

COMMENTS REGARDING A PUBLIC-REVIEW DRAFT:
*Washington Department of Fish and Wildlife Statewide Steelhead Management Plan;
Volume 1. Statewide Policies, Strategies, and Actions, December 21, 2006*

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Introduction

Washington Trout appreciates the opportunity to respond to Washington Department of Fish and Wildlife's request for comments regarding the December 12, 2006 draft of the *Washington Department of Fish and Wildlife Statewide Steelhead Management Plan; Volume 1. Statewide Policies, Strategies, and Actions*. We acknowledge the time and effort devoted by WDFW staff in preparing the draft SMP, and we appreciate WDFW's efforts to engage the public in this process through significant stakeholder involvement and this review and comment period.

Washington Trout has reviewed the December 21 draft, as well as relevant scientific literature, and the reports of independent scientific review bodies (including cited references). Enclosed for the record and your consideration is Washington Trout's review of the Draft Steelhead Management Plan. Based on our review, the references cited, personal communication with WDFW employees, and consultation with other scientists and professionals, we believe WDFW has taken an important first step in developing a needed new management paradigm for Washington's wild steelhead resources. However, we agree with other reviewers that the draft still lacks significant detail, relies too heavily on some unsupported assertions, and does not adequately acknowledge or address some important information and its implications.

Washington Trout represents approximately 2000 members in the region. Many use and enjoy rivers, streams, and their associated riparian areas throughout Washington for recreational, scientific, aesthetic, and commercial purposes, deriving benefits from robust wild-steelhead populations and healthy aquatic habitats. Many WT members take an active role in the conservation and recovery of Washington's wild-steelhead ecosystems. Washington Trout conducts recovery related research on wild-fish populations and habitats, advocates for scientifically and legally responsible wild-fish management, and develops cutting edge habitat-conservation initiatives. Public and tribal agencies, scientific institutions, the business community, the environmental community, and the news media have all recognized WT's credibility regarding wild-fish

ecology and its specific experience in issues associated with wild-steelhead conservation.

Washington Trout has previously responded to invitations from WDFW to participate in review-processes related to the conservation and recovery of wild-steelhead populations in Washington. Washington Trout has submitted reviews regarding: WDFW's Wild Salmonid Policy; Hatchery and Genetic Management Plans for steelhead hatchery programs in Puget Sound and the Columbia River Basin (Gayeski and Vanden Brulle , 2003; Washington Trout, 2005), and most recently; the Public Review draft of *Oncorhynchus mykiss: Assessment of Washington State's Anadromous Populations and Programs* (Washington Trout, 2006A). In addition, Washington Trout has submitted reviews to NOAA Fisheries regarding: NOAA's hatchery listing policy (69 FR 31354, June 3, 2004) (Gayeski and Vanden Brulle, 2004); Critical Habitat Designations for listed populations of steelhead and salmon (Gayeski, 2005); the Puget Sound Steelhead Proposed Listing (Washington Trout, 2006B), and most recently; the Proposed Upper Columbia Spring Chinook Salmon, Steelhead, and Bull Trout Recovery Plan (Washington Trout, 2006C). Where these comments may inform this review, we will not repeat those comments here, but instead include them for consideration by reference.

In addition, Washington Trout has already submitted substantive input on the development of the Draft Steelhead Management Plan through oral comment at several stakeholder meetings organized by WDFW. We want to acknowledge here that WDFW staff has been extraordinarily open and responsive in accepting, recording, and in some cases incorporating the input of Washington Trout and other stakeholders in the development of the draft. In some cases those comments have been repeated in this review; in some cases they have not. However, the absence of previously submitted oral input in this review should not be interpreted as a dismissal or reconsideration of that input, and we anticipate that WDFW will continue to give due consideration to all input previously submitted by Washington Trout during this process.

In general, we continue to be concerned by a lack of detail in the Draft Steelhead Management Plan, particularly regarding the need to incorporate specific management and performance thresholds, timetables, and triggers in subsequent regional management plans. Regarding artificial-production management, we continue to be concerned that WDFW fails to acknowledge or address the findings and recommendations of federally appointed review bodies, specifically the Independent Science Advisory Board and the Salmon Recovery Science Review Panel. The ISAB and RSRP have both published reports that tend to undermine some of WDFW's fundamental management assumptions, and that could potentially require more significant management changes than WDFW appears to contemplate (ISAB 2003; RSRP 2003). We recommend that the Draft Steelhead Management Plan specifically cite the reports of the ISAB and the RSRP, and incorporate many of the findings and recommendations of the reports into its new artificial-production management policies and practices.

