



# COLUMBIA BASIN FISH AND WILDLIFE AUTHORITY

851 SW Sixth Avenue, Suite 300 | Pacific First Building | Portland, OR 97204-1339  
Phone: 503-229-0191 | Fax: 503-229-0443 | Website: [www.cbfwa.org](http://www.cbfwa.org)

May 07, 2009

Nancy Leonard  
Northwest Power and Conservation Council  
851 SW Sixth Avenue, Suite 1100  
Portland OR 97204-1348

Dear Ms. Leonard:

Thank you for accepting comments on the Northwest Power and Conservation Council's (Council) list of High Level Indicators (HLIs) for use in the Fish and Wildlife Program. We provided extensive comments on these indicators in July 2008 ([http://www.nwccouncil.org/fw/program/hli/2008\\_07/cbfwa.pdf](http://www.nwccouncil.org/fw/program/hli/2008_07/cbfwa.pdf)) and appreciated your consideration of our suggestions at that time. The March 13, 2009 request for comments appears to focus on data sources from which you will acquire the data for your reports. We have commented on this aspect of the HLIs in both our July letter and in our Program amendment recommendations. We would like to reiterate the importance of the Status of the Resources Report (SOTR) and website for transmitting this information to the region. Our desire is for efficient and effective access to data that minimizes multiple and duplicative requests to the individual collectors of data across the region. We are encouraged by this effort to regionally agree on HLI's.

The agencies and Tribes of the Columbia Basin Fish and Wildlife Authority (CBFWA) have devoted significant effort over the past two years to develop recommendations for the Council on biological objectives, high level indicators, and reporting. We are currently working on a monitoring and evaluation strategy to support reporting of the indicators we identified, those prioritized for recovery monitoring, and those prioritized in the newly adopted Fish and Wildlife Program. The 2009 Program identified a process for developing biological objectives and we encourage the Council to pursue that process with earnest. It may be premature to establish many of the HLI's prior to establishing the Program's objectives. We encourage the Council to ensure these efforts are coordinated.

The agencies and Tribes have aligned the SOTR report and website with salmon and steelhead recovery monitoring, biological opinion implementation monitoring, and the 2009 Fish and Wildlife Program. We would like to use the SOTR website to disseminate our data to regional entities such as the Council's M&E Report. We request that the Council rely on the SOTR for regional data needs and ensure that future reports to the region's governors and Congress are consistent with the SOTR. We are working to ensure that the SOTR products are consistent with salmon recovery monitoring and reporting needs and state-level reports such as the biennial Oregon Watershed Enhancement Board (OWEB) report and the

Coordinating and promoting effective protection and restoration of fish, wildlife, and their habitat in the Columbia River Basin.

The Authority is comprised of the following tribes and fish and wildlife agencies:

Burns Paiute Tribe

Coeur d'Alene Tribe

Confederated Salish and Kootenai Tribes of the Flathead Reservation

Confederated Tribes of the Colville Reservation

Confederated Tribes of the Umatilla Indian Reservation

Confederated Tribes of the Warm Springs Reservation

Confederated Tribes and Bands of the Yakama Nation

Idaho Department of Fish and Game

Kootenai Tribe of Idaho

Montana Department of Fish, Wildlife and Parks

National Marine Fisheries Service

Nez Perce Tribe

Oregon Department of Fish and Wildlife

Shoshone-Bannock Tribes of Fort Hall

Shoshone-Paiute Tribes of Duck Valley

U.S. Fish & Wildlife Service

Washington Department of Fish and Wildlife

Coordinating Agencies

Columbia River Inter-Tribal Fish Commission

Upper Columbia United Tribes

Compact of the Upper Snake River Tribes

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Washington State of the Salmon report. Through the CBFWA forum we are committed to developing common reporting standards and providing data in a timely manner.

Thank you for consideration of our comments and we look forward to working closely with the Council in developing a comprehensive monitoring and evaluation plan for the Program to support regional reporting of HLIs. If you have questions please contact Brian Lipscomb at (503) 229-0191.

Sincerely,

A handwritten signature in black ink, appearing to read "Elmer Ward", written in a cursive style.

