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January 3, 2014

## **MEMORANDUM**

**TO:** Fish and Wildlife Committee members

**FROM:** Council staff

**SUBJECT:** Fish and Wildlife Program Amendment discussion

The Council's Fish and Wildlife Committee will meet over five days during the first part of January. Portions of January 8, 9, 10, 14, and 15 have been set aside to discuss the Fish and Wildlife Program amendments. To date the staff and Council members have reviewed the recommendations on the 2009 Program and comments on the recommendations. The Committee, using these inputs, is now focused on understanding the various topics and issues and developing a draft Program for consideration by the full Council, likely in the spring of 2014. In January staff will be prepared to: 1) present remaining issues for discussion by the Committee; 2) review with Committee a draft Program outline; 3) review and discuss preliminary draft language for several Program topics.

Attached are staff issue summaries for the following topics: project review, climate change, subbasin plans and strongholds. The Committee and staff had an initial discussion about strongholds in November and per Committee member request, staff will be prepared to discuss this again in January.

In January staff and the Committee will also begin work on the draft amended Program. Materials associated with this work will be sent in a separate email and will not be available for public release.

## **Project Review Process/Step review/ISRP Review Discussion of Recommendations**

### **2009 Fish and Wildlife Program Section**

#### **VIII. Implementation Provisions**

##### **B. Project Review Process (p.61)**

##### **H. Independent Science Review (p. 65)**

**Overview** While the Council has always been involved in efforts to ensure that the program it adopts is being implemented effectively, Congress gave the Council an increased and explicit role in program implementation in a 1996 amendment to the Power Act. The Act now charges the Council, with the assistance of the Independent Scientific Review Panel (ISRP), to make recommendations to Bonneville on projects to be funded through the Bonneville fish and wildlife budget to implement the program. The Power Act specifies certain standards and minimum procedures for the project review process, but otherwise afford the Council broad discretion to define the procedures for conducting project review and selection. The Council has been able to define the particular approach that it intends to use for the foreseeable future to address these statutory requirements and implement the program. In the 2000 program, for example, the process was more scripted; to include details in how the review process was to occur. Many of the current recommendations reflect language that was in the 2000 program. In the 2009 program, the review and selection process was not scripted or detailed and as a result, the review processes were quite different in approach between programs. The council has undertaken review of all projects in various ways over the years, but each approach follows the basic requirements specified in the Act.

#### **Issues:**

The recommendations that we received did not challenge the fundamental elements of the current program language, which reflects the Council requirements under the Act. The recommendations focused primarily on the *process* of how the project reviews are implemented. The current program language is still relevant and applicable and could easily remain unchanged save for minor edits to make it current. The question for the Council is about adding additional detail on process or principles. Some of the top or most-recommended points include:

- Treating ongoing or “mature projects” and new projects differently in the review
- Jointly develop a new project review process with managers
- Streamline the proposal process
- Utilize existing frameworks to identify, review and select projects to the extent possible (e.g., salmon recovery boards and watershed councils)

The Council can address any or all of these points with the flexibility in the current program language. However, you may choose to add any or all of these principles to the program, as well as a secondary level of detail to any. Given the recommendations: Below are some options for the Council to consider for this topic area:

A: No substantive changes to current program language; make current with necessary edits

B: No substantive changes to current program language; make current with necessary edits; and ADD: high-level principles reflecting recommendations from a menu of options (such as those listed above)

C. Revise or leave current program language and incorporate principles and add more details on the process for reviewing projects in the future.

### **Step Review**

As part of the ISRP's initial review (ISRP document 97-1) they recommended a comprehensive basinwide review of artificial production. The ISRP also recommended that until completion of the review, the Council "not approve funding for the construction and operation of new artificial propagation programs," with this exception:

*"To prevent a complete moratorium on new production, the ISRP recommends that the Council permit funding for an individual project only if the project proponents can demonstrate they have taken [Council's 1994 Fish and Wildlife Program] measures 7.0D, 7.1A, 7.1C, and 7.1F into account in the program design and the Council concurs. To ensure that standard is met, the individual projects should be funded only after a positive recommendation from an independent peer review panel."*

The Council responded with an interim approach to this issue called the Three-Step Review Process. At the September 1997 meeting the Council adopted a policy calling for "new production initiatives" to go through a basic development process that has three main steps or components. This process is built upon the existing multi-step design and review process recognized in the program and used by Bonneville for the design, review, approval and implementation of new production initiatives. The steps of this process are: Step 1 -- conceptual planning, represented under the program primarily by master plan development and approval; Step 2 -- preliminary design and cost estimation, as well as environmental (NEPA and ESA) review; and Step 3 -- final design review prior to construction and operation.

The Three-Step Review Process was update and approved on October 18, 2001 to reflect the new Fish and Wildlife Program (2000 Program) and the associated Technical Appendix. In November 2006, as part of the Council's Fish and Wildlife Project Funding Recommendations for FY 2007-2009, the Council confirmed the continued use of the three-step review process for new artificial production and other major projects (document 2006-21).

