

**Directors Office Response to
2008 External Review of PIFSC Ecosystem Programs
in the Hawaiian Archipelago**

-- December 2008 --

Introduction

As an important aspect of the NOAA Fisheries science accreditation process, the regional Science Centers undertake external reviews of their research through a variety of approaches. In 2007 and 2008, PIFSC conducted Center for Independent Experts (CIE) reviews of particular scientific processes or work products, including marine turtle biological research methodologies, demersal species larval dispersal modeling, and bigeye and yellowfin tuna assessments. Similar reviews of Hawaii bottomfish stock assessment methodologies and marine turtle population vulnerability assessment methods are forthcoming.

We also conducted external reviews of our research program. In 2007, we convened a general review of the Science Center, and in 2008, a more targeted review of our ecosystem science activities in the Hawaiian archipelago. The results of both reviews are posted on our Web site at: <http://www.pifsc.noaa.gov/do/pifscreports.php>

The 2008 external program review was chaired by Professor George Boehlert, director of the Hatfield Marine Center at Oregon State University, and a former director of the NMFS Honolulu Laboratory, the Science Center's predecessor organization. The other participants were:

Dr. John Boreman, director, NMFS Office of Science and Technology

Dr. Michael Fogarty, fishery biologist, NMFS Northeast Fisheries Science Center

Dr. Bonnie Ponwith, director, NMFS Southeast Fisheries Science Center

Professor Craig Severance, Department of Anthropology, University of Hawaii at Hilo, and a member of the Western Pacific Fishery Management Council's Scientific and Statistical Committee

A number of important stakeholders were invited and the following were able to attend some or all of the review: Dr. Karl Brookins, Hawaii Division of Aquatic Resources; Dr. Paul Dalzell, Senior Scientist, Western Pacific Fishery Management Council; Dr. David Detlor, deputy director, NMFS Office of Science and Technology; Alvin Katekaru, Sustainable Fisheries, NMFS Pacific Islands Regional Office; Jennifer Koss, Coral Reef Conservation Program Coordinator, NMFS Office of Habitat Conservation; Professor Jo-Ann Leong, director, Hawaii Institute of Marine Biology; Naomi McIntosh,

superintendent, Hawaii Humpback Whale National Marine Sanctuary; Pat Montanio, director, NMFS Office of Habitat Conservation; and Larissa Plants, NOAA liaison to Senator Daniel K. Inouye's office.

The review was held June 24-26, 2008 in Honolulu, Hawaii. The principal objectives of the review were to examine the ecosystem monitoring and research programs of the Center as they are applied in the Hawaiian archipelago, their relationship to NOAA Fisheries' vision of ecosystem research, and to solicit advice, recommendations, and direction on these programs. More detailed information on the review can be found in the material on our Web site at the URL previously cited.

Response

First, as the Director and Deputy Director of the Center, we want to very much thank the review panel, and especially George Boehlert, for their diligent work, their acute questions, and their excellent observations. We undertook this review not as an "obligation" but as an opportunity to learn, and we feel this review was very successful. We do not agree with every nuance in the review, but we agree with the gist of it and offer comments on the main themes here.

The review panel made its observations and recommendations under six substantive sections (identified below in **bold** font), and we have provided our comments in line with those sections. Throughout, we have excerpted some of the review panel's comments and recommendations, and then provided our responses.

Assessment of Current Balance of Research and its Quality/Adequacy of Scientific Approach

The review panel noted:

"While the overall scientific approach employed in these activities is tailored to specific management needs, a broader ecosystem orientation is evident in many."

This is a major strength but also a major challenge for the Center – most of our work is mandate-driven by legislation: the Magnuson-Stevens Fishery Conservation and Management Act and the Endangered Species Act, to name just two. While we have one program focused on ecosystem dynamics, we were pleased that the review panel recognized the effort to consider ecosystem approaches throughout the five research divisions of the Center. And we concur with the panel's follow-on comment:

"This [a formal approach toward an Ecosystems Approach to Management (EAM)] will entail a re-examination of the overall monitoring, research, and modeling activities conducted by the Center Divisions to determine if they can be (or should be) modified to meet broader ecosystem research goals."

