

PIFSC Directors Response to the Center's 2007 External Review -- October 2007 --

The Center held an external review on March 6-8, 2007. The review panel was chaired by Dr. R. Ian Perry, Fisheries and Oceans, Canada. Other panel members included Dr Ned Cyr, NOAA Ecosystems Observations Program; Ms. Kristen Koch, Office of the Chief Scientist, NOAA Fisheries; Professor Jo-Ann Leong, Director, Hawaii Institute of Marine Biology; and Dr. Nancy Thompson, acting Director, NOAA Fisheries Northeast Fisheries Science Center. The objectives of the review were to review and evaluate the Center's current and proposed activities, and to provide advice to the Center on the direction and quality of the science program. A series of questions were posed to the review panel and Dr. Perry as chair provided overview comments to the Center on March 28, 2007. Those comments along with the review agenda are posted on the Center's web site¹. The following is the Center's response to those comments.

First, we very much appreciate the comments provided by Dr. Perry and the open and free-ranging discussion between the panelists and the Center staff, as well as the input from our stakeholders. We found the review to be very beneficial, both in terms of preparation and conduct, and now in terms of considering the comments. This was our first review as a NOAA Fisheries Science Center, and it provides us an excellent opportunity for setting our future direction.

Second, to respond to Dr. Perry's comments in a systematic manner, we have summarized them below in the order in which they were presented. We have also responded to a few comments that were provided orally by panel members.

PIFSC Directors Response to External Review report – in report page number order

Page 2 – final para -- Dr. Perry notes that all the Center's programs "have strong applied contexts."

We believe this is critical to a government research center operating in an agency responsible for the conservation and management of the myriad of living marine resources in the central Pacific. We appreciate Dr. Perry's recognition that this is what we are, and what we strive to be, although we of course seek to advance basic science when and wherever possible.

¹ <http://www.pifsc.noaa.gov/do/pifscreports.php>

Page 3 – first para – Concerns related to the nature of the Fish Biology and Stock Assessment’s age-growth studies.

We concur that periodic and on-going ageing of important fish species is important, and this summer we have redirected our effort in the ageing laboratory toward currently critical management species – Hawaii bottomfish. This will provide a cross-check against age-growth studies conducted twenty years ago for these species not only in Hawaii but also in the Marianas Archipelago. We are unlikely to have the capability to provide routine (annual) age-growth studies through traditional analysis of hard parts (e.g., otoliths), but we can certainly do so on a frequency of more than every twenty years! Luckily by maintaining a skill base with the scientific staff at the ageing laboratory, it has been easy to shift the focus from one group of species to another quickly and the staff has invested in exploring more modern ageing approaches and technologies.

However, a point that we did not raise in the review, but that is pertinent here, is that the underlying funding for basic fisheries biology (as well as fisheries monitoring and data compilation) has been static for many years. We did not focus on fiscal issues during the review, but we believe it is important to raise them in this context. We have raised this point nationally, and we are hopeful that national funding opportunities (e.g., the Stock Assessment Improvement Program and MSA revision funding) will help us address this problem.

Page 3 – second para – Concerns were raised about the information requirements necessary to implement quota-based management for Pacific Islands fisheries, and the suggestion was made that “a structured approach to the evaluation of these [e.g., “input” controls which regulate effort] different management strategies (e.g., formal management strategy evaluations)” would be worthwhile.

We agree entirely and appreciated the contribution from the panel that some Centers within NOAA Fisheries have “fishery management coordinators” whose job it is to provide liaison with the NMFS Regional Offices and the Fishery Management Councils. A person with a background in control theory and risk assessment would enhance the Center’s capabilities to look at alternative management strategies in that context. At the moment the underlying evaluation of management strategies is conducted by the Fishery Management Council, with some input from the Regional Office and the Science Center. Increasing attention is being put by the Center’s stock assessment program to risk assessment of the annual catch limit approach to fisheries (codified in the recent revision to the Magnuson-Stevens Act). The addition of a fishery management coordinator, probably in the Fishery Monitoring and Socioeconomic Division, would complement this approach. We have added this position to our list of funding priorities for MSA revision funding and have contacted other Centers to obtain background information on these positions.

Page 3 – third para – The importance of “the need to formally develop and evaluate alternative working hypotheses” for protected species recovery actions was identified.

