State of the Salmon Conference  
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Keynote Speech by Fran Ulmer  
Director of the Institute of Social and Economic Research  
University of Alaska Anchorage

Thank you for the invitation to speak to this distinguished gathering of scientists, resource managers, policymakers, and fellow salmon lovers.

That is why we are here, isn’t it? Because we are fascinated by these amazing creatures who are revered in art, culture, history, science and politics. They lead such remarkable, complicated, and dangerous lives, traveling thousands of miles in search of food and adventure and then returning home to die reproducing. Humans are understandably in awe. Humans are also understandably confused about how best to manage them, given their complexity and range, and the reality that salmon are citizens of the world, not just regional treasures.

I grew up in Wisconsin, where perch and bullheads were common. I thought a salmon was just a larger, more expensive fish on upscale menus. I undervalued the social, cultural, economic, and ecological significance of the Pacific salmon, until I moved to Alaska. Even after ten years as one of three U.S. commissioners on the North Pacific Anadromous Fish Commission, I know there will always be more to learn about the habitat, feeding, migration, predation, utilization, management, and significance of salmon.

That is why I want to thank the organizers and sponsors of this gathering for your efforts to promote a better understanding of the challenges facing scientists, researchers, managers, and policymakers who are committed to assuring the sustainability of this magnificent animal.

Over the next several days you will be hearing from a wide range of experts. I hope you will all be enlightened, challenged, and inspired to continue to be part of the group of humans who are willing to spend time, energy, intellect, and resources improving the research and management of both the salmon and the ecosystems that sustain them, both freshwater and saltwater. This is not a simple challenge. Salmon test our abilities to restore ecosystems and they force us to think big picture. They require us to integrate information and management across political boundaries that make no ecological sense. They require diverse public and private entities to work together for the common good. They require us to think long term.

In my remarks I would like to focus on the global, not the local, on the salt rather than the freshwater phase of salmon lives. I will discuss two issues: the importance of international collaboration and cooperation and the need for a new approach for organizing data, research, and management.

Over the last century, many nations have developed processes for managing natural resources, because they recognize that higher concentrations of humans and their demand for natural resources require 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 use 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 in the short term.

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 on them accelerate the need for more data and research, at the same time that governments are reducing budgets. Under these circumstances, it seems prudent to evolve the most efficient ways to use the available resources and consider new ways to organize how the research is undertaken.
I believe it is essential that we look beyond borders to get the job done. Pooling of resources and sharing of time, talent, information, and analysis all help to stretch capacity. Moreover, many of the questions about natural systems, particularly ocean systems, can be answered only with international collaboration. This is particularly true for research on Pacific salmon, a species that ignores lines on maps.

Five countries contribute fish to the North Pacific—Japan, Russia, Korea, Canada, and the United States. All these countries have vested interests in the health of the species, and all assume responsibilities for management. Most of that management is done independently, autonomously, even though we know that the salmon from these nations intermingle in the North Pacific and in some cases, the Bering Sea. However, in several significant ways, international collaboration is increasing.

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. The North Pacific is the largest marine reserve for salmon in the world, and it was made so by international treaty in 1992, when Japan, Russia, Canada, and the United States joined together to ban high-seas drift net fishing for salmon. In addition to that ban and specific provisions to enforce it, the treaty also provided that the representatives on the treaty’s commission would share data and cooperate on research examining anadromous fish and their environment. For several years, scientists from these countries have worked together to share information and conduct research cooperatively 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 from 2002 to 2006 to collect information on oceanographic conditions, salmon, and associated species. The results are helping to clarify the mechanisms of biological response to the conditions influenced by climate change. BASIS is unique in its level of cooperation and productivity. It has an unusual foundation: a treaty signed 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 provide insight into salmon migration routes. Studies of salmon diets are casting new light on the early life history and survival of salmon.

The BASIS participants are discussing additional standardization of sampling gear, data and analysis, which will be decided in May. If you would like to learn more about the research and see the remarkable level of collaboration, you might consider attending the BASIS Symposium this fall in Anchorage, at the American Fisheries Society meeting at the Hilton Hotel, September 14.

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 and 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. Both reports identify major barriers to solutions, emphasizing
the lack of information and understanding of the complex bio systems of our seas and oceans. Over 90 percent of the earth’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 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.” James Connaughton, the director of the United States Council on Environmental Quality, 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 21st 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 will move ocean research higher on the agenda also is unclear.

However, one must hope that the recently released United Nations Millennium Ecosystem Assessment will be a worldwide wake up call to action. www.milleniumassessment.org.

Over 1300 experts from 95 countries contributed to the report. It warns that ongoing degradation of 15 of the 24 ecosystem services examined is increasing the likelihood of potentially abrupt changes that will seriously affect human well-being, including changes in water quality, creation of dead zones along the coasts, the collapse of fisheries and shifts in regional climates. The UN Millennium Project’s Task Force on Environmental Sustainability presents ten recommendations for action in its Final Report on the Environment and Human Wellbeing: A Practical Strategy

1. Improve small-scale agricultural production systems
2. Promote forest management for protection and sustainable production
3. Combat threats to freshwater resources and ecosystems
4. Address the threats to fisheries and marine ecosystems
5. Address the drivers of air and water pollution
6. Mitigate the anticipated effects of global climate change
7. Strengthen institutions and governance
8. Correct market failures and distortions
9. Improve access to and use of scientific and indigenous knowledge
10. Build environmental sustainability into all development project proposals

That report also recommends additional funds for research, expanding efforts to manage ecosystems instead of single species, and new mechanisms to facilitate multi-jurisdictional decision-making. But to make progress, it will take more than just money spent in the old way—highly decentralized, uncoordinated, and never adequately shared or integrated into regional models. There must be common methods for collecting and reporting on data for it to move to the next level of understanding and utility. It will also take more than just reports or advice from scientists. It will take a commitment from all of us who care about the sustainability of salmon. We know that salmon is an indicator species of the health of their ecosystem and we know that many other species depend on salmon, from bears and eagles to humans and coastal communities. We must make every effort to inform others of what is at stake, what is possible, and why it is needed.
BASIS has already produced good results, including useful information and positive peer relationships. It offers an excellent example to other organizations and regions of how to undertake complex international research in a meaningful and efficient way. All the countries contribute resources (vessels, researchers, transportation support, analysis, or supplies) and all the countries have access to the accumulated information, which they can use for additional analysis, interpretation, and publication. Representatives from all 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.

What would be helpful to take this to the next level? More funding and broader understanding of the process. Policymakers, regulators, fishermen, community leaders, university faculty, foundation and grant giving organizations and media representatives should know about BASIS and the progress underway at NPAFC to provide a new paradigm for international science and information sharing. Many people see the need for common efforts, but few organizations have laid the groundwork as successfully as NPAFC has in taking steps to achieve them. It is essential to develop the necessary financial support to see this work continue and grow. It would help if more potential funders come to understand what has already been accomplished and what an opportunity this model provides.

You can also make a huge difference this week, as you discuss ways to organize and standardize data collection, reporting, and processing into useful information. I encourage you to think beyond your region, beyond your discipline, beyond your comfort zone. Think about what you can do to improve research and resource management to meet the challenges of tomorrow.

I commend the Wild Salmon Center, Ecotrust, and the Moore Foundation for sponsoring this conference to allow the sharing of ideas, from the local to the global. Thank you for the leadership you are providing, thank you for the opportunity to speak today, and thanks to all the participants for working to assure that future generations will be able to enjoy salmon as much as we do!