# Northwest Power and Conservation Council





June 12, 2008

Dear Interested Party:

The Council has developed a draft set of high-level indicators designed to measure success of the fish and wildlife program. The high-level biological and implementation indicators could become a part of the Columbia River Basin Fish and Wildlife Program.

At its June 11 meeting in Spokane, Washington, the Council released these high-level indicators for public comment. The comment period extends to July 11, 2008.

Attached is a draft of the high-level indicators and the Power Point presentation that Dr. Tom Karier, Washington Council Member, made at the Council Meeting.

If you wish to comment on the high-level indicators, please send your comments to Mark Walker, director of Public Affairs, Northwest Power and Conservation Council, 851 S.W. Sixth Avenue, Suite 1100, Portland, Oregon 97204. Or you can comment at comments@nwcouncil.org.

Thank you for your interest in the Council's work.

Sincerely,

Stephen L. Crow
Executive Director

Enclosure

x:\jh\ww\council members\high level indicators comment letter.doc

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DRAFT: Biological and Implementation Indicators (June 10, 2008)

| Indicator | Description |
|---|---|
| BIOLOGICAL INDICATORS | |
| **Total Abundance** | |
| Total adult salmon and steelhead returns to the Columbia. | Number passing Bonneville Dam (1938-present) |
| Abundance of adult fish in the Council's program. | Number of salmon, steelhead, lamprey, resident fish, ... |
| **ESUs** | |
| Trends in abundance and productivity for each ESU, especially listed ESUs. | Based on NOAA definitions |
| **Life-cycle mortality** | |
| 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. |
| **Harvest and Hatcheries** | |
| Harvest number and rate. | Totals for all spring, summer, fall Chinook, sockeye, steelhead, lower river sturgeon and for each listed ESU |
| Harvest of hatchery fish in the Council's Program | Number by species and by hatchery |
| 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 natural origin spawners compared to control stream. |
| **Hydro survival** | |
| Survival rates through the hydrosystem for adult and juvenile fish passing in-river and barged. | From LGR to Bonneville and McNary to Bonneville |
| **Habitat** | |
| Productivity of wild fish in select watersheds targeted by Council program. | Juveniles/spawner for anadromous and resident fish. Alternatives for consideration: number of wild spawners or juvenile growth rates. |
| **Wildlife** | |
| Wildlife habitat units by dam: lost and acquired | Measured in habitat units. |

IMPLEMENTATION INDICATORS

**Passage Barriers**

| | |
|---|---|
| Additional habitat made accessible | Miles, number of barriers removed. (PISCES: Install Fish Passage Structure, Remove/Install Diversion, Remove/Modify Dam,...) |

**Water**

| | |
|---|---|
| Additional water available for fish, anadromous and resident | Cfs, miles of primary stream reach improvement. (PISCES: Acquire Water Instream, Install Well, Install Pipeline, Install Sprinkler...) |

**Land**

| | |
|---|---|
| Additional land acquired or leased for fish habitat | Miles protected, # of acres. (PISCES: Lease land, ...) |

**Improvement**

| | |
|---|---|
| Riparian habitat improved | Miles, acres. (PISCES: 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**

| | |
|---|---|
| Diversion screens installed. | Number and total flow protected. (PISCES: Install Fish Screen) |

**Predators**

| | |
|---|---|
| Number of juvenile salmon saved from all predators. | Consider pikeminnow, avian predators, sea lions, .... |

**Watershed Health Indicator**

| | |
|---|---|
| Number and percentage of targeted watersheds that provide adequate fish habitat. | Need to develop watershed health indicator for fish. |

# Council High Level Indicators

Draft for Public Comment

June 11, 2008

# BIOLOGICAL INDICATORS

## Total Abundance

- Total adult salmon and steelhead returns to the Columbia.
- Abundance of adult fish in the Council's program.

## ESUs

- Trends in abundance and productivity for each ESU, especially listed ESUs.

# BIOLOGICAL INDICATORS, Continued

**Life-cycle mortality**

- Life stage survival estimates for representative populations of Chinook and steelhead.

**Harvest and Hatcheries**

- Harvest number and rate.
- Harvest of hatchery fish in the Council's Program.
- Relative fitness of supplemented stocks from hatcheries in the Council's Program.

# **BIOLOGICAL INDICATORS,** Continued

**Hydrosystem Survival**

- Survival rates through the hydrosystem for adult and juvenile fish passing in-river and barged.

**Habitat**

- Productivity of wild fish in select watersheds targeted by Council program.
- Alternatives for consideration: number of wild spawners or juvenile growth rates

**Wildlife**

- Wildlife habitat units by dam: lost and acquired

# IMPLEMENTATION INDICATORS

**Passage Barriers**

- Additional habitat made accessible.

**Water.**

- Additional water available for fish, anadromous and resident.

**Land.**

- Additional land acquired or leased for fish habitat.

**Improvement.**

- Riparian habitat improved.

## IMPLEMENTATION INDICATORS, Continued

**Screens**

- Diversion screens installed.

**Predators**

- Number of juvenile salmon saved from all predators.

**Watershed Health Indicator**

- Number and percentage of targeted watersheds that provide adequate fish habitat.

# Next Steps

- Precisely define indicators.
- Identify sources of data and reporting process.
- Incorporate indicators in reports to Congress and Governors as available.
- Develop management indicators.