

# Walla Walla

## Review Summary

The Walla Walla Subbasin Plan is a very good initial effort that closely follows the planning guidance provided by the Council. The regional approach shared between the Walla Walla, Asotin, Tucannon, and Lower Snake Mainstem is a strong feature of the plans for those subbasins. The intent to integrate aquatic and terrestrial components is also a very good aspect of this plan. The plan substantially meets many of the scientific elements for subbasin plans called for in the Council's 2000 Fish and Wildlife Program and the Subbasin Planning Technical Guide.

Wildlife assessments within the subbasin were not as strong as aquatic assessments, and followed the template and process of other subbasins in this region, referring almost entirely to Ashley and Stoval (2004) and a southeast Washington framework. Nonetheless, it could be argued that this ecoregional planning effort is more appropriate for these migratory animals than watershed-based as used for fish. Review comments refer mainly to the aquatic environment. A number of the plan's elements need further treatment to increase the plan's effectiveness in guiding, soliciting, developing, and selecting fish and wildlife projects. Using the results from EDT to develop objectives and strategies needs to be better structured, re-examined, and validated. The research, monitoring and evaluation (RME) plan needs to be developed in cooperation with others in the Columbia Basin. Information and guidance related to bull trout is deferred to recovery planning, but the plan would be stronger -- reflect a more ecological basis -- if bull trout were treated in this plan.

Reviewers would like to see the plan proceed with quantitative numeric objectives for plants and animals in the basin. Numeric objectives for habitat and the ecosystem should be related to what it will take to assure viable populations. This process will help identify what habitat is needed to produce the needed distribution and abundance of focal fish and wildlife populations across the subbasin.

Further prioritization of strategies and development of a research, monitoring, and evaluation (RME) plan would improve the Management Plan. As it stands, however, the plan can effectively provide some direction on project development, funding, and review, and represents a document that will evolve to be more effective in assisting a decision process over time.

As an organizational note, much of the material necessary to review and use these plans is in the appendices. In many cases the three major components of the plan did not adequately summarize the necessary information from the appendices. The planners should incorporate the information from the appendices into the body of the plan in a concise fashion. There is a careful balance between making these documents detailed and thorough, and making them too large and unwieldy for readers.

In general, review comments and scores on the review checklist for the four subbasins in this set (Walla Walla, Tucannon, Lower Snake Mainstem, and Asotin) are very similar, because similar

approaches were used in preparation of the subbasin plans. This is particularly true for the terrestrial sections of the plans.

### **Assessment**

The Assessment provides a general context for fish and wildlife resources in the basin, but it leaves too much information in the appendices. Although the plan's treatment of the current levels of ecological degradation and impact are sufficient, major elements of the subbasin's context within the Columbia River basin such as future human occupation trends and outcomes, and ocean conditions are weak or missing. The plan should gather more information about the levels of human impact in the future, and develop a more comprehensive examination and consideration of these impacts. One of the main points of subbasin planning is to manage resources to meet these changes, rather than react to them. The data on projected human population and land use trends is likely available and is vital to this plan.

The plan uses EDT to summarize limiting factors and propose those conditions that inhibit populations from achieving the abundance and productivity expected with properly functioning conditions. Because EDT is not very transparent, the limiting factors are not currently validated. Moreover, the planners use EDT in a very prescriptive sense, but that is not the proper use of EDT. EDT outputs of numbers should not be used literally but should be used in a relative sense. In comparison, the Umatilla looked at relative outputs to identify limiting factors and opportunities for restoration and protection.

Bull trout are excluded from the analysis in spite of the fact that QHA is a tool that could be used to examine them. Historical factors are discussed well in the appendices. This plan virtually ignores fish assemblage structure and non-focal species (fish biodiversity). Non-native species' distribution, abundance, and possible interaction with native species also could be better described.

Wildlife assessments within the subbasin were not as strong as aquatic assessments, and followed the template and process of other subbasins in this region, referring almost entirely to Ashley and Stoval (2004) and a southeast Washington framework for terrestrial focal habitats. Nonetheless, it could be argued that this ecoregional planning effort is more appropriate for these migratory animals than watershed-based as used for fish. Review comments refer mainly to the aquatic environment. The distributions and status of wildlife species are assessed, but data are often lacking for terrestrial species. Habitat types are described in some detail, including current and historic representation. A regional approach to many of the wildlife species seems appropriate, but for plant and animal species unique to the subbasin or with unique attributes within the subbasin, a more local treatment would improve the planning exercise. Here, as in many plans, there is not a clear indication that the focal species selected are representative of the ecosystem and habitat types described.

The importance of key limiting factors that occur outside of the subbasin may not be adequately described or recognized in the plan. The relative effects of out-of-subbasin effects on anadromous fish compared to the reproductive potential within the subbasin should be investigated further. The Assessment should determine if sustainable runs are probable if tributary habitat protection and restoration activities are put in place. Altogether, the out-of-basin limiting factors are not adequately addressed.

## **Inventory**

The Inventory is thorough. Its strength is that it summarizes past efforts, covers gaps, and considers whether past efforts are appropriately prioritized. Its primary weakness is in identifying specific projects that are either unsuccessful or successful and explaining why. The Inventory appears to be focused on trout and salmon, and provides little information on wildlife except for an additional document on elk, and references to WDFW plans.

## **Management Plan**

The plan describes biological objectives, as determined by the committee. The desired physical and biological changes for the subbasin are presented, but they may be inadequate to achieve the vision, and may take too much time to accomplish. Conversely, the vision for the subbasin is so broad that the subbasin may already have met it given the system's capacity.

The effort to consider objectives for aquatic and terrestrial habitat is an especially good aspect of the plan. The primary strength of the Management Plan is a focus on land management activities that affect habitat characteristics and likely to promote adequate ecosystem functions. The primary weakness of the management plan is a lack of performance measures for habitat characteristics.

In developing the objectives, the planner's use EDT in a prescriptive sense, but it is intended to be used in a relative sense. This creative use, perhaps misuse, of EDT raises issues regarding the scientific soundness of the Management Plan.

The plan lays out a reasonable and logical pathway for moving between working hypotheses, objectives to address the hypotheses, and strategies to accomplish the objectives that should be useful in implementing the plan. The objectives and strategies, as stated, are exceedingly prescriptive. There is a need for a level of objectives that are more general than the prescriptive ones and that describe what the specific objectives are intended to accomplish for each Geographic Area.

For example, hypothesis MC1 states that reduction in sediment will increase survival of various life stages of steelhead and spring Chinook. Objective MC 1.1 states that this will be accomplished, in part, by reducing embeddedness within the area to < 10%. A set of strategies is then proposed to accomplish the objectives. What is missing is a general objective that describes what is to be achieved at the population and ecosystem level by a reduction in sedimentation and a correspondent increase in survival. The general objectives should address desired changes in fish populations as well as habitat. For example, a general objective or purpose could be to restore spring chinook to areas A, B, and C where they have been extirpated, to increase the abundance and distribution of extant populations, to protect and increase abundance of core populations in stream X, Y, and Z, to increase population diversity and connectivity, to increase life history diversity, and so forth. Each general objective should be followed by specific objectives and strategies defining how the general objective will be accomplished.

In essence, the general objectives define goals for protection and restoration in each geographic area. The general objectives do not need to be expressed solely as numeric escapement goals,

although they could be. The general objectives should bridge the gap between the vision and the specific objectives, provide the Council with a broader picture of what the plan is intended to accomplish, and clarify, for purposes of project review, the principle purposes of the plan.

The Council's Fish and Wildlife Program is directed specifically at protection, restoration, and mitigation of fish and wildlife in the Columbia River Basin. Subbasin plans must provide biological objectives directly related to achieving the Fish and Wildlife Program goal. The objectives and strategies in the Walla Walla plan are aimed at habitat changes, with the assumption that these changes will enhance fish populations. Reviewers would also like to see the plan proceed with quantitative numeric objectives for plants and animals in the basin. Numeric objectives for habitat and the ecosystem should be related to what it will take to assure viable populations. This process will help identify what habitat is needed to produce the needed distribution and abundance of focal fish and wildlife populations across the sub-basin.

The lack of specification of the role of artificial production is particularly troubling.

Objectives and strategies are not explicitly prioritized, but the planners prioritize reaches based on EDT. A concern in this process is the use of the sum of diversity, productivity, and abundance to develop ranking scores. These three parameters are not independent and therefore cannot be summed. For example, abundance is dependent on both productivity and capacity, and diversity is dependent on productivity and abundance.

