

NOAA, NMFS  
Pacific Islands Fisheries Science Center  
External Review

6-8 March 2007  
Honolulu, Hawaii

Comments from:

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## **Background**

The Pacific Islands Fisheries Science Center Director, Dr. Sam Pooley, established an external panel to review the programs of the Center. This review took place 6-8 March 2007 in Burns Hall, East – West Center, on the campus of the University of Hawaii at Manoa. The External Panel members were:

John Boreman	Director, NMFS Office of Science and Technology, Washington, DC
Ned Cyr	NOAA Ecosystems Observation Program, Washington, DC
Kristen Koch	Office of the Chief Scientist, NOAA Fisheries, Washington, DC
Jo-Ann Leong	Director, Hawaii Institute of Marine Biology, Honolulu, HI
Ian Perry (Panel Chair)	Fisheries & Oceans Canada, Pacific Biological Station, Nanaimo, BC, Canada
Nancy Thompson	Acting Director, NOAA Northeast Fisheries Science Center, Woods Hole, MA

The Pacific Islands Fisheries Science Center was established in 2003. This is the first opportunity for an external panel to review the organization that was put in place at that time to see if it is working as expected, and if any changes might be needed. The objectives and format for the review consisted of:

### Objectives

- Review and evaluate the Center's current and proposed activities
- Provide advice to the Center on the direction and quality of the science program

## Questions

- Relationship of current and planned activities to Center mandates and requirements – are the right things being done
- Opportunities – are there opportunities that the Center should be pursuing
- Scientific approach – is the Center using the best suite of techniques and approaches for meeting its objectives
- Organization and priorities – is the Center properly organized to meet its mandates and is the allocation of resources among programs appropriate
- Scientific conduct – are the Center’s programs being conducted properly

## Format

The review consisted of presentations of (selected) Division programs by Division Heads (or alternates), plus discussion and questions from the panel. An afternoon was set aside for *in camera* discussions with PIFSC stakeholders, representing a broad variety of agencies with interests in, and who receive information from, PIFSC programs. The stakeholders provided the scientific review panel with comments on how their needs and priorities are being met and what issues they foresee. The Review Panel Agenda is provided as Appendix 1 to the present report.

At the conclusion of the review, the panel presented oral comments and suggestions to the PIFSC leadership team (Director’s Office, Division Heads). The following written report by Ian Perry represents an elaboration of these oral comments. They do not necessarily represent the complete or unanimous comments of the entire Review Panel.

## **Comments**

First and foremost, it was a pleasure to serve as a member of this external review panel. The presentations by the Center’s staff were all excellent, describing exciting and state-of-the-art (in many cases pushing that “state” forward) scientific programs that are revealing new knowledge and understanding of marine resources and ecosystems in a vast and poorly sampled ocean. All programs also have strong applied contexts, addressing current issues and concerns of resource managers and client agencies. I expect that the PIFSC Directors’ Office are already aware of all of my comments below; I hope that reiterating them here and perhaps casting them in a new light may provide some new ideas or approaches that will be useful in future program planning within the Center. My comments are structured around the main questions posed as part of the objectives for this review.

*Scientific approach - is the Center using the best suite of techniques and approaches to meet its objectives?*

The answer is unequivocally “Yes”. In many programs these techniques are “cutting edge”, for example crittercams, deep-diving submersibles, the ecosystem approach and techniques used to survey coral reef systems. For future consideration, I have some concerns regarding the ageing facility of the Fish Biology and Stock Assessment Division. Currently, ageing and age-growth studies are experimental, mostly to develop (time-invariant) age-length keys. This is valid as a first step – and indeed is necessary to resolve major discrepancies in definitions and techniques among international agencies providing advice for the management of highly migratory species such as tuna and billfishes. However, there is a need to plan for the next steps. Declining length-at-age is perhaps one of the most important early warning indicators for stock problems; such declines in length-at-age would not be noticed (or perhaps would be misinterpreted) using time-invariant age-length keys. Once validated ageing techniques have been developed, it may be necessary to provide periodic and on-going ageing of important species/stocks.

During the review we had much discussion on the potential requirement to develop and use output (e.g. TAC) controls for stock assessment advice and management, and the apparent requirements of the newly-reaffirmed Magnuson-Stevens Act to focus on catch controls. The information required to identify and implement total allowable catch (TAC) limits may be difficult to develop for many of the species assessed by the PIFSC. Other management approaches, including “input” controls which regulate effort (e.g. including area and time closures) may represent more practical measures with information needs that are more tractable to provide. The Center would benefit from a structured approach to the evaluation of these different management strategies (e.g. formal management strategy evaluations).

Considerable discussions occurred during the review regarding the need to formally develop and evaluate alternative working hypotheses as opposed to taking rapid intervention and mitigation approaches to crises, in particular for significant and high-profile problems such as Hawaiian monk seal declines (Protected Species Division). The risks in rapid intervention approaches are that the wrong problems might be mitigated, or perhaps mitigation might deal with short-term outcomes rather than recognising the ultimate causes.

