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

APR 26 2013

MEMORANDUM FOR: Master David Nelson
Commanding Officer, NOAA Ship *Oregon II*

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

SUBJECT: Project Instruction for R2-13-02
SEAMAP Spring Ichthyoplankton Survey

Attached is the final Project Instruction for R2-13-02, SEAMAP Spring Ichthyoplankton Survey, which is scheduled aboard NOAA Ship *Oregon II* during the period of 29 April – 30 May, 2013. Acknowledge receipt of these instructions via e-mail to **OpsMgr.MOA@noaa.gov** at Marine Operations Center-Atlantic.

Attachment

cc:
MOA1

U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
3209 Frederic St.
Pascagoula, MS 39567

Project Instructions

APR 26 2013

Date Submitted: 04/29/2013

Platform: NOAA Ship OREGON II

Cruise Number: R2-13-02 (303)

Project Title: SEAMAP Spring Ichthyoplankton

Cruise Dates: 04/29/2013 - 05/30/2013

Prepared by: MILLETT.ANDREW.FRANCIS.1398325792 Date: 04/15/2013
Field Party Chief
SEFSC, Pascagoula, MS

Approved by: DESFOSSE.LISA.L.1365834519 Date: 04/18/2013
Dr. Lisa Desfosse
Director, Mississippi Laboratory
NMFS, Pascagoula, MS

Approved by: Date: 4-26-13
Dr. Bonnie Ponwith
Director, SEFSC
NMFS, Miami, FL

Approved by: Kristy for Date: 4-26-13
Captain Anita Lopez, NOAA
Commanding Officer
Marine Operations Center - Atlantic

Commanding Officer
NOAA Ship *Oregon II*

PROJECT INSTRUCTIONS
NOAA Ship *Oregon II* Cruise R2-13-02 (303)

I. Overview

A. Project Period: April 29 to May 30, 2013

B. Operating Area: United States northern Gulf of Mexico (GOM) along the continental shelf break from 82º00' to 97º00' W and 25º00' to 30º00' N. A list of the station locations and a map of the area of operations are found in Table 1 and Figure 1 respectively.

C. Summary of Objectives:

1. *Primary Objectives*
    a. Assess the occurrence, abundance and geographical distribution of the early life stages of spring spawning fishes, especially bluefin tuna (*Thunnus thynnus*), from mid-continental shelf to deep Gulf waters using a bongo frame fitted with 0.335 mm nets, a neuston frame fitted with a 0.950 mm net, and a "Spanish" neuston fitted with a 0.500 mm net at selected Southeast Area Monitoring and Assessment Program (SEAMAP) stations in support of annual stock assessments.
    b. Describe the pelagic habitat of fish larvae through measurements of various physical and biological parameters:
        i. Record profiles through the water column of temperature, salinity, fluorescence, dissolved oxygen, and turbidity using a CTD at SEAMAP stations.
        ii. Measure chlorophyll a in replicate water samples taken at surface, mid or maximum chlorophyll layer and near bottom (to a maximum of 500 m) depths using bench top fluorometry.
        iii. Detect and measure frontal features along the survey cruise track using data from the ship's Fluoro-thermosalinograph flow-through system (TSG).
    c. Collect detailed observations of net-caught jellyfish and ctenophores.
    d. Measure the vertical distribution of fish larvae by sampling at discrete depths in the water column at selected locations along the SEAMAP plankton survey grid using a 1 m Multiple Opening/Closing Net and Environmental Sensing System (MOCNESS).
    e. Measure the vertical distribution and abundance of fish eggs using a vertical egg net (PAIROVET) at selected stations along the trackline.

D. Participating Institutions:
    National Marine Fisheries Service- Pascagoula Laboratory

E. Personnel (Science Party)

Name	Title	Sex	Organization	Citizenship
LEG 1 (April 29 – May 11, 2013)				
Andy Millett	FPC	M	IAP[1]	US

Plus up to 6 additional scientists to be named later

Name	Title	Sex	Organization	Citizenship
LEG 2 (May 14 – 30, 2013)				
Andy Millett	FPC	M	IAP[1]	US

Plus up to 6 additional scientists to be named later

1 - IAP World Services

F. Administrative:

1. Points of Contact:
   a. Field Party Chief: Andy Millett; 3209 Frederic St., Pascagoula, MS 39567; (228) 549-1645; Andrew.Millett@noaa.gov
   b. Operations Officer: Sarah Harris; NOAA Ship *Oregon II*, 151 Watts Ave, Pascagoula, MS 39567; (228) 762-6422; OPS.Oregon@noaa.gov

1. Diplomatic Clearances: This cruise does not involve research under the jurisdiction of any other country. No diplomatic clearance has been requested.

