

7 Addendum

This is an addendum to the draft Columbia Gorge Mainstem Subbasin Plan submitted by Oregon Department of Fish and Wildlife to the Northwest Power and Conservation Council, May 28, 2004. The purpose of this addendum is to acknowledge the review by Council staff of the draft Subbasin Plan, of the written comments on the plan during the public review period, and of the comments by the Independent Scientific Review Panel. Comments submitted to Council during the public review period were prepared by:

Bonneville Power Administration (August 12)
Columbia River Inter-Tribal Fish Commission (August 12)
Oregon Department of Fish and Wildlife (August 12)
Oregon Invasive Species Council (August 6)
Oregon Subbasin Coordination Group.

Council staff state they do not believe that the issues identified during their review will affect the ability to adopt the plan under the Northwest Power Act and the 2000 Fish and Wildlife Program. However, staff did identify issues that if addressed, would strengthen the draft Subbasin Plan. While staff believes that outstanding issues could be resolved during implementation and future revisions of the subbasin plan, the subbasin plan authors have prepared this addendum to help future development and implementation of the subbasin plan. Response to Council staff is presented first, followed by responses to selected comments provided by other reviewers.

7.1 Council Staff

Council staff note specifically:

1. The assessment and management plan is weaker at addressing four focal species (chum salmon, Pacific lamprey, bald eagle, and western pond turtle) than white sturgeon; and
2. the ecological interactions resulting from the artificial production of anadromous fish could be better described.

7.1.1 Assessment and Management Plan

Authors note the following. For chum salmon, a more thorough investigation is warranted of existing knowledge of the disposition of the low number of chum salmon that are observed ascending the ladder at Bonneville Dam; availability of potential existing spawning and rearing habitat; and extent of loss of suitable habitat through the development and operation of the Federal Columbia River Power System (FCRPS).

A more comprehensive investigation of incidental or anecdotal observations of Pacific lampreys at different life stages could be fruitful, particularly along the Washington shore of the subbasin. Discussion of the passage rates through the dams observed through radio-telemetry studies was overlooked.

For bald eagles, a more thorough description of their life history, role in the subbasin ecology, and limiting factors is warranted (*see* CBFWA 1996). Specific recovery actions taken to protect and recover bald eagles could be presented. Implementation of the USFWS bald eagle recovery plan in the subbasin could be described. The results from past and ongoing studies need to be better described (*see* CBFWA 1996). The subbasin management plan overlooks past recommendations for bald eagle studies (CBFWA 1996):

- Trophic web studies in selected sampling zones;
- Determinants of bald eagle prey selection;
- Effects of various contaminants on eagles and their prey under various controlled conditions of stress, metabolism, and environment; and
- A system simulation of rates and variables in the LCR bald eagle ecosystem.

Management protection and recovery efforts of western pond turtles are thoroughly described in Washington and Oregon's management plans for the three known turtle populations (Dobson 1995 and Hays et al. 1999). However, the citation and reference for the Washington recovery plan was omitted (Hays et al. 1999; *see* 7.7. Addendum References).

7.1.2 Artificial Production of Anadromous Fish

Authors sought to be certain to describe the fact and magnitude of the downstream and upstream migrations of anadromous fish to and through the Columbia Gorge Mainstem Subbasin. However, addressing the alternative hypotheses about management and potential impacts of juvenile salmonids (whether hatchery or wild origin) was left to the existing and developing regional forums that address hatchery production issues (e.g. *US v Oregon* Columbia River Fisheries Management Program negotiations, APRE, HGMPs, IHOT, NOAA Fisheries consultations including the present court ordered remand, and others). Authors believe that nearshore habitat use by juveniles and the effects of alterations to nearshore habitat on juvenile survival (particularly ocean type Chinook salmon) could be better investigated in the draft subbasin plan. These types of issues might better be developed not within a single mainstem subbasin, but at a mainstem-systemwide scale.

7.2 Bonneville Power Administration

BPA notes prioritized strategies on focal species are incomplete (Enclosure 1 in Maslen 2004). Subbasin plan authors placed relative priorities on the strategies to meet objectives for the individual focal species but not across focal species. The distribution, territory, or range of all the focal species extend beyond the definition of the Columbia Gorge Mainstem Subbasin. Authors believe setting absolute priorities within a single mainstem subbasin (or possibly a single 'classical' subbasin) is premature before subbasin plans are "rolled-up" into a system-wide or ecological province context. The total score for the BPA F&W Internal Review for the Columbia Gorge is "5" and not "4" (Enclosure 1 in Maslen 2004).

