



Highlights of [GAO-04-606](#), a report to congressional requesters

Why GAO Did This Study

Because of concerns raised about the accuracy of National Marine Fisheries Service (NMFS) stock assessments, GAO reviewed the assessments for five species of Pacific groundfish: Pacific hake and four types of rockfish—bocaccio, canary, darkblotched, and yelloweye. Specifically, for these five species GAO (1) assessed the reliability of NMFS' stock assessments, (2) identified which relevant recommendations from NMFS' stock assessment improvement plan have been implemented and which have not, and (3) identified the costs associated with planned and ongoing improvements to groundfish stock assessments.

What GAO Recommends

GAO recommends that the Secretary of Commerce require the Director of NMFS to take actions to improve the reliability of stock assessments, such as continuing efforts to improve the quality and types of data used in groundfish assessments, establishing a standard approach that requires that data used in stock assessments be evaluated for reliability, and requiring stock assessment reports clearly present the uncertainties in the assessments.

NOAA generally agreed with the report's accuracy and agreed with the report's recommendations, but expressed concern that the report's conclusion could be misconstrued to infer that the assessments are unreliable for use in managing the west coast groundfish fishery.

www.gao.gov/cgi-bin/getrpt?GAO-04-606.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Anu K. Mittal at (202) 512-3841 or MittalA@gao.gov.

PACIFIC GROUND FISH

Continued Efforts Needed to Improve Reliability of Stock Assessments

What GAO Found

The reliability of the NMFS assessments is questionable for the five species GAO reviewed, although the assessments were based on the best information available at the time they were conducted. According to NMFS officials and a National Research Council report, to obtain reliable results each stock assessment should include at least one NMFS data source of sufficient scope and accuracy because such data are derived from unbiased, statistical designs. However, in the yelloweye assessment, no NMFS data were used, and in the darkblotched, canary, and bocaccio assessments, the NMFS data were limited because the NMFS' surveys were conducted in trawlable waters only. A 2003 NMFS report concluded that darkblotched groundfish are less abundant and bocaccio and canary are more abundant in untrawlable waters. Also for all five species, NMFS lacks a standard approach for ensuring the reliability of non-NMFS data used in stock assessments. Some assessors reviewed the quality of non-NMFS data; others did not. The assessors who reviewed the quality of the non-NMFS data found errors that made some of the data unusable or that could have impaired the reliability of certain stock assessments. Finally, for four species, the stock assessment reports were questionable because they did not present the uncertainty associated with the population estimates. For example, the canary stock assessment review panel recommended that standard estimates of uncertainty be included in the assessment report because without them it is difficult to determine their reliability.

NMFS has taken steps to implement some of the recommendations contained in the NMFS stock assessment improvement plan, but much remains to be done. NMFS has concentrated its efforts mostly on improving data quantity. For example, NMFS increased the frequency of groundfish stock assessments and extended the geographic ranges of the shelf and slope surveys to cover over 300 more miles along the southern California coast. However, because of staffing and funding limitations, NMFS has not yet implemented many of the recommendations aimed at obtaining more types of data and improving data quality. For example, NMFS has not collected enough ecosystem data, and the frequency and range of recruitment surveys (estimated production of new members of a fish population) are limited. Finally, because of other program priorities, NMFS has not implemented the recommendation to create a comprehensive plan that combines the improvement plan and its complementary plans.

NMFS records indicate at least \$8.9 million is needed to complete ongoing and planned stock assessment improvements—\$2.6 million that NMFS' Northwest Fisheries Science Center requested but did not receive in fiscal years 2001 to 2003, and \$6.3 million requested for fiscal years 2004 and 2005. It will cost about (1) \$7.7 million to improve the types of data used, such as more untrawlable water and recruitment surveys and (2) \$1.2 million to improve the quality of data used in stock assessments, such as enhanced calibration of vessel equipment and standardized trawl survey procedures. The actual cost of the remaining improvements may be even higher than the \$8.9 million estimated because the estimates primarily reflect the amount of money that agency officials believed could be realistically obtained, rather than what the improvements might cost.