Lower Snake Mainstem

Review Summary

The Lower Snake Mainstem 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 are not as strong as aquatic assessments, and follow the template and process of other subbasins in this region, referring almost entirely to Ashley and Stoval (2004) and a southeast Washington framework. A regional approach to many of the wildlife species appears to be 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.

Of key importance, the plan specifically omits consideration of the mainstem itself as habitat or as a migration corridor for fishes that are likewise not considered. The planners conclude that mainstem problems need to be addressed at a regional level and not in a subbasin plan. This conclusion leaves this part of the Snake River (Hells Canyon and Lower Snake River Mainstem Subbasin) out of the subbasin planning process, a result that ought to be unacceptable to the Council.

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

Assessment

The functioning of this subbasin is dependent upon operations of the Lower Snake River dams, but that part of the subbasin is not included in this plan. Beyond that, the assessment for steelhead in the tributaries is thorough. In fact, the planners had to conclude that the steelhead (primary focal species) probably cannot meet the requirements for viability. It seems likely that steelhead in these small basins are peripheral populations that occasionally go extinct as a result of stochastic processes. Perhaps bull trout or some other species is a more appropriate focal species here.

The plan calls attention to the need to verify inputs used for the EDT analysis. Nevertheless, this is a very good Assessment. Future conditions should be assessed more rigorously.

Like the other plans in this set, the use of EDT results to develop aquatic objectives and strategies needs to be better structured, re-examined, and validated. In addition, the research, monitoring and evaluation (RME) plan needs to be developed.

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 unsuccessful or successful and explaining why. Review comments for the terrestrial focal habitats from the other subbasins in this set (Walla Walla, Tucannon, and Asotin) apply to the Lower Snake Mainstem Subbasin.

Management Plan
Reviewers are concerned that the subbasin plan does not include consideration of the mainstem Snake River.

For steelhead in the tributaries, this plan is highly responsive to the Council outline and requirements. If the overall working hypothesis - "fix it, or partially fix it, and they will come" - can be supported by sound scientific analyses, this would be, for the most part, a good plan for the subbasin. The plan does an especially good job of identifying realistic and useful strategies. It also identifies the importance of developing information regarding the critical quantitative needs of a species to persist. The terrestrial component, especially, attempts to address the need to understand and protect diversity in the ecosystem.

The choice of steelhead as the primary aquatic focal species in these basins may not be the best choice, because the Assessment shows they are likely not viable. The planners began development of a strategy to integrate the aquatic and terrestrial components of the plan - they are encouraged to continue the effort.

Reviewers would also like to see the plan proceed with quantitative numeric objectives for plants and animals in the basin. Numerical 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 species populations across the subbasin.

Further prioritization of strategies and completion of a research, monitoring, and evaluation (RME) plan would improve the Management Plan.

Review Checklist

I. The Subbasin Assessment

(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.

I. A. Subbasin Overview

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. A.1. General Description		*(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.		Yes	0
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)?		
Reviewers: The Assessment provides a general description of the subbasin's physical environment.		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)?		
Reviewers: There is no description of the mainstem per se. The focus is upon the tributaries to the Snake River in this reach of the mainstem. This omission leaves this part of the Snake River mainstem (Hells Canyon subbasin and lower Snake River subbasin) out of the subbasin planning process.		Partial	3
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?		
Reviewers: Adequate.		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?		
Reviewers: Tables to include plants of significance to tribal culture and state and federally listed plant species are included, but the discussion of these plants is not adequate. The exact location of plants that are of special significance to American Indians need not be given.		Partial	
I.A.2. Subbasin in the Regional Context		*(Y)es, (P)artial, (N)o*	*Need for additional treatment (0-4)*

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)?		
Reviewers: The description of the subbasin within a regional context and the important ecological functions of the subbasin within the region are described adequately. As noted elsewhere, however, the mainstem Snake River in this subbasin is not included in the plan.		Yes	
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.[1]) where this information was available during the planning process?		
Reviewers: There appears to be a general assumption in this plan that if the needs of steelhead can be met then the needs of species such as bull trout will also be met. This assumption needs further justification in the plan.		Partial	1
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)?		
Reviewers: The plan includes detailed discussion of external environmental conditions for steelhead. Planners acknowledged that terrestrial focal species fortunes are dependent on environmental conditions outside the subbasin.		Yes	0
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)?		
Reviewers: The focus of the plan is on the next ten to fifteen years. Discussion of the potential effects of changing climate on aquatic focal species and terrestrial focal habitat is included. There is no discussion of further population growth in the subbasin. Considering that much of the subbasin is in private ownership, additional treatment of human population growth would be helpful.		Partial	2
	Summary comments and evaluation on the Subbasin Overview: Does the assessment provide the geographical, demographical, and environmental context for fish and wildlife resources in this subbasin?		
Reviewers: The Assessment provides a general context for fish and wildlife resources in the subbasin.		Yes	

