

Sampling at Sea in 1988

Sampling, collecting, and monitoring the ocean waters and marine life of the Southern California Bight are an integral part of the research conducted by the Southern California Coastal Water Research Project. SCCWRP personnel use research vessels

provided by sponsoring agencies for cooperative projects, or private commercial charter boats.

From January 1 to December 31, 1988 SCCWRP staff participated in 86 cruises totaling 344 man-days at sea. An outline of ocean activities

conducted by SCCWRP during 1988 is listed in Table 1, including the date, vessel, activity, and location of the work conducted.

A brief description of activities conducted at sea by SCCWRP staff are listed below:



Grabs: The modified Van Veen grab sampler is used to obtain sediment samples of the ocean floor for biological, physical, and chemical analysis. The grab sampler is deployed from a boat and is most effective for sampling soft substrates. Van Veen grabs can collect sediment samples measuring 0.1 m² of surface area and up to 18 cm deep.

CTD: A conductivity, temperature, and depth profiler (Neil Brown CTD) is lowered and raised through the water column to monitor characteristics of the ocean water during a particular time period at a given place. The single-system CTD simultaneously measures of conductivity, temperature, dissolved oxygen, and light transmissivity at various depths in the water column. CTD samples are usually collected concurrently with the deployment of other monitoring equipment (eg. sediment collectors) to collect additional oceanographic data.



Sediment trap collectors: SCCWRP-built sediment collectors are used to collect suspended and resuspended particulates settling to the ocean floor. Several sediment trap collectors are usually deployed on a single mooring at various depths in the water column.

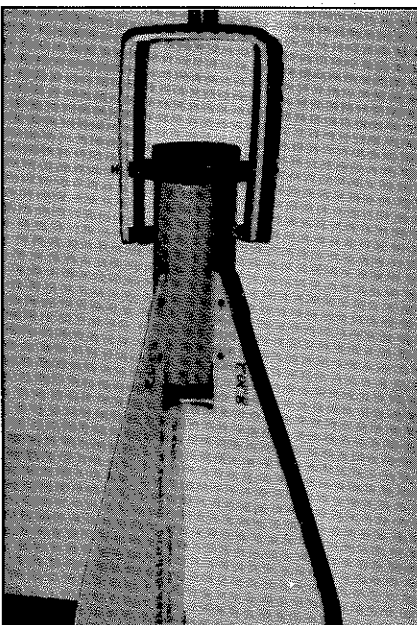
Coring: A SCCWRP-designed corer is used to collect samples of bottom sediments for chemical and physical analysis. The instrument is deployed from a boat and penetrates deep, soft sediment up to 1 m below the sediment surface. A chronological sediment record is obtained from these samples. To date SCCWRP has collected over 200 cores of sediments off the southern California coast in water depths ranging from 30 m to 500 m.





Microlayer sampling: The microlayer is the upper 50 μm of surface water that accumulates aerial and subsurface inputs. A SCCWRP-manufactured microlayer sampler is deployed from a primary vessel and samples the ocean surface microlayer at specific locations while tied to a secondary inflatable boat. Samples are analyzed in the laboratory for chemical contaminants.

Trawls: Trawling is conducted to sample demersal fish and large benthic invertebrate diversity and numbers of organisms inhabiting the ocean floor. Animals collected by trawling are identified, counted, measured, and sometimes transported to the laboratory for analysis.



Current meters: SCCWRP-designed current meters are deployed to collect data about ocean currents during specific time periods. Since 1974, SCCWRP has collected information about currents from many locations and depths throughout the nearshore areas of the Southern California Bight. Data are usually recorded for 32 days, and an inventory of these deployments are available. SCCWRP current meters are presently being upgraded with microprocessors to make data acquisition and storage easier.

Hook and line fishing: Rig fishing is utilized to collect fish from inaccessible areas where it is not possible to deploy otter trawls. This sampling technique is used to capture target species for laboratory or experimental analysis.

Longline fishing: This multi-hook fishing technique is employed to collect many fish in a short time. Using the longline method, specific species of fish can be collected alive for laboratory analysis.

Since 1973 SCCWRP staff have logged 4,677 man-hours during 1,401 days at sea without serious injury, a credit to SCCWRP's Chief of Marine Operations Harold Stubbs, Marine Biologist Dario Diehl, and others involved in SCCWRP oceanographic activities. SCCWRP thanks all cooperating agencies that provided ocean transport during 1988. In addition, we thank the crews of each boat for their expert assistance. Cooperating agencies, crews, and their vessels are listed in Table 2.

