

**Importance of the Washington Coast in Salmon Recovery**  
**Draft White Paper**  
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**Introduction**

Salmon<sup>2</sup> recovery in Washington is increasingly focused on regional efforts to develop recovery plans that emphasize recovery of salmon species that have been listed as threatened or endangered under the federal Endangered Species Act (ESA). Regional salmon recovery planning processes in Puget Sound and the Columbia River Basin are a necessary and appropriate response to ESA listings and are now underway. It is also appropriate to highlight the importance of Washington's coastal streams and estuaries to the long-term health of wild salmon populations. As pointed out in the Statewide Strategy to Recover Salmon (September 1999), coastal populations tend to be better off than populations inhabiting interior drainages. With the exception of Lake Ozette sockeye and certain bull trout populations, Washington's coastal salmon populations from Cape Flattery in the north to Cape Disappointment in the south have not been listed under the ESA. Given the relatively healthy status of these populations and the more limited risks to their continued health, maintaining the health of salmon populations along Washington's Pacific coast is an important part of our prospects for overall, long-term success in preserving healthy runs of wild salmon.

**Conceptual Foundation**

Recovery of wild salmon populations from Northern California to the Canadian border is a massive enterprise facing many challenges. In a recent presentation addressing basic barriers to salmon recovery, Dr. Robert Lackey<sup>3</sup> points out the ecological reality that wild salmon in the Pacific Northwest are well on their way to a status similar to wolves, grizzlies, and bison; wild remnants of once flourishing species struggling to hang on in a small portion of their original range. The long-term decline of Pacific Northwest wild salmon has not yet been reversed. Looking at the current wild salmon situation, Dr. Lackey anticipates that by 2100 wild salmon runs in the Pacific Northwest will be a shadow of the past over much of their original range, and in Washington – biological remnants. On a more optimistic note, Dr. Lackey points out that some wild salmon recovery possibilities are more promising; with the coastal watersheds of Northern California, Oregon and Washington having the brightest prospects. Dr. Lackey asserts that the most efficient way to address wild salmon recovery is to focus efforts in those

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<sup>1</sup> Mr. Miller is the Lower Columbia and Washington Coast Regional Coordinator for the Governor's Salmon Recovery Office, State of Washington.

<sup>2</sup> In this paper, "salmon" refers to all species of salmon, steelhead, trout and char native to Washington.

<sup>3</sup> Dr. Lackey is a fisheries biologist with the U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Corvallis, Oregon. The presentation "Salmon Recovery in the Twenty-First Century: Breaching the Basic Barriers" was given at a conference in Spokane, Washington, April 29, 2002 and represents the views and comments of Dr. Lackey.

geographic locations with the greatest chance for success in maintaining wild salmon, i.e. the coastal watersheds.

Dr. Lackey has recently commented that the importance of the coastal watersheds is supported by basic realities and common sense. Coastal populations are currently relatively healthy and their habitat is relatively intact. A large percentage of land in coastal drainages is publicly owned or is in large private parcels managed as forestland. There are few hydropower facilities and relatively minor irrigation withdrawals. Although the influence of fish hatcheries is significant, the effects on wild salmon can be managed. More options for maintaining wild salmon remain viable in the coastal watersheds. The importance of these points is reinforced by a recent paper published by scientists at the Northwest Fisheries Science Center<sup>4</sup>. In proposing a strategy for setting priorities for restoring Pacific Northwest watersheds, these scientists stress protection of existing high-quality habitats and assert that protection of high quality habitat should be given priority over habitat restoration because it is far easier and more successful to maintain good habitat than to try and recreate or restore degraded habitat. Similar conclusions have been reached by many others.

Additional support for the importance of Washington's coastal watersheds to the long-term health of salmon comes from the work of Ecotrust, a nonprofit organization based in Portland, Oregon. Ecotrust is dedicated to supporting a conservation economy along the North American coast from San Francisco to Anchorage. Ecotrust has developed an approach to setting priorities for wild salmon recovery among the coastal watersheds of the Pacific Northwest based upon historical abundance and current production of selected salmon species in the watersheds and the relative risk to current wild salmon production posed by land use, dams, and hatchery practices<sup>5</sup>. Using this approach, Washington's northern coastal watersheds (Sol Duc/Hoh/Quillayute, Queets/Quinalt) have been defined as high priority and its southern coastal watersheds (Grays Harbor/Chehalis, Willapa Bay) have been defined as medium priority by Ecotrust. The southern coastal area was rated as a lower priority by Ecotrust primarily due to the more prominent influence of hatcheries in those watersheds.

