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: Commanding Officer, NOAA Ship *Gordon Gunter*

FROM: Captain Anita L. Lopez, NOAA
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for GU-13-01
Northern Right Whale Survey & Biology

Attached is the final Project Instruction for GU-13-01, N. Right Whale Survey, which is scheduled aboard NOAA Ship *Gordon Gunter* during the period of 29 April – 31 May, 2013. Acknowledge receipt of these instructions via e-mail to **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 Instructions

Date Submitted: 16 April 2013

Platform: NOAA Ship *Gordon Gunter*

Project Number: GG13-01

Project Title: N. Right Whale Survey & Biology

Project Dates: April 29-May 31, 2013

Approved by: _____ Date: 4-16-13

for William A. Karp, Ph.D.
Science and Research Director
Northeast Fisheries Science Center

Approved by: _____ Date: _____

Captain Anita L. Lopez, NOAA
Commanding Officer
Marine Operations Center - Atlantic

COMMANDING OFFICER
NOAA Ship *Gordon Gunter*

PROJECT INSTRUCTIONS: GG 13-01 N. Right Whale Survey & Biology

Project Dates: On or about 29 April 2013 – 31 May 2013

Area of Operation: Shelf and shelf-edge waters from Massachusetts eastward into Canadian waters out to Georges Basin and northeastward as far as Browns Bank. The primary survey area will be the Great South Channel and Georges Bank (Figure 1).

Objectives: The primary objectives in order of priority are to: 1) Collect photo ID and biopsy samples of baleen whales. Primary target species is North Atlantic right whales. 2) Apply dermal tags to right and sei whales. 3) Conduct oceanographic sampling in proximity to tagged whales. 4) Conduct zooplankton sampling to examine prey sources. 5) Collect right whale fecal samples for hormone analysis. 6) Deploy acoustic array of marine acoustic recording units (MARU), for acoustic localization and distribution purposes.

Planned Itinerary:

25 April:	Load scientific gear.
29 April:	Load any remaining scientific gear, embark scientific personnel and depart Woods Hole, MA.
30 April - 09 May:	Survey line transects between Great South Channel/Georges Bank/Gulf of Maine as appropriate.
10 May:	Return to Boston, MA. Disembark scientific personnel.
20 May:	Embark scientific personnel and depart Boston, MA
21-30 May:	Survey line transects between Great South Channel/Georges Bank/Gulf of Maine as appropriate.
31 May:	Return to Newport, RI. Disembark scientific personnel, and off-load scientific equipment and samples.

Operational Plans: Primary cruise activities are described below and include: (1) Collecting biopsies and photographs of large whales from a RHIB on all good weather days that whales are present. (2) Apply dermal tags to right and sei whales from a RHIB on all good weather days that whales are present. (3) Deploy vertical profiling package from NOAA Ship *Gordon Gunter* in the trailing path of tagged whales for the duration of the tagging period (24-72 hr). (4) Conduct zooplankton tows near whales from the ship and the RHIB. (5) Collect sei and right whale fecal samples for hormone analysis. 6) Deployment of 5 MARUs.

Prior to departure from Woods Hole (and for the duration of the cruise), the chief scientist will consult with the Northeast Fisheries Science Center (NEFSC) aerial survey team to determine locations of concentrations of North Atlantic right whales to be targeted. If no right whale sightings are available from the aerial survey team, *G. Gunter* will run a series of transect lines in order to locate concentrations of North Atlantic right whales.

In general, small boat operations will be conducted on all good weather days when sea state allows. Conditions permitting, the vessel will conduct small boat operations when sightings of North Atlantic right whales occur. At the request of the chief scientist and at the Commanding Officer's discretion, the RHIBs will be deployed in order to maximize efforts in good conditions. One RHIB (18'-90hp provided by NEFSC) will focus on photographic identification and biopsy sampling. The other RHIB (15'-70hp provided by Woods Hole Oceanographic Institute (WHOI)) will focus on dermal tagging.

Cruise activities may change from hour-to-hour or day-to-day depending on the sea state, weather, availability of whales, and previous accomplishments. The Chief Scientist and Commanding Officer will discuss the upcoming day's anticipated activities and the conditions under which the day's science plans will change. For example, survey operations may be conducted during the first part of the day, but if the wind and seas calm down and whales have been encountered, the Chief Scientist may request to cease survey operations and deploy the RHIBs to conduct photo-identification, biopsy and tagging operations.

