Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

ENVIRONMENT, FISH AND WILDLIFE

May 18, 2009

In reply refer to: KEW-4

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

Dear Ms. Leonard:

This letter responds to the Northwest Power and Conservation Council's (COUNCIL'S) request for public comment on a draft list of seventeen possible high-level indicators (HLI) to measure success of the Fish and Wildlife Program (Program) and to track performance indicators under the Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp). Bonneville Power Administration (BPA) supports the effort of developing a common set of high level indicators and associated metrics used in the region for reporting the status and trends of the region's natural resources. We have actively supported the development and standardization of HLI and monitoring needs through the work of Dr. Karier under the Program as well as the Pacific Northwest Aquatic Monitoring Partnership (PNAMP) and The Northwest Environmental Information Sharing (NWEIS) executive forum. BPA has participated in these activities to help advance coordination of regional monitoring programs and information sharing that is critical to making adaptive management decisions.

BPA provided general comments to the Council on their draft list of indicators in July of 2008, many of the issues raised are still relevant. We are providing more specific comments on high priority BiOp indicators (see enclosure, excel spreadsheet). It is important for the indicators to help answer critical management questions, assess program performance and to be understandable for a variety of audiences (e.g., technical staff of natural resource managers or regulatory agencies; general public; Congress; regional governors, etc.). In the case of BiOp reporting, the HLI and metrics need to be aligned with the BiOp performance and adaptive management needs. For the implementation category of HLI and metrics, alignment is needed with the Katz et al and PCSRF metrics (informed by the recent ISRP metrics review) in compliance with RPA 73 of the FCRPS Biological Opinion (see detailed comments in the attached spreadsheet).

To determine the feasibility and cost of proposed monitoring to inform and support the HLI, it is important to fully develop the specific monitoring actions across-the-basin that would be proposed for the Program, Biological Opinion, and regional recovery programs.

BPA proposes that NOAA and Council BiOp RM&E Implementation Workgroups together with the Action Agencies continue to work in coordination with PNAMP to further define and align the HLI and metrics. A subset of these workgroups could meet in June to take further steps in this direction. Our point-of-contact for this effort is Jim Geiselman who can be reached at 503-230-5732.

We appreciate the opportunity to provide these comments and look forward to working further with the Council and staff on this important work.

Sincerely,

William C. Maslen

William C. Maslen
Director, Fish and Wildlife Program

Enclosure:
NPCC Indicators

BPA Edits and Comments to Council HLIs - Draft 5-15-09							
Management Question	**Performance Measure or Standard**	**High Level Indicator**	**Metrics**	**Data Source**	**Comments / Recommendations**		
BIOLOGICAL INDICATORS							
		Yellow highlighted indicators are BiOp Critical					
Fish Abundance							
What is the trend in total adult salmon and steelhead returns to the Columbia Basin above Bonneville Dam?	Trend and numbers of adult salmon and steelhead returns to the Columbia Basin above Bonneville Dam (1938-present)	1. Total adult salmon and steelhead returns to the Columbia Basin above Bonneville Dam	Adult & jack counts at Bonneville Dam	Fish Passage Center and UW Columbia Basin Research (CBR).	Provide context by paring this information with harvest and hatchery production information both above and below Bonneville.		
What is the population condition of fish species in the Council Program?	Trend or relative value of fish population abundances in the Council's program	2. Abundance of adult fish in the Columbia Basin ~~Council's program~~	Number of salmon, (Coho, Chinook, Sockeye, Chum) steelhead, lamprey, Sturgeon, bull trout, resident fish, …	Status of the Resources, CBFWA Agencies; STREAMNET	Provide separate hatchery fish population data where available or note proportion of abundance from hatcheries. Coordinate with PNAMP on this HLI and metrics.		
What are the status and trends in adult abundance for ESA listed fish populations?	Percent of the populations within an ESU or DPS that have a positive trend in abundance	3. Fish population status and trends for each ESU and DPS, for listed populations ~~especially listed ESUs~~	Population abundance metrics (redd counts, wier counts, tag detections, etc.) for each population within an ESA Listed Salmon/Steelhead and resident fish ESU or DPS (Hatchery and Natural Origin)	NOAA and USFWS (Bull trout and sturgeon) annual updates/ ESA Status assessments	Track and differentiate hatchery vs natural origin spawners. Coordinate with PNAMP on this HLI and metrics.		
Habitat Productivity		-	-	-			