### **Status of Washington Coast Salmon and Steelhead Populations**

Information on the current status of wild chinook, coho, chum, sockeye, and steelhead populations is available from the Washington Department of Fish and Wildlife (WDFW) and the National Marine Fisheries Service (NOAA Fisheries). In 1992, WDFW published the Washington State Salmon and Steelhead Stock Inventory (SASSI) and is in the process of publishing a revised Salmonid Stock Inventory (SaSI) for 2002. NOAA Fisheries has published a series of Species Status Review Reports by their Biological Review Teams (BRT) for Evolutionarily Significant Units (ESUs) of coho

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<sup>4</sup> Philip Roni, Timothy J. Beechie, Robert E. Bilby, Frank E. Leonetti, Michael M. Pollock, and George R. Pess, "A Review of Stream Restoration Techniques and a Hierarchical Strategy for Prioritizing Restoration in Pacific Northwest Watersheds", *North American Journal of Fisheries Management* 22:1-20, 2002.

<sup>5</sup> Charley Dewberry, "The Development of Regional priorities for Salmon Restoration in the Coastal Watersheds of the Pacific Northwest (Cascadia)", Ecotrust, 2001.

(September, 1995), steelhead (August, 1996), chum (December, 1997), and chinook (February, 1998).

A summary of 1992 SASSI data<sup>6</sup> shows that 57% of stocks (65 out of 115) in the Washington coastal region were rated healthy compared to 44% of stocks (93 out of 209) that were rated healthy in Puget Sound and 26% of stocks (29 out of 111) that were rated healthy in the Columbia Basin. Although only 26% of the total number of stocks in the state are in the coastal area, that area had 35% of the state's total number of healthy stocks. The coastal area had no stocks rated "critical" and only eight stocks rated as "depressed" in 1992. The coastal area had only 6% of the statewide total of critical and depressed stocks.

Preliminary data from the 2002 SaSI show a continuing high percentage of coastal stocks are rated healthy, i.e. 54% or 65 out of 120 rated stocks. Unfortunately, the number of stocks rated as depressed has apparently risen since 1992 from 8 to 13 stocks, and one stock is now rated as critical.

NOAA Fisheries Biological Review Team (BRT) reports provide the basis for determinations that ESA listings for Washington coastal ESUs for chinook, coho, chum and steelhead are not warranted. A second southwestern Washington ESU for coho is still a candidate for ESA listing.

The 1998 BRT report for chinook salmon noted that recent abundance of chinook has been relatively high, with long-term trends being predominantly upward for medium and larger populations, but with sharply downward trends for several smaller populations. In general, indicators are more favorable for the north coast and for fall run populations than for spring or summer run chinook. The report expressed special concern for spring run populations throughout the ESU and fall run populations in Willapa Bay and parts of the Grays Harbor drainage. The report noted that all basins are affected by habitat degradation, largely related to forestry practices.

The 1995 BRT report for coho salmon concluded that the population of southwest Washington coastal coho is likely to remain stable but is vulnerable to overharvest. The largest production of coho in this area is in the Chehalis River Basin. Most of the northern coastal coho stocks were considered to be healthy or of unknown status. Although no historical population estimates were available to compare to recent abundance, the report presumed there have been substantial declines in coho populations as a result of well-documented habitat degradation since European settlement.

The 1997 BRT report on chum salmon concluded that ESA listing was not warranted with an important factor being the abundance of natural populations in Grays Harbor and Willapa Bay. Elsewhere on the Olympic Peninsula, available data suggested that populations of chum are depressed from historical levels but relatively stable.

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<sup>6</sup> "Statewide Strategy to Recover Salmon: Extinction is Not an Option", Table 2, Joint Natural Resources Cabinet, November, 1999.

