

**DRAFT Sub-basin Summary**  
**Regional Nearshore and Marine Chapter of the Puget Sound Salmon Recovery Plan**

**CENTRAL PUGET SOUND**

**Introduction:**

This document summarizes discussions between the Puget Sound Technical Recovery Team (TRT), NOAA Fisheries scientists, the Puget Sound Action Team (PSAT) and Shared Strategy staff about salmon recovery in the Central Puget Sound Sub-basin. People with an interest in this area should also review the recommendations provided to watershed planning groups in the Shared Strategy Feedback for Decision Makers (October 2004) and the Technical Feedback from the TRT (November 2004). The nearshore and marine chapter of the recovery plan which is under development will expand upon the information in this summary and provide the scientific foundation for the recommendations that follow. This summary is intended to help regional and watershed planning groups synthesize the technical and policy information that has been compiled to date and stimulate policy discussions on the conditions that are necessary to implement actions that will support recovery in the nearshore and marine environments.

**Fish Story:**

The TRT identified five historically independent Chinook populations from this sub-basin – the Sammamish, Cedar, Green, White and Puyallup. All of these populations currently are at high risk of extinction. The White River watershed is critical for sustaining the distribution of the early run life history trait within Puget Sound because it is the only watershed in south Puget Sound supporting this life history type. The Green and Puyallup rivers and Lake Washington provide migratory corridors, linking upper watersheds to Puget Sound. Functionally, the fry migrant and delta fry life history types from the Green River and Puyallup River are probably rare, given the condition of the two estuaries. Use by non-natal early migrant chum salmon from Northern Hood Canal Rivers may extend south into the Kingston area. Juvenile Chinook salmon from each of the five natal populations, as well as non-natal populations from throughout Puget Sound, use this sub-basin for feeding and growth, refuge, physiological transition and as a migratory corridor. Adult Chinook salmon from the five natal populations and non-natal populations use the area for feeding and as a migratory corridor. Both natal and non-natal populations also likely derive some function from the smaller freshwater tributaries within this sub-basin. Significant numbers of hatchery juvenile and adult salmon use the nearshore waters. Forage fish are an important prey resource, and locations such as Quartermaster Harbor support forage fish spawning functions.

The sub-basin includes two preliminary core areas for bull trout (Puyallup, Chester Morse). The Puyallup watershed is critical for sustaining the distribution of the anadromous bull trout life history trait within Puget Sound because it is the only main watershed in south Puget Sound supporting this life history type. This core area contains an estimated five local populations, comprised of less than 1000 adult fish.

### **Landscape Story:**

Of the 308 miles of shoreline in the Central Puget Sound sub-basin, nearly 179 miles are armored. Railroads follow the shoreline in the Tacoma area and from Ballard north to Mukilteo. Concentrations of commercial and recreational overwater structures such as ramps, piers and docks can be found in Tacoma and Commencement Bay, the Lower Duwamish River and Elliott Bay. These structures are also evident along much of the eastern shoreline of the sub-basin, along parts of Vashon and Maury Island, on the eastern side of Bainbridge Island and along part of Colvos Passage. Thirty seven pocket estuaries were identified and analyzed by the PSAT by examining oblique aerial photos on the DOE's Digital Coastal Atlas website, and all three Chinook functions (feeding, osmoregulation, refuge) were present in 12 of the 37. Based on criteria applied by the PSAT, fifteen of the pocket estuaries were considered to be functioning well and most of the rest were considered at risk. Shoreline development, urbanization, diking and filling and susceptibility to spills and discharges were identified as stressors in many of the pocket estuaries. Eelgrass is located intermittently throughout the area from Vashon Island northward.

There are numerous sewage outfalls and storm drains in the sub-basin. Some areas exhibit poor water quality. Toxic contaminants such as PCBs and PBDEs (and others) are prevalent, particularly in the Central and South Sound basins. Natal Chinook salmon populations as well as primary salmon prey (such as Pacific herring) are potentially affected by such toxins.

### **Key Actions:**

At the September 9, 2004 meeting of Puget Sound Action Team, the TRT and Shared Strategy staff, actions for marine and nearshore sub-basins were identified and organized under two strategy types – **protection** and **restoration**. Protection is recommended as the primary strategy direction for nearshore and marine areas, given the current state of knowledge. This strategy is designed to protect what is currently functioning, while leaving options open for future restoration. In the next five years, the Puget Sound Nearshore Ecosystem Restoration Program (PSNERP) is expected to provide additional information that will better inform the development of large-scale restoration efforts. Restoration actions in the near-term should occur where benefits to fish are reasonably certain and there is local support.

### **Key Protection Actions:**

In addition to the recommendations identified in the WRIA plans, the following actions should be considered in the near-term if possible, and in the longer-term as part of a regional Puget Sound assessment:

- Maintain the lower portions of the Duwamish and Puyallup rivers and Lake Washington as migratory corridors.
- Protect smaller freshwater tributaries. Pay particular attention to discharge of pollutants.
- Protect entire basin for existing life history types of the natal populations. Pay particular attention to functioning drift cells throughout the sub-basin, and their

- role in supporting eelgrass bands and depositional features that have the greatest potential to contribute to nearshore functioning.
- Protect the forage fish spawning areas in places such as Quartermaster Harbor and other areas that are likely important for forage fish spawning.
  - Protect all remaining functioning nearshore habitat from further degradation via shoreline master programs, critical areas ordinances, enforcement and incentives.
  - Protect water quality through existing programs (TMDL, NPDES) and other processes (such as HB2415). Temperature and dissolved oxygen are fundamental attributes of aquatic habitat – ensure adequate levels of each are available to any and all life history types utilizing this sub-basin.
  - Add enhanced treatment, to the same standards as for salmon bearing streams, for stormwater discharging directly to Puget Sound.
  - Consider wastewater reclamation and reuse retrofits for all wastewater discharges into the sub-basin.
  - Protect against catastrophic events such as oil or toxic chemical spills.

**Key Restoration Actions:**

There is not sufficient information to evaluate the regional benefit of restoration actions in this sub-basin. The following actions should be considered as part of a Puget Sound regional assessment and prioritized for their potential benefits to this sub-basin.

- Restore the entire sub-basin for existing life history types of the natal populations.
- Restore estuaries to the maximum extent possible.
- Work with regional authorities on sediment remediation efforts.
- Restore smaller freshwater tributaries. Pay particular attention to discharge of pollutants.
- Restore the connection between the uplands and the aquatic environment.
- Work with regional authorities to improve water quality throughout the sub-basin.
- Initiate and/or continue remediation of contaminated sediment hot spots and toxic discharges in highly urbanized larger estuaries such as the Lower Duwamish, Puyallup.
- Evaluate the effects of hatchery fish using nearshore habitats under current and restored conditions—how will their presence affect the status of wild salmon in the area?
- Study the feasibility of beach nourishment to mimic natural sediment transport processes in select areas where functions have been impaired.
- Encourage voluntary revegetation of cleared residential shorelines from Alki Point to Brown Point.