

The Southern California Marine Institute



Annual Report 2012-2013

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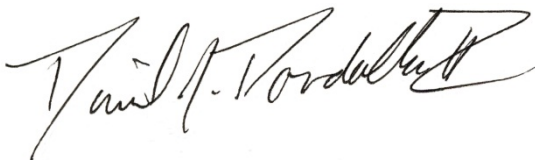
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Mission

The Southern California Marine Institute consortium represents a strategic alliance of 11 major universities in Southern California, eight universities from the California State University System representing the Ocean Studies Institute (Dominguez Hills, Fullerton, Long Beach, Los Angeles, Northridge, Pomona, San Bernardino and San Marcos) and the combined marine resources of the University of Southern California, Wrigley Institute for Environmental Studies, University California Los Angeles, and Occidental College. The Southern California Marine Institute is committed to providing marine expertise and hands-on experience to students at all levels, to achieve the highest and most efficacious level of research, to monitor the marine environment and to increase public awareness.

Director's Message

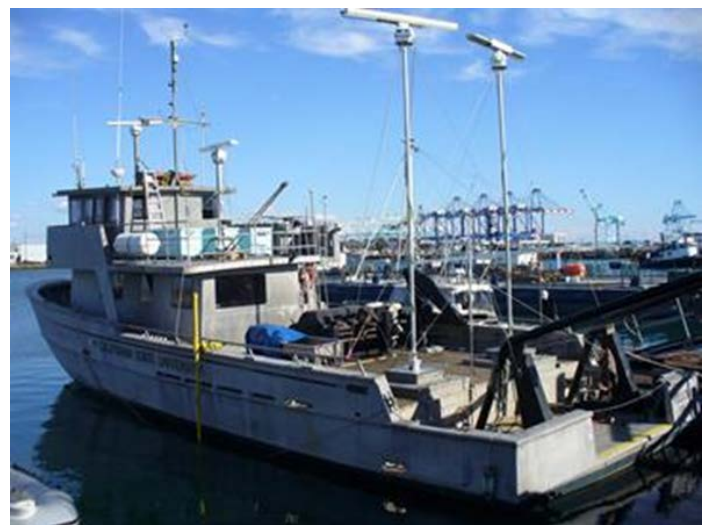
As I sit in my office, which happily overlooks the wharfs and bay, all I can think is 'wow'. This place is on the move. As you'll see from our report, not only are we growing in every way, but we are also upgrading and improving our facilities to better serve the SCMI community. This year we increased our staff, vessel use, research scuba diving, and reinvigorated our K-12 program. There are a variety of reasons why this is happening. We have upgraded our facility including a new dive locker, a new dock, new gangways, a new seawater system is in progress, and the interior of the main building has been painted. While we are a number of years off from our move to AltaSea, the excitement and planning around the new marine institute continues unabated. This interest in AltaSea is really only a manifestation of how important the various marine programs we service are to our member universities but also to the region in general. There is no question that the marine sciences are increasingly critical to the region. As a result, education and research opportunities are increasing. While all these metrics are being met, the real credit needs to go to the SCMI staff, they do the hard work and I would like to thank them. The next year already appears to be more dynamic, I look forward to seeing you all in the Port of Los Angeles.



Dan Pondella

Introduction

The Southern California Marine Institute (SCMI) has had a very eventful and exciting year. We welcomed Dr. Daniel Pondella as the new SCMI Director in August 2012. Dr. Pondella has been on the SCMI Board of Directors for 5 years and served as SCMI Board of Director President for 3 years. Dr. Pondella is an Associate Professor of Biology and the Director of the Vantuna Research Group at Occidental College. The year ended on a high note with the Los Angeles Mayor's event unveiling of the newly named AltaSea, a marine research facility proposal in the Port of Los Angeles. AltaSea will be the future home of SCMI and is expected to open in 2019. In the meantime, the SCMI staff has been working hard to improve SCMI's existing facility in Fish Harbor. This year construction has begun on a new closed seawater system, we have installed refurbished docks, and created a new dive locker for our AAUS Research Dive Program. SCMI continues to fulfill our mission in the areas of research and education and has seen a 30% growth in the use of the RV Yellowfin, and the numbers of students, faculty, and researchers using the RV Yellowfin has increased 11%. Overall visitors to SCMI has increased with the partnership of Mountain and Sea Educational Adventures (MSA) who are utilizing our docks for their vessel that takes school groups K-12 to Catalina Island for science educational camping trips. We are collaborating with MSA and hope in the next year to grow our partnership to include the use of SCMI's classrooms and lab space and service more K-12 educational programs.