Staff recommendation: No substantive changes to current program language, but align the process as needed to the new program when adopted.

## Summary of Recommendations

For ISRP/project review process issues, 14 entities submitted recommendations: eight state or tribal governments; two tribal membership organizations; Bonneville; Bureau of Reclamation, and the group of utility customers. Recommendations on the three step review for hatchery projects, Bonneville submitted the only recommendation (that we found). The general themes are as follows and additional details are provided below:

- Streamline ISRP process overall, with more specifics on
  - Accord projects & ongoing (mature) projects
  - Jointly develop a review process for review
  - Utilizing existing subregional frameworks and umbrella processes
  - Taking advantage of annual science and management conferences
  - Focusing ISRP on the science
- Future solicitations
  - Target only new actions and/or research for future work
  - Limit to geographic areas above Grand Coulee and Chief Joseph
  - Limit to Non-Accord entities
- Standardize application/proposal format with other entities
- Review current projects to ensure their resiliency under climate scenarios
- Council to develop a process to prioritize work based in highest priority
- One recommendation was received regarding the step review process requesting that the Council should encourage improved processes for planning and reviewing artificial production projects and consider incorporating energy efficiency and conservation measures in the 3-step planning process for new or updated artificial production facilities.

### Review of ongoing or “mature projects”

Nine entities (fish and wildlife managers) recommended that the Council treat new and ongoing or “mature” projects differently through a science review process (ODFW, WDFW, YN, CTUIR, Cowlitz Tribe, USRT, KTOI, NPT, CRITFC)

For ongoing or mature projects, they recommend the Council to “jointly develop a new ISRP review process” that:

- a. Council involve “regional panels” to assist with project review; which might include 2 at-large members, 2 co-managers, 1-2 NOAA representatives, 1 tribal rep and two ISPR members.
- b. continue to support local project prioritization frameworks and technical review processes, including umbrella projects; (BPA)
- c. would take advantage of local project review conferences and workshops

The Spokane Tribe added additional detail for reviewing for ongoing projects. Specifically, they recommend:

- Hatchery operations projects be reviewed every 4-6 years.
- Wildlife O&M project be reviewed every 4-5 years.
- Long-term habitat projects be reviewed every 5-7 years.

New projects solicitation:

The seven fish and wildlife entities listed above suggest that only new projects be reviewed under the Council's normal (current) review process.

The Spokane Tribe made specific recommendations for the Council regarding future solicitations:

- target only new actions or research for future solicitations
- open for non-Accord agencies
- for areas located above Chief Joseph and Grand Coulee Dams
- and fund these new projects within 60 days of adopting the new program

Other recommendations came in that called for the Council to: 1) Standardize and simplify application formats with other local or state entities (CRITFC); 2) Review current projects to ensure their resiliency under climate scenarios (WA-GSRO); 3) Support BPA's approach for habitat project selection -- the council should support and acknowledge this as a way to move from opportunistic to more strategic implementation (BPA); 4) provide a rigorous scientific review of all measures under the program (utility customers); 5) develop a methodology to prioritize projects prior to making funding recommendations to Bonneville (Utility Customers); and 6) focus the ISRP on the science (BoR and Bonneville).

## Alternative Approaches to Address Climate Change Recommendations

The Council's 2009 Fish and Wildlife Program acknowledges that climate change could have significant effects on mainstem Columbia and Snake river flows and temperature, with possible changes in snowpack, tributary flows and reservoir elevations. Such changes could have a profound impact on the success of the Program's restoration efforts and the status of Columbia Basin fish and wildlife populations. While acknowledging that climate change is not directly caused by the hydrosystem, the Council, through the Program, seeks to obtain the best available scientific knowledge on the effects of climate change and will consider that scientific data when recommending Program strategies and implementation measures. The 2009 Program includes the following specific actions related to climate change and its effects on CRB fish and wildlife:

- Support for improvements in runoff forecasting and for implementing relevant climate change research and disseminating the information.
- Assessments of how climate change may be altering river flows, temperatures and other habitat attributes in ways that could affect key fish and wildlife species or affect the success of the Program's mitigation efforts.
- Evaluations of how alternative water management scenarios, including changes in flood control operations and/or selective withdrawal systems, could minimize the potential effects of climate change on mainstem hydrology and habitat.
- Evaluations of the feasibility of modifying hydrosystem operations to mitigate climate change impacts in the Columbia River estuary and plume.

Based on the existing Program language and the many recommendations and comments received, there is a range of possible approaches the Council could take on this issue.

**One** approach would essentially leave the Program language as it is, with minor specific language changes as recommended by a number of entities. The Council could then support full implementation of that language. This approach would largely defer to other federal, tribal and state agencies to: a) identify which additional actions concerning climate change and its effects should be implemented in the next several years; and b) sort out which of those agencies would take responsibility. Since it would defer much of the future climate change evaluations and actions to other federal, tribal and state agencies to identify and implement, much of the future climate change evaluations and mitigation actions would occur in forums outside the Council. While some recommending entities would be more comfortable with this approach, many others would view it as unresponsive to the numerous recommendations/comments calling on the Council to take more of a regional leadership role on climate change issues and more fully integrate it into the Program. This approach also would not be responsive to the ISAB's recommendations concerning climate change.

