

Marine Fisheries Stock Assessment Improvement Plan

Presents an illustrated, A-Z encyclopedia with more than 600 entries providing information on topics related to marine science.

The collapse of cod, flounder, and haddock fish stocks in the Northeast United States has caused widespread concern among managers and fishers in the United States and Canada. The diminishing stocks have forced managers to take strict regulatory measures. Numerous questions have been raised about the adequacy of stock assessment science used to evaluate the status of these stocks and the appropriateness of the management measures taken. Based on these concerns, Congress mandated that a scientific review of the methodology and data used to evaluate these stocks be conducted. In this volume, the committee concludes that although there are improvements to be made in data collection, modeling uncertainty, and communicating between fishers, managers, and scientists, the scientific methods used in the Northeast stock assessments are sound. Recommendations are made on how the stock assessment process can be improved.

**Report of the National Marine Fisheries Service, National Task Force for Improving Fish Stock Assessment
Environmental Impact Statement**

**Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations for 2005
Improvements are Needed in the Federal Process Used to Protect Marine Mammals from Commercial Fishing
Continued Efforts Needed to Improve Reliability of Stock Assessments**

**Oversight Hearing Before the Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs of the Committee on
Natural Resources, U.S. House of Representatives, One Hundred Twelfth Congress, First Session, Thursday, March 31,
2011**

The National Marine Fisheries Service (NMFS) employs many fishery scientists with diverse skills. The agency finds that the supply of fishery biologists is adequate to meet most of its demand. However, increasing demands on the agency to understand fish populations and the social and economic conditions in fishing communities have created a need for additional experts in the fields of fisheries stock assessment and social sciences. NMFS has developed plans for meeting its anticipated staff needs in stock assessment and social sciences and asked the National Research Council (NRC) to convene a workshop to discuss the plans and suggest other actions the agency might take to ensure an adequate supply of experts in these fields. Approximately 30 individuals gathered in Woods Hole, Massachusetts on July 17, 2000 under the auspices of the NRC's Ocean Studies Board to discuss NMFS' plans. This document summarizes the presentations and discussions at that one-day workshop. No attempt was made to reach consensus among the participants; thus, the suggestions recorded in this summary represent the personal views of workshop participants, as summarized by NRC staff.

Provides guidelines for fish stock assessment and fishery management using the software tools developed by the UK's Department for International Development's Fisheries Management Science Programme. This report explains some key elements of the precautionary approach to fisheries management and outlines a range of alternative stock assessment approaches.

Departments of Commerce, Justice, and State, the Judiciary, and related agencies appropriations for 2004

Recruiting Fishery Scientists

Sustaining Marine Fisheries

The Future of Fisheries Science in North America

A Framework Guide to the Stock Assessment Tools of the Fisheries Management and Science Programme

Oversight on Management Issues at the National Marine Fisheries Services [sic]

Because marine mammals (MM), such as whales and dolphins, often inhabit waters where commercial fishing occurs, they can become entangled in fishing gear, which may injure or kill them. The 1994 amend. to the MM Protection Act (MMPA) require the Nat. Marine Fisheries Serv. (NMFS) to establish take reduction teams for certain MM to develop measures to reduce their incidental takes. This report determines the extent to which NMFS: (1) can accurately identify the MM stock that meet the MMPA's requirements for establishing such teams; (2) has established teams for those stocks that meet the requirements; (3) has met the MMPA's deadlines for the teams subject to them; and (4) evaluates the effectiveness of take reduction reg₂s. Illus.

The National Marine Fisheries Service (NMFS) is responsible for the stewardship of the nation's living marine resources and their habitat. As part of this charge, NMFS conducts stock assessments of the abundance and composition of fish stocks in several bodies of water. At present, stock assessments rely heavily on human data-gathering and analysis. Automatic means of fish stock assessments are appealing because they offer the potential to improve efficiency and reduce human workload and perhaps develop higher-fidelity measurements. The use of images and video, when accompanied by appropriate statistical analyses of the inferred data, is of increasing importance for estimating the abundance of species and their age distributions. "Robust Methods for the Analysis of Images and Videos for Fisheries Stock Assessment" is the summary of a workshop convened by the National Research Council Committee on Applied and Theoretical Statistics to discuss analysis techniques for images and videos for fisheries stock assessment. Experts from diverse communities shared perspective about the most efficient path toward improved automation of visual information and discussed both near-term and long-term goals that can be achieved through research and development efforts. This report is a record of the presentations and discussions of this event.

