U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Fisheries Science Center
1845 Wasp Blvd. Bldg. 176 • Honolulu, Hawaii 96818

FINAL Project Instructions

Date Submitted: February 19, 2015

Platform: NOAA Ship *Oscar Elton Sette*

Project Number: SE-15-01

Project Title: North Pacific Subtropical Front Survey

Project Dates: April 1, 2015 to April 15, 2015

Prepared by: _____ Dated: 19Feb15
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Chief Scientist
Pacific Islands Fisheries Science Center

Approved by: _____ Dated: 3/3/2015
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Approved by: Matthew J Wingate Dated: 3/26/2015
CDR Matthew J. Wingate, NOAA
Commanding Officer
Marine Operations Center – Pacific Islands

I. Overview

A. Brief Summary and Project Period

The *NOAA Ship Oscar Elton Sette* will be engaged as support for a Pacific Islands Fisheries Science Center (PIFSC), National Marine Fisheries Service (NMFS), NOAA, project from 1 – 15 April 2015 for a total of 15 sea days. The cruise will be conducted in the waters north of Oahu, along the 158°W meridian. The primary objective of this cruise is to sample the physical and biological oceanographic environment of the North Pacific tuna and swordfish fishing grounds.

B. Days at Sea (DAS)

Of the 15 DAS scheduled for this project, 15 DAS are funded by an OMAO allocation. This project is estimated to exhibit a medium Operational Tempo.

C. Operating Area

Operations will be conducted in the waters of the North Pacific along the 158°W meridian from 22.75°N to approximately 36°N (see Appendix 1, Fig. 1). Northernmost operations will be determined by the location of the transition zone chlorophyll front and/or weather conditions.

D. Summary of Objectives

The scientific objectives of this cruise are:

1. Describe the physical environment of the North Pacific tuna and swordfish fishing grounds through routine conductivity-temperature-depth (CTD) casts and continuous acoustic Doppler current profiler (ADCP) and thermosalinograph (TSG) measurements.

2. Assess the influence of physical dynamics on the density, distribution, and composition of micronekton in the region by monitoring the biological backscatter using the Simrad EK60 echosounder system. Characterize the micronekton faunal composition and densities as the forage base for larger pelagic nekton.

3. Assess the influence of the physical dynamics on the biological productivity in the region through CTD-mounted fluorometer measurements and extracted chlorophyll and accessory pigment determinations.

4. Conduct stern Cobb trawl operations targeting the depths of high sonic scattering layers to better our understanding of echosounder signals collected by the EK60 echosounder and of the micronekton faunal community composition.

E. Participating Institutions

The Pacific Islands Fisheries Science Center and the University of Hawaii's Joint Institute for Marine and Atmospheric Research are the only institutions participating in this cruise.

F. Personnel/Science Party: name, title, gender, affiliation, and nationality

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Woodworth-Jefcoats, Phoebe	Chief Scientist	1 Apr 15	15 Apr 15	F	NMFS	USA
Kobayashi, Donald	Research Fishery Biologist	1 Apr 15	15 Apr 15	M	NMFS	USA
Abecassis, Melanie	Research Analyst	1 Apr 15	15 Apr 15	F	UH JIMAR	France
Copeland, Adrienne	Graduate Assistant	1 Apr 15	15 Apr 15	F	UH Manoa	USA
Gove, Jamison	Research Oceanographer	1 Apr 15	15 Apr 15	M	NMFS	USA
Mooney, Eric	Biological Technician	1 Apr 15	15 Apr 15	M	NMFS	USA
Chen, Jessica	Cooperating Scientist	1 Apr 15	15 Apr 15	F	UH Manoa	USA
Hoover, Aimee	Cooperating Scientist	1 Apr 15	15 Apr 15	F	UMCES	USA
Lilly, Laura	Cooperating Scientist	1 Apr 15	15 Apr 15	F	SCCOOS	USA
Oyafuso, Zack	Cooperating Scientist	1 Apr 15	15 Apr 15	M	UH Manoa	USA
Abdul, Jesse	Data Applications Developer	1 Apr 15	15 Apr 15	M	UH JIMAR	USA
Moxey, Lucas	OceanWatch Operations Mgr.	1 Apr 15	15 Apr 15	M	UH JIMAR	USA
Miyano, Justin	Cooperating Scientist	1 Apr 15	15 Apr 15	M	UH Manoa	USA
Kawamoto, Erin	Cooperating Scientist	1 Apr 15	15 Apr 15	F	UH Manoa	USA
Gloeckler, Kristen – Tentative	Cooperating Scientist	1 Apr 15	15 Apr 15	F	UH Manoa	USA

