UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Alaska Fisheries Science Center
Resource Assessment and Conservation Engineering
7600 Sand Point Way NE
Seattle, WA 98115

Draft Cruise Instructions

Date Submitted: 13 March 2013
Platform: NOAA Ship *Oscar Dyson*
Cruise Number: DY-13-03
Project Title: Acoustic-Trawl Survey of Walleye Pollock in the Chirikof Shelfbreak, Shelikof Strait, and Marmot Bay regions of the Gulf of Alaska

Cruise Dates: 14-29 March 2013

Approved by: Neal J Williamson for
Chief Scientist Name
Title
Affiliation

Dated: 13 Mar 2013
Chris Wilson
Supervisory Research Fish Biologist
Alaska Fisheries Science Center

Approved by: _____
Division Director Name
Title
Affiliation (Program or Lab)

Dated: 13 March 2013
Guy Fleischer
Deputy Division Director
AFSC/RACE Division

Approved by: Douglas DeMaster
Science Center Director
Title
Affiliation

Dated: 13 Mar 13
Dr. Douglas P. DeMaster,
Science and Research Director
Alaska Fisheries Science Center

Approved by: Wade J Blake
Digitally signed by BLAKE.WADE.JAMES.1025936538 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=BLAKE.WADE.JAMES.1025936538 Date: 2013.03.13 16:30:18 -07'00'
Captain Wade Blake, NOAA
Commanding Officer
Marine Operations Center - Pacific

Dated: _____

I. Project Overview

A. Project Period: 14-29 March 2013

B. Service Level Agreements

Of the 16 DAS scheduled for this project, 0 DAS are funded by the program and 16 DAS are funded by OMAO. This project is estimated to exhibit a High Operational Tempo.

C. Operating Area: Chirikof shelf break, Shelikof Strait, and Marmot Bay

D. Summary of Objectives: (1) collect acoustic trawl (AT) data necessary to determine the distribution, biomass, and biological composition of walleye pollock; (2) collect target strength data using hull-mounted or a lowered transducers for use in scaling acoustic data to estimates of absolute abundance; (3) calibrate the ER-60 acoustic system using standard sphere calibration techniques; (4) conduct trawl hauls (AWT, PNE, Marinovich, and Methot) to ground truth multi-frequency acoustic data collection; (5) deploy a stereo-camera system (Cam-Trawl) in the midwater trawl to optically sample fish; (6) collect physical oceanographic data (temperature and salinity profiles) at selected sites, and continuously collect sea surface temperature and salinity data; (7) conduct trawl selectivity trials of age-1 fish using pocket nets attached to the outside of the AWT; (8) test a drop-camera system and ruggedized cam-trawl; (9) conduct tests of a "modified" Marinovich trawl with FishBuster doors and without restrictor using different bridle lengths, 10) following Kodiak offload/load, deploy two moorings near Chiniak.

E. Participating Institution: Alaska Fisheries Science Center, Seattle, WA

F. Personnel:

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Wilson, Chris	Chief Scientist	March 14	March 28	Male	AFSC	USA
Jones, Darin	Fish Biologist	March 14	March 28	Male	AFSC	USA
Furnish, Scott	IT Specialist	March 14	March 28	Male	AFSC	USA
Williams, Kresimir	Fish Biologist	March 14	March 28	Male	AFSC	USA
Taylor, Kevin	Fish Biologist	March 14	March 28	Male	AFSC	USA
Dorn, Martin	Fish Biologist	March 14	March 28	Male	AFSC	USA
Andrews, Alex	Fish Biologist	March 14	March 28	Male	ABL	USA
Carney, Dan	Fish Biologist	March 14	March 28	Male	Industry	USA
Floering, Bill	Fish Biologist	March 28	March 29	Male	AFSC	USA

G. Administrative

1. Point of Contact Chris Wilson (Chief Scientist), 7600 Sand Point Way NE, Seattle, WA. 98115, 206-526-6435, chris.wilson@noaa.gov

2. Diplomatic Clearances: N/A

3. Licenses and Permits: This Project will be conducted under a Scientific Research Permit issued by the Alaska Regional Office, National Marine Fisheries Service (#2013-B1), and a Fish Resource Permit issued by the State of Alaska. The Chief Scientist will be included as an authorized participant on both permits.