What is the expected increase in fish survival (productivity or capacity) or tributary habitat quality associated with implemented or planned habitat actions?	Expected increases in fish survival (productivity or capacity) or habitat quality for targeted populations for all actions implemented and/or planned	4. Changes in fish productivity or capacity; ~~of wild fish,~~ or a change in tributary habitat quality relative to maximum potential ~~in select watersheds targeted by Council program~~	Abundance of juveniles/spawners for anadromous and resident fish; habitat life stage survivals; habitat conditions. ~~Will focus on adult fish in and juvenile fish out.~~	BPA (AA BiOp comprehensive reports) and CBFWA SOTR	In the Performance Measure is "percent habitat quality improvements" a metric of fish productivity? Or a change in habitat condition? Increase in Tributary Habitat life stage survival for each population within an ESA Listed Salmon/Steelhead ESU or DPS		
What is the relative increase in estuary habitat fish survival associated with implemented or planned habitat actions?	Expected increases in fish survival (productivity or capacity) or habitat function for Stream Type and Ocean Type chinook ESUs and steelhead DPSs for all actions implemented or planned	Changes in fish productivity or capacity; or a change in esturary habitat function relative to maximum potential	Smolt to ocean Survival, based on Ocean and stream type lie histories of the species	BPA (AA BiOp comprehensive reports)			
Harvest and Hatcheries			-	-			
Are fisheries meeting expected harvest rates or quotas?	Harvest rates relative to the levels established by fishery managers.	5. Harvest number and rate	CWT, Pit-tag, survey counts and derived estimates for natural and hatchery origin spring, summer, fall Chinook, sockeye, steelhead, lower river sturgeon and for each listed ESU and by fishing Location and entity.	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.	Need more accurate ocean, mainstem and sport harvest information.		

At what level are different Council Program hatcheries supporting fish production and harvest?	Percent of production harvested in fisheries or escaping to spawing grounds for each hatchery	6. Harvest and escapement rates of hatchery fish in the Council's Program.	Harvest and spawning ground survey data	Fish Management Agencies; PSMFC's coded wire tag database			
Are Selceted populations achieving HGMP or HSRG goals? What is the expected relative increase in life cycle survival (low, medium or high) associated with implemented or planned hatchery actions?	Percent of Hatcheries achieivng goals by ESU. Targeted Low, Medium or High benefits relative to BiOp objectives and implemented or planned actions – by target population	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), the number of natural origin spawners recruits for htchery fish compared to control streams.	Fish Management Agencies; CBFWA SOTR	Being developed by the Ad Hoc Supplementation Workgroup and ISRP. May include number of natural origin spawners. Completion goal: 2009. *This indicator would support BiOp Hatchery Action Effectiveness comprehensive evaluation reporting needs.*		
Hydro survival			-	-			
What is the increase in juvenile survival rate, relative to basecase conditions, through the FCRPS for ESA listed salmon and steelhead?	1) Juvenile salmon and steelhead hydrosystem passage survival targets - by ESU and 2) Juvenile Dam Passage Survival Standards	8. Survival rates through the hydrosystem for ~~adult and~~ juvenile fish passing in-river and barged and juvenile dam survival rates	From LGR to Bonneville and McNary to Bonneville, total system survival and individual hydroelectric facility	NOAA and COE			
What is the adult survival rate through the FCRPS for ESA listed salmon and steelhead?	Adult salmon and steelhead hydrosystem passage standards specified in the BiOp	Adult Mainstem Hydrosystem Survival for each ESU or DPS	From Bonneville to LGR or McNary total system survival and individual hydroelectric facility	NOAA and COE	.		

