

Draft Summary
North Pacific Research Board
Science Panel Meeting
Seattle, Washington
September 13-14, 2004

The Science Panel met at the NOAA/NMFS Alaska Fisheries Science Center in Seattle on September 13-14, 2004 to review the revised draft science plan and initial implementation steps. The meeting was chaired by Rich Marasco. The following other members attended: Vera Alexander, Don Bowen, Anne Hollowed, Gordon Kruse, Tom Royer, Pat Tester, David Witherell, and Doug Woodby. Absent were Shannon Atkinson, Dick Beamish, James Berner, Dan Goodman, and Ed Houde. The meeting was staffed by Clarence Pautzke and Misty Ott. Science plan team members included Jim Schumacher and David Fluharty (Gordon Kruse and Clarence Pautzke also are on the plan team).

1. Draft Science Plan

The Science Panel was briefed by the staff and drafting team on revisions made to the draft science plan since July. The revisions incorporated to the extent possible comments received from the Science Panel, Advisory Panel, and Board. The Science Panel then reviewed the revised plan and developed the recommendations below. Minor editorial revisions will be addressed by the team in the next draft before transmittal to the NRC committee. With these revisions, the Science Panel believes the draft plan is ready for NRC review. It also should be posted on the Board's web site for reference purposes for applicants responding to the 2005 RFP.

Chapter 1 – Introduction

Section 1.1 (p. 7, line 1): Refer to “marine ecosystems” off Alaska since there is more than one. On line 22: In goal #1, delete “use of the.”

Section 1.3 (p. 9, lines 3-11): Add further emphasis on the convenience of characterizing geographic region as three large marine ecosystems and note that using taxon-based organization for Chapter 3 is just one of several ways to organize sections and was a matter of convenience and that IERPs provide another way of organizing the plan.

Section 1.4 (p. 9, line 47): Tell the reader a timeframe when the implementation plan will be “periodically” reviewed, such as annually with the drafting of the RFP.

Chapter 2 – Scientific Foundations

Section 2.2.1 (p. 12, line 28): Modify to “all” time and spatial scales – including global and local and emphasize the ‘leaky’ outer boundaries of the LMEs.

Section 2.2.2.1 (p. 20, lines 19-20): Delete “distinct” before “bathymetric and oceanographic features”, because many of these features are similar across LMEs. Discuss interconnectivity of the three LMEs as characterized.

Section 2.2.1.2 (p. 14): Alphabetize Table 2-1. (p. 15, line 2): clarify “its” boundary at Samalga Pass is not the boundary for Gulf of Alaska gyre.

Section 2.2.2.2 (p. 24, line 9): include “stream flow” under list of variables that characterize physical habitat. (p. 24, line 18): delete “great whale populations;” (line 20): delete “varying.”

Section 2.2.2.4 (p. 26, line 17): “devastated” is a harsh description, maybe use “impacted” or “occurred” also delete “regional” and replace “These” with “Such” [human impacts...].

Section 2.3 (p. 29, line 14): To sentence with “...energy flow through the ecosystem” add “and its trophic structure and dynamics.” Explain at end that we are striving for integrated ecosystem research plans and want to break down barriers between groups of scientists working on separate ecosystems components.

Chapter 3 – Research Themes

Section 3.1 Introduction

Section 3.1.1 (p. 33, line 19): Add more emphasis on the ultimate goal being IERPs (do the same thing on p. 37). Also see notes below on Section 3.9. On p. 35, renumber Section 3.1.3 “Sectional Guide”, to Section 3.1.4, and move ecosystems indicators Section 3.9.5 from p. 121 up to be a new Section 3.1.3. Ecosystem Indicators.

Section 3.2 Lower Trophic Level Productivity

Section 3.2.2 (p. 39, line 62): Change last sentence to read: “The vast amounts of freshwater runoff may provide for generation of estuarine-like flow that may provide nutrients.”

Section 3.2.3 (p. 41, line 43): Use bolding to further emphasize that issues raised are just examples among many others that could be provided. Continue that emphasis through sections.

Section 3.3 Fish Habitat – just minor edits and typos

Section 3.4 Fish and Invertebrates

Section 3.4.3.2 (p. 67, line 21): Delete last sentence starting: “In the absence of...”

Section 3.4.3.4 (p. 68, last paragraph): add something on carry capacity issues as it relates to impacts of hatchery programs. On p. 69, line 5: delete “away from single-species management” because managers already consider multiple species in their decisions.

Section 3.4.4.1 (p. 70, line 11): Delete “in shallow waters.”

Table 3-4 on p. 74. Under “Stock Assessment Research and Development” – add: Incorporation of ecosystem indices in stock assessments and spatially explicit stock assessments. Under “Bycatch Mitigation Measures” – revise second bullet to read “New technologies/methods to monitor and reduce bycatch.”

Section 3.5 Marine Mammals

Section 3.5.3.3. Add note that diet information in Table 3-7 will vary in time and space.

Table 3-8 on p. 84. Note that these intersections are based on the views of NMFS and the report of Angliss and Lodge (2002) and that other scientists may have differing opinions.

