

**W 9 The Water Quantity Opera –  
Can we have a Happy Ending?**

**Draft Platform Statement  
1-20-05**

# **Shared Strategy Summit 2005 Draft Platform Statement**

## **Introduction to Platform Statements**

This “platform statement” is one of nine papers drafted to stimulate discussion and make progress on topics related to salmon recovery that cross all the Puget Sound watersheds. These platform statements are not intended to represent positions or decisions of any individual or organization. Rather, they have been developed by the Shared Strategy staff with help from others and are intended to describe the ideas and questions that have been identified to date by a variety of people working on these issues.

The expectation is that together, Shared Strategy participants will be able to forge a regional consensus on how to make progress on the ideas and questions identified in the papers and that these ideas will be incorporated into the draft regional recovery plan submitted to NOAA and U.S. Fish and Wildlife Service this June.

Under the Endangered Species Act, a recovery plan must identify the threats to survival, the actions necessary to address the threats, measures for delisting, cost of the actions and a schedule for implementation. In the Shared Strategy, all governments and interest groups agreed to add to the federal requirements by including commitments to implement the plan to ensure its success. This will be the first recovery plan ever developed through a partnership of affected parties that includes commitments for implementation.

The Puget Sound recovery plan will be a living document that evolves and improves over time through implementation. Parts of it will be well defined by June, and other parts will need more work in the future, due to limited knowledge, resources or current political or public commitments. Where additional detail is needed to address a significant threat to salmon survival, the plan must provide a schedule with measurable decision points for how the gap will be filled.

We encourage your comments at the Summit or by contacting the Shared Strategy staff directly. It will be most helpful for you to indicate where the draft statement is generally heading in the right direction and how to take it further to help achieve recovery goals, as well as to identify which questions or issues will need to be addressed at a future time.

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**Background – Adequate Water in Streams for Fish.**

In the Statewide Strategy to Recover Salmon, Extinction is not an Option, (November 1999) the issue of water quantity is well described: “Instream flows are defined as the amount of water needed in streams and rivers for aquatic life, water quality and other instream values that occur in them. Instream flows are necessary to ensure that sufficient amounts of water are available for fish to survive and reproduce, for boats to navigate and people to swim and enjoy. The focus of this strategy is only on the water needs for fish.”

Insuring adequate quantities of cool, clean water during seasonal low flow periods is a key habitat requirement for sustainable fish production in the streams and rivers of Puget Sound. In some cases, it is also important to ensure high flows and that the rate and occurrence of flows approximate what was historically present to ensure river and stream functions are maintained. In other cases, high flows will scour redds and reduce fish production. In Puget Sound, most watersheds identified water quantity as a factor limiting salmon recovery. The Department of Ecology identified six of 14 watersheds as being over-appropriated in terms of existing water withdrawals and the rest as facing significant growth pressures. In some of these areas, although additional surface water and large groundwater use is now prohibited, additional drilling of small, “exempt” wells are drawing down the water table further and are impacting stream flow. By 2020, the population in Puget Sound is expected to grow from its current level of 3.8 million to 5.2 million which increases the demand on our water resources.

The State’s Salmon Recovery strategy, Extinction is not an Option, states that the Instream flow goal is to: “Retain or provide adequate amounts of water in streams to protect and restore fish habitat required by wild salmonids.” Through the development of the Puget Sound Recovery Plan this State goal has been further defined by the population targets developed for Chinook by the tribes and State as well as by the efforts of the US Fish and Wildlife Service for Bull Trout. To achieve these goals, the Puget Sound recovery plan will need to define the strategy to foster substantial progress on ensuring adequate water for salmon.

The relationship between water quantity and salmon recovery is recognized at the watershed level across Puget Sound. Yet, few watersheds have been able to identify the level of flows needed and to develop significant recommendations to achieve the flows necessary for recovery. In many cases, land use impacts on flow and habitat have yet to be sufficiently addressed. We must resolve the fundamental expectation of having a strong scientific foundation for identifying and addressing instream flows and land use impacts within the context of salmon recovery so that ultimately each watershed provides steps and a timetable for addressing flows where they are a limiting factor.

