

Fifteenmile

Review Summary

The Fifteenmile Creek Plan, including Chenowith, Mosier, Rock, and Three-mile Creeks on the Oregon-side of the Gorge, substantially meets the scientific elements of a subbasin plan as described in the Council's 2000 Fish and Wildlife Program and Subbasin Planning Technical Guide. The Management Plan is comprehensive and clearly applicable to on the ground conditions as would be widely understood. The plan is more thoughtful than most in terms of giving contextual information, which likely reflects participation by the watershed councils. The plan is internally consistent; strategies in the Management Plan are directly linked to the limiting factors identified in the Assessment.

The Assessment is thoroughly executed, well documented, and thoughtful. It includes a clear explanation of the planners' use of EDT and QHA. The use of EDT to forecast the magnitude of fish population responses from evaluating different future conditions is the kind of action this exercise is intended to foster. The information needed to help determine whether achieving optimum conditions is possible is identified. Steelhead receive the most complete analysis in this section, and the discussion was adequate given that this is a rather data-poor subbasin. Giving a similarly detailed analysis of the other focal species would further enrich this portion of the plan. In addition, because EDT is a species-centered analytical tool that does not really address ecosystem health or interspecies compatibility, elements of the key findings are not thoroughly discussed. Using other means to further examine these key findings would further enrich the plan.

Overall, the Assessment provides an intelligent discussion of the modeling methodologies used and indicates knowledge of their strengths and weaknesses; e.g., the Assessment includes a useful section on "confidence in the data." Scientists and managers may or may not agree with the EDT analytical method, but the EDT rules were followed, and that is commendable.

The Inventory is more useful than that of many other subbasin plans. The Inventory described the gaps between existing and potential actions well by comparing them to limiting factors and discussing the geographic extent of riparian, in stream, and upland conservation protections. Adding a socio-economic analysis would further augment the Inventory.

The Management Plan provides a good discussion of incentives needed for actions on private lands, which is important because 81% of the acreage in the Fifteenmile subbasin is privately owned. About 37% is cropland and 21% is rangeland. The fact that in the past five years nearly half the agricultural acreage has been converted to direct-seed/no-till systems shows a receptivity in the subbasin to alternative agricultural practices that offer potential biological benefits. This conversion to no-till deserves further discussion in the Management Plan, in terms of conditions enabling this conversion, plans for monitoring its biological impact, and the potential for continued adoption of no-till practices.

The Management Plan includes a reasonable start to an RME section, given the available resources. The RME section could be improved by a more detailed discussion of funding, coordination and implementation, and data management issues.

Overall, the plan presents a sound logic path and describes what should be done. To build upon this sturdy foundation, the planners must decide what *will* be done in the RME section and provide details regarding how information will be used to alter their management plan and tie their monitoring back to EDT. The level of monitoring needed in this smaller subbasin should be determined with consideration of regional needs, opportunities, and economies of scale; i.e., the region does not need intensive and comprehensive monitoring everywhere.

Where does Fifteenmile Creek fit into an overall monitoring strategy for the Basin? The fact that there are no hatcheries or dams (yet) in Fifteenmile Creek makes it an attractive subbasin for comparing the efficacy of habitat restoration with other subbasins in this province that rely heavily on artificial production.

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 Assessment provides an adequate overview of the subbasin.		
I.A.1.2	Does the assessment provide a general description of the subbasin’s macro-environment (geology, climate and weather, land cover, vegetation) and of the subbasin’s water resources (hydrography and watersheds, hydrologic regimes, water quality, riparian and wetland resources), water uses, and modifications to water resources (hydropower projects and operations, water diversions, channel modifications)?	

