U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

MEMORANDUM FOR: Commander G. Mark Miller, NOAA
Commanding Officer, NOAA Ship *Henry B. Bigelow*

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

SUBJECT: Project Instruction for HB-16-01
Spring Bottom Trawl Survey

Attached is the final Project Instruction for HB-16-01, Spring Bottom Trawl Survey, which is scheduled aboard NOAA Ship *Henry B. Bigelow* during the period of April 6 – June 6, 2016. Of the 59 DAS scheduled for this project, 59 days are funded by a Line Office Allocation and 55 DAS are now scheduled to occur due to repair delays. 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.

Attachment

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

Project Instruction

Date Submitted: 25 January, 2016

Platform: NOAA Ship *Henry B. Bigelow*

Project Number: HB 16-01

Project Title: Spring Multispecies Bottom Trawl Survey

Project Dates: ~~2 March – 14 May 2016~~
06 APRIL - 06 JUNE 2016 BLA

Prepared by: _____ Dated: _____
Michael Martin
Bottom Trawl Survey Program Lead
Northeast Fisheries Science Center

Approved by: _____ Date: 19 Feb 16
William A. Karp, Ph.D.
Science and Research Director
Northeast Fisheries Science Center

Approved by: _____ Date: 4/4/2016
Captain Anne K. Lynch, NOAA
Commanding Officer
Marine Operations Center – Atlantic

I. **Overview**

A. HB 16-01 Spring Multispecies Bottom Trawl Survey, 6 April – 06 June 2016

B. Days at Sea (DAS):

Of the ~~59~~ 55 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation, ~~59~~ 55 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. Operating Area:

The continental shelf and upper continental slope from north of Cape Lookout, 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. Objectives:

The objectives are to: 1) determine the spring distribution and relative abundance of fish and invertebrate species found on the continental shelf and upper slope, including the collection of additional biological information following the pre-established sampling plan at the direction of the Chief Scientist; 2) opportunistically evaluate survey gear efficiency, methods, or survey related equipment that may benefit the trawl survey and fish stock assessments; 3) collect oceanographic data including CTD casts and bongo tows at selected stations; 4) opportunistically collect acoustic data along cruise tracks with the EK-60 and ME-70 acoustic systems.

E. Participating Institutions:

National Marine Fisheries Service, Northeast Fisheries Science Center

F. Science Party:

Name	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
TBD	Chief Scientist	6 Apr	22 Apr		NMFS	
TBD	Chief Scientist	26 Apr	13 May		NMFS	
TBD	Chief Scientist	18 May	6 Jun		NMFS	

G. Administrative:

I. Points of Contact

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

nmfs.nec.survey.branch@noaa.gov	{Ecosystem Surveys Branch}
Wendy.Gabriel@noaa.gov	{FEMAD Division Chief}
Bill.Karp@noaa.gov	{NEFSC Science and Research Director}
Russel.Brown@noaa.gov	{NEFSC Deputy Science and Research Director}
Jack.Moakley@noaa.gov	{OMI Chief}
Nathan.Keith@noaa.gov	{NEFSC Vessel Coordinator}
Jon.Hare@noaa.gov	{Oceanography Branch Chief}
Tamara.Holzwarth-Davis@noaa.gov	{Oceanography Branch}
Mark.Terceiro@noaa.gov	{Acting Population Dynamics Branch Chief}
Richard.McBride@noaa.gov	{Population Biology Branch Chief}
CO.Henry.Bigelow@noaa.gov	{Commanding Officer – *Henry B. Bigelow*}
Michael.S.Abbott@noaa.gov	{NEFSC Port Captain}

2. Diplomatic Clearances:

This project involves Marine Scientific Research in waters under the jurisdiction of Canada. Diplomatic clearance has been requested.

3. Licenses and Permits:

Canada's Foreign Fishing Vessel License has been requested and the license number will be provided once issued and prior to entry in Canadian waters.

Salvage of dead migratory birds is authorized under Federal Fish and Wildlife Permit **MB043513-0**

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.

The Ecosystems Surveys Branch requests calibration of the auto-trawl system prior to each bottom trawl survey cruise season with the participation of Ecosytems Surveys Branch representatives and a technical representative from Rapp-Hydema. This effort is estimated to take approximately 12 – 24 hours of vessel time prior to the beginning of the survey. The Ecosystems Surveys Branch requests that the collection of underwater video observations of the

survey trawl gear during the autotrawl calibration tows. The effort will focus primarily on evaluating bottom contact of the groundgear in relation to the Scanmar Trawleye bottom contact signal. Conducting the autotrawl calibration tows during daylight hours will greatly benefit the video quality, however, if logistics do not allow for daylight tows underwater lights may be used.

A. Project Itinerary:

The cruise will be divided into four parts:

22 Mar – 24 Mar: Load scientific equipment and supplies, Brooklyn Naval Yard, Brooklyn, NY

Part I: Calibrations

5 Apr – 6 Apr: Depart Brooklyn Naval Yard, Brooklyn NY to conduct vessel systems calibrations; return to TBD.

Part I, continued: Mid-Atlantic to Southern New England, ~~2~~ 6 April – 22 April

6 Apr: Load scientific gear, embark scientific personnel and depart TBD.

6 Apr – 22 Apr: Begin the spring bottom trawl survey.

22 Apr: Arrive Newport Naval Station, Newport, RI, offload scientific collections and disembark scientific personnel.

Part II: Southern New England Sector and Georges Bank 26 April – 13 May

26 Apr: Load scientific gear, embark scientific personnel and depart Newport Naval Station, Newport, RI.

26 Apr – 13 May: Continue the spring bottom trawl survey.

13 May: Arrive TBD, offload scientific collections and disembark scientific personnel.

Part III: Georges Bank Sector and Gulf of Maine ~~17~~ 18 May – ~~3~~ 6 June BLA

18 May: Load scientific gear, embark scientific personnel and depart TBD

18 May - 6 Jun: Continue the spring bottom trawl survey.

6 June: Arrive Newport Naval Station, Newport, RI, offload scientific collections

6 - 7 Jun Offload scientific equipment and supplies

B. Staging and Destaging:

Ecosystems Surveys Branch personnel will coordinate directly with the vessel command and deck department regarding specific staging and destaging activities. These efforts will require the use of the vessel's cranes to onload and offload equipment.

C. Operations to be conducted:

Survey operations will be conducted 24 hours. A standard 20-minute tow will be made at the approximately 377 randomly pre-selected stations indicated on cruise charts which will be provided to the Commanding Officer prior to departure. It is requested that the vessel's Navigation Officer plot and examine stations, and identify any stations that are problematic for the vessel in terms of depth, obstructions or other issues in advance of the cruise. Specific sampling problems and requirements may necessitate the planning of additional stations during the actual operation of the cruise (e.g., special deep-water stations). Figure 1 shows the general area of operations. All survey tows will adhere to the NEFSC Bottom Trawl Survey Protocols for NOAA Ship *Henry B. Bigelow* (accessible online: http://nefsc.noaa.gov/publications/crd/crd1406/). Sampling will be conducted using the NEFSC standardized, 3 bridle, 4 seam, bottom survey trawl, equipped with a rockhopper sweep. The trawl will be fished using 2.2 m^2 Poly-Ice oval trawl doors and 36.6 meter (20 fathom) bridles. In addition, net mensuration equipment will be used to monitor and validate trawl performance at all stations.

Vessel Sensor and Logging Requirements: *Henry B. Bigelow*'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 ESB is responsible for setting up FSCS hardware and software, and the ESB and *Henry B. Bigelow*'s ET are responsible for ensuring data collection.

