



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
SOUTHWEST FISHERIES SCIENCE CENTER  
8901 La Jolla Shores Drive  
LA JOLLA, CA 92037-1508

October 21, 2014

F/SWC1:AEH

CRUISE ANNOUNCEMENT

VESSEL: R/V *New Horizon* (SIO) Cruise 1411-NH.

CRUISE DATES: Nov. 8 - 25, 2014.

PROJECT: CalCOFI Survey, Fisheries Resources Division.

ITINERARY: Depart San Diego, California at 0800 on November 8, 2014. Proceed to first CalCOFI station 93.3/26.7 (position 32° 57.4'N/117° 18.3'W) and begin a standard CalCOFI pattern (see attached cruise track). The vessel will return to San Diego, California on November 25, 2014.

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 record continuous acoustic targets obtained with the Simrad EK-60 scientific sounder.

PROCEDURES: 1. Each standard CalCOFI station will include the following:

- a. A CTD/Rosette consisting of 24 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  $\mu$ 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° 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. A self-contained LOPC(Laser Optical Particle Counter)will be mounted in the port side opening during each tow. The port side sample will be preserved in buffered ethanol at all stations inshore of, and including station 100.0.

c. A Manta net (surface) tow, using a 505 µm mesh net on a frame with a mouth area of 0.1333 m<sup>2</sup>.

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. A PRPOOS(Planktonic Rate Processes in Oligotrophic Ocean Systems) net tow will be taken at all stations on line 90.0 and 80.0 as well as stations out to and including station 70.0 on lines 86.7 and 83.3. These stations are occupied as part of the LTER(Long Term Ecological Reserve) project. The mesh of the PRPOOS net is 202 µm and the tow is a vertical cast up from 210 meters.

g. 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 C<sup>14</sup> 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.

h. A light meter(secchi) will be used to measure the light intensity in the euphotic zone once a day with the primary productivity cast.

i. During transit between stations, a bird observer and three mammal observers will be recording location and species of various sea birds and marine mammals.

j. During transit between most daylight stations, an acoustic hydrophone array will be towed off the stern with a cable/winch to record sounds from marine mammals. Upon approaching a station, a sonobuoy will be deployed one nautical mile prior to stopping for station work.

EQUIPMENT: 1. Supplied by scientific party:  
37% Formalin (SWFSC)

Sodium borate (SWFSC)  
95% Ethyl alcohol (SWFSC)  
pH 8 Tris buffer (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  $\mu$ m mesh Bongo nets (SWFSC)  
CalCOFI 150  $\mu$ m calvet nets and codends (SWFSC)  
CalCOFI pairovet frames (SWFSC)  
333  $\mu$ m mesh codends (SWFSC)  
LTER PRPOOS frames(LTER)  
LTER 202  $\mu$ m mesh nets and codends(LTER)  
Inclinometer for bongo tows (SWFSC)  
Digital flowmeters (SWFSC)  
75 lb Bongo weights (SWFSC)  
170 lb hydro weight (LTER)  
CalCOFI Manta net frames (SWFSC)  
60 cm CalCOFI 505  $\mu$ m 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)  
Nutrient auto analyzer with reagents (SIO)  
Nutrient collecting tubes (SIO)  
Guildline Portasal (SIO)  
Salinity bottles (SIO)  
Standard sea water (SIO)  
Data sheets for scheduled hydrographic work (SIO)  
Weather observation sheets (SIO)  
CTD and rosette (SIO)  
10 liter hydrographic bottles (SIO)  
Isotope van (SIO)  
LTER van (LTER)  
LTER reagents and collection gear (LTER)

2. Supplied by R/V *New Horizon*:

Hydro winch with  $\frac{1}{4}$ " cable for standard Bongo, Pairovet and Manta tows  
Oceanographic winch w/.322" conductive cable  
J-frame w/blocks to accommodate .322" conductive cable and  $\frac{1}{4}$ " mechanical cable  
Constant temperature in main lab set at 22°C  $\pm$ 1°C (71.5°F  $\pm$ 2°F)  
Winch monitoring system  
12 kHz Knudsen precision depth recorder  
Acoustic Doppler Current Profiler

MISCELLANEOUS:

1. At the completion of the cruise an inspection will be made of scientific working and berthing spaces by the Master or his designated representative. The scientific party is responsible for the condition and cleanliness of spaces assigned to the scientific party.
2. The Cruise Leader will hold a pre-cruise meeting aboard the vessel before departure.

3. All dates and times recorded will be in Pacific Standard Time.

SWFSC PERSONNEL:

Amy Hays . . . . .	SWFSC
David Griffith . . . . .	SWFSC
Susan Manion . . . . .	SWFSC

NMFS personnel authorized per diem at the rate of \$5.00 per day to be paid via travel voucher at the termination of the cruise.

WATCH HOURS:      0000-1159.....OVERTIME:.....120 hours  
                          1200-2359.....NIGHT DIFF:.....108 hours

20 October 2014

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

Prepared by: \_\_\_\_\_  
Amy E. Hays

Approved by: \_\_\_\_\_

Kristin Koch  
Science & Research Director (acting)  
Southwest Fisheries Science Center

