



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
**NATIONAL MARINE FISHERIES SERVICE**  
**SOUTHWEST FISHERIES SCIENCE CENTER**  
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June 4, 2004

F/SWC1:DAG

CRUISE ANNOUNCEMENT

VESSEL: F/V *Frosti*, 0403-FR.

CRUISE DATES: February 29 - March 19, 2004

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

ITINERARY: Depart Port Angeles, Washington after loading and rigging of trawl gear on February 29, 2004. Proceed to first station of the proposed survey track and occupy all 42 scheduled stations (see attached cruise track). The vessel will return to Port Angeles on March 19, 2004.

OBJECTIVES: 1. Collect fishery independent adult sardines for spawning biomass estimates.

2. Collect oceanographic data over a fixed cruise track which covers the region 42°N to 48°N out to 127° W.

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

PROCEDURES: 1. Forty-two primary stations have been plotted on the survey track design with an approximate spacing of 30 nautical miles (please refer to attached diagram). At each station the following activities will be performed:

a. Deployment of a Seabird SeaCat (SBE 19) down to 100 meters, bottom depth permitting. The self-contained CTD will collect depth, temperature, conductivity and chlorophyll data.

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

c. During all transit between stations continuous measurements will be made of acoustic targets using the ES-60. All acoustic targets will be recorded for reoccupation during the night portion of the survey.

d. A thirty minute surface tow using SWFSC's high speed midwater trawl. The trawl will be fitted with Polyform floats at the trawls wings and headrope.

EQUIPMENT: 1. Supplied by scientific party:

- 37% Formalin (SWFSC)
- Sodium borate (SWFSC)
- 30 cc and 50 cc syringes (SWFSC)
- Canulas (SWFSC)
- Pint, 8 oz and 4 oz jars (SWFSC)
- Standard CalCOFI tool boxes (SWFSC)
- Bucket thermometers and holders (SIO)
- Weather observation sheets (SIO)
- SeaCat CTD (PMC)
- Midwater trawls (SWFSC)



