

Gulf of Alaska Integrated Ecosystem Research Program

THE GULF OF ALASKA IS DOMINATED BY THE STRONGEST AND MOST PERSISTENT CURRENTS FOUND ALONG EITHER COASTS OF NORTH AMERICA. THESE CONDITIONS REFLECT THE INFLUENCE OF WEATHER AND CLIMATE AND PROVIDE THE LINK TO EFFICIENTLY TRANSFER PHYSICAL AND BIOLOGICAL "SIGNALS" FROM LOWER LATITUDES OF THE NORTH PACIFIC OCEAN INTO THE NORTHERN GULF OF ALASKA. ALTHOUGH LARGE GAPS REMAIN IN OUR UNDERSTANDING OF THIS COMPLEX MARINE ECOSYSTEM, OCEAN RESEARCH IN THE GULF HAS BEEN ONGOING FOR DECADES. ANY NEW PROGRAM NEEDS TO CAPITALIZE ON THE EXISTING KNOWLEDGE AND DATA.

Program Development

The Board first started considering an integrated research program in the Gulf of Alaska in September 2005, along with the Bering Sea Project and completion of the *Science Plan*, which emphasized the need for ecosystem research. At that meeting, the Board approved funding to support a planning team to start developing the program. A discussion paper was presented in March 2006 by Dr. Carl Schoch, working under contract to the Board, but the Board decided to delay further development of the Gulf of Alaska Integrated Ecosystem Research Program (GOAIERP) until it had more experience with the BSIERP. Further discussion occurred in September 2006 and April 2007. At the April meeting, the Board discussed development of the Gulf program and heard a report from the executive director of the EVOSTC about a potential collaboration with NPRB. Although the original intent in crafting the Gulf of Alaska project was to release a call for pre-proposals in October 2007, the Board concluded that it would be better to wait until February or March 2008, but not wait as long as October 2008. This would give time for it to learn from the ongoing Bering Sea Project. The Board also expressed interest in the collaboration with the EVOSTC.

In June 2007, while finalizing the BSIERP components, the Board noted that the requirement for large multidisciplinary teams to send in proposals and have a winner-take-all approach led to less competition than the Board desired. They said this should not happen again for the Gulf of Alaska program. The process of developing proposals needed to be fully competitive and well thought out. The Board emphasized that it would thoroughly consider the lessons learned from the BSIERP when proceeding with the development of the GOAIERP.

The Science Panel, meeting in August 2007, reflected upon the approaches and lessons learned in the BSIERP. Everyone agreed not to repeat the large group, winner-take-all approach, nor to follow the NSF individual proposal approach. Instead, they recommended that a directed, but still competitive strategy should be explored. Staff suggested a modular approach, where all modules that would make up an integrated ecosystem research program are identified initially and roughly defined by NPRB (as was done for LTK and patch dynamics components of BSIERP).



Modules would be process-oriented and could be competed openly, followed by focal meetings like those for the patch dynamics and LTK components, which proved to be extremely valuable and productive. Such an approach would give control, ensure competition, allow for creativity within defined modules and prevent any group or institution from dominating. Such a modular approach could also deal with the issue of insufficient funding, depending upon available partnerships, as well as ensure a high quality, comprehensive and integrated program comparative to BSIERP. Core modules could be identified for funding simultaneously in a first instance, with additional modules designed ahead of time to be added as more funding becomes available. The Science Panel endorsed this idea and added that relevant long-term datasets should be identified and their availability determined to ensure a level playing-field in terms of data access for all applicants.

In September 2007, the Board agreed with the recommendations of the Science Panel and said it wanted to evaluate the BSIERP process and determine whether it was suitable for the Gulf of Alaska program. They requested that staff further develop the modular approach for the April 2008 meeting.

By April 2008, staff had fleshed out the beginnings of a modular approach, and the Board's science director, Francis Wiese, presented a detailed overview with the following specifics:

1. Process-oriented multi-disciplinary modules will be competed individually.
2. Give longer timeline than BSIERP for module teams to develop proposals as no field work is planned for 2009.
3. 2009 would be used for programmatic and logistic development, as well as to start retrospective analysis and modeling (depending on modular approach chosen).
4. Field seasons in 2010–2012 will give a one year field overlap with BSIERP and thus a potential to determine downstream effects (depending on modular approach chosen, see presentation).

The Board thoroughly discussed the suggestions and through unanimous vote, requested that staff develop five examples for their review in September 2008, along with a discussion of strengths and weaknesses of each. Staff also should be prepared to release a call for pre-proposals. The Board was also informed that the *Exxon Valdez* Oil Spill Trustee Council had not agreed to pursue a partnership with the Board for a joint GOAIERP.

Preliminary Program

In September 2008, the Board finally approved the release of a call for pre-proposals that would address the overarching question of how environmental and anthropogenic processes, including climate change, affect various trophic levels and trophic linkages in the Gulf, with particular emphasis on fish and fisheries, marine mammals, and seabirds. The goal would be to determine and quantify the processes driving upper trophic level populations and to better understand observed and potential future variability therein as they affect key management issues in the North Pacific.

The overall Gulf of Alaska Integrated Ecosystem Research Program would range from climate and physics up through fish, birds, mammals and humans. It would have four components: upper trophic level species, forage base, lower trophic level and physical oceanography, and ecosystem modeling. They would be competed separately and integrated in a post-proposal selection process.

The program is anticipated to run from 2009 to 2013 or 2014, and cost about \$9 million including \$1 million reserved for unanticipated expenses, including ship time. It would need at least one fish species of commercial importance and encourage two areas for comparative study, though not require it. It would need to identify clear management application. There would be an option of two or three field seasons but none could exceed \$3 million. It would envision a planning year and a wrap-up year, each funded at about \$500,000.

The call for pre-proposals focused on just the upper trophic level to investigate the processes and mechanisms that regulate the productivity and population trends, including their variability, of the top level species of interest. The call for pre-proposals was released on September 26, 2008. Further development for the Gulf of Alaska integrated program will be covered in the next annual report.

