

# Wenatchee

## Review Summary

The Wenatchee Subbasin Plan is an important first step for implementing adaptive management in the Wenatchee subbasin. The Plan, however, needs additional development, especially in the Management Plan section, before it can substantially meet the scientific elements of a subbasin plan described in the Council's 2000 Fish and Wildlife Program and Subbasin Planning Technical Guide. It is regrettable that this plan seems to have missed the point of the Council's intent; it is oriented more towards general watershed planning than to the Council's planning process. Because this draft lacks adequate tie-in to the Council's Fish and Wildlife Program, this deficiency might need to be fixed before the Wenatchee subbasin plan can be the basis of a Council amendment.

According to presenters at the ISRP/AB review meeting, the County developed a good working relationship with the Yakama Nation, and the public has had meaningful input on various portions of the plan through the subbasin planning process. The public, however, has not been able to comment on the plan as a whole. As the subbasin planning process continues, these new collaborative relationships will be a valuable asset.

## Assessment

Overall, the Assessment is the strongest and most detailed component of the Plan. It provides a considerable amount of information on the past and current condition of the subbasin and the focal species. It offers a good, useful analysis and synthesis in general terms. Despite several shortcomings, it provides a suitable basis to develop a management plan by a diverse group of stakeholders with various interests. For the aquatic species, there is a good summarization by species, stock, and Assessment Units. The planners use bullets to highlight standard elements of their synthesis, a strategy that is helpful. There is also a useful rating of confidence in the summary. There are good hypothesis statements for all of the Assessment Units, and tables are provided for the focal species, key life stages, degree of effort (on the hypothesis), and level of certainty. The fact that QHA was used for the aquatic assessment, rather than a more data-intensive tool, suggests that the information used to identify limiting factors and develop key findings was not very detailed or complete. There is a clear need to improve the quality of the information in this subbasin.

In addition, the Assessment needs to provide a better analysis of external effects on the productivity and sustainability of fish and wildlife in the subbasin. These issues are raised in the appendix material, but should be expanded on and incorporated in the Assessment. In addition, assessment and management information from other key documents pertaining to the Wenatchee subbasin should be better incorporated in the Plan including the Habitat Conservation Plans of Douglas and Chelan County PUDs, and USFS and ICBEMP reports.

The Assessment should highlight that the Wenatchee is an especially important subbasin in regard to recovery of ESA listed salmonids because of the presence of upper river Chinook, steelhead, and sockeye runs.

## **Inventory**

The Inventory appears to be rather thorough in that it includes numerous seemingly small projects. It only includes, however, minimal summaries of protection and restoration activities covered in the subbasin. More detailed information about relevant plans or past or ongoing management programs should be provided. Those programs, including the Council's Fish and Wildlife Plan, should be explicitly named and described. The authors state initially that they requested such information from the agencies and public, but got little response. Descriptions of these programs are readily available, and the authors could have obtained sufficient information on their own, despite the lack of response from the agencies. The planners relied heavily on information from the Upper Columbia Regional Technical Team. While their local knowledge is correct and useful, this inventory needs more detailed work to become adequate.

Although the Plan's overview mentions the Habitat Conservation Plans of Douglas and Chelan County PUDs in passing, these plans are much more significant in terms of their potential effects on the subbasin than would be suggested by that short reference. The plans call for the PUDs to undertake work to enhance fish populations in the tributaries to the extent that they are unable to meet survival goals for salmonids at the three mainstem dams: Wells, Rocky Reach and Rock Island. The HCPs are multi-governmental agreements that satisfy requirements of numerous federal and state laws, as well as recognizing the treaty fishing rights of affected tribes. This plan should incorporate these HCPs to a greater extent.

## **Management Plan**

The Management Plan does not contain sufficient details to serve as an effective plan and is whittled down to key points provided in outline fashion. It offers lists of some actions to take, but these were often obvious from the start (achieve lower temperature, remove blockages, reduce siltation, etc.). The plan suffers from a mix-up between strategies and objectives. Strategies are a means of attaining sought-after outcomes, objectives *are* sought-after outcomes; the plan lists outcomes as strategies. In other words, the Council's intention was that the process of developing a plan would start with identification of limiting factors, move to objectives aimed at ameliorating them, and then specify strategies and actions that might be undertaken to accomplish the objectives. An unfortunate impression is created by listing strategies first, thereby implying that no decision has been made about what outcome is desired. Moreover, because strategies aren't prioritized, the usefulness of this plan in directing management activities and research with limited resources is compromised.