Right whale photo-identification and biopsy: The 18' NEFSC RHIB will be deployed on all fair weather days when right whales are encountered. The NEFSC RHIB will focus on photo-identification and biopsy sampling of previously un-sampled right whales and possibly other baleen whales. The NEFSC RHIB will carry a coxswain, photographer, darter and data recorder. Biopsy sampling will be done with a crossbow which has a 150lbs draw weight. The bolts have a modified tip for extracting a skin and blubber sample. All samples will be processed once scientists are back aboard *G. Gunter*. Skin samples will be fixed in dimethylsulfoxide (DMSO) and blubber samples will be frozen. The NEFSC RHIB will work within a distance of *G. Gunter*, previously agreed upon by the chief scientist and the Commanding Officer. The biopsy effort will be conducted under ESA/MMPA permit #1058-1733-01.

Right whale dermal tagging: The 15' WHOI RHIB will be deployed on all fair weather days when right whales or sei whales are encountered and when there is no tag currently on a whale. The WHOI RHIB will focus on applying a dermal tag to right or sei whales. The WHOI RHIB will carry a coxswain and a tagger. The tag will be applied on the back of the whale between 1.5 m posterior to the blowholes and 1 m anterior to the peduncle from a distance of 5-10 m using a compressed air launcher. Once the tag is secured to a whale, the WHOI RHIB will be retrieved and the *G. Gunter* will commence oceanographic sampling. The tag is designed to report its GPS location every 10-20 minutes to the *G. Gunter* via an ARGOS satellite-receiving antenna mounted high on the ship's mast. A computer will be set up on or near the bridge that will allow bridge personnel to monitor the location of the tagged whale in real time. Oceanographic sampling will be conducted at stations along the whale's track. The tagging effort will be conducted under ESA/MMPA permit #1058-1733-01.

Deployment of the MARU array: During the first leg of the cruise 5 MARUs will be deployed (see Figure 2 for general locations. Exact Maps and GPS positions for deployments will be provided). Deployment will take place on days when small boats cannot be launched for large whale work. MARUs will need to be deployed using the ship's crane. Each MARU will have 4 sandbags attached to it at the bottom and will need to be lowered into the water and released. Acoustic signal checks will be carried out with each MARU before and after the deployment of the unit.

Oceanographic sampling: A vertical profiling instrument package (CTD) fitted with equipment to examine prey source and water conditions will be deployed from the *G. Gunter* every 15-20 minutes at locations provided by the dermal tag. These operations will continue round-the-clock for the duration that the tag is on the whale: 24-72 hours.

Zooplankton sampling: Zooplankton samples will be collected at times when a tag is not attached to a whale using double or single ring nets outfitted with 150 micron mesh nets. During photo-identification and biopsy effort, the RHIB will opportunistically collect zooplankton samples in the vicinity of surface feeding sei whales. The RHIB will deploy a small cone net approximately 10 feet off the stern and tow just below the surface for approximately 5 minutes. Samples will be transferred to jars while on the RHIB. All samples will be preserved in a 5% formaldehyde-seawater solution. Formaldehyde will be stored in the fume hood in the chemistry lab of *G. Gunter.*

Fecal sampling: During photo-identification and biopsy effort, right and sei whale fecal samples will be opportunistically collected from the NEFSC RHIB using a dip net. Sample jars will be stored in the scientific freezer aboard *G. Gunter.*

Vessel Sensor and Logging Requirements: *G. 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. Date and time for data collections from computers, instrumentation, and log sheet recordings will be synchronized using the vessel's GPS master clock. The NEFSC is responsible for setting up hardware and software, and the NEFSC and *G. Gunter's* Survey and Electronics Technicians are responsible for ensuring data collection and storage.

The ship's Scientific Computer System (SCS) will be required for logging data on a routine basis and data requirements will be coordinated with the Commanding Officer and Survey Technician at the beginning of the cruise.

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. For cruise GG13-01, the *G. Gunter* will be approaching most all right whales closer than 500 yards. The chief scientist is a co-investigator on ESA/MMPA permit # 779-1633-02 and the biopsy and tagging effort will be conducted under ESA/MMPA permit #1058-1733-01.

