



MARINE MAMMAL COMMISSION

11 March 2010

Mr. William Michaels
National Marine Fisheries Service
Office of Science and Technology, F/ST4
1315 East-West Highway
Silver Spring, MD 20910

Dear Mr. Michaels:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's 11 December 2009 *Federal Register* notice (74 Fed. Reg. 65724) regarding the Service's proposed rule on the guidelines for National Standard 2 of the Magnuson-Stevens Fishery Conservation and Management Act. National Standard 2 requires the use of the best scientific information available in fisheries conservation and management. The proposed rule would revise the existing guidelines and establish new guidelines for scientific peer review. The Commission, which is charged with overseeing federal actions that affect marine mammals and the ecosystems upon which they depend, supports efforts to ensure that the highest scientific standards are employed in managing fisheries and marine ecosystems.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service—

- include further direction in the guidelines for fishery managers to use scientific information at the ecosystem level;
- preserve the principles of relevance, inclusiveness, objectivity, transparency and openness, timeliness, verification and validation, and peer review in the final guidelines;
- retain language emphasizing the importance of evaluating uncertainty, identifying gaps in information, and recognizing the associated risks of moving forward with ill-conceived management actions (e.g., overfishing or lost economic activity);
- promote a more cautious interpretation of findings where uncertainty is high in order to (1) ensure conservation of data-poor species and (2) provide an incentive to collect the necessary information;
- retain the framework of the peer-review process outlined in the proposed rule and work with the councils to determine if, when, and how peer reviews should be conducted;
- provide a minimum of a 21-day period to enable timely but more thorough external review and comment;
- continue to recognize the scientific and statistical committees as the scientific advisory bodies to the councils, distinct from other peer-review bodies that would be convened to support or supplement the work of the committees and councils;

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- include the conflict of interest provisions in the final rule and ensure that they apply to all peer reviewers and scientific and statistical committee members;
- include requirements for the Secretary to disclose the source of any information included in a stock assessment and fishery evaluation (SAFE) report and carry out a targeted peer review of new information included in the document; and
- require more thorough assessments of marine ecosystems in SAFE reports.

RATIONALE

National Standard 2 of the Magnuson-Stevens Fishery Conservation and Management Act directs the National Marine Fisheries Service and eight regional fishery management councils to base conservation and management measures on the best scientific information available. The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 directed that harvest limits be set based on the advice of fishery scientists and established a peer-review process to ensure that councils have the benefit of the best available science regarding fishery conservation and management. In response, the Service is proposing to revise the existing guidelines for implementing National Standard 2 and to establish new guidelines for scientific peer review to ensure the reliability of the scientific information used by fishery managers. The Marine Mammal Commission supports the Service's goal of strengthening these guidelines.

The Use of Ecological Information

The requirement to use the best scientific information available should apply to all aspects of fishery management. To ensure effective management of fisheries and fished ecosystems, fishery scientists and ecologists must provide information on such variables as the abundance, distribution, and population dynamics of the target species, as well as their natural history and ecological relationships. In addition, to inform managers about the socioeconomic consequences of their decisions, social scientists and economists must provide information on fishing practices and the individuals, companies, and communities that depend on fishing. Although section (a)(1) of the proposed revision acknowledges the need to collect, analyze, and apply biological, ecological, economic, and sociological information, it provides little guidance to managers who must consider and use this information, particularly that pertaining to ecosystem science. As the nation's marine policies move toward ecosystem management based on regional and long-term planning frameworks, fishery managers and fishery management councils also should operate under scientific guidelines consistent with, and supportive of, that approach. To advance an ecosystem-based approach to fishery management, the Marine Mammal Commission recommends that the National Marine Fisheries Service include further direction in the guidelines for fishery managers to use scientific information at the ecosystem level.

Principles for Evaluating the Best Scientific Information

The principles for evaluating best scientific information—relevance, inclusiveness, objectivity, transparency, openness, timeliness, verification and validation, and peer review—put forth in the proposed revisions are sound and widely accepted. The National Research Council (2004) recommended a similar suite of guidelines for identifying best scientific information available rather than a static, inflexible, and overly prescriptive approach because information that is considered relevant and inclusive, for example, will evolve through scientific inquiry. The Marine Mammal Commission recommends that the National Marine Fisheries Service preserve the principles of relevance, inclusiveness, objectivity, transparency and openness, timeliness, verification and validation, and peer review in the final guidelines. Verification and validation—the assurance of sufficient data documentation and the proper performance of analytical methods, respectively—are particularly important in fishery and marine ecosystem modeling.