For us the challenge is to make progress on this pending the establishment of a clear, funded mandate for such work. The new NOAA-NSF CAMEO initiative (Comparative Analysis of Marine Ecosystem Organization) is an exciting opportunity in this regard, and we have participated in two proposals for first year funding under the program. We also expect to have a CAMEO post-doctorate fellow funded through NMFS in FY09. We appreciate that the panel recognized the Hawaiian Archipelago Marine Ecosystem Research (HAMER) plan as “a good source document for EAM research planning at the Center.” PIFSC and its research partners put considerable effort into that planning document as an investment in guiding future ecosystem research opportunities in the central and western Pacific.

PIFSC Center Organization for Ecosystem Studies

Organizational Structure: The panel raised some significant questions about collaboration between the five research divisions within the Center, including the following comment:

“These collaborations need to be initiated and strengthened immediately, and strong leadership from the Center directorate may be required to stimulate the collaborations.”

During the review presentations by the Center’s research staff, we were also struck by the degree to which apparently obvious areas of coordination had not been followed up on. We recognize that the mandate-driven nature of much of our work makes experiments in collaboration riskier. But we must do better. As a first step, we held an internal workshop of Center scientists in the Fall of 2008, in the context of the FY09 national milestone process, to identify five to seven milestones that emphasize ecosystem approaches and collaboration between divisions. These include:

- Coordinate PIFSC and Pacific Islands Regional Office Research and Management Priorities
- Develop a Comprehensive Plan for Highly Migratory Species (HMS) Science
- Develop an Integrated Sea Turtle Program
- Convene a Center Workshop to Establish a Climate Research Vision/Strategy/Program within PIFSC
- Develop a PIFSC Fisheries Data Integration Plan

The review panel made a strong recommendation on increasing the integration of ecosystem research amongst the Center’s five research divisions:

“These collaborations need to be initiated and strengthened immediately, and strong leadership from the Center directorate may be required to stimulate the collaborations.”

The review panel also made several suggestions on organization to improve inter-division coordination:

- 1) Establish a Chief Scientist position
- 2) Establish an Ecosystem Research lead
- 3) Establish an inter-division collaboration team
- 4) Re-invigorate the Special Committee on Research (SCOR); and
- 5) Explore collaborative incentives (funding)

The PIFSC leadership is committed to exploring these suggestions and made this task a priority milestone for FY09.

The panel also had a separate suggestion concerning organization and coordination of data management:

“The Center should consider consolidating their data management practices as a means of improving efficiency and enabling them to more readily plug into national efforts to standardize data management and to make data more accessible to science partners and clients.”

We concur completely and in fact we had already, and currently have on-going, efforts to do so; this activity is a multi-year milestone for the Center under the leadership of our System Design Team. Data management is an area of the Center’s scientific infrastructure that has suffered from insufficient investment in the past. We did not provide a separate briefing on the Center’s data management, but had we done so the panel’s recommendation would just have been accentuated: we recognize there is still much work to be done in this area, and we have some excellent people leading the work. PIFSC data management staff has also been participating in a NMFS-wide “data integration” project and have contributed a key piece of the software support to that initiative (InPort).

Infrastructure: The review panel was concerned that the Center’s current facilities (five separate sites in Honolulu) do not allow the kind of interaction nor have the kind of communication capability to facilitate cooperative work. We share this concern and have been seeking ways to address it. At present we have an extensive broadband installation project on-going, with the support of NOAA, to increase our telecommunications capabilities, and we are booking one year in advance external meeting rooms large enough for all PIFSC staff to attend all hands meetings on a quarterly basis. Within the Center, we expect many of these concerns to be resolved with the construction of the new NOAA Pacific Region Center and subsequent consolidation of staff, while at the same time posing some new challenges with respect to interactions with our external partners (as noted below).

