

Willamette

Review Summary

The Willamette Subbasin Plan is of very high quality, and is impressive and exemplary overall. The plan reflects the reality that the Willamette Basin “is a big and complex place” and does a good job of describing how it will work within that context to improve the Willamette watershed and ecosystem. The plan substantially meets the scientific elements for subbasin plans called for in the Council’s 2000 Fish and Wildlife Program and Subbasin Planning Technical Guide. The plan did not complete some components such as a detailed prioritization of strategies or the Research, Monitoring and Evaluation section. However, the plan provides a sound logic path and describes a thorough process for how it will address these incomplete elements. The plan should prove very useful in directing and selecting fish and wildlife management actions in the Willamette Basin.

Assessment

The Assessment represents an expansion of the Willamette Restoration Strategy (part of the Oregon Plan for Salmon and Steelhead) into a more detailed identification of fish and wildlife conservation priorities and environmental planning. It places a strong emphasis on local implementation which, given the extent of private ownership in the Willamette, is a necessary and appropriate focus. There is a strong emphasis throughout the subbasin plan on collaborative work with agency and organizational partners.

The Assessment provides a complete and detailed description of the subbasin. Especially useful are the discussions of human uses and the alterations on the subbasin made by human occupation. Useful "institutional" limiting factors are described, addressing the problems presented by complex and fragmented authorities and the challenges of providing environmental protections in a subbasin with extensive private land ownership. The relationship between the Willamette subbasin and the larger region is clearly presented.

The plan does a thorough job identifying limiting factors. The limiting factors section splits the Willamette Subbasin into seventeen (sub)subbasins. Four are assessed using EDT. The use of EDT and other tools to assess limiting factors is accompanied by a good study of the strengths and limitations of EDT for the Willamette subbasin. This provides context for the modifications that have been made or need to be made to ensure EDT’s relevance to conditions in the Willamette.

The Assessment followed a good strategy to expand knowledge beyond data-rich areas by conducting surveys of less well-studied areas. Watershed councils, existing programs, local governments, ODFW biologists, and other technical experts were deployed to identify limiting factors and conservation needs. Historical context of the effects on focal species and ecosystem processes are also provided.

In sum, the Assessment presents a large amount of information in a format and writing style that make it easy to digest. The examination of historical and current conditions in a large and

complex subbasin is of very high quality. The Assessment provides an excellent foundation for selecting and prioritizing strategies and management actions.

Inventory

The Inventory is done very well with useful evaluative content, including identification of gaps that will be useful in identifying and prioritizing management actions. This is one of the best inventories of all the subbasin plans.

Management Plan

The Management Plan is developed logically from the Assessment and Inventory. The biological objectives section begins with a narrative summary of the basin-wide changes needed to address the limiting factors and implement the vision. The need for more work is recognized and the plan's current objectives will be revised following the completion of EDT. This is a good plan of action, but until the biological objectives are finalized they can't be fully assessed.

The biological objectives are stated in terms that provide a basis for measurement. Objectives for terrestrial species are detailed and specific. Objectives for focal habitats are specified in acreage. Objectives for listed stocks are contained in the respective recovery plans and are specific. Other objectives are in the form of achieving properly functioning conditions. The biological objectives would be improved by the inclusion of explicit quantitative targets with time lines.

The Management Plan establishes guidelines for setting priorities in the Conservation Guidelines and in the City of Portland Guide for Implementation (pp. 5-21.) There is a good discussion of a process to derive priorities and make decisions about implementing subbasin-wide strategies at a local scale. However, the Management Plan presently does not get to the detail of prioritization that will ultimately be of the highest use in soliciting, developing and selecting management actions. Despite the absence of prioritization, the plan does provide a sound process to do this, and given the constraints of the time available for planning and the size of the subbasin, the status of the prioritization effort is adequate.

The plan states that the task of developing a comprehensive research, monitoring and evaluation (RME) program for a subbasin of the size and complexity of the Willamette is too large an undertaking for this time period. Instead it provides a strategic framework for monitoring and evaluation. The RME section stresses collaboration with existing projects, and begins with a description of ongoing RME in the subbasin that describes the research agenda in a general way and relies heavily on existing monitoring and research programs such as the Oregon Plan for Salmon and Watersheds. A more specific description would augment this part of the plan. The entire plan is based on a logical framework that should lead toward adaptive management, but the details are not yet in place.