2012-2013 Highlights

AltaSea Formerly City Dock No. 1 Project

AltaSea is the new proposed marine research campus in the Port of Los Angeles. This 28-acre campus will be a collaboration of marine research, education, business, government, and the community. SCMI is the proposed first tenant in this innovative marine research facility. The planned facility will include 4,100 linear feet of waterfront dock and wharf space, deep draft berths to accommodate large research vessels, circulating seawater and marine life support system, research and teaching laboratories, and an interpretive center. AltaSea's vision is to develop a world class urban marine research and innovation center and offer a sea of opportunity to the community.



Closed Seawater Filtration System Construction

SCMI has made great strides in the construction of a closed seawater filtration system with the hard work of SCMI's Facility Coordinator and Aquarist Brian Tufts, Demonstration Technician Bob Adams, and Vessel Engineer Denis Mahaffy. The new system will have the capacity to hold 5,000 gallons and support 16 holding tanks. The Seawater filtration system comprises of 20 silica sand filters, five reservoirs, and chillers, basket flow box sumps with particle bead filters and charcoal filters, and protein skimmers. The construction of SCMI's new closed water filtration system will help fulfill our mission by supporting more research and educational programs and eliminates our need for a costly NPDES permit and laboratory fees.



Facility Improvements

SCMI has been working hard to maintain and improve our facilities to better serve students, faculty, and researchers. Refurbished main docks have been installed and new gangways have been constructed. A dive locker has been built in our Tech room to help serve OSI AAUS Research Dive Program and any researchers conducting dives through SCMI. The dive locker has an air compressor and hanging storage. The dive lockers close proximity to the docks makes it an ideal location. The SCMI staff has been working hard to clean out the facility and ready it for future tenants interested in conducting research at SCMI. There is currently laboratory and office space available as well as holding tanks space in our closed seawater filtration system. SCMI plans to grow and service more educational and research programs leading up to the move to AltaSea.



Educational Activities

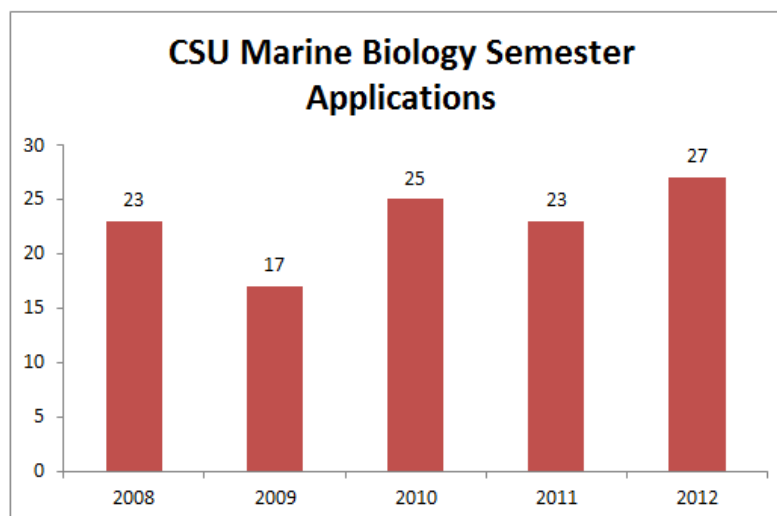
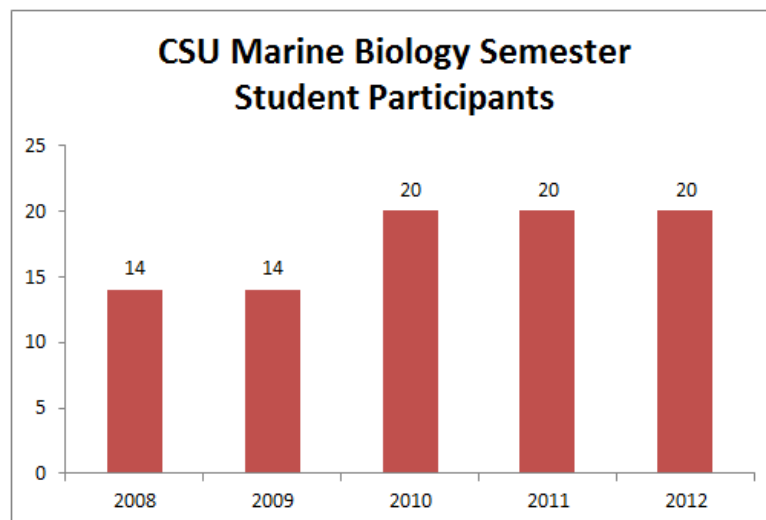
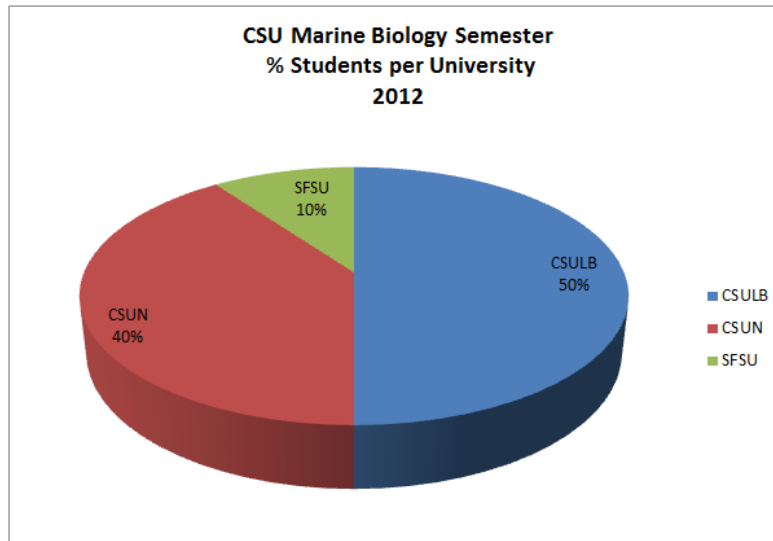
CSU Marine Biology Semester on Catalina Island