Hearings Before a Subcommittee of the Committee on Appropriations, United States Senate, One Hundred Ninth Congress, Second Session

Protecting, Sustaining, Rebuilding Our Nation's Living Oceans, NOAA Fisheries 2001 Report

Pacific groundfish continued efforts needed to improve reliability of stock assessments : report to congressional requesters.

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Implementation of the Magnuson-Stevens Fishery Conservation and Management Act
Improving the Collection, Management, and Use of Marine Fisheries Data
Oversight Hearing Before the Subcommittee on Fisheries Conservation, Wildlife, and Oceans of the
Committee on Resources, U.S. House of Representatives, One Hundred Seventh Congress, First Session, June
14, 2001

NMFS has a difficult and complex task in managing U.S. marine fisheries. Despite some successes, too many stocks continue to decline. In the past decade, several problems have been identified that have contributed to the current dissatisfaction with how marine fisheries are managed. This dissatisfaction is evident from the large number of lawsuits filed by the fishing industry and environmental organizations. The central problem is overfishing. Overfishing issues have been discussed in a series of NRC reports, and these reports identify overfishing and technological and gear improvements as some of the causes. The reports recommend ways to stem these problems and improve the practice of fishery science at NMFS. This report reiterates some of these recommendations, and makes new recommendations for the use of data and science for fisheries management.

Fluctuations and declines in marine fish populations have caused growing concern among marine scientists, fisheries managers, and recreational fishers, and the public. *Sustaining Marine Fisheries* explores the nature of marine ecosystems and the complex factors that shape their productivity. The book documents the condition of marine fisheries today, highlighting species and groups that are under particular stress. Challenges to achieving sustainability are discussed, and shortcomings of existing fisheries regulations are examined. The volume calls for fisheries management to adopt a broader ecosystem perspective that encompasses environmental and human influences. *Sustaining Marine Fisheries* offers new approaches to building workable fisheries management institutions, improving scientific data, and developing management tools. The book recommends ways to change current practices that encourage overexploitation of fish resources. It will be of special interest to marine policymakers and ecologists, fisheries regulators, managers, fisheries scientists and marine ecologists, fishers, and concerned individuals.

Programmatic Supplemental EIS for Alaska Groundfish Fisheries Implemented Under the Authority of the Fishery Management Act
Groundfish Fishery of the Gulf of Alaska and the Groundfish of the Bering Sea and Aleutian Islands Area
Spending for NOAA and NMFS and the President's Fiscal Year 2012 Budget Request for These Agencies
Commerce, Justice, Science, and Related Agencies Appropriations for Fiscal Year 2012
Hearings Before a Subcommittee of the Committee on Appropriations, House of Representatives, One Hundred Eighth Congress, First Session

Annual Report of the Marine Mammal Commission

Fisheries management successes in Alaska and the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act
Marine Fisheries Stock Assessment Improvement Plan
Report of the National Marine Fisheries Service, National Task Force for Improving
Fish Stock Assessment
MARINE FISHERIES STOCK ASSESSMENT IMPROVEMENT PLAN... U.S. DEPARTMENT OF COMMERCE... OCTOBER 2001
Improving Fish Stock Assessments
National Academies Press

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Fisheries science in North America is changing in response to a changing climate, new technologies, an ecosystem approach to management and new thinking about the processes affecting stock and recruitment. Authors of the 34 chapters review the science in their particular fields and use their experience to develop informed opinions about the future. Everyone associated with fish, fisheries and fisheries management will find material that will stimulate their thinking about the future. Readers will be impressed with the potential for new discoveries, but disturbed by how much needs to be done in fisheries science if we are to sustain North American fisheries in our changing climate. Officials that manage or fund fisheries science will appreciate the urgency for the new information needed for the stewardship of fish populations and their ecosystems. Research organizations may want to keep some extra copies for a future look back into the thoughts of a wide range of fisheries professionals. Fisheries science has been full of surprises with some of the surprises having major economic impacts. It is important to minimize these impacts as the demand for seafood increases and the complexities of fisheries management increase.