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 Electronics

Technician at the beginning of the cruise. We request that all available SCS sensors be operational and calibrated as appropriate, with logging capabilities enabled.
Any changes to the settings in the SCS system during the cruise should be immediately communicated to the Chief Scientist. Bridge officers will be requested to execute a new "Trawl Event" using FSCS 2.0 Operation Event Logger to capture SCS data streams during trawling operations. FSCS 2.0 will be set up and utilized to process catches from all tows. Documentation and support will be provided for each survey leg. Collection of ship sensor data via trawl events is a critical requirement to support this work. It is requested that the time server/time date be imbedded into the SCS files. Global Positioning System provides data on vessel towing speed and direction to be recorded at a frequency of 1.0 Hz.

Net Mensuration Integration Software: The Bottom Trawl Survey will utilize Scanmar net mensuration sensors and hydrophones as the primary net mensuration system that is logged to SCS. We request that all net mensuration data to be logged by SCS at a frequency of 1.0 Hz.

Trawl Winches and Towing Warps: *Henry B. Bigelow*'s auto-trawl system will be used during all survey trawling operations in tension based mode with weather effects setting on. National bottom trawl survey standards require redundant measurement of tension during all survey bottom trawling operations. The Ecosystems Surveys Branch requests the vessel calibrate the auto-trawl system prior to each bottom trawl survey cruise season according to the document "Rapp Hydema Auto-Trawl Winch System and Block Load Cell Calibration Procedure" prepared by vessel crew, ESB staff and Rapp Hydema technicians. Both the winch calculated tensions, based on system pressures, and turning block load cells must be calibrated simultaneously to ensure each measuring device is calibrated to an equal magnitude. ESB requires that ship power be available during calibrations so that the system can be operated in "AUTOTRAWL MODE". ESB also requires that the settings of all programmable winch parameters be reported to the ESB after each calibration procedure. Per the current national protocol for trawl surveys, physical markings need not be inserted into the warps if an auto-trawl system is employed. However, the protocols do require redundant measurement of warp length. *Henry B. Bigelow*'s trawl warp measuring systems are required to be operational during all NEFSC bottom trawl survey operations.

Gear repair/inventory: A list of the survey sampling gear put aboard will be presented to the Chief Bosun along with detailed sampling gear plans prior to sailing. All sampling gear provided to the vessel shall be in standard condition and configuration as certified by the detailed ESB survey gear inspection process and marked with green tags. Sampling gear will be maintained and repaired by the vessel's deck crew, as practical, during the course of the survey so as to remain in certified condition. If repairs are not able to be performed to this condition aboard the vessel, the gear should be clearly labeled detailing the specific damage. The Chief Bosun and Lead Fisherman are requested to follow trawl tagging procedures previously developed jointly with net loft staff as follows:

All bottom trawls offloaded from the vessel MUST HAVE one of 3 colored tags attached and visibly displayed on the bundled Net:

Green - Original inspection tag, net in unused condition

White - Used with no apparent damage and *MUST include Net Number*
Red - Used and known to have damage or other issues with description of damage and *MUST include Net Number*

Prior to the end of each cruise leg, the Chief Bosun should communicate all gear related supply needs to the NEFSC Net Loft and arrange the offload of damaged gear and delivery of new gear supplies for the following leg. All gear supply related communications should be communicated to the NEFSC Net Loft (NMFS.NEC.net_loft@noaa.gov).

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EK60 Data Acquisition: The Simrad EK60 echo sounder, (18-, 38-, 70-, 120-, and 200-kHz with split-beam transducers mounted on the retractable center-board) will acquire data continuously throughout the survey. The EK60 will be interfaced to the SCS to record bottom depth and vessel log values. The EK60 will be interfaced to the POSMV motion sensor. When operational, the EK60 will be synchronized with the Simrad ES60 Bridge sounder and the ship's ADCP. The EK60 is not synchronized with the other sounders and Doppler speed log on the vessel. To minimize acoustic and electrical interference, whenever possible we request deactivating other sounders on the vessel. The survey technicians will be responsible for EK60 data acquisition and storage.

Fisheries Scientific Computer System (FSCS): Catches will be sorted to species. The catch of each species will then be weighed and a length frequency obtained. In addition to these basic catch data, biological samples and data will be collected for age and growth, feeding ecology and special studies. Both station and biological data will be recorded using the Fisheries Scientific Computer System (FSCS 2.0). Whole fish and parts of fish will be collected, and either preserved or frozen. Standard bottom trawl procedures will be used to collect these samples throughout the survey.

Ancillary Sampling:

1. At a subset of the preselected stations, plankton sampling will be conducted using a bongo net following standard NEFSC protocols.
2. Physical oceanographic parameters will be continually monitored through the ship's flow-through thermosalinograph and fluorometer instruments. Weather observations, surface salinity samples and bottom salinity samples will be collected at selected stations.
3. There will be a continuation of the collection of specific samples requested by other NEFSC programs as well as separate academic and scientific organizations.
4. Throughout the cruise, particularly during transit to and from operations areas and between bottom trawl stations, a hydroacoustic survey using the ship's Simrad EK60 system (concurrent use of 18, 38, 120 and 200 kHz frequencies) will be conducted. Transducer calibrations may be required.
5. Conductivity, Temperature and Depth (CTD) sampling will occur at all stations. CTD deployments will be conducted by the ship's survey technicians with support from the ship's deck department. In the event that CTD difficulties are encountered during the cruise, shore based support is available. Requests for support should be forwarded NEFSC.CTDHelp@noaa.gov which is monitored daily. Once contact has been established

via email, to assure continuous support, the CTD help address above should be copied on all email communications.

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:**

Please refer to the Northeast Fisheries Science Center Bottom Trawl Survey Protocols for NOAA Ship *Henry B. Bigelow* available online at:
http://nefsc.noaa.gov/publications/crd/crd1406/.

Mitigation Measures for Protected Species during Research with Trawl Gear: The measures and procedures can be found in the appendices and are based on protocols developed during previous NEFSC-conducted research survey trawls. The mitigation for research trawling comes from the NEFSC Programmatic Environmental Assessment, section 2.2.4.

"Take" of Protected Resources: Under the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA) it is unlawful to take a protected species. The MMPA defines take as "harass, hunt, capture, kill, or collect, or attempt to harass, hunt, capture, or collect". The ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." An incidental take is one that is incidental to, but not the purpose of, otherwise lawful activities.

In the event of an incidental take of a marine mammal or federally listed threatened or endangered species during the cruise, the chief scientist will take the following actions:

Marine turtle, Sturgeon and Atlantic salmon bycatch: All marine turtles, sturgeon and Atlantic salmon taken incidental to fishing activities, must be documented and handled according to established procedures in **the Endangered Species Act Section 7 Consultation Biological Opinion (BIOIP)** issued on November 30, 2012. This includeds sea turtle resuscitation techniques. Dead turtles shall, if feasible, be frozen and returned to the Woods Hole Laboratory. Please refer to the appendices, (appendix B – E of the BIOP) for handling and sampling procedures. Information should be collected on the separate Sturgeon and Turtle Data Collection Sheets and required information should be submitted within 24 hours of the take to Incidental.Take@noaa.gov, Elizabeth.Josephson@noaa.gov, Nathan.Keith@noaa.gov, Sarah.Pike@noaa.gov for PSIT entry.

Marine mammal bycatch: All marine mammals taken incidental to fishing activities must be documented and handled according to established protocols outlined in the

Procedures & Actions for Incidental Takes of Marine Mammals in Research & Monitoring Activities located in the appendices. Information should be collected on the Marine Mammal Data Collection Sheet and required PSIT information should be submitted within 24 hours of the take to Incidental.Take@noaa.gov, Elizabeth.Josephson@noaa.gov, Nathan.Keith@noaa.gov, Sarah.Pike@noaa.gov.