The CSU Marine Biology Semester on Catalina continues to grow and benefit CSU students each Fall. The semester is a rewarding opportunity for CSU students to learn hands on marine biology and guide them to a career in marine science. The Fall 2012 Marine Biology Semester was a great success with a total of 20 students from three different CSU's attending. We have received positive feedback from the participating students and are excited to see the program grow to more CSU campuses. The Fall 2013 Semester has seen a high application rate from a large number of CSU campuses.



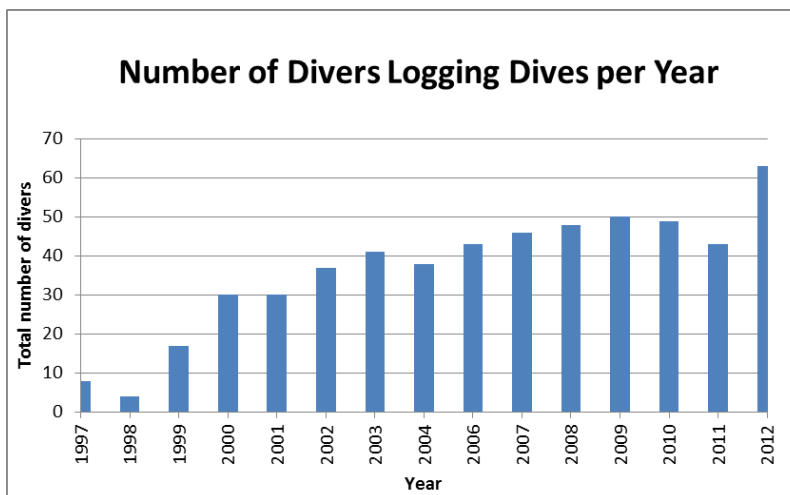
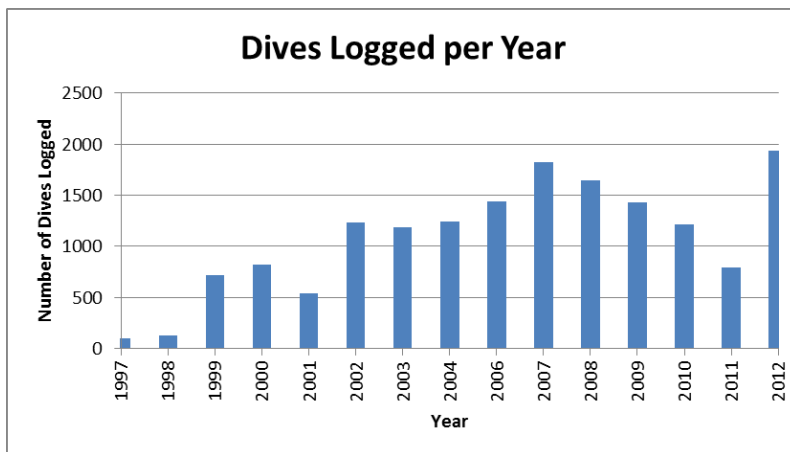
CSU Marine Biology Semester on Catalina Fall 2012