The clear and earnest discussion of disagreements is one of the strengths of the Walla Walla Subbasin Plan. The co-managers have yet to reach agreement on anadromous fish production goals. How to resolve this very central objective is not discussed. The anadromous fish production goals from previous planning may be unrealistically high. An approach to deciding on the balance of artificial and natural production of steelhead and salmon is absent. This will be a critical element of future planning. The difficulty in establishing this balance by subbasin planners underscores the need for basin-wide assessments of the impacts of enhancement/harvest hatchery activities on natural production. There also was a difference of opinion as to whether land acquisition should or should not be included as a strategy for enhancement of fish and wildlife.

Generally, the plan acknowledges the need to have an adaptive management loop to refine objectives and strategies. The RME logic path provides an initial attempt to link strategies to objectives through monitoring, but it is still preliminary and fragmented between two plans for monitoring and data management. The mechanism for implementing the loop and coordination is largely absent. The subbasin has a watershed council but it is not clear that all stakeholders are willing to use that administrative vehicle for implementing the plan.

A regional approach is followed for developing biological objectives and strategies for terrestrial focal habitats and wildlife species. This seems appropriate, but for plant and animal species unique to the subbasin or with unique attributes within the subbasin, a more local treatment would improve the planning exercise.

The planners acknowledge that a regional RME plan needs to be developed. The list of RME activities is comprehensive and complex and needs to be reworked to make some key observations. This is too complex to develop from the bottom-up; direction from the Council, CBFWA, NOAA at a regional level is needed. The planners would likely agree with this observation.

As an organizational note, much of the material necessary to review and use these plans is in the appendices. In many cases the three major components of the plan did not adequately summarize the necessary information from the appendices. The planners should incorporate the information from the appendices into the body of the plan in a concise fashion. There is a careful balance between making these documents detailed and thorough, and making them too large and unwieldy for readers. The authors of the Walla Walla Subbasin Plan erred on the side of detailed and thorough. The resulting plan is unwieldy for users and reviewers.

The planning team was large and the public process was ambitious. They conducted 62 meetings, including six public scoping meetings, and four subbasin planning public meetings. Consequently, the subbasin has the makings of a strong planning infrastructure in place to refine the plan for the Fish and Wildlife Program Amendments and subsequent ESA recovery planning for Washington State and NOAA Fisheries.

## Review Checklist

<b>I. The Subbasin Assessment</b>		
(See generally pages 4-6, 9-10 of the Technical Guide; the checklist is derived from 18-24 of the Technical Guide.) Reviewers should consider the soundness, completeness, analytical approach, and transparency (documentation of methods and decision-making process) of the following components of a subbasin assessment.		
<b>I. A. Subbasin Overview</b>		
<i>General Question to be addressed: Does the assessment provide the geographical, demographical, and environmental context for fish and wildlife resources in this subbasin? The Council specifically asked that the independent scientific review evaluate whether the subbasin assessment was thorough and substantially complete. The following checklist is to aid reviewers in that determination.</i>		
<b>I. A.1. General Description</b>		(Y)es, (P)artial, (N)o  Need for additional treatment (0-4)
I.A.1.1	Does the assessment provide a general orientation to the subbasin (location, size, distinguishing natural and cultural features, land use, land ownership) and an overview of jurisdictional authorities (state, county, federal lands, tribal lands and fishing rights)?	
Reviewers: The Assessment provides an adequate description of the subbasin. Unfortunately, much of the information for the assessment is contained in fourteen appendices that are not complete and have editorial comments waiting to be acted upon.		Yes
I.A.1.2	Does the assessment provide a general description of the subbasin's macro-environment (geology, climate and weather, land cover, vegetation) and of the subbasin's water resources (hydrography and watersheds, hydrologic regimes, water quality, riparian and wetland resources), water uses, and modifications to water resources (hydropower projects and operations, water diversions, channel	

	modifications)?		
	<p>Reviewers: This Assessment provides a general description of the subbasin’s physical environment. Most of it is excerpted from the appendices. The degree of hydrologic alteration could be illustrated with more effective graphics.</p> <p>“Section 2.1.3: Water Resources and Hydrology” refers to the subbasin summary for information on water diversions. Having this material in the subbasin plan would be helpful.</p>	Yes	0
I.A.1.3	Does the assessment provide a general description of anthropogenic disturbances to the aquatic and terrestrial environment, organized by the source of disturbance (urbanization, agriculture, forest practices, water development, mining, transportation, and other)?		
	<p>Reviewers: The plan contains a section on land use patterns, but offers no explicit discussion of anthropogenic disturbances. Since 90% of the basin is comprised of private lands, the disturbance types could be very different than in subbasins with mostly public ownership.</p> <p>Anthropogenic disturbances are described adequately in the appendices on the aquatic assessment.</p>		2
I.A.1.4	Does the assessment provide a list of native and non-native fish and wildlife species present in this subbasin including those species that: <ul style="list-style-type: none"> <li>a. have been designated as threatened or endangered under the Federal Endangered Species Act or state equivalents,</li> <li>b. have been recognized by applicable federal, state, or local resource management agencies, or by the Nature Conservancy or state heritage program, as being especially rare or significant in the local area,</li> <li>c. have special ecological importance within the subbasin,</li> <li>d. are recognized by Native American tribes as having special cultural or spiritual significance, or</li> <li>e. are not native to this subbasin?</li> </ul>		
	<p>Reviewers: The Assessment provides a list of species that are listed or have importance to American Indian tribes. Other ecologically important species such as the mountain whitefish, Pacific lamprey, and mussels are included as species of interest. Bull trout, steelhead, and Chinook salmon are focal species. Thirteen wildlife species are identified as focal species, including the often-controversial beaver.</p>	Yes	0
I.A.1.5	Does the assessment identify plants that have been designated as threatened or endangered under the Federal Endangered Species Act or state equivalents, and/or that are recognized by Native American tribes as having special cultural or spiritual significance, or (optional) that have special ecological importance within the subbasin?		
	<p>Reviewers: The Assessment addresses plants through habitat associations. Documenting plants in the subbasin that are listed, have special ecological importance, or have distinctive importance for American Indians would further enrich the plan.</p>	Partial	2
<b>I.A.2. Subbasin in the Regional Context</b>		(Y)es, (P)artial, (N)o	<i>Need for additional treatment (0-4)</i>
I.A.2.1	Does the assessment describe how this subbasin fits within its regional context (size in relation to the total Columbia Basin, placement within the ecological province and relationship to other subbasins in		

	this province, qualities that distinguish this subbasin from others in the province)?		
<p>Reviewers: The description of the subbasin within a regional context and important ecological functions of the subbasin within the region are described adequately. The Assessment identifies unique characteristics of the Walla Walla basin and its importance for the region.</p> <p>This plan took a different approach to placing itself in a regional context. It considered the subbasin plan in the regional context of ESA planning units and out-of-subbasin environmental effects. The subbasin's relationship to other subbasins in the province is not considered. A more thorough comparison to subbasins in the province and to the Columbia basin would be helpful.</p>		Yes	0
I.A.2.2	Does the assessment describe this subbasin's relationship to Endangered Species Act planning units (NOAA Fisheries-designated evolutionarily significant units (ESU) and U.S. Fish and Wildlife Service-designated bull trout planning units.) <sup>1</sup> where this information was available during the planning process?		
<p>Reviewers: The Assessment provides a description of ESA planning units and the relationships between parties in the Assessment and Management Plan. They manage to do this with only a sentence or two and a figure. It is an effective presentation and better than the approach taken by many other subbasin plans.</p>		Yes	0
I.A.2.3	Does the assessment summarize external environmental conditions that might have an effect on fish and/or wildlife in this subbasin (the ocean, the estuary, the mainstem downstream from the subbasin, and, as relevant, upstream areas and adjacent subbasins)?		
<p>Reviewers: The plan provides a brief summary of TOAST 2004. A more complete summary of the known hydrosystem effects on Walla Walla steelhead would be helpful. This information should be in NOAA Fisheries biological status reviews. The introductory section references out-of-basin effects estimated by EDT. That presentation is not sufficiently transparent to understand how these effects are estimated.</p> <p>The Assessment discusses linkages to the mainstem Columbia and briefly discusses ocean and estuary conditions. Models used by PFMC, ODFW, and NOAA Fisheries could contribute to such analyses. Ocean conditions are acknowledged as a factor, but the evaluation of their effect is weak.</p>		Yes	
I.A.2.4	Does the assessment identify macroclimate and human occupation and use trends that may affect hydrological or ecological processes in this subbasin over the long-term (50 years into the future and beyond)?		
<p>Reviewers: The plan offers a short, non-quantitative examination of macroclimate effects. There is no discussion of further population growth in the subbasin. Considering that 90% of the subbasin is in private ownership, additional treatment of human population growth would be helpful. There is, however, a more thorough analysis of past human</p>		Partial	

<sup>1</sup> The USFWS bull trout planning hierarchy includes, from large areas to small, distinct population segments, recovery units, recovery sub-units, core populations, core areas, and local populations. A subbasin would typically correspond to a recovery unit or sub-unit.)