7.3 Columbia River Inter-Tribal Fish Commission

Authors appreciate the positive comments in Attachment 1 of CRITFC (2004) regarding the white sturgeon and Pacific lamprey portions of the subbasin plan. CRITFC highlights an important omission, namely mention of the existence of the CFWA facilitated Lamprey Technical Workgroup and an upcoming regional conference on Pacific lamprey to focus on policy and technical needs of Pacific lamprey recovery in the Columbia Basin and how subbasin plans will contribute to lamprey recovery.

CRITFC raises an important issue about the fragmented treatment of mainstem subbasins, and the need to consider the river holistically and conduct planning efforts in an overall mainstem framework. This concept is similar to authors' responses on hatchery production and prioritization of strategies in 7.1.2 and 7.2.

7.4 Oregon Invasive Species Council

The Oregon Invasive Species Council (OISC) requests that information on the various invasive species management plans and OISC's work be incorporated into the final subbasin plans in Oregon watersheds. Authors acknowledge that the subbasin inventory is incomplete without describing the actions (or potential actions) to protect fish and wildlife in the subbasin from negative impacts of invasive species. Notably absent from the plan, but described in OISC (2004) are:

- Oregon Invasive Species Council
- Oregon Aquatic Nuisance Species Management Plan
- Federal Nonindigenous Aquatic Nuisance Prevention and Control Act 1990 (NANCPA)
- National Invasive Species Act of 1996
- Oregon Noxious Weed Strategic Plan
- Oregon Department of Fish and Wildlife Integrity Rules.

Additionally, programs in the Washington portion of the subbasin that address invasive species need to be included. Authors note the draft subbasin plan could also better describe the mapping and monitoring of the spread of Eurasian milfoil (being developed by USGS) and its potential impact on native fish and plant communities. Also, the introduced Asian clam and its potential effect on other species could be more fully developed.

7.5 Oregon Subbasin Coordination Group

Authors appreciate the considerable effort by participants in the Oregon Subbasin Coordination Group reviewing and commenting on all the draft subbasin plans in Oregon in addition to the Columbia Gorge Mainstem Subbasin Plan. Highlights of OSCG's overviews are presented below, followed by an acknowledgement by authors in *italic* text. Selected detailed OSCG comments are compiled in Addendum Table 1, to help with future updates or amendments of the 5/28/2004 draft subbasin plan.

Section 3.1.4 (Regional Context) is not discussed in any detail. Discussion of factors outside the subbasin could not be found, and the relationship within a regional context could be better developed. It was not clear to reviewers how a mainstem subbasin addresses this issue.

Authors did not describe in detail many of the factors that affect the mainstem aquatic environment and the physical processes that maintain or alter it. Authors deferred to existing and developing regional forums that address water quality and quantity issues that result from management of the Columbia Basin upstream of the subbasin.

Hypotheses: This section does not appear in the document. What are the hypotheses, assumptions, and uncertainties for aquatic focal species?

The hypotheses supporting the strategies for each of the focal species are presented in Section 5, Management Plan for the Columbia Gorge subbasin.

Desired future conditions that would ensure long-term sustainability are not addressed.

Desired future conditions are embodied within the objectives for the individual focal species. See for example 5.2.1, Objective 2 for white sturgeon: Productivity. Attain a level of production (natural recruitment and individual growth) that would allow the sustainable consumptive harvest of 5 kg/ha as suggested in Beamesderfer et al. (1995). Also see 5.2.4, Objective 2 for bald eagles: Increase the number of nesting birds to 23 pairs over the next 15 years.

Objectives need more work. The plan doesn't really provide any discussion of how the strategies it proposes will bring about the desired future condition of chum, or of how the strategies will accomplish the vision. While the strategies are clearly directed toward both these efforts, the planners haven't done any analysis or included any discussion of the feasibility or likelihood of success.

Authors acknowledge need for more work on some of the objectives, as well as Council staff's assessment that issues like these could be addressed during the implementation stages or future amendments of the plan. Using Chum salmon as an example, authors did not determine with certainty whether some of the proposed strategies would be feasible in the Columbia Gorge Mainstem Subbasin.

Strategies section: Strategies are too general. Bull trout should have specific strategies based on QHA analysis and Draft BT recovery plan. Example: Investigate and implement methods to provide two-way fish passage at Thief Valley Dam, Mason Dam. The logic thread is lost here and the connection between strategies, objectives and vision is not established.

Bull trout were treated as a significant species in the subbasin but were not addressed as a focal species. The subbasin's Technical Working Group initially considered selecting bull trout as a focal species for the Columbia Gorge Mainstem Subbasin. TWG was uncertain, to what extent the subbasin was used by bull trout other than over-winter habitat for adfluvial adults. QHA and EDT were not used for the Columbia Gorge mainstem in accordance with guidance from the Oregon Subbasin Plan Coordination Group.

Clean Water Act/ESA: the management plan does not describe how the objectives and strategies are reflective of and integrated with these programs.