Migratory bird salvage: Please refer to the Federal Fish and Wildlife "Special Purpose – Salvage" Permit located in the appendices for the salvage of dead migratory birds (except species listed as threatened or endangered under the Endangered Species Act; see 50 CFR 17.11).

Stellwagen Bank National Marine Sanctuary (SBNMS):

Please refer to the appendices for SBNMS Artifact Protocol.

III. Equipment

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

ITEM	QUANTITY	FURNISHED BY
1. Trawl Wires	1 set	*Henry B. Bigelow*
2. Pentagon AutoTrawl System	1	" "
3. Simrad EK60 Scientific Sounder	1	" "
4. Simrad ME70 Echo Sounder	1	" "
5. Appleton Cranes	2	" "
6. NOAA Shipboard Computer System (SCS)	1	" "

B. Equipment and Capabilities provided by the science crew (itemized)

Equipment and Supply List: The following sampling and scientific equipment will be placed aboard *Henry B. Bigelow* prior to departure:

ITEM	QUANTITY	FURNISHED BY
1. NEFSC 4 seam, 3 bridle trawls	4	NMFS, NEFSC, Woods Hole, MA
2. 22.2 m^2 PolyIce oval trawl doors	2 pairs	" " " " "
3. Mending twine	Ample	NMFS, NEFSC, Woods Hole, MA
4. Spare trawl and liner sections	Ample	" " " " "
5. Chain backstraps and idlers	4	" " " " "
6. Age and growth supplies (various)	ample	" " " " "
7. Feeding ecology supplies (various)	ample	" " " " "
8. Special sampling supplies (various)	ample	" " " " "
9. Plastic fish baskets, 2 bushel	24	" " " " "
10. Plastic 5 gal buckets	24	" " " " "
11. Marel electronic scales & backups	4	*Henry B. Bigelow*
12. CTDs	3	NMFS, NEFSC, Woods Hole, MA
13. Electronic Fish measuring boards	4	*Henry B. Bigelow*
14. Polyethylene specimen bags	1,000	NMFS, NEFSC, Woods Hole, MA

15.	Gloves, rubberized fish	ample	"	"	"	"	"
16.	Specimen jars	ample	"	"	"	"	"
17.	Clerical supplies (various)	ample	"	"	"	"	"
18.	Reference books (various)	ample	"	"	"	"	"
19.	60 centimeter bongo net gear	2	"	"	"	"	"
20.	Salinity bottles	ample	"	"	"	"	"
21.	Computer	1	"	"	"	"	"
22.	FSCS system components	ample	"	"	"	"	"
23.	(Electronic measuring boards, barcode readers, label printers, touch monitors, computers & backups, etc)						
24.	Scanmar Distance Master Sensors	6	NMFS, NEFSC, Woods Hole, MA				
25.	Scanmar Distance Remote Sensors	6	"	"	"	"	"
26.	Scanmar Depth Sensors	3	"	"	"	"	"
27.	Scanmar Trawl Sounders	3	"	"	"	"	"
28.	Scanmar Height Sensors	1	"	"	"	"	"
29.	Scanmar Trawl Speed Sensors	2	"	"	"	"	"
30.	Scanmar Trawleye	1	"	"	"	"	"
31.	Scanmar SS4 Door Sensor	2	"	"	"	"	"

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 Chief Scientist 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, the Chief Scientist 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 *Henry B. Bigelow* prior to departure:

Common Name of Material	Qty	Notes	Trained Individual(s)	Spill control
10% Formalin	30.3 l	Alkalinity	Chief Scientist/Watch Chiefs	F
Formaldehyde solution (37%)	40 l	Alkalinity	Chief Scientist/Watch Chiefs	F
Ethanol (95%)	150 x 3 ml	Flammable	Chief Scientist/Watch Chiefs	E

C. Chemical safety and spill response procedures:

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.

E: Ethanol

- Small Spill:
  - Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
- Large Spill:
  - Contain spill
  - Flammable liquid. Ventilate area of leak or spill. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk.

- Absorb with dry earth, sand or other non-combustible material. Do not touch spilled material.
- Use proper personal protective equipment
- Dike if needed.

D. **Radioactive Materials**:

No Radioactive Isotopes are planned for this project.

Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
Spill-X-FP	4.2 kg	Formalin, Formaldehyde	36.6 l
Spill-X-FP	3.4 kg	Formalin, Formaldehyde	29.6 l
Kitty litter	44 kg	liquids	

V. Additional Projects

A. Supplementary Projects

Trawl Advisory Panel – Introduction to NEFSC Bottom Trawl Survey Techniques

The Mid-Atlantic Fisheries Management Council and the New England Fisheries management Council, in collaboration with the Northeast Fisheries Science Center and the Atlantic States Marine Fisheries Commission have recently formed the Trawl Survey Advisory Panel with three primary goals:

1. Understand the existing NOAA/NEFSC trawl survey gear performance and methodology
2. Evaluate the potential to complement/supplement this and other regional research surveys
3. Improving understanding and acceptance of NOAA/NEFSC trawl survey data quality and results.

It is our belief that the best way to accomplish goal 1 is to see the NEFSC bottom trawl survey in action first hand. To achieve this, we hope to bring out interested Advisory Panel members to allow them to participate in bottom trawl survey tows aboard *Bigelow*. It is anticipated that they would depart aboard the ship at the beginning of leg 3 and be transported back to land at the end of the day via small boat transfer. During the period aboard the ship, *Bigelow* will perform survey tows (or similar tows if logistics dictates) and the Advisory Panel members will be able to observe operations, ask questions of the scientific and vessel crew, and experience what bottom trawl survey tows aboard *Bigelow* actually consist of. It is our hope that those attending will gain a basic understanding of how bottom trawl surveys are conducted and provide them with a basis on which to better serve their roles on the Advisory Panel. The completion of this project may

require some flexibility in the timing and logistics as we respond to panel members availability, weather, and survey progress.

D. **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 Management:

Trawl Catches: Trawl catches will be processed on shipboard as specified in the Operational Plans. All station and biological data will be electronically recorded. At the completion of the cruise, all data, including all SCS data, will be electronically transmitted to the NEFSC data management system based in Woods Hole, MA. Samples and data collected for specific individuals, agencies or organizations will be processed by same. Plankton samples will be processed through the NEFSC laboratory in Narragansett, RI. Data from the CTD will be processed at the NEFSC Woods Hole Laboratory.

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-leg Meeting:
Upon completion of each cruise leg, 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.

D. Post-Project Meeting:

The Commanding Officer is responsible for conducting 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.

E. Project Evaluation Report

Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Chief Scientist. The form is available at http://www.omao.noaa.gov/fleeteval.html and provides a "Submit" button at the end of the form. Submitted form data is deposited into a spreadsheet used by OMAO management to analyze the information. Though the complete form is not shared with the ships', specific concerns and praises are followed up on while not divulging the identity of the evaluator.

VIII. Miscellaneous

A. Watches:

Vessel operations will be conducted 24 hours per day. The scientific watch schedule will be determined by the Chief Scientist and submitted as part of the Addendum one week prior to sailing. Scientific personnel will stand 12 hour watches.

B. 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 ESB 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.

C. 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 Executive Officer for all members of the scientific party, with the following information: contact name, address, relationship to member, and telephone number.

