

How does our region integrate new scientific research, as it becomes available, into policy and management decisions?

This was the question we posed this year at our annual Science to Policy Summit. Brian Baird, former US Congressman representing southwest Washington, opened the Estuary Partnership's 2012 Science to Policy Summit with a charge: *with a flood of scientific information available the challenge is to communicate in simple terms what it means and how it matters to our everyday lives.*

Congressman Baird encouraged attendees to make science a part of their decision making process, placing it within the broader context of the economic, social, political and fiscal needs of the region. He reminded us that policy makers are inundated with technical “white papers” that provide good information but lack context. He pointed out that even if we have the right information, we may not make the right decisions. For example, it may not matter whether we can detect parts per trillion, it should be about the effect of parts per million. His challenge to the group: communicate information, and translate it to help policy makers understand how to put it to use.

Over 100 participants representing tribes, academic and applied science, agriculture, transportation, fisheries, recreation, industry and local to federal government agencies joined the discussion.

Oregon State Senator and co-host Jackie Dingfelder convened the meeting with Washington State Representative Sharon Wylie. Senator Dingfelder encouraged the continuation of cross-river discussions to advance the protection of the lower Columbia River, a hallmark of the Estuary Partnership, as a National Estuary Program.

Bernadette Graham Hudson, Lower Columbia Fish Recovery Board and Catherine Corbett, Estuary Partnership, summarized the key findings from the biannual Columbia River Estuary Conference (CREC) held in May. Over 200 of the region's scientists attended or presented their latest scientific research on the lower Columbia. They offered three key messages: the importance of restoring ecological diversity in the region, the need to consider salmon recovery along with other community and wildlife needs, and the need to address habitat restoration on a broader landscape scale. The Summit brought these latest scientific findings from CREC forward for a broader discussion with community leaders and policy-makers.

Joan Dukes, Northwest Power and Conservation Council Chair and Dick Pedersen, Oregon Department of Environmental Quality Director, discussed how they use scientific information in their policy decisions. Both agreed: they have to review the science, assess the political reality and make the best decision with available information. Chair Dukes strongly encouraged that “do no harm” needs to be the standard and that we need to integrate science with broader economic and societal priorities. Mr. Pedersen stated that climate change, water resources, and contaminants are key complex issues that face us now. Increased regional coordination is necessary if we are to address them in a way that is meaningful and timely. Putting data into context is paramount. Both panelists agreed that leadership is essential. We cannot wait for scientific certainty because it does not exist. Sometimes you have to make a decision because it is the right thing; science and public health support the decision even though it may not be popular.



Key Science Outcomes of Columbia River Estuary Conference 2012

1. Emerging Science: Ecological Diversity Is Critical

Fish need diverse habitats, including shallow water edge and tidal shrub habitat. To increase their resilience and survival rates they also need the ability to use a diversity of life history strategies; for example, when and what size they are when they enter the estuary. Diversity of hydrology and inundation patterns drives habitat structure and how the fish use the habitat. Fish are found in a variety of habitats throughout the year and stock composition and diversity vary by reach and fish type.

Management Implications: More monitoring across a diversity of habitats is needed to better understand fish use, performance and habitat needs. Monitoring in different reaches of the river is important throughout the year, not just during peak migration periods. To benefit multiple fish stocks, estuarine habitat restoration should focus on a variety of diverse habitats with diverse hydrology, inundation patterns and vegetation communities. We still are learning about the ecological consequences of the loss of diverse habitat and its effect on salmon resilience. How do we build in the effects of climate change, sea level rise, and invasive species? What is the effect on salmon and ecosystem resilience in the future with the historic loss in diversity? How do we ensure continuation of data, monitoring and evaluation?

2. Emerging Science: Balance (or Lack of) Between Salmon Recovery and Other Objectives

The region's laser focus on salmon recovery may be limiting broader ecosystem restoration. Salmon recovery was discussed within the context of hatchery programs and other species – specifically beaver and mollusks, but also in reference to white tailed deer, turtles, smelt, and other species. There may be actions needed for salmon recovery that can be tweaked to address salmon *and* other species.

