

W5 Uncovering the Mysteries of the Nearshore

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 the help of 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.

**Uncovering the Mysteries of the Nearshore
Protection and Restoration of Puget Sound Nearshore and Marine
Environments for Salmon Recovery
Draft January 20, 2005**

Background for Nearshore – Puget Sound’s Estuaries and Marine Shorelines

For many years, how salmon use the marine environment of Puget Sound has been largely a mystery--there has been so much we have not known and what we did know has been scattered in a variety of places. Over the last few years, however, that has begun to change. There are still many unknowns; but existing information demonstrates that we must act to protect and restore the marine environment if we want to recover salmon. Local salmon recovery planners, the Puget Sound Action Team (PSAT), scientists and Shared Strategy staff have worked together this past year to compile existing information and to craft hypotheses about Chinook salmon populations and their utilization of the nearshore and marine areas of Puget Sound.

Local watershed groups are addressing the nearshore in their work, and the regional chapter for the nearshore portion of the recovery plan is under development by the PSAT. The PSAT works with Shared Strategy staff, the Nearshore Policy Group, the Puget Sound Technical Recovery Team (TRT), NOAA Fisheries scientists and local planners, and is also coordinating with the each of these entities, as well as the Puget Sound Restoration Program (PSRP, formerly PSNERP), to develop the draft chapter. PSAT produced the first comprehensive draft in September 2004, with some of the scientific analysis still under development. As PSAT continued work on the draft chapter, Shared Strategy and PSAT developed a draft protection and restoration strategy and summaries of potential actions for each of the eleven nearshore and marine sub-basins. Those summaries are available on the Shared Strategy website and comments are welcome. A subsequent draft was posted by the PSAT in November 2004, but has not yet been reviewed by the TRT or NOAA scientists. The PSAT is scheduled to deliver a final draft chapter in April and will provide information to local planners for their input on key issues before the final chapter is completed.

The following are key conclusions from the discussions over the last year.

What We Have Learned

We must ensure that the fresh, nearshore and marine waters of Puget Sound are able to support an increase in salmon abundance, productivity, spatial structure and diversity. Puget Sound was once home to more populations of Chinook salmon with a greater diversity of traits than we have today. It is hard to know precisely but scientists believe we have lost over 15 Chinook runs and most of the losses have been runs that returned in the spring to their river systems. The 22 remaining identified independent historical populations of the Puget Sound Chinook Salmon Evolutionarily Significant Unit (ESU) have suffered significant losses in abundance, productivity, spatial structure and genetic diversity. Improving the chance for survival of Puget Sound Chinook over time will require significant increases in the abundance,

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productivity, spatial distribution and diversity of the remaining populations and the preservation of opportunities for the restoration of early run fish and other life history traits.

Lowering the risk of extinction for Puget Sound Chinook salmon requires that all remaining populations show significant improvements. Two to four populations in each of the five sub-regions of the Sound (as identified by the TRT) must be naturally self-sustaining in the long-term. These objectives for recovery mean that more Chinook salmon as well as Hood Canal summer chum and bull trout will be using the estuaries, shorelines and marine waters of Puget Sound.¹ We must ensure that habitats are present and functioning in sufficient quality, quantity and distribution to support the numbers and diversity of fish.

In regard to Puget Sound shorelines, estuaries and marine waters, the health of salmon populations can be improved through the protection and restoration of the quantity, quality and locations of habitat across Puget Sound. Using what we know about Chinook salmon utilization of the nearshore and marine environment will help us be strategic in how we prioritize protection and restoration efforts in both the short and long-term. We have learned that juvenile salmon have a complex pattern by which they use habitats as they leave freshwater and proceed toward the ocean. Some fish stay for up to a year in the freshwater before moving directly to deeper marine waters, others grow extensively in the major river deltas, while others move through the river deltas and grow predominately along the shallow waters and shorelines of Puget Sound. Scientists call these different patterns “life history trajectories”. The percentage of fish that uses these different trajectories varies by population and river system.

