



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
SOUTHWEST FISHERIES SCIENCE CENTER
P.O. BOX 271
LA JOLLA, CA 92038-0271

March 8, 2002

F/SWC1:DAG

CRUISE ANNOUNCEMENT

- VESSEL: NOAA Vessel *David Starr Jordan*, 0204-JD, DS 02-03, (329).
- CRUISE DATES: March 24 - April 25, 2002.
- PROJECT: CalCOFI/DEPM Survey, Fisheries Resources Division.
- ITINERARY: Leg I: Depart San Diego, California at 0800 on March 24, 2002. Proceed to first CalCOFI station 93.3/26.7 (position 32° 57.4'N/117° 18.3'W) and begin the CalCOFI pattern (see attached cruise track). To complete the proposed cruise track, it will be necessary to maintain maximum speed between stations whenever possible. The vessel will complete leg I on or about April 10, 2002 at which time the vessel will go into a dry dock in San Pedro. The work is expected to be completed by April 14, 2002.
- Leg II: After fueling and exchange of scientific personnel, the ship will proceed to areas of high spawning densities identified during the previous leg. Trawling and gill netting operations for adult sardines will comprise the work performed on leg II. The ship will return to San Diego on April 25, 2002.
- OBJECTIVES: 1. To continue an ongoing assessment of pelagic fish stocks between Monterey Bay and La Jolla, California.
2. To monitor environmental conditions within the CalCOFI survey area.
3. To conduct continuous underway sampling of surface waters. Temperature, salinity and chlorophyll will be automatically logged by computer with the output from the GPS navigational unit.
4. To record current profiles throughout the duration of the cruise with the Acoustic Doppler Current Profiler.
5. To make continuous observations of sea birds and marine mammals.
6. To operate a continuous submerged pumping system for identifying and mapping the horizontal egg distribution of epi-pelagic fish.
7. To collect adult Pacific sardine (*Sardinops sagax*) for estimating the standing biomass using the daily egg production method (DEPM) in conjunction with data being collected on the NOAA ship *McArthur*.
- PROCEDURES: 1. Each standard CalCOFI station will include the following:
- a. A CTD/Rosette consisting of 20 10-liter hydrographic bottles will be lowered to 500 meters (depth permitting) to measure



physical parameters and collect water at discrete depths for analysis of: oxygen concentration, salinity, nutrients, chlorophylls and phytoplankton.

- b. A CalBOBL (CalCOFI Bongo) standard oblique plankton tow with 300 meters of wire out, depth permitting, using paired 505 μm mesh nets with 71 cm diameter openings. The technical requirements for this tow are: Descent rate of 50 meters per minute. All tows with ascending wire angles lower than 38° or higher than 51° in the final 100 meters of wire will be repeated. Additionally, a 45° wire angle should be closely maintained during the ascent and descent of the net frame. The Bongo frame will be fitted with a self contained OPC (Optical Particle Counter) mounted inside the port side opening.
 - c. A Manta net (neuston) tow, using a 505 μm mesh net on a frame with a mouth area of 0.1333 m^2 .
 - d. Weather observations.
 - e. A Pairovet (vertical) plankton tow will be taken at all stations inshore of, and including station 70. The Pairovet net will be fished from 70 meters to the surface (depth permitting) using paired 25 cm diameter 150 μm mesh nets. The technical requirements for Pairovet tows are: Descent rate of 70 meters per minute, ascent rate of 70 meters per minute. All tows with wire angles exceeding 15° during the ascent will be repeated.
 - f. At about 1100 hours on each day of the cruise a primary productivity CTD cast consisting of six 10-liter hydrographic bottles will be carried out. The cast arrangement will be determined by a Secchi disc observation. The purpose of the cast is to collect water from 6 discrete depths for daily *in situ* productivity experiments. Measurements of extracted chlorophyll and phaeophytin will be obtained with a fluorometer. Primary production to be measured a C^{14} uptake in a 6 hour *in situ* incubation. Nutrients will be measured with an auto-analyzer. All radioisotope work areas will be given a wipe test before the departure of the SIO technical staff.
 - g. A light meter will be used to measure the light intensity in the euphotic zone once a day with the primary productivity cast.
 - h. During transit between stations, a bird observer will be recording location and species of various sea birds and marine mammals.
2. The egg pump will be mounted inside the ship's hull drawing water from a depth of three meters. During the grid occupation, the pump will be running constantly while the ship is underway.
 3. Once the basic CalCOFI pattern has been completed, the ship will move to areas of observed high egg densities identified during the first leg. Each area will be searched using the Wesmar SONAR for potential trawling targets. Upon determination of a suitable target, the high speed mid-water trawl will be set on the target and retrieved. All fish caught will be subject to a full RACE (Resource Assessment and

Conservation Engineering) work up. Any Pacific sardine caught will be processed for histological examination in addition to the preliminary RACE work up.

