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

HOOD CANAL

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 Hood Canal 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.

The Hood Canal Coordinating Council is developing detailed information on summer chum, and this sub-basin summary does not yet include the more detailed information.

Fish Story:

For salmon recovery, the TRT has identified 2 historical populations of chinook--the Skokomish River and the Mid-Hood Canal rivers (Hamma Hamma , Duckabush, and Dosewallips rivers). The TRT also has identified 2 historical populations of summer chum in the region--the Hood Canal summer chum population (including Skokomish and Hood Canal streams) and the Strait of Juan de Fuca summer chum populations (including Chimacum Creek, Dungeness River, and intervening streams). The co-managers have identified eight extant summer chum stocks along with rebuilding goals. Juvenile salmon from all of the populations use the sub-basin for feeding and growth, refuge, physiological transition and as a migratory corridor. Natal and non-natal adults also use the sub-basin.

Landscape Story:

The Hood Canal sub-basin (defined by the PSAT and NOAA Fisheries for the draft nearshore and marine recovery plan chapter) has 215 miles of shoreline and 32% is armored. It includes the Skokomish delta which covers close to three square miles. The armored areas have higher concentrations of overwater structures than the rest of the shoreline. Thirty-nine pocket estuaries have been identified and analyzed by the PSAT by examining oblique aerial photos on the DOE's Digital Coastal Atlas website. All three Chinook functions (feeding, osmoregulation, refuge) were observed in 21 of the pocket estuaries. Based on criteria applied by the PSAT, eighteen pocket estuaries were estimated to be functioning well. Shoreline development, urbanization, diking and filling and susceptibility to spills and discharges were highlighted in many of the pocket

estuaries. Eelgrass habitat is located within the Skokomish delta and throughout the sub-basin. Critically low dissolved oxygen levels have been recently observed in Hood Canal. Reasons for the low DO levels are unknown, but human activities and natural geography (e.g. excessive nutrient input, reduced freshwater input, low flushing rate) may be factors. Low dissolved oxygen zones have the potential to impede fish migration, and would significantly impact the ability of the Chinook yearling life history type to rear in this sub-basin.

Key Actions:
At the September 9, 2004 meeting of PSAT, the TRT, and Shared Strategy staff, actions for marine and nearshore sub-basins were 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:

- Protect water quality. Any protection and restoration actions in this sub-basin are dependent upon adequate dissolved oxygen levels. To adequately protect salmon, a level of at least 5 mg/l should be maintained.
- Protect shallow water/low gradient habitats and pocket estuaries within five miles of the Skokomish delta and the deltas of the composite population from the Dosewallips, Duckabush and Hamma Hamma rivers.
- Protect deltas of summer chum producing streams.
- Protect small freshwater tributary areas.
- Protect against catastrophic events such as oil spills.
- Protect functioning drift cells and source features such as feeder bluffs that support eelgrass bands and depositional features along the eastern shoreline and the western shoreline north of Point Whitney, including Dabob and Quilcene bays.
- Protect shorelines and limit armoring via shoreline master programs, critical areas ordinances, enforcement and incentives.
- Consider wastewater reclamation and reuse retrofits for all sewage discharges from wastewater plants into lower Hood Canal.
- Promote shellfish environmental codes of practice.

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 benefit.

- Restore water quality (dissolved oxygen) to adequate levels.
- Restore shallow water/low gradient habitats and pocket estuaries within five miles of the Skokomish delta and the deltas of the composite populations from the Dosewallips, Duckabush and Hamma Hamma
- Restore deltas of summer chum producing streams.
- Increase the tidal prism and estuarine connectivity at all Highway 101 river crossings to benefit Chinook and summer chum salmon.
- 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?