<p>influences in the appendices. This discussion should be moved into the plan.</p> <p>The plan does not provide a scientifically credible (quantitative or qualitative) assessment of future trends. This is a deficiency in many subbasin plans. Future changes in human population, land use, land cover, water use, and resource use are almost certain in this basin, and they will have meaningful effects on the ecosystem. One of the main points of subbasin planning is to manage resources to meet these changes, rather than react to them. The data on projected human population and land use trends should be available and is vital to this plan.</p>		
	<p><b>Summary comments and evaluation on the Subbasin Overview:</b> Does the assessment provide the geographical, demographical, and environmental context for fish and wildlife resources in this subbasin?</p>	
<p>Reviewers: The Assessment provides a general context for fish and wildlife resources in the basin, but it leaves too much information in the appendices. Although the plan's treatment of the current levels of ecological degradation and impact are sufficient, major elements of the subbasin's context within the Columbia River basin such as future human occupation trends and outcomes, and ocean conditions are weak or missing. The plan should gather more information about the levels of human impact in the future, and develop a more comprehensive examination and consideration of these impacts.</p>	<p>Yes</p>	<p>2</p>

<p><b>I.B. Species Characterization and Status</b></p>		
<p><i>General question: Does the assessment adequately describe the current status of fish and wildlife focal species?</i></p> <p>Note to reviewers: for this section of the review, the checklist should be applied to each focal species. Please identify which species your evaluation applies to in the comment field. Use the ranking fields (Y,P,N; 0-4) to give an overall evaluation across all focal species. Note differences among approaches to species in the comment field. If necessary, once the plans are received, assignments will be made to cover an individual species or a series of focal species.</p>	<p>(Y)es, (P)artial, (N)o</p>	<p><i>Need for additional treatment (0-4)</i></p>
<p>I.B.1. Does the assessment identify a series of focal species that will be used to characterize the status of fish and wildlife species within the subbasin? These should include one or more wildlife, resident fish, and, where present, anadromous fish species. Anadromous fish may also be included in subbasins where they were historically present and where there is a reasonable probability that these fish could be restored to sustainable levels. Criteria suggested for selecting focal species include a) designation as Federal endangered or threatened species, b) local ecological significance,<sup>2</sup> and c) cultural significance.</p>		

<sup>2</sup> Species that could be considered under the ecological significance criterion might include those that: a) are particularly rare within the subbasin (regardless of ESA classification), or b) perform a particularly important or unique ecological function.

<p>Reviewers: The Assessment identifies six aquatic focal species and thirteen terrestrial focal species based on their ecological importance, ESA or state listings, cultural significance to American Indian tribes, or value as game species. This plan's focal species and habitats are similar to those that are in the plans of nearby subbasins.</p> <p>The Assessment adequately describes the status and ecology of bull trout, steelhead, and Chinook salmon, Pacific lamprey, mountain whitefish, and freshwater mussel. Species of interest include alkali bees, sheep, and turtles.</p> <p>The plan includes extensive lists of candidate fish and wildlife species. Changes in major habitat types that have declined significantly since non-native settlement are described in the appendices. Upland vegetation associations and wildlife species are described and assessed thoroughly and compared with historical conditions.</p> <p>Although said to be extirpated from the subbasin, spring Chinook are included as a focal species in order to plan for their return.</p> <p>During the presentation to the ISRP/AB, the planners noted that some bird and wildlife species chosen as focal species did not reflect functional ecological relationships. They will alter the subbasin plan accordingly in the future.</p> <p>This plan virtually ignores fish assemblage structure and non-focal species (fish biodiversity). Non-native species' distribution, abundance, and possible interaction with native species also could be better described.</p> <p>See the ISRP/AB comment on focal species in the programmatic section of the report. The plan for aquatic species did not focus on their local ecological significance.</p> <p>Finally, it is questionable to choose species that are supplemented with hatchery products as focal species, because these are species that presumably reflect " ecosystem health."</p>	<p>Yes</p>	<p>2</p>
<p>I.B.2. Does the assessment identify and characterize focal species populations; i.e. delineate unique population units and, as applicable and where information is available, meta-populations, subpopulations and/or other genetic/behavioral groupings used by scientists or managers?</p>		
<p>Reviewers: The planner's only offer maps of steelhead, spring chinook, and bull trout distribution in the body of the plan. A full consideration of focal species populations is referred to in an appendix. A summary of the information should be brought into the body of the plan.</p> <p>The Assessment provides an excellent characterization of the populations of aquatic focal species. The characterizations of wildlife species are more general.</p> <p>The plan does not consider possible metapopulation implications.</p>	<p>Yes</p>	<p>1</p>

I.B.3. Does the assessment describe the current and historic status of each focal species population and summarize available population data (abundance, productivity, spatial structure, etc., with particular emphasis on trend data)?		
Reviewers: The Assessment provides an excellent characterization of the current and historic status of aquatic focal species populations. The characterizations of wildlife species are more general.  The plan cites an appendix to find this information. This material should be incorporated into the plan.  The stock assessment information was thin, but this has been true of most of the other plans. This plan probably described the current and historic status of each focal species population as well as can be done, given current data.	Yes	
I.B.4. Does the assessment describe the population's life history, including identifying distinct life stages?		
Reviewers: The available life history information is adequately described for the aquatic focal species. Once again, this information is embedded in an appendix.	Yes	1
I.B.5. Does the assessment characterize the genetic diversity of the population, especially regarding possible effects of artificial production? Specifically does the assessment describe the historic and current status of introductions, artificial production, or captive breeding programs in this subbasin or affecting the subbasin through straying or other means, and describe the relationship between the artificial and naturally produced populations?		
Reviewers: The plan includes a long section on artificial production, introductions, and their importance to harvest. Although available genetic information for salmonids is analyzed and apparently few hatchery fish are in the river, the plan could be improved by a more detailed examination of the effects of artificial production on genetic structure.		2
I.B.6. Does the assessment describe historic and current harvest, including both in-subbasin harvest and downstream or ocean harvest affecting the focal species?		
Reviewers: The plan describes historical and current harvest practices, but does not do so in detail. The plan does not provide a table of in-river, ocean, and mainstem harvest rates. There should be catch numbers. It would be better for the plan to include a quantitative assessment. The planners should be able search for available numbers that have been compiled by NOAA for the Cumulative Risk Initiative modeling exercise.	Yes	2
<b>Summary comments and evaluation on the Species Characterization and Status Subsection:</b> Does the assessment adequately describe the current status of fish and wildlife focal species?		
Reviewers: Focal species' characterization and status are adequately addressed. The distributions and status of wildlife species are assessed, but data are often lacking for terrestrial species.	Yes	2

**I.C. Environmental Conditions**  
*General question to be addressed: Does the assessment adequately describe the effect of the environment on fish and wildlife populations?*