We appreciate this comment although it is possible that the broad nature of the review failed to make clear the substantial steps that are being taken in this regard. At the same time, we

concur that there has been an historical tendency to undertake recovery actions without a firm “experimental” framework for evaluating their success. This can apply to both our monk seal as well as our sea turtle work, where the idea of adaptive management is perhaps less accepted than in fisheries (where it is not that well implemented either!). In all three cases, developing the underlying scientific rationale for such an approach and communicating it clearly to conservation and management managers is important.

Since the external review we have taken the first steps toward developing a three-sided captive care program including our Center, the NOAA Fisheries Pacific Islands Regional Office (PIRO), and independent non-profit protected species research and recovery organizations and individuals, including the academic sector. A critical part of this program is the development of an explicit plan for implementation, including evaluation of alternatives within a NEPA context, and the use of experimental design so that control-treatment evaluation of different techniques is tractable. We are participating in a similar evaluation of our coral reef monitoring program’s sampling regime in the Northwestern Hawaiian Islands (with expectation that it will be utilized throughout the entire range of the program’s ecological assessments) in cooperation with the National Marine Sanctuary Program and academic partners.

As we increasingly conduct NEPA analysis of our research activities, this approach should permeate all aspects of our scientific field programs.

Page 3 – final para – A concern was raised pertaining to the long-term “scientific direction, or vision, for the Center, in comparison with the on-going day-to-day demands for scientific advice ...”

This concern marks the very real tension we feel between the applied nature of our mandate (as mentioned on Page 2 of Dr. Perry’s comments) and the importance of improving our underlying understanding of both the basic biology and ecology of the living marine resources of this vast area, as well as their socio-economic and cultural components.

We would note for the record that we do have a Center-wide vision statement that raises these issues, but more pragmatically, we have spearheaded a multi-agency planning initiative for conducting a broad ecosystem evaluation of the Hawaiian Archipelago. This initiative, which will undergo its own external review this summer, focuses Center and research partner efforts toward integrated ecosystem assessment (IEA) research, a topic which is central to NOAA’s strategic planning.

We would also respond in this context to a question raised during the review concerning our involvement in NOAA’s strategic planning and budgeting process (PPBES). As a small, somewhat isolated Center with few NOAA research partners in the region, we have found it difficult to get traction within that system, but we are working hard at improving our performance. We are seeking off-island NOAA partners to work on the NOAA Fisheries new ecosystem initiative, CAMEO (Comparative Analysis of Marine Ecosystem Organization). We believe that the Hawaiian archipelagic research initiative will be another component

central to NOAA strategic plan. But we accept the concern implied by the question and intend to do better.

Page 4 – para 1 – The previous theme carried over into two additional comments concerning more specific 5-10 year goals and the development of internal “action teams” to address emerging issues. The panel also suggested this would assist in breaking down the lines between the Center’s divisions.

We agree that these important points although our previous experience has made steps in those directions more difficult. The issue of resolving lines between our research division is not a new one (it was raised during our own internal evaluation of the management structure of the Center), and an important one. Over the past 6-12 months we have taken small steps in developing approaches to inter-relate the research programs within the Center itself – the development of professional specialty groups (PSGs) such as oceanography; the initiation of a Center-wide data management committee; and an acoustics team to mention just three. We believe that developing our approach to CAMEO will also require such a multi-disciplinary approach.

At the same time, we acknowledge that we do not have the planning infrastructure in place to insure that these kinds of initiatives are followed through systematically, nor that overall program planning is consistent. We have identified a planning background as an important component when we implement a formal Operations, Management and Information division.

Page 4 – para 2 – “PIFSC should take the opportunity define itself and to “provide the right science” for the “right issues.”

This is inherently a central component of strategic planning and an element we had tried to approach, in part, through one-on-one meetings with our key stakeholders in 2006. But we did not codify the knowledge we gained through these meetings, which was a mistake.

A key point in this comment was the need to strike the balance to ensure “fundamental research” is not lost. Where resources allow, we believe PIFSC does a good job of insuring that we are not entirely management advice driven, but we do need to maintain an awareness and be cognizant when we do become overly entrenched with putting out fires and focusing on the science of the day.

Page 4 – para 3 – Issues pertaining to our ability to conduct research in the newly formed Papahānaumokuākea National Marine Monument were raised in the review.

We believe there are three aspects to this, each important.