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 to 866-755-NOAA. 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. Both placards are available online (http://www.nefsc.noaa.gov/psb/surveys/documents/20120919_Report_a_Right_Whale.pdf and http://www.nefsc.noaa.gov/psb/surveys/documents/20120919_Report_a_Dead_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 alive and well may be reported using the Platforms of Opportunity (POP) forms and protocols

During cruise GG13-01, the chief scientist will be responsible for reporting the days' right whale sightings to the appropriate contact number listed above. It is requested that all whale sightings not seen by marine mammal observers when on watch be reported to the chief scientist by nightfall of the day of sighting.

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 any protected species such as a sturgeon, whale, dolphin, porpoise, marine turtle or seal (e.g., collision with a whale or bycatch of a sturgeon or sea turtle), then the NMFS Northeast Regional Office must be notified via e-mail 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. The chief scientist will be notified before reports are made.

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.

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

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

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

Data Management: All whale sightings and survey effort will be recorded electronically. Data logging computers will be linked to ship's computer system for real-time locations. All effort and sightings data will be submitted to NEFSC DMS for incorporation into Oracle database system. Samples and data collected for specific individuals, agencies or organizations will be processed the same.

Foreign National Access and Deemed Export Controls:
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). The foreign national's sponsor is responsible for obtaining clearances and export licenses required and for providing for required escorts by the NAO. Programs sponsoring foreign nationals should consult with their designated line office personnel to assist with the process (http://deemedexports.noaa.gov/contacts.html).

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 FRNS granting approval for the foreign national guest's visit. 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 Regional Security Officer.
4. Export Control - The NEFSC currently neither possesses nor utilizes 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 NMAO approval 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 of the NOAA Foreign National List spreadsheet for each foreign national in the scientific party.
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 cruise, 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 Regional Security Officer.

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 Departmental Sponsor/NOAA 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, NOAA (or DOC) employee. According to DOC/OSY, this requirement cannot be altered.
3. Ensure completion and submission of Appendix C (Certification of Conditions and Responsibilities for a Foreign National Guest) as required by NAO 207-12 Section 5.03.h.

Certified Boat Operators: Under NAO217-103 MANAGEMENT OF NOAA SMALL BOATS, certified small boat operators must have current CPR and First Aid certification as well as a Small Boat Safety course and Fast Rescue Boat certification which includes classroom and on water components. Photocopies of the small boat operators required documentation must be provided to the Master of the vessel prior to any cruise which conducts small boat operations. Boat Operators included on this cruise are: Henry, Baumgartner, Cole, Conger, Duley, Josephson, Lysiak, Matzen, and Morin. Coxswains will not work beyond the 12 hours per day as permitted under the STCW guidelines.

Communications: Routine communications will be conducted between *G. Gunter* and Woods Hole via email. Satellite based voice communication are available (INMARSAT B, Iridium) and cellular phone, if needed. 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 it must be arranged at least 30 days in advance.

Hazardous Material: The Chief Scientist is responsible for complying with MOCDOC 15, Fleet Environmental Compliance #07, Hazardous Material and Hazardous Waste Management Requirements for Visiting Scientists, released July 2002. Details regarding those requirements will be provided by the Chief of Operations, Marine Operations Center – Atlantic upon request and may be reached at 757-441-6716.

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 the anticipated quantity brought aboard, MSDS and appropriate neutralizing agents, buffers, and/or absorbents in amounts adequate to address spills of a size equal to the amount of chemical brought aboard and a chemical hygiene plan. The amount of hazardous material arriving and leaving the vessel shall be accounted for by the Chief Scientist.

Hazardous Materials Inventory: The following chemicals will be placed aboard the *G. Gunter* prior to departure:

Item	Quantity	Furnished By
Dimethyl Sulfoxide (DMSO)	30 vials	Protected Species Branch
Formaldehyde, 37%	4 liters	Woods Hole Oceanographic Institute

Radioactive Isotopes: N/A

Medical Clearances: NOAA Fleet Medical Policy requires all personnel embarking on NOAA vessels to furnish a completed copy of the NOAA Health Services Questionnaire (NHSQ) to the Health Services Office of the Marine Operations Center. This form should be submitted 30 days in advance of sailing, but no later than 7 days in advance of sailing. The Chief Scientist is responsible for the timely submission of NHSQs for scientific personnel to the Health Services Office.