Proposed management objectives and strategies for the focal species did not appear to counter the requirements of CWA/ESA. Pursuing restoration of chum salmon in the subbasin is consistent with ESA-related objectives. Future versions of the plan need to incorporate ongoing efforts of the NOAA Technical Recovery Teams and the USFWS-lead bull trout recovery team.

In addition to the federal Clean Water Act, authors did not describe the important water resource protections in Oregon administered by Oregon Water Resources Department. These measures need to be included and described as part of the subbasin plan inventory.

RM&E: The linking with regional effort does not appear to be in the document. Also, while individual RME activities are listed for each species (wish list approach), there is no attempt to present a cohesive RME effort for the entire subbasin.

The distribution, territory, or range of all the focal species extend beyond the definition of the Columbia Gorge Mainstem Subbasin. Authors believe a more cohesive RME effort could be more fully developed in a systemwide-mainstem or ecological province context.

7.6 Independent Scientific Review Panel

- Authors appreciate the considerable effort of ISRP members to review and comment on all the draft subbasin plans in the four Columbia Basin states including the Columbia Gorge. ISRP concludes the draft subbasin plan provides a sound starting point from which to further develop and prioritize biological objectives and strategies, particularly as they address white sturgeon. ISRP does identify inadequacies particularly with treatment of the other focal species: the plan does not adequately identify limiting factors for enough aquatic focal species to constitute an ecosystem approach; and it does not adequately identify and discuss out-of-basin factors that may be limiting focal species.
- Authors acknowledge that some interspecies-relationships could be better developed, and that effects of the hydropower system is certainly a limiting factor to some species and their habitats. Specifically, some topics that were considered but not fully developed include:
- Examine fish community dynamics, including interspecific-relationships of non-native fishes at different life stages. Develop management objectives that address fish species at a community level.
- Examine species interactions and responses to the impacts of reservoir operation on shoreline and nearshore habitats.
- Monitor effects of hydro operations on nearshore and benthic habitats. Effects include short term impacts of operating pool elevations to shoreline and nearshore aquatic and terrestrial habitats; seasonal impacts to shoreline, nearshore, and benthic habitats; and long term effects

on dynamic hydraulic forces that influence seasonal wetlands, backwaters and embayments, and sediment retention or transport.

Selected detailed ISRP comments are compiled in Addendum Table 7.8.2, to help with future updates or amendments of the 5/28/2004 draft subbasin plan.

7.7 Addendum References

BPA. 2004. Letter to Judi Danielson, Chair, Northwest Power and Conservation Council, from William C. Maslen, Director for Fish and Wildlife, Bonneville Power Administration, dated 8/12/2004. Portland, OR.

CBFWA. 1996. Contamination ecology of selected fish and wildlife of the lower Columbia River. A report to the Bi-State Water Quality Program. Columbia Basin Fish and Wildlife Authority. Portland, OR.

CRITFC. 2000. Letter from Olney Patt, Jr., Executive Director, Columbia River Inter-Tribal Fisheries Commission to Judi Danielson, Chair, Northwest Power and Conservation Council, dated 8/12/2004. Portland, OR.

Hays, D.W., K.R. McAllister, S.A. Richardson and D.W. Stinson. 1999. Washington State recovery plan for western pond turtle. Washington Department of Fish and Wildlife, Wildlife Management Program. Olympia, WA.

OISC. 2004. Letter to Lynn Palensky, Northwest Power and Conservation Council from Dr. Mark Sytsma, Chair, Oregon Invasive Species Council, dated 8/6/2004. Portland, OR.

7.8 Addendum Tables

The following two tables are included to capture key detailed comments prepared by OSCG and ISRP for use in future implementation or amendment of the draft plan. As time allowed, authors have incorporated some notes in response to comments.

7.8.1 Detailed Comments from OSCG

Selected OSCG Comments	Notes for future responses
<p>A. There are some editorial errors. Could use an introductory paragraph describing the organization of the document (plan). Explain which tribes were included in the subbasin planning area and which other subbasin plans are addressing these tribes. Discuss coordination with WA.</p> <p>B. P. 7: Suggest saying chum salmon have been “virtually extirpated” rather than “extirpated” (there are a few there!).</p> <p>C. P. 8: Need to clarify the following sentence: “Chum salmon are listed under federal ESA, historically entered the planning areas, and are genetically similar to chum salmon in the Bonneville Dam tailrace.” They didn’t just “enter” the area historically (e.g., they spawned there)—and need to clarify which chum or genetically similar to which others (that clause is particularly unclear). Verb tenses are awkward here too—clarify.</p> <p>D. P. 13: last sentence under item 1 in Objectives for Chum Salmon should read: “It is also consistent with subbasin plan objectives for the Wind River being developed by the Lower Columbia Fish Recovery Board in Washington.”</p> <p>E. There is no specific information on the inventory contained in the Exec. Summary.</p>	
<p>Describe nature and extent of coordination with Washington, including LCFRB.</p>	<p>Coordinated geographic coverage of areas outside of Bonneville Reservoir, consistency of species accounts downstream and upstream of Bonneville Reservoir, and identification and rationale for selecting focal species.</p>
<p>No indication of local or regional support. How were stakeholders</p>	<p>Stakeholder involvement could be developed further.</p>