Areas that currently support salmon must be protected if we are going to have a chance, through restoration of habitats, to increase the capacity of the Sound to support all the needs of salmon, including diverse Chinook salmon life histories and populations. A significant portion of the estuarine and shoreline habitats and processes of Puget Sound has been lost or degraded. Major estuaries (deltas) and shorelines along central Puget Sound have undergone extensive modification. We need to reverse the loss and degradation of habitats. Protection of remaining habitat is fundamental to ensuring that conditions do not worsen. Remaining areas of high-quality, functioning habitat are dispersed throughout the region and continue to support Chinook salmon, summer chum and bull trout populations. These areas include drift cell² sediment processes, estuaries, eelgrass beds and forage fish spawning habitats, freshwater sources and riparian areas.

Some areas of Puget Sound are more sensitive or susceptible to human impacts that can significantly diminish the survival of salmon.

- Admiralty Inlet, Tacoma Narrows, Deception Pass and the San Juan Islands function as major migratory routes of juvenile and adult Chinook salmon. Therefore, catastrophic events, such as an oil spill, could significantly impact multiple populations at one time.

¹ This protection and restoration strategy focuses on Chinook salmon, but is intended to benefit all salmonids. The Hood Canal Coordinating Council is developing more detailed information about summer chum that will be integrated with the nearshore and marine chapter of the regional recovery plan.

² A drift cell, also called a littoral cell, is a system in which sediment is suspended by waves or currents and transported along the shoreline in a repetitious cycle of suspension and deposition.

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- As was recently learned by the oil spill in Central Puget Sound, shallow bays and protected shorelines are also particularly vulnerable to spills.
- Areas such as the Whidbey Basin, the Inlets of South Sound and Hood Canal appear to be especially prone to water-quality impacts, which can significantly decrease survival of listed salmonids.
- Because 10 of the 22 listed Chinook populations are produced within the Whidbey Basin, support of the natal populations as well as the non-natal populations that enter the area is important. Shallow, low-gradient, fine substrate shorelines are important for juvenile rearing.
- The major river deltas and areas adjacent to these deltas appear to be the most important habitats for transition to marine life stages.

What do we need to do to achieve recovery?

Salmon recovery requires a long-term view and commitment as well as a near-term focus on the actions necessary to reduce the risk of extinction and move populations on a positive trajectory in terms of abundance, productivity, spatial structure and diversity. We must ensure that Puget Sound's nearshore and marine environments support salmon recovery and that they are linked with protection and restoration actions occurring in upland and freshwater environments.

1. Protect healthy habitats and water quality

Protection is the primary salmon recovery strategy for the nearshore and marine environments of Puget Sound if we expect to stop further degradation and move toward recovery. Effectively protecting shoreline functions means that the level of protection must be tailored to local circumstances matched with the qualities and functions provided by the habitat. Based on what we know now about the nearshore and how fish use the area, the best geographic scale to tailor most protection actions and measure results is at the level of individual drift cells and the larger sub-basins as defined by the TRT.

Effective protection will rely on a suite of tools that includes regulatory programs, enforcement, incentives, and education. Most local governments in Puget Sound are required to update their growth management programs and critical areas ordinances in 2005. These activities provide continuing opportunities to use existing information about the current functions in the nearshore environment in each jurisdiction and to ensure that current functions are protected to the extent possible through local land use regulations. In addition to the regulatory tools, there must be an integrated effort in each watershed to ensure the use of a combination of tools that effectively results in the protection needed for salmon recovery.