<p>Reviewers: This Assessment presents a good description of water resource issues. Irrigation is described as the major water use in the subbasin. All mainstem streams in the subbasin are listed as water quality (temperature) limited. This part of the plan could be further strengthened by an examination of the location and amount of water withdrawals, and major well systems. A map showing diversions, wastewater discharges, etc. would also aid this part of the Assessment.</p>			
I.A.1.3	<p>Does the assessment provide a general description of anthropogenic disturbances to the aquatic and terrestrial environment, organized by the source of disturbance (urbanization, agriculture, forest practices, water development, mining, transportation, and other)?</p>		
<p>Reviewers: The Assessment provides an interesting historical narrative. It listed five major sources of anthropogenic disturbance that are consistent with the ownership pattern of the subbasin. There was a nice overview of issues that impact the subbasin including changes to land cover that affect wildlife habitat, hydrologic regimes, and erosion rates; alteration of in-stream and riparian conditions through channelization of streams, road-building, removal of large woody debris, and historical logging patterns, pesticide and fertilizer use, and groundwater overdraft.</p>			
I.A.1.4	<p>Does the assessment provide a list of native and non-native fish and wildlife species present in this subbasin including those species that:</p> <ul style="list-style-type: none"> 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? 		
<p>Reviewers: This is another fine job that provides good lists with an explanation of the source data. This part of the assessment would be enriched by the identification of the sculpin species and a recognition of the potential presence of longnose suckers and Umatilla dace.</p>			
I.A.1.5	<p>Does the assessment identify plants that have been designated as threatened or endangered under the Federal Endangered Species Act or state equivalents, and/or that are recognized by Native American tribes as having special cultural or spiritual significance, or (optional) that have special ecological importance within the subbasin?</p>	No	2
<p>Reviewers: This plan does not address endangered plant species. The Fifteenmile Subbasin is on the boundary between the coastal and interior regions of the Columbia River basin, and probably has some very interesting plant species. A general survey of plant species in the subbasin, including plants that may be culturally significant, would enrich this plan.</p>			
<p>I.A.2. Subbasin in the Regional Context</p>	<p>(Y)es, (P)artial, (N)o</p>	<p>Need for additional treatment (0-4)</p>	

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 subbasin's context within the greater Columbia River Basin is adequately described in various pieces throughout the Assessment. Specifically addressing 'qualities' that distinguish this subbasin from others would augment this portion of the Assessment. For instance, much of this subbasin is pretty arid compared to more western subbasins.		Yes	1
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: This subbasin contains an independent population of winter steelhead that is part of the mid-Columbia ESU. Explaining how Fifteenmile fits in with the ESA from a strategic point of view would further strengthen the assessment. Fifteenmile is highly significant because it has neither dams nor hatcheries and, therefore, represents an important subbasin for comparison to other nearby subbasins, which do have dams and hatcheries, in terms of ESA recovery.			
I.A.2.3	Does the assessment summarize external environmental conditions that might have an effect on fish and/or wildlife in this subbasin (the ocean, the estuary, the mainstem downstream from the subbasin, and, as relevant, upstream areas and adjacent subbasins)?		
Reviewers: The assessment includes a good summary of ENSO and PDO. More detail, however, would improve the assessment.			
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 description of trends in human use and their impact on the ecology of the subbasin are very thoroughly done. The plan is above average in discussing climate especially the receding permanent winter snow pack. More information regarding future population changes would benefit this portion of the assessment.			
	Summary comments and evaluation on the Subbasin Overview: Does the assessment provide the geographical, demographical, and environmental context for fish and wildlife resources in this subbasin?		
Reviewers: The assessment provides a generally adequate context for fish and wildlife restoration.			

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.)

