



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 10, 2000

F/SWC1:DAG

### CRUISE ANNOUNCEMENT

VESSEL: NOAA Vessel *David Starr Jordan*, 0004-JD, DS 00-01, (318).

CRUISE DATES: April 3 - 29, 2000.

PROJECT: CalCOFI Survey, Fisheries Resources Division.

ITINERARY: Depart San Diego, California at 0800 on April 3, 2000. Proceed to first CalCOFI station 93.3/26.7 (position 32° 57.4'N/117° 18.3'W) and begin a modified 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 return to San Diego, California on April 29, 2000.

- OBJECTIVES:
1. To continue an ongoing assessment of pelagic fish stocks between Morro 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 measure optical profiles within the California bight. The optical profile measurements will include pigment concentration and particle absorption.
  6. To make continuous observations of sea birds and marine mammals.
  7. To operate a continuous submerged pumping system for identifying and mapping the horizontal egg distribution of epi-pelagic fish.

- 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  $\mu\text{m}$  mesh nets with 71 cm diameter openings. The technical requirements for this tow are: Descent rate of 50 meters per minute, ascent rate of 20 meters per minute. All tows with ascending wire angles lower than  $38^\circ$  or higher than  $51^\circ$  in the final 100 meters of wire will be repeated. Additionally, a  $45^\circ$  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 (surface) tow, using a 505  $\mu\text{m}$  mesh net on a frame with a mouth area of 0.1333  $\text{m}^2$ .

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  $\mu\text{m}$  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  $15^\circ$  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 as  $\text{C}^{14}$  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. Additional bio-optic studies will be performed during the cruise. A bio-optics package (Multi-wavelength Environmental Radiometer - MER) will be lowered each day in conjunction with the primary productivity cast.
3. 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.

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)
  - 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 paironet frames (SWFSC)
  - 333 µm mesh codends (SWFSC)
  - Inclinometer for bongo tows (SWFSC)
  - Digital flowmeters (SWFSC)
  - 10 lb OPC/Bongo weight (SIO)
  - 75 lb Bongo weights (SWFSC)
  - 100 lb hydro weights (SWFSC)
  - CalCOFI Manta net frames (SWFSC)
  - 60 cm CalCOFI 505 µm mesh 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)
  - Bio-optics van (SIO)
  - Inboard mounted egg pumping system (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
  - Center combo winch w/.322" conductive cable
  - J-frame w/block to accommodate .322" conductive cable
  - A-frame w/block to accommodate .322" conductive cable
  - Guideline Autosal

Constant temperature room set at 22°C ±1°C (71.5°F ±2°F)  
 Winch monitoring system  
 Sea Bird thermosalinograph  
 Simrad EQ-50 color sounder  
 Simrad EK-500 scientific sounder  
 Cable from SCS for egg pump data acquisition (port lab)  
 12 kHz depth recorder  
 Acoustic Doppler Current Profiler w/writeable CD drive

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 Porta Sal unit.
8. A stop will be made at the completion of line 90 in Dana Point to exchange personnel. After the completion of line 63, the *Jordan* will exchange personnel and take on fuel in San Francisco on or about April 21.

PERSONNEL:

David Griffith, Cruise leader	SWFSC
Ronald Dotson	SWFSC
Amy Hays	SWFSC
Ed Renger, MLR technical coordinator	MLRG
David Wolgast	MLRG
Fernando Ramirez	MLRG
Dennis Gruber	MLRG
Mike Thimgan	MLRG
Scott Storms	MRD
Antoine Poteau	CSI
Doug Masten, chemist	ODF
David Hyrenbach, Bird Observer (Leg I)	MLRG
Natalia Collier, Bird Observer	PRBO

SWFSC personnel authorized per diem at the rate of

\$2.00 per day to be paid via the Imprest Fund on a  
Travel Roll Voucher at the termination of the cruise.

WATCH HOURS: 0000-1159 Charge to account #8L1A6A30  
1200-2359

OVERTIME: 164 hours (Authorized total for all NMFS personnel)  
NIGHT DIFF: 162 hours (Authorized total for all NMFS personnel)

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

Prepared by: \_\_\_\_\_  
D.A. Griffith

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