II. Operations

A. Project Plan/Itinerary:

March 14	Embark scientists in Kodiak, AK
March 15	Depart Kodiak, AK at 0900. Transit to survey start
March 15-27	AT surveys of Chirikof shelf break, Shelikof Strait, and Marmot Bay
March 27	Conduct sphere calibration in location TBD
March 28	Arrive Kodiak at 0900; debark scientists and offload/load gear
March 28	Deploy Chiniak moorings
March 29	Transit to Seward; Project ends

B. Staging and Destaging: Scientific gear will be loaded and mounted onto the vessel in Seattle, WA prior to departure for the gear trials in Puget Sound on January 26, 2013. Upon completion of the Project, trawl gear will be offloaded and stored in the Kodiak NOAA warehouse. Sometime in April/May, the gear will be barged to Dutch Harbor to be re-loaded for the summer Gulf of Alaska acoustic-trawl (AT) survey during the June 4-7 inport.

C. Operations to be conducted

1. Underway Operations:

1A. Survey operations will be conducted 24 hours per day. Acoustic data will be collected continuously along a series of parallel transects with a Simrad ER-60 scientific echo sounder system incorporating five centerboard-mounted transducers (18-, 38-, 70-, 120-, and 200-kHz) and an ME-70 multibeam echo sounder. The vessel must not operate other echo sounders or acoustic equipment that interferes with collection of scientific acoustic data. The bow thrusters, Doppler speed log, and bridge Furuno depth sounder should all be secured, as they degrade the quality of acoustic data. At infrequent times this equipment must be operated to ensure the safe navigation and control of the vessel. These times will be noted in the ships SCS/electronic MOA.

Transect spacing will be as follows: 6.0 nm along the Chirikof shelfbreak, 7.5 nm in Shelikof Strait, and either 1.0 or 2.0 nm in Marmot Bay (Appendix A). Trackline start and end points will be provided in an electronic file to the

Navigation Officer. Because the start point of the first trackline of each survey is randomized, tracklines will not match those from prior surveys. Ship speed is expected to average 11 to 12 knots in favorable conditions.

Acoustic trawl survey operations require that an Aleutian wing trawl (AWT) midwater and poly Nor'eastern (PNE) bottom trawl with roller gear be loaded onto the net reels. A spare AWT and PNE will serve as backups. Codend liner mesh size will be 0.5 in. for both the AWT and the PNE. Fishbuster doors will be used with all trawls. Small fishes or zooplankton may be sampled using fine-mesh nets (e.g. Methot net, Marinovich trawl). We request that the chief boatswain keep a trawl gear logbook to record any modifications made to trawl gear during the Project.

Trawl hauls will be made to identify acoustic backscatter and provide pollock samples and other biological data. Haul duration will be kept to the minimum necessary to ensure an adequate sample. We anticipate that on average 2-3 tows will be conducted during a 24-hour period. Biological data collected from each haul will include species composition, sex composition, length frequencies, whole fish and ovary weights, maturities, and otoliths. Pollock tissue samples will be taken from selected hauls for fecundity studies and genetic analysis.

The Scientific Computing System (SCS) will run continuously throughout the Project and will be configured to log data from various sensors.

When all trawl operations have been completed for the survey, sufficient time should be allotted for streaming of all trawl nets used during the survey. Trawl nets should be streamed behind the vessel with the codend open to ensure nets are clean and free of fish and other debris for storage. Nets should be visually inspected as they are brought in and any debris still entangled in webbing should be removed.