Finally, we agree with other reviewers that WDFW must acknowledge evidence of much higher historical abundance, productivity, and diversity in native steelhead populations than WDFW currently estimates, and accordingly adopt much more ambitious recovery goals.

Specific Comments

1. Plan Introduction, page 1. The first paragraph should highlight the depressed status of most wild steelhead populations and emphasize that the point of departure for the RMP is the preservation and recovery of the diversity, resilience, and long-term fitness of the state's wild steelhead populations. The statement that "substantial variation now exists among the status of steelhead stocks" obfuscates the serious state of the majority of the state's wild populations and avoids stating directly that the RMP is needed to guide a recovery process.
2. Page 1, second paragraph. The reference to the White Paper implies that the original version on which the public commented is a valid scientific guidance document. This is disputable, as there considerable substantive public comments were made on the document and currently it is presumably under revision in light of some of those comments, and in any case the public commenting on this RMP has not seen the final version of the White Paper.
3. Page 1, last 5 lines. This again obfuscates the key issue. ESA is needed to facilitate/insure *recovery* of populations, not mere "avoidance of extinction". The RMP needs to clearly emphasize *recovery* of depressed, at-risk populations, be clear about how great a proportion of the state's original wild steelhead populations and life history components have been lost, how many remain, and how many are at risk. As many others in addition to Washington Trout have emphasized, starting early in the document (and in its Introduction) with a robust reference point of historical steelhead abundance is essential to adequately framing a recovery-based perspective and management approach.
4. Goals and Policies. Page 3. Key terms employed in the goal statement and the following text should be defined soon after their first occurrence or perhaps immediately prior to their first significant occurrence.. Here, "healthy" as applied to population condition, and "abundance" in the goal statement (restore and maintain) should be defined/explicated. To what levels of abundance is it the goal of the RMP to restore depressed population? What are the fundamental features of stock/population health and what are the measurable and monitorable biological indicators of healthy stock conditions? The RMP must also go considerably beyond the features and indicators used in SASSI (or provide a substantive discussion of why those are valid).
5. Page 3, Fishery Management. What are the "conservation objectives" that will be (or currently are) established for natural production? A fundamental issue with the statement as a whole is that the several objectives listed are likely to be in conflict, even in the case of populations that currently appear healthy (have significantly

positive productivity parameters based upon good, long-term data) but are either of small absolute size and/or face significant habitat threats. Statements such as this one again fail to confront the key issues associated with preservation and recovery and the attendant hard choices that must be made in order to achieve a recovery goal. As a long-term, post-recovery objective, the statement is fine, but this is not the context that the RMP needs to be addressing.

6. Page 3, Artificial Production (AP). See the comment above on Fishery Management. The same fundamental issues apply here. Both sub-statements imply that there are no inherent conflicts between objectives of the two uses of AP and the VSP criteria for natural production and, further, imply that there is good scientific evidence for these assertions. This latter is, to say the least controversial. We believe it is simply false. The RMP must honestly acknowledge the significant uncertainties associated with AP and wild stock health and recovery. Further, it must go on to address the issue of how the key uncertainties are going to be addressed by management and program changes, including addressing the key recommendations of not only the HRSG, but more importantly of the ISAB/RP in its 2003 review of supplementation programs in the Columbia Basin and the reports and recommendations of the RSRP on hatcheries. The public (including future generations) is simply not well served by vague assertions that all status quo desires can and are going to be satisfied.
7. Natural Production (NP), Page 5. The specification of a healthy natural stock should be referenced to historical abundance in addition to the conditions listed.
8. NP Strategies, page 5. "sufficient diversity and numbers of natural spawners" should be explicitly referenced to biological parameters, and to management model parameters such as maximum sustained yield (MSY/MSH) and other stock-recruit reference points. We note here and in general that we do not believe that MSY is an appropriate management reference point for either healthy populations or those in need of recovery. Among other reasons, MSY harvest even if consistently achieved by management fails to sustain life history diversity within populations and this diversity is fundamental to the long-term viability and adaptability of wild populations.