<p>I.B. Species Characterization and Status</p> <p><i>General question: Does the assessment adequately describe the current status of fish and wildlife focal species?</i></p> <p>Note to reviewers: for this section of the review, the checklist should be applied to each focal species. Please identify which species your evaluation applies to in the comment field. Use the ranking fields (Y,P,N; 0-4) to give an overall evaluation across all focal species. Note differences among approaches to species in the comment field. If necessary, once the plans are received, assignments will be made to cover an individual species or a series of focal species.</p>	<p>(Y)es, (P)artial, (N)o</p>	<p><i>Need for additional treatment (0-4)</i></p>
<p>I.B.1. Does the assessment identify a series of focal species that will be used to characterize the status of fish and wildlife species within the subbasin? These should include one or more wildlife, resident fish, and, where present, anadromous fish species. Anadromous fish may also be included in subbasins where they were historically present and where there is a reasonable probability that these fish could be restored to sustainable levels. Criteria suggested for selecting focal species include a) designation as Federal endangered or threatened species, b) local ecological significance,² and c) cultural significance.</p>		
<p>Reviewers: The assessment lists four focal aquatic species that were chosen for their being listed under ESA, cultural importance to the tribes, or unique situation in the subbasin:</p> <p>Winter steelhead, rainbow-type/rainbow trout, Pacific lamprey, cutthroat trout. Each species has a separate table summarizing the rationale for its selection (special designation, ecological importance and tribal recognition).</p> <p>Extensive lists of candidate wildlife species were generated from various protection approaches of the state, tribes and federal government.</p> <p>Seven focal wildlife species are chosen for association with habitat that has been reduced significantly since non-native settlement. The most heavily impacted wildlife habitats in the subbasin are shrub-steppe, interior grasslands, and interior riparian habitat. The focal species are mountain quail, spotted owl, western gray squirrel, Brewer's sparrow, loggerhead shrike, mule deer and American beaver. A table lists these with their associated habitat type and reason for selection.</p> <p>As a general note, it would be nice to see a plan identify an aquatic focal fish species that isn't eaten by humans (lampreys are an important American Indian food resource). In the lower Fifteenmile Creek system, there are lots of interesting species that are vulnerable to habitat loss.</p> <p>Editorial note: check spelling of <i>Oncorhynchus</i>.</p>		
<p>I.B.2. Does the assessment identify and characterize focal species populations; i.e. delineate unique population units and, as applicable and where information is available, meta-populations, subpopulations and/or other genetic/behavioral groupings used by scientists or managers?</p>		

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.

Reviewers: The literature on population characteristics of aquatic focal species is well described and referenced. This is done for focal wildlife species to the extent that information is available. A more direct inspection of the meta-population or subpopulation structure of naturally spawning fish would enrich this section of the assessment.		
I.B.3. Does the assessment describe the current and historic status of each focal species population and summarize available population data (abundance, productivity, spatial structure, etc., with particular emphasis on trend data)?		
Reviewers: The assessment provides a very good description of the current and historic status of steelhead, along with a fine description of the loss of spatial structure in its habitat. Running the EDT model was a part of this analysis. Adding more data to the description of the focal wildlife species would further enrich this plan.		
I.B.4. Does the assessment describe the population's life history, including identifying distinct life stages?		
Reviewers: The extent of the available life history information is adequately described for both steelhead and cutthroat trout. This analysis needs to be done as thoroughly for all of the other focal species to increase the utility of this portion of the plan.		
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: Existing knowledge is adequately described. This subbasin does not have a hatchery, nor are there supplementation programs currently underway, so part of this question does not apply to this subbasin.		
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: This assessment provides a refreshing look at fishing regulations—something that most subbasins did not do—and it does a generally good job of describing harvest for steelhead. This plan would be augmented by the inclusion of more detailed harvest information for other fish species and terrestrial species.		
	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: In sum, this subsection is done quite well, especially considering the limited data.		

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 planners used EDT for Fifteenmile and QHA for Mosier, Mill, Rock, etc. Creeks. For the most part their presentation of results is easier to understand than many other EDT analyses from other subbasins. Habitat data are somewhat limited, it appears that they had to rely on professional judgment for some of the environmental attributes. Their use of DEM-based maps to present results by topic is helpful. An excellent summary history is presented of the interaction of changing ownership, economic activity, and environmental effects such as erosion, increased water temperatures, etc. The discussion of government programs and actions taken to mitigate or reverse the environmental effects is quite informative. Extensive documentation is included. This section is a fine integration of economic activities and ecological impacts. Worthwhile descriptions of potential environmental conditions are included. There is a good summary of the history of species introductions in the subbasin. There is also a good discussion of likely future environmental conditions if no new actions are taken.	Yes	1
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: The Assessment's description of current reach condition is adequate and was done for 41 reaches. There is some discomfort among the reviewers regarding the potential for restoration being based strictly on EDT predictions. The planners appear to address this concern by providing a useful caveat discussion of the variance between EDT estimates and available data.	Partial	1

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.