Resources: The review panel noted a number of funding shortfalls and suggested that:

“The Center should thus work to expand outside collaborations with groups like the University of Hawaii, the NOAA Marine Sanctuary program, and others to leverage their resources to the benefit of EAM objectives.”

As an independent science center, PIFSC is integrated into NOAA's PPBES (Planning, Programming, Budgeting, and Execution System) approach to identifying program requirements and seeking funding. Each of our divisions is also involved in NMFS Headquarters level program prioritization. At the same time, as with many programs within NOAA over the past several years, funding has been relatively static. But this is not for lack of identified priorities on our part, and we are hopeful that the FY09 budget will begin to address some of these shortfalls.

We concur that collaboration is critical to our success, both within the Center's own frame of reference and for meeting NOAA's wider marine ecosystem science objectives. We have a strong collaboration with the University of Hawaii's Hawaii Institute of Marine Biology and seek at every opportunity to enhance it – for this year's NOAA CAMEO initiative, we teamed with two external partners in developing research proposals.

Finally, in a later section of their review, the panel expressed concern about the reliance on external funding by the Coral Reef Ecosystem Division (CRED) and the integration of that division with the other Center programs. CRED remains a new program within PIFSC but is increasingly finding success in building bridges to the more traditional fisheries and protected species programs, specifically in terms of bringing CRED's near-shore ecosystem monitoring information, and its use of new technologies, to add value to these programs. We continue to be diligent on the integration of funding and mission, as suggested by the panel.

Priorities; Balancing Ecosystem-related Research with Traditional Fisheries Research

The review panel was concerned about how PIFSC could conduct ecosystem-related research while at the same time meeting our more specific mandates. We agree this is a challenge. In the absence of increased funding, while we can improve coordination and acknowledge that meeting mandates requires more ecosystem science (e.g., our foraging work on recovery questions concerning juvenile monk seals), we will continue to be limited. However we are encouraged that both ecosystem science and mandated science are supported in future year Presidential budgets.

We would disagree to a certain extent with one review comment in this area:

“Most evident is the lack of collaboration between the social sciences and the physical and biological sciences.”

NMFS has the most robust social science program (including economics, anthropology, and sociology) within NOAA. Within NMFS it is roughly 8% of the total budget, and within PIFSC it is approximately 3-4% of the total budget, the shortcoming reflecting the division of economic research funding between PIFSC and SWFSC when PIFSC was created. Almost all funding comes from the NMFS Office of Science and Technology and is increasing under a national build out plan. PIFSC social science is included in the

HAMER plan under the Human Interactions theme, and PIFSC social scientists collaborate with each of the other divisions. For example, the PIFSC economics program has developed a model of the North Pacific swordfish fishery that incorporates information on swordfish and loggerhead turtle behavior along with information on longline fishing effort. In American Samoa, under a NOAA Preserve America grant, PIFSC social scientists worked with the corals program to document traditional Samoan fishing practices. While there is much still to be done, both the economic and non-economic sides of the PIFSC social science program reach out to the natural science divisions and have good opportunities for future collaboration.

The panel also had concerns about the integration of ecosystem science into actual conservation and management activities:

“Collaborations with the Regional Office and Council will be necessary to ensure that evolution to an ecosystem-based approach in science programs are synchronized with changes in the management process. This is an area that should receive priority attention.”

Developing pragmatic ecosystem based conservation and management activities is a real challenge, not only in the Pacific Islands but nationally and internationally. We received some excellent suggestions by the review panelists on how to take steps in these directions, beyond our current participation in the Council’s ecosystem plan teams. The Center director participated this year in two international conferences on ecosystem approaches to management with the specific objective of reviewing the steps being made elsewhere. In addition, one of our senior staff will be visiting the Northeast Fisheries Science Center (Woods Hole) this year to review their ecosystem management program.