G. Administrative

1. Points of Contacts:

Phoebe Woodworth-Jefcoats, Chief Scientist
1845 Wasp Blvd., Bldg.176
Honolulu, HI 96818
(808) 725-5562
Phoebe.Woodworth-Jefcoats@noaa.gov

LT Ryan Wattam, NOAA, Operations Officer
NOAA Ship *Oscar Elton Sette*
1897 Ranger Loop, Bldg. 184
Honolulu, HI 96818
(808) 469-0074

OPS.Sette@noaa.gov

2. Diplomatic Clearances

None Required.

3. Licenses and Permits

NEPA: This project meets the requirements of NOAA Administrative Order (NAO) Series 216-6, Environmental Review Procedures, Sections 5.05 and 6.03c.3(a) for Categorical Exclusions (CE) for Research Programs. (PIFSC-20150006 - Memo for the Record in process)

ESA: PIFSC has initiated informal consultation under section 7 of the ESA with PIRO Protected Resources Division, and requested concurrence with a not likely to adversely effect determination for the proposed action on listed species in the action area.

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.

A. Project Itinerary:

Based on a ship speed of 9.5 knots.

1 April	0700. Embark Phoebe Woodworth-Jefcoats, Donald Kobayashi, Melanie Abecassis, Adrienne Copeland, Jamison Gove, Kristen Gloeckler, Jessica Chen, Zack Oyafuso, Eric Mooney, Laura Lilly, Jesse Abdul, Lucas Moxey, Justin Miyano, Erin Kawamoto, and Aimee Hoover. 0800. Start project. Depart Pearl Harbor and proceed to Station ALOHA (22.75°N, 158°W) where acoustic and oceanographic survey operations will commence. Upon completion of Station ALOHA operations, proceed to 30°N, 158°W.
3 – 5 April	Upon arrival at 30°N, 158°W, continue acoustic and oceanographic survey operations along 158°W.
5 April	Upon arrival at 36°N, 158°W, commence trawling operations while continuing acoustic and oceanic survey operations along 158°W.
6 – 12 April	Upon completion of operations at 36°N, 158°W, proceed southbound along 158°W continuing trawling, acoustic, and oceanographic survey operations.
14 April	Upon completion of acoustic and oceanographic survey operations at Station ALOHA, secure from science operations. Proceed to Pearl Harbor.
15 April	Arrive at Pearl Harbor. Disembark Phoebe Woodworth-Jefcoats, Donald Kobayashi, Melanie Abecassis, Adrienne Copeland, Jamison Gove, Kristen

Gloeckler, Jessica Chen, Zack Oyafuso, Eric Mooney, Laura Lilly, Jesse Abdul, Lucas Moxey, Justin Miyano, Erin Kawamoto, and Aimee Hoover. End of cruise.

B. Staging and Destaging:

Prior to sailing on 1 April 2015, the ship's crew will inspect the port- and starboard-side J-frames and associated oceanographic winches, conducting cable and DESH-5 winch form CTD operations, the trawl net reel and stern trawl winches, the Netmind mensuration system and displays (electronics lab and trawl house), the RD Instruments ADCP and associated computer and software, the thermosalinograph, the Simrad EK60 ecosounder, the Scientific Computing System (SCS), the Global Positioning System (GPS) navigational systems, and the scientific freezer to ensure that they are in proper working order. The SeaBird 9/11+ CTD will be installed and inspected ensuring that it is fully operational. Electrical continuity of the J-frame conducting cable, the winch's slip ring assembly, and connections to the electronics laboratory will be confirmed by the Chief Electronics Technician before sailing. The Chief Electronics Technician will also ensure that the EK60 General Purpose Transceiver Units (GPT) in the ship's laundry are free of dust and debris and clean the GPT cable connections before sailing. The EK60 transducer faces will be cleaned by ship's divers within one week of the departure date.