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	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 Willamette is a large subbasin that contains 70% of Oregon's population. The plan provides good orientation to the subbasin. It includes fine descriptions of the history of human settlement, with some detail about American Indian use of the valley. Excellent descriptions of human population growth, demographics, and even a description of the general economic features are included. Land ownership is described, of which 2/3 is private. This high proportion of private land provides the basis for the collaborative approach to restoration taken by this plan.		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 plan includes an extensive description of the subbasin's geology with accompanying maps. There is a good description of weather with a precipitation map. The land cover description goes beyond a listing of vegetation types to a categorization of vegetation into habitat types and ecoregions. There is an extensive and excellent discussion of the subbasin's hydrology, with maps and explanations of HUC levels, pollution types, discharge permits, etc. The discussion includes information on water quantity and quality issues, including limiting factors and regulations to address them.		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: The Assessment provides a good summary of the key types of human disturbances, beginning with the early American Indian uses of fire.		Yes	0
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: The Assessment lists seven fish species and 110 wildlife species of concern. A very nice summary table of plant or fish species used by Native Americans for food or traditional arts is presented along with a good discussion of non-native aquatic and terrestrial species, including their geographic distribution.		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: Ten threatened or endangered plant species are summarized.		Yes	0
I.A.2. Subbasin in the Regional Context		<i>(Y)es, (P)artial, (N)o</i>	<i>Need for additional treatment (0-4)</i>
I.A.2.1	Does the assessment describe how this subbasin fits within its regional context (size in relation to the total Columbia Basin, placement within the ecological province and relationship to other subbasins in this province, qualities that distinguish this subbasin from others in the province)?		
Reviewers: The Assessment does a good job describing how this subbasin fits within its regional context.		Yes	0
I.A.2.2	Does the assessment describe this subbasin's relationship to Endangered Species Act planning units (NOAA Fisheries-designated evolutionarily significant units (ESU) and U.S. Fish and Wildlife Service-designated bull trout planning units.) where this information was available during the planning process?		
Reviewers: The Assessment specifies the subbasin's relationship to the ESA with regard to bull trout, Oregon chub, and NOAA Fisheries ESUs for listed salmonids.		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)?		

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.)

Reviewers: The Assessment summarizes external environmental conditions as ocean effects for anadromous species and as out-of-basin effects for migratory birds.	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 Assessment discusses future changes in detail in the extensive hydrology section. Climate effects are assessed, specifically as they influence the predicted changes in the Pacific Northwest's weather over the next 10 years. Trends of human use out to 2050 are projected. Especially important for this subbasin is the projected doubling of the population in the next 20 years. Few subbasins have addressed climate and human effects as thoroughly.	Yes	0
	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 represents an expansion of the Willamette Restoration Strategy (part of the Oregon Plan for Salmon and Steelhead) into a more detailed identification of fish and wildlife conservation priorities and environmental planning. It places a strong emphasis on local implementation which, given the extent of private ownership in the Willamette, is a necessary and appropriate focus. There is a robust emphasis throughout the subbasin plan on collaborative work with agency and organizational partners. The Assessment provides a complete and detailed description of the subbasin illustrated with good maps and tables. Especially useful are the discussions of human uses and the alterations on the subbasin made by human occupation. The relationship between the Willamette subbasin and the larger region is clearly presented.	Yes	0