The RME section provides almost no information on how the efficacy of management actions would be assessed. The Management Plan would benefit by a discussion in the aquatics section of how key uncertainties might be resolved and how effects of new information would be taken into account. The NOAA Fisheries organized RME pilot project on action effectiveness should be incorporated and described better.

For additional detailed comments on the terrestrial approach taken by the Columbia Cascade Province planners, see the ISRP/AB reviews of the Methow and Upper Mid-Columbia Mainstem subbasins. Those comments apply to this plan as well.

# Review Checklist

<p><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.</p>			
<p><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></p>			
<p><b>I. A.1. General Description</b></p>		<p>(Y)es, (P)artial, (N)o</p>	<p>Need for additional treatment (0-4)</p>
I.A.1.1	<p>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)?</p>		
	<p>Reviewers: The plan provides sufficient detail to its general description of the subbasin. Although there is a good general narrative, inclusion of maps early in the document would augment the orientation by providing visual context. There should be a locator map for the Columbia River Basin, a subbasin map, and a map identifying the different Assessment Units. A reader has to wait until section 4.9 of the Assessment section before seeing a subbasin map with the Assessment Units.</p>	<p>Partial</p>	<p>1</p>
I.A.1.2	<p>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>		
	<p>Reviewers: The plan provides a general description of the subbasin’s macro-environment. The text is rather lay oriented, and while this is likely a strength in terms of making the plan usable for the public, adding more tables and figures would increase its usefulness as a scientific document. The plan provides better descriptions in the section on each Assessment Unit.</p>	<p>Yes</p>	<p>1</p>
I.A.1.3	<p>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>		
	<p>Reviewers: The plan provides general information on anthropogenic disturbances in the main text. Most of the information on the subject is found in the Assessment Units. Cross-referencing information on anthropogenic disturbances in the subbasin characteristics section to the more detailed treatment in the Assessment Unit section would help readers locate information.</p>	<p>Yes</p>	<p>1</p>

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: a. have been designated as threatened or endangered under the Federal Endangered Species Act or state equivalents, 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, c. have special ecological importance within the subbasin, d. are recognized by Native American tribes as having special cultural or spiritual significance, or e. are not native to this subbasin?	Yes	0
Reviewers: The plan provides the relevant information, but it is not organized into a single section. Organizing this information into one section would increase this document's usefulness, even if the information were repeated elsewhere in it.			
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?	Partial	2
Reviewers: The plan indicates that 22 rare plant communities are present in the subbasin, but it doesn't specify whether there are any ESA listed plant species. It is unclear whether or not ESA listed plants are present. If they are, then the plan should list them. If they are not, then the plan should say so. The plan does, however, provide a list of noxious weeds.			
<b>I.A.2. Subbasin in the Regional Context</b>		<i>(Y)es, (P)artial, (N)o</i>	<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)?	Partial	1
Reviewers: The plan contrasts land use and vegetation with other subbasins in the province. It seems that the plan fits the province into the greater Columbia River Basin to a larger degree than it does the subbasin. Assessment of the subbasin in the context of the Columbia River Basin will further enhance the plan. Specifically, there needs to be a description of the relative "importance" of species/habitat to a regional context. This addition would help in provincial planning and ESA recovery planning roll up (e.g., the Wenatchee may be a critically important river for spring chinook and sockeye in the Columbia River Basin).			
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.) where this information was available during the planning process?	Yes	0
Reviewers: The assessment adequately describes the subbasin's relationship to the Endangered Species Act.			

<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.)

