Sandison, Derek

From: Rebecca Sherman [northwest@hydroreform.org]
Posted At: Friday, November 11, 2005 2:03 PM
Conversation: Comments on Condit Dam Removal SEIS
Posted To: Condit Dam

Subject: Comments on Condit Dam Removal SEIS

SEIS
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Please find attached the comments of American Rivers, Trout Unlimited, and Friends of the White Salmon River. A hard copy will follow in the mail. If you have immediate questions or require another format of the comments, feel free to contact me. For questions on the substance of the comments, please direct them to Brett Swift with American Rivers at (503) 827-8648.

Thank you for the opportunity to comment.

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American Rivers

Sent Via Email: **ConditDam@ECY.WA.GOV** (hard copy to follow via regular mail)

November 11, 2005

Mr. Derek Sandison
SEPA Responsible Official
Washington Department of Ecology
15 W Yakima Ave., Ste. 200
Yakima, WA 98902-3452

Re: Proposed Condit Dam Removal Project, FERC No 2342
Draft Supplemental EIS

Dear Mr. Sandison:

On September 30, 2005, the Washington Department of Ecology (WDOE) released for public comment its Draft SEPA Supplemental Environmental Impact Statement (SEIS) for the proposed Condit Dam Removal Project, FERC No. 2342. The SEIS contains a comprehensive analysis of the proposed dam removal, including the incorporation and adoption of previously released environmental assessments conducted by the Federal Energy Regulatory Commission (FERC). It established a deadline of November 15, 2005 for submission of public comment.

American Rivers has been involved in the Condit dam relicensing for more than ten years and has a direct and significant interest in the outcome of this proceeding. We support the Department of Ecology's independent review of the proposal to remove Condit Dam. We have reviewed the SEIS and offer the following comments and recommendations on behalf of American Rivers, Trout Unlimited, and Friends of the White Salmon River (collectively, American Rivers).

A1-1

General Comments

American Rivers strongly supports the Condit Dam Removal Project. For nearly a century, Condit Dam has adversely affected the ecosystem and natural ecological processes of the White Salmon River and interfered in the health of the anadromous salmon and steelhead populations that historically relied upon spawning and rearing habitat above the dam. Some impacts include blocked access to historic habitat, altered flow and temperature, and reduced or eliminated transport of spawning size gravel and LWD. The Big White Salmon Subbasin

A1-1
Preference acknowledged.

Plan found that spring chinook extirpation from the White Salmon River is likely a result of the lack of passage at Condit Dam.[1] There is no question that removing Condit Dam, as proposed in the Settlement Agreement and recommended by Federal Energy Regulatory Commission (Commission) staff,[2] will benefit fish, recreation, and cultural resources of the White Salmon River and in the long term, will enhance beneficial uses of the river. As noted on many occasions, dam removal is recognized by federal, state, and tribal fishery experts to be the best alternative for the White Salmon River salmon and steelhead resources.

A1-2

The SEIS provides a comprehensive analysis of the various impacts that may result from the removal of Condit Dam. It provides significant detail on the probable adverse environmental impacts, focusing on those that are expected to be significant, and the range of mitigation measures to be implemented by PacifiCorp. To a lesser degree, the SEIS documents the anticipated long-term benefits of removal. Many of those benefits are discussed in detail in FERC's Final Supplemental Final Environmental Impact Statement. As required by RCW 43.21.031, the SEIS, in combination with FERC's previously released documents, discusses significant short-term and long-term environmental impacts, significant irrevocable commitments of natural resources, significant alternatives including mitigation measures, and significant environmental impacts which cannot be mitigated. The SEIS clearly meets the requirements of state law.

A1-3

As the SEIS makes clear, dam removal is expected to result in few significant adverse impacts. In particular, these include the impacts from the initial release of sediment. The majority of expected impacts will be insignificant, in part because of the multitude of mitigation measures to be implemented by PacifiCorp. The SEIS makes clear that the impacts from sediment associated with construction areas, accidental spills if any, and, from reinforcing the Northwestern Bridge, to name a few, will be negligible because of measures such as a Revegetation Plan, Erosion Control Plan, Woody Debris Management Plan, Spill Containment and Prevention Plan, and a fall chinook capture and release program.

