

## Trawl Fleet Buy-Back Referendum Passes

By Christopher Dewees

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The NOAA Fisheries Service announced in early November that the trawl fishery buyback referendum of all permit holders in the Pacific Coast groundfish trawl, pink shrimp, and Dungeness crab fisheries passed. The vote, weighted by debt obligation for each fishery, was 85.5% yes. The non-weighted vote was 757 in favor and 348 against. Approximately 90% of the trawl, 80% of the pink shrimp, and 55% of the crab fleets voted yes. This included overlap due to some participants holding permits in multiple fisheries.

NMFS received \$59.8 million of reverse auction bids from 108 groundfish trawl permit owners. The amount of each irrevocable bid was divided by the average annual total fishing revenue of each bidder and ranked from low to high. NMFS accepted 92 bids before reaching the \$46 million dollar buy-back total. Accepted bids involved 240 permits including 92 groundfish trawl permits, 121 Dungeness crab and pink shrimp permits, and 27 other federal permits. On December 4, 2003 accepted bidders must permanently stop all further fishing with the buy-back vessels and permits. The buyback removes about one-third of the fleet trawl permits and about 45% of the groundfish production.



*Old Bodega trawler*

The distribution of accepted bids is interesting with half (46) in California ports, 34 in Oregon, and 12 in Washington state. Reductions were most striking in Crescent City where a large majority (14) of the fleet was bought out and in Eureka where 17 vessels are gone. Other California ports with accepted bidders include Fort Bragg (5), San Francisco (3), Moss Landing (3) and Morro Bay/Avila (4).

What happens next? Those remaining in the groundfish, pink shrimp and Dungeness crab fisheries are obligated to repay \$36 million of the buyback cost to the federal government. Some changes in the fleet distribution and operations seem inevitable. Those remaining in the groundfish fleet are discussing alternative management approaches. In addition, the Pacific Fisheries Management Council recently established a committee to examine individual fishermen's quotas (IFQs) for managing the groundfish fishery.



*Trawlers at Fort Bragg*

For further information on the buyback, see the Federal Register of November 4 (Vol. 68, #213) and the Fishermen's Marketing Association web site <http://www.trawl.org>

## California Dungeness Crab Fishery Survey

By Kristen Sortais

Results are in from a survey of commercial fishermen who harvest Dungeness crab in California waters. The survey was part of a California Sea Grant-funded project.

The survey was a joint effort between Humboldt State University researchers Steve Hackett and Matt Krachey as well as Christopher Dewees and Kristen Sortais at U.C. Davis. The survey was developed with advice from fishermen in the northern California ports of Bodega Bay, Fort Bragg, Eureka and Crescent City.

The survey was intended to gather opinions of management measures and baseline data on fishing costs. These data can support on-going discussions among fishermen about the future of the fishery.

Forty percent (243) of the 616 California permit owners responded to the survey. When compared to California Department of Fish and Game (CDFG) permit data, our sample was reasonably representative of the fleet geographically and in vessel size.

Currently, the fishery is regulated with a cap on the number of vessels allowed to harvest Dungeness crab in California waters, a 6.25 inch minimum harvest size for male crabs, approximately five months annual closure to harvesting, a ban on take of female crabs, and mandated escape openings on traps for undersize crabs. Most of the survey respondents held favorable opinions of these current regulations.



*Dungeness crab trap being hauled and unloaded*

Findings include:

The number of crab traps deployed in California's fishery appears to have increased fourfold since 1975-76 to approximately 172,000 fished during the 2000-01 season.

Fishermen deployed an average of 293 traps per vessel during the peak fishing month of December 2000. On average during December 2000, small (<30ft.), medium (30-50ft.) and large (>50ft.) vessels fished 138, 259, and 448 traps, respectively. Trap numbers increased substantially with vessel size, reflecting increasing capability to carry traps.

Respondents were asked to give their opinions on twelve potential management measures currently used in crustacean trap fisheries around the world. Just two of the twelve were perceived of favorably. On average, respondents perceived of *one trap limit for all size vessels* and *daylight fishing only* favorably. Trap limits varying by time of season or by vessel size, trap certificates, trip limits, quota systems, and zonal management, on average, were viewed neutrally or unfavorably.

In some cases, opinions of potential management measures clearly differed depending on the size of respondents' vessels. For example, those with vessels smaller than fifty feet held favorable opinions, on average, of *one trap limit for all size vessels*, while owners of larger vessels, on average, were neutral. Similarly, those with vessels smaller than fifty feet ranked *daylight fishing only* favorably, while those with vessels larger than fifty feet, on average, expressed a neutral opinion on this measure.

