

Bruneau

Review Summary

The Bruneau Subbasin Plan shows evidence of substantive leadership and commitment to actually using the plan. It is a good starting point for a successful program. Although more work is needed before all scientific elements of a subbasin plan called for in the Council’s 2000 Fish and Wildlife are met, the plan in its current state would be useful in soliciting for, drafting, and selecting projects. The subbasin has several unique features that could benefit from the plan, such as an endangered mollusk (the Bruneau hot springs snail), a dramatic canyon (which is bat habitat), and the southernmost population of bull trout in the world.

The Bruneau Subbasin has received little BPA funding in the past, yet the planning team was able to gather sufficient information and conduct adequate analysis to produce a usable plan. This is evidence that the planners gave consideration to the purpose of subbasin planning and followed through on it. The planners hope this plan can be used to secure financial support from numerous sources, especially seed money that can leverage further USDA funding.

The Assessment includes an adequate amount of information and synthesis that can be used in selecting strategies in the Management Plan. Additional refinement would make it more useful, especially in regard to treatment of future human occupation trends, choice of focal species, and documentation of the analytical inputs and decisions. The Inventory has much useful information but doesn’t take the final step of synthesizing the information to identify gaps. The Management Plan needs considerably more work on prioritizing strategies. The RME plan is a good start. Editorial attention is needed throughout the documents.

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 <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>		
I. A.1. General Description	(Y)es, (P)artial, (N)o	<i>Need for additional treatment (0-4)</i>
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 general orientation is adequate, but the section could be improved by a better description of jurisdictional authorities.		Yes	1
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: This section is generally adequate for its purpose, but is weak on terrestrial relative to aquatic aspects.		Yes	1
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 an odd gap here, as the assessment goes from historic American Indian use to present public and American Indian use, with almost no coverage of the historic non-Indian use that accounts for most of the damage that needs to be ameliorated now. It is important that this be remedied with additional discussion of post-settlement land use influences.		Yes	1
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: This is adequately covered with some special tables on fishes, but no one list is provided that covers all fishes.		Yes	1
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: Plants are adequately identified.		Yes	0
I.A.2. Subbasin in the Regional Context		(Y)es, (P)artial, (N)o	<i>Need for additional treatment (0-4)</i>
I.A.2.1	Does the assessment describe how this subbasin fits within its regional context (size in relation to the total Columbia Basin, placement within the ecological province and relationship to other subbasins in this province, qualities that distinguish this subbasin from others in the province)?		
Reviewers: The Assessment does an excellent job of distinguishing what is unique and valuable about this subbasin but does not place it in interrelationship to other subbasins.		Partial	0
I.A.2.2	Does the assessment describe this subbasin's relationship to Endangered Species Act planning units (NOAA Fisheries-designated evolutionarily significant units (ESU) and U.S. Fish and Wildlife		

	Service-designated bull trout planning units. ¹) where this information was available during the planning process?		
Reviewers: The subbasin's relationship to the ESA is adequately covered.		Yes	0
I.A.2.3	Does the assessment summarize external environmental conditions that might have an effect on fish and/or wildlife in this subbasin (the ocean, the estuary, the mainstem downstream from the subbasin, and, as relevant, upstream areas and adjacent subbasins)?		
Reviewers: Better coverage of external environmental conditions for terrestrial species would improve this plan, specifically for mule deer. This was a difficult plan to review because elements requested in the technical guide were scattered throughout the three major components and appendices. Some reorganization of the material is needed.		Partial	2
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 plan would benefit from a better description of future human occupation trends. This area will likely experience impacts of growth in the Boise area, such as more recreational use. Also the plan should discuss possible military expansion and future mining.		No	3
	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 overview section provides adequate context for this planning effort. However, future human occupation trends need more attention. "Economic poverty" is a subtle but powerful distinction, and including nutritional outcomes of dams likewise demonstrates a holistic view. The uses of ICBEMP and The Nature Conservancy regional analyses, as well as an emphasis on wildlife diversity, are strengths of the plan.		Partial	1

I.B. Species Characterization and Status		
<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 <i>Need for additional treatment (0-4)</i>
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		

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.)