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 Assessment covers the key issues. There is a good brief summary of the effects of the PDO and ENSO on the subbasin. For wildlife, the loss of habitat outside of the basin is discussed. This plan could be improved by capturing the capacity that will change with PDO and ENSO, this is generally true about the out-of-subbasin-effects section of most of the subbasin plans. PDO/ENSO cause (are defined by) not just ocean effects but also freshwater effects. This portion of the plan could be enhanced by a more complete examination of the effects that climate change may have on the basin.		Yes	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: This Assessment provides a few general statements regarding the assumptions of external conditions on the productivity and sustainability of fish within this subbasin. A more explicit discussion would improve this section's utility.		Partial	2
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: This Assessment is more thoughtful than most in terms of giving contextual information. This reflects participation by the watershed councils. This discussion includes a clear explanation of the planner's use of EDT and QHA. The information needed to help determine whether achieving optimum conditions is possible is identified. Steelhead receive the most complete analysis in this section. Giving a similarly detailed analysis of the other focal species would further enrich this portion of the plan.		Yes	1
	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: Overall, this section is very well done, and the planners made a good effort to be as accurate as possible given their limited data.		Yes	1

<p>I.D. Ecological Relationships</p> <p><i>Question to be addressed: Does the assessment describe the key inter-species relationships and the key functional relationships?</i></p>	<p>(Y)es, (P)artial, (N)o</p>	<p><i>Need for additional treatment (0-4)</i></p>
<p>I.D.1. Inter-species Relationships</p> <p>Does the assessment identify important inter-species relationships or interactions, both positive and negative, with specific attention to relationships between anadromous fish and wildlife and specifically identify: 1) wildlife species and habitats that may be influenced, positively or negatively through direct effects of changes in fish abundance or fish community composition; 2) fish species and habitats that may be influenced, positively or negatively, through direct effects of changes in wildlife abundance or wildlife community composition; and 3) key species relationships within this subbasin based on the above?</p>		
<p>Reviewers: Although the Assessment summarizes interspecies relationships for wildlife species, it does not offer much discussion of how changes in fish habitat would affect wildlife or vice-versa. The assumption seems to be that improving riparian, floodplain, and flow conditions would be beneficial to both, which is probably true. To further improve this portion of the plan, it would be worthwhile to expand upon the beaver-fish story; i.e., restoring beaver will lead to beneficial fish habitat changes. The planners could explore what changes in fish habitat and species composition would likely result from rebuilding the beaver population.</p>	<p>Partial</p>	<p>2</p>
<p>I.D.2. Processes and Functions</p> <p>Does the assessment identify key ecological functions for species within this subbasin and assess the current status of ecological processes and functions in the subbasin?</p>		
<p>Reviewers: This assessment does a good job of identifying ecological processes and functions, especially for the headwaters. Much of the general processes and functions information, however, is brought up indirectly in several sections throughout the document. Compiling this information into one section and discussing it directly would further improve this section of the Assessment.</p>	<p>Partial</p>	<p>1</p>

<p>I.E. Interpretation and Synthesis / Limiting Factors and Conditions</p>
<p>I.E.1. Limiting Factors and Conditions</p> <p>Does the assessment describe:</p> <p>1) Historic factors or conditions that led to the decline of each focal species and of ecological functions and processes?</p> <p>2) Current key factors or conditions within and without the subbasin that inhibit populations and ecological processes and functions relative to their potential.</p>