Accident/Illness Reporting: Mishaps, injuries and near misses must be reported to the vessel's Executive Officer and Medical Person in Charge so that appropriate reporting can be made through the OMAO chain of command. In addition, all work-related mishaps involving scientific staff that result in an employee injury or illness, or any work related mishap or near miss, including those that do not require first aid or medical attention, must be reported within 24 hours of occurrence to the NOAA Fisheries Deputy Assistant Administrator for Operations. The reporting will be accomplished using a Mishap Reporting Form, via email, originating from the Chief Scientist, through the OMI Facility Operations and Safety (FOS) Branch (Jack.Emberg@noaa.gov with copies sent to Linda.Arlen@noaa.gov and Joseph.Finnegan@noaa.gov).

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

Peter.Corkeron@noaa.gov	{Large Whale program leader}
Michael.Simpkins@noaa.gov	{Protected Species Branch Chief}
Fred.Serchuk@noaa.gov	{Acting READ Chief}
Bill.Karp@noaa.gov	{Science and Research Director}
Russell.Brown@noaa.gov	{Deputy Science and Research Director}
Nathan.Keith@noaa.gov	{NEFSC Vessel Coordinator}
Ops.Gordon.Gunter@noaa.gov	{Operations Officer – *Gordon Gunter*}
CO.Gordon.Gunter@noaa.gov	{Commanding Officer – *Gordon Gunter*}
Michael.S.Abbott@noaa.gov	{NEFSC Port Captain}

Watches: The scientific watch schedule will be 24 hours, with small boat ops and visual survey during daylight hours and oceanographic and zooplankton sampling during all hours.

Meals and Berthing: Meals and berthing are required for up to 13 scientists. Meals will be served 3 times daily beginning one hour before scheduled departure, extending throughout the cruise, and ending two hours after the termination of the cruise. Berthing requirements, including number and gender of the science crew, 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.

All NOAA Scientists will have proper travel orders when assigned to a NOAA ship. The Chief Scientist will ensure that all non-NOAA and/or non-Federal employee scientists aboard will also have proper orders or the means to support themselves in the event that the ship becomes uninhabitable and/or the galley is closed during a port call during any part of the scheduled project.

Pre-Cruise Meeting: Prior to departure the Chief Scientist will conduct a meeting of the scientific party to train them in sample collection and inform them of cruise objectives. Some vessel protocols, e.g., meals, watches, etiquette, etc., will be presented by the ship's Operations Officer.

Post Cruise Reporting Requirements: Upon completion of the cruise, a post-cruise meeting will be held (unless prior alternate arrangements are made) and attended by the ship's officers, the Chief Scientist, members of the scientific party, the Vessel Coordinator and the Port Captain to review the cruise. Concerns regarding safety, efficiency, and suggestions for improvements for future cruises should be discussed. Minutes of the post-cruise meeting will be distributed to all participants via email and to the CO.MOC.Atlantic@noaa.gov and ChiefOps.MOA@noaa.gov. The Port Captain, if attending, is responsible for the recording and distributing the minutes. In his/her absence, the Operations Officer shall be responsible for the minutes.

Within 20 days of the completion of each cruise leg, a Ship Operation Evaluation form is to be completed by the Chief Scientist and submitted to NOAA's Office of Marine and Aviation Operations. The Chief Scientist will also provide a Cruise Report to the NEFSC vessel coordinator.

Personnel List (Scientific):

