

**Draft Summary**  
**North Pacific Research Board**  
**Science Panel Meeting**  
**Alaska SeaLife Center**  
**Seward, Alaska**  
**April 10-12, 2007**

The Science Panel met on April 10-12, 2007 at the Alaska SeaLife Center in Seward, Alaska. The meeting was chaired by Rich Marasco and the following other members were in attendance: Vera Alexander, Shannon Atkinson, Dick Beamish, Jim Berner, Michael Dagg, Anne Hollowed, Mary Pete, John Piatt, Andre Punt, Michael Simpkins, Tom Royer, Pat Tester, David Witherell and Doug Woodby. The meeting was staffed by Clarence Pautzke, Francis Wiese, and Carolyn Rosner.

**1. Call to Order and Approve Agenda**  
**a. Election of Officers**

Rich Marasco and Doug Woodby were re-elected as Chair and Vice-Chair of the Science Panel.

**b. Approve Agenda**

Shannon Atkinson suggested adding a discussion item to the agenda on the role of the NPRB in technology development. It was also suggested the Panel have a discussion on long-term monitoring. Clarence Pautzke suggested adding 'Updating Freshwater Input Model in GOA' based on recent correspondence with Tom Royer. All items were added under 'Other Matters' and the agenda was approved as amended.

**2. Proposals Review for 2007**

The Science Panel was given a quick overview on past projects regarding their status (complete or on-going) and how they parse out into eco-system priorities. It was suggested by staff that this be taken into account if faced with a choice between equally meritorious proposals.

The panel reviewed 86 proposals that responded to the 2007 RFP (6 of 93 received were rejected earlier as non-responsive and not processed further, 1 was rejected later when it became clear it was outside the geographic scope specified in the RFP). Each panel member did a primary or secondary review of 7-10 proposals, which included considering anonymous technical reviews and developing a summary recommendation on whether the proposal should be funded. The two members presented their findings to the full Panel which then proceeded to develop funding recommendations for consideration of the Board. Science Panel conflict of interest procedures were reviewed and followed during the meeting.

Again this year, the Panel concluded that there were many high quality, competitive proposals, and wanted to fund more than was allowed by the funding targets listed in the RFP. As with last year, to fit more proposals under the funding ceiling, the Panel reduced the funding of some proposals from the amounts requested, and also created a second tier of high quality proposals that deserve consideration if the Board chooses to fund at higher levels than the \$3.895 million indicated in the RFP. Overall, the panel recommended 28 proposals for funding totaling \$3,894,381, and another 20 tier 2 proposals totaling roughly \$3.35 million. The panel's considerations of the various sections of the RFP are presented below. This summary will be accompanied by a spreadsheet showing the proposals identified for tiers 1 and 2, and a document which summarizes the panel comments on each of the 86 proposals.

Sea Ice Database (RFP Section 1a): The panel recommended funding the one proposal submitted under this category for the full amount of \$99,987.

Chlorophyll Data (Section 1b): The panel did not recommend either of the two proposals submitted under this category for funding.

Arctic Baseline Survey (section 1c): The panel did not recommend funding the one proposal submitted to this section due to its lack of statistical design. However, the panel did express a desire to go forward with an Arctic Baseline Survey and suggested the Board consider allowing \$60,000 to conduct a workshop (including some of the proponents) to develop the desired sample design. This was discussed further under Other Matters.

Lower trophic level productivity (section 2a): This was a competitive section with requests for more than four times the amount of funds allotted to this category. The panel recommended three proposals for \$543,928, exceeding the section target of \$400,000. For proposal #7, rather than approving the full \$249,849 requested, the panel only approved \$125,000 to ensure one year of sampling. Proposal #8 was moved to section 6: Community Involvement. Two proposals were placed in Tier 2.

Fish Habitat (section 2b): Requests in this category were three times the amount of funds allotted to this category. The panel recommended two proposals totaling \$350,820, slightly exceeding the \$300,000 section target. Three proposals were placed in Tier 2.

