



**February 4, 2007**

**SEPA/NEPA Coordinator  
Regulatory Services Division  
WDFW Habitat Program  
600 Capitol Way N. Olympia, WA 98501**

**RE: Comments to the WDFW on the SEPA Scoping Process regarding the preparation of the State-wide Resource Management Plan (RMP) for steelhead.**

Thank you for the opportunity to provide comments and suggestions for the WDFW State-wide RMP. The parties participating in these comments are conservation organizations dedicated to increasing the return of wild steelhead to the waters and rivers of the Pacific Northwest. We hope you will find our comments and suggestions helpful in your process of developing new scientific based management strategies to form the basis of the RMP and future steelhead management. The bold-faced, bulleted-list presents our major comments, along with some discussion in the accompanying text.

- **New management programs and plans must be based on the best science available, and on a process that always errs on the side of wild fish to assure success in rebuilding the many depleted wild steelhead populations in Washington.**

Future management of wild steelhead must be based on full recovery and maintenance of the abundance, life history and genetic diversity, distribution and productivity of the species. Missing any of these natural VSP characteristics will prevent full recovery and reduce the resilience of these fish to environmental and man made change.

We do not believe that our state's conservation values for wild steelhead should be compromised by planning steelhead recovery through hatcheries and integrated wild

stocks until the science of this untested strategy is thoroughly studied and evaluated in carefully designed field experiments.

- **The RMP and watershed plans should include the historical record of steelhead abundance including estimates of the total steelhead run-sizes and the tribal and sport catch for each river or each ESU, depending on information available.**

Historical abundances are needed to understand the history of wild steelhead and their importance to Washington's riverine ecosystems and fisheries. If historical run-size, harvest, and escapement information is not included in these plans, it will be lost for future use. This loss will contribute to the concept of the "Shifting Baseline Syndrome", wherein new managers view recent resource characteristics (e.g. abundance, diversity, and productivity) as the norm because information on historical properties is not available.

- **The first work of the State-wide RMP should be to develop a vision and a set of goals, both for the state-wide and watershed plans, for recovering the abundance of wild steelhead to levels as close as possible to the historical runs.**

Recovery of historical numbers is not presently possible, given the existing condition of Washington's salmonid habitat. This means that short term goals are necessary, such as recovery to stock levels that existed in the 1980's. A long term goal, panned with habitat recovery, should have the clear objective to recover stocks to abundances approaching historical levels, given that the removal of dams and other harmful river modifications may not occur and will prevent full recovery. Without this vision and an overarching goal, wild steelhead recovery will not move forward and will flounder in the ever changing political and economic winds of the North West.

- **The RMP should include the fishery goals of the individuals participating in steelhead fisheries.**

Sport fishers goals have changed their attitudes towards steelhead fishing in the last 20 or so years due to the declines/listings of wild steelhead in their home rivers and the risks of further declines in the annual runs. It has become evident in recent years that fishing for wild steelhead every year and during the normal winter months of December through April is far more important to sport fishers than a wild harvest. The state's goals for sport steelhead fishers should be to provide for full season fishing opportunities every year, planning for a reasonable harvest of hatchery fish and a limited harvest of wild fish when the populations are significantly above the minimum escapement goals. Clearly the tribal

goal is different, but the state and the tribal goals can be compatible, given proper discussions of ways to meet each party's needs.

- **The Department should define a new or adaptive management model for wild steelhead that has the following objectives: recovers and maintains all VSP characteristics; provides strategies to rebuild stock abundance to levels as close as possible to the historical levels; determines the level of spawner abundance that must be rebuilt and maintained to buffer declines during low productivity periods; plans for the ever present management error inherent to the fisheries; and recovers ecosystems of all species to assure natural productivity of all salmonids.**

Management programs need to restore the abundance of wild steelhead, not only at the watershed level, but in every tributary and in each time segment of the run. Recent genetic work has shown that each tributary and each run period may have different populations. The time is past when we can manage at minimum escapement goals. Increasing habitat problems and the ever present changes in ocean and river conditions have produced long dynamic productivity cycles. Managing harvest at the present escapement goals means going into the low cycles with the minimum spawning stock. As productivity falls below replacement, stocks will decline and become depressed and fisheries will close.