University	# Students	Professors	Courses
CSULB	10	Dr. Larry Allen	BIOL 421 – Marine Biology (4 units)
CSUN	8	Dr. Bob Carpenter	BIOL 313 – Marine Invertebrate Zoology (4 units)
SFSU	2	Dr. Steve Dudgeon	BIOL 504 – Marine Phycology (4 units)
Total # Students	20	Dr. Peter Edmunds	BIOL 495C – Directed Research in Marine Biology (3 units)
Total # of Schools	3		



OSI AAUS Research Dive Program

The summer 2013 OSI AAUS Research Dive course had a total of 13 participants. The course was taught by OSI Dive Safety Officer Jim Cvitanovich and California Science Center’s Dive Safety Officer Chris Wade. SCMI hopes to grow the OSI AAUS Research Dive program and will include a winter course to better serve our research divers. There were a total of 63 divers logging dives for 2012 a 32% increase from 2011. The total number of logged dives has also increased 59% from 2011.



Earth Day at Cabrillo Aquarium

SCMI Earth Day booth at the Cabrillo Aquarium continues to be a great success. This year over 200 public participants stopped by SCMI's booth. The booth displayed information about SCMI's research and educational programs including the Port of Los Angeles Water Quality Monitoring Project, XBT models and information, marine specimens and fossils, and a science quiz. The highlight of the booth was the SCMI touch tank with marine invertebrates, rays and a horn shark. Children and Parents were able to touch and learn about the marine animals that are found right in their backyard in the Los Angeles Harbor. SCMI Staff passed out brochures and SCMI's new Newsletter as well as small beach balls for the kids. Earth Day at the Cabrillo Aquarium is a wonderful opportunity for the public to learn about the new and exciting research and education programs happening at SCMI.



Research Activities

Port of Los Angeles Water Monitoring Project

SCMI has continued its collaboration with the Port of Los Angeles water monitoring program where real-time water quality data is collected through multi-parameter sondes at two locations in the Port of Los Angeles. This project allows Port staff and the public to observe select water quality parameters as they occur in real-time through a web-based interface with the sampling devices. The sondes collect the following water quality parameters: temperature, salinity, pH, dissolved oxygen, chlorophyll, and turbidity. SCMI's staff maintains the water monitoring sondes and the project's website to insure the data is accurate.



Pilot Dock Site



Retrieving the sonde from Pilot Dock site



SCMI staff Dan Warren and Adriana Bell replacing the sonde



Research and Education Coordinator Carrie Wolfe activating the sonde from above the Pilot Dock site



Reclamation Dock Site



Calibrating the sonde in the SCMI Water Quality Lab

Log on to The Port of Los Angeles website to view live data:

<http://www.ysieconet.com/public/WebUI/Default.aspx?hidCustomerID=208>

Ports of Los Angeles and Long Beach Fish Tracking Study

Movement patterns and habitat use of the white croaker in Los Angeles Harbor in relation to highly contaminated sediments.

This research study is conducted by CSULB Professor Chris Lowe and CSULB Graduate students to characterize the movement patterns and degree of site fidelity of white croaker caught and tagged in the Los Angeles Harbor, to determine whether the fish enter and spend a significant amount of time in areas of the harbor where contaminated sediments are present. The goal of this study is to assess whether the movement pattern behaviors contribute to the distributions of contaminants such as DDT and PCB's.

Salt Ponds Restoration Project

The Salt Ponds Restoration project is conducted by CSULB Professor Christine Whitcraft and Community College students. The project monitors the recovery process of the salt ponds in the San Diego Bay following restoration of tidal flushing. The project aims to understand if the salt pond habitats can provide healthy foraging habitat for fish and birds. Using traditional invertebrate counts combined with stable isotope analysis, the project will provide a pre- and post-restoration of characterization of available food sources (invertebrates) and trophic structure. The results of this project can help develop a cost-effective metric of trophic support for long-term monitoring of many regional wetland restoration projects.



Salt Ponds Pre-restoration



Salt Ponds under construction to allow tidal water flow

Submesoscale Experiment II (SubEx II)

The Submesoscale experiment was a multi-institutional project examining the physical properties and mechanisms of submesoscale eddies, fronts, and filaments. The study was conducted by the following institutions: University of California Los Angeles, Helmholtz-Zentrum Geesthacht, University of California Santa Barbara, Jet Propulsion Laboratory, Naval Research Laboratory, Leibniz Institute for Baltic Sea Research, Institute of Ocean Sciences, and Centre for Maritime Research and Experimentation. The study used the RV Yellowfin, UCLA Zodiac, and RV Sundiver II all equipped with hydrographic instruments. Two small aircraft were also used to measure sea surface temperature and ocean color.



