

## **BASIS as a Model for International Scientific Collaboration: the Project is Greater than Just the Sum of its Parts**

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I am pleased to be able to join you here in Sapporo to listen to your presentations and learn from your research and analysis. I am honored to have the opportunity to offer some comments this morning about the importance of your work and its relationship to other cooperative efforts to expand our understanding of ocean life.

During the last century, many nations developed processes for managing natural resources, because they recognize that higher concentrations of humans and their demand for natural resources required some governmental regulation and protection. Those processes began simply and evolved into complex local, regional, national and international systems. Based on both public input and scientific information, decision-makers attempted to provide the necessary guidance to both utilize and protect the resources, some wisely and some poorly. Legal requirements and official mandates vary greatly. Some assure sustained yield harvests and attempt to achieve long-term sustainability; others guarantee specific levels of harvest to provide economic and social benefits.

The wide range of both goals and implementation strategies share one common characteristic: the need for information upon which to make decisions.

Demand for reliable information has increased interest in scientific research and data accumulation. However, obtaining the necessary financial support to conduct that research has been difficult. The rapid rate of change of both natural systems and human impacts upon them accelerates the need for more data and research, at the same time that governments are reducing budgets. Under these circumstances, it seems prudent to look for new funding sources and to evolve the most efficient ways to use the resources that are available.

All of these considerations make it even more appropriate to look beyond national borders to get the job done. Pooling of resources and sharing of time, talent and information all help to stretch capacity. Moreover, many of the questions about natural systems, particularly ocean systems, can only be answered with international collaboration. This is particularly true for research on anadromous fish in the North Pacific, where five countries contribute fish to the area, Japan, Russia, Korea, Canada and the United States.

The North Pacific Anadromous Fish Commission is an excellent example to the world of how nations can work together productively in the stewardship of their shared marine resources and ecosystems. For several years, scientist from these countries have worked together to share information and to jointly conduct research under BASIS, the Bering Aleutian Salmon International Survey.

BASIS is an NPAFC coordinated program of ecosystem research on salmon in the Bering Sea. The major goal of the program is to clarify how changes in ocean conditions affect the survival and growth of salmon. The BASIS Research Plan calls for synoptic research vessel operations across the entire Bering Sea 2002–2006 to collect information on oceanographic conditions, salmon and associated species. The results will help clarify the mechanisms of biological response to the conditions influenced by climate change (see Myers 2004).

BASIS is unique in its level of cooperation and productivity. It has an unusual foundation: a treaty signed in 1992 by the member nations enabling them to share data and resources for a common mission (the protection of anadromous fish).

However, its success lies in something else: mutual trust and respect among the participating scientists and the shared vision that no one country can accomplish this mission alone. Joint research cruises enable participation of scientists from several countries and facilitate the sharing of research technology, methodology and results. New genetic techniques, mass marking strategies, and the use of “smart” tags are being applied to study distribution of salmon stocks. Data storage tag (DST) recoveries in 2003 provide insight into salmon migration routes. Studies of salmon diets are casting new light into the early life history and survival of salmon.

This workshop in Sapporo provides a forum for the exchange of research results by scientists from Japan, Canada, Russia, Korea and the United States, and for additional standardization of sampling gear, data and analysis. I applaud the efforts of the workshop participants to continue the quest for greater understanding of this precious salmon resource and the ecosystems that support it and I thank you for your remarkable level of collaboration and cooperation.

Now more than ever, this approach of working together is needed.

Recent efforts to assess the status of the health of the oceans have produced reports that are alarming. According to the U.S. Commission on Ocean Policy and the Pew Ocean Commission, there is an emerging

consensus that our oceans are in crisis and reforms are essential. See [www.pewoceans.org/oceans](http://www.pewoceans.org/oceans) and [www.oceancommission.gov/documents](http://www.oceancommission.gov/documents)

Experts identify the four major challenges that threaten ocean health as overfishing, incidental by-catch, pollution, and habitat destruction. Both Commissions document these challenges and make compelling arguments for addressing them.

I would add one more challenge: the lack of information and understanding of the complex bio systems of our seas and oceans. Over 90% of the globe's oceans remain unexplored below the surface, and only a small amount of public and private research funding supports these efforts.

Will this change? Many experts think that the time is right for a huge change in the amount of attention paid to oceans. According to Roger Rufe, President of the Ocean Conservancy, "This is a seminal moment."

The United States Council on Environmental Quality's Director James Connaughton said: "Restoration, wise use and conservation of the oceans has come to the forefront of environmental priorities, not just for the nation but for the world. There's a massive bipartisan and regional consensus toward embarking on a new generation of progress." (The Washington Post, 10/09/04)

The Pew Ocean Commission recommends doubling the funding for basic ocean science and research, and developing a comprehensive ocean research and monitoring strategy.

The U.S. Commission on Ocean Policy's Final Report "An Ocean Blueprint for the 21<sup>st</sup> Century" recommends an eco-system based management approach, a new coordinated ocean policy framework and "cutting edge ocean data and science translated into high quality information for managers". The Commission also recommends doubling the nation's investment in ocean research and launching a new era of ocean exploration.

Whether the United States follows through on these recommendations and what level of support it contributes to the effort remains to be seen. Whether other nations move ocean research higher on the agenda also is unclear.

But to make progress, it is not up to just the heads of state or the directors of research organizations. It is also up to those of us who have had some experience with successful collaborative efforts, like BASIS; we must make every effort to inform others of what is possible and why it is needed.

BASIS has already produced positive results, both useful information and positive peer relationships. It offers an excellent example to other organizations and regions of how to undertake complex international research in the most meaningful and efficient way. All of the countries contribute resources (vessels, researchers, transportation support, analysis or supplies) and all of the countries have access to the accumulated information, which they can use, for additional analysis, interpretation and publication. Representatives from all of the countries participated in designing the research plan that guides the BASIS effort and all are welcome to share their results and ideas at annual meetings and workshops.

I would like to encourage you all to do continue the sharing process after this workshop and beyond Sapporo, as well. Policy makers, regulators, fishermen, community leaders, university faculty, foundation and grant giving organizations and media representatives must be educated about BASIS. They need to know about the progress underway at NPAFC to provide a new paradigm for international science and information sharing. I for one, plan to do so whenever the opportunity presents itself. One of those opportunities will be in Anchorage, Alaska next April at the 2005 State of the Salmon Conference. The sponsors hope to forge new alliances across the North Pacific to create a common baseline of knowledge regarding best practices in salmon management.

Many people see the need for common efforts, but few organizations have laid the groundwork as successfully as you all have in actually achieving them. It will be easier to develop the necessary financial support to see your work continue and grow if more potential funders come to understand what you have already accomplished and the opportunity that this model provides. I hope that before leaving tomorrow, you will recommit yourselves to sharing the results, the experiences and the vision of BASIS back home, wherever that might be.

In closing, I want to thank NPAFC for inviting me to participate, and to thank each and every one of you for the contribution that you are making to our improved understanding of the oceans and our world.

## REFERENCES

Myers, K.W. 2004. BASIS Research Results in 2003. N. Pac. Anadr. Fish Comm. Newsletter 16: 4-5.