A **second** approach would also support implementation of the current program language and use the recommendations to add specific detail to the Program as to what actions should take place in the next few years to address additional climate change issues in the Columbia River Basin. Under this approach, the Council would take more of a leadership role on this issue. This approach could include recommended actions to more fully integrating climate change effects into the Program, including: a) developing a strategic plan to address the impacts of climate change; b) reviewing current and future restoration or habitat projects under the Program to

ensure their resiliency under predicted future climate scenarios; c) examining various management and mitigation options under climate change scenarios; d) assessing and revising ongoing monitoring efforts to ensure collection of data on key species responses, interactions and productivity under climate change; and e) implementing long-term habitat protections for resident fish.

A **third** approach is a variation of and builds upon the second, in which the Council includes from the numerous recommendations a broad array of priority actions to assess and address climate change issues that affect fish survival and the Council explicitly identifies that Bonneville and the other federal action agencies are expected to take some level of responsibility for implementing these actions and why. Under this approach, the Council would take an even greater leadership role on this issue. Note this approach would be consistent with many of the recommendations, while inconsistent with the recommendations and comments of some others, who would argue that this approach would expand the Program into other areas and reduce its effectiveness.

**Existing 2009 Fish and Wildlife Program Language Concerning Climate Change:**  
Section II-Emerging Habitat Issues on page 16 of the Fish and Wildlife Program states:

The need to assess and, where necessary, respond to the impacts of climate change that could threaten the Program's past and ongoing investments in habitat improvements. From this point on, planning and implementation should include explicit consideration of the possible effects of climate change on the focal habitats and populations. It may be that climate change is not likely to change the suite of habitat actions that the Program implements, but it may lead to a need to re-evaluate place and intensity. The Council is already investing in a set of studies and assessment methods to prepare the tools for this task, and requests federal agencies and others to do the same.

Section IV-Ocean Strategies section on page 31 states "The Council also supports monitoring salmon returns and **climate-change impacts on ocean conditions** in order to identify factors affecting survival in the ocean and plume." [Emphasis added.]

Also, in Section VI-Mainstem Plan under Climate Change Planning Considerations on page 51 it says:

Climate change could have significant effects on mainstem Columbia and Snake river flows in terms of runoff timing, water quantity and temperature. Possible changes in regional snowpack, river flows, and reservoir elevations due to climate change could have a profound impact on the success of restoration efforts and the status of Columbia Basin fish and wildlife populations. The Council acknowledges that global climate change is not directly caused by the hydrosystem. However, to the extent climate change may further adversely affect fish and wildlife affected by the hydrosystem, it is appropriate for the Council to seek the best available scientific knowledge regarding the effects of climate change and to consider that scientific data when recommending Program strategies and implementation measures.

The Federal action agencies, in coordination and collaboration with others, should:

- Support the advancement of runoff forecasting techniques. Continue to encourage, monitor, and promote public awareness of pertinent climate change research and information and assess how it should influence Program mitigation efforts.
- Assess whether climate change effects are altering or likely to alter critical river flows or other habitat attributes in a way that could significantly affect fish or wildlife important to this Program, either directly or by affecting the success of current mitigation efforts.
- If so, evaluate whether alternative water management scenarios, including changes in flood control operations, could minimize the potential effects of climate change on mainstem hydrology. Evaluate the effectiveness and feasibility of possible actions to mitigate effects of climate change, including selective withdrawal from cool/cold water storage reservoirs to reduce water temperatures or other actions to create or protect cool water refugia in mainstem reaches or reservoirs.
- Under similar conditions, investigate the feasibility of mitigating climate change impacts in the estuary and plume through changes in hydrosystem operations, including changes in flood control operations.

In section VII-Subbasin Plans on page 57, it says “All subbasin plans proposed for adoption must be consistent with the Council’s Program and should **take into account**, to the extent possible, **impacts from climate change** and human population growth and movement.” [Emphasis added.]

In Section VIII-Implementation Provisions in the Water Transaction Program section on page 62 it says “To the extent possible, **consider the potential impact of climate change** while making water transaction recommendations.” [Emphasis added.]

Also in Section VIII-Implementation Provisions under Coordination with Other Regional Programs (pp. 64-65) it says “**The Council will coordinate with organizations that track and monitor data on** non-native species distribution, **climate change**, and human population change at the Northwest regional scale.” [Emphasis added.]