The RV Yellowfin equipped with submesoscale instruments



UCLA Zodiac



HZG Researches aboard the RV Yellowfin

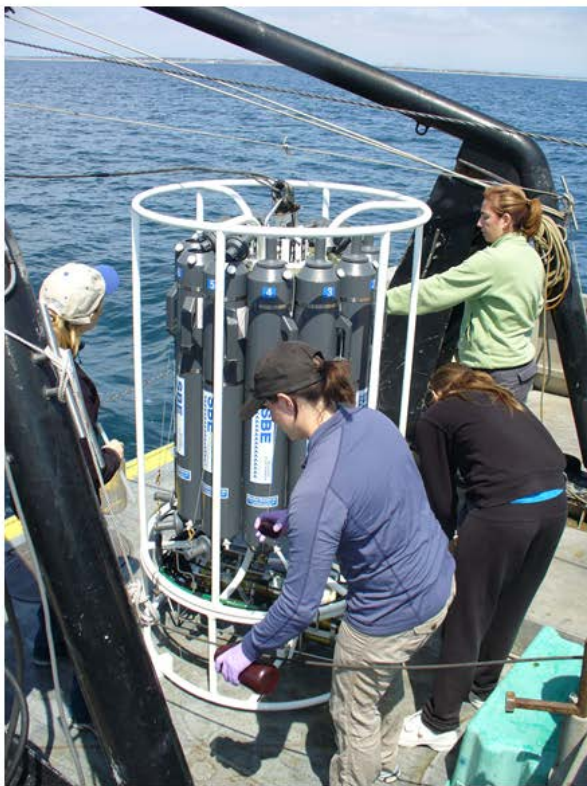


UCLA Plane

USC Caron Laboratory Research

ECO HAB: A Regional Comparison of Upwelling and Coastal Land Use Patterns on the Development of HAB Hotspots along the California Coast

The University of Southern California Caron Lab is involved in a multi-institutional research project funded by the National Oceanic and Atmospheric Administration (Ecology of Harmful Algal Blooms: ECOHAB) to investigate and compare blooms of toxic algae that occur in Monterey Bay with those that occur along the coast of southern California in the San Pedro shelf region. The primary objective is to develop a better understanding of the ecophysiological conditions leading to blooms and toxin initiation by *Pseudo-nitzschia*, by simultaneously comparing two "hot spots" for these blooms (Monterey Bay and San Pedro, California). Better understanding of these factors will lead to improved understanding of how bloom dynamics change in response to shifting environmental conditions, why "hot spots" exist, and ultimately provide improved monitoring, predictive modeling, and management decisions. The project uses the RV Yellowfin to deploy a rosette of niskin sampling bottles and a CTD to record sea water properties like salinity, pH, and temperature. The project is conducted by Dr. Dave Caron and USC Ph.D students and researchers.