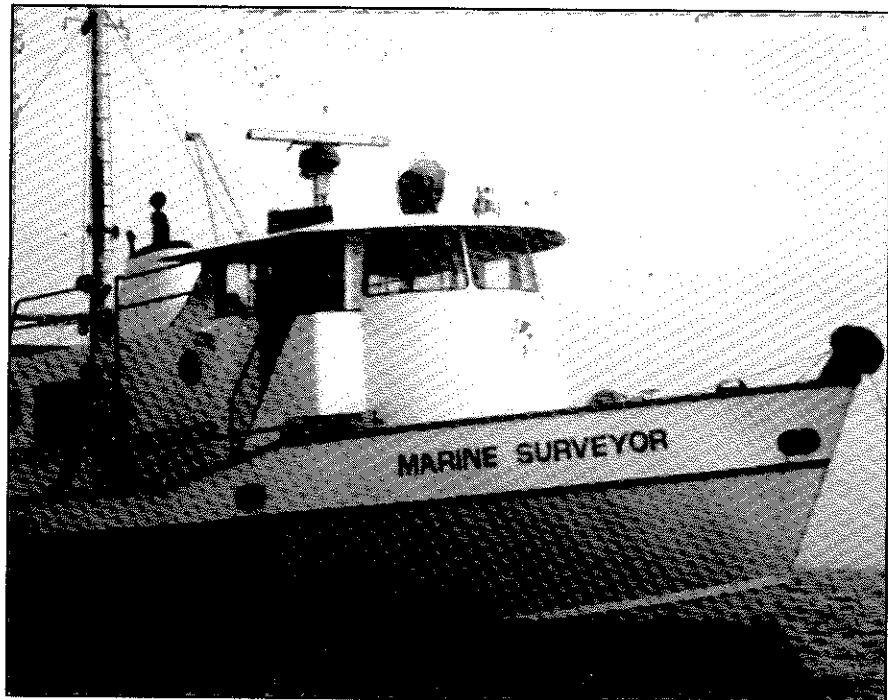


Table 1. SCCWRP research cruises in 1988.

Date	Vessel	Activity	Location
January			
5-7	<i>Monitor III</i>	Trawls & sediment collectors	San Diego
12	<i>Whaler</i>	Longline fishing	Los Angeles Harbor
13-15	<i>Marine Surveyor</i>	Trawls & grabs	Santa Monica Bay
13	<i>Marine Surveyor</i>	Night trawls for white croaker	Marina del Rey
22	<i>Marine Surveyor</i>	Trawls & grabs	Santa Monica Bay
26	<i>Golden West</i>	Night trawls	Los Angeles Harbor
29	<i>Marine Surveyor</i>	Trawls & grabs	Santa Monica Bay
February			
1	<i>Sea-S-Dee</i>	Sediment collectors & CTD	White Point
4	<i>Marine Surveyor</i>	Trawls for hornyhead turbot	Santa Monica Bay
10	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
12	<i>Marine Surveyor</i>	Trawls & grabs & CTD	Santa Monica Bay
23	<i>Golden West</i>	Night trawls	Los Angeles Harbor
29	<i>Marine Surveyor</i>	Current meters & sediment collectors	Santa Monica Bay
March			
7	<i>Sea-S-Dee</i>	Sediment collectors & CTD	White Point
15	<i>Sea-S-Dee</i>	Grabs for <i>Capitella</i>	White Point
17	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
28	<i>Sea-S-Dee</i>	Grabs for bioassay	White Point
29,30	<i>Monitor III</i>	Grabs for bioassay	San Diego Harbor
31	<i>Marine Surveyor</i>	Grabs for bioassay	Santa Monica Bay
April			
14	<i>Enchanter IV</i>	Sediment collector & CTD	Orange County
19	<i>Sea-S-Dee</i>	Current meters, sediment collectors, & CTD	White Point
20-22	<i>Marine Surveyor</i>	Trawls & grabs	Santa Monica Bay
26	<i>Whaler</i>	Hook & line for kelp bass	White Point
28,29	<i>Marine Surveyor</i>	Trawls & grabs	Santa Monica Bay
May			
3	<i>Whaler</i>	Hook & line for kelp bass	White Point
4	<i>Vantuna</i>	Hook & line for kelp bass	Santa Catalina Island
5	<i>Golden West</i>	Night trawls for white croaker	Los Angeles Harbor
11	<i>Whaler</i>	Hook & line for kelp bass	White Point
23	<i>Con-Suerte</i>	Hook & line for kelp bass	San Mateo Point