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)?	Partial	3
<p>Reviewers: The plan includes some mention on the effects of dams within the province, and Appendix C provides a short examination of the hydropower system's effects in the mainstem. Incorporating the information from Appendix C into the body of the text as its own subsection and expanding that information to include a concise examination of mainstem passage, ocean survival, and the effects of external fisheries would increase the usability of the plan. All of these factors have the potential of adversely affecting the subbasin plan insofar as the plan depends upon improved survival or productivity of the focal fish species within the subbasin.</p>			
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)?	Partial	2
<p>Reviewers: The plan included some discussion of the expected population changes over the next several decades and an indication of some pending changes in the Columbia River Province. Insufficient attempt was made, however, to identify potential constraints on species recovery due to future changes in land use or other human impacts. Including this information would strengthen the efficacy of the plan. Including an overview of the possible effects of long-term climate change on the subbasin would also strengthen the plan.</p> <p>Much of the general information on human development in the subbasin was presented in each Assessment Unit section. Collating this information into one section would enhance the plan's readability.</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>		Partial	2
<p>Reviewers: Overall, the Assessment does an excellent job of summarizing circumstances in the Wenatchee Subbasin. The overview is the strongest section of the Wenatchee Subbasin Plan. To further enhance this section, it will be necessary to include a discussion of changes in the mainstem, the effects of fishing outside of the subbasin, and effects of the variable survival of salmonids in the estuary and ocean. These factors will inform the monitoring and evaluation of the effectiveness of the strategies that may be undertaken to increase the numbers of juvenile salmonids or their survival to adulthood. The wildlife section does a better job at evaluating out-of-subbasin effects than the aquatics section by discussing the migratory paths of wildlife species and the uncertainties associated with life history stages outside of the subbasin.</p> <p>The assessment does a good job of offering a general overview that was perhaps properly oriented to the lay reader. There are, however, a few changes that would make it more user-friendly for scientists and lay</p>			

readers, such as including more maps in relevant sections.		
This plan did a good job at demonstrating the Columbia Cascade Province’s relation to the greater Columbia River Basin. Making an equally strong effort at demonstrating the Wenatchee Subbasin’s relationship to the Columbia River Basin and Columbia Cascade Province (Upper Columbia) would further enrich this plan.		

<b>I.B. Species Characterization and Status</b>		
<i>General question: Does the assessment adequately describe the current status of fish and wildlife focal species?</i>		
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.	(Y)es, (P)artial, (N)o	Need for additional treatment (0-4)
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.		
Reviewer: The plan generally did a good job at identifying focal species. The aquatic focal species were the usual salmonids. This mix of species may not be fully representative of complete array of aquatic habitats in the basin and some consideration might have been given to non-salmonids that are more abundant than the lamprey (see programmatic comments on this point). The selection of the terrestrial focal species seems to have been based on the plan’s concentration on focal habitats.	Yes	1
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?		
Reviewers: The plan adequately described the focal aquatic species. The planners treated the focal aquatic species by geographical “assessment units”. To augment the efficacy of the plan, the aquatic species need to be more linked to the TRT/viable populations. An examination of separate aquatic species populations within the subbasins would further enhance the plan.	Partial	4
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)?		

<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.