<p>Reviewers: This Assessment provides a good description of historical factors in the focal species sections and effectively deploys maps to clarify conclusions.</p> <p>EDT was used for the Fifteenmile watershed; QHA was used for the other watersheds because data were inadequate to support the use of EDT. By using EDT, limiting factors are assessed for 41 reaches. The assessment offers a useful caveat discussion of the variance between EDT estimates and available data.</p> <p>Limiting factors identified by EDT are habitat diversity, sedimentation, flows, water temperature, key habitat quantity, pathogens, and channel stability. These are associated with life history stages. The discussion section for each includes a useful section on "confidence in the data."</p> <p>Overall, this is an intelligent discussion of these modeling methodologies indicating knowledge of their strengths and weaknesses.</p>	Yes	1
<p>I.E.2. Key Findings</p> <p>Is the knowledge gained through the assessment synthesized in regard to: 1) the status of species, 2) the status of the subbasin environment, 3) the biological performance of focal species in relationship to the environment, 4) the health of the overall ecosystem, 5) potential conflicts and compatibilities between individual species and ecological processes, 6) a determination of the key factors that impede this subbasin from reaching optimal ecological functioning and biological performance?</p>		
<p>Reviewers: The Assessment's key findings are well presented throughout and are expanded upon in sections prioritizing actions and describing desired future conditions. Information gaps are described in detail.</p> <p>Because EDT is a species-centered analytical tool that does not really address ecosystem health or interspecies compatibility these elements of the key findings are not thoroughly discussed. Using other means to further examine these key finding would further enrich the plan.</p>	Partial	1
<p>I.E.3. Subbasin-wide Key Assumptions/Uncertainties (“Working Hypothesis”)</p> <p>Does the assessment describe the key assumptions (including uncertainties) that have been made in the “Key Findings” above, and document the data sources and/or analytical tools relied upon?</p>		
<p>Reviewers: Overall, the Assessment does a fine job displaying its confidence in different parts of the analyses. This is well done for focal wildlife species in the focal species section. Combined with this discussion is a set of "opportunities and recommendations" for each. Numerical and measurable objectives for wildlife species are also included in this section.</p>	Yes	0

	<p>Overall impression and evaluation of the Assessment: Does the assessment synthesize the information regarding the health and functioning of this subbasin ecosystem? Does it adequately: a) bring together the single-species and community assessments to form a holistic view of the subbasin's biological and environmental resources, b) provide a foundation for the development of scientific hypotheses concerning ecological behavior and the ways that human intervention might prove beneficial? As needed elaborate on your evaluation of the various Sections enumerated above. If the plan provides additional analysis beyond what is laid out above in the checklist please comment here (e.g., socio-economic descriptions or analysis).</p>		
<p>Reviewers: Overall, this Assessment is thoroughly executed, well documented and thoughtful. The use of EDT to forecast the magnitude of responses from evaluating different future conditions is the kind of action this exercise is supposed to foster. Scientists and managers may or may not agree with the analytical method (it is circular in many respects), but the rules were followed and that is commendable.</p> <p>The examination of steelhead is adequate given that this is a rather data-poor subbasin. Including lamprey and cutthroat trout as focal species, however, is questionable because there are virtually no data about them.</p>	<p>Yes</p>	<p>1</p>	

<p>II. The Inventory <i>(This checklist section was developed from pages 11-12 of the Technical Guide.)</i> Reviewers should consider the soundness, completeness, analytical approach, and transparency (documentation of methods and decision-making process) of the following components of a subbasin 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).</p>			
<p>II.A. Existing Protection</p>		<p>(Y)es, (P)artial, (N)o</p>	<p>Need for additional treatment (0-4)</p>
<p>II.A.1</p>	<p>Does the inventory identify areas with protections through stream buffers, municipal or county ordinances, conservation designations, or water resources protection?</p>		
<p>Reviewers: The Inventory's survey is adequate. It lists federal, state, tribal, county and city programs or policies for protection of streams, riparian areas, fish and other aquatic life. Short descriptions of each provide extensive coverage.</p>		<p>Yes</p>	<p>0</p>
<p>II.A.2</p>	<p>Does the inventory assess the adequacy of protections for fish, wildlife, and ecosystem resources?</p>		
<p>Reviewers: The Inventory engages in a good general dialogue about state and federal regulation. Expanding this discussion to include details regarding specific protections in Fifteenmile and adjacent watershed would augment this plan.</p>		<p>Partial</p>	<p>2</p>
<p>II.B. Existing Plans</p>			
<p>II.B.1</p>	<p>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?</p>		

