

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

March 23, 1992 F/SWSC:JLB

CRUISE REPORT

VESSEL: NOAA R/V David Starr Jordan, DS91-09 (238).

CRUISE DATES: September 10 - 19, 1991.

PROJECT: Groundfish Survey Cruise, Coastal Fisheries Division, SWFSC - La Jolla CA.

ITINERARY: Embark scientists in San Francisco, CA on September 9. Transit to station locations off Santa Cruz, CA and conduct bottom trawl survey. Trawls were performed at 8 sites (see attached Fig. 1) and were worked up as per standard RACE procedures. Transfer personnel from Pt. Lobos to Jordan on September 10. Transfer personnel to and from Pt. Lobos on Sept. 11. Pickup Chin Lai in Monterey on Sept. 13. Return to Monterey on September 17 and disembark scientists. Trawl for live specimens on Sept. 18 and return to San Diego on Sept. 19.

OBJECTIVES:

1. To collect bottom trawl data to study the distribution of deep slope groundfish species and for comparison with visual transect data obtained in cooperation with Monterey Bay Aquarium Research Institute's (MBARI) remotely operated vehicle (ROV).
2. Tissue samples will be taken from target species for analysis of biochemical adaptation to the slope environment, in particular the oxygen minimum.
3. Stomach samples of target species will be taken as per attached protocol.
4. To collect thornyhead otoliths for radiochemical analysis.
5. To tag lingcod and inject with oxytetracycline when recovered in good physical shape.
6. As per Project Instructions: SP-PMC-2-89, to record sea turtle observations.

7. Collect live specimens for rearing and spawning in the laboratory.

PROCEDURES:

1. Bottom trawl were conducted with modified Aberdeen trawl at assigned stations (Table 1). The trawl catches were worked up per standard RACE procedures. Stomach samples were taken as per attached protocol. A CTD cast was made to 1000m.
2. On the return to San Diego several bottom trawls will be taken to collect live Dover sole, longspine thornyhead and shortspine thornyhead for addition to SWFSC's broodstock.

RESULTS:

1. Eight trawl sites were occupied in Monterey Canyon ranging in depth from 100m to 1400m bottom depth (Table 1, Fig. 1)

- a. Twenty four successful trawls were completed using a NWAFSC modified 75/90 "Poly Aberdeen" trawl, roller gear and 5' by 7' trawl doors. Trawls of 600 m or less were of 30 minutes duration and those of depths greater than 600m were one hour long. Trawl sites were surveyed for trawlability and location prior to net deployment.
- b. A CTD cast to the bottom was made at each site to provide environmental data for physiological samples. A total of 17 CTD casts were made.
- c. Samples of muscle, heart, liver and blood were taken from selected species and frozen in liquid nitrogen for physiological and genetic analysis at the SWFSC (Table 1).
- d. All fish, shellfish, and epibenthic organisms were identified, weighed, and enumerated from each trawl. The watch leader in charge supervised the disposition of the catch. Selected species were sampled and lengths, weights, and sex were recorded. The duration, position and distances of trawls, depths of station, surface and bottom temperatures were recorded and all catch and trawl data were entered into a RACE data collection program.
- e. Otoliths from shortspined and longspined thornyheads were collected for age determination and radiochemical analysis. A total of 391 shortspined and 237 longspined otolith pairs were extracted. An additional 500 lb of longspined thornyheads were frozen for later analysis at the Moss Landing Marine Laboratory.
- f. Two lingcod were tagged and released.

DISPOSITION

OF DATA: RACE data - Dr. John Butler, SWFSC, La Jolla
CTD data - Ron Lynn, SWFSC, La Jolla
Frozen fish tissues, live specimens - Dr. Russell Vetter, SWFSC, La Jolla
Frozen fish specimens (taxonomic collection) - Dr. Richard Rosenblatt, Sio, UCSD, La Jolla.
Trawl data forms and computer logged data, Richard Charter and Eric Lynn, SWFSC, La Jolla

INCIDENTS AND MALFUNCTIONS: On September 11 one tow was repeated when the cod end spilled as the net was pulled up the ramp.
On September 12 operations were suspended while the ship ran into Monterey to allow Chico Gomez to return to San Diego to be with his wife who was critically ill and carrying twins. We were later informed the twin boys were delivered by Caesarean section and that mother and twins were well.