1. Licenses and Permits:
   This cruise will be conducted under the following permits:
   a. Florida State Permit
   b. Alabama State Permit
   c. Mississippi State Permit
   d. Louisiana State Permit
   e. Texas State Permit
   f. Southeast NMFS Regional Permit
   g. Sea Turtle Permit

II. Operations

A. Cruise Plan/Itinerary:

Itinerary:

Leg	Date	Location
1	April 29, 2013	Depart Pascagoula, MS
	May 11, 2013	Arrive Pascagoula, MS

Leg	Date	Location
2	May 14, 2013	Depart Pascagoula, MS
	May 30, 2013	Arrive Pascagoula, MS

B. Staging and Destaging: PASCAGOULA/PASCAGOULA

C. Operations to be conducted:

Operational Plans:

NOAA Ship *Oregon II* will depart Pascagoula, Mississippi on April 29, 2013 to conduct the spring SEAMAP Ichthyoplankton survey. The 30-day cruise will be divided into two legs: Leg 1, 13 days; Leg 2, 17 days. Both legs of the survey will be conducted along a standard ichthyoplankton cruise track with a modified sampling plan designed to incorporate adaptive sampling based upon current oceanographic conditions. This trackline includes 97 pre-selected stations located approximately 30 n mi apart (Figure 1). Ichthyoplankton operations will be conducted throughout the day and night. Table 1 lists the 97 stations, station positions, and the plankton gear used at each station. MOCNESS stations will be determined at a later date by the FPC and may be based on incoming satellite data over the course of the survey. The station order listed in Table 1 is the preferred order of sampling as developed since 1978 for the sampling of bluefin tuna larvae in the GOM and changes to this order may be made by the Field Party Chief (FPC) during the survey, but only after consulting with the Commanding Officer (CO). The survey will require 24 h operations with two scientific watches: 12 am – 12 pm, 12 pm – 12 am.

Standard stations will follow SEAMAP sampling protocols with an oblique bongo tow to a maximum depth of 200m, a 10 min neuston tow, and a CTD profile to a maximum depth of 200 m. In addition, a 10 min subsurface tow (Spanish neuston) will be conducted at each station using a neuston net frame with a 0.500 mm mesh net. The MOCNESS will be used during both legs of the survey. A PAIROVET will be towed no deeper than 70 m to collect fish eggs. In addition, the TSG will be in use throughout the survey.

Prior to arrival at the first station the SBE 9/11 plus CTD and the SEACAT SBE 19 CTD (with a weight) will be deployed in water depth greater than 100 m in order to test the functionality of the winches, hydraulics, CTD array, and SEACAT. Any problems encountered during the test can then be corrected prior to arriving on the first station. The Chief Engineer will be made aware of expected time of arrival at the first station so the salt water pumps can be turned on and ready.

Communication between the scientists and the bridge while on station will be accomplished via hand held radios. During rough weather, the watch leader and OOD with consultation from the ship's crew will determine which sampling gear can be deployed safely. The FPC should be notified of any change to station location or delays to sampling due to mechanical, medical, or weather issues as well.

PRIMARY STATION OPERATIONS – At the Bridge's 10 min warning, scientists and deck personnel will proceed to duty stations and prepare for station. Scientists and deck personnel should be ready and standing by for bridge's call that the ship is on station and ready to proceed. Smoking is not permitted near or while handling any plankton nets due to the likelihood of burning holes in the nets.

Bongo Sampling

The SEAMAP bongo plankton sampler is comprised of two 61 cm diameter collars with two 0.335 mm nets. Prior to deployment of the bongo sampler, the watch leader must run software programs and prepare them for the bongo cast. The lab scientist must make sure the bridge and deck are ready to deploy before hitting >Ok on SBE 19 SEACAT program because this program only allows 60 s to turn on the magnetic switch or the setup process must be repeated, often including re-booting the computer. The lab scientist should wait for the bridge and deck to relay their readiness to deploy gear, hit ok on the program, have the deck turn on the magnetic switch at the appropriate time, and wait for data to begin scrolling. There is a small delay between the switch and data scroll, therefore, the lab scientist will relay to the deck when to put the net into the water. The bongo sampler is towed in an oblique path from near bottom, or 200 m maximum, to the surface. The SBE-19 SEACAT will be used to monitor the tow path of the bongo net. Vessel speed should be adjusted during the bongo tow to maintain a 45-degree wire angle in order to uniformly sample throughout the water column. If angle exceeds 55º, falls to 35º or if combined variation exceeds 15º, then tow must be repeated (the samples will be saved until a better tow is completed). If available, an electronic wire angle indicator with readouts on the bridge and in the dry lab will also be used to monitor wire angle. The net depth will be monitored on the dry lab computer by the watch leader. The Deck Scientist will report wire angles periodically during downcast. On the watch leader's command at maximum depth, stop payout of cable and immediately start retrieval (do not allow net to 'settle'). At that time, the Deck Scientist (or winch operator) will report wire angle and wire out to the watch leader. The watch leader should tell the winch operator to slowly retrieve the bongo array at 20 m per min for tow depths of 100 m or deeper; for shallower stations the retrieval rate will be determined at each station based on station depth. The Deck Scientist (or winch operator) must report wire angle and remaining wire out to watch leader when asked for (on upcast or downcast).