Elmer Ward, Chair  
Columbia Basin Fish and Wildlife Authority

cc: Council Members  
BPA Staff  
CBFWA Members



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July 11, 2008

Mr. Mark Walker  
Director of Public Affairs  
Northwest Power and Conservation Council  
851 SW Sixth Avenue, Suite 1100  
Portland OR 97204-1348

Dear Mr. Walker:

Thank you for the opportunity to comment on the Northwest Power and Conservation Council's (Council) draft set of high level indicators released for public comment at the June 2008 Council meeting in Spokane, WA. The Columbia Basin Fish and Wildlife Agencies and Tribes (CBFWA Members) commend the Council for taking this initial step to identify potential high level indicators that can assist in measuring the success of the Fish and Wildlife Program (Program).

As you know, for the past three years, the CBFWA Members have collaborated with the Council and the Bonneville Power Administration (Bonneville) to develop the Status of Fish and Wildlife Resources in the Columbia River Basin Report (SOTR). Clearly, for high level indicators to demonstrate Program effectiveness, they need to be based on the best scientific information available. We see the SOTR as a *mid-level* summary of indicators measuring the success of the Program, and an important source of information on which to report the high level indicators. We are now embarking on the third edition of the SOTR. The SOTR is a potential vehicle to report monitoring results at the appropriate scales so the information is readily available to the Council and region to meet multiple reporting requirements. An executive summary of the SOTR should provide the Council with most of the information needed for their basin-wide reporting needs. We are committed to summarizing and displaying information pertinent to those indicators that the Region believes are essential and are of use to the Council as you develop your reports to the Governors, Congress, and other interested parties.

High level indicators are useful in summarizing Program accomplishments at a broad scale, providing accountability to the Region, and establishing an overarching direction for research, monitoring and evaluation. When combined with the summaries of information at lower levels they become the essential element for adaptive management to succeed through the implementation of the Program. From these perspectives, the CBFWA Members have provided a detailed analysis of your proposed indicators for your consideration. In each high level indicator we have assessed the following:


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1. Is this indicator appropriate to summarize at the highest level?
2. Does this indicator relate to goals within the Program or goals that could be incorporated into the Program and therefore measure success?
3. Is it being considered in the right context?
4. Is it organized in the right category?
5. Are the appropriate reporting units being used?
6. Does the indicator promote consistency with other statutory requirements in particular ESA?

We recognize that development of high level indicators will be an iterative process based upon the best available information. The Federal, State and Tribal Fish and Wildlife Managers of CBFWA look forward to working with the Council to ensure the reporting units are clearly defined so that: (1) the Council's reporting units and those of other high level reports are consistent; (2) existing monitoring can support the selected high level indicators to the extent possible; (3) existing programs can be modified or expanded to cost effectively meet multiple resource management needs; and (4) where necessary, new monitoring programs can be initiated within a broad monitoring framework. It is imperative that a data management framework be in place to support the monitoring and reporting needs.

The CBFWA Members are committed to working with the Council to further develop the high level indicators to support the amended Program, including the yet to be developed management indicators. We also encourage the Council to explore the potential for including economic indicators for Program expenditures and the benefits of Program implementation. The purpose of these indicators would be to display Program expenditures in greater detail and to demonstrate the wide range of benefits provided by the Program. If you have any questions or desire further information, please contact Brian Lipscomb or Ken MacDonald at the CBFWA office 503/229-0191.

Sincerely,



Larry Peterman, Chairman  
Columbia Basin Fish and Wildlife Authority

Enclosure: (1) Attachment: CBFWA Comments to NPCC Draft  
Biological and Implementation Indicators

cc:  
NPCC Members and Staff  
CBFWA Members

## Attachment

### Columbia Basin Fish and Wildlife Agencies and Tribes (CBFWA Members) Comments to NPCC Draft Biological and Implementation Indicators (June 10, 2008)

#### Council Biological Indicator: Total Abundance

- 1) **Council Indicator:** Total adult salmon and steelhead returns to the Columbia.  
**Council Description:** Number passing Bonneville Dam (1938-present).