Fish and Invertebrates (section 2c): Requests for more than \$4.3M were received under this category. The panel recommended funding five proposals for \$1,038,676, slightly under the section target of \$1,200,000. This was a very competitive section and the panel recommended another six proposals totaling over \$0.9 million in Tier 2.

Marine Mammals (section 2d): This was a very competitive section with requests for more than five times the amount of funds allotted to this category. The panel recommended funding four proposals for \$556,441, thus slightly exceeding the section target of \$500,000. For proposal #44, rather than approving the full \$180,043 requested, the panel only approved \$30,000 for the PIs to develop the proposed predictive habitat modeling as a proof of concept. Funds were also reduced for proposal #53. Rather than approving the full \$296,554 requested, the panel only approved \$150,000 and suggested PIs use this money to leverage industry support (expressed by the oil and gas industry in the Cooperative Research section of the RFP) to support the full project. Regarding beluga whales, the Panel did not recommend any of the proposals submitted, but suggested funding a workshop for \$30,000 to help develop research priorities to address the population's inability to recover. Two proposals were placed in Tier 2.

Seabirds (section 2e): The panel recommended three seabird proposals totaling \$505,175, just over the \$500,000 section target. For proposal #63, rather than approving the full \$296,701 requested, the panel only approved \$50,000 to be used as seed money to get the project started and leveraged by support from conservation organizations. For proposal #64, rather than approving the full \$237,887 requested, the panel only approved \$56,000 in order to fund the captive feeding portion of this study. Two proposals were placed in Tier 2.

Humans (section 2f): The panel recommended funding the only proposal submitted in this category for \$23,948, substantially under the \$100,000 section target.

Contaminants (section 2g): Requests in this category were more than five times the amount of funds allotted to this category. The panel recommended funding two proposals totaling \$146,076, exceeding the section target of \$100,000. Three proposals were placed in Tier 2.

Local and Traditional Knowledge (section 3): The panel recommended funding one proposal for \$100,000, directly on target for this section.

OSRI-NPRB Collaboration on Tracking and Monitoring of Marine Organisms (section 4b): The panel adopted the recommendation of a subcommittee of the two science panels for the OSRI and NPRB to fund proposal #79 on the Nearshore Residency and Movements of Copper Rockfish and Lingcod in Prince William Sound. The panel recommended increasing the funding for that project from the \$125,000 requested, to \$145,000 (\$77,500 contributed by each organization) to be able to double the tagging sample size and add a trawl survey to cover seasonality. Despite the increase, this total amount was still substantially under the collaborative section target of \$300,000. The science panel did not recommend funding any other proposals under this collaborative section. The panel did recommend that it have a greater role in developing priorities for this collaboration next year if it continues.

Cooperative Research (section 5): More than three times the amount available in this category was requested. The panel recommended funding two proposals for \$392,137, exceeding the section target of \$250,000. One proposal was placed in Tier 2.

Community Involvement (section 6): The panel recommended funding proposal #8 that was moved from Lower Trophic Levels to this section for \$59,693, substantially under the target of \$100,000 for this section.

### **3. Bering Sea Integrated Ecosystem Research Program**

The Panel was given a summary of the proposal submission and review process since their November 2006 meeting. They were informed that the two full proposals will go out for five technical reviews later this month and that their results will be available a few weeks ahead of the joint NSF-NPRB June 10 meeting in Washington D.C. Science Panel members were also informed about the conflict of interest rules for that meeting, restricting the participation to the following Science Panel members: Dick Beamish, Jim Berner, Mike Dagg, Seth Macinko, Tom Royer, Mike Simpkins, Pat Tester, and Dave Witherell. Dan Goodman and Tim Barnett from the EMC would be added to this panel also. The Panel discussed the possible need to complement that meeting with other expertise lost due to conflicts. The discussion on the moorings was deferred to the Monitoring item under Other Matters.