1B. Target strength data collection will occur on an opportunistic basis. These data are used to validate the relationship between fish length and target strength. Data will be collected when certain conditions (i.e., low fish densities, single species) are encountered. Collecting target strength data typically involves repeated passes over an aggregation of fish at a vessel speed of less than 3 knots. One or two trawl hauls are made to provide species composition and biological data. When calm seas are encountered along with the above-mentioned conditions, a second approach to collecting target strength data may be attempted: with the vessel stopped, a “drop TS” assembly containing a 38-kHz transducer will be lowered to a depth just above the fish sign.

1C. A standard sphere calibration of the centerboard-mounted scientific acoustic systems (18-, 38-, 70-, 120-, and 200-kHz) will be conducted near the

end of the Project in a location to be determined. This requires anchoring the vessel at the bow and stern and suspending a calibration sphere assembly directly beneath the vessel's centerboard. A CTD cast will be conducted prior to the calibration.

1D. If single-species aggregations are encountered (e.g. rockfish, euphausiid, capelin), opportunistic trawl hauls (AWT, PNE, Marinovich, or Methot) may be conducted to ground truth multi-frequency acoustic data collection.

1E. A Cam-Trawl camera system will be deployed in the midwater trawl to optically sample fish. Prior to being loaded, the AWT will have been modified with an opening in the starboard side panel allowing the attachment of the camera. When the Cam-Trawl is not attached, the opening can be sown shut to prevent fish escapement.

1F. Conductivity-temperature-depth (CTD) data may be collected with a Seabird SeaCat system at selected locations. Temperature and depth profile data will be collected with a Seabird SBE39 temperature/pressure recorder attached to the trawl headrope. Sea surface temperature and salinity will be collected continuously throughout the Project and logged with the vessel's Scientific Collection System (SCS).

1G. When Age-1 walleye pollock are encountered, a series of back-to-back AWT trawls will be conducted with pocket nets affixed to the exterior of the net in predetermined locations to estimate net selectivity and escapement of juvenile fish.

1H. Conduct gear testing of a "modified" Marinovich trawl with FishBuster doors and without restrictor under multiple bridle lengths to determine the optimal configuration for fishing in midwater.

1I. Following completion of acoustic survey and offloading of MACE fisheries equipment (nets, doors, etc.) in Kodiak, load Chinak surface and sub-suface moorings and associated equipment. Remain dockside for final assembly of the Chiniak surface mooring and depart in time for daylight transit through Kodiak Channel. Deploy both Chiniak moorings followed up by one CTD cast. Upon completion of the Chiniak work vessel will steam to Seward.

2. Station Operations: N/A

D. Dive Plan: It may be necessary to deploy divers during the survey if it is suspected that the propeller has been fouled.

E. Applicable Restrictions: N/A

III. Facilities

A. Equipment and Capabilities Provided by the Ship (number is 1 unless specified)

1. Acoustic Equipment
    - GPS with NEMA 183 to ER60 (2)
    - 50/200 kHz ES60 Bridge sounder
    - Furuno FE-700 fathometer
2. Trawling Equipment
    - 3rd wire FS-70 net sonar with winch and accessories (2)
    - Simrad ITI net mensuration system (2)
    - Furuno CN24 headrope transducer
3. Oceanographic Equipment
    - Seabird CTD System
4. Biological Sampling Equipment
    - Fish lab conveyor system
    - Catch sorting and weighing table
5. Computing equipment
    - Scientific Computing System

B. Equipment and Capabilities Provided by the Scientists (number is 1 unless specified)

1. Acoustic Equipment
    - Simrad ER60 system (2)
    - Simrad ES18 transducer (2)
    - Simrad ES38B transducer (2)
    - Simrad ES38DD transducer
    - Simrad ES70 transducer (1)
    - Simrad ES120-7C transducer (2)
    - Simrad ES200-7C transducer (3)
    - Standard target & suspension assembly
    - Simrad ME70 system
2. Trawling Equipment
    - Aleutian wing trawl w/accessories (e.g., 0.5" mesh liners) (2)
    - Poly nor'eastern trawl w/accessories (e.g., 0.5" mesh liners) (2)
    - Methot net with accessories (2)
    - Marinovich trawl w/accessories (e.g., 0.5" mesh liners) (2)
    - Dandylines (10 fm x ½ in.)
    - Dandylines (30 fm x 5/8 in.)
    - Fishbuster door with accessories (2 sets)
    - Spare webbing & twine
    - Spare 0.5" mesh cod end liners (2)