[1] 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.B. Species Characterization and Status *General question: Does the assessment adequately describe the current status of fish and wildlife focal species?* 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,[2] and c) cultural significance.		
Reviewers: A series of terrestrial focal species is identified, and the steelhead is the single aquatic focal species chosen. The Assessment would be much improved by considering the assemblage structure of species.	Yes	
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: Viability requirements of steelhead are discussed and it is concluded that all elements are not likely to be met by these sub-populations. Steelhead populations are likely dependent on occasional reproductive input by individuals from other sub-populations in the ESU. Viability requirements of terrestrial species are not described.	Yes	1
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 current and historic population status of steelhead is not described. Some trend data for terrestrial species are included.	Yes	0
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 steelhead, and terrestrial species.	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 could be improved by a more detailed examination of the effects of artificial production on genetic structure.	Yes	

[2] 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.

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 has a detailed assessment of steelhead harvest, and the harvest of terrestrial game animals is considered. There is little information given on the harvest of terrestrial species.	Yes	
Summary comments and evaluation on the Species Characterization and Status Subsection: Does the assessment adequately describe the current status of fish and wildlife focal species?		
Reviewers: Focal species' characterization and status are adequately addressed. The Assessment could be improved by determination of the significance of these data.	Yes	

I.C. Environmental Conditions *General question to be addressed: Does the assessment adequately describe the effect of the environment on fish and wildlife populations?*		
I.C.1. Environmental Conditions within the Subbasin	*(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,[3] b) potential,[4] c) future/no new action,[5] 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?		
Reviewers: The plan offers an adequate presentation of historic, current, and properly functioning environmental conditions by subunit (subwatershed). The analysis of a no new action scenario is partially done and it ties to concerns about the inadequate coverage of demographic/human use changes.	Partial	2
I.C.1.2 Does the assessment classify 6th 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?		
Reviewers: Reach assessment is used.	Yes	0
I.C.2. Out-of-Subbasin Effects and Assumptions		
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.		

[3] The historic condition refers to the state of the environment at the time of European settlement, or 1850.
[4] 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.
[5] The future/no new action condition is the state of the environment in 2050 assuming that current trends and current management continues.

Reviewers: The Assessment discusses out-of-subbasin issues related to the mainstem Columbia and ocean conditions. The plan also discusses out-of-subbasin effects on wildlife species. Out-of-subbasin effects are treated through the use of EDT, allowing for estimates of what magnitudes of population increases can be achieved through 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 salmonid life history diversity.		Yes	
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?		
Reviewers: Assumption about the impact of external effects only established for steelhead. There is not a sufficient explanation of how out-of-subbasin effects are quantitatively treated in the EDT analysis.			

I.C.3. Environment / Population Relationships

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.

Reviewers: Optimal conditions are hard to define here; in fact, planners conclude that steelhead, the primary focal species, is not viable in these streams.		Yes	2
	Summary comments and evaluation on the Environmental Conditions Section: Does the assessment adequately describe the effect of the environment on fish and wildlife populations?		
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 species within subwatersheds. Much of the Assessment is based on assumptions regarding benefits of proposed actions with subsequent assessment of these effects.		Yes	

I.D. Ecological Relationships *Question to be addressed: Does the assessment describe the key inter-species relationships and the key functional relationships?*	*(Y)es, (P)artial, (N)o*	*Need for additional treatment (0-4)*

I.D.1. Inter-species Relationships

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 plan proposes a unique approach to integrate the aquatic and terrestrial components of the subbasin and strategies that may be undertaken. Seventy-five species are identified that consume salmon at some point in their lifecycle. 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. The plan does not appear to consider the effects of exotic or invading fish.	Partial	3

I.D.2. Processes and Functions

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 plan primarily used EDT as the tool to identify aquatic 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, mostly functions associated with terrestrial species. Integrating ecological functions, terrestrial and aquatic ecosystems, and developing an integrated working hypothesis is discussed. More consideration of disturbance regimes and how they shape habitat and contribute to natural variation would improve the plan.	Partial	

I.E. Interpretation and Synthesis / Limiting Factors and Conditions

I.E.1. Limiting Factors and Conditions

Does the assessment describe:
1) Historic factors or conditions that led to the decline of each focal species and of ecological functions and processes?

2) Current key factors or conditions within and without the subbasin that inhibit populations and ecological processes and functions relative to their potential.

