

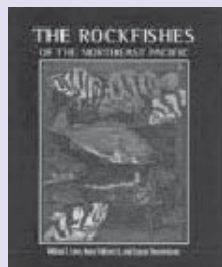
Newsletter of the California Sea Grant Extension Program and UC Division of Agriculture and Natural Resources

Collaborative Research on Juvenile Rockfish Habitat Preferences

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Editors:
Chris Dewees
Bill Leet

Designer:
Janelle Kohl

Recent stock assessments of the rockfishes (family Scorpaenidae) have demonstrated that many of the more than 60 species found off California are overfished. Consequently, the agencies responsible for managing rockfish fisheries have taken strong, urgent measures aimed at rebuilding these resources.

In order to understand the causes of the depletion and to identify strategies to remedy them, it is essential to have accurate life history information for all of the rockfish species that enter the fisheries, whether as targeted species or incidental catch. This is particularly true for nearshore species, which only recently have been intensely sought by fishermen. Sea Grant sponsors and conducts a broad range of research to gather this essential information. The following paragraphs describe one such project.

Unlike most fishes that spawn by depositing externally fertilized eggs, all species of rockfish have internal fertilization and release larval offspring into the water column. There they reside as plankters (moving at the whims of the currents) for the early stages of development, later to become pelagic juveniles (moving about at their own will). At some time during the first quarter to half year of their life, all but a few species of rockfish "settle." That is, they move to the bottom substrate, where they reside for the remainder of their life.

Susan McBride, Sea Grant Marine Advisor in Eureka, California, and Jennifer Bloeser, Science Director of Pacific Marine Conservation Council, began a study in the spring of 2003 that will help define the type of substrate habitat several nearshore

species of rockfish prefer when they first settle. Susan was able to secure first-year project funding as part of a National Sea Grant Fisheries Extension competition and a second-year funding through the Pacific States Marine Fisheries Commission.

Most importantly, this work is being done collaboratively with fishermen in Morro Bay, Monterey Bay, Bodega Bay, Fort Bragg, Eureka and Crescent City, California; and Charleston, Port Orford, and Newport, Oregon. Other cooperators include Oregon Sea Grant, NOAA Fisheries, California Department of Fish and Game, Oregon Department of Fish and Wildlife, and South Slough Estuarine Research Reserve. Susan and Jennifer are coordinating the field work coast wide.



Copper and black rockfishes

The study utilizes traps that were specially designed and constructed by a fisherman from Morro Bay to catch juvenile rockfish. They are similar to nearshore traps used in commercial fisheries but have smaller mesh and are used without bait. Each month, weather permitting, traps are placed in four different habitat types in each of the above-mentioned ports. The catch for each trap is then quantified by date, location (including a site description), species, length, and weight. Observations of water temperature, salinity, and turbidity are also made.

At the conclusion of the study, the information will be analyzed to determine the seasonal distribution of settlement and growth, habitat-type preferences, and any other correlations. Most of the rockfish research that the collaborating agencies have performed to date has been concerned primarily with adult fish. This study will provide much-needed information on the critical early benthic stages of black, copper, blue, grass, brown, gopher, and other nearshore rockfish species, as well as cabezon, greenling and other fishes that might be encountered during the study. The information gleaned from this research will help to guide agencies in understanding essential fish habitat for early benthic

juvenile fishes. The study will give preliminary information on duration of habitat use and growth. It will be a much-needed piece of the puzzle in understanding the early life history of nearshore rockfishes.



Jim Bassler checking fish trap

Trawl Fleet Harvest Capacity Reduction Process Begins



Groundfish trawler in Fort Bragg

Earlier this year, Congress approved a fishing industry funded capacity reduction program for the Pacific Coast groundfish fleet. The process is beginning this summer with the mailing of bidding packages to all eligible limited entry trawl permit holders. Pacific whiting at sea catcher/processors are not eligible. A total of \$46 million is available for the “buy-back”; \$36 million of it as a 30-year loan to be repaid to the federal government by those remaining in the affected fisheries.

Those who wish to participate in the buy-back will submit an irrevocable bid during the August 4-29 period to sell their fishing business. The bid amount will be divided by their average annual total fishing revenue (groundfish, pink shrimp and Dungeness crab). These ratios of bid to fishing revenue will be ranked from low to high to maximize the harvest capacity removed per dollar loaned. The bid evaluation period runs August 30 through September 29.