Reviewers: The assessment's description of the current and historic status of each focal species is mostly a narrative description with some imbedded numbers. It was done qualitatively, and it appears that available numbers have not been presented. If this is the case, the plan would be strengthened by the inclusion of all pertinent numerical data.	Yes	1
I.B.4. Does the assessment describe the population's life history, including identifying distinct life stages?		
Reviewers: The plan adequately describes the populations' life history.	Yes	0
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 provides an historical account of the operation of hatcheries in the subbasin in the appendix by Peven <i>et al.</i> Integrating the information from this appendix into the plan would increase its readability and efficacy.  The plan suggests that competitive interactions between wild and hatchery fish are not considered to be a significant concern. The reasoning behind this claim should be presented. More information on the possible genetic effects of hatchery fish on wild fish also is needed.	Partial	3
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 provides a general discussion of the historic harvest of focal species. No quantitative information is provided, however, on either historic or recent harvest levels. Including an examination of ocean harvest is necessary to augment the usefulness of the plan. Some of the information regarding harvest was found in the hatchery appendices. Integrating this information into the body of the text would be helpful.	Partial	3
<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: The plan provides a good, general narrative on species characterization. Adding more detail and integrating the appended material would improve the plan. Including elements of the species that reflect the public's interest in them would also augment the plan. For instance, with salmon and steelhead, the magnitude of the recreational and tribal fisheries in recent years would provide an indication of public interest. This information is readily available.	Partial	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>		<i>(Y)es, (P)artial, (N)o</i>	<i>Need for additional treatment (0-4)</i>
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: Although the assessment describes historic and current conditions fairly well, the plan does not adequately describe or consider extensive assessments such as ICBEMP and others done by the USFS that include worthwhile information for the Wenatchee subbasin. For example, the Forest Service has maps identifying alluvial plains and other habitat types that would be very useful to this assessment.</p> <p>The QHA assessment process was used to provide an indication of both the change in conditions from historic ones and a potential for restoration. No projections of future population or habitat descriptions, however, were included. Adding this information would increase the efficacy and utility of the plan.</p>		Partial	3
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: The assessment uses key habitats (terrestrial) or Assessment Units (aquatic) that are not 6<sup>th</sup> field HUCs. The plan used QHA to evaluate aquatic conditions on assessment units that were larger than 6<sup>th</sup> code HUCs, ones that were closer to 5<sup>th</sup> code. The units were probably small enough, however, given the uncertain nature of the assessment tool being applied.</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 plan provides an appendix by Bioanalysts (2004) that offers an excellent overview of the effects of the hydroelectric system on wild fish. This appendix was not given a citation in the body of the plan. This information should be incorporated directly into the Assessment and used to develop the Management Plan. For example, the strategies in the</p>		Partial	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.

<p>subbasin to increase abundance, survival, or other life history characteristics of the focal species ought to discuss the potential effects of the hydroelectric system and other external factors on the monitoring and evaluation phases.</p> <p>The plan would be further enriched by consideration of the out-of-basin effects for migratory birds.</p>			
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: There is no analysis of external effects on the productivity and sustainability of fish and wildlife in the subbasin included in the assessment. These issues are raised in the appendix material. Including a thorough and detailed examination of these issues in the assessment would help maximize the efficacy and utility of the plan.</p>		No	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 plan provides general information on the specific habitat requirements of the focal species. There is no true assessment of the capacity of the current environment, or a restored environment, to support the long-term viability of any of the focal species. Adding such an assessment and providing information on the life stages of fish outside of the subbasin would strengthen this plan.</p>		Partial	2
	<p><b>Summary comments and evaluation on the Environmental Conditions Section:</b> Does the assessment adequately describe the effect of the environment on fish and wildlife populations?</p>		
<p>Reviewers: The plan's environmental conditions section worked pretty well as a general narrative. The data included in this section are too few for a scientific document. As was noted above, there are USFS and ICBMP reports that are up-to-date and could inform this Assessment. Including a discussion of the out-of-subbasin effects on fish and migratory birds would bolster it. Integrating information that is present in the hydropower appendix and a better discussion of the ocean/estuary would help the discussion on out-of-basin effects.</p>		Partial	3
<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>

<b>I.D.1. Inter-species Relationships</b>		
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?		
Reviewers: The discussion of inter-species relationships is general, but adequate for planning purposes. There is some discussion of competitive and predator-prey interactions among species in the subbasin. Providing more consideration to hatchery-wild fish interactions would bolster the plan.	Yes	2
<b>I.D.2. Processes and Functions</b>		
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?		
Reviewers: The descriptions of key ecological functions for species within the subbasin were general, but adequate for planning. These interactions were only provided for a few species, mostly fish, and they were not examined very much for wildlife. A more complete examination of processes and functions for all species would improve this plan.	Partial	2