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: As in many plans, the use of focal species has tenuous analytical value. The non-game species selected here are ESA-important, not ecosystem indicators, and mountain whitefish did not prove to be useful. Whitefish were used because they have cultural and ecological importance, and because they are the only native salmonid besides redband and bull trout. The Assessment describes them as "thermally flexible," but in reality they are less tolerant of warm water than are other salmonids. In retrospect the planners acknowledge that inclusion of whitefish did not seem worthwhile (limited data available, did not add any new dimension to other focal salmonids). For future planning, reviewers recommend reconsideration of some of these choices.	Yes	2
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: No mention is made of critical habitat designation for bull trout. The limited information that exists for redband and bull trout seems adequately summarized.	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: Some valuable density data are shown for redband trout that could have been better used in developing the Management Plan. Much more information on distribution and abundance that is being analyzed by IDFG in the next few months should provide a strong knowledge base for that species. Redband trout densities by HUC 6 are given, but in fish/meter; hopefully that is a typo and should be per square meter. Elsewhere in the section densities are given in both fish/square meter and fish/100 square meters, and these need to be standardized.	Yes	1
I.B.4. Does the assessment describe the population's life history, including identifying distinct life stages?		
Reviewers: The Assessment is generally done for terrestrial species on the basis of life history but not life stages. The plan would be improved by discussion and identification of the habitat requirements and preferences of each life stage. For aquatic focal species the material is brief, reflecting a paucity of available information.	Partial	2
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		

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.C.1.2	Does the assessment classify 6 th 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: See previous comments.		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.		
Reviewers: The terrestrial section fails to mention loss of nutrients from blocked anadromous fish migration.		Partial	2
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: Is this information really needed for each (or any) focal species? Reviewers suspect it is unreasonable to ask anyone to try to obtain (or guess at) it.		No	1
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: A better synthesis of information relevant to this question would improve the plan.		Partial	3
	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's consideration of environmental conditions is adequate for initial planning purposes, but further treatment of the issues identified above would improve the plan.		Partial	2
I.D. Ecological Relationships			
<i>Question to be addressed: Does the assessment describe the key inter-species relationships and the key functional relationships?</i>		(Y)es, (P)artial, (N)o	<i>Need for additional treatment (0-4)</i>
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: Inter-species relationships are not well covered except for nest parasitism by yellow-billed cuckoo and predation by wildlife species on each other. Other trophic relationships are not discussed (food-web considerations seem lacking in many subbasin plans, especially for aquatic species). Important competitive relationships between animal species are not adequately discussed.	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: This doesn't appear to be explicitly addressed in the plan.	Partial	3

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: This is a decent effort to inform initial prioritizations. From the plan, it is hard to know the confidence the technical team biologists have in their assessment. Documentation of their confidence would improve the plan.	Partial	2
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: This section is brief but shows good logic and a working knowledge of the situation.	Partial	1
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: This is done in the Management Plan.	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 comment here (e.g., socio-economic descriptions or		

	analysis).		
Reviewers:	This Assessment includes adequate information and synthesis for informing selection of strategies in the Management Plan. Additional refinement would make it more useful, especially in regard to treatment of future human occupation trends, choice of focal species, and documentation of the analytical inputs and decisions. Editorial attention is also needed; e.g., the Title for Table 48, p. 178, needs to be changed from Imnaha to the Bruneau. Is all the information in the table accurate?	Partial	3

