

Southwest Fisheries Science Center  
P.O. Box 271  
8604 La Jolla Shores Dr.  
La Jolla, CA 92038

April 27, 1998

### PRELIMINARY CRUISE ANNOUNCEMENT

- VESSEL:** NOAA Vessel David Starr Jordan, 9808-JD, DS 98-08, (310).
- CRUISE DATES:** June 11- June 23, 1998
- PROJECT:** Marine Reserves (MERRP), Coastal Fisheries Resources Division
- ITINERARY:** Depart Nimitz Marine Facility, San Diego, at 0900 on June 11, 1998. Sites to be occupied include the following: Big Sycamore Canyon Marine Reserve, Vandenberg Marine Reserve, Anacapa Island and San Miguel Island (see attached diagram). The order in which the sites will be occupied will be determined prior to departure by the principal investigators in collaboration with the ship's officers. A stay of 2-3 days at each site is anticipated and other sites among the Channel Islands may be added as time and weather permit. The cruise will be divided into two 7-day legs, with an exchange of some scientific personnel taking place on Wednesday, June 17, at Santa Barbara. The vessel will return to San Diego on June 23, 1998.
- OBJECTIVES:**
1. To determine the effectiveness of the targeted marine reserves as source areas for the production of fish eggs and larvae that will "re-seed" areas outside of the reserves.
  2. To produce bathymetric maps and overlay habitat and sediment characteristics to produce a full description of available habitat within each reserve.
  3. To determine spawning patterns and egg/larval development rates of resident fish species.
- PROCEDURES:** The basic sampling design/pattern will follow the four nominal depth contours of 20 meters, 40 meters, 60 meters and 200 meters at each site, with stations approximately 0.5 nautical miles apart. Sampling of each nominal depth contour will begin at a predetermined station on one side of the reserve, pass through the reserve, and finish at a station on the other

side of the reserve. Sampling will proceed around the clock until all stations are completed. Specific station coordinates will be provided prior to departure from San Diego. Each region will include the following operations:

A. Egg pump sampling. The egg pump will be used to continuously sample along the four nominal depth contours in and around each reserve. Sampling operations will begin at a predetermined station outside of the reserve, pass through the reserve along that nominal isobath, and finish at a station on the other side of the reserve. Once that particular depth contour pattern has been completed, the vessel will then move to the next depth contour. Full patterns will be run 4 times, ideally with two passes during the day and two at night. All samples will be preserved in scintillation vials using 5% formalin.

B. Calibration of the egg pump samples will be accomplished by taking a series of “vertical” CalBOBL (CalCOFI Bongo) plankton tows, from bottom to surface, using paired nets with 71 cm diameter openings and 333 micron mesh at predetermined stations along each of the four nominal depth contours. Stations will be approximately 0.5 nautical miles apart. As the vessel remains stationary on station, the net will be lowered until the weight/cod-ends reach bottom, then retrieved vertically at a rate of 50-60 meters per minute. Both cod-end samples will be preserved in 5% formalin and will be used to estimate fish egg/ larval abundance and to calibrate the egg pump samples. If prevailing winds/currents preclude maintenance of a wire angle of 15 degrees or less, tows will be treated as oblique samples with wire angle measured periodically during each tow and standard haul factors calculated. An egg pump sample will be taken simultaneously with each net tow.

C. Given adequate time and conditions at each site, separate additional net tows (manta and/or bongo) will be made in areas of abundant fish eggs. These would include non-quantitative tows dedicated to collecting eggs and larvae to aid in species identification and for genetic analysis as well as onboard incubation.

D. In order to map habitat types and assess fish communities, diver transects will be conducted each day during daylight hours using one of the inflatable launches. While the main vessel is conducting vertical bongo tows or egg pump transects, diver-transect lines (100-meter lengths of lead-line anchored and buoyed at each end) will be established perpendicular to the shore, from the inshore boundary of the reserve to the offshore boundary, or to a maximum of 90 feet deep. Two divers will swim on either side of the transect line, recording depth, bottom type, kelp cover and fish fauna. It is requested that the *D.S. Jordan* make available at least one diver for these operations. The position of the transect lines will be recorded using a hand-held differential GPS by support personnel in

the tending inflatable. Ascents will be made at a rate of 30 feet/minute and include a 3 minute decompression safety stop 15 feet from the surface. The dive plans assume good diving conditions and more than one dive per day will be made, time and conditions permitting.

E. Efforts to collect adult fish specimens for genetic analysis will be made periodically as time and weather permit. These collections will be accomplished by “hook and line” fishing from the main vessel and, in shallow depths, by fishing from a second inflatable launch. Thus, it is possible that at certain times during daylight hours 3 separate operations will be taking place.....1) Egg pump transects and net tows from the main vessel 2) Diving operations from an inflatable launch 3) Fishing operations from the second inflatable.

MISCELLANEOUS: Ship will provide one winch operator around the clock for net-tow operations, as well as one diver from 0800-1600 for diving operations.