*Mandates, requirements, and opportunities - are the right things being done to meet Center mandates and requirements? Are there opportunities worth pursuing?*

#### Emerging Issues:

A number of Emerging Issues were identified during the review, both in discussions with PIFSC staff and in discussions with client agencies. A general issue was identified in regards to developing the scientific direction, or vision, for the Center, in comparison with the on-going day-to-day demands for scientific advice and responses to urgent priorities (“crises”). This is not to imply that the Center lacks direction. Rather,

government can be very reactive to fisheries and marine management issues, always *responding* to the latest crisis rather than being proactive. It may help the Center steer through some of these crises if it has a clear vision of what are its main priorities and strengths. Specifically, it may help if the Center develops long-term goals and an integrated scientific vision for where the Center wants to be in 5-10 years, which of course would include and take account of emerging issues and on-going legal and regulatory requirements. An ecosystem focus might provide the framework for such a vision. Part of this vision should be to avoid excessive “stove-piping” and to encourage interaction among Divisions on many issues. The concept of “Action Teams” which would include participation from several Divisions to identify and address new emerging issues might be one such approach. The concept here on a Center-wide basis is similar to the suggestion above for the Protected Species Division and monk seal crisis to develop alternative working hypotheses for particular issues rather than moving too rapidly to intervention and mitigation.

Along these lines, an on-going process to identify “emerging issues” and assess their needs for initial responses would be helpful. For example, does the issue have potentially high impacts but also a long lead time to plan, budget and prepare *versus* an issue whose impact may be reduced if it is assessed and managed quickly with present resources. A balance also needs to be struck to ensure the importance of “fundamental research”, so that emerging issues can be identified and alternative explanations developed, e.g. as occurred with the crittercam and identification of the role of deep prey for monk seals. As a new Center, the PIFSC should take the opportunity to define itself and to “provide the right science” for the “right issues”.

One of the most pressing specific issues is the recent designation of the Papahānaumokuākea Marine National Monument (hereafter “The Monument”) and the changes in the role that PIFSC will play in studying, and accessing, this region. Current uncertainty is focused on procedures and protocols for access to this region for scientific purposes, and the process for making these decisions.

Another pressing issue identified during the review but also expressed by the client agencies are concerns regarding bottomfish about the Hawaiian Islands (both main and northwestern islands). Concerns include the poor data available for these species (including both biological and fisheries-related), their assemblage nature, the possibility that they are being overfished, the minimal assessments that are currently being done, and that research on bottomfish is spread across several Divisions. The review also noted that these problems have been recognized by the PIFSC and that steps are being taken to alleviate some of these concerns.

### Challenges/Opportunities

A number of challenges but also opportunities were identified during the review. There is a perception of a strong Hawaii-focus by the Center. It is obvious that PIFSC does not have the resources to extend operations adequately into remote areas of the Pacific. When asked by the Review Panel, client agencies identified the three top-ranked regions in need of greater attention as American Samoa, Guam, and Saipan. Vessel scheduling and availability is a NOAA-wide issue, but is a major impediment for this Center because of the huge ocean region for which it is responsible, the data-poor nature, and the logistical difficulties in transiting to, and working in, such remote areas.

Allocation of (scarce) vessel time among programs may also be a local concern, and charters may not always be appropriate replacements. The new Magnuson-Stevens Act is likely to provide new challenges to the provision of scientific advice by the Center, but may also provide new opportunities to identify more precisely what kind of advice (and management approaches) may be appropriate for this Region taking account of its unique nature.

Several specific issues were raised during our *in camera* session with the client agencies. NOAA cooperative agreements will be renegotiated in 2008, and the outcome of that process may affect relationships between the Center and JIMAR. The Center depends heavily on its agreements with JIMAR, which provide benefits to both partners and flexibility in staffing and project management. The newer PIFSC divisions rely heavily on JIMAR-hired staff. Another related issue is the effect of the impending move of the Center to the secure naval facility on Ford Island, and the security and access issues that will follow given the close interactions between Center scientists and their colleagues in JIMAR and other University of Hawaii programs. There is also interest in developing a degree program in Fisheries Management at the University that would include interactions with the Center, such as by establishing an endowed chair and/or support of Post-Doctoral students. Some clients expressed the view that the Center is still in transition from an oceanographic and pelagic fisheries focus to activities that more broadly reflect its Mission Statement. The PIFSC Mission Statement as provided to the Review Panel is to “conduct timely, high quality applied scientific research to support conservation and management of living marine resources in the central and western Pacific Ocean”. Elaboration of these comments included discussion of bottomfish, and perception of the focus on the Hawaiian Islands, as has been noted above. This led to a discussion of a perceived credibility issue, for example in connection with:

- a process for peer-review of assessments (resolution of this is in progress and the Review Panel noted the external reviews conducted by the Center for Independent Experts -CIE);
- bottomfish assessments – need for a more structured approach;
- (fisheries) data collection – collection of more information on fisheries effort; a need for rapid data summaries to assist with inseason management decisions;
- the role of NOAA scientists on the Scientific and Statistical Committee (SSC) of the Western Pacific Fisheries Management Council.