### **ISAB Review of 2009 Program and Recommendations on Climate Change**

In its review of the 2009 Fish and Wildlife Program, the ISAB identified climate change as one of the major threats to the sustainability of the Columbia River ecosystem and the success of the Fish and Wildlife Program. The ISAB stated:

“climate change predictions point toward changes in the timing and distribution of water flow, including extreme events such as floods and droughts. The concept of return periods of floods and droughts based on historical data may no longer be adequate for designing and planning for extreme events. Fisheries impacts due to warmer water temperatures include physiological effects such as lower growth rates that can result in higher predation, increased susceptibility to invasive and non-native species, and reduced



cold water refuges. Ocean habitat suitable for salmonids in the Gulf of Alaska is projected to be substantially reduced in extent by the 2080s, due to changes in temperature, salinity, and acidification. Given the importance of climate change to the success of the Program, the ISAB recommends that the amended Program promote development of a comprehensive strategic plan to explore strategies to cope with potential impacts of climate change throughout the Basin. Modeling and analyses are needed to provide guidance for flood control and hydropower operations to enhance ecosystem resilience and adaptability under climate change.”

### **Specific ISAB recommendations to address climate change:<sup>1</sup>**

- 1. Develop a comprehensive strategic plan on the potential impacts of climate change on the entire system, including the estuary and ocean, and develop a suite of strategies within the amended Program.**
- 2. Provide guidance for potential revisions to flood control and hydropower operations to enhance ecosystem resilience and adaptability under climate change.** Management options considered in experiments and modeling should not be limited to current operating constraints.
- 3. Examine management options under climate change scenarios by using monitoring data and modeling tools where possible**
- 4. Assess and appropriately revise ongoing monitoring to optimize collection of data regarding species responses, interactions and production under climate change**
- 5. Require project proposals and management plans to consider the potential impact on project outcomes of climate change and its associated variability and uncertainty.** Create a resource of references to the current science that can be shared with project designers and managers.

### **Summary of Major Comments**

**CRITFC** comments that it “agrees with the entities that support the protection of the investments made to date on ameliorating climate change impacts through various habitat protection and restoration actions. The Program needs to continue to research on the effects of climate change on the hydro-system as a whole and to incorporate flexibility in the [Council’s] Program and Energy Plan to deal with [climate change] impacts on restoration efforts and regional energy services and planning.”

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<sup>1</sup> NOAA Fisheries’ 2013 draft FCRPS Supplemental Biological Opinion concluded the ISAB’s climate change recommendations are consistent with the recent scientific literature regarding climate change adaptation for Pacific salmon and steelhead.

In addition, one of the main goals of **CRITFC**'s *2013 Energy Vision for the Columbia River* is to "lessen the demand for fossil-fuel generation that contributes to climate change." It also states:  
Studies have shown that climate change in the Northwest will result in less snowpack; this will cause further changes in the amount and timing of river flows that move away from the natural conditions that previously supported abundant, health salmon populations; these climate changes will further reduce salmon survival.

Since an increase in acid precipitation in Northwest watersheds and in the North Pacific Ocean is likely, the **Native Fish Society** recommends "the Council should request an assessment of the [ocean and stream] acidification ecological threat to salmonid production by the ISAB and request recommendations for a monitoring program of [the ocean and] rivers [in] the Columbia River Basin." Their rationale is that establishing a baseline on acidification of CRB rivers [and ocean] is important and a monitoring program will provide a quantifiable, time series data base on acid impacts on salmonid production.

**American Rivers** comments:

"The Fish and Wildlife Program is an appropriate venue for further research, recommendations, and implementation of actions to adapt to climate-forced changes to the hydrographs and water temperatures of the Columbia River and its tributaries. These changes will likely provide another reason for many of the above recommendations, such as improved dam operations (more spill), construction of fish passage to higher elevation habitat above currently impassable barriers, protection of currently intact habitat, floodplain restoration and flood management changes to improve natural water storage and control water temperature, and maintain and increase the magnitude of the otherwise diminishing spring freshet with releases from upriver reservoirs."

**American Rivers** also comments it supports CRITFC's recommendations to a) maintain funding emphasis on habitat projects which enhance floodplain function, and b) review current restoration or habitat projects to ensure their resiliency under predicted future climate change scenarios to ensure that investments made today are effective in the future.

In addition, 18 individuals' submissions all support American Rivers' comments.

**BPA** submitted the following comments concerning climate change and Program planning:

While BPA is not a significant contributor to climate change and hydropower does not produce greenhouse gases, BPA's Program funding helps limit the impacts of climate change in the region. The ISAB and others have pointed in the past few years to BPA habitat protection and restoration actions, such as creation of riparian buffers, managing water withdrawals to increase tributary flows, and restoring and connecting wetlands and floodplains to store water, as beneficial ways to limit effects of increasing temperatures in the face of climate change. BPA thus continues to support the provisions in the 2009 Program regarding global climate change in which the Council appropriately acknowledged "that global climate change is not directly caused by the Federal Columbia River Power System."



## Subbasin Plans/Multi-Year Action Plan Issue Summary January, 2014

This issue summary discusses both the subbasin plans that the Council adopted into the Fish and Wildlife Program in 2004-05 and the multi-year action plans the Council called for in the 2009 Program. These are distinct items with distinct issues, but they inter-twine as described here.