The 1996 BRT report for steelhead noted that no Olympic Peninsula ESU stocks have been identified as being at risk or of special concern. However, because of their limited distribution in upper tributaries, summer steelhead in the Olympic Peninsula ESU appear to be more at risk from habitat degradation than winter steelhead. For the Southwest Washington ESU, most steelhead stocks of concern were in Lower Columbia tributaries and most healthy stocks were in tributaries to Grays Harbor. The report noted the major threat to genetic integrity for steelhead in the Southwest Washington ESU comes from past and present hatchery practices.

### **Risk Factors for Washington Coast Salmon**

Salmon and steelhead populations along the coast are healthier largely because their habitat is more intact. Several factors contribute to this condition. In contrast to Puget Sound and especially the Columbia River Basin, there are few hydropower dams or other large-scale diversions of water in coastal basins. Furthermore, the human population of the coastal area is low and growing relatively slowly. The population of the five Water Resource Inventory Areas (WRIA) along the coast is projected to grow by less than 50,000 by 2020 and total population will still be less than 200,000<sup>7</sup>. In contrast, the population of the 19 WRIs of the Puget Sound region is projected to grow by over 2 million people by 2020 to a population that exceeds 6 million. Human population growth and the land development associated with such growth is a reasonable measure of the level of risk to salmon habitat.

The percentage of land area in forest or developed for urban use are also general indicators of risk to salmon habitat. Prior to implementation of more recent and salmon-friendly forest practices, extensive timber harvest in forested areas often resulted in degraded salmon habitat. However, in general, the greater the percent of forest land the lower the risk to habitat; and conversely, the greater the percent of urban land use the higher the risk. Forest land in the five WRIs along the coast range from a low of 69% of the total area to a high of 81%<sup>8</sup>. Urban land in these WRIs is at 0% for two WRIs, 1% for two WRIs, and 2% for one WRI. In contrast, four WRIs in the most heavily populated area of central Puget Sound range from a low of 33% of total area in forest to a high of 67%. Urban land in these four WRIs range from a low of 8% of total area to a high of 40%.

Although coastal salmon populations are relatively healthy and face relatively lower risks to their habitat, the NOAA Fisheries BRT reports identified several risk factors that are noteworthy in relation to the long-term prospects of salmon and steelhead populations along the Pacific coast of Washington. These risk factors are: 1) habitat degradation caused by past forestry practices; 2) vulnerability of populations to excessive harvest; and 3) threats to the genetic integrity and diversity of populations from hatchery practices. Given the importance of coastal salmon populations, it does make sense to consider

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<sup>7</sup>“Washington’s Water Quality Management Plan to Control Nonpoint Sources of Pollution”, Appendix A, Washington Department of Ecology, #99-26, December, 2001.

<sup>8</sup> Ibid.

investments in addressing these risk factors when determining priorities for salmon recovery efforts.

## **Conclusions**

It is clear that, given their relative health and the lower risks they face from human population growth and development, coastal salmon populations are important to long-term success in preserving healthy populations of salmon in the State of Washington. These populations do face risks from past and current practices affecting fish and their habitat that warrant attention in order to assure the populations' continued health. These risks can be addressed by investing in: 1) reforms for hatchery practices, such as those initially being implemented in Puget Sound; 2) harvest management practices that reflect the latest technologies for avoiding too much harvest; 3) implementing the Northwest Forest Plan for federal forests, the Habitat Conservation Plan approved for state-owned forests, and the Forests and Fish Agreement for private forest lands, with emphasis on assisting small land owners; and 4) habitat protection and restoration actions that complement the progress being made in addressing the impacts of past forest practices.

Fortunately, the current status of coastal populations has generally not warranted endangered or threatened listings under the ESA. So the ESA is not a driving force on the coast, as it is elsewhere in the state, for conserving salmon populations. Therefore, there is a need to develop alternative approaches and strategies for salmon conservation along the coast. There is also a need, both within the coastal region and across the state, to increase awareness of the importance of these coastal populations and advocate their significance for long-term success in conserving salmon. This will help ensure adequate attention is given to salmon health and recovery along Washington's Pacific coast.