The Deck Scientist should report when the bongo array breaks the surface. Time will be recorded to the second (by the watch leader) when net breaks surface and flowmeters stop turning, at which time the winch operator immediately pulls the frame from the water; taking care not to let the bongo array continue to fish once it breaks the surface. When possible, plankton will be rinsed into cod end of net with seawater hose while the net hangs over the side. In high winds, the watch leader may request that the net is brought directly on board and rinsed down completely on deck. The bongo frame and net are placed on deck. Great care must be taken not to rest the frame on the nets, scrape the net with the frame against the deck, or walk on the ichthyoplankton nets. The abrasions can cause holes in the nets requiring repair or replacement of these expensive sampling devices.

If bottom sediment is present in both samples, the tow must be repeated. Any marginal sample will be saved until completion of the next tow. If bottom sediment (no more than 2 Tbsp) is present in only 1 sample the tow need not be repeated. Initial preservative for right bongo samples is 10% formalin and initial preservative for left bongo samples is 95% ETOH (Ethyl Alcohol). Formalin preserved samples are transferred to 95% ETOH after 36 h. Ethanol samples will be transferred to new 95% ETOH after 24 h.

Neuston Sampling

The neuston net is a 1 x 2 m frame outfitted with a 0.950 mm mesh net. Each neuston tow will be conducted for 10 min at a vessel speed of approximately 2 kt to keep half the frame

submerged in the water. If necessary, the ship should steam forward in a wide arc to keep the neuston net (mouth opening) out of the influence of the prop wash. The duration of a neuston tow may be shortened up to 5 min when there are high concentrations of jellyfish, ctenophores, Sargassum, floating weed and/or debris. After retrieval, plankton is rinsed into cod end with seawater while net hangs over side (if windy, watch leader may request net to be brought directly on board and rinsed on deck). Samples will be preserved in 95% ETOH initially and transferred to new 95% ETOH after 24 h.

Subsurface (Spanish) Neuston Sampling

The subsurface tow uses a 1 x 2 m neuston frame outfitted with a 0.500 mm mesh net. The net is towed at a vessel speed of approximately 2 kt in a multi-oblique pattern from the surface to a depth of 10 m for 10 min. The SBE-19 SEACAT will be used to monitor the tow path of the neuston net, so the bongo winch will be required for the subsurface neuston tow. The duration of a subsurface tow may be shortened up to 5 min when there are high concentrations of jellyfish, ctenophores, Sargassum, floating weed and/or debris. After retrieval, plankton is rinsed into cod end with seawater while net hangs over side (if windy, watch leader may request net to be brought directly on board and rinsed on deck). Samples will be preserved in 95% ETOH initially and transferred to new 95% ETOH after 24 h.

SEAMAP CTD Profiles

The CTD unit with the SBE 32 water carousel with 3 Niskin bottles will be deployed to just below the surface of the water when all areas are ready. When at the surface, the lab scientist will start the CTD recording. The sampler must then remain submerged for 3 min at the surface for the temperature gauge to adjust to the water temperature after sitting on deck between stations. After the 3 min soak period it will be lowered to a depth of 200 m or 500 m (or 2 m above the bottom). After the cast, the CTD is carefully set on deck, taking care not to jar the sensitive electronics. During each CTD profile, water samples will be collected at the surface, bottom (or max depth), and the in situ observed chlorophyll maximum.

1 m MOCNESS Sampling

A 1 m MOCNESS equipped with a maximum of nine, 0.505 mm mesh nets will be deployed from the stern with the port trawl winch using 1/2 in conducting wire and poded termination. Prior to deployment, the ship speed will be maintained at 2 kt. Once deployed, a series of up to 9 nets can be opened independently at specific depths to obtain a discrete sample of that depth bin. Winch and ship speed will be controlled by the watch leader throughout the tow via communication with the deck and bridge. This is done in order to maintain the gear in a specific depth stratum and allow the net to filter the targeted volume of water, i.e. 250–350 m^3 per net. In order to ensure enough volume is filtered for each depth bin, a 'bounce' method will be used during the retrieval. The MOCNESS will be brought up to the top of the depth bin, lowered back down to the bottom of the bin, and then brought back up to the top. This method allows for consistency in sampling each of the depth bins during the tow. After retrieval, samples will be rinsed into cod ends with seawater before bringing the MOCNESS on deck. The sample in net 0 (surface to max depth) will be initially preserved in 10% formalin and transferred to 95% ETOH after 36 h. Samples from the remaining nets will be initially preserved in 95% ETOH and transferred to fresh 95% ETOH after 24 h. More detailed protocols for conducting a MOCNESS event will be provided by the FPC.

Jellyfish data collection

Jellyfish and select ctenophores collected in plankton samples will be rinsed, removed from the sample (when time permits), identified, counted, measured, and weighed. These data will be recorded on special data sheets and noted in the SEAMAP Access database.