<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.		
Reviewers: The plan included good text descriptions by “key habitats” for terrestrial species and “assessment units” for aquatic species. The plan offered some discussion of historic factors contributing to the decline of the focal species.  The identification of the current factors limiting population recovery was generic. All told, although this section is general, it is still detailed enough to inform the key findings and prioritized strategies.	Partial	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 text for key findings is general and provides few details. There was an indication of the level of confidence the planners had in each of the key findings, but it is not always clear how the level of confidence was justified. The fact that QHA was used for the aquatic assessment, rather than a more data-intensive tool, suggests that the information on which the key findings were based was not very detailed. Although there is a clear need to improve the quality of the information in this subbasin, the synthesis presented is adequate for developing the Management Plan.</p>	<p>Yes</p>	<p>1</p>
<p><b>I.E.3. Subbasin-wide Key Assumptions/Uncertainties (“Working Hypothesis”)</b></p>		
<p>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?</p>		
<p>Reviewers: The plan’s key assumptions are pretty general. It included some mention of data gaps for each assessment unit, but provided no mention of the uncertainties. As noted above, some indication of the quality of the input information to the QHA process would be very useful. The document describing the QHA process was not provided. Adding this document would increase the utility of the plan.</p>	<p>Partial</p>	<p>2</p>
	<p><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).</p>	
<p>Reviewers: The Assessment provides a considerable amount of information on the past and current condition of the subbasin and on the focal species. It offers a good, useful analysis and synthesis in general terms, and provides a suitable basis to develop a management plan by a diverse group of interests. For the aquatic species, there was a good assessment and summarization by species/stock and Assessment Units. The planners used bullets to highlight standard elements of their synthesis, which was helpful. There was also a useful rating of confidence in the summary. There were good hypothesis statements by Assessment Unit, and tables were provided for the focal species, key life stages, degree of effort (on the hypothesis), and level of certainty. Integrating the appendix material in the text and adding a socio-economic analysis to the assessment would increase the plan’s efficacy.</p> <p>The Assessment could also be improved by referring to information that reflects the public’s interest in the subbasin’s resources. Records of recreational fishing are one example. In a survey of residents conducted by Chelan County in the Upper Wenatchee River in 1986, one of the</p>	<p>Partial</p>	<p>2</p>

questions asked was, "Would you be willing to take the needs of wildlife into account in planning for use of your property?" Over 90% (91.6%) responded "yes."		
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**II. The Inventory**  
*(This checklist section was developed from pages 11-12 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 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).*

<b>II.A. Existing Protection</b>	(Y)es, (P)artial, (N)o	Need for additional treatment (0-4)
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II.A.1	Does the inventory identify areas with protections through stream buffers, municipal or county ordinances, conservation designations, or water resources protection?	
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Reviewers: The plan lacks specifics of who, what, when, where. Adding these details would increase the efficacy of the plan. The Lake Chelan Subbasin Plan's Inventory provides a table that is a good example for addressing the elements of an inventory.	Partial	2
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II.A.2	Does the inventory assess the adequacy of protections for fish, wildlife, and ecosystem resources?	
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Reviewers: The plan provides short statements regarding the need for each Assessment Unit and species/stock. Much of it appears to have been cut-and-pasted. To improve the inventory, the USFS plans should be described in more detail (salvage logging plans, erosion control, campground and roadway relocation, etc.).	Partial	2
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**II.B. Existing Plans**

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?	
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Reviewers: The plan's overview mentions the Habitat Conservation Plans of Douglas and Chelan County PUDs in passing, but these plans are much more significant in terms of their potential effects on the subbasin than would be suggested by that short reference. The plans call for the PUDs to undertake work to enhance fish populations in the tributaries to the extent that they are unable to meet survival goals for salmonids at the three mainstem dams: Wells, Rocky Reach and Rock Island. The HCPs are multi-governmental agreements that satisfy requirements of numerous federal and state laws, as well as recognizing the treaty fishing rights of affected tribes. This plan should incorporate these HCPs to a greater extent.	Partial	2
The Council's Fish and Wildlife Plan was not considered the main focus of this subbasin plan. Integrating the Council's program would increase the efficacy of this plan. As has been stated before, this plan should take		