Dates and equipment/personnel needed for loading of scientific equipment will be provided to the ship to later than 30 days prior to sailing.

Dates and equipment/personnel needed for off-loading of scientific equipment will be provided to the ship no later than 30 days prior to sailing.

C. Operations to be Conducted:

Both underway and station operations will be conducted. It is requested that the Chief Survey Technician be available 12 hours per day.

C.1. Underway Operations

Active acoustic scattering measurements will be continuously collected with a hull-mounted split beam Simrad EK60 echoscound at the frequencies of 38, 70, 120, and 200 kHz. Current velocity will be continuously monitored with an ADCP. Surface water temperature and salinity will be monitored with a hull-mounted thermosalinograph. The flow-through fluorometer will be used to monitor chlorophyll-*a* throughout the duration of the cruise.

C.2. Station Operations

Station operations will include oceanographic sampling at select stations (see Appendices 1 and 2 for map and waypoint list, respectively) with CTD casts additionally equipped with both a WetLab profiling and Seapoint flow-through fluorometer, redundant dissolved oxygen sensors, and a 12-Niskin water bottle carousel rosette sampler. Water samples for use in measuring nutrients, chlorophyll-*a*, and chloropigments will be collected at a subset of stations. All chloropigment samples, including discrete chlorophyll-*a* samples, will be filtered at sea. Chlorophyll-*a* samples will be analyzed at sea post-filtration while chloropigment and nutrient samples will be stored in the ship's

walk-in scientific freezer. CTD casts will be conducted at predetermined stations along the transect (158°W) from Station ALOHA (22°45'N) to at least 36°N and back. CTD casts will go to a maximum depth of 1000 meters. In addition to full CTD casts, surface water samples will be collected at predetermined stations. Samples will be collected over the side rather than through the ship's flow-through system.

Sampling of the sound scattering layers (SSL) will be conducted at selected stations along the survey track using a dual warp Cobb (Stauffer) trawl. In case the Cobb trawl is not operational, sampling will be conducted using a Tucker trawl. Stern Cobb trawls will be conducted at night (approximately 2100 and 0100) at three to five selected stations along the 158°W transect. The locations will be determined based on oceanographic and weather conditions during the cruise. Trawls will be 1 hr oblique trawls through the shallow SSL (approximately 20 – 200 m), with net depth monitored using the Northstar Electronics Netmind mensuration system.

At a location to be determined, a drifter will be deployed. Drifter schematics are provided in Appendix 3. The drifter will need to be deployed in a controlled manner and without making contact with the ship's hull. The Chief Scientist will work with the Operations Officer and deck department to determine the appropriate deployment method. This drifter will not be collected after deployment. Drifter position will be sent to the Chief Scientist via e-mail several times daily for monitoring post-deployment.

The tentative schedule for scientific operations is one CTD cast at Station ALOHA, followed by one CTD cast every whole degree of latitude and one surface water sample every half degree along the northward transect of 158°W from 30°N to approximately 36°N. On the southbound transect of 158°W, there will be approximately five trawling stations and CTD casts will be conducted every 15' of latitude from 36° – 31°N. If conditions preclude the collection of science-quality active acoustic data while transiting between stations, acoustic transects will be conducted at a to-be-determined subset of CTD/trawling stations.

D. Dive Plan

Dives are not planned for this project.

E. Applicable Restrictions

Conditions which preclude normal operations: conditions that exceed the ship's operating capabilities, such as high winds or seas, equipment failure, safety concerns, and unforeseen circumstances as identified by the Chief Scientist and/or Commanding Officer. Every effort will be made to mitigate the conditions listed above, including but not limited to moving operations to alternate locations, postponing or reordering operations, or using alternate equipment. In the event of heavy weather, the track line may be shifted east or west. Additionally, operations may be suspended or relocated during heavy weather. Such decisions will be made jointly by the Chief Scientist and the ship's command.