Egg sampling

Egg samples will be collected at stations along the trackline using a PAIROVET (vertical) plankton tow. The PAIROVET net fishes from no deeper than 70 m to the surface using a paired 25 cm diameter frame fitted with .150 mm mesh nets. A 45 kg weight is attached to the end of the towing cable, a few meters below the sampler. Flowmeters will be positioned inside the net mouths to determine volume filtered during the tow. With the ship holding a stationary position, the net will be dropped down to depth as quickly as possible, held at depth for 10 sec, and then brought to the surface at the same rate as deployment. All tows with wire angles exceeding 15° during the ascent will be repeated. Station locations will be provided to the ship a few weeks before departure.

Modifications to Field Operations

Sampling protocol may be altered by the FPC or watch leader in order to optimize sampling for time conservation. The FPC may alter the project instructions in order to accomplish mission objectives but will do so only after consulting with the CO. If additional time becomes available during a leg, the FPC will provide the ship with further station locations at that time, after consulting with the CO. The watch schedule for the scientific party will be posted. At times the schedule may change due to unforeseen circumstances during the cruise. If the schedule does change the ship will be notified.

D. Dive Plan: N/A

E. Applicable Restrictions: N/A

III. Equipment

A. Equipment and Capabilities Provided by the Ship:

1. Because of the importance of the CTD equipment package to record environmental data and the need for the Scientific Computing System (SCS) to populate the Fishery Scientific Computing System (FSCS), an Electronics Technician is imperative.
2. Hydrographic winch with wire and meter readout to accomplish CTD/bottle casts and bongo tows up to a 500 m depth. Winch speed should be variable to include 50 m/min during pay-out and 20 m/min during haul back (for bongo tows). Spare slip rings for each winch. Fully functional wire readouts for each winch.
3. Winch, block and wire for deploying neuston net.
4. Winch, block and wire for deploying the MOCNESS sampling system.
5. ADCP
6. One (1) Primary SBE 9plus CTD configured as follows;
   a. Unit should be mounted horizontally and mounted in the water sampling frame. The frame should be examined to ensure it is in good physical condition and there are no breaks present in any of the welds supporting the frame.
   b. The standard 12 position SBE 32 Carousel should be properly mounted in the water

sampler section of the frame and tested to ensure that all 12 bottle positions are working properly and respond to software requests for firing.

c. The internal Digiquartz pressure sensor should be in good working order and have a calibration/service date not to exceed 365 days.

d. The primary sensor suite should be installed and consist of the following (the sensors should have a calibration date as recent as possible, not to exceed 365 days):
   i. One (1) SBE 3 Premium Temperature sensor
   ii. One (1) SBE 4 Conductivity sensor
   iii. One (1) SBE 43 Dissolved Oxygen sensor
   iv. One (1) "Y" air bleeder valve. Valve should be checked to ensure it is not clogged.
   v. One (1) Wetlabs Wetstar pumped fluorometer
   vi. One (1) SBE 5T pump that has been checked by Seabird within the last 365 days for proper operation
   vii. One (1) Wetlabs C-Star transmissometer
   viii. Proper plumbing. Tubing should be checked to ensure it meets Seabird's recommended method of plumbing and is free from cracks and holes. With red end caps for proper storage between stations.

e. The secondary sensor suite should be installed and consist of the following (the sensors should have a calibration date as recent as possible, not to exceed 365 days):
   i. One (1) SBE 3 Premium Temperature sensor
   ii. One (1) SBE 4 Conductivity sensor
   iii. One (1) SBE 43 Dissolved Oxygen sensor
   iv. One (1) "Y" air bleeder valve. Valve should be checked to ensure it is not clogged
   v. One (1) Wetlabs Wetstar pumped fluorometer
   vi. One (1) SBE 5T pump that has been checked by Seabird within the last 365 days for proper operation
   vii. One (1) Wetlabs C-Star transmissometer
   viii. Proper plumbing. Tubing should be checked to ensure it meets Seabird's recommended method of plumbing and is free from cracks and holes.

f. The unit should be properly terminated and connected to a properly functioning SBE 11 Deck Unit. The deck unit should be connected to allow the following:
   i. Proper control of the SBE Water Sampler Carousel via the SEASAVE application
   ii. Integration of a proper NMEA signal from a GPS unit.

7. A second SBE 9plus profiler should be available as well. Unit does not have to be configured as a complete functioning ready-to-install on the sea cable unit; however, it should have the following components available:

   a. Sensors for a Primary suite (with a calibration date as recent as possible, not to exceed 365 days):
      i. One (1) SBE 3 Premium Temperature sensor
      ii. One (1) SBE 4 Conductivity sensor
      iii. One (1) SBE 43 Dissolved Oxygen sensor
      iv. One (1) "Y" air bleeder valve. Valve should be checked to ensure it is not clogged.
      v. One (1) Wetlabs Wetstar pumped fluorometer

vi. One (1) SBE 5T pump that has been checked by Seabird within the last 365 days for proper operation.
vii. One (1) Wetlabs C-Star transmissometer
viii. Proper plumbing. Tubing should be checked to ensure it meets Seabird's recommended method of plumbing and is free from cracks and holes.

b. Sensors for a complete Secondary suite (with a calibration date as recent as possible, not to exceed 365 days):
i. One (1) SBE 3 Premium Temperature sensor
ii. One (1) SBE 4 Conductivity sensor
iii. One (1) SBE 43 Dissolved Oxygen sensor
iv. One (1) "Y" air bleeder valve. Valve should be checked to ensure it is not clogged.
v. One (1) Wetlabs Wetstar pumped fluorometer
vi. One (1) SBE 5T pump that has been checked by Seabird within the last 365 days for proper operation.
vii. One (1) Wetlabs C-Star transmissometer**.**
viii. Proper plumbing. Tubing should be checked to ensure it meets Seabird's recommended method of plumbing and is free from cracks and holes.