Finally, in this section, the panel expressed concern about the Center’s expected move to a new Ford Island facility in 2013:

“Finally, one cautionary note about the relationship with the UH -- the panel was concerned that the Center’s move to Ford Island will reduce the ability to have frequent face-to-face interactions with University colleagues.”

We concur that these collaborations with the University of Hawaii at Manoa are critical to the scientific vitality of the Center, and we are vigorously exploring options for insuring that these relationships continue.

Opportunities and Areas Deserving Greater Emphasis

We concur that the opportunities identified by the review panel are important, and we continue our involvement in each.

Economics and Human Dimensions

We agree that developing the capabilities of the Center's social science program is important, and this is a priority recognized throughout NOAA by NOAA's Science Advisory Board. Collaboration between programs requires an incremental, hands-on approach of individual scientists working together, as exemplified by the current evaluation of time-area restrictions in the longline fishery, in which economics modelers are working with fisheries oceanographic modelers. It also requires team approaches to joint research on key questions when opportunities for additional funding are available.

Stakeholder Feedback

We view the stakeholder feedback as an important part of our external review. Two years ago we sponsored a separate, independent survey of our stakeholders. The stakeholder sessions included in our external review are supplements to those reviews. The external review stakeholder feedback is confidential.

Obviously we appreciate the positive feedback we received on many aspects of our program — such support is important to insuring that we are doing what we should be doing.

Areas of Possible Refocusing and Improvement: The review panel identified eight specific areas where we could consider refocusing and strive for improvement. We provide some brief comments sequentially:

1. *Lack of dedicated staff in the non-pelagics area* – Research on tunas, billfishes, and ecologically associated pelagic species continues to receive a high level of attention. Nevertheless, we have made significant strides in some non-pelagic fisheries this year with the use of national Stock Assessment Improvement Program funds to rebuild our fish life history program. We certainly agree there is more to do on all the non-pelagic fishery species, including new species of concern such as squid. We anticipate allocating more of our SAIP funds to the non-pelagic area over the forthcoming years.
2. *Adequate funding for data management* – We agree that continued development and integration of our data management functions are critical across the Center, and as noted earlier in this response, we are taking a number of steps to enhance those operations.
3. *CRED's funding stream* – We agree that stabilizing CRED funding and integrating it further into the Center's other programs is important, and it is a priority shared by CRED's program managers.
4. *Coral reef biomass assessments* – CRED is primarily a coral reef monitoring program that emphasizes the marine ecosystem, but its participants have also recognized the importance of integrating monitoring and assessment activities, and has sought to increase human dimensions research within its program.

5. *Northwestern Hawaiian Islands research permit process* – We believe that much progress has been made on the permitting process, and we appreciate the strong efforts made by the Pacific Islands Regional Office and our other NOAA partners to facilitate this process. Still, philosophical differences remain between some engaged in the review process, and we must ensure that our programs and permits address those concerns while maintaining scientific integrity.

6. *Cetaceans* – While there has been 50% turn-over (1 of our 2 cetacean staff returned to academia during 2008), this is a young program which we have identified as our top priority for additional funding in the NOAA integrated priority budget process. We have just recruited a replacement person to serve as our lead cetacean scientist, and despite the hiatus, were able to provide critical scientific leadership on a high-level collaborative cetacean study conducted in conjunction with the 2008 Navy RIMPAC exercise.

7. *Traditional ecological knowledge* – We believe that several important steps are being made to build a baseline of traditional ecological knowledge, and we anticipate extending that program to including a broader range of ecological knowledge and perspectives.

8. *Coordination of Council Fishery Ecosystem Plan priorities and Center research priorities* – The Magnuson-Stevens Reauthorization Act requires a process of reviewing Council and Science Center research priorities, and we intend to honor that process. The Council has just recently sent us its priorities, and we will be reviewing those priorities with Council staff.