The early modelers of MSH in the 1950's stated that managing at maximum harvest rates would mean annual closures in some fisheries due to random variation. Those modelers were not familiar with natural productivity cycles that can last 10 to 20 years and have major and non-random impacts on anadromous fish populations. Long low productivity cycles will mean some stock abundance are driven very low, possibly to functional extinction before the higher production cycles return. At best, most wild stocks will take a long time to recover and some may never again provide opportunities for sport fishing.

The only way assure healthy populations and fisheries during the low productivity cycles is to build abundance during the high production periods. The Wild Steelhead Coalition (WSC) has proposed managing harvest beginning at 150% of "maximum sustained harvest" (MSH) escapement goals to build this buffer. At this level, managers should be able to prevent stock depression during the low cycles, retain steelhead resiliency and provide for quick recovery, as necessary, when higher productivity returns. WDFW could model various levels of abundance and apply productivity levels and time periods experienced during the recent low cycles to determine the level of abundance necessary to maintain the required spawner excapements (the minimum escapement goals) and sport fisheries during a full cycle.

- **Wild steelhead ESU's in Washington that have not been listed under the Federal ESA or proposed for ESA listing should be evaluated for their**

**special characteristics that have, to date, prevented stock declines/depressions in these areas.**

Graphs of the wild steelhead runs to the Olympic Peninsula and South West Washington ESU's (see WSC, May 2006) show abundance cycles that appear related to marine and freshwater productivity cycles. In the past decade, stock health in these rivers was buffered and maintained by large spawning stocks, normally 20% to 100% above their respective MSH-determined escapement goals. During the 1990's, many of these rivers maintained healthy spawning populations due to these buffers during apparent state-wide downturns in productivity.

More recently we have seen these rivers managed for harvests that reduced the populations closer to their respective MSH escapement goals. In some cases, such as the wild winter steelhead to the Hoh River, spawner abundance has fallen well below the escapement goal due to overly optimistic pre-season forecasts and intensive harvests. This reduction in annual spawners has set these populations up for potential declines below the minimum required escapements when the productivity again falls.

**Recommendation:** On some Olympic Peninsula rivers, the WDFW has been giving the tribes a major portion of the total harvest allocation, apparently to stave off foregone opportunity issues. If the sport fishery received—but did not actually harvest--its full allocation, these excess fish would escape to the spawning grounds, increasing the spawning population and help to maintain a desired buffer for future cycles in productivity.

- **WDFW should analyze the run prediction error and the parameters necessary to develop a complete reconstructed run estimate.**

Pre-season run forecasts should be conservatively planned, including the use of historical error estimates, and managers should always aim to prevent annual harvest plans that reduce the spawner escapement below escapement goals. Reconstructed runs should include not only the harvests and spawner escapements, but catch and release mortalities, estimates of nonreported harvest, net drop out and marine mammal take.

- **WDFW should analyze changes in life history diversity, including changes in the abundance of early winter runs (December and January abundance) and the importance of the resident form, the rainbow trout, in maintaining viability in anadromous populations. This analysis should also evaluate the annual losses of rainbow trout, steelhead parr and smolts during the summer trout fisheries and during the fall and winter fisheries for anadromous salmonids. Further, the analysis should suggest management strategies for recovering and preserving the diverse life history and genetics of steelhead.**

On the Olympic Peninsula there is information that shows the early winter runs (December and January) have declined significantly, possibly more than 50%, due to increased fishing pressure that began with intensive fisheries targeting hatchery fish in the early 1960s. Early and late runs on the Dean River in BC have been found to be different populations, meaning that the loss of early runs can have profound genetic and life history impacts on abundance, productivity and resilience of the population as a whole. We suggest the EIS include a comprehensive review of the literature on run-timing and stock diversity changes ( including WDG, 1956 and 1957 Bulletins; WDFW, 1996; Royal, 1976; DeShazo, 1985; and WSC, 2006).

