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

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

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

SUBJECT: Project Instruction for R2-13-01
SEAMAP Winter Ichthyoplankton

Attached is the final Project Instruction for R2-13-01, Winter Ichthyoplankton, which is scheduled aboard NOAA Ship *Oregon II* during the period of 29 January – 01 March, 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

Date Submitted: 11/27/2012

Platform: NOAA Ship OREGON II

Cruise Number: R2-13-01 (302)

Project Title: SEAMAP Winter Ichthyoplankton

Cruise Dates: 01/29/2013 - 03/01/2013

Prepared by: Glenn A Zapfe Digitally signed by Glenn A Zapfe DN: cn=Glenn A Zapfe, o, ou, email=glenn.zapfe@noaa.gov, c=US Date: 2013.01.08 14:29:31 -06'00' Date: 01/08/2013
Field Party Chief
SEFSC, Pascagoula, MS

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Dr. Bonnie Ponwith
Director, SEFSC
NMFS, Miami, FL

Approved by: CAPT NOAA Date: 14 JAN 13
Captain Anita L. Lopez, NOAA
Commanding Officer
Marine Operations Center - Atlantic

Commanding Officer
NOAA Ship *Oregon II*

PROJECT INSTRUCTIONS
NOAA Ship *Oregon II* Cruise R2-13-01 (302)
SEAMAP Winter Plankton Survey

I. Overview

A. Project Period: January 29 to March 1, 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 winter spawning fishes (especially groupers and tilefishes) from mid continental shelf to deep GOM waters using a bongo frame fitted with a 0.335 mm net and a neuston frame fitted with a 0.947 mm net at selected Southeast Area Monitoring and Assessment Program (SEAMAP) stations.

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 Conductivity/Temperature/Depth (CTD) unit at SEAMAP stations.

ii. Measure chlorophyll *a* in replicate water samples taken at surface, maximum chlorophyll layer and near bottom (to a maximum of 200 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:

1. National Marine Fisheries Service (NMFS) – Pascagoula Laboratory

E. Personnel (Science Party)

Name	Title	Sex	Organization	Citizenship
LEG 1 (Jan. 29 – Feb 12, 2013)				
Glenn Zapfe	Field Party Chief	M	NMFS	US
Pam Bond	Watch Leader	F	NMFS	US
Andy Millett	Watch Leader	M	IAP*	US
Chloe Dean	Watch Stander	F	LDWF**	US
Amy Shmitt	Watch Stander	F	IAP*	US
Justin Goggins	Watch Stander	M	IAP*	US
Chrissy Stepongzi	Watch Stander	F	IAP*	US

** IAP World Services*
*** Louisiana Department of Wildlife and Fisheries*

LEG 2 (Feb 15 – March 1, 2013)				
Glenn Zapfe	Field Party Chief	M	NMFS	US
Denice Drass	Watch Leader	F	NMFS	US
Andy Millett	Watch Leader	M	IAP*	US
Alonzo Hamilton	Watch Stander	M	NMFS	US
Rebeca Rosado	Watch Stander	F	IAP*	US
John Moser	Watch Stander	M	NMFS	US
Kaela Gartman	Watch Stander	F	IAP*	US

** IAP World Services*

F. Administrative:

1. Points of Contact:
   a. Field Party Chief: Glenn Zapfe; 3209 Frederic St., Pascagoula, MS 39567; (228) 549-1650; Glenn.Zapfe@noaa.gov
   b. Operations Officer: Sarah Harris; NOAA Ship *Oregon II*, 151 Watts Ave, Pascagoula, MS 39567; (228) 762-6422; OPS.Oregon@noaa.gov

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

3. 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. Project Plan/Itinerary:

Leg	Date	Location	Days
1	01/29/13	Depart Pascagoula, MS	15
	02/12/13	Arrive Pascagoula, MS	
2	02/15/13	Depart Pascagoula, MS	15
	03/01/13	Arrive Pascagoula, MS	

B. Staging and Destaging: PASCAGOULA / PASCAGOULA

C. Operations to be conducted:

Operational Plans:

NOAA Ship *Oregon II* will depart Pascagoula, MS on January 29, 2013 to conduct the SEAMAP Winter Plankton survey. The 30-day cruise will be conducted in two 15 day legs. The station positions and primary gear to be used at each of the 131 targeted stations (Figure 1) are listed in Table 1. Sampling will begin in the western Gulf with the break between legs occurring approximately midway through the cruise track. The station order will be provided prior to sailing and is subject to change by the Field Party Chief (FPC) during the survey after consultation with the Commanding Officer (CO). The survey will require 24 hr operations with 2 scientific watches: 12 am – 12 pm, 12 pm – 12 am.