During both transects of 158°W from Station ALOHA to approximately 36°N, the EK60 acoustics system will be used to monitor bottom depth. The ES60 and Furuno systems will

remain secured to avoid mission-compromising interference. If the EK60 does not provide reliable bottom measurements along the transect, the ES60 will be turned on and used as the depth sensor. Additionally, no activities that produce noise substantial enough to compromise the data gathered by the EK60 acoustic system may be carried out during either transect (northbound or southbound) of 158°W. Such activities include, but are not limited to, needle gunning. If acoustic transects are conducted at CTD/trawling stations, the ship will maintain a speed of 4 kts during these transects and adjust speed as necessary to ensure clean data collection.

1. "Take" of Protected Species

a. 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.

b. 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 report the incident to the PIFSC Director and Deputy Director IMMEDIATELY via email and IRIDIUM or INMARSAT. Samples should not be taken from any incidentally taken marine mammals, sea turtles, or seabirds. Photos of the incidentally caught animal should be taken to property identify the animal, but the process of taking the photos must not contribute to the further injury of the animal. These photos are for the purpose of internal NMFS verification only, and must not be shared outside of PIFSC, NMFS Office of Science and Technology, or NMFS Office of Protected Resources (i.e., do not post the photos on the internet). The incidentally caught animal should be returned to the sea as quickly as possible and with minimal disturbance to the animal. The incident should be reported to the NMFS PSIT database as soon as possible. All communications outside of PIFSC will be coordinated through the PIFSC Director's Office.

c. PIFSC has developed mitigation measures for our fisheries and ecosystems research cruises to avoid take and comply with the Lecky, Murawski, and Merric guidance. A copy of these documents is available at https://sites.google.com/a/noaa.gov/pifsc-science-operations/home/nepa-permits/protected-species-mitigation-measures and on the ship's bridge.

III. Equipment

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

CTD system and heavy-duty cage assembly
J-frames and blocks for CTD
Stern trawl winches and net reel
Oceanographic winches and cables (port and starboard)
Backup SEACAT portable CTD

Deck crane
Thermosalinograph
RD Instruments ADCP and associated computer and software
EK60 echosounder system at the frequencies of 38, 70, 120, and 200 kHz
GPS navigational system
Depth sounders and recorders
Scientific freezer, kept between -30° and -20°C at all times
Two-way radios for communication from the electronics lab to the winch operator
Operational Scientific Computing System (SCS)
Northstar Netmind trawl mensuration system displays (electronics lab and trawl house)
Navigational equipment and course plotter

B. Equipment and Capabilities provided by the scientists (itemized)
Water filtration equipment (vacuum pump, filtering ring, filter, forceps, etc.)
WetLab profiling and SeaPoint flow-through fluorometers
Redundant dissolved oxygen sensors
Liquid nitrogen dewer
Cobb (Stauffer) trawls and bridles
5 × 7 "V" doors
Northstar Netmind trawl mensuration system
Time-depth recorders (TDRs) for net monitoring
Sample collection jars and bags
Trays and other supplies for sorting tow catches
Sample scale

IV. Hazardous Materials

A. Policy and Compliance

The Chief Scientist is responsible for complying with FEC 07 Hazardous Materials and Hazardous Waste Management Requirements for Visiting Scientific Parties (or the OMAO procedure that supersedes it). By Federal regulations and NOAA Marine and Aviation Operations policy, the ship may not sail without a complete inventory of all hazardous materials by name and quantity, MSDS, appropriate spill cleanup materials (neutralizing agents, buffers, or absorbents) in amounts adequate to address spills of a size equal to the amount of chemical brought aboard, and chemical safety and spill response procedures. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

Per OMAO procedure, the scientific party will include with their project instructions and provide to the CO of the respective ship 30 days before departure:

- List of chemicals by name with anticipated quantity
- List of spill response materials, including neutralizing agents, buffers, and absorbents
- Chemical safety and spill response procedures, such as excerpts of the program's Chemical Hygiene Plan or SOPs relevant for shipboard laboratories

- For bulk quantities of chemicals in excess of 50 gallons total or in containers larger than 10 gallons each, notify ship's Operations Officer regarding quantity, packaging and chemical to verify safe stowage is available as soon as chemical quantities are known.