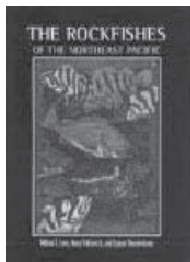
After the bidding process, but prior to informing participants of the outcome of their bid, there will be a referendum among all permit holders in the groundfish trawl, pink shrimp and Dungeness crab fisheries to approve or reject the program. Referendum ballots will be mailed September 30 and the voting period will run from October 15-29. Votes will be weighted by the debt obligation calculated for each fishery sector and the referendum will pass with a simple majority.

If the program is approved in the referendum, bidders will be notified about their bids on November 12. If a bid is accepted and payment made, the person must surrender all permits including limited entry trawl, state pink shrimp and Dungeness crab issued to their vessel. The Coast Guard will be notified that the vessel may no longer be used in commercial fishing.

Those remaining in these fisheries will share the cost of repaying the buy-back loan in proportion to the harvest capacity reduction (a benefit) that occurs in their fishery. This program has the potential to significantly reduce harvest capacity. Participants in other fisheries with excess fishing capacity will be watching the outcome of this process with interest this fall.

(Adapted from Fishermen’s Marketing Association Newsletter, Vol. 51 #1, March 2003)

New Marine Publications of Interest



The Rockfishes of the Northeast Pacific

Three recently published books and one new maritime journal should be of interest to marine fisheries people. ***The Rockfishes of the Northeast Pacific*** by Milton S. Love, Mary Yoklavich, and Lyman Thorsteinson, was recently published by the University of California Press (www.ucpress.edu). This beautifully illustrated book is the finest reference ever compiled on this important resource of the California Current system. It contains over 400 pages of information about the evolution, habitat, biology, management, ecology, diseases, naming, and other facts about the 100+ species of genus *Sebastes*. Illustrations include underwater color photographs, paintings by Ray Troll, fish prints by Christopher Dewees, and many fine works by other artists. It combines scientific accuracy and thoroughness with the entertaining writing style of Love. Because the authors were able to obtain grants to subsidize the cost, it retails for the low price of \$24.95 in paperback or \$60 in clothbound.



From Abundance to Scarcity

From Abundance to Scarcity by Michael L. Weber skillfully weaves together the history of the United States commercial fisheries policy since the mid-1800s. This book should be required



Maritime Studies

reading for fishery managers, students, industry and involved citizens. Published by Island Press (www.islandpress.org) it sells for \$32.50.

Sea Challengers (www.seachallengers.com) just published ***Seaweeds of the Pacific Coast*** by Jennifer and Jeff Mondragon. Those who fish, dive or observe our estuarine, intertidal and nearshore coastal ecosystems should enjoy this easy-to-use guide. Includes color photographs of 128 of the most common marine algae. This field guide (price \$21.95) also includes a simple-to-use key, information on uses of marine algae, and recipes.

Maritime Studies is a new international journal with a multidisciplinary social science focus. It is a revitalized version of *Maritime Anthropological Studies Journal* published from 1988-1993. Articles in the first 2003 issue cover use of fishermen's ecological knowledge in management, evolving fisheries management, artisanal fisheries in France, and the fate of fishing families in Newfoundland after the cod fishery closure in 1992. For more information, contact MAST-MARE, Plantage Muidergracht 4, 1018 TV Amsterdam, The Netherlands, or www.marecentre.nl

On-going Sea Grant Sheephead Research Project

Sheephead are the most popular fish in Southern California's booming live fish market. Landings have risen more than 90 percent in the last seven years. To prevent overharvesting, both recreational and commercial fishermen must release sheephead less than 12 inches long. There are concerns, however, that the process of being caught, handled and then released may increase a sheephead's chances of early death or slow its rate of growth. Internal organs, for instance, may be ruptured as a fish is hauled up from deep water.

C. Lowe and K.M. Kelley at CSU Long Beach are conducting a two-year study (RF-192) entitled "catch and release of California sheephead: physiological and behavioral stress effects and post-release survivorship."

By tagging and tracking fish, biologists seek to evaluate mortality rates in released sheephead caught by hook-and-line and in traps. To study stress levels in the fish, they are analyzing blood hormone, lactate, blood acidity and glucose levels, and monitoring fish behavior, using acoustic telemetry, after fish are released. This research has direct applications for improving the management of sheephead, and can be folded into species-by-species management plans mandated under the Marine Life Management Act of 1998.

For further information on this and other projects, see the California Sea Grant web site (www.csgc.ucsd.edu) or contact California Sea Grant at 858-534-4440.



Seaweeds of the Pacific Coast

(6585)

University of California Davis
Sea Grant Extension Program
Wildlife, Fish and Conservation Biology
1 Shields Avenue
Davis CA 95615-8751
<http://www-csgc.ucsd.edu>

Sea Grant Fisheries

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Editors: Christopher M. Dewees
William S. Leet

