Northwest **Power** and **Conservation** Council

February 7, 2023

MEMORANDUM

TO: **Fish and Wildlife Committee Members**

FROM: **Patty O'Toole, Fish and Wildlife Division Director**

SUBJECT: **An Overview of Columbia River System Commitments to Benefit ESA-listed Fish**

BACKGROUND:

Presenters:

- Greg Smith – Fish and Wildlife Administrator, Bonneville Power Administration, Fish and Wildlife Policy and Planning Group
- Cindy Studebaker – Fish Policy Planner, U.S. Army Corps of Engineers, Northwestern Division
- Pam Druliner – Natural Resource Specialist, Bureau of Reclamation, Columbia-Pacific Northwest Region

Summary: The Columbia River System implementation team will provide the Council with an overview of some of the actions described in the Action Agencies' 2020 Biological Assessment and in the Terms and Conditions from the USFWS's and NOAA's 2020 Columbia River System Biological Opinions that are implemented to benefit ESA-listed salmon, steelhead, bull trout, and Kootenai River white sturgeon

Relevance: Implementation of the action in the 2020 Biological Assessment and in the Terms and Conditions from the USFWS's and NOAA's 2020 Columbia River System Biological Opinions, also implements measures in the Council's Fish and Wildlife Program.

Workplan: Program Implementation, Task H: Pursue implementation of 2014 Program and 2020 Program Addendum, including Council Program priorities

Background:

The U.S. Army Corps of Engineers (Corps), U.S. Bureau of Reclamation (Reclamation), and Bonneville Power Administration (Bonneville) (termed the Action Agencies) jointly manage the operation and maintenance of the hydropower system in the Columbia Basin. Beginning in the 1990's, various anadromous and resident fish species were listed as threatened or endangered under the Endangered Species Act. Since that time, the Action Agencies have consulted with both the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) on the effects of the operation and maintenance of the Columbia River System (CRS) on listed fish. Numerous Biological Opinions have been developed over the years, resulting in specific plans for operating the dams, and required actions to avoid jeopardizing the continued existence of the ESA-listed species.

In 2020, the Action Agencies re-initiated consultation with NMFS and USFWS and submitted a biological assessment (BA). The BA (also known as the Proposed Action) describes how the hydropower system is operated, and the types of actions and programs that will be undertaken to benefit the listed species. Following the submittal of the BA, NMFS and USFWS issued a Biological Opinion, in which they determined that the proposed action was not likely to jeopardize the continued existence of the listed species. Given the non-jeopardy opinion, the expectation is that the Action Agencies will deliver on the commitments as described in the BA. The timeframe for implementation of the commitments under this BA and Biological Opinion is 15 years.

Under the Northwest Power Act, Bonneville (section 4(h)(10)(A)) and the Corps of Engineers and Bureau of Reclamation (section 4(h)(11)(A)(ii)) have certain responsibilities to the Council's Fish and Wildlife Program. The Endangered Species Act is a regulatory overlay directing these agencies on how to use their existing authorities if they might or will affect listed species in implementation of their Northwest Power Act responsibilities.

One of the best ways to understand the role of the Proposed Action and Biological Opinions in the Council's Fish and Wildlife Program is that they contain a set of proposed actions and standards to benefit listed species that are consistent with measures and objectives in the Fish and Wildlife Program. The Council does not "adopt" the Biological Opinions as a whole into the program. Instead, the Council recognizes that the *actions* analyzed in the Proposed Action and Biological Opinion for Endangered Species Act sufficiency are also *measures* in the Program to be implemented under the Northwest Power Act to protect and mitigate fish and wildlife affected by the hydrosystem. The Council does this while also recognizing that there are other measures and objectives to address effects on the *other* anadromous fish, resident fish and wildlife species that also need to be implemented and are of equal priority under the Northwest Power Act and the Council's Fish and Wildlife Program with the measures to

address listed species. The Program also recognizes that there are objectives and measures that may go beyond what is needed for ESA in order to satisfy the protection and mitigation needs of the Northwest Power Act.

At the February Fish and Wildlife Committee meeting, the Council will hear from the CRS implementation team, whose role it is to track, monitor and report out on progress toward meeting these CRS commitments. The agencies will describe the actions they are taking to meet their commitments as described in the Proposed Action and documented as part of the Biological Opinion including operational commitments for storage dams and run-of-river dams, and non-operational commitments such as for hatcheries, habitat restoration in the tributaries and the estuary, fish predation, and research and monitoring. They will also describe new actions that provide benefit to listed fish species.