- **The RMP should evaluate the literature on the importance of resident rainbow trout for steelhead populations.**

Kostow (2003), Scott, 2006 and recent studies on the Olympic Peninsula indicate that rainbow trout are important in steelhead population dynamics and productivity. On the Olympic Peninsula, 15% of the steelhead spawning interactions included male rainbow trout (McMillan, in press). At Snow Creek and Hood River, about 40% of the parents of returning adults were not adults and believed to be juvenile *O. mykiss* (either rainbow trout or young precocious steelhead). Recent evidence also suggests that rainbow trout can provide a reservoir population for helping stock recovery when the anadromous form is depleted (Ventura and San Mateo Rivers in California are examples). The abundance of fry, parr, smolts and rainbow trout is tightly linked with the natural productivity of steelhead and to their resilience in the face of unfavorable events. The RMP should further evaluate methods to protect all rainbow trout and all resident steelhead (fry, parr, and smolts) from fishing mortality including summer trout closures, bait bans, and selective gear fishing.

- **The increases in hatchery fish plants over the last 40 years need to be evaluated for their ecological and productivity impacts on wild steelhead. These evaluations should include not only hatchery steelhead smolts, but also the abundance of other salmonids that Washington state hatcheries produce and plant each year.**

The low survival rates (SAR indices) of hatchery steelhead in Puget Sound suggest that WDFW should consider major reductions in hatchery smolt production to improve the survival of wild stocks. Many biologists believe that reduced ocean survival is responsible for much of the present decline of steelhead in Puget Sound and Southern British Columbia. This indicates fewer food items for smolts and growing fish and considerable feeding competition between wild and hatchery smolts for limited food supplies. Studies in Prince William Sound suggest that hatchery production did not increase total productivity in pink salmon, it only decreased wild fish production.

Reducing the smolt releases will not necessarily mean reduced hatchery production for adult steelhead as survival rates may increase. Given the large number of steelhead and salmon smolts now released from Puget Sound hatcheries, the fact that steelhead hatchery

returns are the lowest in the state, (about 0.4% in recent years) and ocean survival is believed to be a major problem for Puget Sound steelhead, reducing competition and juvenile biomass of hatchery smolts may have far reaching effects in improving the productivity for both wild and hatchery fish.

We believe that undesirable ecosystem impacts of large hatchery releases is one of the many problems that have caused serious declines in wild steelhead populations in Washington. For Puget Sound we suggest full implementation of the HSRG principles and recommendations for segregated hatcheries. Further, we recommend significant reductions in hatchery releases on rivers now experiencing poor productivity, and the elimination of hatchery smolt releases in rivers that have not met wild steelhead escapement goals for two or more years in a row. This temporary process is aimed at reducing the potential suite of negative impacts (e.g. disease, competition, predation, and interbreeding between hatchery and wild fish) of hatchery smolts and recruits on wild fish during periods of low wild stock productivity and preventing mixed stock fisheries.

- **Existing wild brood stock hatcheries should become part of a carefully designed set of ecosystem-scale experiments. In such experiments, protocols for “integrated” hatcheries should be strictly followed, including careful controls on the number of hatchery fish spawning in the wild, and wild fish spawning in the hatchery. All experiments should be fully evaluated for their impacts on the genetics, productivity and domestication of wild steelhead before new hatchery programs of this type are planned. This evaluation should include field studies of the reproductive and life history fitness of the integrated wild stocks and the ability of the program to maintain the natural genetics of the wild populations.**

**In addition:**

- 1. WDFW should explain the differences between their planned programs of integrated hatcheries/ integrated wild stocks and those of the HSRG, and the risks and expected impacts of each,**
- 2. WDFW should state the average and minimal PNI levels that would be maintained in their integrated programs and the reproductive and life history fitness values expected at each level,**
- 3. WDFW should state the maximum allowable proportion of hatchery fish that will reach the natural spawning grounds and the allowable stray rate**
- 4. WDFW should evaluate and state the average domestication level of wild stocks at a series of generations (such as 5, 10, 20 generations).**
- 5. WDFW should compare these evaluations to the present introgression rate (s) (the annual rate after 10 to 15 more-or- less generations) of the isolated hatcheries presently operational in Western Washington.**