specifically involved? What was the level of participation/response?	
A. P. 19, Sec. 2.4, first bullet: how is an issue such as passage not all that important in a mainstem subbasin with two major hydroelectric B. Explain which plans address the tributaries that were part of this planning area.	A. explain that passage issues are addressed in Mainstem-Systemwide, and have specific forums and means to deal with it that may be separate from individual NPCC subbasin plans.
Funding for revisions is uncertain. Schedule for second half of 2004 and future revision schedule are not discussed.	
An adequate verbal description of the subbasin was given, however, maps depicting ownership and land use would have been helpful.	.
A. Development history lacking. B. A map of the subbasin and the planning area would be helpful! C. P. 23, first full paragraph: in the substrate discussion, clarify whether discussion relates to channel or shallow water areas. D. P. 23, second full paragraph: provide a river mile reference for the area between Bonneville Dam and Ruckel Creek.	A. B. C. Substrate composition is compiled from shore to shore in large reaches at a coarse scale. Depicting substrate types by water depth would be helpful. D.
This topic not addressed in any detail. What Ecological Province does the Gorge belong to? What other subbasins are in that province? What do they have in common and what is unique to the Gorge subbasin? What does the province have in common and different	
Paragraph 3.3.2 could use some re-writing: see earlier comment on the “historically entered...genetically similar” sentence. Verb tenses are confusing throughout this whole paragraph, actually—e.g., their historic range may contribute or may have contributed? (or reestablishing their historic range may contributed...) Similar problems throughout this paragraph.	
Change reference to chum salmon being “extirpated” to “virtually extirpated” (also note that on p. 40 the plan text says “virtually extirpated” so this change will make the plan consistent throughout). Add steelhead to the next-to-last sentence in paragraph 3.2 (anadromous fish that use the subbasin as a migration corridor). Last sentence of this paragraph: clarify whether you are talking about both anadromous and	Referring to anadromous form of <i>O. Mykiss</i> ..

resident forms of <i>O. mykiss</i> .	
Discussion of factors outside the subbasin could not be found, and the relationship within a regional context could be better developed. Not clear how a mainstem subbasin addresses this issue.	96% of the discharge through the subbasin comes from upstream – land and hydro system ops effect the quality of reservoir habitat.
P. 41, Restoration Potential: Is the Pribyl discussion of coho relevant (since chum use different parts of the stream)? Also, regarding the potential to reclaim spawning areas, the plan should note that in this subbasin, historic spawning areas may be under the Bonneville pool.	Whether chum spawning habitat still exist needs to be determined. The fact that other species of anadromous fish can still spawn in some tributaries, provides indirect evidence that some areas may still exist for chum.
Predation by hatchery coho and chinook salmon releases may negatively interact with chum salmon recovery in the future. Timing and distribution of chum salmon spawning in the subbasin will need to be evaluated and hatchery programs adjusted to minimize interactions.	Predation by other species could also occur. Below Bonneville Dam, the earlier outmigration, and the water conditions (cooler temperature and lower turbidity) could limit the extent to which hatchery released fish could prey on chum fry.
<p>A. Text references Table 14 as summary of limiting factors. This reference is incorrect – Table 17 contains this information.</p> <p>B. Limiting factors predominantly involve hydroelectric facilities and their operation.</p> <p>C. In some cases, the use of mainstem habitat is not well known or documented, and limits the ability to provide specific analyses. Again well done given the time constraints.</p> <p>D. Last sentence of first full paragraph under 3.12.2: This is most likely the highest priority or most significant issue in this subbasin and should be highlighted as such.</p> <p>E. First bullet under 3.12.2: any estimates of how much habitat has been lost to inundation and where?</p> <p>F. Second bullet under 3.12.2: Instead of “propensity,” say that a lower percentage of chum enter the tailrace and ascend the ladders than is observed in other species?</p> <p>G. Third bullet under 3.12.2: Are the locations of these blockages known?</p>	<p>A.</p> <p>B.</p> <p>C.</p> <p>D. Knowing what the most significant limiting factor to chum upstream of Bonneville requires a closer evaluation of what habitat might still exist..</p> <p>E. No, not yet. Changes of river pre- and post- BON using USACE aerial photos could be examined; The original alluvial areas of tributaries have been inundated. the rate at which they are or can redevelop was not evaluated..</p> <p>F.</p> <p>G. Specific blockages were not identified yet.</p> <p>H. Not without more information and investigation (needs additional check to see what information has already been compiled).</p>