An Overview of CRS Commitments to Benefit ESA-listed Fish

Update for Northwest Power and Conservation Council

Greg Smith, Cindy Studebaker, Pam Druliner

February 14, 2023

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CRS Commitments to Benefit ESA-Listed Fish

What to expect today

- Overview of the CRS consultation process
- CRS Commitments to benefit ESA-listed fish
  - Operational
  - Non-Operational
  - Reporting
  - Coordination

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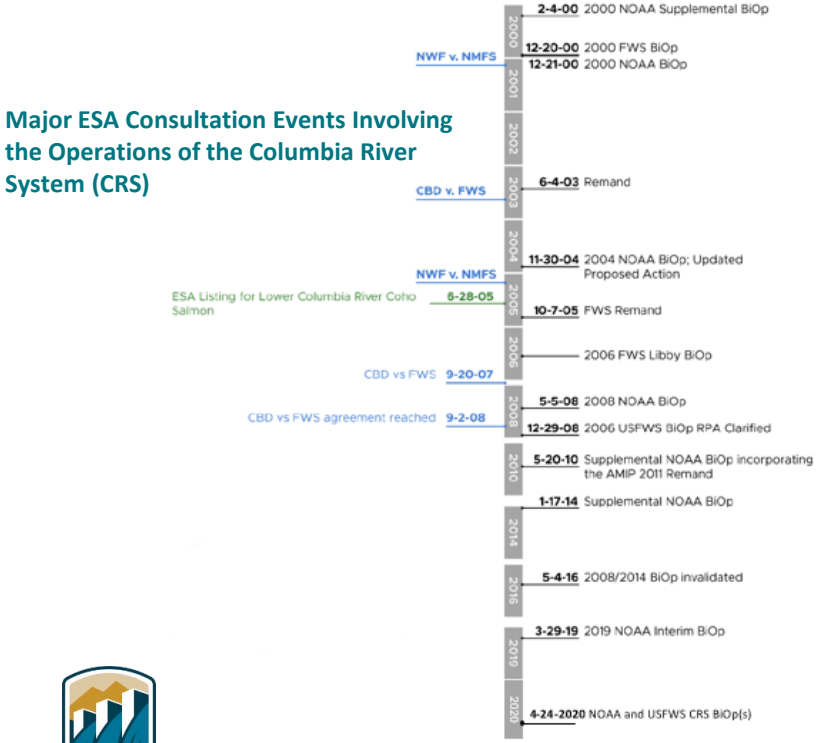
CRS Consultation Process

- CRSO EIS Process
- Single Proposed Action
  - Biological Assessment
  - Clarification Letter
- Two Biological Opinions
  - USFWS
  - NMFS



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What are CRS Commitments to Benefit ESA-listed fish?

- Action Agency Proposed Action/Clarification Letter
  - Systems Operations
  - Non-operational Conservation Measures
- NMFS & USFWS BiOp Terms and Conditions

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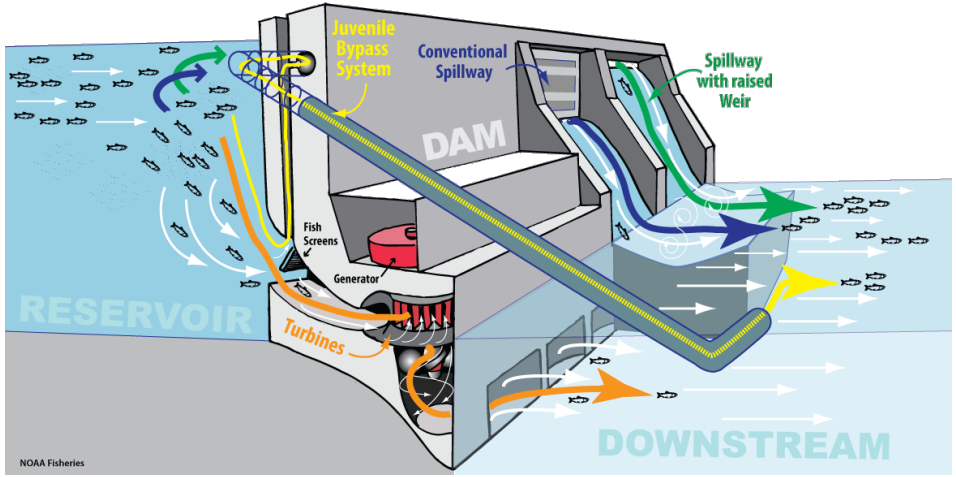
CRS Operations to Benefit ESA-listed Fish

Operational measures include, but are not limited to:

- Fish Passage
- Temperature management
- Flow management



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CRS Storage Projects Operations to Benefit ESA-listed Fish

- Libby and Hungry Horse
  - Follow VARQ
  - Sliding scale summer flow augmentation
  - Selective Withdrawal Operations
- Grand Coulee
  - Flow ops for chum below Bonneville
  - Improve spring flows
  - Summer flow augmentation
- Dworshak
  - Improve conditions on the Snake