D. 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.

E. 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.

F. 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.

G. 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 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

A. Figures

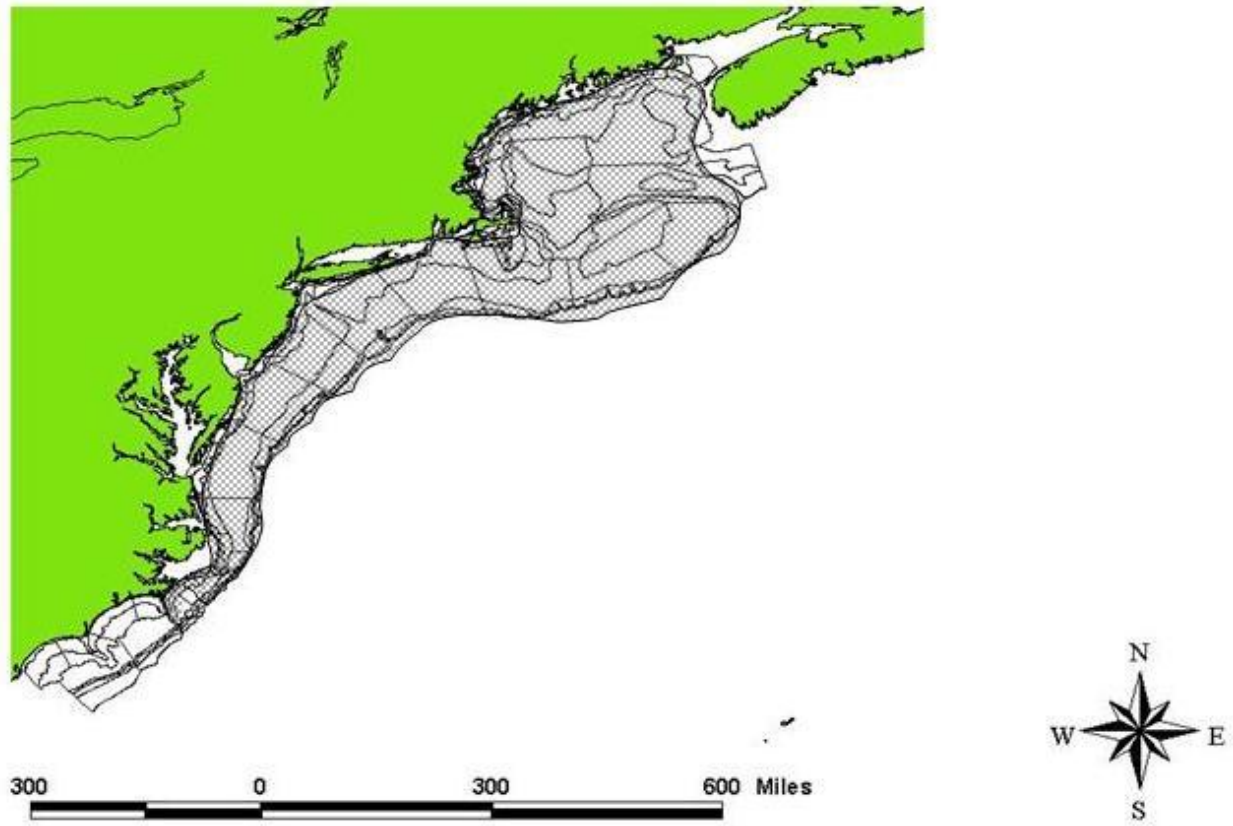


Figure 1. General planned area of operations for *Henry B. Bigelow*, Cruise 16-01 (Parts I-IV), Spring Bottom Trawl Survey.

B. Protected Resources Mitigation, Incidental Take handling, Sampling, Reporting and Salvage Protocols.

Mitigation Measures for Protected Species during Research with Trawl Gear

Monitoring methods

- The officer on watch (or other designated member of the Scientific Party), and crew standing watch on the bridge visually scan for marine mammals, sea turtles, and other ESA-listed species (protected species) during all daytime operations. Bridge binoculars are used as necessary to survey the area upon arrival at the station, during visual and sonar reconnaissance of the trawl line to look for potential hazards (e.g., commercial fishing gear, unsuitable bottom for trawling, etc.), and while the gear is deployed. If any marine mammals or sea turtles are sighted by the bridge or deck crew prior to setting the gear or at any time the gear is in the water, the bridge crew and/or Chief Scientist are alerted immediately. Environmental conditions (e.g., lighting, sea state, precipitation, fog, etc.) often limit the distance for effective visual monitoring of protected species.

Operational procedures

- "Move-on" Rule. If any marine mammals or sea turtles are sighted around the vessel before setting the gear, the vessel may be moved away from the animals to a different section of the sampling area if the animals appear to be at risk of interaction with the gear at the discretion of the officer on watch. Small moves within the sampling area can be accomplished without leaving the sample station. After moving on, if marine mammals or sea turtles are still visible from the vessel and appear to be at risk, the officer on watch may decide to move again or to skip the station. The officer on watch consults with the Chief Scientist or other designated scientist (identified prior to the voyage and noted on the cruise plan) and other experienced crew as necessary to determine the best strategy to avoid potential takes of these species. Strategies are based on the species encountered, their numbers and behavior, their position and vector relative to the vessel, and other factors. For instance, a whale transiting through the area and heading away from the vessel may not require any move, or may require only a short move from the initial sampling site, while a pod of dolphins gathered around the vessel may require a longer move from the initial sampling site or possibly cancellation of the station if the dolphins follow the vessel. In most cases, trawl gear is not deployed if marine mammals or sea turtles have been sighted near the ship unless those animals do not appear to be in danger of interactions with the trawl, as determined by the judgment of the Chief Scientist or officer on watch. The efficacy of the "move-on" rule is limited during night time or other periods of limited visibility; research gear is deployed as necessary when visibility is poor, although operational lighting from the vessel illuminates the water in the immediate vicinity of the vessel during gear setting and retrieval.
- Once the trawl net is in the water, the officer on watch and/or crew standing watch continue to monitor the waters around the vessel and maintain a lookout for marine mammals and sea turtles. If these species are sighted before the gear is fully retrieved, the most appropriate response to avoid incidental take is determined by the professional judgment of the officer on watch, in consultation with the Chief Scientist or other designated scientist and other experienced crew as necessary. These judgments take into consideration the species, numbers, and behavior of the animals, the status of the trawl net operation (net opening, depth, and distance from the stern), the time it would take to retrieve the net, and safety considerations for changing speed or course. Consideration is also given to the increase in likelihood of marine mammal interactions during retrieval of the net, especially when the trawl doors have been retrieved and the net is near the surface and no longer under tension. In some situations, risk of adverse interactions may be diminished by continuing to trawl with the net at depth until the marine mammals and/or sea

turtles have left the area before beginning haul-back operations. In other situations, swift retrieval of the net may be the best course of action. The appropriate course of action to minimize the risk of incidental take of protected species is determined by the professional judgment of the officer on watch and appropriate crew based on all situation variables, even if the choices compromise the value of the data collected at the station.

- If trawling operations have been delayed because of the presence of marine mammals or sea turtles, the vessel resumes trawl operations (when practical) only when these species have not been sighted near the vessel or otherwise determined to no longer be at risk. This decision is at the discretion of the officer on watch and is situationally dependent.
- Care is taken when emptying the trawl, including opening the cod end as close as possible to the deck of the checker (or sorting table) in order to avoid damage to protected species that may be caught in the gear but are not visible upon retrieval. The gear is emptied as quickly as possible after retrieval in order to determine whether or not protected species are present.

NOAA FISHERIES

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

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

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

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	Code 2	Code 3	Code 4
Live Animal	Fresh Dead	Moderate Decomposition	Advanced Decomposition

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

APPENDIX B

Sea turtle and resuscitation measures as found at 50 CFR 223.206(d)(1).

(d) (1) (i) Any specimen taken incidentally during the course of fishing or scientific research activities must be handled with due care to prevent injury to live specimens, observed for activity, and returned to the water according to the following procedures.