Table 1 continued

25	<i>Sea-S-Dee</i>	Current meters, sediment collectors, & CTD	White Point
26	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
June			
2,8	<i>Whaler</i>	Hook & line for kelp bass	White Point
13-15	<i>Monitor III</i>	Van Veen grabs for EPA	San Diego Harbor
16,17	<i>Monitor III</i>	Summer trawls	Point Loma
20	<i>Enchanter IV</i>	Sediment collectors	Orange County
22	<i>Sea-S-Dee</i>	Sediment collectors	White Point
23	<i>Marine Surveyor</i>	Microlayer sampling	Santa Monica Bay
28	<i>Marine Surveyor</i>	Install current meters	Santa Monica Bay
July			
21	<i>Enchanter IV</i>	Calibrate CTD	Orange County
22	<i>Whaler</i>	Hook & line for kelp bass	White Point
26	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
27	<i>Golden West</i>	Night trawls for white croaker	Los Angeles Harbor
28,29	<i>Marine Surveyor</i>	Trawls & grabs	Santa Monica
August			
2	<i>Whaler</i>	Hook & line for kelp bass	White Point
3-5	<i>Marine Surveyor</i>	Trawls & grabs	Santa Monica Bay
12	<i>Marine Surveyor</i>	Current meters & sediment collectors	Santa Monica Bay
17,18	<i>Marine Surveyor</i>	Microlayer sampling	Santa Monica Bay
25	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
September			
1	<i>Sea-S-Dee</i>	Sediment collectors & CTD	White Point
16	<i>Marine Surveyor</i>	Recover current meters	Santa Monica Bay
22	<i>Seawatch</i>	Equipment demonstration	Los Angeles Harbor
28	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
29	<i>Golden West</i>	Night trawls for white croaker	Los Angeles Harbor
October			
3	<i>Seawatch</i>	Recover current meters	Santa Monica Bay
4	<i>Sea-S-Dee</i>	Sediment collectors & CTD	White Point
13	<i>Seawatch</i>	Current meters	Santa Monica Bay
21	<i>Con-Suerte</i>	Grabs and trawls	Orange County
26	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
31	<i>Sea-S-Dee</i>	Sediment collectors & CTD	White Point

Table 1 continued

November			
7,10	<i>Marine Surveyor</i>	Trawls and grabs	Santa Monica Bay
14,17	<i>Marine Surveyor</i>	Coring	Santa Monica Bay
18,28	<i>Marine Surveyor</i>	Trawling	Santa Monica Bay
30	<i>Enchanter IV</i>	Sediment collectors & CTD	Orange County
December			
2	<i>Marine Surveyor</i>	Coring	Santa Monica Bay
5	<i>Sea-S-Dee</i>	Sediment collectors, <i>Mysid</i> trawls, & CTD	Los Angeles Harbor & White Point
14	<i>Enchanter IV</i>	CTD co-op	Orange County
19	<i>Marine Surveyor</i>	Install current meters	Santa Monica Bay
21	<i>Sea-S-Dee</i>	Install current meters	White Point

Table 2. Cooperating agencies, their vessels, and the crews that assisted SCCWRP during 1988 research investigations.

Agency	Vessel	Crew
City of Los Angeles Bureau of Sanitation	<i>Marine Surveyor</i>	Steven Kmeth Peter Cristie William Schafer
County Sanitation Districts of Los Angeles County	<i>Ocean Sentinel</i>	Steve Gregson
County Sanitation Districts of Orange County	<i>Enchanter IV</i>	Tom Pesich Fred O'Brien
City of San Diego Dept. of Water Utilities	<i>Monitor III</i>	Jack Russell Richard Mange
Sea Ventures, Inc.	<i>Con-Suerte and Early Bird</i>	Kenny Nielson Robert Lohrman
Occidental College	<i>Vantuna</i>	Mark Kiby
University of Southern California Marine Support Facility	<i>Golden West and Seawatch</i>	Don Newman (Operations Director)