First, there is the underlying process by which Monument permits are issued. We take on face value the Monument managers comments that as a new institutional form, with two Federal and one State agency, developing procedures has been difficult. No mechanisms were implemented for “grand-fathering” on-going or usual research activities. NOAA Fisheries has worked hard to clarify the important ingredients for a stable permitting

environment and to work closely with Monument partners in providing information on a timely basis. We are also sharing our NEPA documents with Monument staff to facilitate their public comment process for research permit applications. We believe progress is being made, but much work remains.

Second, the Monument is also developing an underlying research plan. The scope of this plan remains to be seen, but this is an important part of the resolution to this issue. PIFSC scientists have worked closely with the National Marine Sanctuary Program office on their research direction over the past several years, including seconding a senior research scientist to that office on a half-time basis for a year, in order to assist in this process. We continue to participate in the research planning efforts conducted by the Monument and their contractors, including the annual field calendar and ship scheduling meetings, and we have co-sponsored an annual symposium with the University of Hawaii's Hawaii Institute of Marine Biology to present preliminary results of on-going research in the Northwestern Hawaiian Islands.

Third, there remains a tension among the supporters of the Monument itself concerning the role and type of research to be conducted within the Monument. There are some who believe that the Monument should be entirely pristine, and no research should be conducted unless it can leave absolutely no environmental footprint. There are others who believe that only non-extractive research should be conducted. And there are others who would support a more robust research agenda. Resolving these value premises is an important task for the Monument managers, and our staff has worked hard to identify the benefits of the types of research we are conducting in the Monument.

Page 4 – para 4 – Concerns were raised over a variety of issues in terms of responding to the Center's determination that over-fishing was occurring in the Hawaii bottomfish complex.

Coincident to the external review, PIFSC as well as the fishery management council, the regional office, and the State have engaged in on-going meetings over several months concerning new regulations for the main Hawaiian Islands component of the fishery, data collection from the recreational component of the fishery, etc. The Center is developing a risk-based approach to TAC management of the fishery (mindful of the concerns raised in Dr. Perry's comments about TAC management versus effort management), and a comprehensive approach to improving data collection was outlined. Some steps in the latter respect have been taken, subject to available funding (\$450,000 was received as a one-year grant from NMFS headquarters with the hope that MSA revision funding will be available for further fishery monitoring activities). The Center's academic partners also held a two week workshop in May 2007 to explore single-species stock assessment of the target species in the bottomfish complex – this work will be published later in the year.

But the external review panel is absolutely correct to identify Hawaii bottomfish as a critical issue for the Center. Focus in the Center's fishery programs over the past 10 years has been on the Hawaii (and subsequently American Samoa) pelagic longline fisheries which comprise 80% of the landed value. But we have warned since the mid-1980s that bottomfish in the main Hawaiian Islands were facing excessive fishing pressure, were an important fish for cultural reasons, and that we did not have the resources to conduct in-depth research on

both pelagic and insular species concurrently. We were able to conduct an annual stock assessment, using available techniques and simple time-series from fishery-dependent commercial data, as a means of monitoring the situation. These were generally published in the fishery management council's annual reports for the bottomfish fishery management plan. With the official over-fishing determination in 2006, our stock assessment program has shown considerable alacrity, with assistance from the NMFS Stock Assessment Improvement Program, in shifting some scientific staff from pelagic stock assessments designed to address international fisheries management issues to the Hawaii bottomfish situation. Further enhancing our ability to work on insular issues is an important priority for the Center and is a focus of our Stock Assessment Improvement Program proposals.

Page 4 – para 5 – The reviewers noted “a strong Hawaii-focus” by the Center and our stakeholders identified three areas in need of greater attention – American Samoa, Guam, and the Northern Mariana Islands.

We agree entirely, and in developing the initial budget for the new PIFSC, we identified stationing fishery biology staff in each of those areas as important to extending our capabilities there. Unfortunately we have not been able to follow through on that desire with existing resources. However we have successfully piggy-backed operations on the NOAA ship Sette to obtain more information on the pelagic environment and cetacean abundance in the waters between American Samoa and Hawaii, and this has shown a number of important opportunities. Furthermore, as result of the external review, we have been discussing the implications of “extending” the coral reef cruises which go to these areas to include additional fishery and cetacean research topics. This raises ship scheduling issues – the primary vessel used by the coral reef program is utilized by other Hawaii-based elements of NOAA – but this is an important opportunity we will continue to explore.

Page 5 – para 1 – “Allocation of (scarce) vessel time among programs” was a concern raised by the review panel.