What to do with the **subbasin plans** in the Council's Fish and Wildlife Program? The Council worked with the region (using \$15 million from Bonneville) to develop the subbasin plans in 2002-04 and adopted the plans into the Fish and Wildlife Program in 2004-05. The subbasin plans serve two functions in the comprehensively revised program: as a home for the Program's specific objectives and measures, and as a planning foundation. Before 2000, the Council's program included a growing mass of loosely organized measures across the basin. The subbasin plans were an effort to organize those measures in a coordinated geographic framework. The scientific critiques of the program from the independent science panels questioned the justification for many of the measures in the program, especially in terms of their priority for implementation within a subbasin. To solve this, the subbasin planning process was developed and began with a technical assessment of problems and priority limiting factors in the subbasins, and then linked a set of objectives and measures (in a management plan) to the technical assessment to provide a subbasin context or justification for the measures. The ISRP reviewed the plans, with special attention to the quality of the technical assessments and the linkage of the management plans to the assessments, before the Council adopted any plan into the program.

By the 2008-09 amendment process the subbasin plans continued to serve both functions, primarily in a passive, foundational way. The Council specifically asked parties not to recommend changes to the subbasin plans during that amendment process. But even so, there were certain developments to consider:

- A substantial amount of further assessment and planning work had taken place across the region that built on, and in some senses superseded, some aspects of the subbasin plans -- and not just through recovery planning. But none of this could be easily recommended or adopted into the program *as a* replacement for all or part of an existing subbasin plan.
- In the 2009 amendment process, the Council received substantial recommendations from across the basin full of specific measures for implementation. Many of these specific measures duplicated measures already in the subbasin plans, and most were probably consistent with the broad strategies in subbasin plans. But without additional work it was not possible to say which specific measures were indeed consistent with the subbasin plans and the priority limiting factors identified in the plans. Some of these recommendations came as simple lists of measures, while other came embedded in new plans for different mandates (e.g., recovery plans) or implementation agreements (e.g., the Accords).

In that light, the Council decided, in the 2009 program amendments, to:

- (1) Leave the subbasin plans in the program as is.

- (2) Recognize all the specific measures recommended to the Council as part of the program within the relevant subbasins, but only under certain conditions. These conditions included follow-up review of any new action proposed for implementation from these measures for (among other things) consistency with subbasin plans (see Appendix E to the 2009 Program).
- (3) Call for the development of multi-year action implementation plans to (a) sort out the linkage of the recommended measures to limiting factors and subbasin plans and (b) try to get the entire program on roughly the same implementation basis as the parts of the program covered by the Accords.
- (4) Contemplate a separate planning and amendment process for actually updating subbasin plans.

Following the 2009 program, the Council staff invested a substantial amount of time and effort into working with others to try to develop the multi-year action plans. Much of this information fed into the new subbasin dashboards. But the Council and the region lacked the interest or incentives to push the action plans to completion and implementation. And the same lack of interest in engaging in further planning stymied the idea of a further amendment process to update subbasin plans.

The **issue** now, in 2014, is what to do about the **subbasin plans**? They continue to serve the program well as a general foundation or context for the approach in each subbasin. In some cases, they are still relevant, while others are going stale. Additionally, many of these subbasins have seen significant developments and refinements since the completion of the subbasin plans in assessments and planning as well as lists of actions to be implemented. So it is hard to say with a straight face that program measures, to be implemented, must be based directly in and justified by the program's subbasin plans or they lack the proper context. There also appears to still be little appetite for another planning effort to formally update the subbasin plans in the same thorough manner as they were first developed. Yet at the same time, and despite a few recommendations that would update a few of the subbasin management plans, it seems incorrect simply to update the management plan portion of a subbasin plan without also linking that revision to and (if necessary updating) the technical assessment of the problems and limiting factors in the subbasin.

Even so, the Council could use this amendment process to develop and schedule a follow-on planning process to formally develop proposed revisions/updates to the subbasin plans and then use the program amendment machinery to adopt those revised plans. That is not the staff's preferred approach, but it is something to consider seriously and not dismiss out of hand. Something has to be done to prevent the program's specific measures (and thus the projects) from sliding again into just a jumble of things to do, disembodied from any justification in a subbasin planning context.

A different and preferred approach recognizes the problem but responds in an admittedly less formal but more practical way. This is still in concept form, but the elements might include:

- Keep the subbasin plans in the program as is, and continue to recognize as part of the program for each subbasin whatever is the current list of recommended measures for that subbasin.
- Recognize in the program in some way, the relevance of whatever is the current state of the highest-quality planning and assessment work for each subbasin, wherever it resides. This would become the appropriate planning foundation or context for any program measure, or for any associated project proposed for implementation. The Council would then require that during project/implementation reviews, project sponsors must justify the implementation logic of any proposed action by demonstrating that the action is associated with a measure in the program *and* that it addresses the priority problems/limiting factors identified in the relevant subbasin plan or in whatever is the most up-to-date planning or assessment foundation.