Spare hardware
500 lb. tom weights (4)
250 lb. tom weights (4)
Pocket nets (9)
Cam-trawl system
Ruggedized cam-trawl system
Miscellaneous supplies*

3. Oceanographic Equipment
   Seabird SBE39 (2)
   Seabird CTD
4. Biological Sampling Equipment
   Dynamometer
   Marel M60 60 kg scale (2)
   Marel M60 6 kg scale (2)
   Fish baskets (30)
   Glycerin/Thymol*
   Ethyl Alcohol*
   Formalin*
   Misc. biological supplies*
5. Computing equipment
   IBM compatibles w/XP Op.System*
   Dell PowerEdge MACEBASE Server
   Printers*

Note: * indicates amount not specified.

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 the anticipated quantity brought aboard, MSDS and appropriate neutralizing agents, buffers, or absorbents in amounts adequate to address spills of a size equal to the amount of chemical brought aboard, and a chemical hygiene plan. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

Per FEC 07, the scientific party will include with their project instructions and provide to the CO of the respective ship 60 to 90 days before departure:

- A list of hazardous materials by name and anticipated quantity

- Include a chemical spill plan the addresses all of the chemicals the program is bringing aboard. This shall include:
  - Procedures on how the spilled chemicals will be contained and cleaned up.
  - A complete inventory (including volumes/amounts) of the chemical spill supplies and equipment brought aboard by the program. This must be sufficient to clean and neutralize all of the chemicals brought aboard by the program.
  - A list of the trained personnel that will be accompanying the project and the training they've completed.

Chemical Inventory and Spill Plan

Common Name of Material	Qty	Notes	Trained Individual	Spill control
Glycerol (50%) / Thymol (1%)	5 gal	Non-Hazadous in quantities used	Darin Jones	G
Formaldehyde solution (37%)	16 liters	Stored in ship chem. locker	Darin Jones	F
Ethyl Alcohol (100%)	1 gal	Stored in ship chem. locker	Darin Jones	E

SPILL CONTROL

G: Glycerol/Thymol

- Rinse affected area with copious amounts of water.

F: Formalin/Formaldehyde

- Ventilate area of leak or spill. Remove all sources of ignition.
- Wear appropriate personal protective equipment.
- Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible.
- Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container.
- Do not use combustible materials, such as saw dust.

E: Ethyl Alcohol

- 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. Contain liquid with absorbent material and place in non-leaking container.
- Do not use combustible materials, such as saw dust.

Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
Neutralex	5 gal	Formaldehyde solution (37%)	5 gal
3M Sorbent Pads	1 box	Ethyl Alcohol	4 gal

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.

Upon departure from the ship, scientific parties will provide the CO or their designee an inventory of hazardous material indicating all materials have been used or 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 scientific chemicals is not permitted during projects aboard NOAA ships.

B. Radioactive Isotopes: N/A

V. Additional Projects

A. Supplementary ("Piggyback") Projects: Secondary objectives of the Project include scientific research requested by AFSC and other investigators. Anticipated projects include specimen collections from standard trawl hauls such as ovary collection from pre-spawning walleye pollock and fin clip samples collected from select walleye pollock. Detailed descriptions of additional ancillary projects will be provided as soon as received. Significant changes to these projects that affect vessel operations will be communicated as soon as they are known.

B. NOAA Fleet Ancillary Projects: N/A

Disposition of Data and Reports

A. Data Responsibilities

1. An electronic Marine Operations Abstract (MOA) will be created to log all operations via daily transfers of position data from the ship's SCS system to MACE. An appropriate logging interval will be chosen for automated track position data. Specific events (and frequency) to be recorded will be decided at the beginning of the project. Globe software will be available to log operations data as a backup. All times should be recorded as Greenwich Mean Time (GMT)

2. The data sets requested by the Chief Scientist from the ship will include the following: electronic files (MOA) from the SCS of all operations logged during the project, and

backup media (e.g., DVDs) with all sensor data logged to the Scientific Computer System (SCS).