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.

Standard SEAMAP sampling protocols will be followed at each station for the primary gear: oblique bongo tow to a max depth of 200 m, 10 min neuston tow, and CTD profile to a max depth of 200 m. The MOCNESS will be used during both legs of the survey. At selected stations along the trackline, 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.

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 mesh 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 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 (~20 sec to 1 min, longer if problems occur) 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 max, to the surface. The SBE-19 SEACAT which is mounted above the bongo array on the sea cable 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° wire angle in order to uniformly sample throughout the water column. If angle exceeds 55°, falls to 35° OR if combined variation exceeds 15°, then the tow must be repeated (the samples will be saved until a better tow is completed). The net depth will be monitored on the dry lab computer usually by the watch leader. The deck scientist (or winch operator) will report wire angles periodically during downcast. On the watch leader's command at max depth, the winch operator will stop payout of cable and immediately start retrieval (do not allow net to settle). At that time, the wire angle and wire out should be reported to the watch leader from the deck. The watch leader will ask 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 wire angle and remaining wire out should be reported from the deck to the watch leader regularly or as requested (on upcast or downcast).

The deck personnel should report when the bongo array breaks the surface. Time will be recorded to the second (by the lab scientist) when the 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, the sample will be rinsed into the cod end of the net with a seawater hose while the net hangs over the side. In high winds, the scientist may request that the net is brought directly on board and rinsed down completely 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 plankton nets. The abrasions can easily 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 Tb) is present in only 1 sample the tow need not be repeated. Right bongo samples will be preserved in 95% Ethyl alcohol (ETOH) and transferred to new 95% ETOH after 24 h. Left bongo samples will be preserved in 10% formalin initially and transferred to 95% ETOH after 36 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 (i.e. maintain a sampling depth of 0.5 m). If necessary, the ship will 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 to no less than 5 min when high concentrations of jellyfish, ctenophores, Sargassum, floating weed and/or debris are entering the net, or weather requires it. After retrieval, the sample is rinsed into the cod end with seawater while the net hangs over the side (if windy, deck scientist may request net to be brought directly on board and rinsed on deck). Neuston samples will be preserved in 95% ETOH initially and transferred to new 95% ETOH after 24 h.

CTD profiles and environmental data collection

After the CTD array is overboard, clear of all personnel and being lowered to just below the surface, the watch leader (lab scientist) will turn on the power to the unit and start the CTD recording. The unit must remain at the surface for 3 min for temperature equilibration, after which time the unit is lowered to approximately 2 m above the bottom or a max depth of 200 m. After the cast, the CTD should be 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 at the observed (during the downcast) chlorophyll max. The unit needs to be rinsed with fresh water after every cast and the caps replaced to keep the unit filled with water. Once a day, the deck scientist should flush the CTD unit with fresh water, add 60 ml of Triton-X, drain, rinse again with fresh water, and replace the caps to keep the unit filled with fresh water. The Electronics Technician will clear the y-connections periodically throughout the cruise. Additional environmental data that will be collected at each designated plankton station during daylight hours are secchi disc depth, water color Forel-Ule, percent cloud cover, and sea condition. The TSG will be in use 24 h/day. Dissolved oxygen concentrations from sensors on the CTD will be verified using an Orion 3 Star Portable D.O. meter made by Thermo Scientific at the beginning of each leg and then every 5 days by the FPC.

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.

6. 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.