For example, many recommendations call for the Council to adopt ESA recovery plans as updates to the subbasin management plans. The recovery plans are in various states of progress and completion. The ISRP is already referring to those plans in some subbasins for the most current information. So the Council needs to recognize this planning fact in some way. Several recommendations ask the Council to update information in the subbasin plans that is no longer relevant, and incorporating the recovery plan information could start this process. In response, the Council could actually adopt into the Program the recovery plans, where final and where considered to be the highest-quality planning and assessment work for a subbasin, as an update to or replacement for the portion of the subbasin plans relevant to the ESA-listed species in that subbasin. But there are also several problems with this approach to piece-meal and non-integrated revisions to subbasin plans. The Council could consider how the Program could recognize the updated or improved planning context as relevant to implementation reviews and decisions, yet not actually revise the subbasin plans themselves at this time.

- If during these implementation/project reviews, the subbasin planning context or justification in any particular subbasin seems particularly muddled, stale, or no longer appropriate, use the reviews themselves to drive the development of an updated subbasin synthesis. This has already occurred in some cases during the latest round of project reviews and may be a good model to continue. This would be appropriate in subbasins that have had significant changes since the completion of both subbasin plans and recovery plans, such as in the Big White Salmon Subbasin where Condit Dam was removed in 2011. It could also provide opportunities to incorporate new elements into subbasin plans, such as the elements of the Tribal Pacific Lamprey Restoration Plan as recommended by several tribal entities.

The Council might want to consider driving the completion and approval (outside of the program amendment process) of the **multi-year action plans** first called for in the 2009 program. These could be used in a less formal way to create an updated subbasin synthesis that connects the actions to be implemented over the next few years in any subbasin (associated with the specific measures in the program) to the priority limiting factors identified in whatever is the most current

planning foundation. The multi-year action plans could also connect the actions to the appropriate m&e framework. Rather than a hugely formal planning process, staff would draw information from the agencies and tribes and project sponsors to regularly update the plans every few years as project reviews cycle through.

The Accords were the genesis for the multi-year action plan concept. The original idea was to create multi-year action implementation plans for those parts of the program that were **not** covered by an Accord (which are, essentially, multi-year action implementation agreements) -- such as in the Clearwater and Kootenai subbasins. When the Council completed the 2009 program, the concept had morphed to call for a multi-year action plan for every subbasin, on the grounds that the Accords imperfectly covered all the program work in any particular subbasin. But the idea had also morphed to call for the multi-year action plans to include detail linking the actions in the plans not only to measures adopted into the program but also to specific priority limiting factors identified either in the subbasin plans or in other relevant planning documents. The Accords do not do that. And it is for that latter reason that the multi-year action plan concept may very well still be a valuable element in the effort to solve the subbasin plan context problem in the Program.

Many recommendations call for the Council to closer track which measures are being implemented within each subbasin and for the Council to provide periodic check-ins with the region. Some recommendations call for the Council to adopt the local recovery plan implementation plans as the Program's "action plans" or to work with Action Agencies to create long-term implementation plans.

If the Council decides not to use the multi-year actions plans in this way and not drive them to completion, then it seems most logical to delete references to the multi-year plans from the program.

## Program Language on Strongholds

### 2009 Fish and Wildlife Program Section

#### II. Basinwide Provisions

#### C. Biological Objectives

#### 1. Habitat Strategies (a, b, c) pg. 15

##### Overview

The program language on strongholds is contained in one paragraph as part of the larger basinwide *habitat strategies* section. The language defines a salmon, steelhead, or resident fish stronghold as a subbasin, watershed or other defined spatial area where populations are stronger and genetically more diverse than other areas. At the time the 2009 Program was being developed, the regional initiative to define and identify salmon and steelhead strongholds through the North American Salmon Stronghold Partnership was just getting started (Partnership). This effort was and still is focused on salmon and steelhead. The Council and region saw the importance of the stronghold concept; valued the participation by partners involved, and included it in the program as a strategy. At the time, there was at least some movement afoot by independent scientists to define and identify reserves for resident fish as well. With that knowledge, the Council broadened the program definition to include resident fish. The Council also wanted flexibility to fund/not fund specific actions in stronghold areas; so the current language retains that flexibility.

The current program calls for the Council to work with other entities to identify strongholds, and that the Council *may* prioritize funding in stronghold areas. This language allows the Council flexibility to direct specific funding toward implementation in identified strongholds. The language does not place priority or emphasis on protecting strongholds through particular actions (or funding). The program approach for targeting actions to benefit strong stocks or in areas considered to be potential strongholds is not strategic. Currently, the program implements actions in stronghold areas on a passive basis; actions in strongholds are not prioritized and not tracked.

Recommendations received ask the Council to take a more strategic approach to stronghold management and protection. Recommenders direct the Council to work with others to develop criteria to identify strongholds and to establish a system of strongholds in the Columbia River Basin. Recommendations include prioritizing native fish strongholds where there is: 1) a reasonable chance of eradicating non-natives; 2) opportunity to create genetic strongholds with adequate buffers to shield them from invasive species; 3) strong performance of native stocks; 4) the ability to manage for wild salmonids while excluding hatchery fish (hatchery-free zone); 5) the ability to monitor and evaluate the effect on wild native salmonids and to provide non-hatchery reference watersheds for hatchery-wild stream comparisons.