3. The Chief Scientist will represent the AFSC lab director for data disposition. A single copy of all data gathered by the vessel will be delivered to the Chief Scientist for forwarding to the AFSC lab director, who in turn will be responsible for distributing data to other investigators desiring copies.

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

Following completion of the field season, a meeting will be held at a date and time to be determined. The meeting will be attended by the ship's officers, the Chief Scientist and members of the scientific party, the Vessel Coordinator and the Port Captain to review the project. Concerns regarding safety, efficiency, and suggestions for improvements for future projects should be discussed. Minutes of the post-project meeting will be distributed to all participants by email, and to the Commanding Officer and Chief of Operations, Marine Operations Center.

C. Ship Operation Evaluation Report: Within seven days of the completion of the project, a Ship Operation Evaluation form is to be completed by the Chief Scientist. The preferred method of transmittal of this form is via email to OMAO.Customer.Satisfation@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

VII. Miscellaneous

A. Meals and Berthing

The ship will provide meals for the scientists listed above. Meals will be served 3 times daily beginning one hour before scheduled departure, extending throughout the project, and ending two hours after the termination of the project. Since the watch schedule is split between day and night, the night watch may often miss daytime meals and will require adequate food and beverages (for example a variety of sandwich items, cheeses, fruit, milk, juices) during what are not typically meal hours. Special dietary requirements for scientific participants will be made available to the ship's command at least seven days prior to the survey.

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the Chief Scientist. The Chief Scientist and Commanding Officer will work together on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current make-up of the ship's complement. The Chief Scientist is responsible for ensuring the scientific berthing spaces are left in the condition in which they were received; for stripping bedding and linen return; and for the return of any room keys which were issued. The Chief Scientist is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the project and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non NOAA or non Federal scientists aboard also have proper orders. It is the responsibility of the 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 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: 02 JAN 2012) 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. 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 project 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 – 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

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. Steel-toed shoes are required to participate in any work dealing with suspended loads, including CTD deployments and recovery. The ship does not provide steel-toed boots. Hard hats are also 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 Chief Scientist may be relayed to the program office. Sometimes it is necessary for the Chief Scientist to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the Chief Scientist. Special radio voice communications requirements should be listed in the project instructions. The ship’s primary means of communication with the Marine Operations Center is via e-mail and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required 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 *NMAO 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 these requirements prior to boarding the ship is required.

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

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 (FRNS) 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 NMFS Deemed Exports point of contact to assist with the process.

The following are basic requirements. Full compliance with NAO 207-12 is required.

Responsibilities of the Chief Scientist:

1. Provide the Commanding Officer with the e-mail generated by the FRNS granting approval for the foreign national guest's visit. This e-mail will identify the guest's DSN and will serve as evidence that the requirements of NAO 207-12 have been complied with.
2. Escorts – The Chief Scientist is responsible to provide escorts to comply with NAO 207-12 Section 5.10, or as required by the vessel's DOC/OSY Regional Security Officer.
3. Ensure all non-foreign national members of the scientific party receive the briefing on Espionage Indicators (NAO 207-12 Appendix A) at least annually or as required by the servicing Regional Security Officer.
4. Export Control - 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 NMAO approval and compliance with export and sanction regulations.
3. Ensure foreign national access is permitted only if unlicensed deemed export is not likely to occur.
4. Ensure receipt from the Chief Scientist or the DSN of the FRNS 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 Regional Security Officer.