Perhaps most important, the SEIS' comprehensive analysis of benefits and impacts of Condit Dam removal illustrates that removal provides a unique restoration potential and that it is wholly consistent with the goals of the Clean Water Act. For example, the SEIS acknowledges that all the non-removal alternatives will have greater impacts on the river than dam removal. (SEIS, p.2-3) The relevance of this cannot be overstated. As a society, we need to be willing to accept some short-term impacts when we have the opportunity to remove a dam, restore a free-flowing river, and greatly improve the long-term health of the White Salmon River. Even with regard to those resources that the SEIS anticipates will be most affected by removal – Lower Columbia River chum and macroinvertebrates – they are expected to rebuild within 3 to 5 years of removal.

A1-4

Although the SEIS details some of the expected dam removal benefits, it fails to adequately depict the role of Condit Dam removal in the region's salmon and steelhead recovery efforts. The SEIS should provide additional discussion of how Condit Dam removal will further the region's recovery goals. For example, the Lower Columbia River Salmon

A1-5

[1] Big White Salmon Subbasin Plan, Prepared for the Northwest Power and Conservation Council, (May 28, 2004).
[2] Federal Energy Regulatory Commission, Final Supplemental Final Environmental Impact Statement, Condit Hydroelectric Project (June 2002).

A1-2
Preference and comments acknowledged.

A1-3
Comment acknowledged.

A1-4
Preference acknowledged.

A1-5
The benefits of the proposed Condit Dam removal project to the region's salmon and steelhead recovery efforts are noted. In Section 4.3.2 Impacts to Aquatic Resources, the FSEIS acknowledges that the removal of Condit Dam would increase the available habitat for anadromous fish within the White Salmon River basin, increasing the long-term viability of existing anadromous fish populations in the basin. The beneficial effects on regional recovery efforts are discussed as cumulative effects.

Recovery Plan[3] emphasizes the benefits to recovery efforts to result from removing fish passage barriers throughout the watershed. In particular, the final SEIS should include a discussion of the following documents, their analysis, and recommendations:

A1-5 Continued

- The Northwest Power Planning Council's Big White Salmon Subbasin Plan.
- Wind River/White Salmon Watershed (Water Resource Inventory Area (WRIA) 29) related documents.

The Big White Salmon Subbasin Plan[4] identified several biological objectives for the basin, one of which is to improve the quantity and quality of presently reduced and degraded fish and wildlife habitat to amounts that will sustain native fish and wildlife species. The plan made two key findings related to attainment of that goal: (1) habitat above Condit Dam is capable of supporting anadromous fish, calling for protection of functioning habitat and watershed processes throughout the basin, and (2) EDT modeling predicts that the current habitat in the White Salmon River is not capable of supporting self-sustaining anadromous fish runs below the dam.[5] Importantly, the plan found that the most limiting factor for anadromous salmonids is the construction and operation of Condit Dam, which causes ESA-listed steelhead, spring chinook, and coho to access only a small fraction of their historic habitat.[6]

A1-6

In 1993, the legislature mandated the Department of Ecology to institute a watershed approach to water quality management (the WRIA process). This process calls for the identification of limiting factors for each watershed, followed by development of a restoration plan. With regard to the White Salmon River, the state has identified the Wind River/White Salmon Watershed (Water Resource Inventory Area (WRIA) 29) as a historically important source for production of anadromous fish in the Lower Columbia River Basin. It also recognizes that hydroelectric development in the White Salmon River has had a serious detrimental effect on the aquatic resources in the WRIA 29. The limiting factors report for the WRIA 29 specifically mentions Condit Dam removal negotiations as an indication that the State is making progress in its effort to restore habitat in the basin. As such, although a recovery plan has not yet been finalized, removing Condit Dam will address a significant limiting factor in the White Salmon River and is an integral part of any restoration plan for WRIA 29.

Finally, with regard to regional recovery efforts, the final SEIS should discuss the relationship of the White Salmon chinook, steelhead, and chum to the larger Lower Columbia River ESUs, especially in light of ongoing work of NOAA Fisheries' Technical Recovery Teams and recovery actions elsewhere in the basin. The SEIS discusses those fish that may be in the White Salmon River, Bonneville Pool, and the Columbia River generally, but does not place the impacts in the larger recovery effort context. We think that context is essential to understanding the impacts.

A1-7

[3] Although the Lower Columbia Fish Recovery Plan for Washington did not include the White Salmon River at the request of Klickitat County, it documents support for the removal of fish passage barriers generally.
[4] Big White Salmon Subbasin Plan, Prepared for the Northwest Power and Conservation Council, May 26, 2004.
[5] Id. at 133.
[6] Id. at 84.