Table 3-9 on p. 85: Migration Patterns. Change “effects of migrations outside U.S. jurisdiction” to “effects of migrations on structure and functioning of LMEs”. Remove redundancies in table as much as possible.

Section 3.6 Seabirds

Table 3-11 on p. 96. Clarify that this is one realization, i.e., a NMFS view and that not everyone would necessarily agree on all intersections.

Table 3-12 on p. 97. Condense to remove redundancies and add winter survival and trophic needs as an issue under foraging success and population dynamics.

Section 3.7 Humans – just minor edits.

Section 3.8 Longer Term Issues

Section 3.8.7 (p. 114, line 13): add GEM and AOOS.

Section 3.9 Integrated Ecosystem Research Programs

The current ordering of the plan seems to favor small, component projects rather than ecosystem projects. Do not change order of Chapter 3 sections, but do emphasize that IERPs are the ultimate goal of the NPRB. This should be stated at the beginning of Chapter 3 and in any executive summary.

Section 3.9.5 (p. 121): Move this section on ecosystems indicators up to p. 35 as new Section 3.1.3.

Section 3.9.6 (p. 123): The first sentence is too pessimistic; add note that good models exist and are valuable learning tools and can be used as framework for the research themes.

Chapter 4 Other Research Approaches and Partnerships

(No comments developed)

Chapter 5 Policies and Procedures

Section 5.2.2.1 (p. 140): Mention OBIS (Ocean Biogeographical Information System).

Section 5.3.2 (p. 143): Delete sentence starting on line 27; it is unrealistic and too hard to enforce.

Section 5.3.4 (p. 145): There should be a minimum dollar limit so as not to impose an unfair burden on the PI.

Appendices

Concerning whether to provide species snapshots (earlier in Chapter 3) for fish, marine mammals, etc, the Science Panel agreed with the plan writing team that the snapshots did not need to be in the main body of science plan, nor in an appendix.

2. Draft Implementation Plan and Request for Proposals for 2005

The Science Panel reviewed implementation steps first presented by staff and the plan team in July. The draft implementation plan from July had been modified in format to include a listing of current projects, applicable provisions from the 2004 RFP, a page reference for general strategies in the draft science plan, and a listing of next steps for implementation. Embedded in the next steps were comments developed by the Science Panel, Advisory Panel, and the Board.

Science Panel discussions culminated in a revised matrix of potential implementation steps through 2008 (Table 1). The Panel then developed more detailed statements of work for each recommended activity for 2005 and incorporated them in a draft RFP for research beginning next year. The Panel paid particular attention to the Board's request of last March for suggestions on ways to reduce the number of proposals. The Board had indicated it would consider a variety of approaches to reduce proposals, for example, by being much more specific in the RFP, grouping issue areas, and possibly assigning dollar estimates to each issue area.

As with last year's RFP, the Science Panel recommends again having two major components: a component with very specific research needs and a second component with more general research priorities. Approximate dollar amounts are identified for specific research projects. To provide continuity for some lines of research and reduce the number of proposals, the Panel is recommending continuation, without further solicitation, of three current projects: support for AOOS, the continuous plankton recorder transects, and the moorings at M2 and M4 in the Bering Sea. The Panel believes that the draft RFP is responsive to the Board's desire to reduce the number of proposals received and the accompanying burden of reviewing and processing the proposals, while still fielding a meritorious research program.

Integrated Ecosystem Research Programs (IERPs)

In general, the Science Panel believes that planning for IERPs should be of utmost importance to the Board for 2005. The long term strategy of the Board should be to move away from independent projects on components of the marine ecosystem to more comprehensive integrated studies that bring researchers together from different disciplines. This will require extensive synthesis work to lay the proper foundation for future integrated plans in the LMEs. In the directed portion of the RFP, the Panel recommends five projects for next year: (1) developing methods for remotely sensing upper trophic animals; (2) evaluating the utility of ecosystem indicators; (3) completing the Arctic Ocean synthesis; (4) assessing the status and potential use of ecosystem models; and (5) supporting a workshop to commence development of an implementation plan for a BSAI LME IERP. The first three were identified needs in the 2004 RFP, but not funded. Once the five projects are completed, funds could be identified in future RFPs to follow through on the findings as shown in the 4-year draft matrix. Currently funded projects that fit within the IERP section of the matrix include the Gulf of Alaska synthesis and the evaluation of BSAI circulation models.

Ocean Monitoring

In July, the Board suggested separating out ocean monitoring from the lower trophic level category. The Science Panel identified AOOS support, the continuous plankton recorder, and M2/M4 mooring support for additional years funding as shown without requiring proposal submission. Essentially the statement of work would be a simple continuation for one or more years of current activities supported by the Board. In the case of the M2/M4 moorings, the Panel recommends earmarking about \$200,000 for each of the next four years, while the other two projects would be for one year (possibly 2 years for AOOS depending on need). The Panel considers these projects to be long-term commitments and thus support, if needed,

should be sustained in the interim while the Board is developing its longer term monitoring programs, if the principal investigators are making satisfactory progress.