<p>H. Is it possible to rank these limiting factors in terms of relative importance (also see first comment in this section).</p>	
<p>An interpretation and synthesis section does not appear in the document.</p>	
<p>What are the hypotheses, assumptions, and uncertainties for aquatic focal species? For terrestrial species?</p>	<p>Assumptions and uncertainties for the focal species are described in the Management section of the draft plan..</p>
<p>A. Desired future conditions that would ensure long-term sustainability are not addressed.</p> <p>B. The goal for chum salmon is to establish at least one chum salmon spawning population in the subbasin to support recovery of the entire ESU. This goal appears to be consistent with the TRT’s ESU viability criteria, but the goal is short on specifics (For example, shouldn’t the goal be to establish at least one <i>viable</i> or <i>self-sustaining</i> population? How will viability or self-sustainability be measured? Where will attempts to re-establish the population be made?). The plan needs to at least note that these aspects of the desired future conditions still need to be developed. Also, we should check with Washington reviewers to see if they want a more explicit connection with the Lower Columbia Fish Recovery Board goals—this plan acknowledges the Board and is consistent with its plan but it doesn’t explicitly link to the goals established in that plan.</p>	<p>A. Desirable future conditions are described for each focal species in the Management section of the draft plan (e.g., 23 nesting pairs of bald eagles over the next 15 years in the Columbia Gorge).</p> <p>B.</p>
<p>Opportunities (refugia, properly functioning habitats, etc.) were not identified.</p> <p>For chum, these are gaps in our current knowledge, and the plan notes that but it should place a higher priority on the need to determine whether potential habitats exist and then restore them if so.</p>	
<p>This section does not adequately list existing water resources protections. Legal protections that need to be included:</p> <ol style="list-style-type: none"> 1. allocation of conserved water program ORS 537.470; 2. delivery and use of water under water exchange ORS 540.541-543; 3. delivery of stored water ORS 540.410; 	<p>Put in inventory. Briefly explain OWRD protection of Gorge tributary water quality and quantity sustains cool, clean streams that flow into BON.</p>

4. regulation of water by watermaster ORS 540.045 to protect existing rights including instream water rights;
5. lease of water rights instream ORS 537.348;
6. transfer of water rights instream ORS 540.510;
7. transfer of a surface water point of diversion to a ground water well ORS 540.531.

Also, this inventory should include public interest standards for new water withdrawals from the Columbia River under OAR Chapter 690, Division 33.

In addition to statewide water resources statutes, existing protections include ORS 538-200 – withdrawing waterfalls near the Columbia River Highway. See ORS language pasted below.

538.200 Streams forming waterfalls near Columbia River Highway; withdrawal from appropriation or condemnation; diversion or interruption prohibited. The following streams and waters thereof forming waterfalls or cascades in view of, or near, the Columbia River Highway, from Sandy River to Hood River, the first 17 of which are in Multnomah County and the remainder of which are in Hood River County, are withdrawn from appropriation or condemnation, and shall not be diverted or interrupted for any purpose whatsoever, except as mentioned in ORS 538.210:

- (1) Latourell Creek–forming Latourell Falls.
- (2) An unnamed stream whose waterfall is approximately at the southwest quarter of the southwest quarter of the northwest quarter of section 28, township 1 north, range 5 east, at the northern edge of Tax Lot 27/28. The fall is on the south side of the old Columbia River Highway 0.7 mile west of the highway bridge at Young Creek.
- (3) An unnamed stream whose waterfall is approximately at the southeast quarter of the southwest quarter of the northwest quarter of section 28, township 1 north, range 5 east, at the northern

intersection of Tax Lot 27/26. The falls are on the south side of the old Columbia River Highway 0.6 mile west of the highway bridge at Young Creek.

- (4) An unnamed stream whose waterfall is approximately at the northeast quarter of the northeast quarter of the northwest quarter of section 28, township 1 north, range 5 east, Tax Lot 3. The falls are on the south side of the old Columbia River Highway 0.1 mile west of the highway bridge at Young Creek.
- (5) Young Creek—forming Shepperd Dell Falls.
- (6) Bridal Veil Creek—forming Bridal Veil Falls.
- (7) Coopey Falls Creek.
- (8) Mist Falls Creek.
- (9) Wahkeena Creek—forming Wahkeena Falls, formerly known as Gordon Falls.
- (10) Multnomah Creek—forming Multnomah Falls.
- (11) Oneonta Creek—forming Oneonta Falls and Gorge.
- (12) Horse Tail Creek—forming Horse Tail Falls.
- (13) Tumalt Creek.
- (14) McCord Creek, formerly known as Kelly Creek—forming Elowah Falls.
- (15) Moffatt Creek—forming Wahe Falls.
- (16) Tanner Creek—forming Wahclella Falls.
- (17) Eagle Creek—forming Metlako Falls.
- (18) Ruckle Creek, formerly known as Deadman's Creek.
- (19) Herman Creek.
- (20) Grays Creek.
- (21) Gorton Creek—forming Gorton Creek Falls.
- (22) Harphan Creek.
- (23) Summit Creek—forming Camp Benson Falls.
- (24) Lindsey Creek—forming Lindsey Falls.
- (25) Spring Creek, also known as Wonder Creek—forming Lancaster Falls.
- (26) Warren Creek.