A1-6

Section 4.3 of the FSEIS references the mentioned documents and acknowledges the contribution the removal of Condit Dam would make toward addressing the limiting factors for the listed anadromous fish species in the river.

A1-7

The benefits of the proposed Condit Dam removal project to the Lower Columbia River salmonid ESUs are acknowledged in FSEIS Section 4.3 Aquatic Resources. Section 4.3 specifically addresses the effects of the proposed alternatives on the White Salmon River basin and the subpopulations of salmonid ESUs present (or expected to repopulate the river basin above Condit Dam) in the White Salmon River basin. It also acknowledges the cumulative beneficial effects on regional recovery efforts.

Specific Comments

Section 1.6.1: Beneficial Effects of Dam Removal

It is within this section that we urge WDOE to include a discussion of the role of Condit Dam removal in regional salmon and steelhead recovery efforts. As noted above, the construction, operation, and existence of Condit Dam has been documented as a major limiting factor in the White Salmon River. Removal of Condit would further regional recovery goals. The final SEIS should identify and discuss the multitude of documents with which Condit Dam removal is wholly consistent. A1-8

Section 1.6.3: Significant Unavoidable Adverse Impacts

This section contains a general overview of the significant impacts to result from dam removal. While our comments are directed at specific statements in this section, they are applicable to related analysis throughout the document. As such, we request that WDOE make appropriate modifications throughout, not just in this section. A1-9

Water Resources

In various places in the document, WDOE notes the turbidity and sediment transport that will occur as a result of dam removal. The SEIS describes the expected levels of total suspended solids to occur within six hours of breaching and at various points in time beyond that, with turbidity spikes at near background levels within three to five years. To better understand the expected levels, it would be helpful if WDOE could provide some context regarding levels that occur during various natural events that result in high turbidity levels. In addition, if available, WDOE should describe the related impacts on those systems and the associated recovery processes. Rivers are incredibly dynamic systems that will repair themselves over time given the right conditions. Removing Condit Dam is one of those conditions. A1-10

Aquatic Resources

The SEIS asserts that "one year-class of chum salmon" will be lost due to high concentrations of suspended sediments and deposition, and that this impact will be long-term for at least 4-5 generation cycles for chum. We are concerned that this overstates the expected impact on chum. First, based on the fact that adult chum salmon return to the White Salmon River at various ages, as noted on p. 4.3-18 of the SEIS, an "entire year class" of chum will not be lost. Rather, only part of a year-class will be affected. A year-class generally refers to those juveniles that emerge from the gravel at the same time. This important clarification should be made in the final SEIS. In addition, it is our understanding that the adult chum salmon that will return to the White Salmon River, of which there are few, will return after the initial breaching. This later timing will result in lesser impacts on chum salmon from dam removal. The final SEIS should discuss both factors. It should also better clarify the potential impacts to 4-5 generation cycles of chum salmon. As WDOE is probably aware, this has been interpreted to mean that the sediment could "wipe out a population of endangered chum salmon for as A1-11

A1-8
The benefits of the proposed Condit Dam removal project to the regional salmon and steelhead recovery efforts are acknowledged. However, Section 4.3 Aquatic Resources of the FSEIS is specific to the effects of the proposed alternatives to the White Salmon River basin and the subpopulations of salmonid ESUs present (or expected to repopulate the river basin above Condit Dam) in the White Salmon River basin. It also acknowledges the cumulative beneficial effects on regional recovery efforts.

A1-9
Comment acknowledged. The FSEIS has been modified where modifications were appropriate.

A1-10
As discussed in Section 4.2.2 Impacts, subsection Drain Tunnel Construction and Dam Removal, suspended sediment concentrations in the White Salmon River could briefly reach 250,000 parts per million (ppm). During the first day, while the reservoir is draining and soft sediments are sliding into the river, the average sediment concentrations could be 150,000 ppm. These suspended sediment concentrations are predicted to become episodic and fall off rapidly to about 3,000 ppm in the White Salmon River after 3 months and 200 ppm after 6 months.