Name	Title	Organization
Allison Henry	Chief Scientist	NMFS, NEFSC, Woods Hole, MA
Mark Baumgartner	Marine Mammal specialist	WHOI, Woods Hole, MA
Lauren Bamford	Visiting Scientist	WHOI, Woods Hole, MA
Barbara Beblowski	Visiting Scientist	College of the Atlantic, Bar Harbor, ME
Steven Brady	Observer	Integrated Statistics, Woods Hole, MA
Tim Cole	Marine Mammal specialist	NMFS, NEFSC, Woods Hole, MA
Lisa Conger	Marine Mammal specialist	NMFS, NEFSC, Woods Hole, MA
Peter Duley	Marine Mammal specialist	NMFS, NEFSC, Woods Hole, MA
Sarah Fortune*	Visiting Scientist	University of British Columbia
Jennifer Gatzke	Marine Mammal specialist	Integrated Statistics, Woods Hole, MA
Elizabeth Josephson	Marine Mammal specialist	Integrated Statistics, Woods Hole, MA
Nadine Lysiak	Marine Mammal specialist	WHOI, Woods Hole, MA
Eric Matzen	Marine Mammal specialist	Integrated Statistics, Woods Hole, MA
David Morin	Marine Mammal specialist	NMFS, NERO, Gloucester, MA
Christopher Tremblay	Marine Mammal specialist	WHOI, Woods Hole, MA
Angela Greene	Visiting Teacher	Teacher At Sea Program
Melanie Lyte	Visiting Teacher	Teacher At Sea Program

*Canadian citizen - Allison Henry will act as Foreign National Sponsor

Equipment and Supply List:
The following sampling and scientific equipment will be placed onboard NOAA Ship *G. Gunter*

ITEM	QUANTITY	PROVIDED BY:
Rigid hull inflatable boat-18' -90hp- gasoline, cradle, lifting harness, other associated gear & safety equipment	1	NMFS, NEFSC, Woods Hole, MA
Biopsy systems (3 crossbows, bolts, modified tips)	3	NMFS, NEFSC, Woods Hole, MA
Biopsy sampling supplies	ample	NMFS, NEFSC, Woods Hole, MA
DMSO-dimethyl sulfoxide	30/ 2oz. tubes	NMFS, NEFSC, Woods Hole, MA
MARU buoys and deployment materials	5	NMFS, NEFSC, Woods Hole, MA
Photographic equipment	Ample	NMFS, NEFSC, Woods Hole, MA
Big eye binoculars w/ stand	2	NMFS, NEFSC, Woods Hole, MA
Observer platform for flying bridge	1	NMFS, NEFSC, Woods Hole, MA
Observer deck for flying bridge	1	NMFS, NEFSC, Woods Hole, MA
Observer chair with stand	1	NMFS, NEFSC, Woods Hole, MA
Life vests and exposure suits	Ample	NMFS, NEFSC, Woods Hole, MA
Laptop computers/data recorders	2	NMFS, NEFSC, Woods Hole, MA
Sighting and biopsy logs	ample	NMFS, NEFSC, Woods Hole, MA
Handheld binoculars	3	NMFS, NEFSC, Woods Hole, MA
Dip net & bucket for fecal sampling	1	NMFS, NEFSC, Woods Hole, MA
Fecal sampling jars and data sheets	Ample	NMFS, NEFSC, Woods Hole, MA
Zooplankton sampling net	1	PCCS, Provincetown, MA
Zooplankton sampling jars	20	PCCS, Provincetown, MA
Rigid hull inflatable boat-15' -70hp- gasoline, cradle, lifting harness, other associated gear & safety equipment	1	WHOI, Woods Hole, MA
Vertical profiling instrument package with CTD, optical plankton counter, and video plankton recorder (weight = 450 lbs).	1	WHOI, Woods Hole, MA
Dermal attachment tags	2	WHOI, Woods Hole, MA
Modified compressed-air line thrower, modified for launching		WHOI, Woods Hole,

dermal attachment tags	1	MA
Scuba air tanks	2	WHOI, Woods Hole, MA
Single and Double 75 cm diameter ring net	1 each	WHOI, Woods Hole, MA
Plankton sampling gear: sieves, 1-quart jars	ample	WHOI, Woods Hole, MA
Microscope with light source	1	WHOI, Woods Hole, MA
Digital camera	1	WHOI, Woods Hole, MA
Laptop computers	4	WHOI, Woods Hole, MA
GPS antennae and ARGOS tracking antennae	1 each	WHOI, Woods Hole, MA
SBE 37 temperature/depth instrument for use on ring nets (~1 ft long)	1	WHOI, Woods Hole, MA
Formaldehyde, 37%	4 liter container	WHOI, Woods Hole, MA

Figure 1. Planned area of operations during NOAA Ship *Gordon Gunter* cruise 13-01, N. Right Whale Survey & Biology, during 29 April – 24 May 2013.