There is considerable interest, hype and political motivation in converting non-local broodstock hatcheries to wild-broodstock hatcheries. There are studies showing some wild species (especially those with a short in-river time), such as Chum salmon, may

increase with this technique but there is very limited information on the values of such programs for steelhead. Before moving into the use of wild broodstock techniques statewide, carefully designed and executed experiments with a range of hatchery management techniques are needed before any one approach is embraced by WDFW. A suite of experiments should include “controls” where no hatchery fish are planted, “segregated” programs, and “integrated” programs. The impacts of each approach should be understood well beyond the 2<sup>nd</sup> generation to assure that the long term use and a given approach is not harmful to the reproductive, life history and genetic fitness of wild steelhead. These impacts should be determined by field research, not theoretical or modeling studies. There are now 14 wild broodstock steelhead conservation hatcheries on line in western Washington now and several (such as the Wynoochee and the Snyder) should be good candidates for monitoring and evaluation. All conservation hatcheries must be monitored for a variety of performance measures. Changing existing non-local broodstock hatcheries to wild-broodstock/integrated hatcheries should be placed on hold until the science is clear on the impacts they will have on wild steelhead.

- **The HSRG, ISAB, and ISRP each recommend wild steelhead management zones to preserve population genetics and serve as control areas needed to evaluate the performance of different steelhead management approaches. These zones can also help to determine the true carrying capacity through time and a better understanding of the ecology of all wild fish. WDFW should evaluate the values of establishing these zones for all species of wild salmon, trout and other indigenous species.**

Research in these reserves will allow us to understand the true ecological interactions and carrying capacity of all wild species with a natural and full compliment of the other species and their natural abundances and marine derived nutrients. These zones will also preserve a wild genetic bank for future needs. These zones will provide the research and management opportunities needed to fully understand ecosystem functions, nutrient transport and cycling, natural carrying capacities and inter-specific interactions. Infusing hatchery fish of other species into these wild management zones will reduce the many benefits these zones will provide to the future understanding of wild steelhead and their VSP characteristics and complete management systems.

- **WDFW should develop concepts and plans to recover the watershed conditions and values that existed prior to old growth logging and dam/hydroelectric facility construction.**

The present salmonid freshwater habitat conditions can be characterized as unstable, subject to unnatural flooding and scouring and unnaturally long summer/fall drought events, and presently incapable under the present annual flow conditions of maintaining stream conditions and characteristics (riffle, pool, spawning gravels, woody debris, flow levels and speed, productivity, etc) necessary for natural salmon production.

Washington Rivers should be returned to pre-Western natural stability by recovering watersheds and their forests to their (near) original conditions. This will require wider stream side (natural/uncut) corridors, new logging practices and wider set-backs for development. It will also require the in-stream work to restore the large woody debris, correct pool and riffle ratios, and replacement of stream-side vegetation and other corrections necessary to recover the riverine habitat to natural conditions.

- **WDFW should evaluate the level of enforcement necessary to assure the important rules protecting wild steelhead are maintained. In addition, WDFW should:**
  - 1. consider implementing a program similar to “eyes in the woods” for Washington’s anadromous rivers,**
  - 2. Conduct a specific study to determine the unrecorded harvest in sport and commercial fisheries,**
  - 3. recommend special fines and license loss terms for illegal harvest**
  - 4. evaluate the value that a harvest tag system may have in reducing the illegal harvest.**

Most fishers believe that enforcement is inadequate to stem the loss of wild stocks due to poaching. Some guides in the Olympic Peninsula believe that only about one half of the fish harvested are recorded. This problem contributes to the lack of specific information on the run sizes and annual catch. A special random contact study is recommended to gain better information on the illegal harvest. Further, we recommend larger penalties for illegal harvest and a harvest tag system to assist enforcement in controlling the non recorded catch.

- **WDFW should conduct a scientific pier review of the draft State-wide RMP.**

Several excellent bodies of researcher groups are available including the American Fisheries Society (AFS), The NOAA Biological Review Team (BRT) for Puget Sound Steelhead and a select NOAA or WDFW Salmon Recovery Science Review Panel (RSRP). Given the difficulties that all agencies have experienced in managing wild salmonids in recent times, this review will add a valuable critique and credibility to the draft RMP.

- **WDFW should conduct an economic review of areas and situations where conservative management and abundant wild fish stocks have had positive impacts on local communities.**

Case studies of the economic impacts of conservatively managed fisheries in the Yakima Basin; Ennis (the Madison River), Montana; and Smithers, BC would provide valuable information for WDFW and local communities to review when considering various management strategies and regulations.

Respectfully submitted,

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Wild Steelhead Coalition, and