Responsibilities of the Foreign National Sponsor:

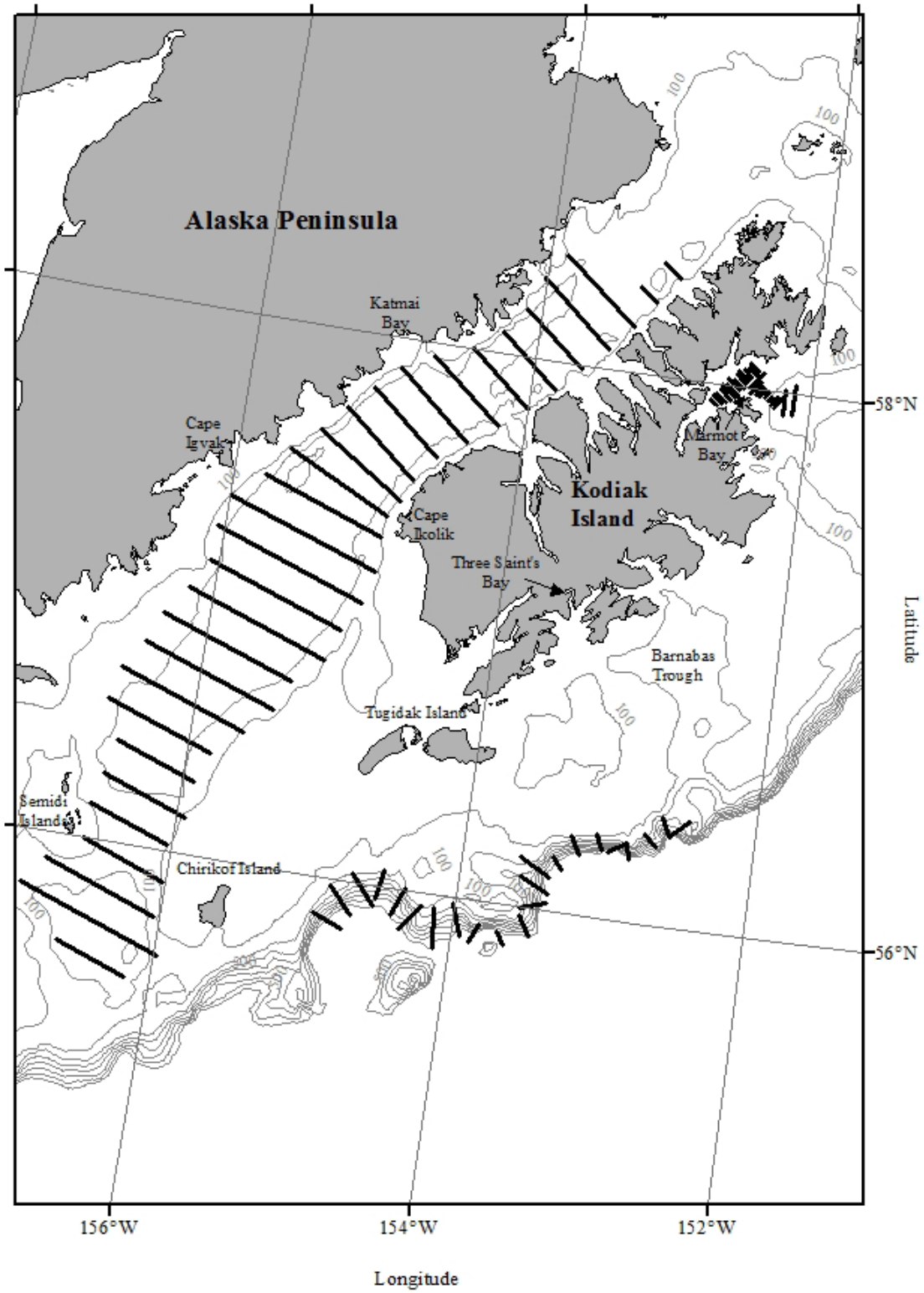
1. Export Control - The foreign national's sponsor is responsible for obtaining any required export licenses and complying with any conditions of those licenses prior to the foreign national being provided access to the controlled technology onboard regardless of the technology's ownership.
2. The DSN 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, 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

Appendices

A. Proposed survey areas and tracklines

B. Chemical Hygiene Plan

Appendix A - Proposed survey areas and tracklines.