The estimated suspended sediment concentrations in the White Salmon River immediately after dam breaching would be similar to concentrations measured in the Toutle River near Castle Rock, Washington in May 1980 after the eruption of Mount St. Helens. At gaging station 14242690 on the Toutle River, the U.S. Geological Survey (USGS) measured suspended sediments concentrations as high as 960,000 ppm in May 1980 (USGS 1980). By August 1980, concentrations of suspended sediment in the Toutle River had decreased at this station to 4,000 ppm. In subsequent measurements, turbidity spikes as high as 234,000 ppm were recorded in March 1982, but over time these spikes decreased and the suspended sediment levels began to stabilize. While the magnitude of the sediment released by the two events is very different, a similar pattern with respect to spikes in suspended sediment concentrations is expected.

As the volume of sediment is much smaller, the magnitude and frequency of the spikes are expected decrease more rapidly on the White Salmon River than on the Toutle River.

The USGS also conducted a water quality study for the Skokomish, Nooksack and Green-Duwamish Rivers (Embrey and Frans 2003), which drain into Puget Sound. Under high flow conditions in these rivers, maximum suspended sediment concentrations ranged from 787 to 3,210 ppm. This range of suspended sediment concentrations is similar to the predicted concentrations in the White Salmon River 3 to 6 months after the dam is breached. The relatively high levels of suspended sediments are typically related to high flow, and as the streamflow is reduced, the levels decrease to more typical levels, with median values ranging from approximately 25 to 70 ppm.

A1-11

The statement that "one year-class of chum salmon" would be lost is accurate. The statement in the DSEIS concerning the long-term impact was that "at least several 4- to 5-year generation cycles for Chinook and chum salmon" would be affected, not 4 to 5 generation cycles. Section 4.3 of the DSEIS also stated that variation in age-at-return would allow a lost year-class to rebuild over several generations. Depending on the salmon stock, the majority of returning adults from a given year-class of fry would likely have a dominant age-at-return. If the dominant age-at-return is 4 years (the general case for chum salmon), with a subdominant age-at-return of 3 or 5 years, then 4 years after the loss of a year-class the run would be composed primarily of 3-and 5-year-old fish from the previous and subsequent year-classes (and hence, greatly reduced). An unusually high survival of 3- and 5-year-old return adults would speed recovery, while a low survival rate and small return of 3- and 5-year returning adults would lead to a slow recovery. Because of this, it is impossible to predict how many generation cycles would be required for a complete recovery, but it would likely be several generation cycles before recovery is complete.

In the case of chum salmon, the number of spawning adults is very low and likely represents strays from a population below Bonneville Dam that

long as four or five generations."[7] The SEIS should provide greater clarification to prevent future misunderstandings. A1-11 Continued

Also with regard to chum, the document notes that spawning substrate will be impaired during the second year after removal. While this is likely accurate, it should also be noted that additional habitat above the dam will be available by that time. The final SEIS should more adequately account for the additional spawning habitat that will be available to chum salmon. A1-12

The SEIS finds that displacement of fish in the Bonneville Pool during dam removal would likely result in a "take" under the Endangered Species Act, however, it does not provide the basis for why displacement would constitute a take. Since Endangered Species Act determinations are to be made by NOAA Fisheries Service and the U.S. Fish & Wildlife Service, we urge WDOE to refrain from making any legal conclusions in its environmental analysis document. A1-13

Table 1.1.

On p. 1-17, the table states that with regard to sediment transport, the "longer the high concentrations continue, the longer or more difficult it will be for recolonization of the lost species." It isn't clear to which species WDOE is referring. Nonetheless, the analysis does not support the general assertion that species will be lost. Rather, different species will be affected to varying degrees. We recommend that the final SEIS reference affected rather than lost species. Otherwise, it appears to overstate the impacts. A1-14 The table also states that for salmon trying to enter the White Salmon River to spawn while the mass of sediment is passing, the year-class of reproduction will be lost. This statement is unclear for several reasons. First, is this different than a year-class of chum salmon being lost? If so, we urge WDOE to modify it for the reasons stated above. Second, it does not appear to be limited to chum salmon, even though the analysis in the SEIS does not support a statement applying to salmon generally. The final SEIS should more accurately state the impacts to result and limit them to the appropriate species. A1-15

The discussion of aesthetic and scenic resources, notes that new recreational opportunities would help mitigate loss of aesthetic/scenic resources. (SEIS, p. 1-21). Elsewhere the document notes that people have different aesthetic sensibilities and that while some may prefer a reservoir created by a dam, many others prefer a free-flowing river. As such, we do not agree that there will be a loss of aesthetic resources that need to be mitigated. Moreover, it is not clear how additional recreational opportunities will provide the mitigation. We recommend that the statement be deleted in the final SEIS. A1-16