Reviewers: Populations declines are attributed to general categories of environmental change. The plan uses EDT to summarize limiting factors for aquatic resources 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. 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.	Yes	

I.E.2. Key Findings

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?		
Reviewers: Key findings are generally provided. The assumption is that the restoration that can be accomplished will produce significant increases in abundance.	Yes	
I.E.3. Subbasin-wide Key Assumptions/Uncertainties ("Working Hypothesis") 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 that are relied upon to make these assumptions.	Yes	1
Overall impression and evaluation of the Assessment: 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 Reviewers: (e.g., socio-economic descriptions or analysis).		
Reviewers: The functioning of this subbasin is dependent upon operations of the Lower Snake River dams, but that part of the subbasin is not included in this plan. That stated, the Assessment for steelhead in the tributaries is thorough. In fact, the planners had to conclude that the steelhead (primary focal species) probably cannot meet the requirements for viability. It seems likely that steelhead in these small basins are peripheral populations that occasionally go extinct as a result of stochastic processes. Perhaps bull trout or some other species is a more appropriate focal species here. The plan calls attention to the need to verify inputs used for the EDT analysis. Nevertheless, this is a very good Assessment. Future conditions should be assessed more rigorously.		

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).

II.A. Existing Protection	*(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: Adequate.		Yes	0
II.A.2	Does the inventory assess the adequacy of protections for fish, wildlife, and ecosystem resources?		
Reviewers: Planners tried to assess the percentage of habitat presently classed as "protected" and completed a gap analysis for terrestrial habitat. The adequacy of this protection is missing and obviously is difficult without specification of the viability needs for each species.			
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?		
Reviewers: Adequate.		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: Adequate. The plan offers an extensive list of existing protections, but it does not provide an evident discussion of the adequacy of existing protections.		Yes	1
II.C. Management Programs / Restoration and Coordination Projects 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?[6]		
Reviewers: Many ongoing programs and projects are identified.		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: Adequate.		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: Adequate.		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		
Reviewers: The Inventory includes some discussion of improved conditions but no data to show benefit to fish and wildlife.		Partial	

[6] 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?

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 plan uses EDT to estimate conditions and identify where "potential" is unfulfilled in the aquatic portion of system. The plan describes an intention to seek more information to assess potential.		Partial	1
	Overall impression and evaluation of the Inventory: 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 Reviewers: (e.g., socio-economic descriptions or analysis).		
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. Review comments for the terrestrial focal habitats from the other subbasins in this set (Walla Walla, Tucannon, and Asotin) apply to the Lower Snake Mainstem Subbasin.		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*	*Need for additional treatment (0-4)*
Reviewers: The vision statement is very broad, but is adequate for planning purposes.	Yes	0

III.B. Biological Objectives

Does the Biological Objectives Section of the Management Plan describe physical and biological changes within the subbasin needed to achieve the vision?

Reviewers: A regional approach is followed for development of 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.	Partial	

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.		
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.[7]		
Reviewers: 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 this subbasin plan are aimed at habitat changes, with the assumption that these changes will enhance focal species' populations. Reviewers would also like to see the plan proceed with quantitative numeric objectives for plants and animals in the basin. Numerical 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 populations across the subbasin.	Yes	2
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 plan's biological objectives appear to be the result of the subbasin Assessment. Fish information from the Assessment is not incorporated into the biological objectives.	Partial	
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: The biological objectives are adequately measurable. Biological objectives should 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 steelhead developed in other programming efforts.	Yes	1
III.B.4. Are biological objectives identified for both the short and long-term?		
Reviewers: Strategies include actions to provide for benefits in both the short and long-term. Generally, planners give preference to actions that result in long-term benefit.		
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. It is not clear if the plan has been thoroughly reviewed by all stakeholders	Yes	

[7] 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.

III.B.6. *Clean Water Act*: 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?[8]		
Reviewers: Adequate.	Yes	
III.B.7. *Endangered Species Act*: 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?[9]		
Reviewers: Elements of viability are described for steelhead, but quantitative objectives for viability need to be developed.		2
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: There does not appear to be full agreement on the strategy to acquire land or water rights, but this is mentioned in the text, as a matter that requires further attention.	Yes	0

III. C. Strategies[10]
III.C.1. **Internal Consistency of the Plan.** 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)[11]

[8] *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).

[9] 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.

[10] *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.

[11] 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.