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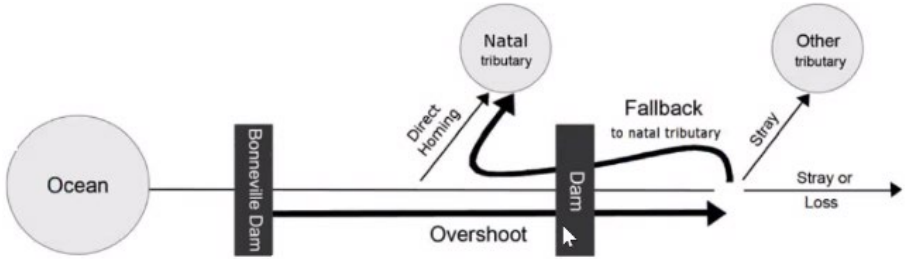
CRS Run-of-River Operations to Benefit ESA-listed Fish

- Lower Snake & Columbia River projects:
  - Spring Operations
  - Summer Operations
  - Fall/Winter Operations
    - Steelhead overshoot
  - Monitoring
  - Adaptive Management



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Non-Operational Conservation Measures

- Structural Measures
- Conservation & Safety-net Hatchery Actions
- Predation Management
- Habitat Improvement Actions:
  - Tributary
  - Estuary
- Monitoring, Reporting & Regional Coordination




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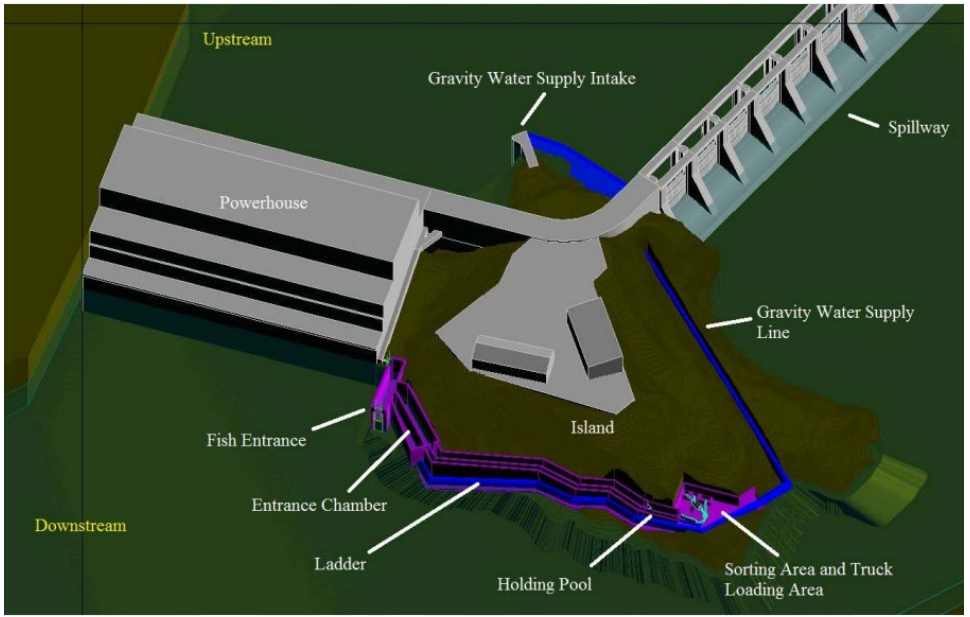
Structural Measures to Benefit ESA-listed Fish

- Reduce temperature differentials in fish ladders
- Add avian predation deterrents at dams
- Seek funding for bull trout passage at Albeni Falls



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Conservation and Safety-net Hatchery to Benefit ESA-listed Fish

- Six Conservation and Safety-net hatchery programs are included in the Proposed Action
- These Programs have their own HGMP ESA-consultations

Table 2.17. Conservation and safety-net hatchery programs included in this consultation