The recommendations describe the *process* to implement actions in these areas, or where funding would come from for the work. However, they do offer a recommendation to leverage funds by creating liaison position to help leverage shared investments that support implementation of subbasin plans, recovery plans, and salmon strongholds.

#### Return to the River:



In Return to the River, the authors discuss the concept of salmon and steelhead “strongholds” as remaining conservation reserves (pg 83) to protect remaining areas of high-quality supporting abundant populations and a diverse number of native fish species. The authors acknowledge that the requirements for strongholds are great, and describe the characteristic of potential stronghold areas in terms of habitat quality (intact ecosystem); connectivity (to other suitable habitats) and geographic areas large enough to withstand disturbances and population synchronization behavior. In a later chapter on Strategies for Salmon Restoration, *Establishing Salmonid Reserves* (pg. 656) is listed among several strategies, including the related *Managing for Biological Diversity* (pg 652). The authors note that it’s critically important to protect the remaining viable naturally spawning salmon and steelhead populations and to restore habitat with the potential to re-establish core populations at strategic locations in the basin. They go on to give the example of the Hanford Reach as one of the most viable potential areas for a reserve. It is the Hanford Reach that the authors believe could serve as focus for rebuilding abundance, and there may be others including the John Day River. They believe that as habitat improves in the Columbia Basin, salmonid metapopulations will likely develop for the expansion of remaining wild core populations, and suggest that reserves be considered in the Columbia Basin.

### **Program Considerations:**

Inclusion of salmon and steelhead “reserves” or “strongholds” in the Program:

- Support the notion that there are particular geographic areas that need to be protected for future generations (maintain at least the existing level of acknowledgement)
- Support as a *strategy* in the Program (where it is currently located)
- Include salmonid “reserves” or “strongholds” as an *objective\** in the program (new)

\* As an objective, this should be measurable and tie back to a non-biological objective

Focus:

- Salmon and steelhead
- Salmon, steelhead and resident fish
- Strongholds for any species
- Salmon and steelhead focus with add-on of other “strongholds, reserves or conservation areas” as they are identified and accepted

Process: (as strategies)

- Continue to support and work with the existing Partnership forum to identify potential strongholds in the basin (ongoing since 2007).
- Work with other experts to identify potential strongholds or salmon reserves in the basin
- Validate existing criteria or add criteria beyond what is currently being used by the regional Partnership (e.g. recommendations received; considerations from Return to the River)

Implementation/management (in Implementation Provisions)

- Call on the Council and region to develop a process to support identified strongholds or reserves (e.g. priorities, targeted solicitation, dedicated funding, as cost share)
- Create a mechanism to leverage funding with other organizations for shared investments
- Develop potential strategies for *managing* strongholds (in part, based on recommendations received)

## NW Stronghold Initiative - Background

The Wild Salmon Center (WSC), through the North American Salmon Stronghold Partnership (Partnership) has led the effort to define and create salmon strongholds throughout the North Pacific Rim -- called the *Salmon Stronghold Initiative*. In the United States portion, the states of Alaska, Washington, Oregon and Idaho have participated in this effort, with British Columbia leading the effort in Canada. The partnership was formed in 2007 and is a completely voluntary. The mission is to identify and conserve the healthiest remaining ecosystems in North America to ensure long-term survival of salmon, steelhead and the many species that depend on them. In 2008, the Partnership established criteria to identify strongholds and those criteria have been used consistently across the Pacific Northwest (PNW) to identify strongholds. However, the application, support and processes used to formally recognize the strongholds vary by state.

### What are Salmon Strongholds?

Salmon Strongholds are watersheds that have high anadromous salmonid abundance, productivity, and diversity (life history and run timing), as well as habitat quality or other biological attributes important to sustaining viable populations of wild Pacific salmon throughout their range. The term stronghold may refer to a watershed, multiple watersheds, or other defined spatial units where populations are strong and diverse, and habitats have a high intrinsic potential to support a particular species, or suite of species.

### The Stronghold approach

The approach was developed by a consortium Partners representing state and federal agencies, tribes, local government, watershed councils, Soil and Water Conservation Districts, private foundations, and nonprofit conservation groups from Oregon, Washington, California, Idaho, and Alaska. Staffed by WSC, the Partnership emerged from a common concern that recovery efforts underway throughout California and the PNW lacked a proactive approach necessary to sustain the health of the region's *core centers of wild salmon abundance and diversity*. While conveners agreed that the triage based approach mandated under the ESA is essential, the numerous policies and programs that advance recovery are insufficient to conserve "salmon strongholds" in the face of emerging threats and long-standing institutional challenges. The stronghold approach is designed to complement – not replace – ongoing recovery restoration and conservation efforts.