### **4. Gulf of Alaska Integrated Ecosystem Research Program**

#### **a./b. GOAIERP development and Recent workshops**

The Panel was given an update on the process of the GOAIERP development to date, including the two recent workshops held in January and February, and was presented with the resulting implementation plan developed by Carl Schoch.

#### **c. GOAIERP Implementation Plan**

The Panel reviewed the current Implementation Plan in detail and made the following comments and recommendations:

*Goals, p.5:* The Panel felt that there is too much focus on models, and that the connection to applied products seems to have been lost. It was also unclear to most what Goal 2 really means given that there are no research initiatives at this point. As a result the Panel suggested restating the goals of the IERP as follows:

1. To achieve sufficient understanding of local and regional ecosystem processes in the Gulf of Alaska by using retrospective analyses, process studies, monitoring, and remotely sensed observations to develop and improve ecosystem models.
2. To evaluate the capabilities of these improved ecosystem models to predict ecosystem responses to environmental change.

*Focal topics, p.12-13:* The Panel discussed each of the three proposed focal areas for the IERP in detail.

Forage Fish: The Panel agreed that this was the most likely topic to yield good results in the IERP time frame. Forage fish abundance, distribution and processes that control their population dynamics continue to be a huge unknown and an ecosystem program focused around enhancing this understanding would be a substantial step forward for marine science in Alaska. If focus remains on forage fish, the Panel suggested rewording the topic slightly to better define the list of species, and to ensure an explicit link to the rest of the ecosystem. The new suggested wording reads as follows: **“Forage species and ecosystem carrying capacity** (including but not limited to juvenile gadids, juvenile salmon, euphausiids, sandlance, capelin, myctophids, and herring). NPRB encourages research that will improve knowledge of the distribution, abundance, population dynamics, life histories, and sources of mortality of forage species and the linkages of these elements to climate and ocean processes. In particular, to enable ecological forecasting there needs to be a better understanding of the dynamic coupling between NPZ and forage fish.”

Crab recovery: It was pointed out that the NMFS started a research program on sandlance after their collapse, but that given the persistently low population numbers, processes were not really understood until the population started to recover. As a result it was questioned whether a program centered around the crab recovery issue during a time of low abundance is really going to produce an understanding of what is holding them back, especially in only 3 field seasons. The argument was made that if the Board still felt this topic was of interest then perhaps the focus should be on juvenile crab processes and dynamics and specifically on bio-physical coupling, including retrospective studies. This reasoning was countered by the concern that the critical processes controlling these populations may occur at such fine scales that retrospective studies won't be able to pick this up, and that thus this topic may be better suited for a future RFP when the populations are more in flux.

Population dynamics of endangered species: There was strong general agreement that it did not seem to be a worthwhile endeavor for the NPRB to focus an IERP on endangered species. Many of the same arguments made for crab were echoed here again, as well as the fact that such a focus would not further a general ecosystem understanding in the GOA.

Despite this very strong message by the panel in favor of forage fish as the focal topic for the IERP, the panel recommended that these other topics could be placed in the regular RFP calling for 3-5 year proposals to allow people to focus on some of these longer term issues. This would allow for accumulating critical data over time that may at some future point allow for a successful IERP.

With an emphasis on forage fish the Panel discussed its implications to the vertically integrated structure of the IERP (Fig.5, p.18). Given the resources available, it was felt that the focus should be on integrating

the bottom to the level of forage fish in a quantitative way, with an exploration of the benefits of this new acquired knowledge to upper trophic level boxes. Such an approach should still contain a climate change context (p.11), and applicants should be asked to address critical processes and variables controlling forage fish (e.g. surface CO<sub>2</sub>, fresh water stratification) and use these to focus their study. In terms of modeling this would imply detailing and developing the proper outputs that will make the forage fish component relevant to the upper trophic levels. As a result of the financial limitation and the above discussion, the Panel recommends not mandating the human component in this IERP.

