Pacific Seabird Group

DEDICATED TO THE STUDY AND CONSERVATION OF PACIFIC SEABIRDS AND THEIR ENVIRONMENT

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NSTC Joint Subcommittee On Ocean Science and Technology

Re: Comments on Draft of "Charting The Course For Ocean Science In The United States: Research Priorities For The Next Decade"

To NSTC Joint Subcommittee On Ocean Science and Technology:

On behalf of the Pacific Seabird Group (PSG), we offer the following comments on the draft plan "**Charting The Course For Ocean Science In The United States: Research Priorities For The Next Decade** that was issued in August 2006. In addition to our general overview, we have attached editorial comments that refer to specific pages. PSG also supports the comments of the Ornithological Council and the American Bird Conservancy. The Draft Research Priorities constitutes a needs assessment and outlines a strategic action plan aimed at outlining national ocean research priorities in the U.S. over the coming decade. We understand that this document will be a foundation for the Ocean Research Priorities Plan and Implementation Strategy, which is to be released in December 2006.

PSG is an international, non-profit organization that was founded in 1972 to promote the knowledge, study, and conservation of Pacific seabirds. It has a membership drawn from the entire Pacific basin, including Canada, Mexico, Peru, Chile, Russia, Japan, South Korea, China, Australia, New Zealand, and the USA. Among PSG's members are biologists who have research interests in Pacific seabirds, government officials who manage seabird refuges and populations, and individuals who are interested in marine and seabird conservation. Since PSG began it has been a strong and vocal advocate of ocean research, including ecosystem-based research on all aspects of the marine and near-shore environment, of which seabirds are an integral part. Our interest in this topic is keen, and our comments are as a primary “stakeholder.”

We applaud this effort by NSTC Joint Subcommittee on Ocean Science and Technology to provide U.S. institutions and government agencies a template that will guide ocean research for the next decade. In general, we believe that this draft represents a good beginning. The final report should provide a strategy and concrete plan of action plan.

The plan should acknowledge and incorporate the increasingly important role of seabirds and other apex predators as indicators of ecosystem function and health. Seabirds are secondary and tertiary consumers, the same trophic level as commercially exploited fish. Seabird prey include the juveniles of many commercial species and may in some cases compete with fish for the same prey. Thus, seabirds can be excellent samplers and predictors of fisheries stocks. Because seabirds are conspicuous, accessible, and are sensitive to physical and biological fluctuations in the marine environment, they can provide early warning of toxins and contaminate accumulation, and signal natural or human-caused changes in the ocean environment. Indeed, upper trophic level predators have been found to be more sensitive indicators of environmental shifts than most physical barometers. For example, in the Pacific Ocean, changes in seabird productivity and survival rates were among the first reported indications of large-scale impacts associated with El Niño and La Niña. This valuable source of information should be incorporated into any comprehensive research plan.

Editorially, this document could be improved by streamlining it, as there are repetitions among sections, and even repetitive paragraphs in the same section. In addition, some of the statements are so general or non-contentious that they provide little guidance. Parts of the introduction read more like conclusions, and thus are repeated later in the document. The findings could be clarified by numbering sections and priorities. For example, on page 7 and elsewhere, the document refers to 21 research priorities, but it is not clear which are the 21 priorities.

Our substantive concern is that, while the document purports to be inclusive of all aspects of ocean research, there is an overriding emphasis on human use of ocean resources or impacts on humans due to changes in the oceans. Even if this human-centered approach is necessary, it will not be possible to understand the marine ecosystem and the issues you propose, without attention to middle and upper trophic levels. Furthermore, there is little (or no) attention to the government's role as a trustee for these natural resources, and the government's responsibility for issues ranging from the regulation of contaminants, to the harvest of fishes, to the maintenance of healthy populations of seabirds and marine mammals.

Throughout, the document makes giant leaps from physical oceanography to humans, with occasional, minimal attention to things such as 'productivity, coral reef systems, pathogens, invasives', etc. The intermediate and upper ecosystem components (fishes, birds, mammals) only appear to be implied. This approach could lead to inefficient operations and flawed programs. For example, the research plan ignores the potential, at least under certain conditions, for 'top-down' impacts on ecosystems and ocean regimes, and appears to assume 'bottom-up' control, which has not always been supported. One example is the potential 'top-down' force on the recruitment and abundance of commercially important fish species by larger fish, seabirds, and marine mammals. Higher trophic levels are mentioned within the context of large-scale ecosystem models (p. 23), but fully understanding interactions among trophic levels will require additional approaches. The outline should be more specific about the inclusion of such basics as population trends and abundances of major taxa, as well as more complex interactions among species and their changing environment.

Among the six themes selected (which 'represent key areas of human interaction with the ocean'), most have in common the issues of acquiring and managing up-to-date data, the communication and availability of the databases, GIS applications, and modeling. In addition, the document notes the need to train and maintain the technical and scientific expertise to maintain the necessary infrastructure. All of these are important goals that we support. We would add, however, that the plan needs to recognize the existence of many valuable data sets that, for lack of support, are not currently fully integrated into accessible databases. These data sources could prove valuable in evaluating long-term changes, as well as the validation of new models.

We are pleased to see the plan address the necessity of improving marine operations, as the lack of safety standards, resources, and accountability continue to endanger seabirds at sea and near their breeding areas. However, the plan does not appear to address the safety issues from foreign registered vessels. It is not clear if 'industry' (p.32) includes foreign-based ships, but if so, this should be clearly stated. U.S. waters host many international routes, yet (for example) there is no mention of the 'great circle' route through Alaska's waters, where 85% of U.S. seabirds occur. While we agree with the need to 'increase understanding of environmental impacts and conditions affecting marine transportation' (p.32), there is also a need to understand and protect the environment from the anticipated increase in marine transportation.

Finally, we strongly support the suggestion for sharing of research platforms among different aspects of ocean science research. We also strongly support the emphasis on long-term observing systems. To be successful, a program will approach both of these goals by fully incorporating the middle and upper trophic levels in its conception and operation. For example, land-based and at-sea monitoring programs for seabirds already provide platforms for collection of physical and biological data. With improved database management and accessibility, these operations could provide useful additions to larger databases. Because seabirds are long-lived and are among the most conspicuous and easily studied of marine organisms, they can play an important role as monitors, sensors, and indicators of marine ecosystem health and dynamics.

Please contact us if we can provide additional information.

Sincerely,

Kathleen O'Reilly, Ph.D.

Enclosure