7. A second SBE 11 Deck Unit should be on the ship to be put into service if needed.
8. 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.
9. Two (2) functional SBE 36 Deck units should be available (1 for backup) that are configured for the model Seacat being supplied.
10. 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.
11. 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.
12. 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.
13. 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
14. Copies of all calibration sheets for CTD profilers, TSG, and spare sensors should be provided to the laboratories' Shipboard System Specialist prior to sailing.
15. CTD capable winch and J-frame for CTD casts, with sufficient electromechanical cable for casts to 500 m.
16. NMEA GPS input to CTD header file.
17. <u>SCS data requested</u>: 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:
    iii. 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).
    iv. 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.
l. 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. 2- 1 x 2 m neuston frames, (4) 0.950 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 – 165 gallons
2. Formaldehyde – 5 gallons
3. Methanol – 8 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. NOAA Ship *Oregon II* cruise R2-13-01 (302), plankton stations 29 January – 1 March 2013. Bongo and neuston tows will be taken at all stations in addition to CTD.

SEAMAP ISS Number	Plankton Gear	Latitude	Longitude
B001	PN, MOC	29º 00'00	88º 00'00
B002	PN, MOC	29º 00'00	87º 00'00
B007	PN	25º 00'00	85º 00'00
B016	PN, MOC	28º 00'00	90º 00'00
B017	PN, MOC	28º 00'00	91º 00'00
B022	PN, MOC	28º 00'00	92º 00'00
B023	PN, MOC	28º 00'00	93º 00'00
B030	PN	26º 01'00	96º 00'00
B031	PN	27º 00'00	96º 00'00
B053	PN, MOC	27º 30'00	94º 00'00
B056	PN, MOC	27º 30'00	93º 00'00
B057	PN, MOC	27º 30'00	92º 00'00
B060	PN	27º 30'00	91º 00'00
B061	PN	27º 30'00	90º 00'00
B072	PN	24º 30'00	85º 00'00
B073	PN	25º 30'00	85º 00'00
B080	PN	28º 30'00	87º 00'00
B081	PN	28º 30'00	88º 00'00
B083	PN	28º 00'00	89º 00'00
B102	PN	24º 30'00	82º 30'00
B105	PN	24º 30'00	83º 00'00
B106	PN	25º 00'00	83º 00'00
B107	PN	25º 30'00	83º 00'00
B108	PN	26º 00'00	83º 00'00
B109	PN	26º 30'00	83º 00'00
B110	PN	27º 00'00	83º 00'00
B116	PN	29º 00'00	83º 30'00
B117	PN	28º 30'00	83º 30'00
B118	PN	28º 00'00	83º 30'00
B119	PN	27º 30'00	83º 30'00
B120	PN	27º 00'00	83º 30'00
B121	PN	26º 30'00	83º 30'00
B122	PN	26º 00'00	83º 30'00
B123	PN	25º 30'00	83º 30'00
B124	PN	25º 00'00	83º 30'00

Table 1 continued.

SEAMAP ISS Number	Plankton Gear	Latitude	Longitude
B125	PN	24º 30'00	83º 30'00
B128	PN	24º 30'00	84º 00'00
B129	PN, MOC	25º 00'00	84º 00'00
B130	PN, MOC	25º 30'00	84º 00'00
B131	PN, MOC	26º 00'00	84º 00'00
B132	PN, MOC	26º 30'00	84º 00'00
B133	PN	27º 00'00	84º 00'00
B134	PN	27º 30'00	84º 00'00
B135	PN	28º 00'00	84º 00'00
B136	PN	28º 32'00	84º 00'00
B137	PN	29º 00'00	84º 00'00
B141	PN	29º 00'00	84º 30'00
B142	PN	28º 30'00	84º 30'00
B143	PN	28º 00'00	84º 30'00
B144	PN, MOC	27º 30'00	84º 30'00
B145	PN, MOC	27º 00'00	84º 30'00
B146	PN, MOC	26º 30'00	84º 30'00
B147	PN, MOC	26º 00'00	84º 30'00
B148	PN, MOC	25º 30'00	84º 30'00
B149	PN, MOC	26º 00'00	85º 00'00
B150	PN, MOC	26º 30'00	85º 00'00
B151	PN, MOC	27º 00'00	85º 00'00
B152	PN, MOC	27º 30'00	85º 00'00
B153	PN, MOC	28º 00'00	85º 00'00
B154	PN, MOC	28º 30'00	85º 00'00
B155	PN	29º 00'00	85º 00'00
B158	PN	29º 30'00	85º 31'00
B159	PN, MOC	29º 00'00	85º 30'00
B160	PN, MOC	28º 40.2'00	85º 30'00
B161	PN	28º 00'00	85º 30'00
B164	PN	28º 30'00	86º 00'00
B165	PN, MOC	29º 12'00	86º 00'00
B166	PN	29º 30'00	86º 00'00
B167	PN	30º 00'00	86º 00'00
B168	PN	30º 00'00	86º 30'00
B169	PN, MOC	29º 30'00	86º 30'00
B170	PN, MOC	29º 00'00	86º 30'00
B171	PN, MOC	29º 30'00	87º 00'00

Table 1 continued.