Section 2.3: Need for State Environmental Review

It is clear from this section, that much environmental analysis of the proposal to remove Condit Dam has been completed. The SEIS incorporates much of that analysis by reference, limiting its discussion to the no action and dam removal alternatives. It does not include analysis of other alternatives because they would have greater environmental impacts A1-17

[7] *Condit Dam removal could hurt fish downstream, state says,* Seattle Times, October 25, 2005.

have the potential of eventually recolonizing the White Salmon River basin and establishing a viable population. Section 4.3 of the FSEIS has been changed to reflect this fact to avoid overstating the expected impact on chum salmon. It also acknowledges that NMFS (2006) Biological Opinion permits the incidental take.

A1-12

Chum salmon have less capacity to leap water falls and generally do not migrate as far upstream as Chinook, coho, or sockeye salmon or steelhead trout, particularly in higher gradient rivers with frequent falls, such as the White Salmon River (Johnson et al. 1997). Reiser et al. (2006) set the maximum jumping height of chum salmon at 4 feet. The fall at RM 2.6 on the mainstem of the White Salmon and other falls on the mainstem may be barriers to the upstream migration of chum salmon adult spawners. Because chum salmon characteristically utilize the lower reaches of high-gradient streams, they may not be able to access this habitat, and additional year-classes may be affected until clean spawning gravels are formed in the lower couple of miles of the river channel. The documentation of two adult chum salmon is not evidence that chum salmon are reproducing in the White Salmon River at the present time, but represents the potential for eventual recolonization of the river if suitable spawning habitat is available. The long-term effect of dam removal would be an improvement of spawning conditions for chum salmon, but it is not known if chum salmon would be able to utilize additional habitat above the dam.

A1-13

Short-term increases in turbidity within the Bonneville pool after the removal of Condit Dam would likely cause avoidance behavior and "displacement" of some fish in the Bonneville pool. These fish would not be displaced from the Bonneville pool, but would seek out areas of the pool with lower turbidity. Korstrom and Birtwell (2006), found that the ability of sediment-exposed Chinook salmon to escape to cover was impaired and that there was a significant increase in stuporous behavior and a significant reduction in cover-seeking response in sediment-exposed fish. They concluded that exposure to elevated levels of suspended sediment could indirectly jeopardize survival in the wild, as such overt performance and behavioral changes would probably render juvenile

Chinook salmon more conspicuous and therefore more susceptible to avian and aquatic predators. NOAA has considered this a "take" (NMFS 2006). The sentence regarding "take" has been modified.

A1-14
Table 1.1 in the FSEIS has been modified to correct the statement.

A1-15
Table 1.1 in the FSEIS has been modified to clarify the discussion.

A1-16
Aesthetics involves the perception of one's surroundings, which includes more than views. There would be a short-term significant unavoidable adverse impact to some residents living along the existing lake until the area transitions from a lake to a stream environment. Long term, there would be a significant unavoidable adverse impact to the aesthetic perceptions of residents who participate in recreational activities such as lake fishing and boating. The beneficial aesthetic perceptions associated with new recreational opportunities such as kayaking, white-water rafting, and stream fishing may help offset the adverse impacts on other recreational or aesthetic conditions.

A1-17
The SEPA DSEIS adopted the FERC NEPA FEIS no-action alternative and did not further address a no-action alternative. Therefore, there is no inference that the no action alternative would not have greater environmental impacts than dam removal. Therefore, no change in the FSEIS is needed for this purpose.

than the proposed dam removal alternative. We agree that other alternatives do not need to be included in this document. However, by including the no action alternative, WDOE appears to be inferring that it does *not* have greater environmental impacts than dam removal. That is clearly not the case and should be stated so explicitly. As the FERC FSFEIS concluded, the dam removal alternative is the best alternative for the resources of the White Salmon River. A1-17 Continued

Section 2.3.1: Issues Resolved

We agree with the resolution of Issue 4 regarding impacts on winter steelhead. However, for the reasons noted above with regard to chum salmon, we disagree with the assertion that an entire year-class of winter run steelhead are expected to be lost as a result of turbidity levels during dam removal. The SEIS appears to recognize that adult winter steelhead return during various years, thereby supporting the notion that an entire year-class will not be lost. Assertions that entire year-classes of any salmon or steelhead species will be lost are overstatements of the expected impacts and should be modified accordingly. A1-18