It is important to note that unfished populations subjected to significant harvest will in general be reduced to their most productive components. The life-histories and sub-populations that are least productive (those using marginal habitats and/or particularly variable habitats, for example) will be the first to be lost. Stock-recruit model measurements of population productivity will actually *increase* after harvest relative the global productivity of the initial pre-harvest population. These lost components of population complexity and diversity need to be recovered, and this likely will require several generations with harvest rates well below any robust estimate of MSH for the extant population. Setting escapements at the current MSH point estimate, even if that estimate is very accurate, will considerably under-escape the population with regard to the needed rebuilding.

9. NP Actions, page 5. The controversy regarding MSH as a reference point should not be glossed over. As noted already in these comments, the context of recovery and wild population rebuilding should be central to the RMP and it is directly relevant to the issues of harvest reference points and escapement goals. MSH arguably has little place in this context -- but the controversy should at least be honestly discussed.
10. NP Actions, #4), page 5. This policy is inadequate and unnecessarily vague. While rebuilding numbers is a central recovery objective and therefore a trend of increasing abundance is one indicator of rebuilding, there must also be a minimum, threshold target level of abundance and diversity established for each depressed population against which trends in abundance can be evaluated.
11. Habitat , Strategies -- provide technical expertise -- and Actions #4, page 7. The RMP should acknowledge the need (and call) for a comprehensive *independent* (non-agency) audit and review of the HPA process. While WDFW possesses considerable technical expertise at higher levels to evaluate HPA application, such expertise is all too often not present on the part of or available to field staff who actually issue HPA permits. Field staff requires more and better support from management at both the local level and from Olympia. Qualified field staff too often do not receive management support when they judge that an HPA should not be issued or that terms and conditions have been violated and an extant HPA should be revoked, particularly where land development is concerned. Only an independent audit can assess the magnitude of the problem and provide sound recommendations for improvement.
12. Fisheries Management, Policy Statement, page 9. As noted regarding the Introduction, this statement ignores the inherent conflict among several of the objectives enumerated. It would also be improved by having been preceded by a clearer and stronger statement regarding the primary need and purpose for the RMP (recovery) that would make clear what in general the "conservation objectives of natural production" mean and are likely to entail with regard to escapement goals and harvest policies.
13. Fisheries Management , Actions, page 10. #3a) diversity. The statement ignores the issues of loss of early run-time components of wild populations resulting from harvest directed at Chambers Creek winter-run stock and the need to recover and rebuild these components. At a minimum closure/abandonment of the use of early-returning hatchery winter-run stocks should be added to the list of potential management actions.
14. Fisheries Management, Actions, #3b), page 10. The statement is vague. What counts as a level of abundance that is inconsistent with watershed goals? How long is "long-term abundance"? How long will a population within a management unit be allowed to suffer such an inconsistent level of abundance before assessment and/or remedial action is taken. The RMP should outline clear measurable and monitorable

standards that will trigger specific kinds of detectable management actions to promptly redress undesirable harvest impacts on wild populations.

15. Fisheries Management, Actions, #6), page 11. Washington Trout believes that an estimate of 10% catch-and-release mortality for steelhead caught in all seasons is a reasonable and risk-averse standard, in view of present information. We endorse the employment of this standard for the purpose described in the statement.
16. Artificial Production (AP) , Policy statement, page 12. See comments of AP in the Introduction.
17. AP, Strategies, Network of Natural Stock Reserves, page 12. This statement is too vague. At a minimum a more substantive idea of the spatial scale and structure (e.g., hierarchical at several nested geographic scales) should be provided. In addition, the meaning of "largely protected from the effects of hatchery programs" should be spelled out in some detail. Moreover, the purpose of such a policy cannot be made clear without a detailed acknowledgment of the dangers AP poses to wild populations. The reserve network policy should be clearly motivated from this perspective. The reserve network policy should also be clearly linked to a policy to implement the kind of evaluation of the conservation AP (supplementation, captive brood) hypothesis that has been called for by the ISAB/RP and the RSRP as noted previously in these comments.
18. AP, Strategies, Implement Rescue Programs for At-Risk Stocks, page 12. A discussion of the risks of conservation AP and a statement of the need to evaluate the *hypothesis* that there is such a thing as conservation AP should be included. Simply put, if the hypothesis is false then by the time "limiting factors are addressed" an at-risk wild population may have been turned into an AP-dependent remnant of the wild population that was the target of the intended rescue operation.
19. AP, Strategies, Adaptive Management (AM) Programs , page 12. Discussions of AM in the context of salmon and steelhead management in general are entirely too vague, and this draft RMP is no exception. AM of actions and policies affecting at-risk populations requires specification of clear objective (measurable and monitorable) risk-averse threshold standards that trigger clearly specified procedures and actions in response to threshold crossing. Absent a specification of these, AM is nothing more than the statement of the intention to collect some data and think about what the data means for the at-risk population and perhaps discuss what, if anything, ought to be done relative to the status quo. This will not preserve or recover the state's wild steelhead populations.
20. AP, Actions, page 13. Closure and reduction of hatchery programs should be included as the first or second specific action. There is little evidence the Department can put all of its eggs in the "manage harvest and tamper with hatchery run-/spawn-timing" basket as the sole means of addressing adverse hatchery-wild interactions. Closure and reduction should be discussed and planned in conjunction