(A) Sea turtles that are actively moving or determined to be dead as described in (d)(1)(i)(C) of this section must be released over the stern of the boat. In addition, they must be released only when fishing or scientific collection gear is not in use, when the engine gears are in neutral position, and in areas where they are unlikely to be recaptured or injured by vessels.

(B) Resuscitation must be attempted on sea turtles that are comatose, or inactive, as determined in paragraph (d)(1) of this section by:

(1) placing the turtle on its bottom shell (plastron) so that the turtle is right side up, and elevating its hindquarters at least 6 inches (15.2 cm) for a period of 4 up to 24 hours. The amount of the elevation depends on the size of the turtle; greater elevations are needed for larger turtles. Periodically, rock the turtle gently left to right and right to left by holding the outer edge of the shell (carapace) and lifting one side about 3 inches (7.6 cm) then alternate to the other side. Gently touch the eye and pinch the tail (reflex test) periodically to see if there is a response.

(2) sea turtles being resuscitated must be shaded and kept damp or moist but under no circumstance be placed into a container holding water. A water-soaked towel placed over the head, neck, and flippers is the most effective method in keeping a turtle moist.

(3) sea turtles that revive and become active must be released over the stern of the boat only when fishing or scientific collection gear is not in use, when the engine gears are in neutral position, and in areas where they are unlikely to be recaptured or injured by vessels. Sea turtles that fail to respond to the reflex test or fail to move within 4 hours (up to 24, if possible) must be returned to the water in the same manner as that for actively moving turtles.

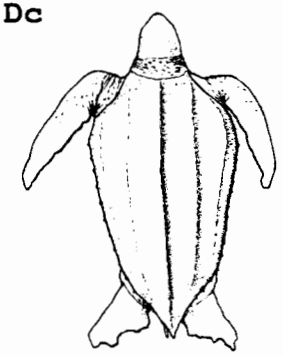
(C) A turtle is determined to be dead if the muscles are stiff (rigor mortis) and/or the flesh has begun to rot; otherwise the turtle is determined to be comatose or inactive and resuscitation attempts are necessary.

APPENDIX C

Identification Key for Sea Turtles and Sturgeon Found in Northeast U.S. Waters

SEA TURTLES

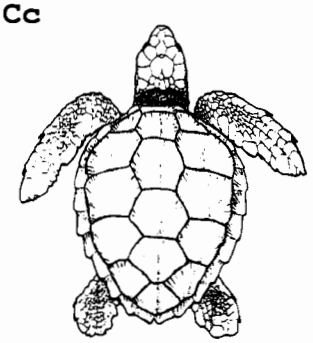
Dc



Leatherback (*Dermocheyls coriacea*)

Found in open water throughout the Northeast from spring through fall. Leathery shell with 5-7 ridges along the back. Largest sea turtle (4-6 feet). Dark green to black; may have white spots on flippers and underside.

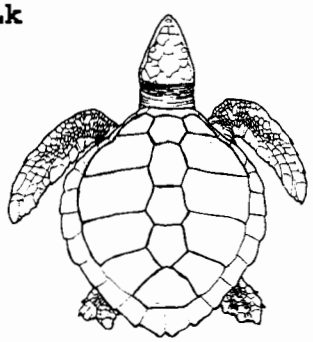
Cc



Loggerhead (*Caretta caretta*)

Bony shell, reddish-brown in color. Mid-sized sea turtle (2-4 feet). Commonly seen from Cape Cod to Hatteras from spring through fall, especially in southern portion of range. Head large in relation to body.

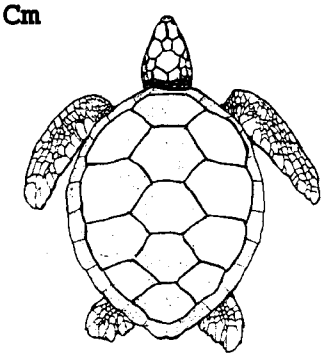
Lk



Kemp's ridley (*Lepidochelys kempi*)

Most often found in Bays and coastal waters from Cape Cod to Hatteras from summer through fall. Offshore occurrence undetermined. Bony shell, olive green to grey in color. Smallest sea turtle in Northeast (9-24 inches). Width equal to or greater than length.

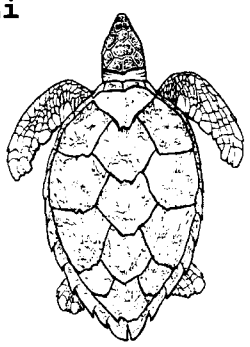
Cm



Green turtle (*Chelonia mydas*)

Uncommon in the Northeast. Occur in Bays and coastal waters from Cape Cod to Hatteras in summer. Bony shell, variably colored; usually dark brown with lighter stripes and spots. Small to mid-sized sea turtle (1-3 feet). Head small in comparison to body size.

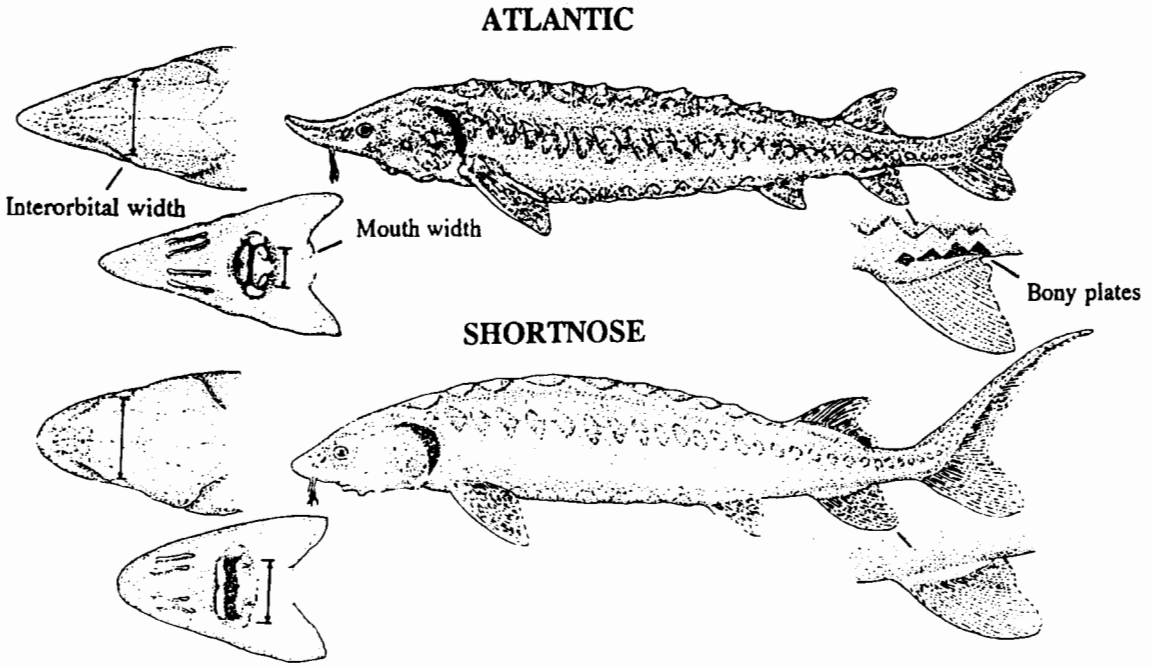
Ei



Hawksbill (*Eretmochelys imbricata*)

Rarely seen in Northeast. Elongate bony shell with overlapping scales. Color variable, usually dark brown with yellow streaks and spots (tortoise-shell). Small to mid-sized sea turtle (1-3 feet). Head relatively small, neck long.