Contending with Uncertainty

Scientific information that satisfies each of the identified principles and attains the label “best available” will still involve varying degrees of uncertainty, and the revised guidelines include important guidance for scientists and managers who must contend with uncertainty. Given the inherent complexity and potential significance of the biological, ecological, and socioeconomic information involved in fisheries science and management, scientists should describe any and all uncertainty, sources of error, and other limitations (both in isolation and in combination) that may limit the applicability or distort the meaning of their findings. Fishery managers must understand the nature and potential significance of various sources of uncertainty when they make their management decisions, and full disclosure of uncertainties and associated risks will help managers make prudent and appropriately cautious management decisions. The Marine Mammal Commission recommends that the National Marine Fisheries Service retain language emphasizing the importance of evaluating uncertainty, identifying gaps in information, and recognizing the associated risks of moving forward with ill-conceived management actions (e.g., overfishing or lost economic activity). The Service notes that one way of dealing with uncertainty in data-poor fisheries is to use simpler assessment methods and proxies for variables that cannot be directly estimated. Doing so requires assumptions that may not be true (e.g., all rockfish have similar life histories), and the Marine Mammal Commission recommends that the Service promote a more cautious interpretation of findings where uncertainty is high in order to (1) ensure conservation of data-poor species and (2) provide an incentive to collect the necessary information.

Peer Review

Peer review is a key principle in determining what scientific information is the “best available” and in evaluating scientific uncertainty, as described here. The peer-review process established in the revised guidelines is consistent with the Final Information Quality Bulletin for Peer Review, published in 2004 by the Office of Management and Budget. The Marine Mammal Commission recommends that the Service retain the framework of the peer-review process outlined in the proposed rule and work with the councils to determine if, when, and how peer reviews should

be conducted. The framework enables scientists and managers to tailor review processes to specific information needs, ensure timeliness, properly define the scope of work, ensure expertise and balance in reviewers, minimize conflicts of interest, maximize independence, and strive for transparency—all consistent with widely accepted standards for ensuring integrity in scientific research. The Commission fully supports the concept of transparency, but believes that the 14-day advance notice requirement (subsection (b)(3)) is too short to allow for meaningful input. To allow for such input, the Marine Mammal Commission recommends that the National Marine Fisheries Service provide a minimum of a 21-day period to enable timely but more thorough external review and comment.

The proposed guideline revisions also make it clear that the peer-review process can complement, but not replace or be replaced by, the role of councils' scientific and statistical committees that provide councils with ongoing scientific advice for management decisions. The Marine Mammal Commission recommends that the National Marine Fisheries Service continue to recognize the scientific and statistical committees as the scientific advisory bodies to the councils, distinct from other peer-review bodies that would be convened to support or supplement the work of the committees and councils.

Conflicts of Interest

One element of the peer-review framework that warrants further consideration is the need to minimize actual and perceived conflicts of interest. Proposed subsection (b)(2)(ii) would define “conflict of interest,” establish full-disclosure requirements for minimizing such conflict when it is unavoidable, and eliminating such conflicts from the peer-review process. If and when members of the scientific and statistical committees serve in a peer-review capacity, proposed section (c)(3) would require those members to meet the peer-reviewer selection criteria, including those pertaining to conflicts of interest. Because real or perceived conflicts of interest undermine the quality and integrity of any advice or findings that result from the review, the Marine Mammal Commission recommends that the National Marine Fisheries Service include the conflict of interest provisions in the final rule and ensure that they apply to all peer reviewers and scientific and statistical committee members.

SAFE Reports

Stock assessment and fishery evaluation (SAFE) reports are key documents for organizing and summarizing scientific information for councils and the public. The proposed guideline revisions include clarification of the purpose and content of these reports. Although the Commission supports the use of these reports, it is concerned with two elements of the proposed revisions.

First, subsection (d)(1) of the proposal states that “the Secretary or council may utilize any combination of personnel from council, state, federal, university, or other sources to acquire and analyze data and produce the SAFE report.” It does not contain any instructions for disclosing the source(s) of information, nor does it include any requirements for the SAFE report to undergo a

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separate peer review—a troubling oversight considering that the Secretary can include any new information, from any source, that becomes available. The Marine Mammal Commission recommends that the National Marine Fisheries Service include requirements for the Secretary to disclose the source of any information included in a stock assessment and fishery evaluation (SAFE) report and carry out a targeted peer review of new information included in the document.

Second, subsection (d)(3) describes information that SAFE reports should contain. The list of information includes exhaustive detail at the single-species or stock level, while generally glossing over information at the ecosystem level. A SAFE report should include a robust assessment of ecosystem variables that affect the stock, including habitat alterations, natural mortality, and other threats or changes that affect recruitment or survival, and it should include information on how the fishery affects other species, including marine mammals and other protected resources, and dynamics within the marine ecosystem. To that end, the Marine Mammal Commission recommends that the National Marine Fisheries Service require more thorough assessments of marine ecosystems in SAFE reports. With regard to marine mammals, the Service has already considered such information as part of its efforts to improve stock assessment reports.

Please contact me if you have any questions about our recommendations and rationale.

Sincerely,

A handwritten signature in blue ink that reads "Peter O Thomas, Sr".

Timothy J. Ragen, Ph.D.
Executive Director

Literature Cited

- National Research Council of the National Academies. 2004. Improving the Use of the “Best Scientific Information Available” Standard in Fisheries Management. The National Academies Press, Washington, DC. 105 pp.
- Office of Management and Budget. 2004. Final Information Quality Bulletin for Peer Review. Executive Office of the President, Office of Management and Budget, Memorandum M-05-03; December 16, 2004.