with Wild Steelhead Reserve Networks. This document still strongly reflects the department's history of placing harvest interests in front of wild stock preservation and recovery.

21. AP, Actions, #4) page 13. Here is another place in which the recommendations of the ISAB/RP and RSRP regarding supplementation and other so-called "conservation hatchery" practices should be mentioned. The risks mentioned in this action item cannot be adequately understood and evaluated in the absence of a comprehensive, statistically sound field-based study design.
22. AP, Actions, #5), Segregated Harvest, page 13. The RMP should note the poor track record of segregation and develop a plan for evaluating (quantifying) the efficacy of specific segregated hatchery programs pose or likely pose significant risk to specific wild populations of concern. The segregation strategy should be considered a *hypothesis* that is in need of testing.
23. AP, Actions, #5a) page 13. This point should be expanded into a plan for systematic wild-population genetic sampling. A Wild Steelhead Genetics Baseline Inventory should be called for, designed, and implemented. This should be fundamental to the RMP. With regard to the specifics of this action item, it is not clear that an estimate of the potential range of gene flow of returning hatchery adults is adequate unless it specifically includes field sampling across the entire wild-run timing. For example, it cannot simply be assumed that HxW reproductive interactions do not occur based on the timing of milt and egg development and spawning in the hatchery.
24. AP, Actions, #6), Integrated Programs, page 13. Loss of diversity: the several critical kinds of diversity should be stated: genetic diversity measured at neutral markers, diversity at QTL (quantitative trait loci) and other markers directly related to fitness in the wild (but rarely measured and/or hitherto difficult to measure -- but less so in the age of genomics using microarrays), and diversity in phenotypic traits related directly or indirectly to fitness in the wild. There is simply little, if any, evidence and considerable *bone fide* scientific uncertainty about whether Integrated Programs will significantly reduce the harmful consequences of HvW interactions. Washington Trout is not convinced that PNI is a reliable parameter for assessing this issue. Specifically, PNI does not address the fitness-related consequences of selection for a mixed life-history, which is the consequence of interactions under an integrated program. Selection a compromised wild-fitness profile can occur (and is in fact likely to occur) under high PNI levels. This has been shown by Goodman ("Selection equilibrium for hatchery and wild spawning fitness in integrated breeding programs", CJFAS, February 2005, pp.374-389) and has been discussed in the ISAB/RP 2003 review of supplementation.
25. AP, Actions, #8), Adaptive Management page 13. See comment # 19 above.
26. Regulatory Compliance (RC), Actions, #1,3 and 6, pages 15-16. See discussion under comment # 11 above. A statement is required that there is a need on the Department's part to insure that field staff have adequate expertise and

management support for evaluating HPAs. Management support at the level of the regional office and from Olympia is often lacking for knowledgeable and responsible field staff that wish to deny or severely condition HPA's from developers and agricultural interests. Again, the magnitude of this kind of problem cannot be adequately assessed and remedied without an independent performance audit of the HPA process. The RMP should state the need for and request such an audit.