<p>(27) Cabin Creek. (28) Starvation Creek–forming Starvation Falls. (29) Viento Creek. (30) Perham Creek. (31) Phelps Creek, except those creeks which are tributary to Phelps Creek and which arise in the north one-half of section 5, township 2 north, range 10 east of the Willamette Meridian, subject to prior rights. [Amended by 1953 c.48 §2; 1985 c.261 §1]]</p> <p>Include SB1010 and statewide land use planning under state protections?</p>	
<p>A. No mention of Columbia River basin program (OAR Chapter 690, Division 519).</p> <p>B. P. 65. There was no information presented for the bald eagle.</p> <p>C. A bull trout draft recovery plan was completed in 2002 and updated in 2003. While final adoption is pending the 5-year review on the listed status of this species, the inventory should acknowledge this information and extract useful portions as needed.</p> <p>D. P. 64, FCRPS section, second paragraph. First sentence should read: “NOAA Fisheries has initiated recovery planning with the establishment of Technical Recovery Teams (TRTs) for the Interior Columbia, which includes the Snake River, and the Willamette/Lower Columbia. Both TRTs are developing recommendations for delisting criterion and viability criteria for populations within ESUs and for ESUs. TRTs will work with stakeholder-based forums to develop formal ESA recovery plans for listed salmon and steelhead.” (W/LC domain includes the chum ESU)</p> <p>E. Mention the FCRPS BiOp remand process?</p> <p>F. P. 65: add the Lower Columbia Fish Recovery Board’s recovery plan.</p>	<p>A. Put in inventory. B. Add. C. Put in inventory. Reference under Resident Salmonids, p 24. D. Okay E. No. 2000 BiOp is still in effect and remand has not concluded. F.</p>
<p>A. NOAA paragraph under 4.3.2: last sentence should read “Federal</p>	<p>A.</p>

<p>agencies are required to consult with NOAA Fisheries under section 7 of the ESA regarding any actions they fund, authorize, or conduct that may affect listed salmon and steelhead.”</p> <p>B. P. 70: Land Conservation and Development Commission—this should be Department of Land Conservation and Development.</p>	<p>B.</p>
<p>P. 72, Sec 4.4. Are there any projects done by the Corps of Engineers under the AFEP program currently or in recent times (I would be surprised if nothing is being done with two major dams on location)?</p> <p>Lists BPA-funded projects only—are there any others? If so, should be listed.</p>	<p>Links to AFEP could be better described; projects addressing the mainstem away from the two projects were not identified.</p>
<p>Again, what’s here is pretty skeletal, but it’s minimally adequate. For chum, another study need is to determine whether there are any suitable habitats that are not submerged by the Bonneville reservoir.</p>	
<p>The plan doesn’t really provide any discussion of how the strategies it proposes will bring about the desired future condition of chum, or of how the strategies will accomplish the vision. While the strategies are clearly directed toward both these efforts, the planners haven’t done any analysis or included any discussion of the feasibility or likelihood of success.</p>	
<p>Hypotheses are presented, but there is no rationale to back them up. The hypothesis statement alone doesn’t help the reader understand the uncertainty or the legitimacy of such statement.</p> <p>The low abundance of adults above Bonneville may require the use of some artificial propagation activities in the subbasin, and is consistent with improvements to habitat, but is not mentioned as a possible strategy.</p>	
<p>not clear whether any alternative management responses were considered; however, the strategies proposed for chum make sense.</p>	
<p>A. Planners indicate that strategies were prioritized according to the following scale: urgent, high priority, and information needed. How</p>	<p>A. B.</p>