Upon embarkation and prior to loading hazardous materials aboard the vessel, the scientific party will provide to the CO or their designee:

- An inventory list showing actual amount of hazardous material brought aboard
- An MSDS for each material
- Confirmation that neutralizing agents and spill equipment were brought aboard sufficient to contain and cleanup all of the hazardous material brought aboard by the program
- Confirmation that chemical safety and spill response procedures were brought aboard

Upon departure from the ship, scientific parties will provide the CO or their designee an inventory showing that all chemicals were removed from the vessel. The CO's designee will maintain a log to track scientific party hazardous materials. MSDS will be made available to the ship's complement, in compliance with Hazard Communication Laws.

Scientific parties are expected to manage and respond to spills of scientific hazardous materials. Overboard discharge of hazardous materials is not permitted aboard NOAA ships.

B. Inventory

Common Name of Material	Qty	Notes	Trained Individual	Spill Control
Liquid Nitrogen	60 L	In dewer in scientific freezer	Phoebe Woodworth-Jefcoats	N
Acetone (95%)	4 x 4 L	Flammable, in Hydrochemical Lab	Phoebe Woodworth-Jefcoats	F
Hydrochloric Acid (10%)	500ml	Acid, in Hydrochemical Lab	Phoebe Woodworth-Jefcoats	A
Ethanol (95%)	3 x 5 g	Flammable, in Wet Lab	Phoebe Woodworth-Jefcoats	F

This inventory is tentative. A complete HAZMAT inventory and associated MSDS will be provided to the Operations Officer no later than seven days prior to sailing.

C. Chemical safety and spill response procedures

N: Liquid Nitrogen

- Nitrogen will evaporate into an inert gas at room temperature and is an asphyxiant. Ventilate closed spaces before entering them.

A: Acids

- Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas.
- Ventilate closed spaces before entering them.
- Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

- **Small Spills**: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly with water to remove residual contamination.
- Never return spills in original containers for re-use.

F: Flammable Liquids

- 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 sawdust.

Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
3M Chemical Folded Sorbent Spill Kit	1	Acetone, Hydrochloric Acid, Ethanol	31 g

D. Radioactive Materials

No radioactive isotopes are planned for this project.

V. Additional Projects

A. Supplementary ("Piggyback") Projects

No Supplementary Projects are planned.

B. NOAA Fleet Ancillary Projects

No NOAA Fleet Ancillary Projects are planned.

VI. Disposition of Data and Reports

Disposition of data gathered aboard NOAA ships will conform to NAO 216-101 *Ocean Data Acquisitions* and NAO 212-15 *Management of Environmental Data and Information.* To guide the implementation of these NAOs, NOAA's Environmental Data Management Committee (EDMC) provides the *NOAA Data Documentation Procedural Directive* (data documentation) and *NOAA Data Management Planning Procedural Directive* (preparation of Data Management Plans). OMAO is developing procedures and allocating resources to manage OMAO data and Programs are encouraged to do the same for their Project data.

A. Data Classifications: *Under Development*

a. OMAO Data

b. Program Data

B. Responsibilities: *Under Development*

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 to establish mitigation strategies for all concerns. This meeting will 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 is usually 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 will be conducted in the first 24 hours of the project's start and is normally presented by the ship's Operations Officer.

C. Post-Project Meeting

The Commanding Officer is responsible for conducted a meeting no earlier than 24 hrs before or seven days after the completion of a project to discuss the overall success and shortcomings of the project. Concerns regarding safety, efficiency, and suggestions for future improvements will be discussed and mitigations for future projects will be documented for future use. This meeting will be attended by the ship's officers, applicable crew, the Chief Scientist, and members of the scientific party and is normally arranged by the Operations Officer and Chief Scientist.

