



SEA GRANT NEWS

“Science Serving California’s Coast”

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Participate in Strategic Planning

As part of its mission to serve public interests, California Sea Grant periodically develops a strategic plan with broad stakeholder input. The program has begun its strategic planning for 2006–2010 and will be holding focus groups during 2005 in various locations in California.

A workshop to identify research and information needs about California’s coastal and marine resources was held in November 2004 and was a joint effort with the University of California Marine Council and the state’s new Ocean Science Trust, both of which also

needed to do their own strategic planning. Participants included scientists, resource managers from state and federal agencies and representatives from the three sponsoring organizations.

If you would like to share your thoughts about what topical areas should be priorities for California Sea Grant’s research, education and outreach activities during the next five years, please contact our main office (858-534-4440) or one of the program’s marine advisors. Their contact information is available online at www.csgc.ucsd.edu/EXTENSION/MAS.html. ■ ■ ■



Participants at the strategic planning workshop held in Santa Cruz in November. Photos: California Sea Grant archives

Fourteen New Grants Awarded



Long Marine Laboratory, UC Santa Cruz. ©2002–2004 Kenneth and Gabrielle Adelman, California Coastal Records Project, www.Californiacoastline.org

Researchers at 11 campuses and marine laboratories throughout California have been awarded funds from California Sea Grant for 14 new research projects beginning in 2005. These projects include topics in fisheries management, aquaculture, coastal processes, new marine products, and human impacts on coastal resources.

Five of the projects focus on developing scientific data to aid the state in implementing California's Marine Life Protection Act of 1999 and mandated fishery management plans. They are funded by a grant from the California Department of Fish and Game. Those projects include:

- analyzing long-term changes in fish populations around Santa Cruz Island (Ralph Larson, **San Francisco State University**);
- determining the home ranges and habitat preferences of exploited nearshore reef fishes in the Catalina Marine Science Center Marine Life Refuge (Christopher Lowe, **California State University (CSU), Long Beach**, and Jennifer Caselle, **UC Santa Barbara**);
- analyzing life history characteristics of West Coast groundfish to identify those species most likely to benefit from the establishment of marine reserves (Steven Berkeley, **UC Santa Cruz**, and Steve Parker, **Oregon Department of Fish and Wildlife**);

- investigating how the size, type and distribution of sheltering areas influence Spiny lobster density, movement and home range in the Point Loma kelp forest (Kevin Hovel, **San Diego State University**, and Christopher Lowe, **CSU Long Beach**); and
- analyzing the population genetics of the commercially important cabezon to determine whether they are a single, genetically homogenous population or are composed of multiple, genetically distinct populations, and whether they should be managed as a single unit or as several demographically independent ones (Royden Nakamura and Francis Villablanca, **California Polytechnic State University**).



Catalina Island. Photo: A. Kalvaitis, National Undersea Research Program Collection

The remaining nine projects are:

At **California State University's Moss Landing Marine Laboratories**, Dave Ebert and Greg Cailliet will study the life histories of sharks, rays, and chimaeras—species common in the bycatch from West Coast groundfishing—to help ensure their sustainable management.

At **Pepperdine University**, Karen Martin will monitor the spawning population of California grunion from San Diego to Monterey Bay as part of an effort to evaluate the effects of human activities on sandy beaches;



Abalone (*Haliotis* sp.). Photo University of California, Division of Agriculture and Natural Resources

At **UC Davis**, Laura Rogers-Bennett will use matrix models of red and white abalone populations to evaluate the effectiveness of current management strategies and determine whether population growth is more dependent upon the growth and survivorship of small individuals or the survival of large ones.

At **UCLA**,

- Keith Stolzenbach and James McWilliams will be refining a regional ocean model developed under an earlier Sea Grant project to simulate—and eventually predict—three important water and sediment quality issues in Santa Monica Bay and over the San Pedro Shelf;

- Richard Zimmer and Cheryl Ann Zimmer are studying the optimal density, spacing and sex ratio of sexually mature abalone to

maximize fertilization in different hydrodynamic conditions, which would help government biologists identify natural abalone populations that likely are not reproducing and identify coastal areas best suited for transplanting or outplanting adults.

At **UC SAN DIEGO**,

- Kaustuv Roy will quantify the effects of harvesting and recreational shore activities on the rocky intertidal ecosystems of Southern California over the last century;

- Victor Nizet continues work on a vaccine against the *Streptococcus iniae* infection in fish for use in aquaculture;

- Robert Shadwick at Scripps Institution of Oceanography and Herbert Waite at **UC Santa Barbara** hope to replicate the peptides in elastic fibers they have found in



Blacksmith fish (*Chromis punctipinnis*) in kelp. Photo Dan Richards

whelk snail egg capsules. These peptides would have broad industrial and biomedical applications, such as creating artificial tendons and ligaments.

At **UC SANTA CRUZ**,

- Daniel Costa will be evaluating the feeding behavior of California sea lions to determine their impacts on fishery resources. ■ ■ ■



Rocky reefs are important for preserving all types of habitat. Photo Shane Anderson

New Fisheries Advisors in California



Carrie Culver, Sea Grant Extension Program marine advisor for Santa Barbara and Ventura counties

Two new marine fisheries advisors have joined the California Sea Grant Extension Program.