Section 3.1.2: Access Roads

The SEIS describes the access roads that may be necessary to conduct a range of activities associated with dam removal. The roads, their purposes, and the necessary work required on them is outlined on p. 3-16 of the SEIS. The SEIS also states that the access roads will be restored and revegetated when they are no longer needed, however it is not clear in the SEIS to which roads these restorative actions apply. It is our understanding that most access roads associated with dam removal will be returned to a natural state after use. The final SEIS should clarify the extent of the restoration that will occur; it is important to acknowledge that this aspect of dam removal will be minimized. A1-19

Section 3.2.1: Removal of Woody Debris Upstream of Tunnel

Prior to dam removal, PacifiCorp will remove woody debris from the upstream face of the dam to prevent the drain tunnel from becoming blocked during removal. Removing the wood will allow for rapid reservoir dewatering, and sluicing as much of the reservoir sediments as possible downstream as quickly as possible. In addition, as the SEIS notes, the woody debris will then be used for habitat enhancement projects in the White Salmon River. The final SEIS should provide some additional discussion of the use of the wood, the likely benefits from its placement, and the manner in which it will be dispersed. A1-20

Section 4.1.3: Mitigation Measures

Section 4.1.3 discusses many of the sediment-related mitigation measures to be implemented as part of the dam removal project. It acknowledges that as part of the Settlement Agreement to remove Condit Dam, funds will be provided to the tribes which can be used to dredge the in lieu site. Because of the natural flux of sediment that will be transported after removal, the SEIS notes that the tribes may elect to remove sediment from the in lieu site more than once after dam removal. Later in the document, however, the SEIS asserts that "[c]hannel dredging and deepening at the "in lieu" site might reduce the total area of spawning gravel created at the mouth of the White Salmon River after dam breaching and might therefore have a long-term impact on available spawning habitat for chinook and chum A1-21

A1-18
Part of the problem here is semantics. The entire year-class of age-0 (juveniles produced during the spring of the year of dam removal) winter-run steelhead are expected to be lost as a result of turbidity levels in the river associated with the proposed dam removal. This would substantially reduce the number of expected returning adult steelhead 4 years in the future, when the majority of the lost year-class of steelhead would have been expected to return. During that year, the return of winter-run steelhead would be primarily composed of 3-year-old steelhead and strays from other river basins. Returns of winter-run steelhead would likely be reduced every fourth year for several generation cycles. A portion of the previous year-class of steelhead juveniles (age-1 fish) would also be lost. Section 2.3.1 of the FSEIS has been clarified.

A1-19
All temporary access roads would be restored. However, public roads would presumably continue to remain open after dam removal. Section 3.1.2 of the FSEIS has been modified to clarify.

A1-20
Large woody debris (LWD) pieces are not equal in value for habitat restoration. The total number of pieces of suitable wood available would not be known until the dam removal project is well underway. The priority for allocating retrieved wood suitable for restoration projects would presumably be first for further restoration on the White Salmon River, then making it available for use by WDFW and habitat restoration organizations in other locations.

No additional discussion has occurred regarding the removed and stock-piled LWD available for use in restoration projects. As mentioned, one option would be to make the LWD available for enhancement projects. PacifiCorp is willing to coordinate a first come first served distribution program to enhancement projects for a period of 2 years following the dam removal, or to offer it to WDFW. If any LWD is remaining after that point, PacifiCorp would then dispose of the wood off site.

A1-21
The statements are consistent. However, a qualifier has been inserted in Section 4.3 to reduce confusion.

salmon." (SEIS, p. 4.3-21). These statements seem to contradict each other. We suggest that WDOE clarify the potential benefits and/or impacts to result from dredging the in lieu site after removal.

A1-21 Continued

Section 4.2.2: Impacts

The SEIS makes clear that WDOE views the expected sediment impacts as one of the most significant impacts of dam removal. It details the expected levels of turbidity and suspended sediment concentrations. With regard to levels that will be experienced in the lower Columbia River immediately following dam removal, the SEIS expects concentrations in the range from 900 to 2200 rpm. It is not clear whether that range is a result of varying estimates of the amount of sediment to be immediately flushed or is because the levels will decrease as the suspended sediments move downstream. For example, levels near the mouth of the Columbia River will undoubtedly be less than levels just downstream of Bonneville Dam. We suggest that WDOE clarify the basis for the range as well as discuss, if appropriate, the decreasing levels expected as the sediment moves downstream.