II. The Inventory			
<i>(This checklist section was developed from pages 11-12 of the Technical Guide.)</i>			
<i>Reviewers should consider the soundness, completeness, analytical approach, and transparency (documentation of methods and decision-making process) of the following components of a subbasin inventory, specifically whether the inventory includes an assessment of the adequacy of current legal protections, plans, and projects to protect and restore fish, wildlife, and ecosystem resources. Does the inventory adequately synthesize past activities and their biological achievements? Planners were requested to, as applicable, describe the extent to which these programs and activities extend beyond the subbasin to a larger scale (provincial and basin-wide).</i>			
II.A. Existing Protection		<i>(Y)es, (P)artial, (N)o</i>	<i>Need for additional treatment (0-4)</i>
II.A.1	Does the inventory identify areas with protections through stream buffers, municipal or county ordinances, conservation designations, or water resources protection?		
Reviewers:	Protections are briefly covered with two helpful map-charts, but protection isn't identified as percentage of area, or as percentage of focal areas or relative to opportunities.	Partial	3
II.A.2	Does the inventory assess the adequacy of protections for fish, wildlife, and ecosystem resources?		
Reviewers:	The adequacy of protections is not adequately covered, but this issue is especially important given the unique resources involved.	Partial	3
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:	Existing management plans are identified.	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:	This is not done in a concise or comprehensive manner in the way this question implies.	No	3
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: The plan does a more complete job of this than most plans.		Yes 0
II.C.2	For each management program (or project where not clearly part of an overarching management program), does the inventory describe the program, project or activity; identify the management or lead entity; identify how the program/project was authorized and who is responsible for implementation; identify the funding source; and identify the relationship to other activities in the subbasin?	
Reviewers: The plan does as much as is reasonable in this context.		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: There is a column in the table for this, but almost nothing is entered in that column.		No 2
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: To some extent, the authors do this for data gaps in the RME portion, but management action gaps are not adequately covered.		Partial 3
<p>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 comment here (e.g., socio-economic descriptions or analysis).</p>		
Reviewers: The Inventory has much useful information but doesn't take the final step and synthesize the information to identify gaps. The list of acronyms is a welcome addition. The reference to Asotin on page 20 should be deleted. The conservation tax credit is an astute inclusion that should be added to other Idaho plans. Reviewers are not sure if FIP pertains, but no harm to include it.		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

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?

the vision, objectives, and strategies described in the 2000 Fish and Wildlife Program (pp. 13-33) and, for mainstem subbasin plans, the Mainstem Amendments (pp.11-28).		
III.A. The Vision for the Subbasin Does the Vision Section of the Management Plan 1) describe the desired future condition for the subbasin; 2) describe a vision that will drive development of the biological objectives and thereby the strategies that are incorporated to change conditions within the subbasin; and 3) incorporate the conditions, values and priorities of the subbasin in a manner that is consistent with the Vision described in the Council's 2000 Fish and Wildlife Program? (Council Question 4 to the ISRP):	(Y)es, (P)artial, (N)o	<i>Need for additional treatment (0-4)</i>
Reviewers: The vision statement is a more substantive vision than many in recognition of ecological interrelationships, even if implied. It could be expanded beneficially to include more of the spirit of the Council's eight scientific principles. The plan's list of guiding principles, which follows the vision statement, has some unique strengths including linking economic and species recovery, not setting one above the other.	Yes	1
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: Adequate.	Yes	0
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: Adequate.	Yes	0
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: Adequate.	Yes	0
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 appropriate to the scale for what they are doing, but more detailed objectives would improve the plan.	Yes	1
III.B.4. Are biological objectives identified for both the short and long-term?		
Reviewers: This is not explicitly done.	No	2
III.B.5. Are the biological objectives complementary to programs of tribal, state and federal land or water quality management agencies in the subbasin?		
Reviewers: The coordination, and broader buy-in is an admirable part of this plan and was especially evident during the oral presentation. Integration with other programs seems to be a high priority for this group throughout various parts of their work, not just in this section.	Yes	0
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		

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.