recent USFS assessments into account.			
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: The plan did not identify or analyze any potential gaps. Including a gap analysis would help maximize the efficacy and utility of this plan.		Partial	3
<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: Although this plan provides one-liners to identify ongoing projects, it offers no details on who, what, when, and where. For aquatic species, ongoing projects were described well in each Assessment Unit section. Some of the phrases used in this section need more explanation. For instance what is a “channel migration zone study?” Clarifying details would improve the plan.		Partial	2
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: This plan provides general information about management programs by topic. Details are lacking on authorization of the projects. Adding a table that lists the projects and provides all of the information requested in the question above would enhance the plan’s utility.		Partial	3
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 limiting factors or ecological processes are identified in a general way by topic, rather than by program or project. The limiting factors addressed by each program or project are not identified. Including more specific information would improve the plan.		Partial	2
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		
Reviewers: The plan does not list management programs or projects; it describes them generally by topic. There is little indication of the adequacy of ongoing management programs.		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?		

<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?

<p>Reviewers: The plan assesses existing activities in a very general manner according to topic, rather than specific to projects. As a result, gaps cannot be defined. The existing activities are not described in terms of recovery or other goals. Providing a project specific analysis that assesses existing plans would enrich this subbasin plan.</p>	<p>Partial</p>	<p>3</p>
<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>		
<p>Reviewers: Although the Inventory appears to be rather thorough because it includes numerous seemingly small projects, it actually only includes minimal summaries of protection and restoration activities in the subbasin. More detailed information about relevant plans or past or ongoing management programs or projects should be provided, especially the Habitat Conservation Plans of Douglas and Chelan County PUDs, and USFS assessments.</p> <p>Programs, including the Council's Fish and Wildlife Plan, should be explicitly named and described. The authors state initially that they requested such information from the agencies and public, but got little response. Descriptions of these programs are readily available and the authors could have obtained sufficient information despite the lack of response from the agencies. The planners relied heavily on information from the Upper Columbia Regional Technical Team. While their local knowledge is correct and useful, this inventory needs more work to become adequate.</p>	<p>Partial</p>	<p>3</p>

<p><b>III. The Management Plan</b>  <i>(Derived from pages 12-16 of the Technical Guide.)</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 management plan.</p> <p>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).</p>		
<p><b>III.A. The Vision for the Subbasin</b>  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):</p>	<p>(Y)es,  (P)artial,  (N)o</p>	<p>Need for  additional  treatment  (0-4)</p>

Reviewers: The plan provides an adequate general vision. The vision statement is more people oriented than resource oriented and does not mention the Council's Fish and Wildlife Program, which is the reason for the subbasin planning procedure. Instead, the vision statement puts the emphasis on ESA and Clean Water Act. The Management Plan, however, begins correctly with the Fish and Wildlife Program. This suggests that there is a lack of linkage between the Vision and the Management Plan.	Yes	0
<b>III.B. Biological Objectives</b>		
Does the Biological Objectives Section of the Management Plan describe physical and biological changes within the subbasin needed to achieve the vision?		
Reviewers: Although the plan's objectives describe general types of degradation that have occurred in the various Assessment Units, they are not very specific. The terrestrial plan uses an outline format for habitat and biological objectives and strategies, but provides no discussion. More discussion is provided for the aquatic biological objectives. The presentation of strategies in relationship to objectives was not logical. There appears to be confusion in this plan between "strategies" and "objectives." <i>Objectives</i> should identify the hoped-for outcome, while <i>strategies</i> should identify the actions intended to accomplish the objectives.	Partial	2
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>		
Reviewers: The biological objectives are consistent with the Fish and Wildlife Plan, although the Fish and Wildlife Plan is not mentioned.	Yes	1
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.)		
Reviewers: The presentation of strategies in relationship to the objectives was not logical. It is very difficult to determine whether or not the biological objectives are based on the Assessment in this document. This inadequate presentation would make it difficult for a project sponsor to effectively use the plan. The planners should be able to present a more workable logic path by following the guidelines presented in the Council's Technical Guide.	Partial	3
III.B.3. Where possible, are the biological objectives empirically measurable and based on an explicit scientific rationale; i.e., quantitative with measurable outcomes?		
Reviewers: Most of the biological objectives are qualitative, although some objectives are measurable. Unfortunately, some of the measurable outcomes for aquatic habitat may not be appropriate. It appears that the planners inserted a table of PFC for aquatic systems without any consideration about the biological characteristics of the subbasin or variation introduced by natural disturbances. A more realistic framing of the desired channel	Partial	4