Reviewers: The Inventory extensively describes existing plans. Summarizing the widths of streamside buffers required by law on private lands in a table would be beneficial.		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 assesses the consistency of existing plans with the subbasin assessment for some programs. Addressing the adequacy of existing protections would strengthen the inventory.		Partial	2
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 Inventory's list of existing programs is excellent and right on point. Projects are summarized in tables by subject area. Included in the tables are comments on limiting factors addressed by each project. After tables listing the projects, a brief evaluative discussion of effectiveness is provided.		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 Inventory adequately describes each management program. A more detailed approach would augment the plan.		Yes	0
II.C.3	For each management program (or project where not clearly part of an overarching management program), does the inventory identify limiting factors or ecological processes the activity is designed to address?		
Reviewers: The management programs are adequately summarized in tables.		Yes	0
II.C.4	For each management program (or project where not clearly part of an overarching management program), does the inventory summarize accomplishments/failures of activity		
Reviewers: The Inventory provides a general evaluation of the effectiveness of the plans after the summary table of projects. Few of the projects were monitored, however, for effects on focal species. Pinning the evaluations directly to the focal species would strengthen this part of the inventory.		Partial	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?		

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?

Reviewers: The Inventory describes the gaps between existing and potential actions well by comparing them to limiting factors and discussing the geographic extent of riparian, in stream and upland conservation protections. Addressing design inadequacies would further fortify the inventory.	Partial	1
<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: Overall, this Inventory is more useful than that of many other subbasins. Including a socio-economic analysis would further augment the inventory.	Yes	1

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 of returning part, but not all, of the historical productivity to Fifteenmile is realistic. It is clear that the majority of problems in Fifteenmile are in the lower reaches of the streams on private lands, but it is less clear whether the existing landowners will be willing to do the things necessary to achieve the vision in this plan. Hopefully, the ground work has been done enlist the landowner and water user support for the restoration package.

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 are stated both qualitatively and quantitatively. They are clustered by land use type and describe needed changes with target dates assigned. They are organized by focal species and limiting factor.	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 biological objectives are generally consistent with the basin-level visions as described in the 2000 Fish and Wildlife Plan, although the Fish and Wildlife Program is not explicitly referenced. However, the recovery plans are mentioned. Building one or more upland storage reservoirs to replace water lost due to the receding snow pack will surely create conflicts with headwater fish and wildlife. Exploring this further will enrich this plan.	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 exist within a framework that would demonstrate what projects would achieve with their funding. The straight EDT and QHA analyses have assumptions about biological responses embedded within them. Corroborating the results with other knowledge will add depth to this portion of the plan.	Yes	1
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: Overall, the plan is integrated well. Objectives are stated in a more general form in reference to the limiting factors they address and the improvements needed to be made to achieve desired conditions. The objectives of the three watershed councils that coordinated this management plan are very specific and include measurable targets.	Yes	1
III.B.4. Are biological objectives identified for both the short and long-term?		
Reviewers: The watershed councils' objectives implicitly identify short and long term plans. Providing a timeline and other measures could help in more explicitly identifying long and short term objectives and thus strengthen the plan.	Partia	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. Pursuant to the above comment about storage reservoirs, some biological objectives may conflict with existing Agency mandates. Moreover, pumping water out of the Columbia River may conflict with mainstem flow objectives, as well as the recommendations of the recent NRC report.	Yes	1

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

III.B.6. <i>Clean Water Act</i> : Does the management plan describe how the objectives and strategies are reflective of and integrated with the water quality management plan and Total Maximum Daily Load schedule within that particular state? I.e., does this subsection of the management plan assess and describe the consistency-coordination-findings of the Water Quality Plan with the subbasin plan? ⁸		
Reviewers: The CWA is specifically addressed and TMDL monitoring is described as an ongoing effort. All mainstem stream reaches in this subbasin are water-quality limited in terms of temperature. This plan downplays the effect of agricultural chemical in affecting water quality; a more complete examination of their effect would benefit this plan.	Yes	1
III.B.7. <i>Endangered Species Act</i> : The USFWS and NOAA Fisheries are developing recovery plans for listed species (bull trout, white sturgeon, salmon). Recognizing that those ESA-based efforts are in various states of completion across the Columbia basin (some efforts are well underway, others just beginning), does the management plan 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: The ESA is addressed well, particularly for species like the northern spotted owl. Fire management plans are likely to pose future problems.	Yes	1
III.B.8. If there are disagreements among co-managers that translate into differing biological objectives, are the differences and the alternative biological objectives fully presented? (The Council's review will examine whether the plan is consistent with legal rights and obligations of fish and wildlife agencies and tribes with jurisdiction over fish and wildlife in the subbasin, and agreed upon by co-managers in the subbasin.)		
Reviewers: The authors do not identify disagreement. An anticipated overview of a tribal proposal for steelhead supplementation does not appear. Perhaps the tribe has canceled their plan.	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