Caron Lab researchers collecting water samples aboard the RV Yellowfin



Laboratory set up on the RV Yellowfin

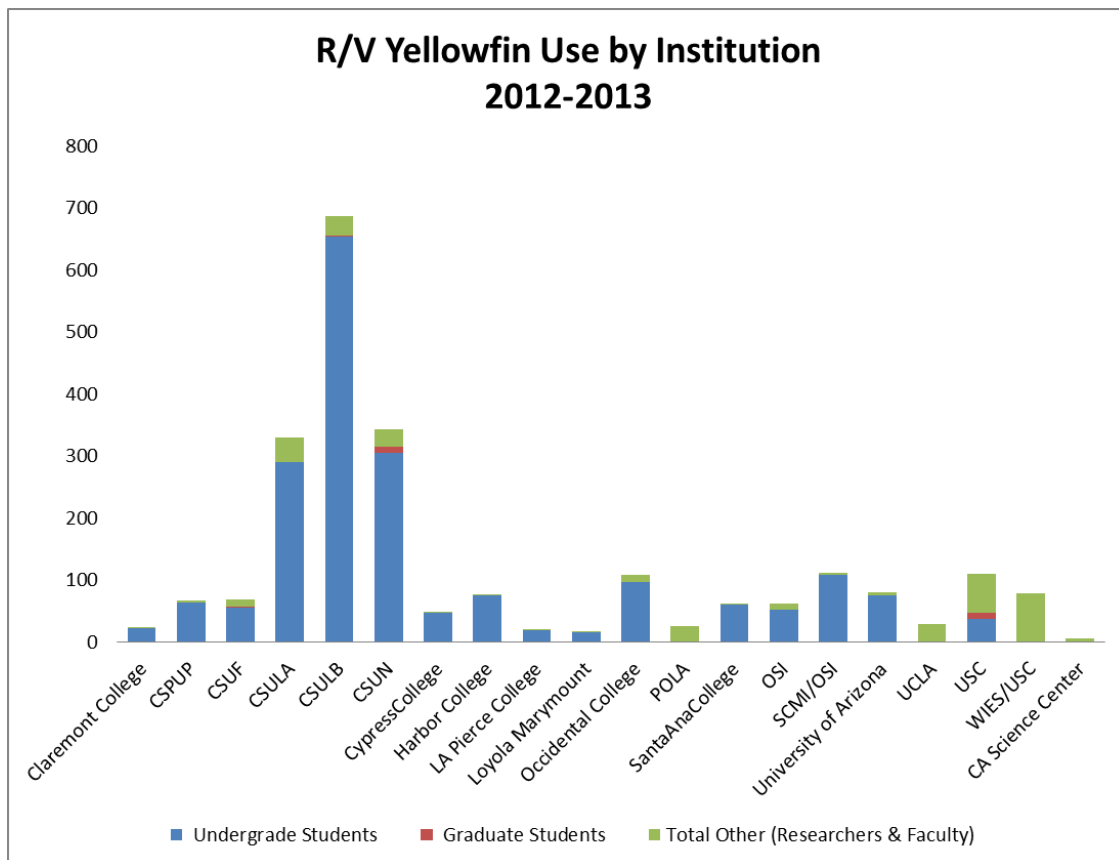
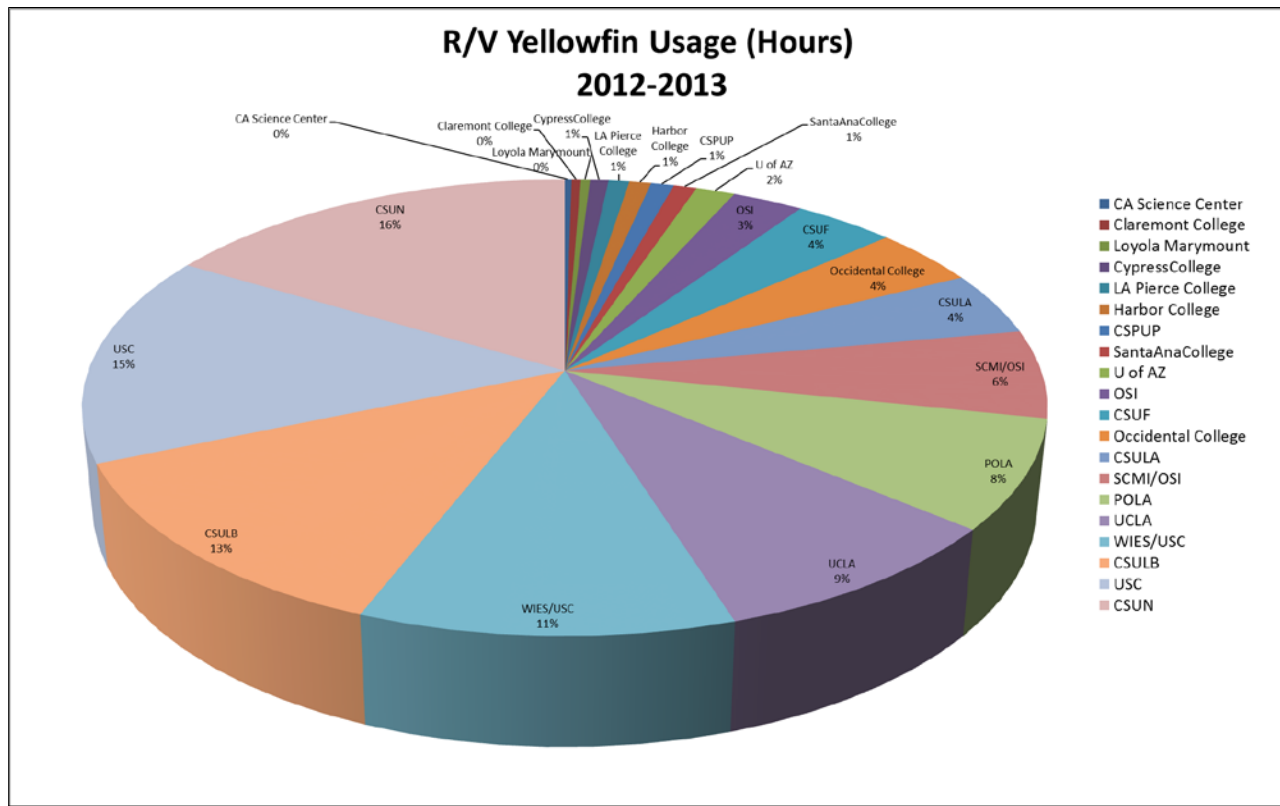
NOAA Ship of Opportunity Program (SOOP)