We agree although this is an issue for NOAA operations nationally, not just locally. NOAA research vessel time is precious to the Center, and we seek to allocate it equitably across the research programs. And we are increasingly attempting to piggy-back acoustic and cetacean observation missions on research cruises with different missions. But we simply do not have the sea days allocated to the Center necessary for conducting our full research program subject to the scientific compliment we have at hand.

We also faced considerable problems early in 2007 with mechanical breakdowns of the NOAA ships stationed in Hawaii. We have held two face-to-face meetings with the NOAA ship leadership and believe that substantial progress in improving the functionality of these ships is at hand.

Page 5 – para 2 – Our stakeholders raised a number of issues here and we will go through them sequentially.

- JIMAR cooperative agreement – this is a national issue related to Department of Commerce/NOAA requirements to put these grants on a competitive basis. We greatly value our JIMAR relationship with the University of Hawaii but must of course defer to the agency in terms of the appropriate manner in which these grants should be administered.
- Movement of PIFSC to Ford Island – obtaining access for the public, including our academic partners, to Ford Island is an important objective of NOAA consolidation project. While we would have preferred to remain adjacent to the University of Hawaii Manoa campus, we also appreciate the advantages of consolidating all of NOAA’s assets in Hawaii at one site. We will do everything we can to maintain our close working relationship with the University.
- Peer-reviewed assessments – we have a number of peer-review processes in place, with the primary vehicle being the NOAA Fisheries contract with the University of Miami’s Center for Independent Experts (CIE). For fishery stock assessments, the fishery management council’s Scientific and Statistical Committee is invited to participate in each review. The Center has conducted two recent reviews using the CIE process, and in response to comments from the panel, we will be posting executive summaries of the reviews on our website – one on the Hawaiian green sea turtle program and one on the yellowfin stock assessment.
- More structured bottomfish assessments – considerable progress has been made in 2007, with a publication forthcoming on a Bayesian approach to the Hawaii bottomfish assessment. We believe this objective is firmly in hand, although issues of data quality remain. We intend to hold a data workshop later this year or early in 2008 to review the data available for the Hawaii bottomfish stock assessment. Similar issues pertain to the Guam and Northern Mariana Islands bottomfish stock assessments, the other two localities with significant bottomfish fisheries. We plan to address these next.
- Fisheries data – The Center spends approximately 7.5 % (\$1.9 million) of its total budget on fisheries-dependent data, either through direct data collection for the American Samoa and Hawaii longline fisheries or through WPacFIN (Western Pacific Fishery Information Network) grants to the state and territories to enhance their fishery-dependent data collection systems. These programs tend to focus on small-scale fisheries, including off-shore pelagic handline as well as insular fisheries.

None of these elements provides completely adequate coverage for these fisheries, and for those with more intense fisheries management (the IATTC bigeye tuna quota for the Hawaii longline fishery and the forthcoming main Hawaiian Islands bottomfish fishery TAC), the timeliness of data compilation lags quota monitoring requirements. The implementing legislation for the new Western and Central Pacific Fishery Commission (WCPFC) included authorization for a substantial increase in funding for fisheries statistics, which if appropriated would make an important

difference on the pelagic side. Insular fisheries statistics remain problematic and are a major priority for the Center.

- Role of Center scientists on the fishery management council's Scientific and Statistical Committee – We have at present two scientists on the SSC and we have had as many as three on a committee of approximately 12-15 people. Our scientific staff serve as independent experts on the SSC and not as representatives of NOAA or the Center. We have sought very hard to maintain their independence and objectivity while on the SSC, although there have been occasions where NOAA policy differs with SSC recommendations, and in these cases our scientists have identified those differences and abstained from decision-making on that topic. We concur with Dr. Perry's comment that the concerns raised regarding advocacy by SSC members in general should be directed toward the chair of the SSC, not the Center.
- Management of purse-seine tuna fisheries on floating objects – PIFSC does not have a purse-seine research program, although we do play an important role in the Scientific Committee of the WCPFC. We believe this is an important research issue and as members of the steering committee of the JIMAR Pelagic Fisheries Research Program, we would encourage research funding be directed toward this issue.

Page 6 – para 2 – The review panel raised the possibility of combining some functions that are currently spread amongst multiple programs – data, acoustics, and oceanographic observations to mention three specifically.