<b>I.C.1. Environmental Conditions within the Subbasin</b>		(Y)es, (P)artial, (N)o	Need for additional treatment (0-4)
I.C.1.1	Does the assessment describe the current condition of the environment in this subbasin, and characterize the condition of the environment under the following reference conditions: a) historic, <sup>3</sup> b) potential, <sup>4</sup> c) future/no new action, <sup>5</sup> and the potential condition of aquatic and terrestrial habitats within the subbasin? Does the assessment include a determination of the difference between current conditions and the various reference conditions?		
<p>Reviewers: The plan offers an adequate presentation of historic, current, and properly functioning environmental conditions by subunit (subwatershed). The no new action analysis was partially done and this ties to concerns about inadequate coverage of demographic/human use changes. They have the groundwork for developing this in Appendix B. Further work on this would improve the plan.</p> <p>Relation of terrestrial species and habitat is identified as a need.</p>			2
I.C.1.2	Does the assessment classify 6 <sup>th</sup> field HUCs (or other appropriate assessment units) within the subbasin according to the degree to which each area has been modified and the potential for restoration?		
<p>Reviewers: Although HUC terminology is not used, the small tributaries to the Walla Walla and Touchet are considered individually. The Assessment develops a series of restoration actions for reaches in the Walla Walla subbasin based on the EDT analysis.</p>		Yes	0
<b>I.C.2. Out-of-Subbasin Effects and Assumptions</b>			
I.C.2.1	Does the assessment identify factors outside of the subbasin that have a significant effect on each focal species, with particular attention to bottlenecks? These might include effects associated with upstream conditions, downstream conditions, and, in the case of migratory wildlife, conditions in adjacent subbasins. Outside effects are particularly relevant for anadromous fish and may include mainstem passage and habitat, estuary conditions, ocean conditions, and harvest.		
<p>Reviewers: The Assessment discusses out-of-subbasin issues related to the mainstem Columbia and ocean conditions to some degree. The plan also identifies out-of-subbasin effects on wildlife species.</p> <p>SARs applying to fish returning to the subbasin are incorporated into the EDT analysis, thus integrating out of basin effects.</p> <p>Out-of-subbasin effects are given an adequate treatment through the use of EDT, this allows for estimates of what magnitudes of population increases can be achieved by in-basin activities. The planners should continue this line of inquiry and should think in terms of what kind of actions can be implemented in the subbasin to address external effects, such as enhancing</p>		Yes	3

<sup>3</sup> The historic condition refers to the state of the environment at the time of European settlement, or 1850.

<sup>4</sup> The potential condition is defined as the optimal condition for the subbasin in the year 2050, but it acknowledges cultural modifications that are not reversible such as urbanization.

<sup>5</sup> The future/no new action condition is the state of the environment in 2050 assuming that current trends and current management continues.

salmonid life history diversity.		
I.C.2.2	For each focal species, does the assessment establish assumptions for each external effect that can be used to calculate the effects of external conditions on the productivity and sustainability of fish and wildlife within this subbasin?	
<p>Reviewers: Overall, the Assessment develops a series of external effects and tables on key relationships. It includes a brief summary of TOAST 2004, which addresses hydrosystem problems. There is not a sufficient explanation of how out-of-subbasin effects are quantitatively treated in the EDT analysis.</p> <p>It is not possible to establish assumptions on external effects spring Chinook due to a lack of information.</p>		3
<p><b>I.C.3. Environment / Population Relationships</b></p> <p>For each focal species, does the assessment identify, for each life stage, environmental factors that are particularly important for the species' survival and determine the characteristics that constitute optimal conditions for species health? Does the assessment describe and make a finding regarding the environment's ability to provide such optimal conditions, or conditions that support the long-term viability of these populations.</p>		
<p>Reviewers: The Assessment identifies key environmental factors related to the survival of different species' life history stages. The ability of the basin to provide such conditions is discussed. Long-term viability is discussed only for bull trout, Chinook salmon, and steelhead. EDT analysis is also conducted for steelhead and Chinook, but no quantitative analyses are conducted for bull trout (even though QHA is possible) or wildlife species and even narrative evaluation is not provided for special interest species.</p> <p>The subbasin plan uses EDT to evaluate stream reaches. Environmental factors important for the species' survival are imbedded in the EDT rules. The planners assume that EDT provides an adequate assessment of the environmental needs of aquatics. They had to conclude that the predicted productivity at "optimum" could not support numeric goals for anadromous salmonids. Research is identified to relate terrestrial and aquatic focal species to environmental conditions. One difficulty in the approach taken by the planners is that the rules are not transparent, and are not easily altered from one subbasin to another. Therefore generic, rather than subbasin specific, survival is assigned to a life-stage for a particular environmental condition.</p>		Yes 2
<p><b>Summary comments and evaluation on the Environmental Conditions Section:</b> Does the assessment describe the effect of the environment on fish and wildlife populations?</p>		
<p>Reviewers: The Assessment provides a general discussion of the effect of the environment on fish and wildlife. EDT analysis is used to identify limiting factors for focal aquatic species within subwatersheds. Again, much of the assessment is based on assumptions regarding benefits of proposed actions with subsequent assessment of these effects.</p>		Yes 2

<p><b>I.D. Ecological Relationships</b></p> <p><i>Question to be addressed: Does the assessment describe the key inter-species relationships and the key functional relationships?</i></p>	<p>(Y)es, (P)artial, (N)o</p>	<p><i>Need for additional treatment (0-4)</i></p>
<p><b>I.D.1. Inter-species Relationships</b></p> <p>Does the assessment identify important inter-species relationships or interactions, both positive and negative, with specific attention to relationships between anadromous fish and wildlife and specifically identify: 1) wildlife species and habitats that may be influenced, positively or negatively through direct effects of changes in fish abundance or fish community composition; 2) fish species and habitats that may be influenced, positively or negatively, through direct effects of changes in wildlife abundance or wildlife community composition; and 3) key species relationships within this subbasin based on the above?</p>		
<p>Reviewers: Inter-species relationships are considered in the closing section of the Assessment. The relationships are presented in a conceptual form, and with more thought than in many other subbasin plans. A section of the plan describes a proposed method for integrating the terrestrial and aquatic portions of the plan. The terrestrial plan mentions wildlife that interact with salmonids.</p> <p>The species interaction section of the plan is identical (verbatim) to that of the Lower Snake River. Inter-species interactions are briefly discussed, but it is a general examination that does not draw on the available literature. The plan states that only great blue heron interact with aquatic species. The plan does not consider beaver to be associated or interactive with salmonids, which is an incorrect characterization. According to the presentation to the ISRP/AB, the planners understand this inaccuracy and explained this lack of association is reflective of IBIS being based on trophic relationships. Consequently, interactions between species are generally described as trophic, and competition and genetic issues are not covered. A fuller treatment of interactions would improve the plan.</p> <p>The plan does not appear to consider the effects of exotic or invading fish.</p>	<p>Partial</p>	<p>3</p>
<p><b>I.D.2. Processes and Functions</b></p> <p>Does the assessment identify key ecological functions for species within this subbasin and assess the current status of ecological processes and functions in the subbasin?</p>		
<p>Reviewers: In general, this plan did a better job than most any plan, given it primarily used EDT as the tool to identify key ecological functions in the subbasin. EDT has some serious limitations in this regard in terms of cumulative effects. The assessment provides a brief and simple description of key ecological functions, as information is available. Integrating ecological functions, terrestrial and aquatic ecosystems, and developing an integrated working hypothesis is well thought out.</p> <p>In addition, more consideration of disturbance regimes and how they shape habitat and contribute to natural variation would improve the plan.</p>	<p>Partial</p>	

<b>I.E. Interpretation and Synthesis / Limiting Factors and Conditions</b>		
<b>I.E.1. Limiting Factors and Conditions</b>		
Does the assessment describe: <b>1) Historic factors or conditions</b> that led to the decline of each focal species and of ecological functions and processes? <b>2) Current key factors or conditions</b> within and without the subbasin that inhibit populations and ecological processes and functions relative to their potential.		
<p>Reviewers: The plan uses EDT to summarize limiting factors and propose those conditions that inhibit populations from achieving the abundance and productivity expected with properly functioning conditions. Because EDT is not very transparent, the limiting factors are not currently validated.</p> <p>Bull trout are excluded from the analysis in spite of the fact that QHA is a tool that could be used to examine them. Historical factors are discussed well in the appendices.</p> <p>The importance of key limiting factors that occur outside of the subbasin may not be described or recognized in the plan. The relative effects of out-of-subbasin effects on anadromous fish compared to the reproductive potential within the subbasin should be investigated further. The Assessment should determine if sustainable runs are probable if tributary habitat protection and restoration activities are put in place. Altogether, the out-of-basin limiting factors are not adequately addressed. The planners provide a qualitative and quantitative EDT analysis to arrive at the subbasin's limiting factors. They use EDT in a very prescriptive sense, but that is not the proper use of EDT. EDT outputs of numbers should not be used literally but should be used in a relative sense. In comparison, the Umatilla looked at relative outputs to identify limiting factors and opportunities for restoration and protection.</p>	Yes	2
<b>I.E.2. Key Findings</b>		
Is the knowledge gained through the assessment synthesized in regard to: 1) the status of species, 2) the status of the subbasin environment, 3) the biological performance of focal species in relationship to the environment, 4) the health of the overall ecosystem, 5) potential conflicts and compatibilities between individual species and ecological processes, 6) a determination of the key factors that impede this subbasin from reaching optimal ecological functioning and biological performance?		
<p>Reviewers: The Assessment describes key findings. Historical key factors are identified. Conflicts and capabilities are described thoroughly.</p> <p>The plan's key findings are mostly based on EDT. The analysis goes beyond a dependence solely upon the EDT analysis, however, by identifying the Corps of Engineers Mill Creek Project as a special topic meriting high priority attention for amelioration of effects on fish, and other similar actions that are of high priority to address obvious problems.</p>	Yes	1