In the directed component of the 2005 RFP, the Panel recommends requesting an evaluation of plankton monitoring methods. Those methods then could be applied in subsequent out-year RFPs. In the general section of the RFP should be a call for proposals for general monitoring, with about \$700,000 identified annually for such research. The Panel recognizes that monitoring activities must be coordinated and compatible with the overall program and standards of AOOS and that monitoring needs may be addressed to a certain extent by newly appropriated funds.

Lower Trophic Level Productivity

The Panel recommends waiting for completion of the activities identified above, particularly the evaluation of plankton monitoring methods, ecosystem modeling, and BSAI LME planning, before going ahead with further projects in this category of lower trophic level productivity.

Fish Habitat

The Panel recommends that fish habitat be identified in the general section of the 2005 RFP as an important research interest for 2005, with the focus on effects of fishing on habitat and recovery times. Habitat work is not inexpensive and a funding target of about \$500,000 for 2005 might be considered by the Board, plus similar amounts in future years. The Board also should consider a mapping technologies conference in 2006 for about \$150,000.

Fish and Invertebrates

This topic generated a good deal of discussion in the Panel meeting. The Panel recognizes that considerable funding already has been made available for fish related research, particularly for salmon and groundfish, and that several of these projects need to come to fruition before additional funds are allocated. For example, hypotheses for fluctuations in Bristol Bay sockeye stocks are being evaluated and those results should be made available to guide research directions before significant new funds are expended. The AYKSSI is in a planning phase and future funding decisions should be based on the results of those planning efforts. Thus, for salmon, the Panel is recommending that about \$100,000 be identified to analyze salmon research programs and describe funding sources, current programs, gaps, etc. This would be part of the directed component of the RFP and would lay the foundation for future RFPs.

Further forage fish work should await completion of the currently funded \$500,000 study (#401) in the BSAI. The Panel recommends that a directed research need on developing methods for spatially specific assessments of pollock be placed in the 2005 RFP, with about \$200,000 earmarked for such a study. The general component of the RFP would have an item on groundfish and crab general research topics as identified in Table 3-4 of the draft science plan. The Panel suggests that future RFPs have funds identified for groundfish and crab and other fish species in the general section in the coming years.

Marine Mammals

The Panel recommends focusing the marine mammal portion of the 2005 RFP on northern fur seal (\$500,000) and ice seal (\$200,000) research projects. The rationale is explained in the directed section of the draft RFP. Northern fur seals have declined significantly, and considering the extensive commercial fisheries in the BSAI that may or may not have some relation to the decline, developing information on fur seal dynamics and foraging needs is an imperative. The fur seal program should be continued at the \$300,000 level in future years.

Relatively little is known about ice seals even though they are a significant subsistence resource. They represent a key ecological component of the Arctic ecosystem and likely will be impacted by climate-induced changes in the Arctic and its ice cover. The Board already is funding a project (#312) on ice seal bio-monitoring in the Bering-Chukchi sea region for \$149,962 which will run through 2006 and involve collection and analysis of samples collected on seals harvested in seven villages in the region. The Science Panel recommends additional research on ice seals, focusing on potential changes in distribution, stock structure, and life history traits, as well as potential interactions with commercial fisheries.

The Panel suggests identifying marine mammals as a general research priority annually beginning with the 2006 RFP at about the \$300,000 level. Further research focused on Steller sea lions would await a synthesis meeting in 2006, followed by application in the RFPs for 2007 and 2008. The Panel noted that worldwide sea lion research will be the focus of the Lowell Wakefield Symposium on September 30 – October 3, 2004, in Anchorage.

Seabirds

The Panel recommends that the Board support a symposium in the directed component of the 2005 RFP which would focus on the role of seabirds in the ecosystems and whether they can serve as indicators of ecosystem status and change. The suggested level of funding is \$200,000. Lead time of about a year would be needed to plan such a symposium, so it most likely would not occur until 2006, even if funding was approved in 2005. Future RFPs would have a general seabird component of about \$400,000.

Humans

The Panel recommends two directed studies for 2005, one on subsistence use (\$200,000) and the other on bioeconomic models for regulatory analyses (\$200,000). Future RFPs then would have a general component on impacts on humans (~\$200,000) and a more specific component focused on climate change impacts for about \$200,000, annually.

Other Comments

Project Second Year Support. The Panel discussed whether projects that requested two years in the 2004 RFP, but were only approved for one year, should automatically be considered for the second year out of 2005 funds without competing under the 2005 RFP. There were six projects: dietary specialization of BSAI killer whales (411), fur seal foraging strategies (414), reproductive ecology of Atka mackerel (417), spiny dogfish off Alaska (418), modeling multi-species groundfish interactions (419), and Pacific ocean perch genetics (420). The Panel recommends that these projects not be given a second year automatically, but compete again under the 2005 RFP for a second year if needed.

RFP Linkage to Science Plan. The Panel requested that staff develop for their review by next summer, statements for each component of the science plan about why particular issues should be of greatest concern and have higher priority over others identified for a specific component in the plan. This will help the Panel in shaping the 2006 RFP.

Next Meeting. The next meeting of the Science Panel will be in March 2005, the specific date still to be determined.