<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.

conditions, one that explicitly considers natural disturbances and spatial variation in watershed characteristics, should be developed. See the ISAB Tributary Habitat report (2003) for a thorough discussion of this concern. The planners have not provided metrics for aquatic species (fish numbers). The wildlife section provided good detail on plans for monitoring and evaluation.		
III.B.4. Are biological objectives identified for both the short and long-term?		
Reviewers: The long-term biological objectives are not included. The aquatic section offers near-term opportunities with the caveat that this is not a prioritization. Including a more detailed identification of both near and long-term strategies would strengthen the utility of the plan.	Partial	3
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: Although the biological objectives appear to be complementary to tribal, state and federal land or water quality management agencies in the subbasin, the plan does not state this explicitly.	Yes	2
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 plan includes a discussion of the CWA.	Partial	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 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 plan does a thorough job of spelling out the criteria that enter into listing of a species under the ESA: abundance, population growth, spatial structure of the population, and life history diversity. Certain strategies are identified on page 30 that should affect the characteristics of listed species in the subbasin. These species are identified in the assessment and linked to the habitats they require. Although the plan includes very general objectives to increase the representation of these habitat types, there is no detailed explanation of how the plan will contribute to attaining ESA objectives. The plan does not make it clear whether NOAA Fisheries have numbers or interim numbers for delisting ESA listed species; their status	Partial	2

<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).

<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).

should be clarified. Explicitly mentioning how the subbasin management plan is reflective of ESA objectives will enrich this portion of the plan.		
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 plan does not present any discussion of disagreements or alternative objectives.	na	na

<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>		
Reviewers: The elements of the plan are presented in outline form with little explanation. Although they appear to be related, they are not explicitly demonstrated to be so. Editorial work that clarifies the internal consistency of the plan would help to maximize this plan's utility.	Partial	3
III.C.2. <b>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)		
Reviewers: Although for the most part the strategies appear to be consistent with the Council's Fish and Wildlife Program, they are not explicitly linked to the Council's Fish and Wildlife Program.	Yes	1
III.C.3. <b>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>		

<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.

<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.

Reviewers: The plan presents generic strategies in a list. There is no indication that alternative approaches to these strategies were considered. The clarity of the strategy section suffers from a confusion of presentation, terminology, and logic.	Partial	3
III.C.4. <b>Prioritization.</b> Does the Strategies Section describe a proposed sequence and prioritization of strategies?		
Reviewers: The plan has explicitly avoided prioritization; consequently, the usability of the plan in directing management actions with limited resources is compromised.	No	4
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 text generally stated its information/assessment needs and identified data gaps for each assessment unit. No priorities, however, were given to the gaps, nor were there any indications of how this information will be collected. Being more specific and prioritizing additional assessment needs would help maximize the utility of the plan.	Partial	2
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 CWA was not explicitly discussed, although the state of Washington's water quality monitoring and reporting is cited. An explicit discussion of the CWA would improve this plan.	Partial	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 plan lays out criteria that enter into listing and delisting. There is nothing specific, however, about how the plan would contribute to ESA goals for species under the jurisdiction of the USFWS or NOAA. The plan is mostly habitat-based, for both aquatic and terrestrial components. Explicitly referencing the ESA would clarify this portion of the plan and increase the plan's overall efficacy.	Partial	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	<p><b>Research:</b> Does the RME section of the plan describe a research agenda 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>	<p>(Y)es, (P)artial, (N)o</p>	<p><i>Need for additional treatment (0-4)</i></p>
<p>Reviewers: In general, the RME section is a generic description of experimental design and data analysis. Much of the RME information appeared in Appendix B. There is nothing specific about monitoring and evaluation for the Wenatchee subbasin and no tie to the assessment or management plan. It appears as though the RME section was imported from another document and not written specifically for this plan.</p> <p>The wildlife section of the plan does well in terms of laying out a general research agenda. The fisheries section is deficient, because it includes no specific discussion of research. The word "study" appears only once in the fisheries section, and that is in the context of a U.S. Fish and Wildlife Study that is recommended for continuation. On the other hand, each objective and strategy is associated with a monitoring component in which some evaluation is implied. There are no details given, however, on study designs, such as are given in the wildlife section.</p>		<p>Partial</p>	<p>3</p>
III.D.2	<p><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?</p>		