Appendix B – Chemical Hygiene Plan

Following is a list of hazardous materials by name and anticipated quantity. Chemicals will be transported, stored and used in a manner that will avoid spills and adequate containment, absorbents, and cleanup materials will be available in the event of a spill.

The scientific chemicals to be used for this project are: 1) glycerin\thymol; 2) formaldehyde (37%); 3) ethyl alcohol (95%). Dilutions of scientific chemicals will be used to preserve tissues collected from trawl samples as described in the Operations section of these Project instructions. Use of these chemicals and the specified dilutions will only occur in areas away from air intakes. Scientific chemicals shall not be disposed of over the side.

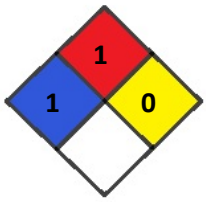
Standard Operating Procedures and Information Sheets are provided for the scientific chemicals. Included are details concerning personal protective equipment, work area precautions, special handling and storage requirements, spill and accident procedures/first aid, waste disposal and other pertinent information. Spills are of particular concern and should first be contained and then neutralized. In all cases, the first responder should evaluate the risks of personal exposure versus potential impacts of a delayed response. A large formaldehyde spill (>1L) is extremely hazardous and individuals at risk of exposure should immediately leave the area. The CO or OOD should be notified immediately so that a response team with self-contained breathing apparatus can be deployed to complete the cleanup operation of dispense the hazard with a fire hose directed overboard. The vessel's course should be adjusted to minimize exposure of personnel to wind-driven vapors and to limit spread of the spill due to vessel motion.

Chemical Inventory

Chemical Name	**Concentration**	**Quantity**	**Notes**
Glycerin/Thymol	50%Glycerin/1%Thymol	5 gal.	For otolith preservation.
Formaldehyde	37%	2 gal.	For zooplankton preservation. Included with FOCI supply
Ethyl Alcohol	95%	1 gal.	For fin clip preservation.

ALASKA FISHERIES SCIENCE CENTER STANDARD OPERATING PROCEDURES
RACE/MACE FOR HAZARDOUS CHEMICALS
Dec 2012

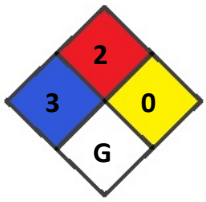
Glycerin (50%)/Thymol(0.3%) solution



#1 Process	General use in the field or on research vessels for otolith preservation
#2 Hazardous Chemicals/Class of Hazardous Chemicals	100% Glycerin may cause eye or skin irritation
#3 Personal Protective Equipment/ Decontamination	Gloves, splash goggles, lab coat or rain gear. For small spills dilute with water and mop up. For larger spills, absorb with inert material. In case of skin/eye contact: flush with running water for at least 15 min. In case of ingestion: Do not induce vomiting. In case of inhalation: move to fresh air.
#4 Engineering/ Ventilation Controls	Provide exhaust venilation to keep airborne concentrations of vapors low.
#5 Special Handling Procedures and Storage Requirements	Store at room temp in tightly closed container.
#6 Waste Disposal	Dispose of waste and residues in accordance with local authority requirements. Incinerate. When released into water, this material is expected to readily biodegrade and is not expected to significantly bioaccumulate.