COMMENDATIONS: The personnel of the David Starr Jordan should be recognized for their dedication to the completion of the cruise with all objectives met and completed on schedule.
The deck department performed admirably even when short handed and trawling for long hours.
The stewards department is to be commended for providing excellent food and for saving meals after meal time when the scientific party was engaged in working up trawls on the deck.
The engineering department worked the same long hours and provided hydraulics for trawling and sea water for cleaning up after trawls.
The electronics department made the seawater connection for the CTD and maintained ship to shore communications throughout the cruise.
The bridge officers did an excellent job of surveying and trawling on the cruise. They also developed an innovative way of finding the tricky 400m site.
The scientific personnel are to be commended for the long hours and the amount of work accomplished. They quickly adapted to routines and new equipment and procedures.

PERSONNEL: John Butler, Ch Sci, SWFSC, La Jolla, CA***
Peter Adams, Watch Leader SWFSC, Tiburon, CA**
Ron Dotson, Watch Leader, SWFSC, La Jolla, CA***
Tom Laidig, SWFSC, Tiburon, CA**
Kelly Silberberg, SWFSC, Tiburon, CA**
Kathy Dahlin, SWFSC, La Jolla, CA***
Eric Lynn, SWFSC, La Jolla, CA*
Russell Vetter, SWFSC, La Jolla, CA*
Sean Costa, SWFSC, La Jolla, CA*
Sue Manion, SWFSC*
N. Chin Lai, USD
Donna Kline, Moss Landing Marine Laboratory

Date: _____ Prepared by: _____
John L Butler

Approved by: _____
Izadore Barrett, Director
SWFSC, NMFS

Table 1. Occupied Stations

Site #1 - Low relief bottom (100 m) 9940 X 27434, 9940 Y 42846.3 to 9940 X 27428.1, 9940 Y 42851.6.

Site #2 - Low relief bottom (200 m) X 27416.6, Y 42853.6 to X 27414.1, Y 42858.

Site #3 - Low relief bottom (400 m) X 27438.3, Y 42827.3 to X 27433.5, Y 42829.6.

Site #4 - Low relief bottom (600 m) X 27416.0, Y 42830.5 to X 27410.5, Y 42835.9.

Site #5 - Low relief bottom (800 m) X 27410.1, Y 42827.8 to X 27402.6, Y 42837.5.

Site #6 - Low relief bottom (1000 m) X 27411.4.5, Y 42820.6 to X 27401.4, Y 42829.9.

Site #7 - Low relief bottom (1200 m) X 27405.2, Y 42815.0 to X 27398.4, Y 42824.6.

Site #8 - Low relief bottom (1400 m) X 27394.1, Y 42821.0 to X 27390.1, Y 42833.4.

Table 2. Tissue samples collected on 9109-JD.

Species	Muscle	Heart	Liver	Blood
Dover sole	68	77	68	48
Shortspined Thornyhead	57	57	57	56
Longspined Thornyhead	66	66	66	51
Rex sole	38	38	38	11
Sablefish	23	23	23	18
Deepsea sole	12	12	12	9
Pacific grenadier	39	39	39	4
Giant grenadier	21	21	21	1
Pacific flatnose	3	3	3	3
Splitnosed rockfish	16	16	16	7
Petrale sole	5	5	5	5
Chilepepper rockfish	13	13	13	13
Aurora rockfish	5	5	5	5
California slickhead	2			2

Table 3. Live fish returned to the Southwest Fisheries Science Center aquarium.

Dover sole	155
Rex sole	20
Shortspined Thornyhead	35
Eelpouts	15
Petrale sole	1
Cat shark	1