



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

May 5, 2000

F/SWC1:DAG

CRUISE ANNOUNCEMENT

VESSEL: NOAA Vessel *David Starr Jordan*, 0006-JD, DS 00-03, (320).

CRUISE DATES: June 19 - July 16, 2000.

PROJECT: Shark/Rockfish Survey, Fisheries Resources Division.

ITINERARY: Leg I: Depart San Diego, California at 0900 on June 19, 2000. For daytime activities, the ship will occupy 7 primary long line sites for mako sharks, *Isurus oxyrinchus*, and 5 sites for thresher sharks, *Alopias vulpinus*, (see station locations on the attached map). For mako sharks, each site will be occupied twice, once on leg I and again on leg II. The sites designated for the thresher shark long lining will vary in effort depending on each site's location. During nighttime operations, the ship will occupy a proposed 120 stations conducting single 10 m² MOCNESS (Multiple Opening-Closing Nets/Environmental Sampling System) tows down to 200 meters (depth permitting). The ship will return to San Diego on or around July 3, 2000.

Leg II: Depart San Diego on or around July 4, 2000 and reoccupy the original 7 primary long line sites. Night operations will be as before. Once the primary sites have been occupied, sets will be performed at the secondary mako shark sites as well as the remaining thresher shark sites. The ship will return to San Diego on July 16, 2000.

- OBJECTIVES:
1. Evaluate a CPUE index based on previously existing fishery for shark abundance suitable for periodic population indexing.
 2. Tag and release live and healthy sharks.
 3. Collect biological samples which include reproductive, muscle and heart tissue, stomach contents and whole specimens.
 4. Collect data on long line by-catch including swordfish (*Xiphias gladius*).
 5. Conduct 10 m² MOCNESS tows down to 200 meters. The samples from each net will be live sorted, all rockfish (*Sebastes* spp.), sardine (*Sardinops sagax*) and anchovy (*Engraulis mordax*) larvae will be picked out and preserved. Any market squid (*Loligo opalescens*) paralarvae will also be picked out and preserved.

- PROCEDURES:
1. A test of set fishing procedures and operations of the long line gear will be conducted in the early afternoon of departure day. At each mako site, two regularly scheduled fishing sets will be conducted during day light hours throughout the cruise. The mako shark set line will consist of approximately 200 hooks attached to a stainless steel wire two miles in length. The thresher shark set line will consist of approximately 100 hooks attached to a mono filament line one mile in length. Each hook will be baited with mackerel. The soak time for each set will last approximately 4 hours. Sharks will be tagged with spaghetti tags as well as tetracycline.
 2. Once the daytime long line sets have been retrieved, the ship will move to a predetermined location to begin



MOCNESS tows. Each tow will descend to a depth of 200 meters (depth permitting) and will be retrieved obliquely. In addition to the juvenile rockfish index, primary scientific objectives are to obtain information on vertical distribution and population genetics of pelagic juvenile rockfishes. The depths which will be sampled during the oblique ascent will fall into the following strata:

net 1= 0-200m
net 2= 200-150m
net 3= 150-100m
net 4= 100-50m
net 5= 50-25m
net 6= 25-0m

To expedite the live sorting the two shallowest samples (nets 5 and 6) will be sorted first and the other samples only if there is time, in descending order. All rockfish and other target species sorted from the samples will be preserved in alcohol for potential aging and genetics as well as archiving for identification verification. The remainder from the sorted samples will be discarded. All unsorted samples will be preserved in formalin for sorting at the laboratory when time and resources permit.

For shallow tows where the bottom is a safety consideration the net will be towed no closer than 25m from the bottom. Where there is any uncertainty about the safety of the gear and personnel, the towing track will be run over and checked with depth sounder prior to the tow. Tows on the shelf and slope will be run along constant isobaths when conditions (wind and swell) permit.

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 and quart jars (SWFSC)
 - Scintillation vials (SWFSC)
 - Inside and outside labels (SWFSC)
 - MOCNESS net tow data sheets (SWFSC)
 - Standard CalCOFI tool boxes (SWFSC)
 - Bucket thermometers and holders (SWFSC)
 - Weather observation sheets (SWFSC)
 - Dissecting microscope (SWFSC)
 - Lighted magnifying glass (SWFSC)
 - Sorting trays (SWFSC)
 - Mono- and Dibasic Sodium Phosphate (SWFSC)
 - 95% Ethanol (SWFSC)
 - Tris buffer (SWFSC)
 - Sling psychrometer (SWFSC)
 - Formalin setup draining sock (SWFSC)
 - Triple-beam balance (SWFSC)
 - 10 m² MOCNESS (SWFSC)
 - MOCNESS Computer system (SWFSC)
 - Standard stainless steel, commercial long line gear 2 miles in length (SWFSC)
 - Standard monofilament commercial long line gear 1 mile in length with hook timers (SWFSC)
 - 30 cases frozen bait (SWFSC)
 - Sampling and tagging supplies (SWFSC)
 - XBT probes (SWFSC)
 - Mako shark swim tank, 2 X 2 X 8 feet long (SWFSC)
 - Shark tagging platform (SWFSC)
2. Supplied by R/V *David Starr Jordan*:
 - Combo winch with .625" conductive cable on port or starboard drum

Winch monitoring system
 Trawl drum, long line fair-lead and necessary
 blocks for line retrieval
 XBT launcher and CPU processor
 Freezer space for 30 cases of bait
 10 m² MOCNESS support stantions
 Sea Bird thermosalinometer
 Simrad EQ-50 color sounder
 Simrad EK-500 scientific sounder
 12 kHz Raytheon precision depth recorder with spare
 recording paper
 Acoustic Doppler Current Profiler w/CD-R drive

MISCELLANEOUS:

1. The disposal of fish and squid 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.

PERSONNEL: Leg I:

Dave Holts, chief scientist	SWFSC
Rand Rasmussen	SWFSC
Darlene Ramon	SWFSC
David Griffith, cruise leader	SWFSC
Sherri Charter	SWFSC
Dave Ambrose	SWFSC
Cindy Taylor	SWFSC
Josh Gregory	SIO
Juan Carlos-Perez	CICESE
Allen Crossland, teacher at sea program	
Richie Ellis, teacher at sea program	
Rebecca Leach, volunteer	

Leg II:

Dave Holts, chief scientist	SWFSC
Rand Rasmussen	SWFSC
Darlene Ramon	SWFSC
Dave Griffith, cruise leader	SWFSC
Bill Watson	SWFSC
Elaine Acuña	SWFSC
Cindy Taylor	SWFSC
Chin Lai	VA
Mary Nishimoto	UCSB
Arturo Ocampo-Torrez	CICESE
Barbara Ziegler	UCSB
Pam Peiper, volunteer	
Gary Patterson, teacher at sea program	
Frank Nielson, volunteer	

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: 0600-1759 Charge to account #8L1A6A30
1800-0559

OVERTIME: 1080 hours (Authorized total for all NMFS personnel)

NIGHT DIFF: 996 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

Shark and Rockfish Cruise

June 19 - July 16