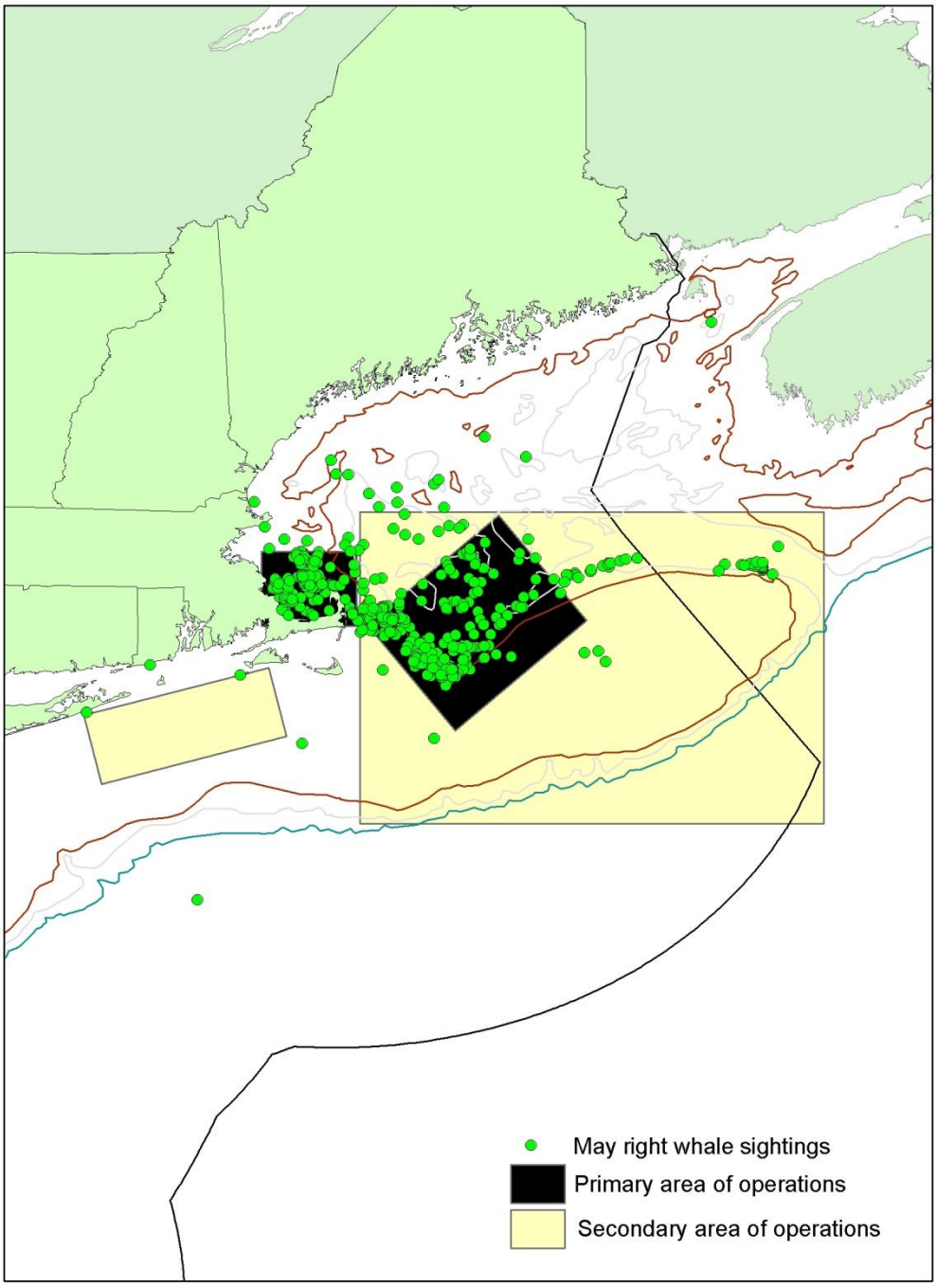

Figure 2. General deployment positions for marine autonomous recording units (MARUs) during NOAA Ship *Gordon Gunter* cruise 13-01, N. Right Whale Survey & Biology, during 29 April – 24 May 2013.