

New Sea Grant Marine Fisheries Research Projects

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On March 1, 2005, California Sea Grant began funding four new multi-year projects directly related to marine fisheries. Below are summaries of the projects. For further information contact the researchers directly. For information about other California Sea Grant projects, publications, activities and opportunities, visit <http://www.csgc.ucsd.edu>.



Black Abalone (CA Dept. of Fish and Game photo).

• **Enhancement of Fertilization Success in Abalone: Increasing Effectiveness of Transplanting and Outplanting Recovery Strategies** R/F-197 Mar. 05–Feb. 08
Richard Zimmer, UCLA, (310) 206-4981, z@biology.ucla.edu; Cheryl Ann Zimmer, UCLA, (310) 825-8561, cazimmer@obee.ucla.edu.

In many areas of California, the density of sexually mature abalone is too sparse to support successful fertilization. For this reason, many natural abalone populations may be unable to recover despite conservation efforts and strict fisheries management regulations. The biologists will determine the optimal adult density, spacing and sex ratio to maximize fertilization for a given coastal flow regime. Their research will involve laboratory studies of the kinetics of abalone fertilization in laminar shear flows. Field experiments will be conducted to test laboratory predictions. Findings will help biologists identify natural abalone populations that likely are not reproducing. It will also help identify coastal

areas whose hydrodynamics are suited for transplanting or outplanting adults.

• **Using Matrix Models to Evaluate Abalone Conservation and Fishery Management Strategies: A Prospective Elasticity Analysis** R/F-198 Mar. 05–Feb. 06
Laura Rogers-Bennett, UCD, (707) 875-2035, rogersbennett@ucdavis.edu.

Matrix models of red and white abalone populations will be used to examine various options for managing and restoring these mollusks. In particular, the models will provide a means for exploring the effectiveness of current red abalone management strategies by evaluating whether these strategies are targeting size classes with the most influence on population growth. An example of the type of question to be addressed for white abalone: Is population growth more sensitive to changes in the growth and survivorship of small individuals or to the survival of large ones? This type of sensitivity analysis redirected loggerhead sea turtle conservation efforts away from head starting hatchlings to emphasizing the need for turtle exclusion devices on fishing nets. The goal for these sensitivity analyses will be to provide similar insights for abalone populations in California.

• **Life History Studies of California Chondrichthyans: Determining Essential Biological Information for Effective Management of Bycatch Fisheries** R/F-199 Mar. 05–Feb. 07 Dave Ebert, MLML, (401) 771-4427, debert@mlml.calstate.edu; Greg Cailliet, MLML, (401) 771-4432 cailliet@mlml.calstate.edu.

In recent years, landings of chondrichthyans (including sharks, rays, and chimaeras) in California have risen to an all time high—both as targeted takes and bycatch. The increase in

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exploitation is alarming, however, because it is occurring in the absence of basic biological information on these animals. In an effort to prevent overharvesting, biologists will collect baseline biological information on the age and growth, reproduction, feeding, and distribution of species common in the bycatch from the West Coast groundfishery. In addition, caudal thorns from skates will be investigated as a novel technique for aging these fish. Skates will also be tagged and recaptured to study movement patterns, estimate growth rates and validate age estimates. This kind of basic life history information can help ensure the sustainable management of chondrichthyans in California and elsewhere.



Gyo-taku print of big skate (C. Dewees).

• **Foraging Ecology of the California Sea Lion: Diet, Diving Behavior, Foraging Locations, and Predation Impacts on Fishery Resources** R/CZ-192 Mar. 05–Feb. 07 Daniel Costa, UCSC, (851) 459-2786, costa@biology.ucsc.edu.



Sea lions at rest (D. Varoujean).

California sea lions (*Zalophus californianus*) feed on many commercially and recreationally targeted fish species. As sea lion populations have increased and regulations on fishing tightened, competition between fishermen and sea lions has intensified. To estimate the degree to which sea lions impact fish populations, researchers will capture, tag and track both male and female sea lions in the Channel Islands National Marine Sanctuary and Monterey Bay National Marine Sanctuary. The goal is to investigate a complex array of the animals' foraging and diving behaviors and their at-sea distribution. The data will aid fisheries managers to more accurately estimate levels of predation by sea lions and thus help refine fishery management decisions.

Pomeroy Accepts Fisheries Advisor Position

We are pleased to announce that Dr. Caroline M. Pomeroy has accepted the new Sea Grant Fisheries Advisor position located in the Monterey Bay Area, beginning July 1, 2005. Pomeroy brings years of experience working on the human dimensions of marine fisheries to the position. Since 1995, she has been a Research Scientist in the Institute of Marine Sciences at UC Santa Cruz. Her recent social science research and outreach has included the squid and wetfish fisheries, Monterey Bay fisheries and communities, marine protected areas, and cooperative fisheries data collection.