CBFWA Members' Recommendation: Past Council reports have included Bonneville Dam counts as an indicator of overall anadromous fish abundance. However it is not an overall indicator of the anadromous fish returning to the Columbia. Counts at Bonneville Dam only provide an indicator of overall anadromous fish abundance and trends at the dam since returns and mortality below Bonneville are not accounted for. This indicator would be more relevant if compared to a biological objective that is aggregated from population level objectives and accounts for returns and mortality below Bonneville as well as ocean harvest. As articulated in our comments to you on Program amendments, the agencies and Tribes have begun the technical work to establish the relationship between population level objectives and programmatic objectives.

We caution that the Bonneville Dam counts alone do not provide sufficient information to determine the distribution of the returning adults throughout the Basin or to determine if individual populations are reaching their objectives. Therefore this indicator should always be reported along with the fish population status and trends indicator below.

The suggested reporting units for adult counts are:

- Bonneville Dam adult counts of salmon and steelhead by species/race, hatchery, and natural.
- Estimated returns to the mouth of the Columbia by species/race, hatchery, and natural.

Pacific lamprey dam counts are problematic and do not provide a total population estimate. Pacific lamprey dam counts should only be used to approximate lamprey abundance. The agencies and Tribes will be exploring the development of Pacific lamprey objectives. We recommend that Pacific lamprey counts be reported at Bonneville Dam and include:

- A map of sub-basins occupied by Pacific lamprey to provide a broad look at current, known distribution, and status.

- 2) **Council Indicator:** Abundance of adult fish in the Council's Program.  
**Council Description:** Number of salmon, steelhead, lamprey, resident fish.

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Resident fish populations are managed as independent units. Unlike anadromous fish, which eventually rear in an “open” system (i.e., the ocean) and return through a common location, resident fish populations are isolated and at no given time are the various species and year-classes from throughout the Basin exiting the Basin via a single point or rearing in a common open system for an extended time and eventually returning through that single point in the Basin.

CBFWA Members’ Recommendation: Adult fish abundance is most appropriately reported at the population scale and should be accompanied by reports of productivity. The appropriate high level indicator for cumulative adult salmon, steelhead, bull trout, and white sturgeon abundance is included as described under Trends in Abundance and Productivity (below).

### **Council Biological Indicator: ESUs**

**1) Council Indicator:** Trends in abundance and productivity for each ESU especially listed ESUs.

**Council Description:** Based on NOAA definitions.

CBFWA Members’ Recommendation: We suggest changing the title for this indicator to “Fish Population Status and Trends.” The salmon and steelhead information for each Endangered Species Unit/Distinct Population Segment (ESU/DPS) will depend upon an assessment of the status of each Major Population Group (MPG) in terms of the recovery criteria which in turn relies on an assessment of the populations relative to the Viable Salmonid Population (VSP) parameters. Suggested units for reporting salmon and steelhead are:

- %/# ESU/DPS listed.
- %/# ESUs/DPS increasing, stable, decreasing and % in very low, low, moderate, and high risk categories (NOAA Definitions).

For most resident fish, including bull trout, the lack of population-specific data limits the potential to estimate abundance at the population scale. Although it may be possible to estimate the abundance of adult migratory bull trout in some core areas, there are populations for which there is insufficient information. Even where there are long-term redd counts there often are not good population estimates, the information is only sufficient to report trends in redds. Similar to the information needs for generating high level reports for salmon and steelhead status, the status of the recovery units for bull trout is dependent upon assessing the status of the populations within each core area.

Despite the limitations listed above, the following high-level units are recommended for bull trout and white sturgeon:

**Bull Trout**

- %/# Recovery Units increasing, stable, decreasing or % very low, low, moderate, and high risk categories meeting objectives (USFWS definitions).

**White Sturgeon**

- Populations increasing, stable, decreasing or % very low, low, moderate, and high risk categories.

Resident fish substitution is a significant component of the Council's resident fish program. The success of resident fish substitution projects is determined by attainment of the individual project objectives.