This latter point related to concerns on the part of client agencies that scientists on the SSC were felt to sometimes stray into advocacy of particular management actions rather than concentrating on providing the scientific advice to judge the merits of various alternative management actions. In discussion it was agreed that this represented more the need for clear instructions on the part of the Chair of the SSC as to the Committee’s role and that of its member scientists. A specific issue that was raised by client agencies related to how to manage purse-seine fisheries on floating objects.

*Scientific conduct – are the Center’s programs being conducted properly?*  
*Organization and priorities – is the Center properly organized to meet its mandates and is the allocation of resources among programs appropriate?*

The Center’s programs are being conducted properly in regard to integrity, transparency, etc.; several of the comments above provide illustrations. The PIFSC Directors and Senior Management team (Division Heads) are to be congratulated on the work that they have done to build and expand the Center over the past 3 years, in particular into new areas (for the Center) such as coral reef ecosystem studies and protected species issues while retaining core expertise in ocean ecosystems and stock assessment studies.

In terms of organizational opportunities, the review noted several issues that appear to cut across Divisions. These include:

- data - handling, management, and archival;
- acoustics - each Division currently appears to handle its own acoustic devices, issues, and analyses;
- oceanographic observations – currently each Division appears to make, process, and archive its own measurements.

There may be opportunities for combining (and perhaps centralizing) at least some of these activities to improve efficiency and free resources for other issues.

The Review Panel discussed the marine debris program of the Coral Reef Ecosystem Division (CRED). We recognized that this was an important program that initially helped to get this Division up-and-running, and that it has both scientific (e.g. as with analyses of marine debris on coral reefs, their origin, etc.) and mitigation (active clean-up) components. However, the mitigation and clean-up parts of this program might be better considered the responsibilities of another agency rather than NMFS – PIFSC. As resources for this activity are declining, and the CRED is now fully-functioning, the time might be appropriate now to discuss transferring this responsibility elsewhere.

It was clear from the review that additional specialists, such as invertebrate taxonomists in CRED and other specialties in other Divisions, are needed by all PIFSC Divisions. The uncertain future relationship with JIMAR could also create major issues in regards to staffing.

An important point which became clear during the review and in discussions with clients, and one which may help resolve several of the issues raised in these written comments, is a clearer definition of the roles, duties, and responsibilities between the Pacific Islands Regional Office and the PIFSC. Distinguishing these responsibilities could be done as part of the exercise to develop the vision for the Center.

## **Review process**

The structure of this review provided a “high level” and broad overview of the PIFSC organization, activities and relationships with client agencies, to provide comments 3 years after the Center’s inauguration in 2003. It did not have sufficient time or expertise to provide detailed reviews of particular programs. These latter have been conducted for specific stock assessment activities (by the CIE), and further external reviews for particular programs are recommended on a periodic basis.

**Appendix**  
**PIFSC Program Review Agenda**

**March 6-8, 2007**  
**Honolulu, Hawaii**

*Location:*  
*Burns Hall, East-West Center, Room 3118*  
*University of Hawaii*

**Agenda**

**Tuesday, March 6**

- 9:00 am Continental Breakfast and Informal introductions
- 9:30 am Welcome, introductions and purpose of review – Sam Pooley
- 10:00 am NMFS science accreditation process – John Boreman
- 10:15 am Overview of Center – Sam Pooley and Mike Seki
- 10:45 am break
- 11:45am Lunch
- 1:00 pm Panel discussion with Stakeholders w/o PIFSC staff
- 3:00 pm Break
- 3:30 pm Scientific Information – Wetherall; Sender
- 4:30 pm Center operations: Admin, ITS/Safety – Michael Seki / Bill Putre
- 5:00 pm Pau for the day / Reception at Kewalo

**Wednesday, March 7**

- 8:30 am Coffee
- 8:45 am Ecosystem and Oceanography Division – Frank Parrish / Reka Domokos / Don Kobyashi
- 9:40 am Coral Reef Ecosystem Division – Rusty Brainard
- 10:30 am break
- 11:15 am Fish Biology and Stock Assessment Division – Christofer Boggs / Bob Humphreys / Gerard DiNardo
- 12:30pm Lunch
- 2:00 pm Fishery Monitoring and Socio-economic Division – David Hamm / Minling Pan
- 3:00 pm Protected Species Division – Bud Antonellis / Stacy Kubis / Jason Baker / Dave Johnston / Melissa Snover / Charles Littman / Bob Braun
- 3:30 pm break
- 4:30 pm Pau for day / Group dinner

**Thursday, March 8**

- 8:30 am Coffee
- 9:00 am Informal discussions with panel and PIFSC divisions
- 11:00 am Private discussion amongst panel members
- 12:30 pm Lunch amongst panel members
- 2:00 pm Expert review panel member comments -- and discussion w/ Division chiefs
- 4:00 pm Private meeting with PIFSC Directors
- 5:00 pm Pau