*Priority scientific issues, p.12:* Based on the discussion on focal topics above, and the fact there are too many requirements and characteristics applicants would have to address in the current version, many of them perhaps not even applicable, the Panel recommended deleting this section, but keeping some of the language under points 3 and 4 as a preamble to the forage fish focal section.

*Geographic scope, p.13-16:* The Panel liked the discussion on different scales and approaches. It is clear that given the scope, that there cannot be an expectation of a broad, system wide study, and thus suggested focusing it down to the nested design in Figure 4, p.16, but emphasizing that not all the coastal labs mentioned there have to be involved. A suggestion also was made that the emphasis could be on processes that regulate forage fish for areas where most of the commercial fishery occurs.

*Implementation, p.16-18:* The Panel discussed the structure of Table 1 on page 17. They liked the overall layout, but recommended removing it from this document and having applicants fill it in as part of their proposal. In addition, it was suggested that the part called “synthesis and analysis of existing data” be relabeled as Program Planning. The discussion on whether or not “analysis and synthesis” should be a separate step was deferred to the August meeting when the Panel intends to have a detailed discussion on lessons learned from the BSIERP process to be able to decide how to best go forward with the GOAIERP process.

#### **d. Inclusion of GAK line funding**

The Panel recommended that proposals to the GOAIERP address whether they need ongoing information from the GAK line, and if yes, what, but to not include this in the IERP proposal budget.

#### **e. Review of Weingartner statement of work**

In light of the funding provided to Weingartner by EVOS to collect data for one more year (till 2008) at GAK-1, the Panel discussed the value of developing and testing a real-time transmitting surface buoy to obtain real-time measurements of the seasonal variations in upper ocean stratification at GAK-1. They were briefed on the communications with Molly McCammon, executive director of AOOS, who stated that if the buoy were real time, AOOS would find the funding to maintain it in the future. On the basis of this there was strong support to use the \$100K assigned last September in direct funding for GAK-1, augment it to \$113K as requested, and approve the statement of work by Tom Weingartner.

#### **f. Report on EVOS Science Planning**

Michael Baffrey, executive director of the Exxon Valdez Oil Spill Trustee Council briefed the Science Panel on future scientific directions for EVOS and the potential for partnerships with the Board. He indicated that there is intent by EVOS to go beyond restoration and focus on long-term monitoring including areas outside of PWS. He pointed out that this could form the basis of a partnership with NPRB, especially in light of the upcoming GOAIERP. The two organizations may also want to explore synchronized proposal processes. The Science Panel was cautious given the history of EVOS and

specifically GEM, but suggested that staff continue to explore a partnership based on an EVOS contribution to long-term monitoring.

## **5. Contaminants Research**

The Science Panel was briefed on the outcome of the contaminants panel held during the January 2007 Marine Science Symposium. The Science Panel deferred the final discussion on this topic and inclusion in an RFP to the August meeting, also because it relates to monitoring (see below), but made the following general comments:

- Projects should relate back to community concerns and marine species that are consumed
- Panel is interested in looking at a sampling design that looks at input sources and levels
- There should be peer-reviewed protocols
- DEC has started a bio-monitoring program for fish and NPRB should take care not to duplicate this effort unnecessarily
- A relevant program could be two-fold:
  - Monitor trends in the environment (e.g. plankton, seabird eggs). This may take some technology development, but sampling may not have to be done every year as long as the parameters measured integrate over the sampling period.
  - Monitor point-source contamination (hot-spot issues) such as epizootics in marine mammals.
- Monitoring could be directly done by the communities, and those should occur every year
- Long-term commitment on such programs will be dependent on the overall funding available
- Board should consider banking funds for more intensive monitoring periods
- There should be periodic review of any long-term monitoring programs
- A panel subcommittee composed of Shannon Atkinson, Pat Tester, and Jim Berner, will develop draft priorities for the 2008 RFP.