Cruise meeting - A pre-cruise meeting between the Chief Scientist (and his staff) and the Commanding Officer (and his staff) will be held prior to the start of the cruise to identify operational and logistic requirements (i.e. overtime, modifications, repairs, or procurements). The Cruise Leader will write a more detailed procedure description and discuss it with the ship's officers before sailing so that operations will go smoothly.

A post-cruise debriefing will be held between the Chief Scientist and the Commanding Officer. If serious problems are identified, the Commanding Officer shall notify the Pacific Marine Center in the most direct means available. The time and date for the debriefing will be determined toward the end of the cruise.

Evaluation Form - The Chief Scientist will complete the Ship Operations Evaluation Form and forward it to the Office of NOAA Corps Operations.

Piggyback Projects - none

Ancillary Projects - Ancillary projects are secondary to the objectives of the cruise, should be treated as additional investigations, do not have representation aboard, and are accomplished by the ship's force. Ancillary tasks will be accomplished in accordance with the NOAA Fleet Standing Ancillary Instructions.

Hazardous materials - The Chief Scientist shall be responsible for complying with NC Instruction 6280A, Hazardous Materials and Hazardous Waste; policy, guidance and training, dated February 4, 1991, paragraph 7.g and paragraph 9. By Federal law, the ship may not sail without a complete inventory of MSDS and appropriate neutralizing

agents, buffers, and/or absorbents in amounts adequate to address spills of a size equal to the amount of chemicals brought aboard.

Radioisotopes - none

Disposition of fish - Recreational fishing policy aboard NOAA vessels. In order to participate in recreational fishing, a valid fishing license must be possessed and regulations pertaining to method of capture, as well as size and bag limits must be followed. Note: for salmon fishing with bait, no more than two hooks may be used per line, and all hooks must be barbless circle hooks which are defined as a hook with a generally circular shape, and a point which turns inward to the shank at approximately a 90 degree angle. It is illegal to sell or barter any fish caught recreationally. No fish or shellfish that are taken during scientific research aboard NOAA vessels may be sold, bartered, or kept for home consumption, although consumption aboard the vessel is allowed.

Specimen requests - Every effort will be made to fulfill requests for specimens. However, if the request is too large we may require the requestor to provide a person to collect the data. Please provide your requests at the earliest possible date.

EQUIPMENT: 1. Supplied by the scientific party:

- 10% Formalin
- 80% Alcohol
- Pint and quart sampling jars/lids
- Inside/outside labels
- 71 cm CalCOFI bongo frames (2)
- 71 cm CalCOFI 333 micron mesh nets (4)
- 333 micron mesh cod-ends
- Data sheets/clipboards
- Live incubation tanks (2)
- 1/3 HP water chillers (2)
- Lauda water baths (4)
- Microscopes/lights (2)
- Strainers/sieves/beakers
- Extension cords
- Thermometers (5)
- Scintillation vials for egg pump
- Squirt bottles
- Hoses/fittings
- 5-gallon buckets (15)
- 3-gallon buckets (10)
- Current drifters (3)
- SCUBA gear/wetsuits (3 full sets)

Underwater notepads  
Weather observation data sheets  
Egg pump system/hardware/software  
CalCOFI Manta net frames (2)  
60 cm CalCOFI 505/333 micron mesh nets  
Fishing gear/tackle

2. Supplied by R/V D.S. Jordan

Inflatable launch suitable for 4 divers/equipment  
2nd inflatable launch for near shore fishing operations  
Starboard A-frame and Pullmaster winch with 1/4" wire rope for vertical bongo net tows  
Winch monitoring system for measuring wire out  
ADCP  
Hand-held differential GPS  
1-2 SCUBA divers/gear  
Air compressor to fill SCUBA cylinders  
Access to "clean" seawater  
Hydro weights-100 lbs (2)  
Hydro weights- 75 lbs (2)  
Lab space/ sink space  
Constant temperature room set at 15.0E C (59.0E F)

PERSONNEL:	Russ Vetter, Chief Scientist (Diver)	SWFSC
	Bill Watson, Co-Chief Scientist	SWFSC
	Geoff Moser *	SWFSC
	Elaine Acuna	SWFSC
	Dave Ambrose	SWFSC
	Eric Lynn	SWFSC
	Larry Robertson	SWFSC
	Jason Stannard *	SWFSC
	TBA	
	TBA *	
	TBA (Diver) *	
	TBA (Diver)	
	Teacher-at-Sea	

\* Scientist aboard only for leg I or leg II

\*\*SWFSC personnel authorized per diem at the rate of \$2.00 per day paid via Imprest Fund on a travel roll voucher at end of cruise.

WATCH HOURS: 0000-1159  
1200-2359  
0600-1800 (Divers)

OVERTIME:  
NIGHT DIFF:

Charge to account # 8L1A6A34

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

Prepared by: \_\_\_\_\_  
Larry Robertson

Prepared by: \_\_\_\_\_  
Lt. Todd Berggren

Approved by: \_\_\_\_\_  
Michael F. Tillman, Ph. D.  
Science & Research Director  
SWR