8. A second SBE 11 Deck Unit should be on the ship to be put into service if needed.
9. Two (2) fully operational SBE 19 SEACAT profilers should be available. One of the units should be installed on the sea cable. Both units should have calibration dates not to exceed 365 days.
10. Two (2) functional SBE 36 Deck units should be available (1 for backup) that are configured for the model Seacat being supplied.
11. Two (2) PDIM units should be available for use with the SBE 19 units. One of these PDIM units should be installed on the primary SBE19 on the sea cable. These PDIM units should also be the proper units that are used with the model Seacats being used.
12. A fully functional SBE 21 thermosalinograph should be available for the survey. The unit should have calibrations that do not exceed 365 days. The calibration data must be verified/entered into the SEABIRD-TSB.CAL file in the Ship Directory of SCS.
13. The Turner 10-AU Fluorometer associated with the flow-through system should be verified as working. Proper spare bulbs should be made available to the rotating ET so they can be replaced as needed during the survey.
14. It is highly desirable to have the following additional spare sensors on-board if possible:
    a. One (1) SBE 43 DO Sensor
    b. One (1) SBE 3 Temperature Sensor
    c. One (1) SBE 4 Conductivity Sensor
    d. One (1) Wetlabs Wetstar pumped fluorometer
    e. One (1) Wetlabs C-Star Transmissometer
    f. One (1) SBE 5T Pump
15. Copies of all calibration sheets for CTD profilers, TSG, and spare sensors should be provided to the laboratories' Shipboard System Specialist prior to sailing.
16. CTD capable winch and J-frame for CTD casts, with sufficient electromechanical cable for casts to 500 m.

17. NMEA GPS input to CTD header file.
18. SCS data requested: The SCS system should be fully operational for the duration of the survey. A listing of any sensors that will not be functional for the survey should be provided prior to sailing to the FPC, taking into consideration that event templates will have to be checked by the Shipboard System Specialists to ensure there will be no impact or an alternative sensor can be selected.
    a. Furuno 951 GPS
        i. UTC time
        ii. Latitude
        iii. Longitude
        iv. Speed over ground
        v. Course over ground
    b. Furuno GP-90 GPS
        i. Latitude
        ii. Longitude
        iii. Speed over ground
        iv. Course over ground
    c. Furuno doppler speed log
        i. Speed through the water
        ii. Speed over ground
    d. EQ50 and EK60 depth in meters
    e. Gyro-heading
    f. Air temperature (°C)
    g. Corrected barometric pressure
    h. True wind speed
    i. True wind direction
    j. Information should be passed to the Rotating ET to ensure the following:
        i. The Automatic Logger Control on the SCS Server must be enabled anytime ACQ is started and should use the default of 0:00:00 (Midnight GMT).
        ii. The contents of the Eventdata folder should be allowed to remain present for the duration of the survey (they should not be deleted between legs). This will ensure that event IDs do not restart for the respective events during the survey.
    k. SEASAVE SOFTWARE: Prior to sailing, the proper .CON files should be built in SEASAVE. The software should be set to look for the proper .CON file for the respective instrument.
19. It is also highly desirable that the ASCII Out function be allowed to feed CTD data into SCS via serial cable.

B. Equipment and Capabilities Provided by the Scientists:

1. Flowmeters (6)
2. 2- 61 cm bongo frames, chain and weight, (6) 0.335 mm nets
3. 3- 1 x 2 m neuston frames, (4) 0.950 mm nets, (2) 0.500 mm nets
4. 1 m MOCNESS frame, (9) 0.505 mm nets, and electronic equipment
5. Conducting wire (1/2-in) and corresponding block for MOCNESS tows
6. PAIROVET frame with nets and 45 kg weight
7. Bongo/neuston gear and equipment box

8. Plankton sampling supplies box
9. Plankton preserving jars, lids and labels
10. Turner Designs 10-AU benchtop Fluorometer
11. Chemical transfer pumps
12. Formalin and ethyl alcohol
13. Triton (R) X-100
14. Methanol and filters
15. 6 Niskin bottles
16. 4 Garden hoses for washing down nets, nozzles, and hose repair parts
17. Plankton transfer table
18. 5 gal buckets
19. Various clerical supplies
20. Spare batteries for the SBE 19 SEACAT profilers

IV. Hazardous Materials

A. Policy and Compliance:

The FPC shall be responsible for complying with OMAO Document Management System (DMS), Fleet Environmental Compliance #07, Hazardous Material and Hazardous Waste Management Requirements for Visiting Scientists, released July 2002. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

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 chemicals brought aboard. The amount of hazardous material arriving and leaving the vessel shall be accounted for by the FPC.