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	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.		
<p>Reviewers: The Assessment's choice of focal species is based on their ecological importance as indicator species, cultural importance, or association with healthy ecosystems. There is a brief but useful discussion of how people differ in their perspectives on what is culturally important or valuable. Detailed tables summarize various attributes of fish, wildlife, and plant species of concern.</p> <p>There are 55 Focal species including all threatened and endangered vertebrates, plants, and invertebrates, and some endemic species limited to the Willamette subbasin. Many other plans did not include invertebrates.</p> <p>Focal habitats are defined as those that are at highest risk from historical uses or are now most at risk from current land use practices.</p> <p>The aquatic focal species selection is guided by four criteria: their special legal status; cultural or ecological importance; indicator of aquatic habitat conditions; and enough available data to establish a management unit.</p> <p>Groups of focal species are chosen for each of the eight management units. Focal aquatic species are both resident and anadromous fish, and these are summarized in tables by management unit and evaluation method used to identify them.</p> <p>Terrestrial focal species are grouped by focal habitat type; they vary in the extent to which they are associated with that habitat. Six focal habitats are listed. There is a good discussion of rationale for selection.</p> <p>A useful summary table compares this chosen list with focal habitats selected by other entities in the Willamette subbasin. Fifty-four terrestrial (plant and animal) focal species are identified. These species are compared in a summary table to focal species selected by other entities.</p>	Yes	0
I.B.2. Does the assessment identify and characterize focal species populations; i.e. delineate unique population units and, as applicable and where information is available, meta-populations, subpopulations and/or other genetic/behavioral groupings used by scientists or managers?		
Reviewers: The Assessment identifies focal species and populations completely and well.	Yes	0
I.B.3. Does the assessment describe the current and historic status of each focal species population and summarize available population data (abundance, productivity, spatial structure, etc., with particular emphasis on trend data)?		
Reviewers: The Assessment extensively discusses population information.	Yes	0
I.B.4. Does the assessment describe the population's life history, including identifying distinct life stages?		
Reviewers: The Assessment describes life history, population status and trends well for each focal species.	Yes	0

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.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 Assessment offers detailed genetic information where it is available.	Yes	0
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 Assessment describes harvest for Pacific lamprey and other focal species. Harvest is also discussed as an out-of-subbasin effect. While this was a good effort, the plan could be augmented with more information concerning out-of-subbasin harvest in general.	Yes	1
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: This is a superb job.	Yes	0

I.C. Environmental Conditions		
<i>General question to be addressed: Does the assessment adequately describe the effect of the environment on fish and wildlife populations?</i>		
I.C.1. Environmental Conditions within the Subbasin		(Y)es, (P)artial, (N)o <i>Need for additional treatment (0-4)</i>
I.C.1.1	Does the assessment describe the current condition of the environment in this subbasin, and characterize the condition of the environment under the following reference conditions: a) historic, 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 Assessment provides excellent discussions of water quality, addresses TMDLs in detail, and assesses the types and location of pollution.		Yes 0
I.C.1.2	Does the assessment classify 6 th field HUCs (or other appropriate assessment unit) within the subbasin according to the degree to which each area has been modified and the potential for restoration?	
Reviewers: The Assessment identifies the number of 6th field HUCs but does not discuss the modification and potential of each one. Those discussions are at a higher level, which is probably necessary given the size of subbasin. In general the discussion of HUCs is detailed.		Yes 1
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	

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.

	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 Assessment describes both aquatic and terrestrial out-of-subbasin effects. Ocean effects are defined in terms of the estuary, the nearshore, and offshore. ENSO and PDO and their influence on habitat for Spring Chinook salmon, winter steelhead, and coho salmon are described. Mainstem habitat, hydropower, and marine harvest are also considered as an out-of-subbasin effect. Broad-scale issues affecting terrestrial species and migratory birds are briefly described. However, some of the discussion is generic and not specific to focal species. Tying the information to focal species and including a more complete examination of out-of-subbasin effects on terrestrial species and migrant birds would further enhance this section of the Assessment.	Yes	1
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:	The Assessment establishes calculable assumptions for some focal species, but in general the information provided is broad and not specific enough to focal species. Providing information that is more particular to all of the focal species will solidify this part of the Assessment.	Partial	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:	The Assessment provides outstanding tables of species groups by type of associations with salmonids. It also discusses how a number of environmental actions (riparian buffers, stream fencing, etc.) could affect wildlife. The Assessment also offers a high-quality summary of HUC units with good habitat attributes for wildlife, by species.	Yes	0
	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 description of the effect of the environment on fish and wildlife populations is well done.	Yes	0
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: The Assessment does a good job of addressing inter-species relationships in the population and synthesis sections.	Yes	0
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 Assessment adequately addresses processes and functions in the synthesis section.	Yes	0

