

TITLE: Lower Columbia River and Estuary Ecosystem Monitoring and Data Management

1. Is the Washington State data structure not appropriate for the estuary?

The new Washington State data structure currently under development will be a data portal. Interested users will be able to access a variety of data sources through this portal. It will not be a data base as such, however, part of the plan is to establish a common set of protocols for reporting data so there will be consistency throughout the State of Washington (Bruce Crawford, personal communication). The State of Oregon is proposing a similar system and has been coordinating with Washington on this project (Mitch West, personal communication). The ERIC system proposed in project #30015 could be one of the many data sources one could access through either or both of these data portals. Our goal would be to make our system as compatible as possible with these systems specifically in the area of developing common protocols. Since our proposal is still in the conceptual stage, there appears to be a good opportunity to develop consistency and it would be our objective to do so. Washington and Oregon have historically not focused much attention on the lower main stem Columbia River. ERIC could provide the perfect linkage between the two states and ensure that all available lower Columbia River data is widely available.

2. How does this tie into NMFS work in the estuary?

The National Marine Fisheries Service is a key player in the Estuary Partnership. Cathy Tortorici of NMFS chairs our Science Work Group and 3 members of the NMFS scientific team currently working on the estuary are members of the work group. Their long term research work in the estuary will fill important gaps in our knowledge base of the lower river and estuarine ecosystem over time particularly as it relates to salmonids. As a result there is a close connection between their work and the three objectives of the monitoring and data management proposal.

Objective 1: Develop Habitat Monitoring Protocols. NMFS research work in the estuary will ultimately provide data needed to refine the pilot protocols in the following areas:

- Food web – Project # 30001 if implemented will provide key information on salmon usage and relationships to estuarine habitat. As the data from this work become available, it will help define specific salmon habitat usage and provide important details in the ongoing process of identifying appropriate restoration projects and developing and refining habitat monitoring protocols that are based on specific habitat needs.
- Historic changes – Also a part of Project # 30001, this element will help identify key historic habitat types and how these have changed over time and what may be missing under the current estuarine regime. It will help delineate where restoration work should occur and provide key data for devising protocols that will help measure the success of meeting those restoration goals.

Objective 2: Toxics Monitoring. The proposed objective to develop baseline information on toxic contaminants in the lower river will provide data that can be compared with the results of

the NMFS research into the effects of pesticides on juvenile salmonids. Through our work, we will attempt to determine the exposure levels encountered in lower Columbia and then contrast that to the results of the laboratory work currently underway at the NMFS research facility in Seattle. The results of this work will help determine whether more effort is needed control sources of toxic contaminants to the lower river.

Objective 3: Data Management. As information is developed through the NMFS research work, our actions, and the activities of many others, the ERIC system will provide the place where it can be stored, processed, accessed, and queried to make management decisions. The system will allow us to contrast current conditions with those measured in the past and over time it will provide the basis for making river condition assessments that will guide future actions. NMFS has been one of the key proponents of this proposed system.

3. Is this consistent with protocols developed through SSHIAP?

Our goal would be to be as consistent as possible with other data collection and storage systems. SSHIAP is doing much of the ground work for developing consistent format for the collection of salmonid habitat data across the Pacific Northwest. We plan to tap into that knowledge base as much as possible. The lower Columbia River system is unique to the area, however, because of its size. The tremendous volume of fresh water flow coupled with the major modifications to its flow regime that have occurred over time means that measuring habitat condition and change within that system is going to require some unique methods. Both Oregon and Washington are developing protocols for assessing habitat and we plan to work closely with both states. In each case, however, the states have focused primarily on the tributaries and on salmon habitat. The main stem Columbia has mostly been neglected. We want to make sure that this important resource is not a footnote in the respective states' plans but instead receives the attention it deserves based on its critical importance to salmonids and other species.

4. Is this a counterpart to StreamNet?

StreamNet is primarily designed to be a fish related data base. Although other types of data can be accommodated, it would have to be substantially modified to handle the variety of data envisioned for ERIC which will be an ecosystem data base. In addition, the ultimate goal for ERIC is to provide raw and processed data on demand for resource managers specifically involved with the Columbia River. ERIC would provide linkages to other data sources such as StreamNet but it would be much more than a data portal or data warehouse. It would actively assist in planning and decision making processes with real time data and data support services. It would also be designed with the interested public in mind and they would be actively encouraged to learn about and use ERIC. We envision ERIC as providing a regular public reporting on the health of the river. Public support would be a key part of maintaining this system over time.

