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INDEPENDENT SCIENCE PANEL

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TO: Steve Meyer, Director
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FROM: Kenneth P. Currens, Chair 

SUBJECT: The Role of Independent Scientific Review in Public Policy

At a meeting of the Independent Science Panel (ISP) some time ago you asked us to provide our thoughts about the role of independent scientific review and how the ISP relates to that role. We have discussed the issue at length and this memo reflects our initial response. We hope it will be helpful to you and others and welcome further dialogue on these subjects.

Making good natural resource policy can be frustrating. Decision makers face not only conflicting public values but also complex scientific questions and potentially confusing answers. During fiscally lean times, when efficiency and accountability are at a premium, it is more important than ever for decision makers to have clear, scientifically rigorous but policy neutral answers.

In 1998, the Washington State Legislature created the ISP to provide the legislature and governor with independent scientific review and oversight of salmon recovery activities, including review of recovery plans. Since then, the ISP has successfully addressed all of its assignments. Mr. William Ruckelshaus, who is forging an historic effort to marry science and politics to recover salmon in Washington, has pointed out that independent scientific review benefits the public by creating informed decision makers and an informed electorate.

New issues – often unanticipated in 1998 – keep emerging. As the legislature considers how to address these, it may be worth reviewing the characteristics and merits of independent scientific review.

What are the characteristics of independent scientific review?

- **Use of experts** – Independent scientific review is built on the notion of peer review, where experts in a field judge scientific merits by how well they reflect scientific methods and rigor. Experts tend not only to be leaders in their own fields, but are usually well connected with a larger community of scholars and management scientists that they can use as a resource.
- **Independence** – Independence means that conflicts of interest and political influence on evaluations are minimal or non-existent. Independent reviewers do not represent agency or

stakeholder positions. This is important when issues are politically controversial and scientifically controversial.

- **Public accountability** – To provide meaningful scientific interpretation, political, institutional, and technical contexts for the assignments to the panel are well defined before the review begins and panel members have access to the full range of scientific information on an issue. Completed reviews belong to the public and are available to anyone.

What does independent scientific review bring to decision-making?

- **Identifying scientific assumptions and uncertainties** – Scientific conclusions are built on facts and assumptions. Facts are rarely controversial, but assumptions may be. Independent review allows policy makers to understand the uncertainty associated with different kinds of assumptions and approaches and avoid getting caught in the crossfire of “dueling-model” debates.
- **Distinguishing science from policy** – Science can help distinguish which expectations are realistic and which are implausible. Agencies often have to use this information to determine what is acceptable, which can blur the distinction between science and policy and lead to controversy. Independent review can identify which assumptions are science and which are policy.
- **Accountability and better quality information** – Several hundred years of experience has shown that when products are peer reviewed, the quality of the work improves.
- **Efficiency** – Decisions based on unsupportable science, can increase risks that desired outcomes would not be achieved. Inefficiency ultimately leads to higher costs. Independent review identifies these situations and helps decision-makers focus on lower risk alternatives.
- **Education and communication** – Independent review can help translate scientific jargon from existing analyses into understandable terms for decision-makers and the public, explain plausible scientific options, identify new options, and describe levels of uncertainty and risk.
- **Scientific coordination** – Scientific panels have become a popular tool for analyzing controversial issues. Independent scientific reviewers or panels can help evaluate or coordinate science review involving multi-jurisdictional panels.

How should independent scientific review be obtained?

Independent review can be performed in several ways:

- **Small, focused panels** – This is the model for the current ISP, where a small group of scientists with different expertise either reviews different products or facilitates reviews by acting as an editorial board that identifies experts in a field, compiles their comments, and makes a judgment on the scientific issues. Small panels are economically efficient because they can use their own expertise when appropriate or increase their expertise by enlisting others, depending on the issue. Small panels have only limited capacity to take on many issues simultaneously, however.
- **Large, diverse panels** – In this model, panels are composed of a large group of sitting scientists, economists, and social scientists that can be organized into different workgroups to address both the scientific and non-scientific aspects of many different issues simultaneously. Large panels have greater capacity but may require support staff or facilities that increase their cost.
- **Ad hoc panels** – This model is similar to the processes used by the National Academy of Sciences’ National Research Council, which provides the independent scientific reviews for the federal government. In this model, a small group of scientists and support staff identify

and enlist panel members as different issues arise. Ad hoc panels can respond to many different issues and are limited in capacity only by budgets and the availability of expert scientists. Because they do not use sitting panel members, however, forming the panels can take longer and decision makers have less opportunity to develop professional working relationships with the scientists.

- **Context** – Regardless of the model of choice, panels must have access to the full range of information on the technical, policy, and institutional contexts of their work to assure an unbiased approach. This typically requires some form of staff support.
- **Schedule for engagement** – Review processes can be very effective when panels engage early enough in product development to provide constructive criticism and allow adjustments to be made. If reviews are performed after products are finalized, there may be little room for the product developers to address constructive criticisms of the panel, which makes the review less helpful. The advantages of early engagement, however, need to be balanced by the need to preserve unbiased, independent review. The involvement of scientific review early in a process can appear to make the reviewers part of the process they are reviewing, which can potentially discredit the review.

What are the unique characteristics of the ISP?

- **Responsiveness** – The ISP responds directly to the legislature and governor.
- **Focus on science** – The ISP includes only scientists, and provides scientific information into public debates on the relationships between natural resource supply and competing social values for the resource.
- **Regional expertise** – The ISP is familiar with regional issues, processes, and jurisdictions involved with salmon management, which allows it to address issues more quickly than *ad hoc* panels.