B. Radioactive Isotopes: N/A

C. Inventory: Expected hazardous materials to be brought on board for this cruise are:

1. Ethanol – 150 gallons
2. Formaldehyde – 5 gallons
3. Methanol – 5 gallons
4. Triton-X – 1 pint concentrate & 2 gallon carboy of 1% dilution

V. Additional Projects

A. Supplementary (“Piggyback”) Projects: N/A

B. NOAA Fleet Ancillary Projects: N/A

V. Disposition of Data and Reports

A. Data Responsibilities:

The FPC is responsible for submission of a ROSCOP II form (NOAA, Form 2423) to the National Oceanographic Data Center within 30 days after cruise termination.

B. Project Meetings:
Welcome aboard Meeting: On the ship prior to departure, the FPC 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, etiquette, etc. will be presented by the ship's Operations Officer.

Post-Cruise Meeting: If need be, upon completion of the cruise, a post-cruise meeting will be held and attended by the ship's officers, the FPC and members of the scientific party, the Vessel Coordinator, and the Port Captain to review the cruise. Concerns regarding safety, efficiency and suggestions for improvement for future cruises should be discussed. Minutes of the post-cruise meeting will be taken by the Pascagoula Port Captain and distributed to all participants with e-mail to the CO.MOC.Atlantic@noaa.gov and ChiefOps.MOA@noaa.gov . A cruise report will be prepared by the FPC and submitted to the Director, SEFSC, within 30 days after the cruise is completed.

C. Ship Operation Evaluation Report:
Within 7 days of the completion of the cruise, a Ship Operation Evaluation form is to be completed by the FPC. The preferred method of transmittal of this form is via email to OMAO.Customer.Satisfaction@noaa.gov . If email is not an option, a hard copy may be forwarded to:

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

A file copy of each completed evaluation form will be sent to the SEFSC Mississippi Laboratory Director and the SEFSC Vessel Coordinator.

VI. Miscellaneous

A. Meals and Berthing:
Meals and berthing are required for up to 7 scientists per leg. Meals will be served 3 times daily throughout the cruise. 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 7 days prior to the survey.

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the FPC. The FPC and CO 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 FPC 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 FPC is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the cruise and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship.

The FPC will ensure that all non NOAA or non Federal scientists aboard also have proper orders. It is the responsibility of the FPC 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 CO. 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 7, 1999 which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

B. Medical Forms and Emergency Contacts:

The NOAA Health Services Questionnaire (NHSQ, Revised: 12/11) must be completed in advance by each participating scientist. The NHSQ can be obtained from the FPC or the NOAA website at http://www.corporateservices.noaa.gov/~noaaforms/eforms/nf57-10-01.pdf. The completed form should be sent to the Regional Director of Health Services at Marine Operations Center. The participant can mail, fax, or scan the form into an email using the contact information below. The NHSQ should reach the Health Services Office no later than 4 weeks prior to the cruise to allow time for the participant to obtain and submit additional information that health services might require before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of the NHSQ. Be sure to include proof of tuberculosis (TB) testing, sign and date the form, and indicate the ship or ships the participant will be sailing on. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

Contact information:

Regional Director of Health Services
Marine Operations Center – Atlantic
439 W. York Street
Norfolk, VA 23510
Telephone 757.441.6320
Fax 757.441.3760
E-mail MOA.Health.Services@noaa.gov

Prior to departure, the FPC must provide a listing of emergency contacts to the Executive Officer for all members of the scientific party, with the following information: name, address, relationship to member, and telephone number.

C. Shipboard Safety:

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. 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.

D. Communications:
A progress report on operations prepared by the FPC may be relayed to the program office. Sometimes it is necessary for the FPC to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the FPC. 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 it must be arranged at least 30 days in advance.

E. IT Security:

Any computer that will be hooked into the ship's network must comply with the OMAO Fleet IT Security Policy 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 preferable. Non-NOAA personnel using the ship's computers or connecting their own computers to the ships network must complete NOAA's IT Security Awareness Course within 3 days of embarking.

F. Foreign National Guests Access to OMAO Facilities and Platforms: N/A

Table 1. *Oregon II* Cruise R2-13-02 (303) ichthyoplankton stations. A CTD cast will be done last at all stations. BN = 61 cm Bongo; NN = 1x2 m Neuston; SN= Spanish Neuston