A1-22

During removal, water elevations will understandably increase in the lower river. As the SEIS notes, however, the levels are expected to be substantially lower than during the 1996 flood event. Providing this reference places the expected impacts in the context of natural events. It is helpful to recognize that impacts will be within natural conditions that the White Salmon experiences.

A1-23

Section 4.3.1: Affected Environment

Nonsalmonid Fish

The SEIS identifies three species of nonsalmonid fish that are likely to occur in the Bonneville Pool and potentially in the lower White Salmon River during removal. It specifies that if these species occur in the White Salmon River, they are most likely found in the large pool at the in lieu site. (SEIS, p. 4.3-10). WDOE, however, fails to provide any documentation supporting this assertion. We request that WDOE include any documentation of the species existence in the White Salmon River.

A1-24

Section 4.3.2: Impacts

Sediment Transport

This section asserts that "[i]t is reasonable to assume that no recruitment of fall-run chinook salmon or chum salmon would occur during the fall and winter following the breaching of the dam and that one year-class would be lost." (SEIS, P. 4.3-18). Further, the SEIS notes that this impact would be long-term (at least 4-5 generation cycles for chinook and chum). Consistent with our comments above, we request that WDOE modify the final SEIS to more accurately describe the anticipated impacts. Due to the variation in adult age returns, a year-class will not be lost. A year-class is used to define the group of juveniles that emerge from the gravel at the same time. The SEIS seems to be using the term to define the returning adults. In addition, due to the fall chinook mitigation measure to be implemented by PacifiCorp, loss of a year-class, as used in the SEIS, of chinook will not occur. Finally, we

A1-25

A1-22
Section 4.2.2 of the FSEIS provides clarification on the basis for the range of concentrations and additional details regarding the decrease in concentrations as sediment moves downstream. In addition, see the response to Comment A1-10.

A1-23
Immediately after the dam breaching, waters would begin pouring out of the reservoir at a rate of approximately 8,000 to 10,000 cfs, draining the reservoir in about 6 hours. Peak streamflow measurements at USGS Surface Water Monitoring Station 14123500 on the White Salmon River (http://nwis.waterdata.usgs.gov/wa/nwis/peak?site_no=14123500&agency_cd=USGS&format=html) indicate that streamflows similar to those predicted immediately following dam breaching were measured on January 31, 2003 (10,900 cfs), February 20, 1982 (12,400 cfs) and December 26, 1980 (10,300 cfs). As described in the FSEIS, the estimated peak streamflow rate following dam breaching is considerably less that the highest measured flow during the period of record (45,200 cfs on February 8, 1996). Therefore, the water elevation in the White Salmon River following dam breaching is expected to be well below the elevation during the 1996 flood event.

A1-24
Leopard dace (*Rhinichthys falcatus*), mountain sucker (*Catostomus platyrhynchus*), and river lamprey (*Lampetra ayresi*) are documented to occur in the Bonneville Reach of the Columbia River (Wydoski and Whitney 2003). The in-lieu site is suitable habitat for these species, and no barrier exists to prevent free passage of these species between the mainstem Columbia River and the in-lieu site. The conclusion that they are potentially present in the White Salmon River and that the in-lieu site is the mostly likely reach for them to occur in is a reasonable assertion.

A1-25
The statement that "one year-class of fall-run Chinook salmon and chum salmon" would be lost is accurate. The statement in the DSEIS concerning the long-term impact was that "at least several 4- to 5-year generation cycles for Chinook and chum salmon" would be affected, not 4 to 5

generation cycles. Section 4.3 of the DSEIS also stated that variation in age-at-return would allow a lost year-class to rebuild over several generations. Depending on the salmon stock, the majority of returning adults from a given year-class of fry would likely have a dominant age-at-return. If the dominant age-at-return is 4 years (the general case for chum salmon), with a subdominant age-at-return of 3 or 5 years, then 4 years after the loss of a year-class, the run would be composed primarily of 3- and 5-year-old fish from the previous and subsequent year-classes (and hence, greatly reduced). An unusually high survival of 3- and 5-year-old return adults would speed recovery, while a low survival rate and small return of 3- and 5-year returning adults would cause a slow recovery. Because of this, it is impossible to predict how many generation cycles would be required for a complete recovery, but it would likely be several generation cycles before recovery is complete.

