STATE OF WASHINGTON
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May 18, 2009

Ms. Nancy Leonard
Northwest Power & Conservation Council
851 SW 6th Avenue, Suite 1100
Portland, Oregon 97204-1348

Dear Ms Leonard:

Thank you for the opportunity to comment on the Northwest Power and Conservation Council's (Council) high level indicators outlined in the March 13, 2009 memo. The Washington Department of Fish and Wildlife (WDFW) supports the Council's efforts to select a short list of high level indicators that can communicate progress of the Fish and Wildlife Program to the region's Governors, state legislatures, and Congress.

WDFW has provided comments on the Council's indicator list in the attached document and encourages the Council to continue its coordination with other entities as it finalizes and refines its high level indicators. The Council's current indicator list appears sufficient to communicate the Council's progress. However, further work is needed to realize the full potential of high level indicators as a means to clarify, organize, and prioritize data collection, storage, and reporting across the Basin.

The Department encourages the Council to continue its participation with other similar efforts so that the full potential of high level indicators can be realized. The Washington Monitoring Forum is charged with adopting statewide indicators by December 2009, and aligning those indicators with protocols later in 2010. The Puget Sound Partnership is in the process of selecting a set of core indicators to track the recovery and restoration of Puget Sound. The Pacific Northwest Aquatic Monitoring Partnership has issued a final draft report through its partners that compiles a comprehensive list of indicators in use across the Pacific Northwest. This draft report will be included in discussions by the Northwest Environmental Information Sharing (NWEIS) executive summit partners as they go through their own process of evaluating and compiling high level indicators. Finally, the Washington State Salmon Recovery Regions are each in different stages of developing their monitoring and adaptive management plans, which will each inform high level indicators. This list is inclusive but by no means exhaustive, and illustrates the need for coordination by the Council.

WDFW encourages the Council to work with the Columbia Basin Fish and Wildlife Authority to incorporate the Council's high level indicators into the existing Status of the Resource Report (SOTR), rather than creating a separate Council report. This will help align the Council's

interests with existing reports, such as the Governor's Salmon Recovery Office State of Salmon in Watersheds report, Puget Sound Partnership State of the Sound report, and NOAA's Report to Congress that currently rely on fish and wildlife managers' data.

Using the SOTR as the Council's reporting tool will help clarify a number of unresolved issues including: what data are used and how the indicators are derived; the availability and quality of those data; and the scale of the reporting. The NOAA Fisheries Service's Draft Guidance for Monitoring Recovery of Salmon and Steelhead document provides a data dictionary that can help further clarify terminology, definitions, and methodologies. The WDFW recommends the Council build on the draft NOAA data dictionary as a means to coordinate standards for indicator naming conventions and methods for deriving these indicators.

WDFW also encourages the Council to continue its participation in the data inventory and gap analysis being conducted across the Columbia Basin by tribes, state agencies, NOAA-Fisheries, and Bonneville Power Administration. This effort is significant and will greatly aid in addressing data quality and availability issues across the Columbia Basin and assist with implementation of the FCRPS BiOp and the Council's Fish and Wildlife Program.

Finally, we commend the Council on its efforts and look forward to working together. If you have any questions, please contact me at (360) 902-2559.

Sincerely,

Erik Neatherlin
Research and Monitoring Policy Lead

cc: Nate Pamplin
Bill Tweit
Sara LaBorde

May 18, 2009

WDFW Comments: Northwest Power and Conservation Council High Level Indicators

Council High Level Indicators	Description	Data Source
BIOLOGICAL INDICATORS		
WDFW Comment (Biological Indicators): The biological indictors proposed by the Council for fish include important indicators commonly measured by WDFW including abundance by origin, juvenile productivity, productivity, diversity, and spatial structure. However, the reporting of these indictors to communicate F&W program progress would be greatly improved if the indicators were referenced to a goal. For example, BON or Columbia River abundance levels could be compared to the Councils goal of salmon and steelhead returns to BON. The adult fish abundance in the Councils program could be compared to subbasin or salmon and steelhead recovery goals. If goals have not been established, then the reporting of indictors should focus on reporting the trends of abundance, productivity, hatchery fitness, hydrosystem survival, or other indicators, and an examination if this trend is increasing.		
Abundance		
1. Total adult salmon and steelhead returns to the Columbia	Adults & jacks passing Bonneville Dam (1938-present): Excel (30k) or PDF (20k) Smolt counts, Lower Granite and McNary to Bonneville: Excel (60k) or PDF (10k) Will include returns to mouth of the river and lamprey if available.	Fish Passage Center
2. Abundance of adult fish in the Council's program.	Number of salmon, steelhead, lamprey, resident fish, …	Status of the Resources, CBFWA
WDFW Comment (Indicator #2): The Council should support efforts that help fish and wildlife managers standardize methods for estimating adult abundance that incorporate error measurements. In the short term this may result in the need to fund projects that help determine how best to calculate error measurements across different populations. In the long term, however, this approach (providing estimates of adult abundance with associated error measurements) will improve data quality and increase the Council's ability to roll up data from a variety of sources. The Council should use the draft NOAA guidance and data dictionary document, and the ongoing data gap analysis to help further define and guide this work.		