5. How does this tie with the Council and NMFS discussion on creating a regional data management system?

NMFS is a strong supporter of the ERIC proposal and was actively involved in its development along with the Oregon Graduate Institute. The Estuary Partnership has met twice recently with

NMFS and NWPPC to discuss ERIC and the relationship of it to the Council's interests in creating a regional database. Since the Councils' direction on data management is awaiting a year long study to determine what the data needs are, there will be ample opportunities to coordinate development to ensure the best use of resources. The Council's data system consultant, SAIC, is very anxious to develop something that would be compatible with ERIC, particularly since much of the thinking about what is needed and what the system would look like has already been done through the processes that led up to the ERIC concept. Our plan is to continue to work closely with the Council to ensure that we are creating a system that is in step with other data initiatives and is compatible to the maximum degree possible.

6. What does Washington Dept. of Ecology have and plan for toxic monitoring?

Prior to the development of this proposal and once again in response to this query, we have discussed Ecology's monitoring planning. In both cases the response was the same, Ecology currently does no water quality sampling on the main stem Columbia and has no plans to do so in the future. They do sample the tributaries to the Columbia on a rotational basis but that monitoring only includes routine water quality parameters, not toxics. They sample for toxics on a project by project basis. At present, they have no plans for the lower Columbia (Rob Plotnikoff, personal communication).

Likewise, Oregon DEQ has no present plans for sampling toxics on the main stem Columbia . They currently sample four sites on the mainstem for routine water quality parameters and could modify their program, should increased funding become available, to include toxics on a routine basis at their fixed sites (Greg Pettit, personal communication). Our goal would be to do the 3 year toxics monitoring proposed in 30015 to establish baseline toxics data and then, depending on the results of the study, establish a routine toxics monitoring program. Such a program could be carried out by DEQ as part of their ambient monitoring program on the lower river.

7. What are the agency commitments to use this data warehouse?

The Science Work Group which has representation from all the major monitoring organizations and data users has been directly involved in discussions about ERIC. Some of the members were also involved in the development of the original data management strategy developed in conjunction with the CCMP. The members uniformly agree that the present situation on the lower Columbia is simply not acceptable and that a central data access system is needed for the lower river and estuary that will allow all interested parties easy access to past, present, and future data. Thus far there have been no signed agreements developed in part because we have no product to show them. A prototype ERIC is needed to provide a demo of how important and useful this system will be. Our intention is to actively involve all who are interested in its development and testing so that it will, in fact, meet the varied needs of the different parties. This involvement will help ensure that the agencies will be committed to using the system.

8. Why is this so expensive?

Data management and monitoring are expensive propositions. We are anxious that the development work on ERIC and the habitat monitoring protocols be done right with the

maximum involvement of our partners. Buy in on this work is critical and we have built into the proposal the kind of time and monetary commitment we feel it will take to make these projects viable. The projected costs of developing the prototype ERIC are based on the expert opinion of the data scientists from the Oregon Graduate Institute. With respect to the toxics monitoring program, the costs are based on what it actually cost DEQ to accomplish the CMAP monitoring for EPA in 2001. Costs mount quickly when it comes to the highly specialized nature of toxic sample analysis. This is particularly true for the adjustments that will have to be made to keep up with the ever changing world of pesticide and herbicide application. The costs for developing the habitat monitoring protocols are based on our need to hire a consultant team with very specific expertise. The scope of the project, Bonneville to Astoria, will make this an expensive undertaking.

If you have any questions regarding the responses to any of the eight questions above, please call Bruce Sutherland, Program Scientist at 503-226-1565 X 226 or email:

sutherland.bruce@lcrep.org

REFERENCES

1. Bruce Crawford, Washington IAC, personal communication, 3/11/2002
2. Mitch West, Oregon DEQ, personal communication, 3/13/2002
3. Robert Plotnikoff, Washington Ecology, personal communication, 3/13/2002
4. Greg Pettit, Oregon DEQ, personal communication, 3/8/2002