The detailed survey results have been submitted for publication, and we will notify readers when it is available. A companion study of California's Dungeness crab processing industry is complete and will appear in the next volume (44) of CalCOFI Reports.

To learn more about this survey project, please contact Christopher Dewees, Sea Grant Marine Fisheries Specialist, at (530) 752-1497 or [cmdewees@ucdavis.edu](mailto:cmdewees@ucdavis.edu).

## New California Sea Grant Research Projects

Fourteen proposed research projects have been selected to receive California Sea Grant awards for 2004 and four additional California projects will receive National Sea Grant awards. Funding for the projects will begin in March 2004. All eighteen projects were peer reviewed and selected competitively for their potential to provide answers and explanations to complex issues relating to marine resources. The national grants will look at a world-wide viral disease of shrimp; an invasive kelp in southern California; the biology and life history of mitten crab, another exotic; and the spread of two species of exotic crayfish. Five of the new projects specifically address marine fisheries issues including:

- review of the historical uses of marine resources dating back to as much as 10,000 years ago;
- investigations of the causes and possible cures for diseases of abalone;
- history of the decision-making process leading to management of the groundfish fisheries;
- shark movement in the California Bight.
- food habits study of murrelets, an important seabird;

“What is most exciting about these new studies,” said California Sea Grant Director Russell Moll, “is the diversity in topics that include sociological studies of fishing in California and archeological studies of historical coastal development. The new projects will continue the long tradition in excellence of research supported by California Sea Grant.” For more information on these new projects, contact California Sea Grant, <http://www.csgc.ucsd.edu/> or call (858) 534-4440.

## Herring Peer Review

By William Leet

The California Department of Fish and Game (CDFG) has traditionally used spawn surveys and hydroacoustic surveys to assess the stock size of Pacific herring in San Francisco Bay. These surveys have demonstrated a steady downward trend in the stock size over the past 25 years. Beyond the downward trend, during the past several years there was disagreement between the population estimates derived by using these two survey techniques.

This year, CDFG decided to use currently available statistical modeling techniques to further assess the status of the population and the results that might be expected from different management strategies. The selected model, the Coleraine model, had not previously been used by CDFG, and this general purpose model was not specifically designed for assessing San Francisco Bay Pacific herring. CDFG requested that Sea Grant Extension Program assemble a panel of peer reviewers to determine if it was appropriate to use the Coleraine model, to instruct CDFG in its use, and to help its staff in interpreting the results. SGEP assembled an independent team of scientists with demonstrated expertise in modeling, managing herring fisheries, and assessing fish populations. The scientific review team met together with CDFG staff for a two-day workshop on August 19 and 20 to assess the utility of the Coleraine model in assessing the herring stocks.

Only one CDFG staff member was conversant with the model, and he was in the process of retiring, so the objectives of the review went beyond the traditional scope of evaluating the merits and shortfalls of the Coleraine model. It involved fine instructing other members of the CDFG staff in its use, and interpreting the information resulting from its use.

Upon tailoring the Coleraine model to the characteristics of the herring population, the peer review panel demonstrated that the hydroacoustic surveys were overestimating the San Francisco Bay herring biomass by approximately twenty percent. The age composition of the catch has tended toward younger fish recently, and currently there are no fish six years or older entering the catch. In prior years, six-year-olds represented as much as fifty percent of the catch. The Coleraine model indicated that the spawn survey gave a better estimate of the stock size than the hydroacoustics survey.

At their late August meeting of the California Fish and Game Commission CDFG staff presented the Commission with two management alternatives: 1) a complete closure for one year as recommended by CDFG staff, or 2) a reduced annual quota and shortened season. The Commission selected the second alternative. For more on this subject, please refer to <http://www.dfg.ca.gov/mrd/newsletter/1003.html#closing>

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# *Sea Grant Fisheries*

## **Research for Halibut and Sardine Management**

The Fall 2003 edition of *Bight Bulletin*, a bilingual (Spanish/English) California Sea Grant newsletter on water quality, coastal watersheds and habitats, contains several marine fisheries articles of interest to our readers. One article highlights U.S. and Mexican efforts to learn about the biology and life history of California halibut, a target for commercial and sport fisheries in both nations. Eight different research projects are examined, with particular coverage given to those projects geared toward enhancing halibut aquaculture. Also covered in this edition is the state of knowledge about a disease found in sardines landed in California, called viral hemorrhagic septicemia. Although a ban on importation of California sardines to Australia, the primary market, was lifted this year, much still needs to be learned about the disease. To learn more, you can access these articles at [http://www.csgc.ucsd.edu/NEWS/BB\\_Indx.html](http://www.csgc.ucsd.edu/NEWS/BB_Indx.html)

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