



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
National Marine Fisheries Service  
Southwest Fisheries Science Center  
8604 La Jolla Shores Drive  
La Jolla, CA 92037

August 19, 2004

F/SWC1:DAG

CRUISE REPORT

VESSEL: NOAA Ship *Miller Freeman*, 0706-MF, MF-07-09.

CRUISE DATES: June 5 - June 10, 2007.

PROJECT: Oregon - Washington Sardine Survey, Fisheries Resources Division.

ITINERARY: Departed Astoria, Oregon at 12:00 on July 5, 2007. Proceeded to the first station of the proposed survey track and began occupying the 15 pre-determined stations. Once the survey was complete, the ship docked in Newport, Oregon on June 10, 2007.

OBJECTIVES: 1. Collect fishery independent adult Pacific sardines (*Sardinops sagax*) for spawning biomass estimates.

2. Map sardine egg distribution with CUFES (Continuous Underway Fish Egg Sampler) off of Oregon and Washington.

3. Collect oceanographic data over a fixed cruise track which covers the region 43°N to 47°N from inshore out to 126° W.

4. Collect acoustic data continuously throughout the survey using the vessel's EK-60 Simrad sounder.

5. Conduct quantitative plankton tows using a Pairovet and a bongo net for calibration of the CUFES and attempt to quantify the sardine spawning biomass using the EPM (Egg Production Method).

6. Collect continuous underway temperature and conductivity measurements of surface waters. These measurements will be recorded using NOAA's SCS software which is also interfaced with the CUFES software.

PROCEDURES: 1. Fourteen primary stations were occupied after dusk and prior to sunrise. Daytime activities included occupying a transect between survey lines using the CUFES and the EK-60 sounder. At each night station the following activities were performed:

a. Deployment of a Seabird 9/11+ down to 200 meters, bottom depth permitting. The CTD collected depth, temperature, conductivity and chlorophyll fluorescence data.

b. A standard Pairovet cast. The Pairovet net was fished from 70 meters to the surface (depth permitting) using paired 25 cm diameter 150 µm mesh nets. The technical requirements for the Pairovet tow was: descent rate of 70 meters per minute, a terminal depth time of 10 seconds and an ascent rate of 70 meters per minute.

c. A CalBOBL (CalCOFI Bongo) standard oblique plankton tow with 300 meters of wire out, depth permitting, used paired 505 µm mesh nets with 71 cm diameter openings. The technical requirements for this tow were: Descent rate of 50 meters per minute, ascent rate of 20 meters per minute. All tows with ascending wire angles lower than 38° or higher than 51° in the final 100 meters of wire were repeated.

Additionally, a 45° wire angle was closely maintained during the ascent and descent of the net frame. Contents of the starboard side net were preserved in buffered formalin for later identification. The port side net contents were preserved in buffered ethanol for later identification of ichthyoplankton and DNA studies.

d. Standard meteorological data including SST, wind speed and direction, wave height and direction, cloud cover, relative humidity, air temperature and barometric pressure.

e. During all transit between stations continuous measurements were made of pelagic fish eggs (CUFES) and acoustic targets using the EK-60.

f. A Nordic 264 mid-water trawl using 3.0 m<sup>2</sup> foam core doors was towed at the surface for 30 minutes traveling at approximately 3.5 knots. Every catch was sorted and target species were sampled.

RESULTS:

<u>Activity</u>	<u>Requested</u>	<u>Completed</u>	<u>Aborted</u>
Paironet tows	15	14	1
Bongo tows	15	14	1
CTD casts	15	14	1
Weather	15	14	1
Surface Temp.	15	14	1
EK-60 (hours)	120	120	0
CUFES	153	153	0
Trawls	15	14	1
Mar. mammal obs. (hrs.)	75	75	0

Of the 14 trawls performed, a summary of the target species is listed below:

<u>Species</u>	<u>Total Weight (kg)</u>
Pacific sardine ( <i>Sardinops sagax</i> )	1249.77
Northern anchovy ( <i>Engraulis mordax</i> )	676.09

DISPOSITION OF DATA:

Paironet tow data sheets and formalin preserved samples - Richard Charter, FRD (SWFSC).

Station activity logs, weather data and surface temperature data - Richard Charter, FRD (SWFSC).

CUFES data and preserved samples - Richard Charter, FRD (SWFSC).

CTD data - David Griffith, FRD (SWFSC).

EK-60 data - David Demer, FRD (SWFSC).

Trawl data and preserved samples - Beverly Macewicz, FRD (SWFSC).

Marine mammal and bird sighting data - Jen Zamon, FED (NWFSC).

INCIDENTS & MALFUNCTIONS:

During the first trawl, one of the riblines parted on the net. The trawl was repaired by the deck crew prior to the next station but during the second tow, two of the riblines parted and the net was damaged beyond at sea repair. The *Miller Freeman* returned to Astoria to retrieve a back-up trawl net. No time was lost.

COMMENDATIONS: The personnel of the *Miller Freeman* should be recognized and commended for their dedication and professional manner, ensuring a successful and complete cruise.

PERSONNEL: Dave Griffith . . . . . SWFSC  
Bev Macewicz . . . . . SWFSC  
Noelle Bowlin . . . . . SWFSC  
Ric Brodeur . . . . . NWFSC  
Bob Emmett . . . . . NWFSC  
Jen Zamon . . . . . NWFSC  
Marisa Litz . . . . . OSU  
Troy Guy . . . . . OSU  
Casey Benkwitt . . . . . OSU

SWFSC personnel authorized per diem at the rate of \$3.00 per day to be paid via the Imprest Fund at the termination of the cruise.

WATCH HOURS: 1800 - 0559  
0600 - 1759  
1200 - 2359  
0000 - 1159

Date: \_\_\_\_\_

Prepared by: \_\_\_\_\_  
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Approved by: \_\_\_\_\_  
William Fox, Ph.D.  
Science & Research Director  
Southwest Region

