Northwest Power and Conservation Council

February 26, 2009

MEMORANDUM

TO: Council members

FROM: Tony Grover

SUBJECT: Discussion on releasing high-level indicators for public comment

Dr. Karier, Washington member, will discuss the proposed release for public comment of draft high level indicators related to the Council's Fish and Wildlife Program. Included here is a draft letter to the public and the list of proposed high level indicators.

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Northwest Power and Conservation Council

[Date]

DRAFT

Dear Interested Party,

The Council is interested in developing a list of high level indicators to communicate its Fish and Wildlife program's progress to the region's Governors and to Congress. The 2009 program guides mitigation for the impacts on fish and wildlife resulting from the construction and operation of the hydropower system within the Columbia River basin. The Northwest Power Act, which directs the program, encompasses mitigation for anadromous fish, resident fish and wildlife. The Council recognizes that there is a high interest within the region to mitigate for salmon and steelhead listed under the Endangered Species Act (ESA), and aims to balance this need with the needs of non-ESA listed fish species and wildlife. The Council is requesting public comment on a draft list of seventeen possible indicators in an effort to stimulate discussion and to begin the process of aligning, as appropriate, with existing high level indicators used by others in the region in reporting the status and trends of the region's natural resources.

Currently there are two broad categories of indicators under consideration by the Council, biological and implementation indicators. There are twelve proposed biological indicators that report on the status and trend of fish abundance, fish harvest, fish productivity, predation levels, hydrosystem survival, wildlife habitat, and watershed condition. The remaining five implementation indicators report on actions that are likely to contribute to the program's success such as fish passage, water conservation, land improvements, and fish screens. A general description of how these indicators may be derived also is included.

The Council seeks your comments on the following points:

- Potential of the Council's draft indicators to effectively communicate the program's progress
- Which indicators, among those suggested by the Council or other indicators used in the region, are the most important to inform Congress, Governors and other regional decision-makers about Columbia River basin's fish and wildlife?
- How should these indicators be derived to assure aligning with similar indicators used by the region to report to decision-makers?
- What is the availability of existing data to support these indicators and what is the quality of the available data?

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The Council also seeks input from the region on the potential use of high level indicators in assisting with the development of the program's research, monitoring and evaluation strategy and for prioritizing program objectives.

The high level indicator documents are on the Council's website at http://www.nwcouncil.org/fw/program/hli/2008_11/Default.htm. If you would like to comment on the indicators, please send comments to Nancy Leonard at Northwest Power and Conservation Council, 851 S.W. Sixth Avenue, Suite 1100, Portland, Oregon 97204 or nleonard@nwcouncil.org. Comments are due by midnight on _____, 2009.

Thank you for your comments on developing of high level indicators for the Council's Fish and Wildlife Program.

Sincerely,

W. Bill Booth
Chair

High-Level Indicators and Descriptions

March 2009

Indicator	Description
BIOLOGICAL INDICATORS	
Abundance	
1. Total adult salmon and steelhead returns to the Columbia	Number passing Bonneville Dam (1938-present) (Will include returns to mouth of the River and lamprey if available)
2. Abundance of adult fish in the Council's program.	Number of salmon, steelhead, lamprey, resident fish, …
3. Fish population status and trends for each ESU, especially listed ESUs	Based on NOAA definitions and USFWS (Bull trout and sturgeon)
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.
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
6. Harvest of hatchery fish in the Council's Program	Number by species and by hatchery. For all hatcheries receiving BPA funds.
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.
Hydro survival	
8. Survival rates through the hydrosystem 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
Life-cycle mortality	
9. Life stage survival for representative populations of	Mortality rates at each life stage: egg to smolt, freshwater passage (reservoirs, dams), estuary, ocean,

Chinook and steelhead	harvest, freshwater return. Include SARs.
Wildlife	
10. Wildlife habitat units by dam: lost and acquired	Measured in habitat units.

Indicator	Description
IMPLEMENTATION INDICATORS	
Passage Barriers	
1. Instream passage improvement. Additional habitat made accessible	# of miles of habitat accessed, number of barriers removed. (PISCES: work element #84, 85, 184)
Water	
2. Water conservation and irrigation improvement and water transactions. Additional water available for fish, anadromous and resident	Acre-feet/yr., # of miles of primary stream reach improvement. (PISCES: work element #82, 149, 150, 164)
Land	
3. Land acquisition/conservation easement. Additional land acquired or leased for fish habitat	# of riparian miles protected, # of acres. (PISCES: work element #5, 92)
Habitat Improvement	
4. Habitat	Miles, acres. (PISCES: work element #29, 30, 40, 55, 180, 181) 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…)
Screens	
5 Installed fish screens	Quantity of water protected in acre-feet. (PISCES: work element #69)
Predators	
6. Number of juvenile salmon saved from all predators	Include pikeminnow, avian predators, sea lions and others as appropriate.
Watershed Health Indicator	
7. Number and percentage of	Need to develop watershed health indicator for

targeted watersheds that provide adequate fish habitat	fish. Should include measures of water quality.

Management Questions for High Level Indicators

1. Are we seeing improvements in the overall returns of salmon and steelhead that are returning to the Columbia River?
2. Are we seeing an increase in the fish populations targeted in the Council's Program?
3. In particular, are we seeing an increase or decrease in the abundance of fish in each ESU?
4. Are investments in habitat improving fish populations and productivity?
5. What are the trends in the harvest of Columbia Basin Chinook?
6. Is the implementation of the Program providing additional harvest opportunities?
7. Are fish in integrated hatcheries contributing to the recovery of listed ESUs?
8. Are investments in fish passage contributing to higher survival of adult and juvenile fish?
9. For key target species, what life-cycle stages have the highest mortality? Does this information suggest sources of mortality that the Program should focus on?
10. Are we making progress in mitigating for the loss of wildlife habitat from the construction of the dams and resulting inundation?

Implementation Indicators

11. Are we improving habitat conditions by expanding fish passage, increasing tributary water flows, improving terrestrial conditions, and screening irrigation diversions?
12. Are the predator projects in the program increasing the survival of target populations?
13. Is the implementation of the Program improving the watershed health of important parts of the Columbia Basin?