Overall, the analysis is inadequate for species interactions; the regional approach on wildlife was lengthy and will benefit plans only if focal species are truly key within focal habitats.			
<b>I.E.3. Subbasin-wide Key Assumptions/Uncertainties (“Working Hypothesis”)</b>			
Does the assessment describe the key assumptions (including uncertainties) that have been made in the “Key Findings” above, and document the data sources and/or analytical tools relied upon?			
Reviewers: The plan’s working hypotheses and uncertainties are considered in the Management Plan and the RME section. The plan lists its key factors and assumptions, but it is difficult to determine the data sources relied upon.		Yes	1
<b>Overall impression and evaluation of the Assessment:</b> Does the assessment adequately synthesize the information regarding the health and functioning of this subbasin ecosystem? Does it adequately: a) bring together the single-species and community assessments to form a holistic view of the subbasin’s biological and environmental resources, b) provide a foundation for the development of scientific hypotheses concerning ecological behavior and the ways that human intervention might prove beneficial? As needed elaborate on your evaluation of the various Sections enumerated above. If the plan provides additional analysis beyond what is laid out above in the checklist please comment here (e.g., socio-economic descriptions or analysis).			
Reviewers: The plan calls attention to the need to verify inputs used for the EDT analysis. Nevertheless, the results of the analysis are convincing. This is a very good assessment.  However, there is a lack of assessment data that should drive the decision process and use of management tools. Management decisions made in the Assessment should be moved to the Management Plan. Future conditions should be assessed more rigorously.		Yes	2

<b>II. The Inventory</b>			
<i>(This checklist section was developed from pages 11-12 of the Technical Guide.)</i>			
<i>Reviewers should consider the soundness, completeness, analytical approach, and transparency (documentation of methods and decision-making process) of the following components of a subbasin inventory, specifically whether the inventory includes an assessment of the adequacy of current legal protections, plans, and projects to protect and restore fish, wildlife, and ecosystem resources. Does the inventory adequately synthesize past activities and their biological achievements? Planners were requested to, as applicable, describe the extent to which these programs and activities extend beyond the subbasin to a larger scale (provincial and basin-wide).</i>			
<b>II.A. Existing Protection</b>		(Y)es, (P)artial, (N)o	Need for additional treatment (0-4)
II.A.1	Does the inventory identify areas with protections through stream buffers, municipal or county ordinances, conservation designations, or water resources protection?		
Reviewers: The plan offers a general presentation on laws and programs that apply to the entire subbasin. It would be helpful to know the proportion of the streams and subbasins that have various protections via these rules and laws, including maps that show impaired reaches and protected areas. This plan’s inventories are very thorough.		Yes	

II.A.2	Does the inventory assess the adequacy of protections for fish, wildlife, and ecosystem resources?		
Reviewers: The plan offers an extensive list of existing protections, but it does not provide an evident discussion of the adequacy of existing protections.			
<b>II.B. Existing Plans</b>			
II.B.1	Does the inventory identify and review applicable local, state, tribal, and/or federal fish and/or wildlife management plans and water resource management plans that affect fish and wildlife?		
Reviewers: The Inventory provides an extensive list and discussion of existing programs.		Yes	0
II.B.2	Does the inventory assess the extent to which existing plans are consistent with the subbasin assessment and their adequacy in protecting and restoring fish, wildlife, and ecosystem resources? (It is possible that this analysis is done in another section of the plan, e.g. in the management plan.)		
Reviewers: Major programs consistency with assessments and their adequacy is discussed. The planners note in their introduction that ongoing and future subbasin planning should be integrated into all the other planning in the basin. Clearly, the planners are aware of the benefits of integrating and considering the needs of various planning efforts.		Yes	1
<b>II.C. Management Programs / Restoration and Coordination Projects</b>			
Does the inventory identify management programs implemented through on-the-ground restoration and conservation projects that target fish and wildlife or otherwise provide substantial benefit to fish and wildlife? These include, at a minimum, those implemented within the past five years regardless of funding source.			
II.C.1	Does the inventory identify ongoing or planned public and private management programs or initiatives that have a significant effect on fish, wildlife, water resources, riparian areas, and/or upland areas? <sup>6</sup>		
Reviewers: Ongoing programs and projects are listed and described.		Yes	0
II.C.2	For each management program (or project where not clearly part of an overarching management program), does the inventory describe the program, project or activity; identify the management or lead entity; identify how the program/project was authorized and who is responsible for implementation; identify the funding source; and identify the relationship to other activities in the subbasin?		
Reviewers: The plan provides these characteristics in tables.		Yes	0
II.C.3	For each management program (or project where not clearly part of an overarching management program), does the inventory identify limiting factors or ecological processes the activity is designed to address?		
Reviewers: The plan provides a general summary of the proportion of the projects (out of 700) that address different limiting factors and different habitat areas strategies. The Inventory briefly discusses key findings and identifies management actions.		Yes	0
II.C.4	For each management program (or project where not clearly part of an overarching management program), does the inventory summarize accomplishments/failures of activity		

<sup>6</sup> Among other programs, the Technical Guide requested for artificial production programs that the inventory include and summarize relevant HGMPs (both BPA-funded and non-BPA funded programs) and Council APRE evaluations?

Reviewers: The Inventory goes as far as it can in describing outcomes. The Inventory also explains why information is often lacking on this point. Successes and failures, however, are not discussed.		Partial	3
II.C.5	Does the inventory relate the assessment to the existing activities and identify the gaps between actions that have already been taken or are underway and additional actions that are needed to address the limiting factors and meet recovery and other goals, and identify inadequacies in both design and implementation?		
Reviewers: The summary of projects that identify which limiting factors have been addressed and the reaches that have been treated is helpful. There is a discussion concerning how the treatment of limiting factors and reaches has been disproportionate to the level of impairment, as judged by EDT. This is one of the few examples of subbasin planning leading to a discourse on past projects. The data gaps addressed by ongoing projects are identified.		Yes	1
<p><b>Overall impression and evaluation of the Inventory:</b> As needed elaborate on your evaluation of the various Sections enumerated above. If the plan provides additional information or analysis beyond what is laid out above in the checklist please comment here (e.g., socio-economic descriptions or analysis).</p>			
Reviewers: The Inventory is thorough. Its strength is that it summarizes past efforts, covers gaps, and considers whether past efforts are appropriately prioritized. Its primary weakness is in identifying specific projects that are unsuccessful or successful and explaining why. The Inventory appears to be focused on trout and salmon, and provides little information on wildlife except for an additional document on elk, and references to WDFW plans.		Partial	2

### III. The Management Plan

*(Derived from pages 12-16 of the Technical Guide.)*

*Reviewers should consider the soundness, completeness, analytical approach, and transparency (documentation of methods and decision-making process) of the following components of a subbasin management plan.*

These checklist tables incorporate Council Question 4, Consistency with the Provincial- and Basin-level Program: Are the vision, objectives, and strategies proposed in the subbasin management plan consistent with those adopted in the program for the province and/or basin levels? This is a three-part question and reviewers must be familiar with the vision, objectives, and strategies described in the 2000 Fish and Wildlife Program (pp. 13-33) and, for mainstem subbasin plans, the Mainstem Amendments (pp.11-28).