After an undergraduate degree from Yale, Pomeroy earned a M.A. degree in Marine Affairs and Policy at the University of Miami. She received her doctorate from Texas A&M in Wildlife and Fisheries Sciences with a sociology emphasis. Before coming to UC Santa Cruz, Pomeroy conducted fisheries policy research and taught at Indiana University.

Pomeroy and her family live in Santa Cruz. She has worked closely with other Sea Grant Marine Advisors, fisheries constituents and researchers for a decade and is looking forward to applying her skills to the plethora of marine fisheries issues facing the Monterey Bay area and California. Pomeroy's contact information will appear in the next *Sea Grant Fisheries* newsletter.



Carrie Pomeroy

McArdle Moves On



Deborah McArdle
(Sea Grant photo)

Marine Advisor Deborah McArdle has resigned to concentrate on her PhD studies at UC Santa Barbara. McArdle served as Marine Advisor for Santa Barbara and San Luis Obispo counties since August of 1993. Her Sea Grant Extension Program work has been focused on marine protected areas (MPAs), marine education, and historical ecology of fisheries. McArdle's 1997 book *California Marine Protected Areas* was the first comprehensive guide to the state's MPAs and has been widely used since then. We wish Deborah McArdle well in her studies and future endeavors.

Rockfish Symposium Scheduled for AFS

The 135th annual meeting of the American Fisheries Society will be held in Anchorage, Alaska, September 11-15. An important component of the conference is a major symposium on rockfish. Industry, fishery managers and scientists will discuss rockfish biology, taxonomy, assessment techniques, research needs, and management strategies. A peer-reviewed proceedings will be published. If you have questions about the symposium, contact Sherri Pristash at fyconf@uaf.edu and view <http://www.uaf.edu/seagrant/Conferences/rockfish/info.html>.

Creating a Fisheries Mosaic: Connections Across Jurisdictions, Disciplines, and Cultures is the theme of the American Fisheries Society Annual Meeting. For further information visit www.wdafs.org/Anchorage2005.

Fishing Volunteers Sought for Collaborative Project

Rick Starr of UC Sea Grant Extension and Captain Roger Thomas of the Golden Gate Fishermen's Association (GGFA) received funding from the Pacific States Marine Fisheries Commission to conduct a collaborative nearshore fish research project. The overall objective is to combine the resources of fishermen and university scientists to learn more about populations of nearshore fishes in an area that is heavily fished by boats from the San Francisco Bay area. Starr and Captain Thomas have chosen a study area near Bolinas, California that is heavily fished by commercial passenger fishing vessels, private anglers, and commercial fishermen. They are interested in estimating the relative abundance, site fidelity, home range, and movements of several important nearshore fish species in order to provide information about potential effects of fishing regulations and the establishment of marine protected areas.

Starr and Thomas plan to work with Commercial Passenger Fishing Vessels and volunteer anglers to catch and tag nearshore fish species, such as rockfishes, lingcod, greenling, and cabezon. All captured fish will be brought on board, identified, measured, tagged with an anchor tag using standard tagging techniques, and released at the point of capture. Scientists experienced in handling and tagging nearshore fishes will be present on each vessel to tag fish and to talk with anglers about the biology of nearshore fishes.

The work will start in June and continue through September 2005. The plan is to have two boats on the water fishing for up to 10 days each in June to tag and release fish, and then return to fish for 5 or more days in September to recapture tagged fish.

Starr and Thomas are looking for volunteers to help catch fish for tagging. They will be fishing two to three days per week, from 6 a.m. to 3 p.m. each day, depending on the weather, during the following blocks of time: May 31 through June 3; June 14 through 17; June 20 through 24; June 27 through 30.

If you are interested in helping to catch fish, please print and fill out the form found at <http://www.csgc.ucsd.edu/EXTENSION/StarrFishing/FishingStory.html>, then mail it to:

Rick Starr
Moss Landing Marine Labs
8272 Moss Landing Road
Moss Landing, CA 95039.

If you have additional questions about the project or the selection process, please feel free to contact Rick Starr at (831) 771-4442 or Captain Roger Thomas at (415) 760-9362.

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Sea Grant Fisheries

Participate in California Sea Grant 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.

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.

Advisors' contact information is available at <http://www-csgc.ucsd.edu/EXTENSION/MAS.html>.

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