APPENDIX C continued
Sturgeon Identification



Distinguishing Characteristics of Atlantic and Shortnose Sturgeon

Characteristic	Atlantic Sturgeon, *Acipenser oxyrinchus*	Shortnose Sturgeon, *Acipenser brevirostrum*
Maximum length	> 9 feet/ 274 cm	4 feet/ 122 cm
Mouth	Football shaped and small. Width inside lips < 55% of bony interorbital width	Wide and oval in shape. Width inside lips > 62% of bony interorbital width
*Pre-anal plates	Paired plates posterior to the rectum & anterior to the anal fin.	1-3 pre-anal plates almost always occurring as median structures (occurring singly)
Plates along the anal fin	Rhombic, bony plates found along the lateral base of the anal fin (see diagram below)	No plates along the base of anal fin
Habitat/Range	Anadromous; spawn in freshwater but primarily lead a marine existence	Freshwater amphidromous; found primarily in fresh water but does make some coastal migrations

* From Vecsei and Peterson, 2004

APPENDIX D

Procedure for obtaining fin clips from sturgeon for genetic analysis

Obtaining Sample

1. Wash hands and use disposable gloves. Ensure that any knife, scalpel or scissors used for sampling has been thoroughly cleaned and wiped with alcohol to minimize the risk of contamination.

2. For any sturgeon, after the specimen has been measured and photographed, take a one-cm square clip from the pelvic fin.

3. Each fin clip should be placed into a vial of 95% non-denatured ethanol and the vial should be labeled with the species name, date, name of project and the fork length and total length of the fish along with a note identifying the fish to the appropriate observer report. All vials should be sealed with a lid and further secured with tape Please use permanent marker and cover any markings with tape to minimize the chance of smearing or erasure.

Storage of Sample

1. If possible, place the vial on ice for the first 24 hours. If ice is not available, please refrigerate the vial. Send as soon as possible as instructed below.

Sending of Sample

1. Vials should be placed into Ziploc or similar resealable plastic bags. Vials should be then wrapped in bubble wrap or newspaper (to prevent breakage) and sent to:

   Julie Carter
   NOAA/NOS – Marine Forensics
   219 Fort Johnson Road
   Charleston, SC 29412-9110
   Phone: 843-762-8547

   a. Prior to sending the sample, contact Russ Bohl at NMFS Northeast Regional Office (978-282-8493) to report that a sample is being sent and to discuss proper shipping procedures.

APPENDIX E

Incident Report: ESA Listed Species Take

Photographs should be taken and the following information should be collected from all listed fish and sea turtles (alive and dead) collected.

Observer's full name:_____
Reporter's full name:_____

Species Identification:_____

Type of Gear and Length of deployment:

_____
_____

Date animal observed:_____ Time animal observed: _____
Date animal collected:_____ Time animal collected:_____

Environmental conditions at time of observation (i.e., tidal stage, weather):

_____
_____

Water temperature (°C) at site and time of observation:_____
Describe location of animal and how it was documented (i.e., observer on boat):

_____

Sturgeon Information:
Species _____

Fork length (or total length) _____ Weight _____

Condition of specimen/description of animal

_____
_____
_____
_____

Fish Decomposed: NO SLIGHTLY MODERATELY SEVERELY
Fish tagged: YES / NO *Please record all tag numbers.* Tag # _____

Photograph taken: YES / NO
(please label *species, date, geographic site* and *vessel name* when transmitting photo)

Genetics Sample taken: YES / NO
Genetics sample transmitted to: _____ on ____/_____/2012

APPENDIX E continued

Sea Turtle Species Information: *(please designate cm/m or inches.)*
Species _____ Weight (kg or lbs)_____

Sex (circle): Male Female Unknown How was sex determined? _____

Straight carapace length _____ Straight carapace width _____

Curved carapace length _____ Curved carapace width _____

Plastron length _____ Plastron width _____

Tail length _____ Head width _____

Condition of specimen/description of animal_____
_____

Existing Flipper Tag Information
Left _____ Right _____
PIT Tag # _____

Miscellaneous:
Genetic biopsy taken: YES NO
Photos Taken: YES NO Is this a Recapture: YES NO

Turtle Release Information:
Date _____ Time _____
Lat _____ Long _____
State _____ County _____

Remarks: (note if turtle was involved with tar or oil, gear or debris entanglement, wounds or mutilations, propeller damage, papillomas, old tag locations, etc.)
_____
_____

Standard Conditions
Special Purpose - Salvage Permits
50 CFR 21.27

All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR 21.27 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. The standard conditions below are a continuation of your permit conditions and must remain with your permit. If you have any questions regarding these conditions, refer to the regulations or, if necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit: http://www.fws.gov/migratorybirds/mbpermits.html.

1. This permit does not authorize personal use of any migratory bird(s) salvaged under the authority of this permit.

2. You must tag each migratory bird specimen you collect or salvage. Each tag must include
   (a) the date and location where the specimen was collected or salvaged, and
   (b) the name of the person who collected or salvaged the the specimen.
   The permit number under which the specimen was collected or salvaged must be recorded in the permanent accession record.

3. All migratory birds salvaged under this permit must be deposited with the repository designated on the face of this permit within six (6) months of acquisition and/or by December 31 of that calendar year.

4. Salvaged migratory birds, including parts, nests, and nonviable eggs unsuitable for donation must be completely destroyed by burial or incineration.

5. If you encounter a migratory bird with a Federal band issued by the U.S. Geological Survey Bird Banding Laboratory, Laurel, MD, report the band number to 1-800-327-BAND or www.reportband.gov.

6. This permit does not authorize salvage of specimens on Federal lands without additional prior written authorization from the applicable Federal agency, or on State lands or other public or private property without prior written permission or permits from the landowner or custodian.

7. A subpermittee is an individual to whom you have provided written authorization to conduct some or all of the permitted activities in your absence. Subpermittees must be at least 18 years of age. As the permittee, you are legally responsible for ensuring that your subpermittees are adequately trained and adhere to the terms of your permit. You are responsible for maintaining current records of who you have designated as a subpermittee, including copies of designation letters you have provided. Other individuals, including those under the age of 18, may conduct the permitted activities only if you or a designated subpermittee are present.

8. You and any subpermittees must carry a legible copy of this permit and display it upon request when exercising its authority. Subpermittees must also carry your written subpermittee designation letter.

9. You must maintain records as required by 50 CFR 13.46 and 50 CFR 21.27. All records relating to the permitted activities must be kept at the location indicated in writing by you to the migratory bird permit issuing office.

10. Acceptance of this permit authorizes the U.S. Fish and Wildlife Service to inspect any wildlife held, and to audit or copy any permits, books, or records required to be kept by the permit and governing regulations.

11. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
Migratory Bird Permit Office
P.O. Box 779 - Hadley, MA 01035-0779
Tel: 413-253-8643 Fax: 413-253-8424
Email: permitsR5MB@fws.gov

FEDERAL FISH AND WILDLIFE PERMIT

1. PERMITTEE

NORTHEAST FISHERIES SCIENCE CENTER
U.S. DEPARTMENT OF COMMERCE
NATIONAL MARINE FISHERIES SERVICE
166 WATER STREET
WOODS HOLE, MA 02543
U.S.A.