<p>were these priorities assigned? Was this a consensus decision of those involved in the planning? Do these priorities enjoy public support? As a reviewer, this is difficult to follow since there is no rationale offered for the assignment of priorities to each strategy.</p> <p>B. For chum, provide suitable spawning habitat within Bonneville Reservoir should be an equal priority with providing suitable reservoir conditions for passage, etc. (pp. 84-85). Distinction between strategies and R, M, and E actions is not always clear. Seems that some of the R, M, and E actions should be strategies.</p>	
<p>Consistency with Clean Water Act?</p>	
<p>not a lot of explicit discussion of all four VSP parameters (abundance, productivity, spatial structure, diversity). Adding this would be an improvement. Also note the comment above regarding checking with WA re. links to the Lower Columbia Fish Recovery Board recovery plan.</p>	
<p>A. The linking with regional effort does not appear to be in the document. Also, while individual RME activities are listed for each species (wish list approach), there is no attempt to present a cohesive RME effort for the entire subbasin. Absent this, for example, should we fund research on eagles or monitoring on lamprey? How are all these RME activities prioritized and related to one another? In the end, what we get is a bunch of statements promoting that we get new information on individual species, but what is missing here is a subbasin-wide mechanism to organize our knowledge, our next steps in RME, and our future management decisions based on that new knowledge. It does not appear that the authors adhered well to the Council's Technical Guidance for subbasin planners.</p> <p>B. PNAMP is not referenced.</p> <p>C. The R, M, and E section for chum, on p. 85, notes the dearth of information on the status of chum within Bonneville Reservoir. The states have done some surveys since 2001—it's not clear whether the</p>	<p>A. Establish fish community management objectives; Adequately map benthic and nearshore environment; monitor changes over time?</p> <p>B. Put in inventory. (PNAMP was not yet developed during the subbasin planning period)</p> <p>C. Call someone in WA and add info to chum assessment.</p> <p>D. Okay.</p> <p>E. Okay</p> <p>F. This could be a detail of implementation.</p> <p>G. Okay.</p>

<p>author is aware of these or not.</p> <p>D. Regarding item “c” on p. 85, there is a relevant ongoing WDFW study, but it’s not clear whether the authors are aware of it. Please contact us if you want more information.</p> <p>E. Item “f” on page 86 should be the number 1 priority—in fact this could be a strategy rather than a research need.</p> <p>F. Item “g” on p. 86 proposes to experiment with the use of remote site incubators to enhance chum spawning in some basins. The source of eggs used in these RSIs will need to be identified and the program should be part of an HGMP for the subbasin. The experimental use of trap and haul of adults will also need evaluated in more detail and could be part of the above HGMP.</p> <p>G. Another information need (either strategy or R, M, and E action) should be to determine whether the hydrologic processes needed for chum salmon are still present in the upper gorge habitat above Bonneville pool.</p>	

7.8.2 Detailed Comments From ISRP

Selected ISRP Comments	Notes for future responses
<p>It would help to have the map of the subbasin in the text instead of in an appendix. Tables referenced in the text should also be included in the text rather than in an appendix. Putting this information in the body of the document would augment the plan's readability.</p>	<p>Agreed.</p>
<p>The plan's description of the subbasin's macro-environment is a condensed summary that could stand to have more details on water quality, riparian condition, weather, climate, and the effect of hydroelectric operations on the availability (timing and quantity) of water. Including information on the two hydroelectric projects and their major impacts on the subbasin is especially important to maximizing the efficacy of the plan.</p>	
<p>human uses, but they are not described in terms of how those uses affect the environment. Land uses are listed as commercial, residential, industrial, etc. These are not the most informative set of categories. Once again, the effects of the hydroelectric system should be accounted for.</p>	
<p>ESA listed, rare, ecologically important species in the subbasin, and species that are of special interest to American Indians are not listed,</p>	<p>Discuss the 8 salmonid ESUs listed under ESA that use the subbasin; have ONHI list of sensitive species (flora and fauna), but could not subset the info to include the planning area only (as opposed to Oregon's side of the Columbia River Gorge). A table could be created, but assessment would be fairly coarse –essentially a list of x plants, as well as invertebrates that are unique to the Gorge but the linkage to the mainstem would still be incomplete.</p>
<p>More discussion of the relationship between this mainstem reach and those above and below it is needed.</p>	<p>96% of the flow through BON originates upstream – water velocity, temperature, and turbidity are a function of hydro ops except when flow exceeds hydraulic capacity of dams.</p>
<p>short section in the plan describing these species and the relevance of the reservoir habitat and hydrosystem affecting them should be added. It</p>	<p>Could more fully develop a description of altered hydrosystem and impacts to native fish (e.g., reference</p>