<p>Reviewers: Although data gaps are identified for each assessment unit, the manner in which these gaps would be addressed is not included in the RME section. Some indication of needed information is included in the descriptions of the objectives. Describing the process by which the data gaps were identified would improve this plan. Some indication of how this effort would be coordinated with the BPA-funded pilot study of the Wenatchee watershed should be included.</p>	<p>Partial</p>	<p>3</p>
<p>III.D.3</p>	<p><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)?</p>	
<p>Reviewers: The terrestrial section adequately identifies specific protocols for measuring them. The aquatic section is not as specific. It appears that the planners have taken the standards from the old NOAA PFC tables. These are not ecologically sound values. Although a section of the ISAB Tributary Habitat report (ISAB 2003-2: <a href="http://www.nwcouncil.org/library/isab/isab2003-2.htm">www.nwcouncil.org/library/isab/isab2003-2.htm</a>) was devoted to establishment of standards, it appears that the aquatic planners were not familiar with this information. Conversely, the standards for wildlife do recognize the desirability of variation in conditions across the landscape and provide goals that reflect this understanding. Adding information such as this to the aquatic goal section would augment the plan.</p>	<p>Partial</p>	<p>2</p>
<p>III.D.4</p>	<p><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?</p>	
<p>Reviewers: The plan did not adequately address this issue.</p>		
<p>III.D.5</p>	<p><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.</p>	
<p>Reviewers: The RME section generally described coordination and implementation. No detailed information was included. There was little detail provided about the research effort (action effectiveness pilot study) being led by NOAA in the Wenatchee as part of the RME plan that was reviewed last year. This effort should form the backbone for research and monitoring efforts in the subbasin.</p>	<p>No</p>	<p>3</p>
<p>III.D.6</p>	<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</p>	

	objectives, and strategies in describing uncertainties?		Partial	2
<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: Although the logic path is not described explicitly, it is there. Offering a clearly marked, explicit logic path would improve the plan. The quality of the information used in the QHA assessment is not provided and no indication of how data gaps will be addressed is provided. The phrase "adaptive management" was used, but no indication regarding how this process would be applied is provided.</p> <p>A critical RME requirement for this plan is to describe how information will be collected and evaluated (e.g., relative numbers of hatchery and wild fish) to evaluate potential interaction between hatchery and wild fish.</p>		Partial	3
<p>Reviewers: The Management Plan is whittled down to key points provided in outline fashion. It offers lists of some actions to take, but these were often obvious from the start (achieve lower temperature, remove blockages, reduce siltation, etc.). There was no prioritization of needed work. This section of the plan also is flawed due to uncertainty of the quality of the QHA data. The RME section provides almost no information on how the efficacy of management actions would be assessed. Providing this information would strengthen the plan.</p> <p>The management plan would benefit by a discussion in the fisheries section of how key uncertainties might be resolved and how effects of new information would be taken into account.</p> <p>The text includes some typos that should be corrected before adoption by the Council. Some citations in the text are not adequate for identifying the referred to document. The reference to U.S. v Oregon and Washington is abbreviated to U.S. v Oregon, which could lead to confusion. Actually, <i>Sohappy v Smith</i> was enlarged when the United States entered and the case became U.S. v Oregon. Later, Judge Belloni joined Washington as a party and the case became U.S. v Oregon and Washington, which is its present proper name.</p>				

**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: Although the plan was mostly consistent with the eight principles, this consistency was only demonstrated implicitly. Adding a section to the plan that succinctly demonstrates the consistency between this plan and the Council’s Fish and Wildlife Plan would augment this subbasin plan. Principles 4 and 7 warrant further attention by the planners. The plan should increase its attention to setting restoration priorities to evaluate its effectiveness in achieving the goals of the eight principles.</p>	<p>Partial</p>	<p>2</p>
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