## **6. Other Matters**

### **a. Graduate Student Fellowships**

Carolyn Rosner presented the Panel with an overview of the development of the GSF, and the current graduate student support NPRB provides in their regular projects. As requested at the August 2006 meeting, the panel was shown a series of GSF models from other organizations. After much discussion, the panel agreed that the aim of such a program for the NPRB would not be to enhance graduate student support, as we are already doing that successfully, but that it is more of a value for the student and for the NPRB in terms of public relations and prestige. Consequently the Panel suggested dropping the idea of a fellowship program and instead investing into Best Student Presentation and Poster awards at the Marine Science Symposium every year. Students supported by NPRB would be identified as such in the MSS program. Student awards could just be a diploma or it could be monetary. The Panel also suggested to continue monitoring the number of students supported by current and future projects.

### **b. Technology development proposals**

The Panel discussed the fact that the NPRB has funded technology development proposals in the past, but that they often fall under different categories and have a hard time competing with direct research proposals. It was argued that this may require a separate category in the RFP, and on this basis further discussion was deferred to the August 2007 meeting.

**c. Monitoring**

The issue of NPRB's role in long-term monitoring/research surfaced several time throughout the meeting as it has in past meetings: as part of the regular proposal recommendations, as part of the BSIERP and in relation to the upcoming GOAIERP. There was general consensus that long-term monitoring should be a legacy of the Board, but there was concern due to a lack of focus regarding this investment. It was decided that some members of the Panel should form a committee to meet on a separate occasion before August 2007 in order to deal with this issue (Panel members were not identified). The critical components to discuss included a wish to not continue funding such efforts year to year, to work with agencies to determine relevance of current monitoring projects, to determine what is currently not being monitored and if it should be, and what schedules (may not need to be yearly) specific monitoring programs should occur on. In relation to the M2-M8 moorings and the GAK/Seward Line mentioned under the two IERP sections, it was decided to wait and see whether those data would be part of the successful proposals.

**d. Updating Freshwater Input Model in GOA**

Tom Royer briefed the Panel on the fact that he wrote a hydrology model for freshwater input for the Gulf of Alaska 20 years ago in Quick Basic. This model is the only one like it in this region and still used by researchers. Dr. Royer noted, however, that soon this language will no longer be supported by current software, and that models needs to be updated to include rivers, as well as inputs from British Columbia and possibly the Columbia River region. He noted that this could be achieved by funding a student to make these additions and re-writing the code for C/Matlab for about \$8K. The Science Panel unanimously agreed that this would be a worthwhile investment and recommends funding such a project for the specified amount.

**e. Arctic Survey Design**

Based on the review of proposal #4 submitted under the Arctic Survey Design category of the RFP, the Science Panel discussed the best strategy to move forward in the Arctic. It concluded that it might be most useful at this point to convene an invited workshop (including but not limited to the PIs on the proposal) to design a long-term monitoring program of the NPRB in the Arctic. Comments were made that it would be useful to include members of Conservation of Arctic Flora and Fauna (CAFF) Program, as well as consider building upon past efforts in the Chukchi by "Project Chariot" and "Ishtar", or to partner with other agencies such as MMS in the Beaufort. It was noted that parameters to be monitored over time should integrate over the sampling period and that the focus for inventory may be most useful if centered on zooplankton, benthos, fish and seabirds. The main issues to discuss at this workshop should be: (1) what are the objectives of the survey? It was noted that some critical information could be gathered by reviewing the final report for the Arctic Synthesis Project (503); (2) given the objectives, what should be the survey design? and (3) what is the budget needed for monitoring?

**f. Meeting Schedule**

The panel identified August 28-30, 2007 for their next meeting to be held in Anchorage, and tentatively scheduled 28-30 November 2007 for GOAIERP pre-proposal review, and April 14-18, 2008, August 25-29, 2008, April 13-17, 2009, and August 24-28, 2009 for their upcoming regular meetings.