SEAMAP ISS* Number	Plankton Gear	Latitude	Longitude
B172	SN/BN/NN	29° 59'00	87° 00'00
B169	SN/BN/NN	29° 30'00	86° 30'00
B165	SN/BN/NN	29° 12'00	86° 00'00
B160	SN/BN/NN	28° 40'00	85° 30'00
B153	SN/BN/NN	28° 00'00	85° 00'00
B152	SN/BN/NN	27° 30'00	85° 00'00
B151	SN/BN/NN	27° 00'00	85° 00'00
B150	SN/BN/NN	26° 30'00	85° 00'00
B149	SN/BN/NN	26° 00'00	85° 00'00
B147	SN/BN/NN	26° 00'00	84° 30'00
B131	SN/BN/NN	26° 00'00	84° 00'00
B130	SN/BN/NN	25° 30'00	84° 00'00
B129	SN/BN/NN	25° 00'00	84° 00'00
B128	SN/BN/NN	24° 30'00	84° 00'00
B125	SN/BN/NN	24° 30'00	83° 30'00
B126	SN/BN/NN	24° 00'00	83° 30'00
B127	SN/BN/NN	24° 00'00	84° 00'00
B263	SN/BN/NN	24° 30'00	84° 30'00
B262	SN/BN/NN	25° 00'00	84° 30'00
B007	SN/BN/NN	25° 00'00	85° 00'00
B072	SN/BN/NN	24° 30'00	85° 00'00
** B266	SN/BN/NN	24° 40'00	85° 30'00
B261	SN/BN/NN	25° 00'00	85° 30'00
B008	SN/BN/NN	25° 00'00	86° 00'00
B074	SN/BN/NN	25° 30'00	86° 00'00
** B270	SN/BN/NN	25° 30'00	86° 27'00
B006	SN/BN/NN	26° 00'00	86° 00'00
B077	SN/BN/NN	26° 30'00	86° 00'00
B005	SN/BN/NN	27° 00'00	86° 00'00
B078	SN/BN/NN	27° 30'00	86° 00'00
B163	SN/BN/NN	28° 00'00	86° 00'00
B164	SN/BN/NN	28° 30'00	86° 00'00
B170	SN/BN/NN	29° 00'00	86° 30'00

Table 1 continued.

SEAMAP ISS* Number	Plankton Gear	Latitude	Longitude
B002	SN/BN/NN	29° 00'00	87° 00'00
B080	SN/BN/NN	28° 30'00	87° 00'00
B003	SN/BN/NN	28° 00'00	87° 00'00
B079	SN/BN/NN	27° 30'00	87° 00'00
B004	SN/BN/NN	27° 00'00	87° 00'00
B076	SN/BN/NN	26° 30'00	87° 00'00
** B009	SN/BN/NN	26° 17'00	87° 00'00
B273	SN/BN/NN	26° 00'00	87° 30'00
B010	SN/BN/NN	26° 00'00	88° 00'00
B066	SN/BN/NN	26° 30'00	88° 00'00
B011	SN/BN/NN	27° 00'00	88° 00'00
B288	SN/BN/NN	27° 00'00	88° 30'00
B012	SN/BN/NN	27° 00'00	89° 00'00
B063	SN/BN/NN	26° 30'00	89° 00'00
B013	SN/BN/NN	26° 00'00	89° 00'00
B291	SN/BN/NN	26° 00'00	89° 30'00
B014	SN/BN/NN	26° 00'00	90° 00'00
B062	SN/BN/NN	26° 30'00	90° 00'00
B015	SN/BN/NN	27° 00'00	90° 00'00
B296	SN/BN/NN	27° 00'00	90° 30'00
B018	SN/BN/NN	27° 00'00	91° 00'00
B059	SN/BN/NN	26° 30'00	91° 00'00
B019	SN/BN/NN	26° 00'00	91° 00'00
B299	SN/BN/NN	26° 00'00	91° 30'00
B020	SN/BN/NN	26° 00'00	92° 00'00
B058	SN/BN/NN	26° 30'00	92° 00'00
B021	SN/BN/NN	27° 00'00	92° 00'00
B304	SN/BN/NN	27° 00'00	92° 30'00
B024	SN/BN/NN	27° 00'00	93° 00'00
B055	SN/BN/NN	26° 30'00	93° 00'00
** B025	SN/BN/NN	26° 17'00	93° 00'00
** B307	SN/BN/NN	26° 01'00	93° 30'00
** B026	SN/BN/NN	26° 01'00	94° 00'00

Table 1 continued.