Because marine waters and shorelines are important to salmon, the region's economy and the social interests of the people of Puget Sound, we must find ways to accommodate additional development *and* protect existing habitat and water quality. Landowners and land managers must be engaged to protect and restore the nearshore and marine environments in ways that are consistent with their own interests. Addressing all these interests will require new approaches and important decisions. Much of the shoreline that needs protection and restoration is privately owned. To achieve the objectives of salmon recovery, there must be a focused effort to help landowners understand the relationship between their behavior, stewardship of the land and the

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value of natural resources. We must develop and make available improved incentives and creative design solutions to encourage responsible stewardship and interest in conservation and restoration of nearshore habitats.³

1. Protect against catastrophic events

Catastrophic events, such as an oil spill, can significantly impact multiple salmon populations at one time and threaten recovery. Local communities and a regionally focused organizations must work together to protect susceptible areas and reduce risk in major migratory routes such as Admiralty Inlet, Tacoma Narrows, Deception Pass and the San Juan Islands.

2. Apply scientific knowledge, local commitment and regional priorities

Where there is adequate scientific knowledge (and defensible hypotheses) and the political and public commitment to restore *significant portions* of key areas for salmon, we should act in the near-term and monitor the effectiveness of our actions. Where these conditions are not present, we must move to acquire the knowledge and resources that will enable us better prioritize restoration programs and broaden political and public commitments to develop restoration actions that have certainty of providing significant results for individual populations and the whole region.

Significant restoration of Puget Sound river deltas, shorelines and marine waters will be necessary to increase the viability of Puget Sound Chinook salmon. This includes our major river deltas and shorelines where we have local participation concurrent with higher certainty of benefit for fish. The strategic restoration needs assessment developed over the next five years through the PSRP will help watersheds identify and prioritize restoration actions. This is expected to will include a range of necessary actions, from large-scale projects for federal implementation to smaller-scale, locally implemented actions. The expense of restoration is expected to be significant. Accordingly, before we encourage restoration actions across the region we must be more certain of the results we are likely to achieve.

There is a scientific basis and local public and political commitment to restore substantial portions of the Snohomish, Stillaguamish, Nisqually, Elwha and Dungeness estuaries. Restoration of other estuaries, while scientifically supported, presents more constraints along with feasibility and effectiveness issues.

Wherever restoration occurs, there should be a rigorous scientific approach that includes monitoring, adaptive management and regional coordination to ensure that we are truly providing benefits for fish commensurate with our investments. A strategic approach to restoration should consider the relationship between protection and restoration actions, in other words, use restoration to enhance protection and halt further degradation. As well, the institutional framework for regional cooperation and coordination of restoration efforts must be further developed.

³ Shared Strategy convened a workshop of watershed planners, land use planners and scientists on December 7, 2004. Conclusions and action items to improve protection with regulatory programs are available to interested parties on the Shared Strategy website.

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3. *Coordinate and continue to learn from each other*

Regional coordination and cooperation in research, implementation of protection and restoration actions, and adaptive management must be ensured. We need to continue to expand our knowledge of the relationships among Puget Sound's estuaries, shorelines and marine environments and the needs and responses of Puget Sound Chinook and Hood Canal summer chum populations. Coordinated monitoring and research should occur at the regional, sub-basin, drift cell and habitat scales. Adaptive management will help ensure that regional efforts continue on a trajectory to recovery. Our actions in the nearshore should be viewed as part of the overall strategy for the ESU that moves fish populations on a trajectory to recovery in terms of all viable salmonid population parameters - abundance, productivity, spatial structure and diversity.

10-Year Action Plan

Based on the findings above, the following actions are suggested to frame efforts over the next ten years.

Protect all functioning:

- drift cell sediment processes that support drift cell unit habitat functions. Key segments include the sources, such as feeder bluffs and the habitat units supported by them;
- estuarine habitats of major river deltas;
- forage fish spawning areas and critical rearing and migration habitats;
- marine shorelines (particularly pocket estuaries⁴, eelgrass beds, and other shallow, low velocity, fine substrate habitats), especially those adjacent to major river deltas;
- freshwater sources that directly affect estuaries and marine shorelines and processes that control the delivery rate and chemical and sediment content of freshwater; and
- riparian areas.