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

⁹ E.g. NOAA Fisheries has provided interim targets in a letter from NOAA Fisheries to the Council, Bob Lohn to Larry Cassidy: http://www.nwcouncil.org/library/2002/nmfstargets2002_0404.pdf.

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

¹¹ This is one of the most important review questions. The set of seven questions from Council asks the ISRP to evaluate the internal consistency, scientific soundness, and thoroughness of subbasin plans. Internal consistency means there is scientific support for the conclusion that the strategies proposed in a subbasin plan will in fact address the problems identified by the subbasin assessment; i.e., does the Strategies Section take into account not only the desired outcomes, but also the physical and biological realities of the subbasin environment. The ISRP's Subbasin

<p>Reviewers: The plan is internally consistent; strategies are directly linked to the limiting factors identified in the assessment. There is a good discussion of incentives needed for private lands.</p> <p>Of the acreage in the Fifteenmile subbasin, 81% is privately owned, about 37% is cropland, and 21% is rangeland. The fact that in the past five years nearly half the agricultural acreage has been converted to direct-seed/no-till systems deserves discussion in the management plan, in terms of conditions enabling this conversion, plans for monitoring its biological impact and the potential for continued adoption of no-till practices.</p>	Yes	2
<p>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)</p>		
<p>Reviewers: The authors do not reference the Fish and Wildlife Program goals directly, but they do reference ongoing programs, including those funded through BPA. The plan's heavy emphasis on habitat restoration, however, is consistent with the Fish and Wildlife Program.</p>	Yes	0
<p>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</p>		
<p>Reviewers: Although alternative management actions are rarely mentioned specifically, consideration of alternative management responses can be inferred from the plan's clear descriptions of rationale for choice of strategies throughout.</p>	Partial	2
<p>III.C.4. Prioritization. Does the Strategies Section describe a proposed sequence and prioritization of strategies?</p>		
<p>Reviewers: The strategies are prioritized well via the use of EDT in conjunction with the use of local data and expert opinion for verification and debate. The planners have identified the problems that seem most logical to fix.</p>	Yes	1
<p>III.C.5. Additional Assessment Needs. Does the Strategies Section describe, if necessary, additional steps required to compile more complete or detailed assessment?</p>		
<p>Reviewers: The plan does not identify needed additional assessment, but it does point out information gaps that need to be filled.</p>	Yes	0
<p>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?</p>		

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.

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

Reviewers: The plan addresses bringing some streams into compliance with 303d requirements.	Yes	1
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: The plan offers an extensive discussion of its consistency with the ESA by each category of strategy action proposed. It is also cites the goals of the NOAA Fisheries habitat (HIP) BiOp.	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.*

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

III.D.1 Research: Does the RME section of the plan describe a research agenda with specific conditions and situations identified in the subbasin that will require specific research studies to help resolve management uncertainties? Is the research agenda framed around the relationships between the assessment data and the stated vision, biological objectives, and strategies in describing uncertainties? Does the RME section prioritize research topics that are of critical importance to the subbasin?	(Y)es, (P)artial, (N)o	<i>Need for additional treatment (0-4)</i>
Reviewers: This plan presents RME for each watershed in order of priority for restoration. For each focal species, a short discussion of its condition and limiting factor is followed by a description of needed research and monitoring to address that factor. Organizing RME by watershed is a logical way to integrate the plan with ongoing actions of watershed councils. Many of the items in the proposals, however, include the words “should” or “might” and, therefore, seem to comprise a wish list.	Yes	1
III.D.2 Monitoring Objectives: Does the RME subsection identify what kind of information needs to be collected in order to determine if the plan’s vision and objectives are being met? I.e., what indicator variables will be monitored?		
Reviewers: The monitoring objectives are well explained. Emphasizing the need to monitor SARs as a top priority would further enhance the plan.	Yes	1