27. Monitoring, Evaluation, and Adaptive Management (MEAM), Policy Statement, page 17. The statement should be rephrased and stated in terms of wild population health and recovery. Measurable, monitorable, and biologically appropriate wild population parameters should be the key parameters with respect to which hatchery and harvest programs, policies, and actions are to be evaluated and constrained. It is not simply a matter of restricting undesirable impacts of these activities; rather, it is a matter of promoting and securing wild population, health, resiliency, and recovery.
28. MEAM, Strategies, page 17, Develop comprehensive steelhead adult and smolt monitoring. Washington Trout strongly supports this. However, we recommend that an array of healthy (or relatively healthy) wild populations be included in a comprehensive smolt and adult monitoring program. This should be associated with Wild Reserve Networks and implementation of the recommendations of the ISAB/RP and RSRP for evaluating AP.
29. MEAM, Actions, #1), page 17. In addition to employing neutral genetic markers (microsat, SNPs) studies should be planned for measuring QTLs and gene expression in selected wild populations. This would best be done as part of a field-based evaluation of the supplementation hypothesis that we have noted elsewhere in these comments.
30. Outreach and Education (OE), Strategies (Capitalize on existing programs), Actions, #6, Work with salmon in the classroom), page 22-23. The implementation of Salmon in the Classroom requires substantive revision and improvement in order to educate students about the biology and ecology of real, wild salmonids. This requires providing both materials and knowledge support to teachers. The overwhelming majority of teachers responsible for salmon in the classroom do not know salmon biology and certainly are unaware of the serious issues regarding hatchery-wild interactions. The practice of releasing fry hatched in the classroom into local streams should be terminated in most cases, and certainly vastly revised and protocols for evaluating the release of such fish incorporated into the salmon-in-the-classroom curriculum. It is simply mis-education and a public disservice to students and the public at large to provide the message that if incubating eggs fail they can be replaced by another order from a hatchery and that salmon preservation and recovery is being served (or at least not harmed) by planting hatchery progeny into local waters with no systematic understanding of what is required for a released individual to survive and return as an adult. The Department should take the lead in this process and the RMP should note the deficiencies of the current program and call for its revision.

REFERENCES

Gayeski, N., 2005; Comments Re NOAA Fisheries' December 2004 proposed critical habitat designations for 13 Evolutionarily Significant Units of Pacific salmon and steelhead in Washington, Oregon, and Idaho; Federal Register volume 69, No. 239 74572 (Dec. 14, 2004) Docket Number [030716175-4327-03]; RIN Number [0648-AQ77]; Washington Trout, March 14, 2005; submitted to Branch Chief, Protected Resources Division, NMFS.

Gayeski, N., R. Vanden Brulle, 2003; Comments on WDFW Chinook, Coho, and steelhead Hatchery and Genetic Management Plans for Puget Sound; Washington Trout, August 1, 2003; Submitted to Washington Department of Fish and Wildlife

Gayeski N., R. Vanden Brulle, 2004; Comments on NOAA Fisheries Proposed Policy on the Consideration of Hatchery-Origin Fish in Endangered Species Act Listing Determinations for Pacific Salmon and Steelhead; Washington Trout, November 12, 2004; submitted to Branch Chief, Protected Resources Division, NOAA Fisheries.

Independent Scientific Advisory Board. 2003. Review of Salmon and Steelhead Supplementation. ISAB 2003-3.

Recovery Science Review Panel. 2003. Hatchery Experiments and Monitoring. July 21-23, 2003.

Washington Trout, 2005; Comments on Three WDFW Chinook, Three WDFW Coho, and Four WDFW Steelhead Hatchery and Genetic Management Plans for Columbia River Tributaries. March 21, 2005; Submitted to Washington Department of Fish and Wildlife

Washington Trout, 2006A; Comments Regarding the Public Review Draft of *Oncorhynchus mykiss*: Assessment of Washington State's Anadromous Populations and Programs; September 15, 2006; Submitted to William T. Gill, Fish Program, Washington Department of Fish and Wildlife

Washington Trout, 2006B; Comments Regarding NOAA Fisheries Puget Sound Steelhead Proposed Listing (71FR 15666), June 27, 2006; submitted to Branch Chief, Protected Resources Division, NOAA Fisheries

Washington Trout, 2006C; Comments Regarding The Public Review Draft Of Proposed Upper Columbia Spring Chinook Salmon, Steelhead, and Bull Trout Recovery Plan; Washington Trout, November 28, 2006; Submitted to Lynn Hatcher, National Marine Fisheries Service