Section 4.3 of the FSEIS has been modified to indicate that the loss would be to natural reproduction. The fact that the "lost" year-class of fall Chinook salmon would be raised in a hatchery and not actually "lost" was discussed in Section 4.3. However, it should be noted that hatchery reared Chinook salmon often express different life histories from naturally reared Chinook (i.e., age-at-return can be different between hatchery and naturally reared fish).

request that WDOE provide some clarification regarding the long-term impacts to avoid the type of misunderstanding that is noted above. A1-25 Continued

Undoubtedly, dam removal will result in an increase in available salmon and steelhead habitat throughout the White Salmon River. The SEIS, and other previously released environmental analysis documents, detail the anticipated levels of increase. Access to this new habitat will be available upon removal of the cofferdam upstream. The SEIS states that chinook salmon will be able to access this habitat, however "[c]hum salmon may not be able to access this habitat. . ." (SEIS, p. 4.3-20). We request that WDOE explain why this may occur with regard to chum salmon. A1-26

Potential Impact of Anadromous Salmonids on Resident Rainbow Trout

While we do not dispute that there are ways to minimize the impacts of hatchery fish on wild fish, we urge the state to avoid using any hatchery salmonids to repopulate the White Salmon River. Rather, allowing wild fish to access the river, utilize the habitat, and establish themselves will result in fewer overall impacts than if hatchery fish are used to help anadromous runs establish. Accordingly, we urge WDOE to specifically identify no use of hatchery fish as a method to limit the impacts. The methods currently listed in Appendix C, Section 5, all presume use of hatchery fish. A1-27

Section 4.3.3: Cumulative Impacts

This section also identifies the potential adverse impacts that could result from supplemental hatchery actions. We reiterate our comment above urging against the use of hatchery fish to establish anadromous fish runs. A1-28

Section 4.3.5: Significant Unavoidable Impacts

In numerous places, the SEIS discusses the impacts of dam removal on available thermal refuge in the White Salmon River. It accurately concludes that there will ultimately be a net gain in available thermal refuge upon dam removal. It should also be noted that the available thermal refuge will be of even better quality upon dam removal as the water temperatures are expected to decrease upon removal. The final SEIS should reflect this improvement in its discussions of thermal refuge. A1-29

Conclusion

As described in the SEIS, the expected benefits from dam removal are many. They include, but are not limited to: (i) unimpeded fish passage to almost 20 miles of historic spawning and rearing habitat for anadromous fish species, (ii) an increase in the diversity and abundance of aquatic invertebrates as a result of restoration of the natural flow regime, (iii) long-term increases to macroinvertebrate biomass that benefit fish resources, (iv) restoration of the natural physical, chemical, and biological processes of the river, (v) improved water quality temperature conditions during the summer and fall, (vi) enhanced riparian function, and (vii) enhanced whitewater recreation opportunities. Removal would result in attainment of a new equilibrium and pose enormous potential for salmon recovery. A1-30

A1-26
Compared to Chinook salmon, chum salmon have less capacity to leap water falls and generally do not migrate as far upstream as Chinook salmon, particularly in higher gradient rivers with frequent falls, such as the White Salmon River (Johnson et al. 1997). Section 4.3 of the FSEIS has been modified to reflect the behavioral differences between Chinook and chum salmon. Also see response to Comment A1-12 above.

A1-27
Comment acknowledged. Management decisions concerning hatchery fish planted in the river would be decided by the appropriate state and federal agencies (i.e., Washington Department of Fish and Wildlife and NOAA Fisheries) and not as part of an FSEIS. In the case of many salmonid species (coho, chum, Chinook, and possibly others), native fish populations may no longer exist.

A1-28
Comment acknowledged.

A1-29
The wording of Section 4.3 of the FSEIS has been modified to reflect the better quality of the thermal refuge.

A1-30
Comment acknowledged.

Condit Dam removal provides a unique restoration opportunity to restore and maintain the chemical, physical, and biological integrity of the White Salmon River. As FERC staff found in its environmental analysis, dam removal provides the only opportunity for complete ecosystem restoration. Dam removal also will further regional salmon and steelhead recovery goals. The region would be remiss if it missed this unique restoration opportunity because of the short-term impacts that will result from removal. As made clear in the SEIS, the long-term benefits far outweigh the impacts, which are very short in duration when considered in the context of recovery efforts.

A1-30
Continued

American Rivers, Trout Unlimited, and Friends of the White Salmon River appreciate the opportunity to comment on the proposed project. Feel free to contact Brett Swift at American Rivers if you have any questions about these comments, or would like to discuss any issues further. She can be reached at (503) 827-8648.

Sincerely,

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