III.D.3	Monitoring Indicators: Does the RME subsection identify measurable indicators of physical, chemical, biological, or socioeconomic conditions that may act as environmental signposts by which progress towards achieving the stated vision can be evaluated? E.g., does the RME subsection describe performance standards or quantitative benchmarks for reference conditions against which observations can be compared? Does the plan prioritize which indicators are most needed to answer management questions (include a short list)?		
Reviewers: The RME plan identifies habitat indicators and the need for trend monitoring. The indicators are listed by watershed and reference existing efforts by various agencies that are already underway in the subbasin.		Yes	1
III.D.4	Data and Information Archive: Does the RME subsection describe an infrastructure to archive relevant data and meta data generated through monitoring efforts in existence for the subbasin (e.g., locally or at a regional Fish and Wildlife Program funded database such as StreamNet, the Fish Passage Center, or DART)? Specifically, does the RME subsection include discussion of quality assurance/quality control (QA/QC), data management and analysis, and data reporting?		
Reviewers: The RME section is forthright about the disparate number of data sources and formats, as well as the need to coordinate them. The plan points project sponsors in the subbasin toward StreamNet.		Yes	1
III.D.5	Coordination and Implementation: Does the RME subsection describe who will collect the information and data collection methods whether collection is done by a subbasin, provincial, state, or a regional entity, or a combination of entities? This should include a description of coordination with regional RME efforts in the basin (Regional Partnership, Action Agencies Research, Monitoring, and Evaluation Plan, etc) with standardization of data methods. It should also include estimates of how much the proposed M and E will cost.		
Reviewers: This section clearly displays the entities that are performing particular activities. Its recommended future action is not explicitly identified, although there is a ‘who should respond’ section that names agencies and organizations that are responsible in general areas of the subbasin.		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?		

<p>Reviewers: The planners do reasonably well given the available resources. They present a sound logic path and describe what should be done.</p> <p>The RME section could improve its treatment of funding, coordination & implementation, and data management issues.</p> <p>To build upon this sturdy foundation, the planners must decide what <i>will</i> be done, provide details regarding how information will be used to alter their management plan and tie their monitoring back to EDT. The level of monitoring needed in this smaller subbasin should be determined with consideration of regional needs, opportunities, and economies of scale; i.e., the region doesn't need intensive and comprehensive monitoring everywhere. Where does Fifteenmile Creek fit into an overall monitoring strategy for the Basin?</p> <p>The fact that there are no hatcheries or dams (yet) in Fifteenmile makes it an attractive subbasin for comparing the efficacy of habitat restoration with other subbasins in this province that rely heavily on artificial production. The planners' list of actions is ambitious.</p>	<p>Partial</p>	<p>2</p>
<p>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).</p>		
<p>Reviewers: The Management Plan is comprehensive and clearly applicable to on the ground conditions as would be understood by the typical citizen. It does not include lots of boilerplate discussions or window dressing.</p> <p>To further improve upon this sturdy foundation the RME component of the management plan must strengthen its coordination, implementation and data management issues.</p> <p>The presentation of July 6, 2004 indicates that among the possible improvements in the efficiency of irrigation water use is the conversion to irrigation wells rather than in-stream withdrawals. Given that groundwater overdraft is one of the important sources of anthropogenic disturbance, plans to ensure more in-stream water through development of irrigation wells will need to be carefully assessed. Also, there seems to be some discrepancy between information in the text that says groundwater is a limiting factor, but that aquifers in the subbasin are rapid recharge, and irrigators may increase use of groundwater. Although these may not actually be inconsistent, they should be reconciled in the text to improve the plan.</p>	<p>Yes</p>	<p>1</p>

General Council Question. Consistency with the Fish and Wildlife Program and its Scientific Foundation

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

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

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

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

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

Reviewers: The Fifteenmile Subbasin Plan is consistent with the Council’s eight principles.	Yes	1
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