How to comment: **Send comments by midnight on April 24, 2009 to:**

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Request for comments on High Level Indicators

March 13, 2009

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 ten proposed biological indicators that report on the status and trend of fish abundance, fish harvest, fish productivity, hydrosystem survival, and wildlife habitat. The remaining seven implementation indicators report on actions that are likely to contribute to the program's success such as fish passage, water conservation, land improvements, predation levels, fish screens and watershed condition. 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?

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.

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**: Updated list to add Data Source column
- July 2008: Council endorsed this list for further development

Indicator	Description	Data Source
BIOLOGICAL INDICATORS		
Abundance		
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
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
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/
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

Indicator	Description	Data Source
		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.
6. Harvest of hatchery fish in the Council's Program	Number by species and by hatchery for all hatcheries receiveing 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.
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	NOAA
Life-cycle mortality		
9. Life stage survival estimates for representative populations of Chinook and steelhead	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.
Wildlife		
10. Wildlife habitat units by dam: lost and acquired	Measured in habitat units.	Bonneville Power Administration's PISCES database.
IMPLEMENTATION INDICATORS		
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
Water		
2. Water conservation and irrigation practices and water transactions. Additional water available for fish,	Acre-feet/yr., # of miles of primary stream reach improvement	Bonneville Power Administration's PISCES database. Specifically combining work elements #82, 149, 150, 164

Indicator	Description	Data Source
anadromous and resident		
Land		
3. Land acquisition/conservation easement. Additional land acquired or leased for fish habitat	# of riparian miles protected, # of acres	Bonneville Power Administration's PISCES database. Specifically combining work elements #5, 92
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
Screens		
5. Installed fish screens	Quantity of water protected in acre-feet	Bonneville Power Administration's PISCES database. Specifically, work element #69
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.
Watershed Health 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.