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TO: William Ruckelshaus
Salmon Recovery Funding Board

FROM: Kenneth Currens, Chair



SUBJECT: Comments on May 22, 2003 Draft Monitoring and Evaluation Strategy for Habitat Restoration and Acquisition Projects

The Independent Science Panel (ISP) recently reviewed the May 22, 2003 draft “Monitoring and Evaluation Strategy for Habitat Restoration and Acquisition Projects” (Strategy) as part of our continuing role to provide scientific oversight and review of the state’s salmon recovery efforts, and our interest in monitoring. We support the approach outlined in the Strategy, recognizing that many details remain to be worked out.

The Strategy is aimed at habitat restoration and acquisition projects, not the broader goals and objectives of *Washington’s Comprehensive Monitoring Strategy (CMS)*, which we reviewed during its development. However, in addressing projects, we feel the Strategy is consistent with the approach outlined in our recommendations on salmon recovery monitoring (ISP 2000) and the CMS. With adequate and stable funding, and implementation by the Salmon Recovery Funding Board (SRFB), the project monitoring Strategy will incorporate the necessary elements needed for adaptive management identified in our monitoring recommendations. These include:

- *Clearly articulated goals and objectives*—The use of a nested hierarchy of monitoring objectives is an important way of organizing specific projects to larger ecological, spatial and temporal monitoring objectives. Setting priorities is also clearly important. We believe Table 1 is very useful in helping accomplish this.
- *Appropriate statistical designs*—The use of the Before-and-After-Control-Impact (BACI) design described in the Strategy should provide useful information. We note that an improved version is available (Underwood 1994). We also recommend that the design for sampling intervals be based upon generation time of the species of interest. The use of the Environmental Protection Agency’s approach to sampling watersheds will help link projects from the watershed to regional scales.

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- *Indicators and variables*—The use of indicators and variables as signs of success based upon changes in fish populations is an improvement over more subjective evaluations, such as repeated photographs taken at set locations.
- *Monitoring protocols and quality assurance/quality control* —The clear guidelines concerning monitoring requirements, technical manuals and financial responsibilities for quality assurance/quality control will help make data compatible across projects throughout the state and will allow for better analysis of project effectiveness by regions.
- *Data management*—The concept of the data pyramid illustrates how data can be stored and reported to different audiences and to answer different kinds of questions. It illustrates and advances the complementary roles of the concept of a state Salmon Recovery Scorecard and underlying databases, for example. General conclusions can be supported by different analytical reports and ultimately the data themselves.

The Strategy also explains and justifies the implementation of three different kinds of monitoring, all of which are needed for good, science-based decision making:

- *Compliance monitoring* (project implementation)
- *Effectiveness monitoring* (project-level results)
- *Validation monitoring* (intensive monitoring of cause and effect relationships at the watershed scale)

An apparent gap in this approach is status and trend monitoring, which may be considered an element of effectiveness monitoring, and will be important for some findings from intensive watershed monitoring to be extrapolated outside the intensively studied areas. We recommend that status and trend monitoring be incorporated into the Strategy.

We are especially pleased to see the idea of using designated watersheds for intensive monitoring. Experimentation and intensive monitoring in these watersheds will help validate and explain results in other watersheds.

Thank you again for your interest in integrating monitoring with the SRFB process. We remain convinced that pioneering efforts such as this will help reduce uncertainty in salmon recovery, provide accountability, and lead the way in successful habitat restoration and acquisition projects.

Citations:

Independent Science Panel. 2000. Recommendations for monitoring salmonid recovery in Washington State. ISP Report 2000-2, Olympia, WA.

Underwood, A. J. 1994. On beyond BACI: sampling designs that might reliably detect environmental disturbances. *Ecological Applications* 4: 3-15.