#### III.A. The Vision for the Subbasin

Does the Vision Section of the Management Plan 1) describe the desired future condition for the subbasin; 2) describe a vision that will drive development of the biological objectives and thereby the strategies that are incorporated to change conditions within the subbasin; and 3) incorporate the conditions, values and priorities of the subbasin in a manner that is consistent with the Vision described in the Council's 2000 Fish and Wildlife Program? (Council Question 4 to the ISRP):

(Y)es, (P)artial, (N)o	<i>Need for additional treatment (0-4)</i>
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<p>Reviewers: The plan provides a vision for the Walla Walla subbasin. It describes goals for human communities, fish, wildlife, and ecosystems. The vision is general in nature, and gives no list of guiding principles. The vision is so broad and vague that almost any management strategy could fulfill it, but this is true of most, if not all, of the subbasin plan's visions statements.</p> <p>In addition to the vision statement, a summary is provided of some numeric goals originating in plans previously developed for the subbasin, but not incorporated into this one at this stage of development.</p>	<p>Yes</p>	
<p><b>III.B. Biological Objectives</b></p> <p>Does the Biological Objectives Section of the Management Plan describe physical and biological changes within the subbasin needed to achieve the vision?</p>		
<p>Reviewers: A regional approach is followed for developing biological objectives and strategies for terrestrial focal habitats and wildlife species. This seems appropriate, but for plant and animal species unique to the subbasin or with unique attributes within the subbasin, a more local treatment would improve the planning exercise.</p> <p>The plan describes biological objectives, as determined by the committee. The desired physical and biological changes for the subbasin are presented, but they may be inadequate to achieve the vision, and may take too much time to accomplish. Conversely, the vision for the subbasin is so broad that the subbasin may already have met it given the system's capacity.</p> <p>The planner's use EDT in a prescriptive sense, but it is intended to be used in a relative sense. This creative use, perhaps misuse, of EDT raises issues regarding the scientific soundness of the Management Plan.</p> <p>The plan lays out a reasonable and logical pathway for moving between working hypotheses, objectives to address the hypotheses, and strategies to accomplish the objectives that should be useful in implementing the plan. The objectives and strategies, as stated, are exceedingly prescriptive. There is a need for a level of objectives that are more general than the prescriptive ones and that describe what the specific objectives are intended to accomplish for each Geographic Area.</p> <p>For example, hypothesis MC1 states that reduction in sediment will increase survival of various life stages of steelhead and spring chinook. Objective MC 1.1 states that this will be accomplished, in part, by reducing embeddedness within the area to &lt; 10%. A set of strategies is then proposed to accomplish the objectives. What is missing is a general objective that describes what is to be achieved at the population and ecosystem level by a reduction in sedimentation and a correspondent increase in survival. The general objectives should address desired changes in fish populations as well as habitat. For example, a general objective or purpose could be to restore spring chinook to areas A, B, and C where they have been</p>	<p>Partial</p>	<p>3</p>

<p>extirpated, to increase the abundance and distribution of extant populations, to protect and increase abundance of core populations in stream X, Y, and Z, to increase population diversity and connectivity, to increase life history diversity, and so forth. Each general objective should be followed by specific objectives and strategies defining how the general objective will be accomplished.</p> <p>In essence the general objectives define goals for protection and restoration in each GA. The general objectives do not need to be expressed solely as numeric escapement goals, although they could be. The general objectives should bridge the gap between the vision and the specific objectives, provide the Council with a broader picture of what the plan is intended to accomplish, and clarify, for purposes of project review, the principle purposes of the plan.</p>		
<p>III.B.1. Are the biological objectives consistent with basin-level visions, objectives, and strategies adopted in the program? (Council Question 4) The 2000 Fish and Wildlife Program, pages 16-18, provides general descriptions for basin-level goals, objectives, and strategies. The Mainstem Amendments provide additional biological objectives as well on pages 11-14.<sup>7</sup></p>		
<p>Reviewers: The Council's Fish and Wildlife Program is directed specifically at protection, restoration, and mitigation of fish and wildlife in the Colombia River Basin. Subbasin plans must provide biological objectives directly related to achieving the Fish and Wildlife Program goal. The objectives and strategies in the Walla Walla plan are aimed at habitat changes, with the assumption that these changes will enhance fish populations. Reviewers would also like to see the plan proceed with quantitative numeric objectives for plants and animals in the basin. Numeric objectives for habitat and the ecosystem should be related to what it will take to assure viable populations. This process will help identify what habitat is needed to produce the needed distribution and abundance of focal fish and wildlife populations across the sub-basin.</p> <p>The lack of specification of the role of artificial production is particularly troubling.</p>	<p>Yes</p>	<p>2</p>
<p>III.B.2. Are the biological objectives based on the subbasin assessment? (This question relates to the Logic Path in the subbasin plan. Question III.C.1 is a similar question for the Strategies Section.)</p>		
<p>Reviewers: The plan's biological objectives appear to be the result of the subbasin assessment and the links are mostly related to the EDT analysis. Fish information from the assessment does not appear to be incorporated into the biological objectives. The wildlife objectives do come directly out of the assessment.</p>	<p>Partial</p>	<p>2</p>
<p>III.B.3. Where possible, are the biological objectives empirically measurable and based on an explicit scientific rationale; i.e., quantitative with measurable outcomes?</p>		

<sup>7</sup> Given the Fish and Wildlife Program's emphasis on building from subbasin level management plans upward into provincial and basin level objectives, reviewers should evaluate whether the plans have a framework that will facilitate the development and linkage of objectives from the subbasin to the province to the basin.

Reviewers: Biological objectives should also relate to the numbers of animals and plants. The planners assume this subbasin planning process is a habitat related exercise, so their objectives are associated with changes in physical habitat. They did provide numeric goals for anadromous species developed in other programming efforts. They conclude that numeric objectives will likely be further developed by the Court system. Many of the biological objectives provide quantitative targets, especially for focal species of fish.	Yes	1
III.B.4. Are biological objectives identified for both the short and long-term?		
Reviewers: The plan is aimed at a ten to fifteen year duration. However, the plan proposes that an established team be responsible for developing a detailed implementation plan that would include the prioritization of activities over the next one to three years (p. 208). Most of the plans objectives are short-term; the long-term objectives are vague.  The planners did identify the needs for immediate and longer-term projects.	Partial	2
III.B.5. Are the biological objectives complementary to programs of tribal, state and federal land or water quality management agencies in the subbasin?		
Reviewers: It appears that the biological objectives are complementary to programs of tribal, state and federal land or water quality management agencies in the subbasin. The subbasin plan has not, however, been thoroughly reviewed by all of the stakeholders in the subbasin. There is no explicit comparison of the subbasin plan with other plans affecting the subbasin.	Yes	1
III.B.6. <i>Clean Water Act</i> : Does the management plan describe how the objectives and strategies are reflective of and integrated with the water quality management plan and Total Maximum Daily Load schedule within that particular state? I.e., does this subsection of the management plan assess and describe the consistency-coordination-findings of the Water Quality Plan with the subbasin plan? <sup>8</sup>		
Reviewers: The Management Plan discusses links to the TMDL process in several of its sections. The plan's biological objectives include meeting the TMDL goals of the CWA. A more thorough analysis of what is needed to achieve this would be helpful.	Yes	1
III.B.7. <i>Endangered Species Act</i> : The USFWS and NOAA Fisheries are developing recovery plans for listed species (bull trout, white sturgeon, salmon). Recognizing that those ESA-based efforts are in various states of completion across the Columbia basin (some efforts are well underway, others just beginning), does the management plan		

<sup>8</sup> *Clean Water Act*: The Water Quality Management Plans developed for watersheds within each state includes the following information: 1) Management measures tied to attainment of TMDL; 2) Timeline for implementation; 3) Timeline for attainment of Water Quality Standards; 4) Identification of responsible parties; 5) Reasonable assurance of implementation; and 6) Monitoring and evaluation. The status of Total Maximum Daily Loads (TMDLs) is generally the responsibility of the state, which is delegated the responsibility for implementing the CWA. Each state has a schedule for completing TMDLs, which include a Water Quality Management Plan that describes how the allocations in the TMDL will be met. Basic information on TMDL's can generally be found on the web (see Resources).