2. AUTHORITY-STATUTES
16 USC 703-712

REGULATIONS
50 CFR Part 13
50 CFR 21.27

3. NUMBER
MB043513-0

4. RENEWABLE	5. MAY COPY
☒ YES ☐ NO	☒ YES ☐ NO

6. EFFECTIVE	7. EXPIRES
04/01/2015	03/31/2018

8. NAME AND TITLE OF PRINCIPAL OFFICER *(If #1 is a business)*
AMY MARTINS
CHIEF, FISHERIES SAMPLING BRANCH

9. TYPE OF PERMIT
SPECIAL PURPOSE - SALVAGE

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
Includes the waters of the U.S. Northeastern Continental Shelf or the Northwest Atlantic Ocean, including the Gulf of Maine and Georges Bank, in addition to the waters off the States of Rhode Island south to North Carolina, from three miles from the coastline extending to the edge on the Continental Shelf, and including the waters of the northern Middle Atlantic Bight and the southern Middle Atlantic Bight.
TEL: 508-495-2266

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL, OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. You are authorized to salvage migratory birds (except species listed as threatened or endangered under the Endangered Species Act; see 50 CFR 17.11) found dead that you had no part in the killing or death thereof. Any dead bald eagles or golden eagles salvaged must be reported within 48 hours to the National Eagle Repository at (303) 287-2110 and to the issuing migratory bird permit office at our fax number 413-253-8424. The Repository will provide directions for shipment of these specimens.
For a list of threatened and endangered species in your state, visit the U.S. Fish and Wildlife Service's Threatened and Endangered Species System (TESS) at: http://www.fws.gov/endangered.

E. You are authorized to salvage abandoned (unoccupied) migratory bird nests and nonviable eggs outside the nesting season, except for nests and eggs of bald eagles or golden eagles and threatened or endangered species.

F. All salvaged migratory bird specimens must be deposited with Northeast Fisheries Science Center, Woods Hole, MA for educational or scientific use only.

G. You may not salvage and must immediately report to the U.S. Fish and Wildlife Service Office of Law Enforcement any dead or injured migratory birds that appear to have been poisoned, shot, electrocuted, have collided with industrial power generation equipment, or were otherwise killed or injured as the result of potential criminal activity. See FWS OLE contact information below.

☒ ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS
ANNUAL REPORT DUE 1/31 of each year (even if you had NO ACTIVITY)
Annual Report Form can be found at: www.fws.gov/forms/3-202-9.pdf
Application Form can be found at: www.fws.gov/forms/3-200-13.pdf

ISSUED BY	TITLE	DATE
/Signature/	CHIEF, MIGRATORY BIRD PERMIT OFFICE - REGION 5	03/09/2015

H. Any person who is
(1) employed by or under contract to you for the activities specified in this permit, or
(2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.

I. You and any subpermittees must comply with the attached Standard Conditions for Special Purpose Salvage Permits. **These standard conditions are a continuation of your permit conditions *and must remain with your permit.***

For suspected illegal activity, immediately contact USFWS Law Enforcement at: Chelsea, MA 617-889-6616

Marine Mammal Data Collection Sheet

****Ensure the animal can continue to breathe, if conducting any disentanglement operations. Also, ALWAYS wear gloves when handling marine mammals; it is for your health and safety.****

Station #: _____

Species Name: _____

Condition at Capture (check one):
□ Alive uninjured □ Alive injured □ Fresh dead □ Decomposed □ Unresponsive

If the animal is brought on board and determined to be dead, if feasible, the specimen should be retained on board until the vessel reaches port and collected by the local Regional Stranding Coordinator

If the animal is NOT brought aboard the vessel, and taking photos is not an option, provide a comprehensive summary of the incident under the Protected Species Incidental Take (PSIT) Narrative on Page 4 of this form. Also, please complete narrative, regardless of whether the marine mammal is dead/alive or on board/not on board.

If the animal is brought on board ALIVE, and it is both safe and feasible to do so, use a CAMERA to obtain the following photos both PRIOR TO and AFTER freeing animal from any gear:

TOP of Animal

PHOTOS of any gear entanglement (if applicable) □
PHOTOS of entire dorsal side:
While Entangled □, After Disentanglement □
PHOTOS of dorsal fin:
While Entangled □, After Disentanglement □
PHOTOS of head/jaw:
While Entangled □, After Disentanglement □
PHOTOS of flanks (sides):
While Entangled □, After Disentanglement □
PHOTOS of any injuries (if applicable):
While Entangled □, After Disentanglement □

UNDERSIDE of Animal (if able to safely and gently turn animal over)

PHOTOS of any gear entanglement (if applicable) □
PHOTOS of entire ventral (bottom) side:
While Entangled □, After Disentanglement □
PHOTOS of any injuries or unique markings/scars (if applicable)
While Entangled □, After Disentanglement □

If the animal is DEAD, use a CAMERA to obtain the following:

TOP of Carcass

PHOTOS of any gear entanglement (if applicable) □

(Continued on Back)

PHOTOS of entire dorsal side □
PHOTOS of dorsal fin □
PHOTOS of head/jaw □
PHOTOS of flanks (sides) □
PHOTOS of any injuries or unique markings/scars (if applicable) □

(Continued on Back)

UNDERSIDE of Carcass (if safe and feasible to turn over carcass)

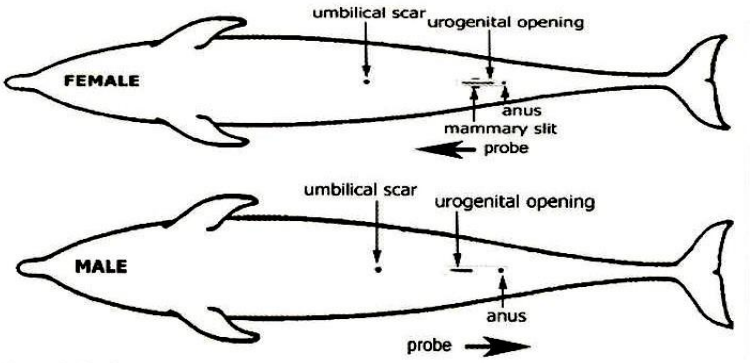
PHOTOS of any gear entanglement (if applicable) □
PHOTOS of entire ventral (bottom) side □
PHOTOS of any injuries or unique markings/scars (if applicable) □

For Dead Cetaceans (Whales, Dolphins, and Porpoises)

Determine the sex of the animal, and use a MEASURING TAPE and SCALE to obtain the following for:

A. TL Length, snout to fluke notch (cm):_____
B. Girth at Axilla/circumference, right behind flippers (cm): _____

Sex (circle one): Male Female Unknown Unexamined



Dead Cetaceans:
Probe the urogenital opening: female = direction of the opening will be forward; males = direction of the opening will be toward the back (fluke).

- If you are examining the animal and are unsure of the sex in any way, please choose "unknown". However, if you are uncomfortable with trying to examine the animal in any way, simply choose "unexamined".

Weight (kg):_____

Continued on Page 3

For Pinnipeds (Seals)

Determine the sex of the animal, and use a MEASURING TAPE and SCALE to obtain the following for:

A. Total Length, snout to tip of tail (cm):
B. Girth at Axilla/circumference, right behind flippers (cm):

Sex (circle one): Male Female Unknown Unexamined

Examine the urogenital opening by stretching the rear flippers taut and very wide apart at the base of the tail, looking inside the outer openings.

- Females will have two, distinct, inner openings (anal and vaginal). The mammary teats (two) are posterior to the umbilical scar in females; finding the mammary teats can be difficult, however.
- Males will only have one opening at the base of the tail (anal). The penile opening is located along the ventral midline between the umbilical scar and the anus; finding the penile opening can be difficult, however.
- If you are examining the animal and are unsure of the sex in any way, please choose "unknown". However, if you are uncomfortable with trying to examine the animal in any way, simply choose "unexamined".