Although we understand the motivation behind this recommendation, and we are taking steps to improve coordination of these functions across programs, we tend to believe that the close integration of these functions with their underlying applications is a preferable approach as opposed to centralization. Data management is a good case in point, where the requirements for fisheries applications are considerably different in character and timeliness than those related to coral reef monitoring, marine mammal population assessment, etc. We believe that each program should have professional data management staff to meet their specific program requirements. At the same time, however, it is critical that the Center have a centralized source of meta data on all data holdings, that there be a centralized archive as well as program archives, and that data quality, formatting, archiving and security standards be consistent across the Center. We have made substantial progress in developing meta data for the Center's data holdings over the past year, and we have also made progress in implementing some enhanced technology approaches to data management in various programs. We have established a Center-wide data management committee and are identifying priority actions to take in the near, short, and medium term to enhance the Center's data management structure. This represents a type of distributed responsibility which we believe maintains a better linkage between data management and application. Similar approaches are being taken in the other areas.

Page 6 – para 3 – Concerns were raised concerning the “mitigation and clean-up parts” of the marine debris program.

We believe that there are strong synergies between the marine debris program as currently constituted and our broader coral reef ecosystem research program. These apply primarily to logistics and to safety training but also apply to an underlying understanding of the same basic physical environment. At the same time we also strongly support enhanced research in the marine debris program and continue to press this point with NOAA coral reef and marine debris program managers.

Page 6 – para 4 – Specific concerns were raised over staffing specialties in the Coral Reef Ecosystem Division, and issues with JIMAR in filling those positions.

CRED is almost wholly funded by competitive grants from NOAA’s Coral Reef Conservation Program which has a policy of not using its grants for Federal personnel positions. Although there are alternatives to JIMAR in terms of providing expertise, and these alternatives are used in some programs for short-term hires, the research relationship with the University of Hawaii through the JIMAR program remains important. Our preference would be to increasingly establish CRED as a “base” program within the Center but this remains more of a hope than an expectation. Resolution of the staffing issue will require further work with JIMAR administration.

Page 6 – para 5 – The review panelists asked for a clearer definition of roles between the Center and NOAA Fisheries Pacific Islands Regional Office.

We believe this comment focuses on two aspects: 1) recovery actions, e.g., monk seal crowd control in the main Hawaiian Islands and similar recovery actions; and 2) conservation and management research currently conducted by the regional office.

We agree that these are concerns but believe substantial progress has been made concern recovery actions through the development of the regional office’s infrastructure and development of inter-office protocols on handling such issues. The issues of regional office involvement in research is perhaps more sensitive – in many cases we are simply unaware of research being conducted by their staff or contracted by the regional office. We have established a socio-economic fieldwork coordinating committee with the regional office and the fishery management council to address issues pertaining to “human subjects” research. And we have raised this issue during our monthly Center-Region directors meetings. We believe that the research agendas of all Center and Regional Office programs should be transparent, and we have taken advantage of the review panel’s comment to promote annual subject-matter meetings.

Page 6 – final para – Further external reviews for particular programs were recommended.

We concur, and that is our plan. The national corals program is going through a review this year, and it will provide important advice to our corals program. We also participate in subject matter reviews (e.g., NOAA’s ecosystem review). We are still determining how to structure the Center on-going external reviews – whether to review each of the

five research divisions on a periodic basis (e.g., every six years, with a Center review to lead off) or whether to conduct “topic” reviews, such as ecosystem research, fisheries management, recovery science, and data management. Whichever approach we take, we do anticipate at least one component of the Center undergoing external review every year.

Other: Not included in Dr. Perry’s wrap-up, there was concern by some panelists that the Center should be doing more in terms of outreach, including through our web site. We do not have a strategic orientation towards outreach, tending to respond to requests to the extent we can. We initiate and participate in several major visibility events a year, such as outreach to the sea turtle community on the Big Island through a joint presentation with Hawaii Preparatory Academy and to the recreational and small scale fishing community through participation in the Fishermen’s Festival. We understand that some elements of NOAA, indeed some other science centers, spend a great deal of time on outreach and that it has been valuable to them. Some of our academic partners are re-evaluating their approaches as well. Given the review panelists comments, we will. We have also created an internal web site team under the Scientific Information Services program’s leadership to expand and enhance our Internet presence. This has been added to the performance plans of all the division chiefs, as well as the Center leadership.

Finally, we again take these comments seriously and believe that they have provided good direction for the growth of the Center.

--- Dr. Samuel G. Pooley, director

--- Dr. Michael P. Seki, deputy director