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: The plan includes a section on this.	Yes	0
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? ⁹		
Reviewers: Adequate for the situation in this basin.	Yes	0
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: Differences weren't apparent.	na	na

III. C. Strategies¹⁰		
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		
Reviewers: This is adequately addressed, but the objectives and strategies section could be improved by building further on the strong assessment foundation. Instead, the plan includes a sweeping, generalized laundry list of strategies with many data gaps.	Yes	1
III.C.2. Consistency with the Fish and Wildlife Program. Are the Strategies proposed in the subbasin		

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.nwncouncil.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.

management plan consistent with those adopted in the program? (Council Question 4)		
Reviewers: The linkage to the Fish and Wildlife Program could be made more explicit.	Yes	2
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 addressed at best indirectly, through later reference to adaptive management. The boilerplate description of the process does not make it clear how strategies were chosen or if alternatives were considered but not recorded.	No	3
III.C.4. Prioritization. Does the Strategies Section describe a proposed sequence and prioritization of strategies?		
Reviewers: There is a good start in Section 6. There is rough prioritization among habitats, but more specifics are needed to increase the usability of the plan. Priorities should be presented in this section of the Management Plan.	Partial	3
III.C.5. Additional Assessment Needs. Does the Strategies Section describe, if necessary, additional steps required to compile more complete or detailed assessment?		
Reviewers: This is indicated at various points in assessment, RME section and other text.	Yes	0
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?		
Reviewers: Adequate.	Yes	0

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.*

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.

<p>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.</p>			
III.D.1	<p>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?</p>	<p>(Y)es, (P)artial, (N)o</p>	<p><i>Need for additional treatment (0-4)</i></p>
<p>Reviewers: The link to management application and obvious relationship to assessment, inventory and data gaps are strengths of the RME plan. In Table 8, however, on research needs, the items in the column headed "Research Needs" are statements of actions, not true needs (information that we need to find out). Thus, the thrust of the table (and of the subbasin research agenda?) is that performance of research procedures is the need, which is not so. The need is to find useful information of certain types. The table should be reworked to state the types of information that are needed.</p>		<p>Yes</p>	<p>0</p>
III.D.2	<p>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?</p>		
<p>Reviewers: Section 7.2, Appendix B (aquatic M&E; not R?) is very informative--excellent. Terrestrial companion table is adequate. Is there to be no monitoring and evaluation of socioeconomic results?</p>		<p>Yes</p>	<p>2</p>
III.D.3	<p>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)?</p>		
<p>Reviewers: The identification of monitoring indicators is adequate for the scale of this discussion. These are explicit for aquatic and implicit for terrestrial in statements of desired long-term outcome.</p>		<p>Yes</p>	<p>1</p>
III.D.4	<p>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?</p>		
<p>Reviewers: Adequate for purposes of the plan.</p>		<p>Yes</p>	<p>1</p>
III.D.5	<p>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.</p>		

Reviewers: The plan was very convincing in this respect, and these items should be put into practice.	Yes	1
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: The plan acknowledges adaptive management in a cursory manner, and provides little information on how it might occur in the subbasin. That stated, the RME plan is better than those for most subbasin plans and provides about what could be expected in this situation.	Partial	2
	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 comment here (e.g., socio-economic descriptions or analysis).	
Reviewers: This plan shows evidence of substantive leadership and commitment to actually putting it into practice. As such, it is a good starting point for a successful program. The plan does a good job of going beyond the BPA program. This is evidence the planners considered the purpose of subbasin planning. Their plan would be useful in soliciting, drafting, and selecting projects. The fact that the document has so many separate files with minimal cross-references makes it unnecessarily difficult to evaluate the thoroughness of this work. When the plan is first revised this issue should be addressed.	Partial	2

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 there is general consistency with the principles, the underlying assumption is that the habitat actions proposed will lead to the overall goal. This proposition needs a much greater base of support than was presented. It is likely that some habitat improvement actions can improve conditions in these basins, but the vision is to provide "sustainable resource-based industries that provide goods and services and other activities for a growing human population." It was not convincingly argued that the vision is attainable, or that goods and services can increase to provide for an expanding human population. A realistic look at these basins is needed to show what is likely to be attainable given the changes in physical and biotic environments. What changes are likely to be irreversible (e.g., most exotics), what can be changed given water and land management policy, and what outcomes can be expected in terms of ecosystem structure and function, persistence of species, and harvestable surpluses.</p>	<p>Yes</p>	<p>2</p>
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