D. Project Evaluation Report

Within seven days of the completion of the project, a 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. Submitted form data are 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. Meals and Berthing

The ship will provide meals for the scientists listed above. Meals will be served three 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 (*e.g.*, 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 that were issued. The Chief Scientist is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the project and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non-NOAA or non-Federal scientists aboard also have proper orders. It is the responsibility of the Chief Scientist to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes uninhabitable and/or the galley is closed during any part of the scheduled project.

All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO's Drug and Alcohol Policy dated May 17, 2000 that 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, 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 each form is fully completed 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 – Pacific
2002 SE Marine Science Dr.
Newport, OR 97365
Telephone 541-867-8822
Fax 541-867-8856
Email MOP.Health-Services@noaa.gov

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

C. Shipboard Safety

Hard hats are required when working with suspended loads. Work vests are required when working near open railings and during small boat launch and recovery operations. Hard hats and work vests will be provided by the ship when their use is 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's CO, safety shoes (i.e. steel or composite toe protection) may be required to participate in any work dealing with suspended loads, including CTD deployment and recovery. The ship does not provide safety-toed shoes/boots. The ship's Operations Officer should be consulted by the Chief Scientist to ensure members of the scientific party report aboard with the proper attire.

D. Communications

A progress report on operations prepared by the Chief Scientist may be relayed to the program office. Sometimes it is necessary for the Chief Scientist to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the Chief Scientist. Special radio voice communications requirements should be listed in the project instructions. The ship's primary means of communication with the Marine Operations Center is via e-mail and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128 kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30-day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required and it must be arranged at least 30 days in advance.

E. IT Security

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

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

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

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

F. Foreign National Guests Access to OMAO Facilities and Platforms

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.