would be effective to add a table that summarizes all the listed species that use this subbasin.	Return to the River, and perhaps describe nearshore habitat use of species such as juvenile fall Chinook salmon).
The overview needs more discussion of the listed species that migrate through the subbasin and could pull in more detailed material from other parts of the plan.	Describe the 8 ESA-listed salmonid ESUs.
Selection criteria are not identified in the text but are listed in a table in the appendix. It would be better to have the selection criteria specifically listed in the text.	.
The white sturgeon fishery is a key factor in this subbasin, and the potential effects of the catch and release fishery should be discussed. It would also be useful to present sturgeon harvest data as a plotted time series. Harvest of spring chinook, smallmouth bass, and other fish are not adequately discussed.	Make sure that the mgmt plan (RME) section includes evaluating specific sources of mortality subject to discretionary mgmt actions. Harvest estimates that were partial estimates done incidentally to other fisheries monitoring (NPM and WSTG programs) were not presented. For commercial catches, not sure that BON can be distinguished from all of Zone 6.
Potential future environmental conditions are not addressed.	
Passage and associated predation issues are discussed as part of the assessment of the focal species. It needs a summary in a separate section.	Describe more fully passage issues, exotic species, and altered environment in the overview part of the assessment.
A better characterization of the ecosystem is needed.	
the plan does not adequately cover other species in the reservoir. (interspecific relationships among non-focal species)	
plan does not adequately cover other species, such as American shad, in the reservoir or the reservoir environment in general. (ecological functions)	Can present some SMP data on juvenile shad outmigration magnitude and timing. Then maybe some speculation on competition for food and contribution (refer to Petersen et al.)
(Working hypotheses) are addressed in the Management Plan and they should be put into a summary and synthesis section in the Assessment.	
Although the Assessment is adequate in regard to the focal species, many other species that have important implications for the habitat, species interactions, etc. are omitted. The description of the reservoir environment, outside of sturgeon, is inadequate. Overall, the Assessment	Monitoring of fish community and change to reservoir habitat over time might be included, but the scope of the plan was limited to the resources available to prepare it.

is deficient. Current and potential effects of American shad and aquatic macrophytes aren't adequately described. There are potentially a lot of missed opportunities.	
Protections are listed as the broad legal ones-- federal and state -- but are not specific to the subbasin.	
Protections for fish, wildlife, and ecosystem resources are not assessed.	Could better explain some of the protections: Federal Eagle plan, CGNSA plan and activities, ESA-recovery planning.
plans are just presented but not related to the subbasin.	
Several ongoing projects (RME) are listed but the relationships to other activities in the subbasin should be better described.	Describe interrelationship of white sturgeon management across the reservoirs; eagle monitoring is applied across subbasins; bull trout recovery planning occurs across basins.
Limiting factors are not addressed in specific terms (as they are addressed in the inventory), but it is possible to piece together some of that information from the narrative. Achievements are noted for only a couple of projects.	
A section addressing gaps is included, but it only identifies several additional needed actions for white sturgeon. This section should be more detailed for the other focal species.	Add some additional information on turtles in Oregon. The eagle section describes some unknowns (regional redistribution vs. a locally growing population).
The Inventory should be more specific in relating programs back to the assessment of limiting factors. The Inventory misses a discussion of the mortality effect of the hydrosystem on migrating fish (juvenile and adults).	
Part of this is in the plan (physical and biological changes within the subbasin needed to achieve the vision), but it could be improved. For example, what biological changes would have to occur to achieve the Tribal objectives?	
Where possible, are the biological objectives empirically measurable and based on an explicit scientific rationale; i.e., quantitative with measurable outcomes? Reviewers: This was accomplished for some of the objectives	

but not all.	
Specific timeframes are identified for some objectives (from the CRITFC plan for aquatic species) and for bald eagles. Most do not have specific timeframes identified.	This gets into some pragmatic issues, such as availability of funding through the FWP.
The ecosystem focus called for in the Fish and Wildlife program is not fully implemented. This subbasin is an important migration route and provides transitory rearing. Those ecological functions are not adequately addressed.	.
Alternative management responses (strategies) are not discussed.	Some alternatives seem untenable: do little or nothing, continue status quo and were not included.
Additional assessment needs are not described.	
RME is outlined for each focal species but not integrated across the subbasin.	
The RME indicates general information that will be needed but does not identify specific indicator variables.	Okay. Animal recruitment rates, condition factors, contaminant levels.
Monitoring indicators are not defined.	Okay. Animal recruitment rates, condition factors, contaminant levels.
Data and information archive issues are not discussed.	Sturgeon management is reported annually in written reports, at professional symposia, and through peer reviewed journal articles.
The RME is discussed in general terms in reference to ongoing plans that are either out of the subbasin or will cross subbasins. It is unclear what data exist for the reservoir and who has the responsibility for collecting the data. The plan should include a discussion of this. No 3	Could more clearly explain the agencies' roles in managing the focal species.
The RME agenda is not addressed except in very general terms.	Could add more detailed examples.
Management Plan is adequate for the focal species, especially white sturgeon, but the plan fails to put the subbasin in an ecosystem context. The executive summary of the subbasin plan is a little confusing in its current form, as the reader is walked through the same sections as the full	Tables and figures can be put in text body.

<p>plan. It would be more effective to pull out the key points in narrative form for the assessment, inventory and management plan. It would also be more useful to include tables and figures in the text so that they are right at hand with the text discussion.</p>	
<p>Some ecosystem functions are not addressed.</p>	