We suggest adding the following resident fish substitution high level reporting unit:

- %/# of projects meeting objectives.

**Council Biological Indicator: Life-cycle mortality**

**1) Council Indicator:** Life stage survival estimates for representative populations of Chinook and steelhead.

**Council Description:** Mortality rates at each life stage: egg to smolt, freshwater passage (reservoirs, dams), estuary, ocean harvest, freshwater return. Include smolt to adult return (SARs).

CBFWA Members' Recommendation: Consistent with the Council's Program, SARs for salmon and steelhead should be reported over time, plotted against the Council's SARs objective by species, hatchery and natural. The SARs should be reported for the Upper Columbia, Snake River, and mid-Columbia populations.

The mortality rates for each life stage require an evaluation of many of the other biological indicators. Life stage mortality indicators would likely be estimated for representative populations and reported at the subbasin/population level rather than for every salmon and steelhead population. Life stage specific estimates are a component of SARs but are not high level indicators themselves.

**Council Biological Indicator: Harvest and Hatcheries**

**1) Council Indicator:** Harvest number and rate.

**Council Description:** Totals for all spring Chinook, summer Chinook, fall Chinook, sockeye, steelhead, lower river sturgeon, and for each listed ESU.

CBFWA Members' Recommendation: Total harvest is an appropriate high level indicator. Harvest by ESU and impact rates are best reported at the ESU scale. The

information can be displayed but are not a high level indicator. The suggested high level indicator units for the Basin by species/race are:

- Harvest number by fishery type (sport, tribal, commercial), location and fish origin (hatchery or natural)

**2) Council Indicator:** Harvest of hatchery fish in the Council's Program.

**Council Description:** Number by species and by hatchery.

CBFWA Members' Recommendation: Most of the hatcheries in the Basin, if not all, ultimately have a harvest objective so this is also an appropriate indicator. Harvest attributed to individual hatcheries should be reported at the subbasin scale. We suggest that the Council report the harvest of fish within the Council's Program in relation to all hatchery programs in the Basin, therefore the suggested high level reporting units for harvest of hatchery fish are by species/race:

- Harvest number by fishery location.
- Harvested fish produced by the Council's Program and other.

There are also objectives for white sturgeon harvest so we suggest adding the following high level harvest information for white sturgeon reported by population:

- Commercial
- Sport
- Tribal
- Yield/unit area

**3) Council Indicator:** Relative fitness of supplemented stocks from hatcheries in the Council's Program.

**Council Description:** Possible measures may include relative reproductive success (RSS), percent natural influence (PNI), or natural origin spawners to control stream.

CBFWA Members' Recommendation: Hatchery programs are operated to provide fish for harvest (production) to restore a population (conservation) or both (supplementation) with specified best management practices to minimize impacts on non-target populations. It is recommended that hatchery indicators be displayed with harvest indicators. The hatchery indicators are in fact implementation goals and therefore should be categorized as implementation indicators. From that perspective we recommend moving the hatchery indicators to the implementation indicator category.

We suggest adoption of high level indicators for RSS and PNI are deferred until the final report and recommendations of the Collaborative Systemwide Monitoring and Evaluation Project (CSMEP) hatchery group and the Ad Hoc Supplementation Work Group reports.

Additional information to report hatchery implementation will need to be aggregated from individual hatchery programs at the subbasin scale. We suggest adding the following indicators for hatcheries:

- Total releases by species by life-stage (smolt, parr, etc.) and program type (production, supplementation, conservation).
- Total adult returns to hatcheries by species/race.
- Total funding under the Council's Program and other.

We also suggest adding for white sturgeon:

- Total hatchery releases by life stage, and program type.
- Total funding by source.

### **Council Biological Indicator: Hydro Survival**

**1) Council Indicator:** Survival rates through the hydrosystem for adult and juvenile fish passing in-river and barged.