In addition, conveners agreed that greater attention to strongholds would not only prevent future listings (and the economic impacts that accompany them), but equally important, anchor recovery, giving the implementation of recovery plans sufficient time to succeed. Between 2007 and 2011, the Partnership met regularly to establish the framework of "a stronghold approach." Following completion of its Charter in 2008, the Partnership completed a Strategic Plan in 2010 that defined the stronghold approach and established the major goals of the initiative. These included:

1. Identification of a network of salmon strongholds using a robust, science-driven process;
2. prioritization of emerging threats to strongholds, with an emphasis on the identification of long-standing systemic challenges that drive continued habitat loss, limit the effectiveness of ongoing conservation efforts, and/or directly threaten strong populations;

3. Increased financial support for stronghold conservation, with an emphasis on support for “programmatically initiatives” that address the systemic challenges identified; and
4. Establishment of institutional (i.e., long term) support for stronghold conservation through the formal recognition of strongholds and integration of the stronghold approach within new and existing policies and programs.

Following completion of the Strategic Plan and development of a stronghold identification methodology, WSC and members of the Partnership began organizing state-based partnerships to take on these goals at manageable geographic and political scales. Primarily due to the economic downturn and cuts to agency staffing, the states’ capacities to advance their stronghold programs varied. While partners remain supportive and committed in Idaho and Washington, programs are further along in California and Oregon.

### **Stronghold Selection Criteria**

The group defined strongholds as watersheds that have high anadromous salmonid abundance, productivity, and diversity (life history and run timing), as well as habitat quality or other biological attributes important to sustaining viable populations of wild Pacific salmon throughout their range. The term stronghold, it decided, may refer to a watershed, multiple watersheds, or other defined spatial units where populations are strong and diverse, and habitats have a high intrinsic potential to support a particular species, or suite of species. For conservation planning purposes, these areas are often defined as “irreplaceable” because they offer the highest proportional contribution toward meeting established conservation targets for a specified spatial scale.

After numerous refinements to draft stronghold selection methodologies, the team arrived at an approach that could be applied consistently across the region, yet be tailored to meet the unique environmental conditions and conservation priorities of each state. This methodology can be summarized as follows:

1. Assess (“score”) wild populations within the study area based on three criteria: percent of natural origin spawners (or PNI), life history diversity, and viability (productivity and/or abundance);
2. Identify populations that meet or exceed the threshold for “strong, diverse, and wild”;
3. Identify and map salmon stronghold design alternatives, based foremost on the strong population data;
4. Convene a team of regional conservation partners to review stronghold alternatives and agree upon a recommended set of salmon strongholds; and
5. Present the recommended strongholds to the Stronghold Partnership Board for review and approval.

Populations and Evaluation. The stronghold identification methodology does not use a new population delineation approach, but relies on those used by technical recovery teams (TRTs), state agencies, and tribes. Although different population identification sources are used to delineate populations, all of the population identification efforts use similar or identical concepts and definitions of independent populations. Characterization and assessment of populations rely on three metrics and associated criteria, including percent natural origin spawners, viability (as represented by abundance and productivity), and life history diversity. The rationale for these metrics is similar to that described for the VSP parameters and by NOAA TRTs.

**Strongholds in the Columbia River Basin, being considered by each state (see map below):**

- Idaho: Lemhi
- Oregon: Sandy, Lower Deschutes, Lower Grande Ronde, Minam, NF John Day
- Washington: Wenatchee

**State Recognition and general Implementation/support-**

Oregon has been the most active thus far in recognizing strongholds. The OR Governor's office, with funding from OWEB and NFWF, solicited for projects that would benefit salmon and steelhead populations in stronghold areas in Oregon last year. The investment level was \$600,000.

Also in Oregon: The Stronghold Fund provided a grant (\$75k) to Western Rivers Conservancy for an acquisition in the Minam stronghold; \$200k into an instream flow protection project in Rudio Creek (John Day); and the WSC has supported land trust projects with letters of support and other outreach for acquisitions in the Deschutes (Trust Public Land), John Day (Western Rivers Conservancy, Sandy (TNC), and Santiam (WRC, though not a stronghold though), and working on acquisitions as part of a stronghold pilot concept in the lower Deschutes.

In Washington: The Partnership provided a \$25k grant to Chelan County to support the Wenatchee stronghold with Trust for Public Lands, and others in a land exchange feasibility analysis, which ultimately aimed to protect key habitats.

**Congressional Support:**

Stronghold legislation has been introduced in past sessions and will be reintroduced by Senator Maria Cantwell (D-WA) and Lisa Murkowski (R-AK), and in the House by Rep. Jared Huffman (D-CA).

**Resident Fish Stronghold Progress**

There has been some progress in the past 5-8 years on identifying resident fish stronghold or conservation areas within the Columbia Basin. Independent scientists are close to having completed an investigation in the Snake River Basin, from Hells Canyon up, that would identify native fish conservation areas to consider protecting. The information overlays existing fish populations, with existing protections and habitat quality to find the best of the best. The model is being used currently in Colorado and is being considered for application in the South for native bass species.