Hearings Before a Subcommittee of the Committee on Appropriations, House of Representatives, One Hundred Ninth Congress, First Session

The Findings and Recommendations of the Department of Defense Independent Review Relating to Fort Hood

Hearings Before a Subcommittee of the Committee on Appropriations, United States Senate, One Hundred Twelfth Congress, First Session, on H.R. 2596/S. 1572, an Act Making Appropriations for the Departments of Commerce and Justice, and Science, and Related Agencies for the Fiscal Year Ending September 30, 2012, and for Other Purposes

Science and Its Role in the National Marine Fisheries Service

A Report to Congress

The significance of habitat to sustainable management of the Nation's fisheries was acknowledged by the U.S. Congress in 1996. The Magnuson-Stevens Fishery Conservation and Management Act was amended by the Sustainable Fisheries Act of 1996 to include provisions for defining Essential Fish Habitat (EFH) as "those waters and substrate necessary for fish for spawning, breeding, feeding or growth to maturity", applicable to all federally managed species and all of the life history stages. The sheer magnitude of the EFH mandate and the general absence of dedicated funding prompted the NMFS to produce the Habitat Assessment Improvement Plan (HAIP) for marine fisheries. The HAIP had multiple objectives including the improvement and prioritization of habitat-science research activities related to stock assessment and EFH definitions. One of the key recommendations in the HAIP is that NMFS should develop criteria to prioritize stocks and geographic locations that would benefit from habitat assessments, meaning the process and products associated with consolidating, analyzing, and reporting the best available information on habitat characteristics related to the population dynamics of fishery species and other living marine resources. This prompted formation of the national Habitat Assessment Prioritization Working Group (HAPWG) in 2011. The HAPWG developed national guidance for

objectively scoring managed species/stocks on a standard set of rubrics. The prioritization process involved a sequence of filters and scorable criteria intended to identify high, medium, and low priority stocks for future habitat assessments, both in terms of value to EFH designations and to address habitat-related uncertainty in stock assessments. A coordination team representing the Alaska Fisheries Science Center, the Alaska Regional Office, and the NMFS Office of Science and Technology adapted the generic prioritization process to the specific circumstances of the Alaska Region, assembled data and references to support online scoring, and arranged for the lead stock assessment authors to score their stock(s) from among the assembled list of managed stocks. As a result, a total of 17 stocks or stock complexes were individually evaluated by the stock-assessment authors including six crab stocks and one rockfish complex that are managed by the State of Alaska and three non-target species that were added at the request of the NPFMC Groundfish Plan Team. Fourteen stocks each in the stock assessment and EFH themes were identified as high priorities for habitat assessments, based on predetermined scoring thresholds for the Alaska Region. Overall, 17 different stocks were given high-priority status in one or the other theme and 11 stocks were prioritized in both themes. Upon completion, an internal review was conducted to assess the process and develop recommendations for future habitat-prioritization exercises. [doi:10.7289/V5/TM-AFSC-361 (<https://doi.org/10.7289/V5/TM-AFSC-361>)]

Congress has promoted fisheries science for over a century and its involvement in fisheries management took a great leap forward with passage of the Fisheries Conservation and Management Act of 1976. In the past decade, Congress has requested advice from the National Research Council (NRC) on both national issues (e.g., individual fishing quotas and community development quotas) and the assessments related to specific fisheries (Northeast groundfish). This report was produced, in part, in response to another congressional request, this time related to the assessments of summer flounder stocks along the East Coast of the United States. Following the initial request, the NRC, National Marine Fisheries Service (NMFS), and congressional staff agreed to broaden the study into a more comprehensive review of marine fisheries data collection, management, and use.

Summary of a Workshop

Science, the Departments of State, Justice, and Commerce, and Related Agencies Appropriations for 2006
Hearing Before the Committee on Armed Services, United States Senate, One Hundred Eleventh Congress, Second Session, January 21, 2010

Stock Assessment for Fishery Management

Continued Efforts Needed to Improve Reliability of Stock Assessments : Report to Congressional Requesters
Hearing Before the Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard of the Committee on Commerce

Science, and Transportation, United States Senate, One Hundred Twelfth Congress, First Session, April 13, 2011
Ocean harvests have plateaued worldwide and many important commercial stocks have been depleted. This has caused great concern among scientists, fishery managers, the fishing community, and the public. This book evaluates the major models used for estimating the size and structure of marine fish populations (stock assessments) and changes in populations over time. It demonstrates how problems that may occur in fisheries data--for example underreporting or changes in the likelihood that fish can be caught with a given type of gear--can seriously degrade the quality of stock assessments. The volume makes recommendations for means to improve stock assessments and their use in fishery management.

Commerce, Justice, Science, and Related Agencies Appropriations for 2010, Part 2, 111-1 Hearings

Departments of Commerce, Justice, and State, the Judiciary, and related agencies appropriations for 1991

Review of Northeast Fishery Stock Assessments

Fiscal Year 2012 NOAA Budget Request and Oversight

Pacific Groundfish

NMFS Strategic Plan for Fisheries Research