Carolynn (Carrie) Culver began working in Santa Barbara and Ventura counties in January, and Peter Nelson started in Del Norte and Humboldt counties in March.

The primary objective of these new positions is to work toward sustainable fisheries and fishing communities, while protecting and enhancing natural resources. The positions were made possible by a special grant from the National Sea Grant College Program.

“We’re delighted to have Carrie and Pete come on board with the Sea Grant Extension Program as part of a national fisheries extension enhance-

ment initiative,” said Paul Olin, California Sea Grant Extension Director. “With their wealth of experience and enthusiasm, I am confident they will become valuable resources in the fishing community and conduct research that will increase our knowledge of fisheries in California.”

Culver brings more than 15 years’ marine biology research experience in Santa Barbara and Ventura counties to her new position. She looks forward to working with the community on various fishery issues of the Santa Barbara channel.

Culver is no stranger to Sea Grant, having been a Sea Grant Extension program representative from 1986 to 1993. During that time, she examined the fisheries and biology of the sheep crab, *Loxorhynchus grandis*, to

assist with the development of potential management strategies for this species. She also evaluated the potential use of remotely operated vehicles for stock assessments with various fishermen, was co-editor of the Oil-Fisheries Newsletter, and was involved in several aquaculture projects.

From 1994 to 1999, Culver worked with Dr. Armand Kuris at UC Santa Barbara (UCSB) on what she described as an “intense and rewarding” project funded by California Sea Grant and the aquaculture industry. It has been called the first and only successful eradication of a marine pest in the wild: a non-native sabellid worm that infected the shells of cultured abalone in Cayucos, California, and then found its way into

the local coastal environment, threatening native shellfish. By identifying an abundant and highly susceptible host, a black turban snail, and subsequently leading a team in removing over a million of these snails from the infested area, Culver and Kuris were able to prevent the worm's continued establishment in the wild. "It took a lot of cooperation and collaboration with the industry, regulatory agency and many volunteers, to enable this victory," said Culver.

More recently, Culver studied recruitment and growth of invertebrates at seven oil and gas platforms in the Santa Barbara channel. She is currently continuing a study examining the potential for predation on salmonid eggs and larvae by the invasive Chinese mitten crab, and is drafting a monitoring guide for use by agencies and nonprofit organizations helping document the range and abundance of the crab.

Culver earned her Ph.D. in marine biology in 1999 from UCSB, and has been a research biologist and lecturer at its Marine Science Institute since then. Culver has also been a consultant to the aquaculture industry in California and Washington.

Culver can be reached at her Ventura County Cooperative Extension office, 669 County Square Plaza, #100, Ventura, CA 93003-5401, email csculver@ucdavis.edu, phone (805) 645-1469.

Peter Nelson brings more than 10 years' fisheries research and



Chinese mitten crabs.
Photo: Carrie Culver

education experience to his new position. His first order of business will be getting to know the fishermen and the needs of the fishing industry in the area.

Nelson's prior experience includes work on bycatch reduction in the Eastern Pacific Ocean tuna purse-seine fishery, as well as studies on habitat selection by juvenile kelp rockfishes and the effects of fish aggregation devices on recruitment patterns.

"Pete's research background, coupled with his outreach experience in the fishing industry provide a unique skillset well-suited to tackle the challenges and opportunities of this position," Olin said.

Nelson has been a postdoctoral researcher at Scripps Institution of Oceanography since 2003. He earned his Ph.D. in biology from Northern Arizona University in 1999 and his master's degree at UC Santa Cruz. He has also worked on near-shore fisheries while a technician with the California Department of Fish and Game in Monterey.

Nelson's research and professional interests include: marine

fisheries ecology and conservation; vertebrate visual ecology; behavior, evolution, ecology and physiology; behavioral and physiological responses of aquatic life exposed to high solar radiation; community and evolutionary ecology of aquatic organisms, especially fishes; and behavior and evolution of social aggregations.

Nelson can be reached at his Sea Grant Extension Program office at 2 Commercial Street, Suite 4, Eureka, CA 95501, email panelson@ucdavis.edu, phone (707) 443-8369. ■ ■ ■



Pete Nelson, Sea Grant Extension Program marine advisor for Del Norte and Humboldt counties.

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NEW CALIFORNIA SEA GRANT PUBLICATION

Antifouling DVD Available



California Sea Grant's Extension Program has published a DVD about nontoxic alternatives to antifouling hull paints.

The DVD was produced in cooperation with the Communication Services of the University of California, Division of Agriculture and Natural Resources. The 30-minute video has narrations in both English and Spanish.

The video content is based on a series of research and educa-

tion projects conducted by marine advisor Leigh T. Johnson and program representative Jamie A. Gonzalez of the Sea Grant Extension Program in San Diego, where copper-based hull paints have caused levels of dissolved copper in bays to be above EPA limits.

The DVD is available for \$7 by calling 858-534-4446. The cost includes shipping, handling and any applicable sales taxes. ■ ■ ■