describe how the objectives of the subbasin management plan are reflective of and integrated with the ESA-based goals for listed species within the subbasin? <sup>9</sup>		
Reviewers: The Management Plan adequately describes the links between objectives for aquatic species. The planners should consider being aggressive about defining the numeric needs for ESA recovery. They seem to have enough expertise associated with this effort to complete that charge rather than wait for products from NOAA/FWS planners. They have done one of the best jobs of relating ESA-based efforts of any subbasin plan.	Yes	1
III.B.8. If there are disagreements among co-managers that translate into differing biological objectives, are the differences and the alternative biological objectives fully presented? (The Council's review will examine whether the plan is consistent with legal rights and obligations of fish and wildlife agencies and tribes with jurisdiction over fish and wildlife in the subbasin, and agreed upon by co-managers in the subbasin.)		
Reviewers: The clear and earnest discussion of disagreements is one of the strengths of the Walla Walla Subbasin Plan. The co-managers have yet to reach agreement on anadromous fish production goals. How to resolve this very central objective is not discussed. The anadromous fish production goals from previous planning may be unrealistically high. An approach to deciding on the balance of artificial and natural production of steelhead and salmon is absent. This will be a critical element of future planning. The difficulty in establishing this balance by subbasin planners underscores the need for basin-wide assessments of the impacts of enhancement/harvest hatchery activities on natural production.  There also was a difference of opinion as to whether land acquisition should or should not be included as a strategy for enhancement of fish and wildlife.	Yes	0

<b>III. C. Strategies<sup>10</sup></b>
III.C.1. <b>Internal Consistency of the Plan.</b> Does the Strategies Section of the Management Plan explain the linkage of the strategies to the subbasin biological objectives, vision and the subbasin assessment? (Council Questions 2 and 3) <sup>11</sup>

<sup>9</sup> E.g. NOAA Fisheries has provided interim targets in a letter from NOAA Fisheries to the Council, Bob Lohn to Larry Cassidy: [http://www.nwcouncil.org/library/2002/nmfstargets2002\\_0404.pdf](http://www.nwcouncil.org/library/2002/nmfstargets2002_0404.pdf).

<sup>10</sup> *Definition:* Strategies are sets of actions to accomplish the biological objectives. Strategies are not projects but instead are the guidance for development of projects as part of the implementation plan. Strategies identified within the subbasin plans will be used as a basis for Council recommendations to the Bonneville Power Administration regarding project funding. Proposed measures will be evaluated for consistency with biological objectives and strategies. The strategies may be organized by categories of habitat, artificial production, harvest, hydrosystem passage and operations, and wildlife.

<sup>11</sup> This is one of the most important review questions. The set of seven questions from Council asks the ISRP to evaluate the internal consistency, scientific soundness, and thoroughness of subbasin plans. Internal consistency means there is scientific support for the conclusion that the strategies proposed in a subbasin plan will in fact address the problems identified by the subbasin assessment; i.e., does the Strategies Section take into account not only the desired outcomes, but also the physical and biological realities of the subbasin environment. The ISRP's Subbasin Plan Logic Path flow chart, attached below, provides a straightforward illustration of the logic path reviewers should look for in subbasin plans. Rick Williams, ISRP chair, developed and has presented this flow chart to subbasin planners around the basin, emphasizing the importance that subbasin plans demonstrate a clear logic path.

<p>Reviewers: The plan’s strategies are generally linked, but an explicit linkage of strategies, objectives, and visions is not included in the plan. The integration section is very general and preliminary.</p> <p>The planners made good use of EDT in identifying limiting factors. The EDT analysis was consistent with other analyses of limiting factors conducted for the subbasin. EDT results were used to rank protection and restoration potential of each reach based on the sum of the of the percentage gains in diversity, productivity, and abundance. This ranking provided the first step in identifying priority areas but was modified where needed by several additional considerations. A concern in this process is the use of the sum of diversity, productivity, and abundance to develop ranking scores. These three parameters are not independent and therefore cannot be summed. For example, abundance is dependent on both productivity and capacity, and diversity is dependent on productivity and abundance.</p>	Yes	
<p><b>III.C.2. Consistency with the Fish and Wildlife Program.</b> Are the Strategies proposed in the subbasin management plan consistent with those adopted in the program? (Council Question 4)</p>		
<p>Reviewers: In general, the plan’s strategies are consistent with the program.</p>	Yes	
<p><b>III.C.3. Consideration of Alternative Management Responses.</b> Does the Strategies Section explain how and why the strategies presented were selected over other alternative strategies (e.g. passive restoration strategies v. intervention strategies)? (Council Question 5)<sup>12</sup></p>		
<p>Reviewers: The plan offers little description of alternative management responses.</p> <p>The integration of artificial and natural production, and the integration of fish production with habitat protection and restoration are largely missing.</p>	Partial	3
<p><b>III.C.4. Prioritization.</b> Does the Strategies Section describe a proposed sequence and prioritization of strategies?</p>		
<p>Reviewers: Objectives and strategies are not explicitly prioritized, but the planners prioritize reaches based on EDT. The planners made good use of EDT in identifying limiting factors. The EDT analysis was consistent with other analyses of limiting factors conducted for the subbasin. EDT results were used to rank protection and restoration potential of each reach based on the sum of the of the percentage gains in diversity, productivity, and abundance. This ranking provided the first step in identifying priority areas but was modified where needed by several additional considerations. A concern in this process is the use of the sum of diversity, productivity, and abundance to develop ranking scores. These three parameters are not independent and therefore cannot be summed. For example, abundance is</p>		2

<sup>12</sup> The 2000 Fish and Wildlife Program directs that the subbasin management plan’s strategy section must include an explanation of how and why the strategies presented were selected over other alternative strategies (e.g. passive restoration strategies v. intervention strategies). The Council does not expect subbasin plans to be structured like an Environmental Impact Statement with a list of alternative actions and descriptions of why each were not recommended. The Council’s primary interest is on why and how a strategy was selected -- the rationale for the selected strategy -- which necessary includes some discussion of alternatives.

dependent on both productivity and capacity, and diversity is dependent on productivity and abundance.		
III.C.5. <b>Additional Assessment Needs.</b> Does the Strategies Section describe, if necessary, additional steps required to compile more complete or detailed assessment?		
Reviewers: The plan’s additional assessment needs are EDT related; the planners should conduct a more comprehensive examination of the additional steps necessary to compile a more complete or detailed assessment.  This subject is dealt with more fully in the RM&E section.	Partial	3
III.C.6. <b>Clean Water Act:</b> Does the management plan describe how the strategies are reflective of and integrated with the water quality management plan and Total Maximum Daily Load schedule within that particular state?		
Reviewers: The plan appears to be consistent with the TMDL process but the TMDL process is not completed.	Yes	2
III.C.7. <b>Endangered Species Act:</b> Recognizing that ESA-based efforts are in various states of completion across the Columbia basin, does the management plan describe how the strategies of the subbasin management plan are reflective of and integrated with the ESA-based goals for listed species within the subbasin?		
Reviewers: The management plan describes the ESA goals for species and how they are related to objectives and strategies.  This plan should include quantitative objectives for gaining the structure and abundances needed to be confident that these species will persist in the basin.  There is a general need for NOAA Fisheries to specify individual recovery targets or other criteria for each subbasin, but the planners may want to consider creating a working hypothesis on what is needed to meet the ESA.	Yes	2

### III.D. Research, Monitoring, and Evaluation

This RME Checklist Section provides the review elements necessary for the ISRP/ISAB to answer *Council Question 6. Plan for Assessing Progress toward Subbasin Goals*. The ISRP/ISAB is asked to determine whether a subbasin plan includes a procedure for assessing how well subbasin objectives are being met over time. This question focuses on accountability and self-assessment, and reflects on the adequacy of the Management Plan’s research, monitoring and evaluation component. This RME component needs to be closely connected to a limiting factors analysis and the biological and environmental objectives. A prioritized RME agenda reflecting the critical uncertainties and limiting factors should be developed and presented with the detail requested below (Technical Guide pp. 14-16). *NOTE: The focus of the RME component should be on the strategy level rather than individual project level.*

Subbasin planners were encouraged to incorporate, or link their RME framework and strategies with the “regional” RM&E strategies being developed by the Pacific Northwest Aquatic Monitoring Partnership and the Columbia Basin-Wide Research, Monitoring and Evaluation (RM&E) Program, a coordinated effort developed by State, Federal, and Tribal entities in response to the Basin-wide Salmon Recovery Strategy 2000 and the FCRPS 2000 Biological Opinion. Products from these regional RME efforts could be used to meet elements of a subbasin plan’s RME section (Technical Guide pp. 14-16), particularly in the areas of monitoring protocols and methodologies. The subbasin plan should also explain how they incorporated existing monitoring guidance from state programs.