ALASKA FISHERIES SCIENCE CENTER STANDARD OPERATING PROCEDURES
RACE/MACE FOR HAZARDOUS CHEMICALS
Dec 2012

Formaldehyde Solution – 37%



#1 Process	General use of 37% formaldehyde in the field or on research vessels.
#2 Hazardous Chemicals/Class of Hazardous Chemicals	37% formaldehyde Carcinogen; very harmful by absorption through skin/eyes, inhalation and ingestion. If you smell formaldehyde, you may be overexposed. Odor and eye irritation becomes less sensitive with time as one adapts to formaldehyde. Possible irreversible effects.
#3 Personal Protective Equipment/ Decontamination	Nitrile or rubber gloves, goggles, apron or rain gear, rubber boots are required. Get a co-worker to stand by as an observer. For small spills spray on Neutralex and wipe up with formalin spill pads. For larger spills, circle the spill with Spill-X for formaldehyde to contain spill to one area. Fill circle with Spill-X or Neutralex and sweep, wipe up, or hose down. For spills on deck, attempt to pour Neutralex on spill before hosing down deck. This reduces vapors and creates a safer environment for co-workers (i.e. neutralizes splash). Wear protective clothing and full face respirator with a formaldehyde cartridge. In case of skin/eye contact: flush with running water for at least 15 min.Toxic, exposure may cause irritation and possible burns. In case of ingestion: Do not induce vomiting. Rinse mouth with water. Ingestion may cause severe abdominal pain, vomiting, headache, diarrhea. In case of inhalation: move to fresh air. Exposure may cause sore throat, coughing, and shortness of breath. If difficult breathing give oxygen. If not breathing, administer CPR. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device.Call a physician. ***For large spills or extreme exposure of formalin contact FPC &

	CO or OOD***
#4 Engineering/ Ventilation Controls	All work should be performed outside in plenty of fresh air or in lab (i.e. Oscar Dyson wet lab) with good ventilation and accessible water hoses. While working, have Neutralex nearby or easily accessible. Fume hoods when present, must be tested and certified regularly.
#5 Special Handling Procedures and Storage Requirements	Store in cool place away from strong oxidizing or reducing agents. When making 10% formalin, prepare solution BEFORE Project while in port. This reduces chance of spill and injury. If you must prepare solution at sea have 37% formaldehyde in small containers, 1 L, rather than 5 gallon jugs.
#6 Waste Disposal	Pour waste 37% formaldehyde into a container and mix 1:1 with Neutralex. Let sit for 2 hr or until reaction is complete and wash down the scupper with hose. If formalin spill pads are used, spray Neutralex in excess of spill.
#8 Designated Area	Special storage is required – Must be stored within flammable cabinet or on deck away from living quarters. Make certain that container is well labeled.

ALASKA FISHERIES SCIENCE CENTER STANDARD OPERATING PROCEDURES
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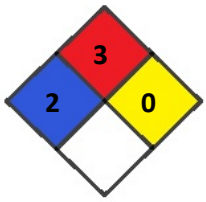
Ethyl Alcohol – 95%
UN Number : 1170



#1 Process	General use of 95% Ethynol in the field or on research vessels.
#2 Hazardous Chemicals/Class of Hazardous Chemicals	Class 3, PG II Flammable Liquid
#3 Personal Protective Equipment/ Decontamination	*gloves *goggles or face shield when pouring * If swallowed, give large amounts of drinking water and induce vomitting. * If vapors inhaled, get into fresh air immediately. Give oxygen if breathing is difficult. * If spilled on skin or splashed in eyes, flush with water for at least 15 minutes. Absorb ethanol with 3M Sorbent Pads and allow to dry in a well ventilated area away from ignition source.
#4 Engineering/ Ventilation Controls	Eye wash fountains and showers should be available for emergency use. Do not store alcohol above 120°F
#5 Special Handling Procedures and Storage Requirements	* Keep away from heat, flame, and other potential ignition sources. * Store in a well ventilated area or in a flammable cabinet. Due to the flammability rating of 95% ethanol, this chemical can not be shipped by air. Transportation by barge or land vehicle will require the ethanol container to be over-packed with absorbent materials such as clumping kitty litter or shredded paper. Include MSDSs and the UN number with the shipment for reference in the

	event of a spill.
#6 Waste Disposal	Use 3M Sorbent Pads to absorb the ethanol. Put used pads outside to dry (secure from blowing overboard and exposure to flame). Once dry, the pads may be reused or burned.
#8 Designated Area	Special storage is required – Must be stored within flammable cabinet or on deck away from living quarters. Make certain that container is well labeled.