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

1. Area of Operations

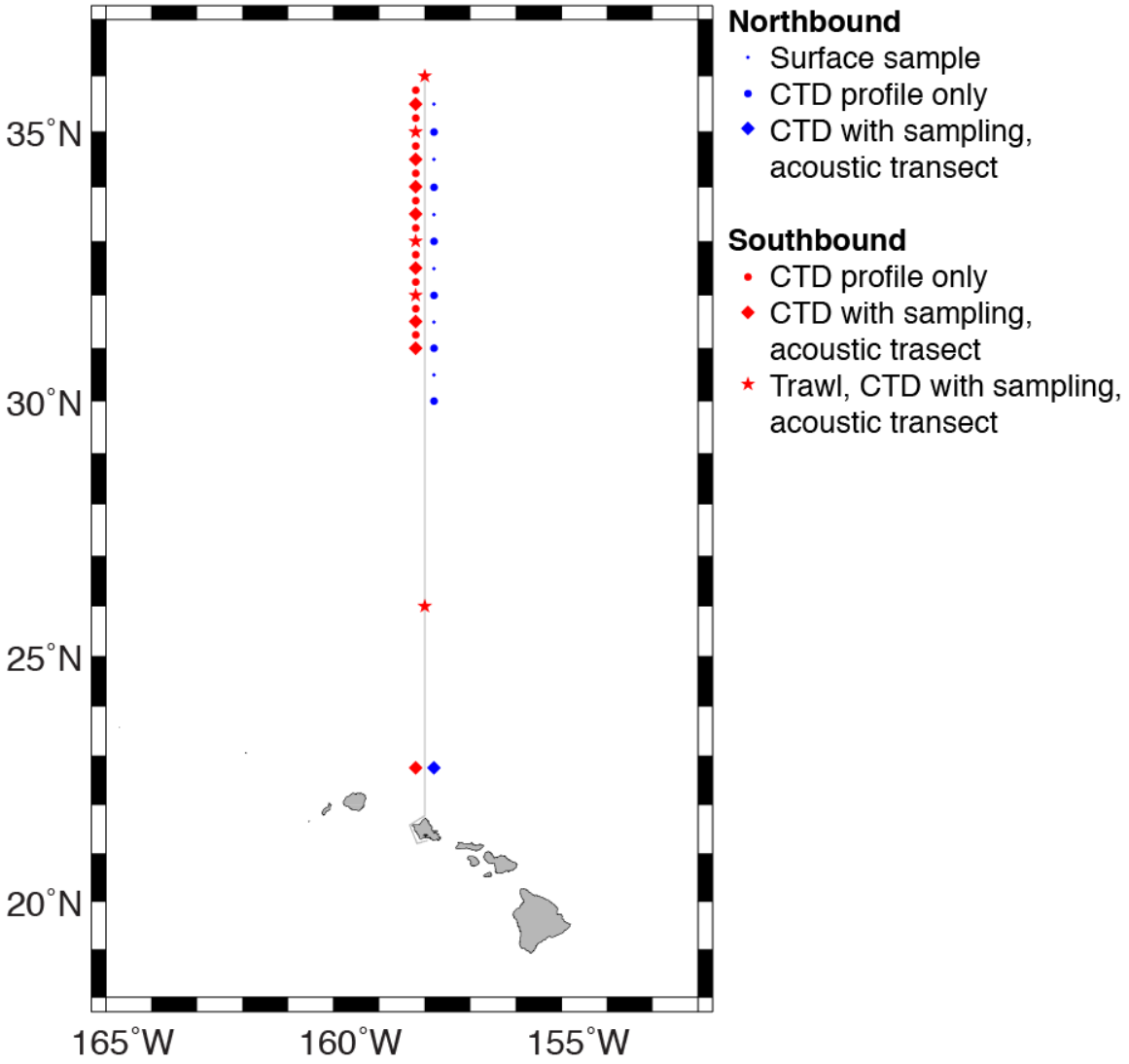

Fig. 1: Area of operations for SE-15-01, including cruise track and operation locations. Note that all operations are planned to be conducted along 158°W and that trawl station latitudes are approximate.

2. Station/Waypoint List

22°45'N, 158°00'W	CTD with sampling
30°00'N, 158°00'W	CTD
30°30'N, 158°00'W	Surface sample
31°00'N, 158°00'W	CTD
31°30'N, 158°00'W	Surface sample
32°00'N, 158°00'W	CTD
32°30'N, 158°00'W	Surface sample
33°00'N, 158°00'W	CTD
33°30'N, 158°00'W	Surface sample
34°00'N, 158°00'W	CTD
34°30'N, 158°00'W	Surface sample
35°00'N, 158°00'W	CTD
35°30'N, 158°00'W	Surface sample
36°00'N, 158°00'W	Trawls[1], CTD with sampling, acoustic transects
35°45'N, 158°00'W	CTD
35°30'N, 158°00'W	CTD with sampling, acoustic transect[2]
35°15'N, 158°00'W	CTD
35°00'N, 158°00'W	Trawls[1], CTD with sampling, acoustic transects
34°45'N, 158°00'W	CTD
34°30'N, 158°00'W	CTD with sampling, acoustic transect[2]
34°15'N, 158°00'W	CTD
34°00'N, 158°00'W	CTD with sampling, acoustic transect[2]
33°45'N, 158°00'W	CTD
33°30'N, 158°00'W	CTD with sampling, acoustic transect[2]
33°15'N, 158°00'W	CTD
33°00'N, 158°00'W	Trawls[1], CTD with sampling, acoustic transects
32°45'N, 158°00'W	CTD
32°30'N, 158°00'W	CTD with sampling, acoustic transect[2]
32°15'N, 158°00'W	CTD
32°00'N, 158°00'W	Trawls[1], CTD with sampling, acoustic transects
31°45'N, 158°00'W	CTD
31°30'N, 158°00'W	CTD with sampling, acoustic transect[2]
31°15'N, 158°00'W	CTD
31°00'N, 158°00'W	CTD with sampling, acoustic transect[2]
26°00'N, 158°00'W	Trawls[1], CTD with sampling, acoustic transects
22°45'N, 158°00'W	CTD with sampling

[1]Trawl station locations are approximate. Actual trawl station locations will be determined based on the positions of the temperature and chlorophyll fronts, as determined by satellite remotely-sensed data and northbound CTD and TSG data.

