

**BUILDING CAPACITY OF THE
NMFS SCIENCE ENTERPRISE**

BY

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EXECUTIVE SUMMARY

The National Marine Fisheries Service (NMFS) asked us to ascertain the scope and frequency of current program reviews, develop a proposed framework for reviews, provide a list of priorities, recommend an oversight and documentation mechanism, and review the overall science enterprise and make recommendations on the science being undertaken, reported, and transitioning into management decisions. We broadly interpret our charge as advising NMFS Senior Management on scientific institution building. We considered programs, products and management of the science enterprise.

While NMFS has numerous outstanding scientists that conduct high quality research and provide sound scientific advice, our study found many problems. The National Marine Fisheries Service faces difficult challenges making some problems inevitable. Our findings are our opinions, but there may be other perspectives that merit consideration.

Our key findings are as follows:

1. NMFS Science Centers and Headquarters operate largely as independent entities in spite of National planning and coordination efforts.
2. The parallel organizational status for Science Centers and Regional Offices is appropriate, but it requires cooperation and coordination.
3. Management information is incomplete, piecemeal and hard to use.
4. There is too much program fragmentation, and investments in innovation are too small and/or subcritical mass.
5. There is insufficient scientific experience and leadership, focus on Science Centers, and follow-through, at Headquarters.
6. There are no functional program review policies.
7. The performance of stock assessment review processes is mixed, and needs to be improved in some regions.
8. Scientific Review Groups peer review marine mammal science.
9. Quality assurance processes for scientific input to the Endangered Species Act are evolving, but they are still incomplete, inconsistent, and lack adequate transparency.
10. Quality assurance of economic and social impact assessments and habitat science is largely left to internal review by the Science Centers and to Regional Fishery Management Council Scientific and Statistical Committees.
11. All Science Centers have internal review policies for documents and publications.
12. Too much faith is placed on independent peer review and the Center for Independent Experts.
13. The Federal Advisory Committee Act impedes science quality assurance.

We have four broad recommendations concerning a National framework for future program reviews, lessons learned from previous program reviews, all aspects of

management of the Agency's science enterprise, and processes to produce scientific advice to support management. Our recommends are to:

1. Implement a National process for program reviews- We think Programs should be defined and reviewed Nationally, rather Center by Center, to:
 - a. Improve or create integration.
 - b. Engage and make Headquarters responsible for the process.
 - c. Enhance consistency nationally and over time.
 - d. Assure follow-through on program review outcomes.

Therefore, we recommend a National program review process with the following elements:

- a. A National Program Review Panel comprised of external science leaders.
 - b. Five National Programs that include all of NMFS scientific activities regardless of organizational location.
 - c. Program Review Teams to conduct annual program review site visits.
 - d. A Program Information Database.
 - e. Program Review Staff to support the process.
2. Conduct a review of reviews- There have been numerous reviews and planning effort at the regional level and from a National perspective. They have been conducted under the auspice of NMFS, NOAA, Department of Commerce, and the National Research Council. The conclusions from all of these studies should be assembled and digested as a foundation for implementing our other recommendations.
 3. Reassess the organization and management of the Agency's science enterprise and make improvements as necessary- We believe improvements are necessary with respect to:
 - a. Coordination with Regional Offices (at least in some regions),
 - b. Some Science Center organizations,
 - c. Program integration at the National level and in some cases regionally,
 - d. Management information and its transmission both ways between the field and Headquarters,
 - e. Investments in innovation at or above the critical mass level,
 - f. Succession planning for future scientific leaders,
 - g. Headquarters capability, leadership and focus, when it comes to managing the Agency's science enterprise from a National perspective.
 4. Evaluate, redesign and complete, as necessary, processes for producing scientific advice for management. We recommend the following steps:
 - a. Each region should prepare a description of the processes used to quality assure MSFMCA, ESA and MMPA scientific advice.
 - b. National workshops should be conducted to review this information
 - c. A Headquarters lead team should prepare National guidelines for quality assurance processes for advice.
 - d. Regions should redesign processes, as appropriate, based on steps b-c.

- e. There should be further consultation with stakeholder before finalizing and implementing regional processes.