Management Implications: The focus on recovery of ESA listed threatened and endangered salmonids and the Biological Opinion for the federal hydropower system have shaped activities for the past decade including significant investment of funds for salmon recovery. Should salmon recovery objectives be prioritized over other ecological and social/community objectives? Are some species more important than others? Can habitat restoration for

multiple species succeed? How are hatchery programs affecting salmon recovery and ecosystem restoration? Will commitment to ecosystem recovery continue or thrive while focused solely on salmonid recovery? Should funding drive the activity and set priorities? How do we broaden the funding?

3. Emerging Science: The Region Needs Restoration on a Landscape Scale

Restoring habitat on a landscape scale is important. The types and locations of habitat, habitat linkages, and habitat complexity need to be considered. Restoring landscapes rather than isolated discrete sites provides a better chance of restoring natural processes (such as sediment and organic matter transport). Landscape scale restoration also has a better chance of being self-sustaining as over time, those natural processes create habitat and build ecological diversity. New tools have emerged to help with restoration on a landscape scale, such as the Estuary Partnership's Tier 3 Restoration Prioritization Strategy.

Management Implications: Landscape scale restoration requires broader social engagement both within and beyond the estuary. Upriver and downriver landowner information and science exchanges need to continue to ensure broad sharing of information. Restoration at the landscape scale will broaden the discussion; it will need to include community goals and needs beyond restoration. How does the restoration community engage the public in water quality, toxic impacts, and restoration needs? To what extent does public support matter? What is the goal of public participation? How can restoration incorporate broader local needs?



The Discussion: What We Heard

Summit participants discussed how the latest scientific findings affect their own work and identified what the Estuary Partnership can do to support the region to adapt to these challenges. We asked three questions:

1. What are the primary management or policy implications of what you heard today?

- **Broader, ecosystem focus:** The region's focus on salmon recovery has advanced protection of ESA listed species; however, it presents a conflict between species priorities and limits response to other environmental problems. Cleaning up and reducing contaminants have taken a back seat on the lower Columbia River, despite their impacts on salmon. Agencies can be limited by their role, purpose and funding, making it difficult to coordinate. Such a limited focus and rigid application of goals narrows the focus to specific species or habitats and it misses the broad spectrum of concerns. In many cases, it actually discourages restoration for other species. The goal is to incorporate single focus science into the larger ecosystem needs. Planning that includes the landscape scale is a good place to start: it takes a broad approach to evaluate restoration objectives and allows us to consider important factors that may not be funded, such as toxics monitoring.

- **More science:** Continuing to advance science and our understanding of the lower river and estuary is critical. It is important to use shared protocols when monitoring and to integrate toxics reduction into salmon recovery. Monitoring, like any protection effort, needs to focus on the ecosystem as a whole. This must include pre and post restoration monitoring which is often not funded now. Currently when post monitoring is funded, it is short term and does not allow adequate data to assess trends or adaptively manage specific projects. A key issue is how to allocate funding for long term monitoring when funders are constrained by short budget or contract cycles and short-term project periods.

- **Enhanced communication:** We need to communicate in terms that matter to individuals. Data and information need to be distilled into what matters; we don't need to overwhelm people with every data point and every nuance of data interpretation. The public needs to be more effectively engaged in talking about the benefits of salmon and other species, ecosystem services (flooding), and the balance and tradeoffs with economic and natural resource priorities. We need to generate a discussion about the acceptable balance between up-front knowledge and risk. Maintaining a dialog with a regional focus is paramount.