3. Fish population status and trends for each ESU, especially listed ESUs.	Based on NOAA definitions and USFWS (Bull trout and sturgeon)	NOAA, although data is not yet available
WDFW Comment (Indicator #3): This indicator needs more clarification. Does the Council intend to report Population Status based on all four of NOAA's Viable Salmon Population parameters (Abundance, Productivity, Spatial Structure and Genetic Diversity)? If so, this may be difficult as data are not currently being collected evenly nor systematically for all of these parameters. More coordination is encouraged with NOAA and the co-managers and data collection agencies to clarify which of the NOAA VSP will be required/desired by the Council along with a level of certainty desired. The draft NOAA Guidance for Monitoring Recovery of Salmon and Steelhead document may be a place where some of this coordination can occur.		
Habitat Productivity		
4. Productivity of wild fish in select watersheds targeted by Council program	Juveniles/spawner for anadromous and resident fish. Will focus on adult fish in and juvenile fish out.	Focus on adult fish "in" and juvenile fish "out". Juvenile fish counts could be added to Streamnet and Status of the Resources/
WDFW Comment (Indicator #4): The Council should identify how this high level indicator relates NOAA VSP and the draft NOAA data dictionary. If aligned with "smolts-per-spawner ratio" from the draft NOAA data dictionary this would further clarify how the Council intends to calculate this indicator. Not clear how this indicator relates to the Intensively Monitored Watersheds.		
Harvest and Hatcheries		
5. Harvest number and rate	Totals for all spring, summer, fall Chinook, sockeye, steelhead, lower river sturgeon and for each listed ESU and by fishing type as well as hatchery and natural	In-river harvest and rate information from the ODFW and WDFW Joint Staff Report on the stock status and fisheries for fall chinook salmon, coho salmon, chum salmon, summer steelhead, and white sturgeon; ODFW and WDFW Joint Staff Report stock status and fisheries for spring Chinook, summer Chinook, sockeye, steelhead, and other species, and miscellaneous regulations; ODFW and WDFW Joint Staff Report concerning stock status and fisheries for sturgeon and smelt Ocean harvest estimated from PSMFC's

		coded wire tag database.
WDFW Comment (Indicator #5): Need to separate out harvest of wild and hatchery where possible. This may be implied in #6 below but it is not explicit. Also, it appears from the data sources that this will be calculated on a population scale but not sure if management units always align with populations so clarification is needed.		
6. Harvest of hatchery fish in the Council's Program	Number by species and by hatchery for all hatcheries receiving BPA funds	PSMFC's coded wire tag database
7. Relative fitness of supplemented stocks from hatcheries in the Council's Program	Possible measures may include relative reproductive success (RSS), percent natural influence (PNI), or the number of natural origin spawners compared to control streams.	Being developed by the Ad Hoc Supplementation Workgroup and ISRP. May include number of natural origin spawners. Completion goal: 2009.
WDFW Comment (Indicator #7): Need to define the spatial scale of the calculation.		
Hydro Survival		
8. Survival rates through the hydro system for adult and juvenile fish passing in-river and barged	From LGR to Bonneville and McNary to Bonneville, total system survival and individual hydroelectric facility	NOAA
Life-Cycle Mortality		
9. Life stage survival estimates for representative populations of salmon	Mortality rates at each life stage: egg to smolt, freshwater passage (reservoirs, dams), estuary, ocean, harvest, freshwater return. Include SARs.	To be determined. It will incorporate data from other HLIs.
WDFW Comment (Indicator #9): Difficult to comment on this high level indicator without more information. WDFW encourages the Council to coordinate with fish and wildlife managers and other efforts to settle on how to report this high level indicator.		
Wildlife		
10. Wildlife habitat units by dam: lost and acquired	Measured in habitat units.	Bonneville Power Administration's PISCES database.
WDFW Comment (Indicator #10): The acquisition of wildlife habitat to offset lost habitat as measured by habitat units (HUs) represents a strategy to mitigate for wildlife losses due to construction and inundation of the hydropower system. Reporting HUs lost and acquired should be considered an implementation indicator. Biological indicators for wildlife need to be determined as wildlife monitoring programs consistent with State Conservation strategies and monitoring programs for wildlife mitigation project biological objectives are developed.		