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: Seventeen “subbasins” organize the limiting factors section. Four are assessed using EDT. There is a useful discussion of these units’ historical and current presence and distribution of the focal species and of the factors (including ecosystem processes) most affecting each of the focal species by life stages. The Assessment expanded knowledge beyond data-rich areas by conducting surveys of less well-studied areas. Watershed councils, existing programs, local governments, ODFW biologists and other technical experts were deployed to identify limiting factors and conservation needs. Historical context of the effects on focal species and ecosystem processes are also provided. The use of EDT and other tools to assess limiting factors is accompanied by a good study of the strengths and limitations of EDT for the Willamette subbasin. This provides context for the modifications that have been made or need to be made to ensure EDT’s relevance to conditions in the Willamette. "Institutional" limiting factors are usefully described. These pertain to the problems presented by complex and fragmented authorities and the challenges of providing environmental protections in a subbasin with extensive private land ownership.	Yes	0

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: The key findings are well synthesized throughout the Assessment.	Yes	0
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: Working hypotheses are made for aquatic and terrestrial species and for their interactions. Opportunities for habitat protection, restoration, and access are also discussed.	Yes	0
	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: The Assessment presents a large mass of information in a format and writing style that make it easy to digest. The examination of historical and current conditions in a large and complex subbasin is excellent. The Assessment provides an excellent foundation to select and prioritize strategies and management actions.	Yes	0

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>Need for additional treatment (0-4)</i>
	<i>(Yes, (P)artial, (N)o</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 well described in the inventory of Municipal and County Programs appendix.	Yes	0
II.A.2	Does the inventory assess the adequacy of protections for fish, wildlife, and ecosystem resources?	

Reviewers: The Inventory makes an effort, through surveys and consultations with subbasin administrators at various levels, to understand the types and effectiveness of conservation efforts. These are summarized in sections dealing with conservation efforts now having significant impacts, conservation efforts expected to have significant impacts in the near future, and assessment of conservation efforts by type of effort and the level of government (e.g. BPA, OWEB etc.) at which they are being done. These sections include lists of specific projects. Maps of project locations and a graph of project funding by types are also included.		Yes	0
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: The Inventory does a reasonable job of reviewing many of the plans, but not all 200 of them. This review is done in an extensive, 153 page inventory appendix that lists state and federal programs. The Inventory was done in 2003 by the Oregon Department of Fish and Wildlife under contract to WRI. Plans are organized by lead entity. Within each entity information is sorted by topic, including fish, wildlife, habitat, water quality, hydrological effort, and species. In addition, there is a 23-page inventory of municipal and county efforts in an appendix.		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: The Inventory does an adequate job assessing the consistency of existing plans with the subbasin Assessment.		Yes	0
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: As stated in II.B.1 the Inventory does an adequate job identifying ongoing programs.		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: As stated in II.B.1 (and 2) the Inventory does an adequate job identifying ongoing programs.		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		

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?

	address?		
	Reviewers: The Inventory evaluates limiting factors in the narrative discussions of ongoing conservation actions, but these are not evaluated relative to the programs and projects. Tying the evaluation to the programs and projects listed in appendices L-O would strengthen this part of the Inventory.	Partial	1
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 evaluates limiting factors in the narrative discussions of conservation actions being taken.	Yes	0
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: Existing gaps are identified in a useful way at levels appropriate to the size of the subbasin. Potential gaps in protection options may arise as the human population in the subbasin grows and more land is transferred from agricultural to residential use, losing protections provided by USDA programs such as CREP and the CRP. Incentives for residential land users, like anti-erosion and stream protection programs, will have to replace the agriculture based programs, but as of now, few exist. The plan could be strengthened by further discussion of this issue.	Yes	0
	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).		
	Reviewers: The Inventory is done very well with useful evaluative content. This is one of the best inventories of all the subbasin plans.	Yes	0

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 reflects the diversity of the subbasin, but it is hard to see how the vision will drive the biological objectives.	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: The biological objectives section begins with a narrative summary of the basin-wide changes needed to address the limiting factors and implement the vision. The need for more work is recognized and the plan's objectives as presently stated will be revised following the completion of EDT. This is a good plan of action, but until the biological objectives are finalized they will be difficult to assess.	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: The objectives and strategies are based on the scientific principles of the Council's Fish and Wildlife Program, but as was noted in III.B the biological objectives are in the process of being revised. It will be difficult to fully assess them until the revisions are complete.	Yes	1
III.B.2. Are the biological objectives based on the subbasin assessment? (This question relates to the Logic Path in the subbasin plan. Question III.C.1 is a similar question for the Strategies Section.)		
Reviewers: The biological objectives are derived directly from the focal species and limiting factors identified in the Assessment.	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 stated in terms that provide a basis for measurement. Objectives for terrestrial species are detailed and specific. Objectives for focal habitats are specified in acreage. Objectives for listed stocks are contained in the respective recovery plans and are specific. Other objectives are in the form of achieving properly functioning conditions. The biological objectives would be improved by the inclusion of explicit quantitative targets with time lines.	Parti	1
III.B.4. Are biological objectives identified for both the short and long-term?		
Reviewers: The biological objectives are not identified for either the short or long-term. Including these time targets will improve this subbasin plan.	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 biological objectives are explicitly complementary to all relevant programs.	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: All of the subbasin's streams are water quality limited under the CWA. A TMDL plan is about to be released	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: No additional comment.	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: No additional comment.	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: Strategies are very clearly related to the limiting factors and the gap analysis.	Yes	0
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)		