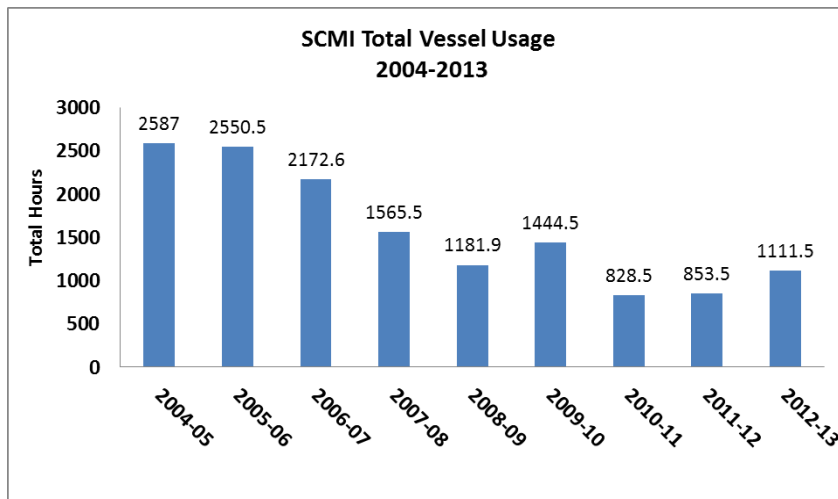
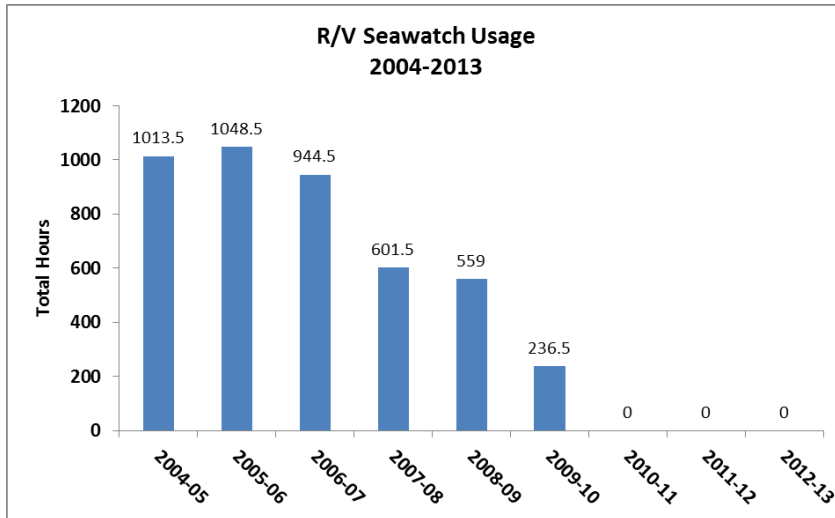
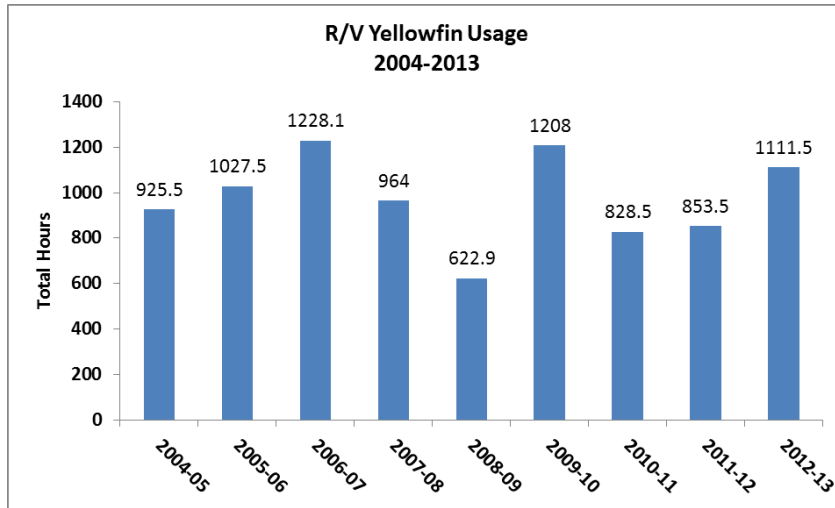
Under the coordination of Carrie Wolfe SCMI's Research and Education Coordinator and NOAA SOOP Contractor, the SOOP program involves cooperation between commercial ships and scientific agencies to operate and deploy oceanographic equipment. The ships are equipped with expendable bathythermographs (XBT's- temperature probes) that records the temperature of the seawater at depth up to 1,000 meters. The XBT's record 3 temperature readings per meter. This data gives researchers valuable information on the physical properties of the ocean across large routes.