[2]Acoustic transects will only be conducted if conditions preclude collection of clean acoustic data along the transect between stations.

3. Drifter Schematic

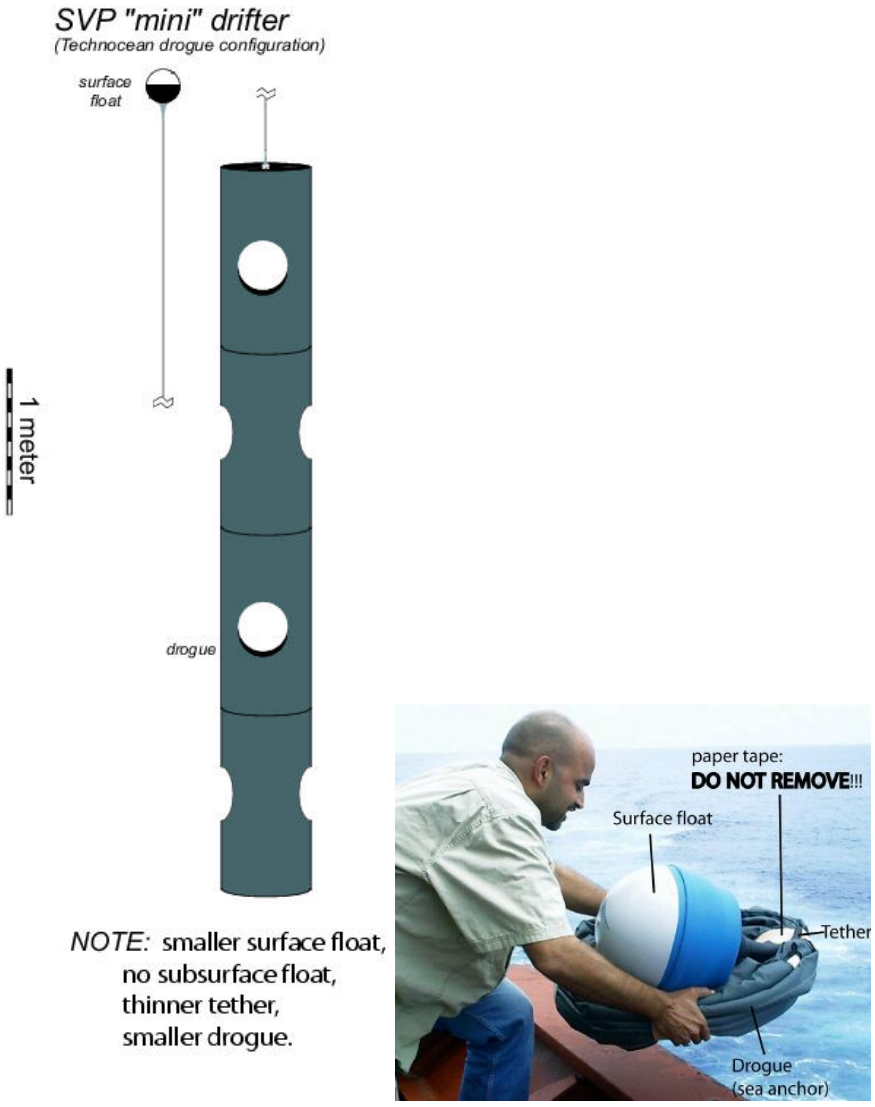

Fig. 2: Drifter schematic in water, left, and at deployment, right. (Lumpkin, R. and M. Pazos, 2006: Measuring surface currents with Surface Velocity Program drifters: the instrument, its data, and some recent results. Chapter two of Lagrangian Analysis and Prediction of Coastal and Ocean Dynamics (LAPCOD) ed. A. Griffa, A. D. Kirwan, A. J. Mariano, T. Ozgokmen, and T. Rossby.)