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.

Reviewers: Strategies are adequately based on the scientific principles of the Council's Fish and Wildlife Program.	Yes	0
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: The plan's strategies are directly linked to and derive from existing watershed plans in the subbasin, but the plan does not clearly describe the alternative strategies considered in the other plans. Considering, or listing, these alternatives would improve the management plan.	Partial	2
III.C.4. Prioritization. Does the Strategies Section describe a proposed sequence and prioritization of strategies?		
Reviewers: The plan establishes guidelines for setting priorities in the Conservation Guidelines and in the City of Portland guide for implementation (pp. 5-21.) There is a good discussion of a process to derive priorities and make decisions about implementing subbasin-wide strategies at a local scale. However, the management plan presently does not get to the detail of prioritization that will ultimately be of the highest use in soliciting, developing and selecting management actions. The plan provides a sound process to do this, and given the constraints of the time available for planning and the size of the subbasin, the status of the prioritization effort is adequate.	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: The plan adequately describes additional assessment needs such as the need for EDT and the type of information it will produce.	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: The CWA is repeatedly addressed throughout the subbasin plan. CWA coordination is addressed as an institutional strategy of the management plan and a final section addresses ESA and CWA requirements.	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: ESA issues are adequately covered.	Yes	0

III.D. Research, Monitoring, and Evaluation
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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.

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

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

III.D.1	<p>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>	(Yes, (P)artial, (N)o	Need for additional treatment (0-4)
<p>Reviewers: The RME section begins with a description of ongoing RME in the subbasin. It describes the research agenda in a general way and relies heavily on existing monitoring and research programs such as the Oregon Plan for Salmon and Watersheds. A more specific description would augment this part of the plan.</p>		Partial	0
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: The plan states that the task of developing a comprehensive monitoring and evaluation program for a subbasin of the size and complexity of the Willamette is too large an undertaking for this time period, so the subbasin plan instead provides a strategic framework for monitoring and evaluation. This monitoring implementation framework will be consistent with the strategies defined by OWEB. It will be built on existing programs and projects. The plan stresses collaboration with existing projects.</p>		Partial	0
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: This plan offers a useful table synthesizes types of monitoring, scale, frequency, indicators, and possible protocols. More specific details on the indicators would improve the list’s efficacy.</p>		Partial	1
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.,</p>		

	locally or at a regional Fish and Wildlife Program funded database such as StreamNet, the Fish Passage Center, or DART)? Specifically, does the RME subsection include discussion of quality assurance/quality control (QA/QC), data management and analysis, and data reporting?		
Reviewers: The plan does not cover the subject of a data and information archive.		No	3
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: The plan places a strong emphasis on collaboration with existing projects for monitoring and evaluation implementation. A table summarizes implementation issues associated with a list of key monitoring strategies. This is done in very general terms, and providing more detail would further enrich this section of the plan.		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 entire plan has a logical framework that should lead toward adaptive management, but the details are not yet in place.		Yes	0
	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 is of very high quality, and is impressive and excellent overall. The plan states on page 3-568 that, "The Willamette Basin is a big and complex place." The plan reflects that reality and does a good job of describing a plan to improve the Willamette watershed and ecosystem. The plan does not complete some components such as a detailed prioritization of strategies or the RME section. However, the plan provides a sound logic path and describes a thorough process for how incomplete elements will be addressed.		Yes	0

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 plan provides an extensive discussion of the eight principles in the Assessment section that includes interpretation, implications for the Willamette subbasin in context, and application to the Assessment.	Yes	0
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