SEAMAP ISS Number	Plankton Gear	Latitude	Longitude
B172	PN	29º 59'00	87º 00'00
B173	PN	29º 59'00	87º 30'00
B174	PN	29º 30'00	87º 30'00
B175	PN, MOC	29º 00'00	87º 30'00
B176	PN	29º 30'00	88º 02.4'00
B177	PN	30º 00'00	87º 57'00
B178	PN	30º 00'00	88º 28.2'00
B179	PN	29º 30'00	88º 30'00
B180	PN, MOC	29º 00'00	88º 30'00
B184	PN, MOC	28º 30'00	89º 00'00
B185	PN	28º 00'00	89º 30'00
B186	PN, MOC	28º 30'00	89º 30'00
B189	PN	28º 30'00	90º 00'00
B190	PN, MOC	28º 05'00	90º 30'00
B191	PN	28º 30'00	90º 30'00
B194	PN	28º 30'00	91º 00'00
B195	PN, MOC	28º 00'00	91º 30'00
B196	PN	28º 30'00	91º 30'00
B201	PN	28º 30'00	92º 00'00
B202	PN, MOC	28º 00'00	92º 30'00
B203	PN	28º 30'00	92º 30'00
B208	PN	28º 30'00	93º 00'00
B209	PN, MOC	28º 00'00	93º 30'00
B210	PN	28º 30'00	93º 30'00
B215	PN	28º 30'00	94º 00'00
B216	PN, MOC	28º 00'00	94º 00'00
B217	PN, MOC	28º 00'00	94º 30'00
B218	PN	28º 30'00	94º 30'00
B222	PN	28º 30'00	95º 00'00
B223	PN, MOC	28º 00'00	95º 00'00
B224	PN, MOC	27º 30'00	95º 00'00
B225	PN, MOC	27º 30'00	95º 30'00
B226	PN	28º 00'00	95º 30'00
B228	PN	28º 30'00	95º 30'00
B231	PN	28º 00'00	96º 00'00
B232	PN, MOC	27º 33'00	96º 00'00
B234	PN	27º 30'00	96º 30'00
B237	PN, MOC	27º 00'00	96º 30'00

Table 1 continued.

SEAMAP ISS Number	Plankton Gear	Latitude	Longitude
B239	PN, MOC	26º 30'00	96º 30'00
B240	PN	26º 30'00	96º 00'00
B242	PN	27º 00'00	95º 30'00
B243	PN, MOC	27º 30'00	94º 30'00
B244	PN, MOC	27º 30'00	93º 30'00
B245	PN, MOC	27º 30'00	92º 30'00
B246	PN	27º 30'00	91º 30'00
B247	PN	27º 30'00	90º 30'00
B250	PN	28º 00'00	88º 30'00
B251	PN	28º 30'00	88º 30'00
B252	PN	28º 30'00	87º 30'00
B253	PN	28º 30'00	86º 30'00
B262	PN	25º 00'00	84º 30'00
B263	PN	24º 30'00	84º 30'00
B316	PN	26º 01'00	96º 30'00
B320	PN, MOC	29º 48'00	87º 00'00
B322	PN, MOC	29º 15'00	88º 00'00
B323	PN	29º 13.2'00	88º 30'00
B325	PN, MOC	28º 19.8'00	90º 00'00
B326	PN, MOC	27º 45'00	95º 30'00

PN – Denotes bongo, standard neuston and CTD
MOC – Denotes MOCNESS

Figure 1. Cruise track with standard SEAMAP plankton stations for NOAA Ship *Oregon II* R2-13-01 (302) January 29 – March 1, 2013. Closed circles represent stations where bongo, neuston, and CTD are to be completed. Open circles represent stations where bongos, neuston, CTD, and MOCNESS are to be completed.