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### **A Three Part Strategy**

A three-part strategy similar to the statewide strategy is proposed for discussion to address flow issues. It includes setting instream flows; advancing the science, and taking actions, both interim and long-term, to improve current conditions. To do this, participants in this breakout session are asked to consider the following three questions.

1. How can we successfully encourage the current processes for flow setting by watershed groups and the state to ensure adequate water for instream flow needed for sustainable fish populations?
2. How can the science help better define the water needs of fish and identify where degraded habitat is caused by or contributed to by poor instream flows, and identify solutions?
3. How can we foster significant actions to improve present conditions where water is a limitation for fish?

The remainder of this issue paper provides background information for the three questions.

### **Setting In-stream Flows**

Over the years, and in several statutes, the state legislature has instructed the Department of Ecology to set stream flow levels by rule in order to protect and preserve instream resources. In the Puget Sound recovery region, instream flows were established for eleven watersheds (watersheds as identified by DOE) from the mid 1970s through the mid 1980s. Seven watersheds do not have instream flow rules and one additional watershed has an instream flow rule in dispute. With the exception of the disputed Lower Skagit, no instream flows have been set in two decades.

Through the Watershed Planning Act (“2514”), the legislature provided an opportunity for watershed groups to develop a plan to address water flows and recommend an in-stream flow to the Department of Ecology. In Puget Sound there are a number of watersheds planning under the Act and several areas planning through other processes. The local efforts generally improve the understanding of water quantity issues for all uses but few have developed a recommendation for an in-stream flow. This leaves the Department of Ecology with the responsibility. Exceptions to this situation are where instream flows have been established by FERC and HCP processes.

Setting in-stream flows or “regulatory” flow does not affect current water use under existing rights; rather, they protect in-stream resources from some of the effects of future water withdrawals or diversions. They are, in effect, a water right for fish. In-stream flows must be set in consideration both specific flow levels and the frequency with which certain flows need to be met.

The current situation in Puget Sound requires immediate action by the Department of Ecology to set in-stream flows where watersheds have not been able to develop a

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recommendation. The Departments of Ecology and Fish and Wildlife need a schedule and sufficient budget for resources to complete rule making in Puget Sound. It is critical that they proceed and they receive continued policy and budget support from the legislature.

### **Advancing the Science**

The roles and benefits of instream flow science in recovery planning are multi-fold. It can help us identify and describe fish needs and existing challenges to salmon recovery that are related to hydrology. It can also provide tools that help us predict and potentially avoid or mitigate problems that could result from future changes in hydrology. It can help clarify and resolve conflicts with salmon recovery that are assumed to be caused by human and climatic effects on hydrology. Finally, science can help us to better understand how to monitor our actions over time to ensure progress. These aspects of the technical problem will be increasingly important if even the most conservative assumptions about population growth, urbanization and increased water demand in the Puget Sound region come to pass and the pressure to take more water from streams and rivers intensifies. Add emerging issues like climate change to the mix, and the need for credible, proactive science supporting policy development becomes even more pronounced.

In-stream flow science continues to evolve. Early techniques focused mostly on identifying minimum flow levels that would be required to avoid significant damaging effects to aquatic resources. These techniques provided the technical basis for many of the initial Instream flow rules adopted for Puget Sound basins, most of which remain in effect today. The current approach for identifying and setting in-stream flows should go forward with provisions for adaptive management as our knowledge improves and new management solutions are found.

Within the last decade, the attention of instream flow experts has broadened to embrace a more ecosystem-based understanding of the need in supporting native species, like salmon, and their habitat. This role encompasses the fish life history needs and habitat maintenance functions of a range of flow factors – lows, highs, timing, frequency and rate – not simply the low flows.

The evolution of the science, especially in light of growing demands to tie the science to salmon recovery needs, is continuing through the Shared Strategy's Instream Flow Assessment Pilot Project. This project is beginning this month in the Stillaguamish watershed and will be completed in June 2005. It is focused on developing and applying a credible, ecosystem-based scientific approach for defining and identifying human-origin hydrologic conditions that may negatively or positively affect salmon recovery. The project will bring together hydrologic and hydraulic data with fish and habitat data using the Stillaguamish Ecosystem Diagnosis and Treatment (EDT) model to determine what light they together shed on instream flow factors critical to salmon recovery.