**Council Description:** From LRG to Bonneville and McNary to Bonneville

CBFWA Members' Recommendation: Reporting the hydrosystem impacts to fish populations is an important indicator for the Program. High level reporting should present information for each hydroelectric facility and total system survival. The comparison of the survival of barged or transported fish compared to fish that pass through the system in-river is referred to as the Transport-In-River Ratio (TIR). The TIR should be reported as the ratio of the SARs for transported fish over the SARs for fish migrating in-river. We suggest the following reporting units by species/race, hatchery and natural:

- Total System Survival for Lower Granite to Bonneville and McNary to Bonneville annually over time.
- TIR at Lower Granite annually over time
- % adult and juvenile mortality by hydroelectric facility.
- A survival indicator for Pacific lamprey should be developed and reported.

### **Council Biological Indicator: Habitat**

**1) Council Indicator:** Productivity of wild fish in select watersheds targeted by Council Program.

**Council Description:** Juveniles/spawner for anadromous and resident fish.

Alternatives for consideration: number of wild spawners or juvenile growth rates.

CBFWA Members' Recommendation: As inferred by the Council's description this indicator needs further development. Whether assessing juveniles/spawner or juvenile growth rates such work may realistically only be implemented for some index populations. The work may be integrated into the Intensively Monitored Watershed

projects. The Kootenai Tribe of Idaho's operational loss assessment methodology using an Index of Ecological Integrity may provide another tool to help indicate potential habitat productivity in a watershed. As such productivity alone is probably not an appropriate high level indicator and is best reported at the population scale and through VSP assessments.

### **Council Biological Indicator: Wildlife**

1) **Council Indicator:** Wildlife habitat units by dam: lost and acquired.

**Council Description:** Measured in habitat units.

CBFWA Members' Recommendation: 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:

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

### **Council Implementation Indicator: Watershed Health Indicator**

1) **Council Indicator:** Number and percentage of targeted watersheds that provide adequate fish habitat.

**Council Description:** Need to develop watershed health indicator for fish.

CBFWA Members' Recommendation: Watershed health should be a biological indicator of the ecological condition of watersheds within the Basin as opposed to an implementation indicator. There are several programs we are or will be working with to develop the watershed health indicator. The programs include those of the Forest Service and Bureau of Land Management on federal lands in the Basin, the Kootenai Tribe of Idaho's operational loss assessment methodology using an Index of Ecological Integrity, the Northwest Habitat Institute, and the water quality managers.

**Council Implementation Indicators: Passage Barriers, Water, Land, Improvement, Screens.**

CBFWA Members' Recommendation: We suggest that the passage barriers, water, land, improvement, and screens indicators be grouped together as habitat implementation indicators. Most if not all of this information in the appropriate units should be available from the Pisces program. To the extent it is not the agencies and Tribes stand ready to work with the Council and Bonneville to assure it is. The organizational structure should be consistent with Pacific Coast Salmon Recovery Fund annual report, the Washington's *State of the Salmon in Watersheds* report and others. We offer the following structure as a starting point for discussion.

**CBFWA Habitat Implementation Recommendation**

<b>Project Type</b>	<b>Implementation Indicator</b>	<b>Timeframe Average (time period to be determined)</b>
Instream habitat projects	Miles treated	
Wetland habitat projects	Acres created Acres treated	
Estuarine habitat projects	Acres created Acres treated	
Riparian habitat projects	Stream miles treated Acres treated	
Upland habitat projects	Acres treated	
Fish passage projects	Number of barriers removed stream miles accessed Number of fish screens installed	
Land acquisition projects	Acres acquired/protected Stream bank miles acquired/protected	
Watershed planning and assessment projects	Number of projects	
Research, monitoring and evaluation projects	Miles of streams monitored Number of assessments completed	
Water acquisition projects	Acre-feet of water restored to streams	
Road projects	Miles corrected	

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### **Council Implementation Indicator: Predators**

- 1) Council Indicator:** Number of juvenile salmon saved from all predators.  
**Council Description:** Consider pikeminnow, avian predators, and sea lions.

CBFWA Members' Recommendation: Reporting on predator control efforts is an appropriate indicator given the growing emphasis and controversy surrounding some of the efforts. Suggest the Council report:

- Avian, pinniped, fish predation rates by salmonid species/race and Pacific lamprey.
- Number and location of bird colonies of interest.