4. When conditions arise, an attempt will be made to set a multi-sized mesh gill net at various depths to catch adult sardines. This methodology will be similar to that used by Ward, et al. (2001) in Australia.

- EQUIPMENT:
1. Supplied by scientific party:
 - -80°C Freezer (SWFSC)
 - 37% Formalin (SWFSC)
 - Sodium borate (SWFSC)
 - 30 cc and 50 cc syringes (SWFSC)
 - Canulas (SWFSC)
 - Pint, quart and gallon jars (SWFSC)
 - Scintillation vials (SWFSC)
 - Inside and outside labels (SWFSC)
 - CalCOFI net tow data sheets (SWFSC)
 - 71 cm CalCOFI Bongo frames (SWFSC)
 - 71 cm CalCOFI 505 µm mesh nets (SWFSC)
 - CalCOFI 150 µm Calvet nets and codends (SWFSC)
 - CalCOFI Pairovet frames (SWFSC)
 - 333 µm mesh codends (SWFSC)
 - Inclinator for bongo tows (SWFSC)
 - Digital flowmeters (SWFSC)
 - 10 lb OPC/Bongo weight (SIO)
 - 75 lb Bongo weight (SWFSC)
 - 100 lb hydro weights (SWFSC)
 - CalCOFI Manta net frames (SWFSC)
 - 60 cm CalCOFI 505 µm mesh Manta nets (SWFSC)
 - Standard CalCOFI tool boxes (SWFSC)
 - Bucket thermometers and holders (SIO)
 - Hand held inclinometer (SWFSC)
 - Oxygen titration rig with reagents (SIO)
 - Oxygen flasks (SIO)
 - Guideline Portasal (SIO)
 - Salinity bottles (SIO)
 - Standard sea water (SIO)
 - Data sheets for scheduled hydrographic work (SIO)
 - Weather observation sheets (SIO)
 - CTD and rosette (SIO)
 - Self contained OPC unit for bongo frame (SIO)
 - 10 liter hydrographic bottles (SIO)
 - Isotope van (SIO)
 - Filtration van (SIO)
 - CUFES system
 - High-speed mid-water trawl (SWFSC)
 - 1.8 m² mid-water trawl doors (SWFSC)
 - Multi-sized mesh gill net (SWFSC)
 2. Supplied by *David Starr Jordan*:
 - Starboard hydro winch with ¼" cable for standard Bongo, Pairovet and Manta tows
 - Port winch with .322" conductive cable
 - Paired trawl winches w/ 5/8" cable for trawling
 - J-frame w/block to accommodate .322" cable
 - Guideline Autosal
 - Constant temperature room set at 22°C ±1°C (71.5°F ±2°F)
 - Winch monitoring system
 - Seabird thermosalinometer
 - EK-500 Scientific sounder
 - Serial cable from the SCS for egg pump data acquisition (port lab)
 - Raytheon 12 kHz depth recorder

- Acoustic Doppler Current Profiler w/writeable CD drive
- Stern mounted net reel
- Trawl gantries
- Trawl blocks mounted on gantries

MISCELLANEOUS:

1. The disposal of fish caught will be in accordance with NOAA Administrative order 202-735B dated January 25, 1989.
2. At the completion of the cruise an inspection will be made of scientific working and berthing spaces by the Commanding Officer or his designated representative. The Scientific party is responsible for the condition and cleanliness of spaces assigned to the scientific party.
3. The Cruise Leader will hold a pre-cruise meeting aboard the vessel before departure.
4. The Cruise Leader will hold a post-cruise meeting upon termination of the cruise.
5. NOAA Fleet Medical Policy requires that all scientific personnel embarking on NOAA vessels complete an SF-93 form, Report of Medical History.
6. All dates and times recorded will be in Pacific Standard Time.
7. It is requested that the constant temperature room be set at the required temperature prior to the installation of the Portasal unit.

PERSONNEL: David Griffith, Cruise Leader SWFSC
 Ronald Dotson SWFSC
 Sophie Webb, bird observer* PRBO
 Fernando Ramirez* SIO
 Dave Wolgast, MLR technical coordinator* SIO
 Dennis Gruber* SIO
 Karie Holtermann* SIO
 Susan Becker, ODF chemist* SIO
 Haili Wang* SIO
 Bev Macewicz† SWFSC
 Cornelia Oedekoven SIO
 TBD
 TBD
 SWFSC personnel authorized per diem at the rate of \$2.00 per day to be paid via the Imprest Fund at the termination of the cruise.

* Leg I only
 † Leg II only

WATCH HOURS: 0000-1159; 1200-2359 Charge to account 8L4S0D05

OVERTIME: 156 hours (Authorized total per NMFS personnel)
 NIGHT DIFF: 138 hours (Authorized total per NMFS personnel)

Date: _____ Prepared by: _____
 D.A. Griffith

Approved by: _____
 Michael F. Tillman Ph.D
 Science & Research Director
 Southwest Region