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This work will be done in two “scenarios” that highlight flow management issues that are common throughout Puget Sound – flow diversions and land cover/land use change - in order to foster the use of the results in the Stillaguamish and other watersheds in the preparation and implementation of watershed plans. The project is expected to provide an important contribution to the Best Available Science regarding the importance of in-stream flow measures to salmon recovery.

The advances and evolution of the science beg the question. As our understanding of what flow conditions are important for recovery improves, how can the policy-making framework respond (via regulations, incentives, acquisition, and other means) to minimize conflicts and help people adapt with new information? Do we have the right management tools and techniques in place to respond to new scientific or technical information? The pilot study will provide a good case study for how we can answer these questions where science and policy meet.

### **Achieving and protecting flows**

In a number of places, it is suspected that current in-stream flow conditions are simply too poor to sustain some life stages of salmon. Water withdrawals, impoundments and land use changes have resulted in extremely low flows in many rivers or streams in Puget Sound. Inadequate flows are particularly common in late summer and early fall when human consumption and agricultural demands are at their highest--- the same time fish need water for migration, spawning and rearing. Setting new or amending existing instream flows will help protect existing flows and define fish flow needs, but will not automatically increase the amount of water available to support fish. The most important and immediate need in many basins is to develop restoration goals and begin to put water back into the rivers and streams either with flow augmentation or by reducing withdrawals.

In addition to flow setting and restoration actions, other actions must also be undertaken in watersheds to protect and manage flows that support important fish stocks – in our case, salmon. These may include:

- Establish an effective instream flow monitoring and compliance program,
- Require the universal measurement and reporting of diversions and withdrawals,
- Develop effective water conservation and reuse programs in the state’s critical basins;
- Enforce against illegal water use;
- Identify where existing or future land use will adversely affect fish habitat;
- Incorporate salmon recovery flow considerations into the long-term planning of water utilities for water supplies.

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Currently, the state utilizes such on-going initiatives as the Irrigation Efficiencies Program, the Conservation Reserve Enhancement Program, watershed planning, and proposals for alternative methods to achieve water related goals. The trust water rights program has been a principal tool used by the state, but it is not without controversy.

Principal concerns raised by water users regarding the Water Acquisition Program as it is currently structured include the loss of water rights, that leased water rights may not be returned, loss of control over water and property, loss of flexibility, and perceived threats to the agricultural community. Despite concerns, however, the state has purchased or leased a number of acres of water over the last three years. The Water Acquisition Program's ability to achieve a high level of utility and acceptance by farmers can be improved if there is a detailed understanding of local conditions, including agricultural water needs and locally specific science regarding stream flows and fish habitat requirements.

The Quilcene-Snow and the Dungeness are two Puget Sound areas in which the Department of Ecology and communities have developed programs and begun to accomplish goals of maintaining flows and providing a means to restore water quantities. These both used a locally-based watershed planning process.

In the Walla Walla basin, there was an acknowledged, persistent and unresolved seasonal low flow/no water problem in a particular reach of the river. The ESA listing of Bull Trout prompted the community to explore ways to achieve more water instream. The co-managers, Ecology, and the parties of interest sat down and developed a way out of the impasse and agreed to set targets on the condition that the work would not stop there. They committed to continuing to work together to insure that the needs of both people and fish would be met. The three conditions were (1) mechanisms that they all designed together would be utilized within a framework that they defined, (2) that the state guaranteed funding and resources necessary for implementation, and (3) adaptive management would be utilized to assess and address changes.

### **Questions for Discussion**

1. How can we successfully encourage the current processes for flow setting by watershed groups and the state to ensure adequate water for instream flow needed for sustainable fish populations?
2. How can the science help better define the water needs of fish and identify where degraded habitat is caused by or contributed to by poor instream flows , and identify solutions?
3. How can we foster significant actions to improve present conditions where water is a limitation for fish?