As an implementation indicator for the wildlife program we suggest the following be reported for the Program and the individual hydroelectric facility:

- o HUs lost due to construction and inundation
- o HU Mitigation Goal
- o Total HUs credited
- o % Completion (total HUs credited divided by HU mitigation goal)
- o Proportion of projects w/long-term management funding agreements
- o Map polygons for acquired parcels

Reviewing the status of wildlife implementation indicators should be the main function of the Wildlife Crediting Forum recently adopted in the Council's Program.

IMPLEMENTATION INDICATORS		

WDFW Comment (Implementation Indicators): In general, the Implementation measurements outlined below do not capture what is left to do. This may be difficult in some cases but should at least be acknowledged.

The Implementation Indicators for passage barriers, water, and habitat include fish reporting metrics of miles of accessible habitat, miles of primary stream reach improved, and miles in increase wetland, floodplain, or instream habitat complexity, realign, connectivity, respectively. While it is important to report on these quantities, there is no measure of quality. For example, we may expect higher restoration quality from a habitat complexity project that places 100 key pieces of large woody debris (LWD) per mile over 5 miles, which remains functional for 20 years as opposed to another project with similar goals but only placed 10 key pieces of LWD per mile and functioned for two season. Without reporting on the quality of habitat restoration, it is difficult to evaluate the effectiveness of BPA funded habitat actions. We propose that work continue on development of quality measures for these indicators or consider the use of validation monitoring to report on realized improvements in fish in response to the implementation of indicators.

Validation monitoring can be used to establish a cause and effect relationship between the biological response of fish and habitat restoration funded by BPA, thus reducing the concern about the lack of detailed quality information from implementation indicators and the influence of out of basin factors on biological indicators. If validation monitoring covered a representative suit of commonly conducted restoration projects then reporting on the success of these projects may eventually become a high level indicator.

Passage Barriers		
1. Instream passage improvement. Additional habitat made accessible	# of miles of habitat accessed, number of barriers removed	Bonneville Power Administration's PISCES database. Specifically combining work elements #84, 85, 184
WDFW Comment (Indicator #1): Data should be coordinated with co-manager Salmon and Steelhead Inventory and Assessment (SSHIAP) program.		
Water		
2. Water conservation and irrigation practices and water transactions. Additional water available for fish, anadromous and resident	Acre-feet/yr., # of miles of primary stream reach improvement	Bonneville Power Administration's PISCES database. Specifically combining work elements #82, 149, 150, 164
WDFW Comment (Indicator #2): Net water loss/gain may be a more appropriate measurement. Additional acre-feet of water measurement does not have a standardized calculation method.		
Land		
3. Land acquisition/conservation easement. Additional land acquired or leased for fish habitat		
Habitat Improvement		
4. Habitat	Miles, acres. Increase Instream Habitat Complexity, Realign, Connect, and/or Create Channel, Create, Restore, and/or Enhance Wetland, Enhance Floodplain, Install Fence, Plant Vegetation, Practice No-till & Conservation Tillage Systems, Upland Erosion & Sedimentation Control…)	Bonneville Power Administration's PISCES database. Specifically combining work elements #29, 30, 40, 55, 180, 181
WDFW Comment (Indicator #4): Measurements and metrics should be coordinated with updated Pacific Salmon Recovery Fund database.		
Screens		
5. Installed fish screens	Quantity of water protected in acre-feet	Bonneville Power Administration's PISCES database. Specifically, work element #69
WDFW Comment (Indicator #5): This measurement does not allow one to consider the quantity of water that is NOT protected. How does the Council intend to capture what is not protected?		

Predators		
6. Number of juvenile salmon saved from all predators	Include pikeminnow, avian predators, sea lions and others as appropriate.	Pikeminnow project: 2007 37% reduction in predation, about 5 million fish. Avian predation is available and sea lions are pending.
WDFW Comment (Indicator #6): This indicator needs more clarification before substantive comments can be provided. We need to know how inclusive the predator assemblage is going to be and how the high level indicator is going to be calculated.		
Watershed Indicator		
7. Number and percentage of targeted watersheds that provide adequate fish habitat	Need to develop watershed health indicator for fish. Should include measures of water quality.	Being developed through Executive Summit, Task 3.
WDFW Comment (Indicator #7): Council indicator states that will coordinate through the Executive Summit, task 3. The Washington Monitoring Forum is also developing recommended watershed health indicators that should be reviewed.		