- **Use science:** Making sure we use science for on-the-ground action and incorporate science into solutions is paramount. The ideal is to take the best available science and make decisions, integrating economic, social, financial and political considerations. Science often strives for perfection and certainty; we need to support that goal while also recognizing that decisions need to be made and that certainty doesn't exist. The more we can integrate science into decisions, the more likely we will achieve the level of protection necessary to sustain ecosystem health, public health and economic viability. Doing nothing is not an option. Sometimes there are conflicts between compliance versus the right thing to do that need to be addressed by policy.

2. What are the two priorities?

- **Science should be the driver in decision making and incorporate economics, cultural needs and political realities:** Science provides the data that is necessary and meaningful to communicate to the public. We need to advance our knowledge about the lower river and base our decisions about the river on science. We need more monitoring and evaluation to understand if we are making progress and to manage adaptively when we learn more, allowing for failure. Getting policy ahead of science can misplace (and misspend) limited dollars and create conflict.



- **Communicate in simple intuitive ways:** The universal theme of the day was: create and communicate a message that speaks to the public in terms that matter to them. Keep the message simple and intuitive like the effects on fish, birds, health, or clean water. Tie information to the sustainability of society that includes the economy, public health and ecosystem health. The best hope for citizen engagement in the protection the lower river is to reflect what citizens' value. Quantify the impacts and benefits to individual lives and give specific options to do the right thing.

3. What can the Estuary Partnership do?

- **Do while learning:** It is important to continue to apply what we know now. We know enough to take action and get results. As we learn more, we can adapt what actions we take. We can't just wait for more data.

- **Communicate and reach out:** A key role for the Estuary Partnership is to communicate the science and conservation needs and bring more participants into the discussion, serving as a bridge between science and public entities and governments. The Estuary Partnership is positioned to respond to Congressman Baird's charge to take science and make it meaningful and practical. The Estuary Partnership should build a vision for the whole region, including the ecological and socioeconomic contribution it makes. Engage the public through good stories with visualizations of places that people recognize. Coordinate 'the message' with other groups and serve as "the voice" that does good work.

- **Monitoring and advance science:** A second key role for the Estuary Partnership is to serve as a clearinghouse for data collection and policy development; getting data to regional policy makers regularly; encouraging codes and regulations that are science and ecosystem based and putting science into context. The Estuary Partnership has the most detailed classification on estuary habitat; this type of effort and data should be expanded. We need to focus on advancing science, including comprehensive monitoring and federal and state toxics reduction actions, and to balance the need for monitoring and evaluation with project funding.

- **Coordinate:** Coordinating regional efforts and partners is a third key role for the Estuary Partnership. Participants asked the Estuary Partnership to reach out to those who are not already core partners who share the same vision, such as the Native Americans and fishers. The more diverse the perspectives, the stronger the vision and more likely we will achieve it. The Estuary Partnership provides the regional context and coordination for local groups, agencies and efforts. It is essential to facilitate cooperative management, unify efforts and avoid competition for limited funding.

- **Funding:** Finally, continuing to access funding for the region, including funding for toxics monitoring and reduction. A key role for the Estuary Partnership is collaborating with lobbying groups to secure diverse funding sources and continue our work with the legislatures to keep a focus on the lower river and its needs.

What's Next?

Science to Policy Summits help the Estuary Partnership shape our activities and ensure we serve the region. The discussion at this summit encouraged us to communicate, to coordinate, and to advance science. This discussion guides us to:

- ◆ Design our website to make information more accessible and usable for a range of users from students to scientists.
- ◆ Convene funding partners to heighten coordination and look for collaborative opportunities.
- ◆ Continue our role coordinating regional partners, habitat restoration activities and the tracking of those activities.
- ◆ Stay focused on getting the Columbia River Restoration Act re-introduced – and passed to increase focus and regional funding for contaminant reduction and cleanup.
- ◆ Investigate social media and other options to increase communication and expand partnerships.
- ◆ Improve how we convey data and information to make sure we understand what matters to citizens.
- ◆ Continue to secure funds to provide advanced information and data for the region.
- ◆ Get on-the-ground actions and results; apply what we know, while learning more.

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