SEAMAP ISS* Number	Plankton Gear	Latitude	Longitude
B054	SN/BN/NN	26° 30'00	94° 00'00
B027	SN/BN/NN	27° 00'00	94° 00'00
B312	SN/BN/NN	27° 00'00	94° 30'00
B028	SN/BN/NN	27° 00'00	95° 00'00
B052	SN/BN/NN	26° 30'00	95° 00'00
** B029	SN/BN/NN	26° 01'00	95° 00'00
** B313	SN/BN/NN	26° 01'00	95° 30'00
** B030	SN/BN/NN	26° 01'00	96° 00'00
B240	SN/BN/NN	26° 30'00	96° 00'00
B031	SN/BN/NN	27° 00'00	96° 00'00
***B232	SN/BN/NN	27° 33'00	96° 00'00
B231	SN/BN/NN	28° 00'00	96° 00'00
B226	SN/BN/NN	28° 00'00	95° 30'00
B223	SN/BN/NN	28° 00'00	95° 00'00
B217	SN/BN/NN	28° 00'00	94° 30'00
B216	SN/BN/NN	28° 00'00	94° 00'00
B209	SN/BN/NN	28° 00'00	93° 30'00
B023	SN/BN/NN	28° 00'00	93° 00'00
B202	SN/BN/NN	28° 00'00	92° 30'00
B022	SN/BN/NN	28° 00'00	92° 00'00
B195	SN/BN/NN	28° 00'00	91° 30'00
B017	SN/BN/NN	28° 00'00	91° 00'00
B190	SN/BN/NN	28° 05'00	90° 30'00
B016	SN/BN/NN	28° 00'00	90° 00'00
B185	SN/BN/NN	28° 00'00	89° 30'00
B083	SN/BN/NN	28° 00'00	89° 00'00
B250	SN/BN/NN	28° 00'00	88° 30'00
B082	SN/BN/NN	28° 00'00	88° 00'00
B081	SN/BN/NN	28° 30'00	88° 00'00
B001	SN/BN/NN	29° 00'00	88° 00'00
B176	SN/BN/NN	29° 30'00	88° 02'00

* ISS = SEAMAP ichthyoplankton sampling site
** Denotes station locations moved 1 mile north from projected locations due to proximity to EEZ.
***Denotes station B# corrected from past years.

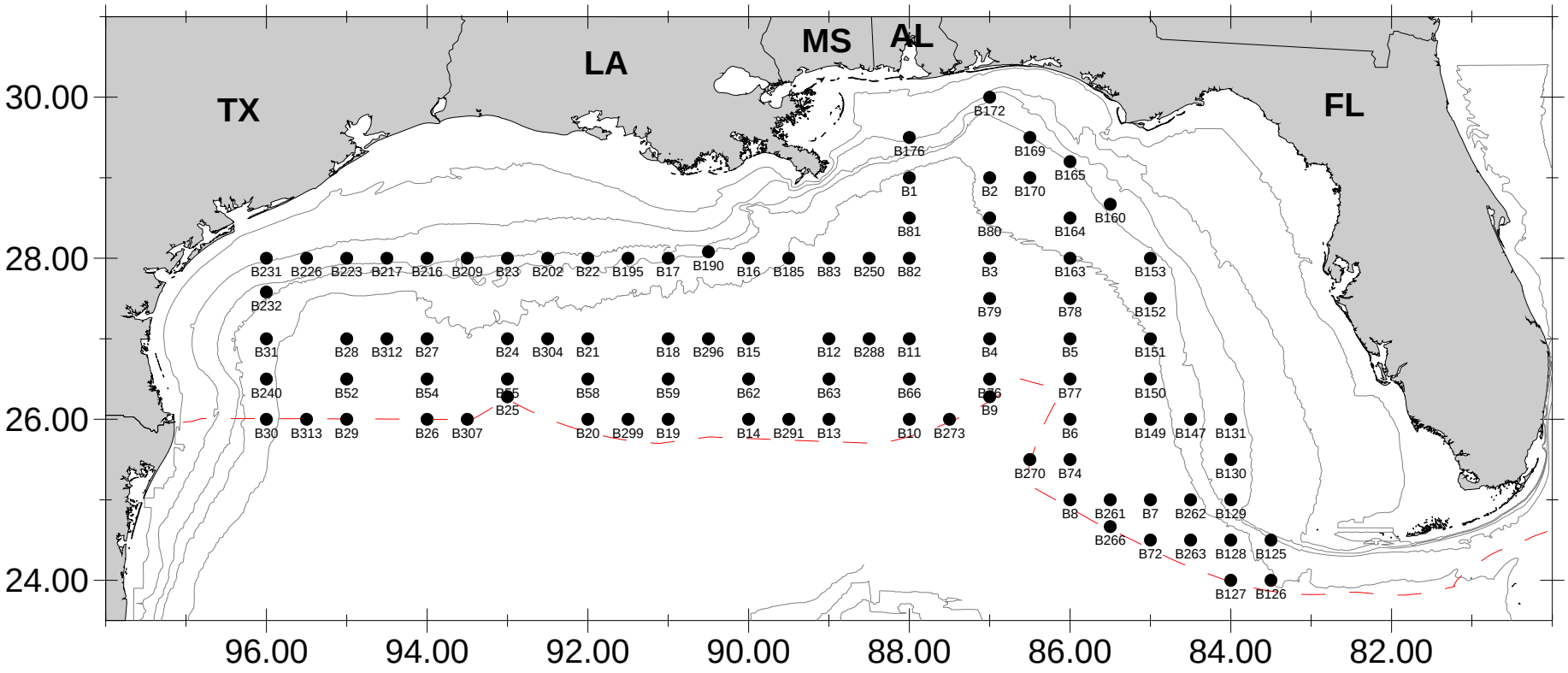

Figure 1. Cruise track with SEAMAP ichthyoplankton stations for NOAA Ship *Oregon II* Cruise 13-02 (303), April 29 - May 30, 2013.