III.D.1	<b>Research:</b> Does the RME section of the plan describe a research agenda	(Yes,	Need for
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	with specific conditions and situations identified in the subbasin that will require specific research studies to help resolve management uncertainties? Is the research agenda framed around the relationships between the assessment data and the stated vision, biological objectives, and strategies in describing uncertainties? Does the RME section prioritize research topics that are of critical importance to the subbasin?	(P)artial, (N)o	additional treatment (0-4)
	Reviewers: The plan outlines a general RME strategy. Two specific plans are presented in the appendices by CTUIR and WDFW, but these two plans are not coordinated. The material provided is very general and does not establish clear immediate research priorities. The Walla Walla Technical Work Group shows promise for coordinating RME efforts.	Partial	2
III.D.2	<b>Monitoring Objectives:</b> Does the RME subsection identify what kind of information needs to be collected in order to determine if the plan's vision and objectives are being met? I.e., what indicator variables will be monitored?		
	Reviewers: The RME section identifies information needs and areas of insufficient information in very general terms in the appendices.	Yes	2
III.D.3	<b>Monitoring Indicators:</b> Does the RME subsection identify measurable indicators of physical, chemical, biological, or socioeconomic conditions that may act as environmental signposts by which progress towards achieving the stated vision can be evaluated? E.g., does the RME subsection describe performance standards or quantitative benchmarks for reference conditions against which observations can be compared? Does the plan prioritize which indicators are most needed to answer management questions (include a short list)?		
	Reviewers: The plan does not identify habitat indicators. It does provide quantitative benchmarks for a few strategies, but they are still in drafts.	Partial	3
III.D.4	<b>Data and Information Archive:</b> Does the RME subsection describe an infrastructure to archive relevant data and meta data generated through monitoring efforts in existence for the subbasin (e.g., locally or at a regional Fish and Wildlife Program funded database such as StreamNet, the Fish Passage Center, or DART)? Specifically, does the RME subsection include discussion of quality assurance/quality control (QA/QC), data management and analysis, and data reporting?		
	Reviewers: The plan discusses the subject of establishing an RME infrastructure, recognizes the desirability, and recommends the formation (continuation) of a permanent plan implementation oversight committee to monitor and update the implementation plan and other activities. Data archiving, however, is not listed as one of the responsibilities.	No	3
III.D.5	<b>Coordination and Implementation:</b> Does the RME subsection describe who will collect the information and data collection methods whether collection is done by a subbasin, provincial, state, or a regional entity, or a combination of entities? This should include a description of coordination with regional RME efforts in the basin (Regional Partnership, Action Agencies Research, Monitoring, and Evaluation Plan, etc) with standardization of data methods. It should also include estimates of how much the proposed M and E will cost.		
	Reviewers: The plan provides a template for coordination of data collection and management. It appears that there is redundancy in measurements in some areas. The Walla Walla Technical Working Group and these initial RME plans may help increase coordination and reduce redundancy. The plan attaches two appendices that appear to provide a basis for discussion among the affected parties. The parties do not appear to be far apart.	Partial	2

III.D.6	<p><b>Summary Question. RME Logic Path (Evaluation and Adaptive Management):</b> Does the subbasin plan provide a scientifically supportable procedure for refining the biological objectives as new information becomes available about how fish, wildlife, and the environment interact, and in relationship to how the plans are implemented over time? (Council Question 7) Specifically, does the RME subsection describe a scientifically sound logic path for how to test if the subbasin plan's strategies are helping to reach the stated vision and objectives? I.e., Is the RME agenda adequately framed around the relationships between the assessment data and the stated vision, biological objectives, and strategies in describing uncertainties?</p>	
<p>Reviewers: Generally, the plan acknowledges the need to have an adaptive management loop to refine objectives and strategies. The RME logic path provides an initial attempt to link strategies to objectives through monitoring, but it is still preliminary and fragmented between two plans for monitoring and data management. The mechanism for implementing the loop and coordination is largely absent. The subbasin has a watershed council but it is not clear that all stakeholders are willing to use that administrative vehicle for implementing the plan.</p> <p>The planners acknowledge that a regional RME plan needs to be developed. The list of RME activities is comprehensive and complex and needs to be reworked to make some key observations. This is too complex to develop from the bottom-up, direction from the Council, CBFWA, NOAA at a regional level is needed. The planners would likely agree with this observation.</p>	Partial	3
	<p><b>Overall impression and evaluation of the Management Plan:</b> As needed elaborate on your evaluation of the various Sections enumerated above. If the plan provides additional analysis beyond what is laid out above in the checklist please comment here (e.g., socio-economic descriptions or analysis).</p>	
<p>Reviewers: The plan is a good initial effort overall. The effort to combine aquatic and terrestrial portions of the planning is an especially good aspect of the plan. The primary strength of the Management Plan is as a focus on land management activities to affect habitat characteristics that are likely to promote adequate ecosystem functions. The primary weakness of the management plan is a lack of performance measures for habitat characteristics, lack of agreement among co-managers on abundance and performance of hatchery and natural anadromous fish.</p> <p>This plan acknowledges many of the problems that reviewers have noted elsewhere. For example, in its RME section it specifies the need to "determine if a correlation does exist between focal habitat management conditions and focal species population trends." Also, it reports that they will document the "why, where, how much and whether habitat recovery actions" will produce viability. These are the elements of sound science in these planning efforts.</p> <p>Much of the plan is only in draft form. The plan's fish objectives and strategies must be further developed and integrated with habitat objectives.</p> <p>They defer on bull trout to the recovery plan, but bull trout should be</p>	Partial	

<p>covered in this subbasin plan.</p> <p>A regional approach is followed for developing biological objectives and strategies for terrestrial focal habitats and wildlife species. This seems appropriate, but for plant and animal species unique to the subbasin or with unique attributes within the subbasin, a more local treatment would improve the planning exercise.</p>		
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**General Council Question. Consistency with the Fish and Wildlife Program and its Scientific Foundation**

The Council asks the ISRP to evaluate a subbasin plan for its consistency with the Scientific Foundation adopted as part of the Program and with the requirements for “biological objectives” as described in the program. The core of the Council’s Scientific Foundation is a set of eight Scientific Principles:

1. The abundance, productivity, and diversity of organisms are integrally linked to the characteristics of their ecosystem.
2. Ecosystems are dynamic, resilient and develop over time.
3. Biological systems operate on various spatial and time scales that can be organized hierarchically.
4. Habitats develop, and are maintained, by physical and biological processes.
5. Species play key roles in developing and maintaining ecological conditions.
6. Biological diversity allows ecosystems to persist in the face of environmental variation.
7. Ecological management is adaptive and experimental.
8. Ecosystem function, habitat structure and biological performance are affected by human actions.

*See 2000 Fish and Wildlife Program, pages 14-15 for full detail.*

Questions on consistency with the objectives and strategies section of the Fish and Wildlife Program are incorporated in the table above. Consistency with the Program’s scientific foundation is interwoven throughout the checklist, and this comment table provides reviewers a place to specifically summarize and identify how well the eight principles were addressed.

**Summary comments and evaluation of the subbasin plan’s consistency with the eight principles of the Fish and Wildlife Program’s Scientific Foundation:**

<p>Reviewers: The planners have made a good effort. The plan is consistent with the eight principles, but its lack of analysis of trajectories of ecosystem change and coordinated monitoring and data management program make it unlikely that it would implement the conservation and restoration efforts as effectively as possible.</p> <p>Reviewers would also like to see the plan proceed with quantitative numeric objectives for plants and animals in the basin. Numeric objectives for habitat and the ecosystem should be related to what it will take to assure viable populations. This process will help identify what habitat is needed to produce the needed distribution and abundance across the sub-basin. This plan provides one of the most robust assessments of the outcomes of EDT, other sources of information, and critical comparison of these different sources of assessment. This should be encouraged in other plans.</p> <p>The plan gave inadequate consideration of the dynamic nature of ecosystems and the role of disturbance in shaping aquatic habitats. What are the important ecological functions and processes that must be</p>	<p>Partial</p>	
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<p>restored? It is unclear how the plan will address natural variation both in- and out-of-basin. How is biodiversity protected and restored?</p> <p>The planners should incorporate their stock assessment with risk assessment, management actions, uncertainties, decision analysis, and vision to strengthen the plan.</p> <p>In summary much has already been done, and some additional actions are needed.</p>		
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