Reviewers: Linkage is well developed, but an explicit linkage of strategies to viability of fish populations in the assessment and vision is not included in the plan.	Yes	
III.C.2. **Consistency with the Fish and Wildlife Program.** Are the Strategies proposed in the subbasin management plan consistent with those adopted in the program? (Council Question 4)		
Reviewers: The plan's strategies are consistent with the program.	Yes	
III.C.3. **Consideration of Alternative Management Responses.** 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)[12]		
Reviewers: Alternatives are discussed and described. Planners acknowledge that data often are not available to compare alternative actions. Planners use expert opinion to choose objectives that are concluded to be of greatest potential benefit among available alternatives. They acknowledge that passive restoration alternatives can take many years to produce the desired benefit.	Partial	3
III.C.4. **Prioritization.** Does the Strategies Section describe a proposed sequence and prioritization of strategies?		
Reviewers: The plan says priorities will be set later. On the other hand, the EDT process does identify actions most likely to produce results by reach. EDT results are used to rank the protection and restoration potential of each reach for aquatics. Terrestrial actions included four primary habitat types; strategies are not prioritized except by expert opinion. Criteria are outlined that could be used to develop priority by subsequent users.	Partial	2
III.C.5. **Additional Assessment Needs.** Does the Strategies Section describe, if necessary, additional steps required to compile more complete or detailed assessment?		
Reviewers: Planners conclude that additional assessment needs for aquatics are EDT related, and the description of associations with habitat for terrestrial species is needed.	Partial	2
III.C.6. **Clean Water Act:** 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: Adequate.	Yes	0
III.C.7. **Endangered Species Act:** 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?		

[12] 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 needs to include quantitative objectives for gaining the structure and abundances needed to be confident that these species will persist in the basin, or in the case of anadromous species, how these populations can contribute to the larger spatial scale of the ESU. The planners should ascertain what structure in this basin will yield the lowest probability or frequency of extinction?		

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	**Research:** 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?	*(Y)es, (P)artial, (N)o*	*Need for additional treatment (0-4)*
Reviewers: The plan outlines an interim RME strategy. Planners point to the components of viability as critical data needs. Two specific plans are presented in the appendices, but these two plans are not coordinated. The material provided is very general and does not establish clear immediate research priorities.			
III.D.2	**Monitoring Objectives:** 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.		Yes	
III.D.3	**Monitoring Indicators:** 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: Planners prepared an interim plan that includes specification of species abundance, diversity measures, and other benchmarks in general terms only. The RME plan is interim and not reviewed by all stakeholders.			
III.D.4	**Data and Information Archive:** 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: A better description of the infrastructure to archive relevant data and meta data generated through monitoring efforts in existence for the subbasin would improve the plan.		No	
III.D.5	**Coordination and Implementation:** 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: This part of the plan needs to be developed.		Partial	3
III.D.6	**Summary Question. RME Logic Path (Evaluation and Adaptive Management):** 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?		
Reviewers: Planners discussed should determine what works and what does not, and should then pursue testing of a series of hypotheses developed for both aquatic and terrestrial components of the system. 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 key observations. The plan could benefit by including more description of how the program intends to pursue an adaptive management approach.		Partial	
	Overall impression and evaluation of the Management Plan: 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 Reviewers: (e.g., socio-economic descriptions or analysis).		
Reviewers: Reviewers are concerned that the plan does not include consideration of the mainstem Snake River. For steelhead in the tributaries, this plan is highly responsive to the Council's outline and requirements. If the overall working hypothesis - "fix it, or partially fix it, and they will come" - can be supported by sound scientific analyses, this would be, for the most part, a good plan for the subbasin. The plan does an especially good job of identifying realistic and useful strategies. It also identifies the importance of		Partial	3

developing information regarding the critical quantitative needs of a species to persist. The terrestrial component, especially, attempts to address the need to understand and protect diversity in the ecosystem. The choice of steelhead as the primary aquatic focal species in these basins may not be the best choice, because the Assessment shows they are likely not viable. The planners began development of a strategy to integrate the aquatic and terrestrial components of the plan - they are encouraged to continue the effort.		

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 identity 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:

Reviewers: The absence of the Snake River mainstem in the subbasin planning process remains a concern. Whether it should be included in this plan, or a separate plan is not clear. 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. Reviewers would rather see the plan proceed with quantitative numeric objectives for plants and animals in the basin. They should apply numerical objectives related to what it will take to assure viable populations, and then identify what habitat is needed to produce the needed distribution and abundance across the subbasin. An overall hypothesis of "fix it, or partially fix it, and they will come" provides no endpoints for assessing program success, nor does it answer "how much and where?" The plan would benefit by providing greater consideration of the dynamic nature	Partial	

of ecosystems and the role of disturbance in shaping aquatic habitats. It is unclear how the plan will address natural variation both in and out-of-basin. How is biodiversity and habitat diversity protected and restored, especially in aquatic communities?		