-	-	~~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.~~	This Indicator is already covered by other Indicators that were added.		
Predators			-	-			
What is the increase in survival rate associated with predation reduction projects?	Increases in juvenile and adult survival rates associated with reduced predation rates	6. Number of juvenile and adult salmon saved from all predators	predation metrics for pikeminnow, avian, sea lions and others as appropriate.	Program Predation Projects and COE			
PHYSICAL INDICATORS							
Watershed Health and Ocean Conditions							
How are large scale environmental conditions affecting survival of salmonids?	Trend or value of ocean and terrestrial environmental condition indices that are correlated with salmon survival	Environmental Condition Index	Metrics needed to caculate an Ocean Productivity Index; Pacific Northwest Index (PNI); Pacific Decadal Oscillation (PDO); Multivariate El Niño/Southern Oscillation Index (MEI); Spring and Fall Transition Dates; Air/Ocean Moored Buoy Data; and Ocean Coastal Upwelling Index (CUI)	NOAA NWFSC and UW Columbia Basin Research (CBR)	A high level synthesis indicator of a suite of environmental condition indices should be developed and reported. This could be broken out by ocean and terrestrial indicators.		
What is the health of Columbia Basin watersheds for supporting fish population goals?	Watershed Health Indices	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.	Coordinate with PNAMP and NWEIS	-	-

Are the juvenile and adult hydrosystem environmental and physical conditions at each FCRPS mainstem dam within criteria?	Juvenile and Adult Hydrosystem Environmental and Physical Configuration Standards	Proportion of FCRPS Dams meeting Envrionmental and Physical standards	River flow, gas levels, and temperaturelevels (adjusted to reflectannual and seasonal waterconditions)	BPA HLI			
IMPLEMENTATION INDICATORS **(NOTE - All Implementation indicators need standardized across the region. BPA is working with NOAA, ISRP, NPCC, and PNAMP)**							
BiOp Implementation			-	-			
Are projects committed to under the FCRPS BiOp RPA being successfully implemented?	Proportion of projects identified in the RPA and subsequent Implementation Plans successfully implemented for each Strategy of the FCRPS BiOP Reasonable and Prudent Alternative(RPA)	Number of BiOp projects being successfully implemented	Project reporting metrics	PISCES and BiOp Annual Reports			
Passage Barriers			-	-			
How much instream habitat was made accessible to listed salmon and steelhead from the removal of a full and partial barrier?	Program goals	1. Instream Habitat Improvement - Additional miles of habitat made accessible	# of miles of habitat accessed and number of barriers removed.	Bonneville Power Administration's PISCES database. Specifically combining work elements #84, 85, 184	There is the need to standardize how these estimates are generated among various reporting entities (PCSRF grantees, Restoration Center, PISCES, etc.)		
Water			-	-			
What was the volume of water conserved and returned to the streams to aid in anadromous fish passage or survival?	Program goals	2. Water conservation and irrigation practices and water transactions. Additional water available for fish, anadromous and resident	Acre-feet/yr.	Bonneville Power Administration's PISCES database. Specifically combining work elements #82, 149, 150, 164			
How many miles of primary stream reaches are improved from returing water to the stream?	Program goals	Total miles of stream reach improved with additional water	# of miles of primary stream reach improvement, (Mininum Instream Flow Rates)	Bonneville Power Administration's PISCES database. Specifically combining work elements #82, 149, 150, 164			
Land			-	-			

How many stream miles of Habitat were acquired to protect fish habitat?	Program goals	3. Land acquisition/conservation easement. Additional land acquired or leased for fish habitat	# of miles protected Stream bank (Each Stream bank by habitat type (Riparian)	Bonneville Power Administration's PISCES database. Specifically combining work elements #5, 92	It is important to document what type of habitats are protected.		
How many acres of Habitat were acquired to protect	Program goals	3. Land acquisition/conservation easement. Additional land acquired or leased for fish habitat	# of acres of Wetlands, of Upland, of Estuarine wetland, etc		It is important to document what type of habitats are protected.		
Habitat Improvement			-	-			
How many miles of riparian and Instream habitat were improved?	Program goals	4. Miles of Habitat by Type Improved	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			

How many acres of wetland, riparian, upland, estuarine, or instream habitat were improved?	Program goals	4. Acres of Habitat by Type Improved	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…)				
Screens			-	-			
How much water is diverted that could remove salmon from normal migration corridoor reducing survival rates?	Program goals	5. Installed fish screens	Quantity of water protected in acre-feet, and number of screens installed.	Bonneville Power Administration's PISCES database. Specifically, work element #69			
Wildlife			-	-			
What is the total area of habitat lost or acquired for wildlife species?	Habitat units aquired relative to goals	10. Wildlife habitat units ~~by dam: lost and~~ acquired	Measured in habitat units.	Bonneville Power Administration's PISCES database.	.		
Research and Monitoring			-	-	Need Developed		