Weight (kg): _____

Condition During Release/Escape (check one):
□ Alive uninjured □ Alive injured □ Fresh dead □ Decomposed □ Unresponsive

Species Death Condition (if applicable)
□ Fresh dead □ Moderate decomposition □ Advanced decomposition
□ Mummified or skeletal remains

(Continued on Back)

Protected Species Incidental Take (PSIT) Narrative for ALL Marine Mammal Incidental Takes

1) Did animal escape or was it released? (circle one) Escaped Released
2) Was animal seen in vicinity of the vessel during fisheries operations? (circle one)
   Yes No
3) Were other marine mammals seen in vicinity of vessel during fisheries operations? (circle one)
   Yes No
4) Describe any observed injuries, the behavioral state of animal after escape/release (e.g. swam away vigorously, did not swim away vigorously, surfaced to breathe, sank to bottom), as well as any other potentially important observations (e.g. blood in water, predator in water, etc.)

   _____
   _____
   _____
   _____

5) If gear was still attached to animal after release, describe how gear was cut, approximately how much gear is left, and where animal is still entangled/injured.

   _____
   _____
   _____
   _____

6) Describe rationale for any discretionary decisions taken by Chief Scientist/Watch Chief/Ship Crew.

   _____
   _____
   _____
   _____

7) Describe possible/known causes for this specific, incidental capture.

   _____
   _____
   _____
   _____

8) Additional comments/observations that you feel are important.

   _____
   _____
   _____
   _____

Turtle Data Collection Sheet

Station #: _____

Species (check one):

□ Green □ Hawksbill □ Kemp's Ridley □ Leatherback □ Loggerhead

Condition at Capture (check one):

□ Alive uninjured □ Alive injured □ Fresh dead □ Decomposed □ Unresponsive

If the animal is brought on board and determined to be dead, if feasible, the specimen should be retained on board until the vessel reaches port and collected by the local Regional Stranding Coordinator

Use a MEASURING TAPE and CAMERA to obtain the following:

TOP of Animal

□ **PHOTOS** of entire animal
□ **PHOTOS** of carapace
□ **PHOTOS** of head (both top and side views)
□ **PHOTOS** of all flippers

Curved carapace length, notch to notch (cm): _____

Straight carapace length (cm): _____

Curved carapace width (cm): _____

Straight carapace width (cm): _____

Head width (cm): _____

Tail length (cm): _____

UNDERSIDE of Animal (if able to safely and gently turn over turtle)

□ **PHOTOS** of plastron ("belly" shell)

Plastron length (cm): _____

Plastron width (cm): _____

Use a CAMERA to obtain the following, if applicable:

□ **PHOTOS** of any injuries
□ **PHOTOS** of unusual markings

PIT Tags

Scan for PIT tags, but DO NOT insert a new one.

PIT tag already present? (circle one): YES or NO

If **YES**
Tag #: _____

(Continued on back)

External Tags

Look for external tags, but DO NOT apply any new ones.

External tag/s already present? (circle one): YES or NO

If **YES**:
Where is/are external tag/s located?: _____

Tag #: _____

Use a SCALE to obtain the following:

Weight (kg): _____

Condition at Release (check one):

☐ Alive uninjured ☐ Alive injured ☐ Fresh dead ☐ Decomposed ☐ Unresponsive

Species Death Condition (if applicable):

☐ Fresh dead ☐ Moderate decomposition ☐ Advanced decomposition
☐ Mummified or skeletal remains

Sturgeon Data Collection Sheet

*****IMPORTANT: Assign staff to GENTLY run saltwater over live sturgeon's gills while collecting data*****

Station # : _____

Species (check one): □ Atlantic sturgeon □ Shortnose sturgeon

Condition at Capture (check one):

□ Alive uninjured □ Alive injured □ Fresh dead □ Decomposed □ Unresponsive

Note: If sturgeon is dead and not badly decomposed, freeze animal for transport back to NMFS for necropsy AFTER collecting data on this form. If sturgeon is dead and badly decomposed, dispose of carcass at sea AFTER collecting as much data as possible on this form. In all dead sturgeon cases, the Dead Sturgeon Salavge Form (see electronic, at-sea resources folder) must also be completed by Chief Scientist within 30 days of investigation.

Use a MEASURING TAPE and a CAMERA to obtain the following:

Total length (cm): _____

Fork length (cm): _____

□ **PHOTOS** of entire side view, including measuring tape
□ **PHOTOS** of side scutes between caudal and anal fins
□ **PHOTOS** of dorsal fin to caudal fin

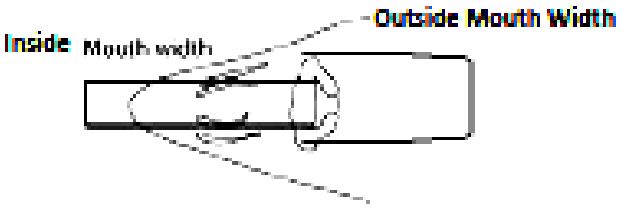
Use CALIPERS, a CAMERA, and a RULER to obtain the following:

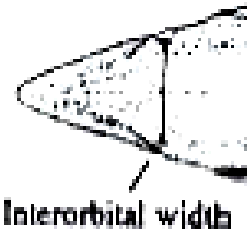
Inside mouth width (mm): _____
□ **PHOTOS** of inside mouth width, including calipers

Outside (labial furrows) mouth width (mm): _____
□ **PHOTOS** of outside mouth width, including calipers

Head width of underside, inline with mouth (mm): _____
□ **PHOTOS** of ventral view of head, centered and including ruler across middle of mouth

Interorbital (between the eyes) head width (mm): _____





(Continued on Back)

PIT Tags

Scan the animal for PIT Tags. For live animals, if no tags present, insert new PIT tag just below skin along the dorsal mid-line anywhere from posterior edge of the 4th dorsal scute to the posterior edge of the dorsal fin.

PIT tag found? (circle one): YES or NO

If **NO**:
New PIT tag inserted? (circle one): YES or NO

PIT tag #: _____

If **YES**:
PIT tag #: _____

External Tags

Look for external tags. For live animals, if no tags present, insert new T-bar tag through base of dorsal fin.

External tag present? (circle one): YES or NO

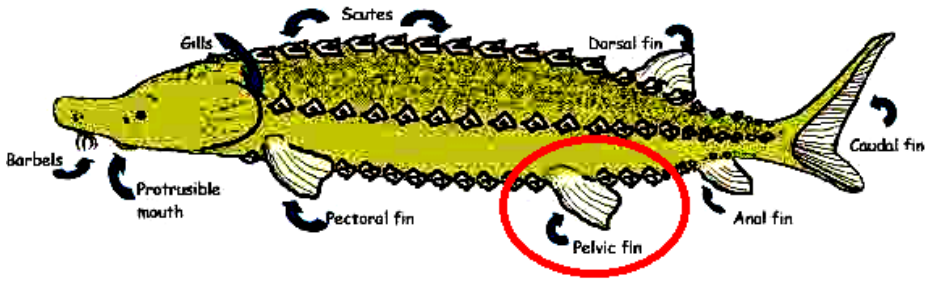
If **NO**:
New external tag applied? (circle one): YES or NO

External tag #: _____

If **YES**:
External tag #: _____

Fin clips

- Wash hands and use disposable gloves
- Ensure knife, scalpel, or scissors have been cleaned and wiped with alcohol
- Take 1 cm^2 clip from the **PELVIC FIN**



- Place fin clip into vial of 95% non-denatured ethanol
- Using permanent marker, label with species name, date, station number, project name & fork length of animal
- Tape vial lid shut and place tape over labeled info (to minimize smearing)
- Store vial in fridge

Fin clip taken? (circle one): YES or NO

If **YES**:
Vial #: _____

Use a SCALE to obtain the following:

Total Weight (kg): _____

Condition at Release (check one):

□ Alive uninjured □ Alive injured □ Fresh dead □ Decomposed □ Unresponsive