Evaluate opportunities for restoring:

- tidal exchange processes in river deltas;
- marine shorelines (particularly pocket estuaries, eelgrass beds, and other shallow, low-velocity, fine substrate habitats) especially those adjacent to major river deltas;
- sediment delivery from sources such as feeder bluffs, river and creek discharges, and sediment transport processes to support habitat formation and functions; and
- marine riparian functions related to water quality, food production, and refuge from predators and extreme conditions.

Action/coordination of governments, non-governmental organizations and landowners:

1. Local, state, federal and tribal governments should enforce existing regulations and where necessary, and improve their regulatory programs to ensure that habitat is protected.
2. The state and federal governments need to support local government efforts to improve regulations and to protect and restore processes, structure and functions, provide technical

⁴ Pocket estuaries are the result of mid- to small-scale (as compared to large river deltas) interactions between marine and freshwater influences at low elevations along the shoreline. These processes are thought to create and sustain a physical structure similar to large river deltas and the diversity of habitat types that support a variety of fish and wildlife species, including salmon. See the Draft Nearshore and Marine Chapter for more information.

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assistance, and support education and outreach programs focused on marine resources and development practices. Support could include collaborative work to identify key habitat areas at the greatest risk for development and design protection efforts to focus in those areas. It can also include providing guidance documents, model policies and programs, development of Best Management practices, and financial support for updates and/or early adoption.

3. A complex network of jurisdictions and regulatory authorities exists for nearshore and marine areas. Agencies must work together to coordinate regulatory authority and voluntary programs. The State could examine its regulatory role and the possibility of streamlining dual jurisdiction (for example, shoreline master programs and hydraulic project approvals both address bulkheads). Local entities would also benefit from clear and concise guidance on best available science, buffers, soft shore designs and other protection tools.
4. State and federal agencies need adequate funding and the political support to enforce rules and regulations to protect existing functions and allow opportunities for future recovery to occur.
5. Voluntary conservation efforts and funds need to be focused on the protection of habitats and processes at risk that are not adequately protected by regulations because of landownership or development patterns. A broad coalition of governments and non-governmental organizations should collaborate to identify key habitat areas at the greatest risk and focus protection efforts in those areas.
6. State and local governments, land trusts and other non-profit organizations need to improve incentives and education for private property owners. As appropriate, State and local governments should consider:
 - Development of a Public Benefit Rating System for marine areas
 - Creation of a fund for purchase of vested properties or to optimize re-development opportunities
 - Providing information that explains the role their land plays in salmon recovery
 - Establishment and funding of programs that allow landowners to actively rehabilitate their land to be more salmon-friendly
7. The State needs to work with federal, regional and local agencies, tribes and industry to ensure protection from catastrophic events such as oil spills. Admiralty Inlet, Tacoma Narrows, Deception Pass and the San Juan Islands are considered particularly sensitive in terms of catastrophic risk for salmon populations.
8. Dischargers, land owners, and regulatory agencies need to work together to increase protection of the Whidbey Basin, South Sound, Hood Canal and other susceptible basins in Puget Sound from water quality impacts.
9. A coalition of state, local, tribal, federal and non-governmental organizations should identify and move forward in restoring key portions of Puget Sound shorelines and beaches.

Key Questions for the Shared Strategy Summit

1. How can we support local governments to ensure that the combination of tools is developed to protect existing nearshore habitats? How do we evaluate the results over time to determine if we are advancing the level of protection?

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2. What more is needed to protect against oil spills and other events that can affect entire areas of the Sound?
3. With limits on the funding available for nearshore and freshwater restoration, how should priorities be determined? What factors and processes should be used to determine nearshore priorities for restoration?
4. How can we ensure regional coordination and cooperation in research, implementation of protection and restoration actions, and adaptive management in a manner that engages local communities and regional organizations?