Vessel Use

R/V Yellowfin Usage by Institutions

R/V Yellowfin Passengers 2012-2013				
Institute Name	Undergraduate Students	Graduate Students	Total Other (Researchers & Faculty)	Hours of Vessel Use
Claremont College	22	0	1	4
CSPUP	64	0	2	10
CSUF	55	1	13	44
CSULA	290	0	40	50
CSULB	654	2	30	140.5
CSUN	304	10	28	177.5
Cypress College	46	0	2	8
Harbor College	75	0	2	9.5
LA Pierce College	19	0	1	9
Loyola Marymount	16	0	1	4
Occidental College	96	1	11	46
POLA	0	0	26	86
Santa Ana College	60	0	2	10
OSI	52	0	10	31
SCMI/OSI	108	0	4	69.5
University of Arizona	75	0	5	17
UCLA	0	0	29	100.5
USC	37	9	63	171.75
WIES/USC	0	0	78	120.25
CA Science Center	0	0	6	3
Totals:	1973	23	354	1111.5
Total # of passengers	2350			





Financial

SCMI TOTAL ACCOUNTS

REVENUE	TOTAL
⊕ Payroll Budget	\$ 338,673
⊕ Member Contributions	\$ 135,000
⊕ Project Contracts	\$ 111,419
⊕ Research Contracts	\$ 83,681
⊕ Rentals	\$ 83,555
⊕ College Demonstrations	\$ 52,391
⊕ NOAA Contract	\$ 29,179
⊕ Scientific Dive Program	\$ 13,540
⊕ Other Income	\$ 70,920
TOTAL REVENUE	\$ 918,358

EXPENSE	TOTAL
⊕ Payroll Expense	\$ 543,965
⊕ Ocean Marine Insurance	\$ 52,463
⊕ Property Insurance	\$ 14,219
⊕ Other Insurance	\$ 669
⊕ Vessel Maintenance/ Fuel	\$ 58,663
⊕ Facility Maintenance	\$ 42,790
⊕ Utilities	\$ 37,152
⊕ Laboratory Supplies	\$ 23,286
⊕ Rent	\$ 20,700
⊕ Office Expense	\$ 14,857
⊕ Closed Water System	\$ 12,727
⊕ Architectural Design	\$ 12,000
⊕ Travel	\$ 5,965
⊕ Permit Fee	\$ 4,471
⊕ Reimbursement	\$ 3,990
⊕ Scientific Dive Program	\$ 430
⊕ Other Expenses	\$ 53,216
TOTAL EXPENSES	\$ 901,564

NET GAIN (LOSS)	\$ 16,793
BALANCE FORWARD FROM FY 2011-2012	\$ 79,980
OVERALL TOTAL	\$ 96,773

Southern California Marine Institute Members

Southern California Marine Institute Staff 2012-2013

Dr. Daniel Pondella
Director

Tom Chavez
Assistant Director

Dan Warren
Operations Coordinator

Carrie Wolfe
*Research and Education
Coordinator*

Brian Tufts
*Facilities Coordinator
Aquarist*

Dennis Dunn
*Captian
R/V Yellowfin*

Denis Mahaffy
Vessel Support Technician

Bob Adams
Demonstration Technician

Jim Cvitanovich
OSI Dive Safety Officer

Adriana Bell
*Instructional &
Adminstrative Assistant*

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Vice President: Dr. Laura Kingsford
Secretary: Dr. Doug Hammond

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Dr. Doug Hammond
Dr. James Moffett (Alternate)

OSI
Dr. Jerry Stinner
Dr. Laura Kingsford
Dr. Larry Allen
Dr. Steve Murray

Occidental
Dr. Daniel Pondella

UCLA
Dr. Jeroen Molemaker
Dr. Mark Gold (Alternate)

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Member at Large: Dr. Tina Hartney

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CSU Northridge

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Administrative: Dr. Jerry Stinner

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Administrative: Dr. Jayson Smith

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Consortium Members