Species	Hatchery Program	Population	Program Type	Operator	Action Agency Funding Source	NOAA BiOp Status	USFWS BiOp Status	Production Level Approved in NMFS BiOp
Upper Columbia spring Chinook[2]	Winthrop NFH Spring Chinook Program[a]	Methow spring Chinook	Integrated conservation	USFWS	Reclamation	Final BiOp 10/13/2016 WNFH Sec 10 Take permit issued on 2/21/2017	Final BiOp issued on 5/13/2016	Up to 400,000 smolts
Upper Columbia steelhead[2]	Winthrop Steelhead Program	Winthrop steelhead	Integrated conservation	USFWS	Reclamation	Final BiOp 10/10/2017 WNFH 4DConcurrence letter issued on 8-30-2019	Final BiOp issued on 5/13/2016	Up to 200,00 smolts
Upper Columbia spring Chinook	Chief Joseph Hatchery Program/Winthrop NFH	Okanogan spring Chinook	Isolated conservation (10j)	Colville Tribe/ USFWS	Bonneville/ Reclamation	Final CJH BiOp 10/27/2014 Final BiOp WNFH 10/13/2016	Final WNFH BiOp issued on 5/13/2016	Up to 200,000 smolts
Snake River spring Chinook	Johnson Creek Spring Chinook Program	Johnson Creek	Integrated Recovery	NPT	Bonneville	Final BiOp 11/27/2017	Final BiOP 12/08/2017	Up to 150,000 smolts
Snake River fall Chinook	Nez Perce Tribal Hatchery Fall Chinook Salmon Program	Clearwater basin	Integrated Recovery	NPT	Bonneville	Final BiOp 8/13/2018	Final BiOP 05/16/2017 Amended 07/20/2018	Up to 1,400,000 sub -yearlings
Snake River sockeye	Snake River Sockeye Salmon Captive Broodstock Program	Redfish Lake	Integrated Recovery	IDFG	Bonneville	Final BiOp 9/28/2013	Final BiOP 12/18/2017	Up to 1,000,000 smolts

BiOp = biological opinion; IDFG = Idaho Fish and Game; NFH = National Fish Hatchery; NPT = Nez Perce Tribe; USFWS = U.S. Fish and Wildlife Service
[a]The upper Columbia spring Chinook and steelhead hatchery programs included in this table serve as conservation programs as well as the Grand Coulee mitigation programs

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Predator Management to Benefit ESA-listed Fish

Avian, Pinniped, Northern Pikeminnow

- Avian predator management and monitoring
  - Implement existing avian management plans
  - Avian predation deterrents at dams
  - Cumulative predation study
- Pikeminnow predation mgmt.
  - Explore management opportunities
- Pinniped predation mgmt.
  - SLEDS, hazing, and monitoring
  - Allow access for others to manage

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Habitat Improvements to Benefit ESA-listed Fish

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Habitat Improvements - Tributary

Process Improvements

- Tributary Habitat Steering Committee
- Science Committee to advise THSC
- Adaptive Management Process (ongoing w/ THSC & NWFSC)

Habitat Metrics

- Specific, targeted metrics by Major Population Group
- 5 year cycles of increased reporting, analysis used to adapt for next cycle

Table D.2. Proposed habitat metrics (2021–2026) for major population groups in the Snake River and upper Columbia spring/summer Chinook evolutionarily significant unit (ESU) and Snake River and upper Columbia steelhead DPS and the middle Columbia steelhead DPS

Major Population Group	Flow Protected (cfs)	Flow Enhanced (acre-feet)	Entrainment Screening (# screens)	Habitat Access (miles)	Stream Complexity (miles)	Riparian Habitat Improved (acres)
Snake River spring/summer Chinook major population groups						
Grande Ronde / Imnaha	79	6893	0	49	8	140
Upper Salmon	76	9680	24	16	6	36
Lower Snake	0	0	0	3	10	156
Upper Columbia River spring Chinook ESU						
Upper Columbia/ East Slope Cascades	29	5309	5	5	8	68
Snake River steelhead DPS major population groups						
Grande Ronde	79	6893	0	54	10	356
Clearwater	0	0	0	17	6	419
Salmon	76	6360	25	30	6	326
Lower Snake	0	0	0	3	10	116
Upper Columbia River steelhead DPS						
Upper Columbia/ East Slope Cascades	42	8254	10	35	9	109

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Habitat Improvements - Estuary

Target: 300 acre/year

LEG	ACTIVITY	AM	FOUNDATIONAL AM 00 01 02 03 04 05 06 07 08	EMERGING AM 09 10 11 12 13	MATURING AM 14 15 16 17 18 19 20 21
Science	Action Effectiveness Monitoring and Research	M			
	Basic Ecological Research	M			
	Critical Uncertainties Research	M			
	Cumulative Effects Method Development and Evaluation	M			
	Ecosystem Classification System	M			
	Estuary-wide Terrain Surface	M			
	Landscape Principles	R			
	Restoration Design Challenges Research	M			
	Status and Trends Monitoring	M			
	Synthesis Reports	L			
	Two-year Flood Elevation Modeling	R			
Coordination	Columbia River Estuary Conference	L			
	Estuary CBFish.org website	L			
	Expert Regional Technical Group	R			
	Restoration Sponsor Workshops	R			
	Science Seminars	L			
Management	Annual Restoration and Monitoring Plans	R			
	Get-after-it List	R			
	Implementation Forecaster	R			
	Landscape Planning Framework	R			
	Management/Technical Support Capacity	R			
	Master Matrix of Learning	L			
	Project Goal Maps	R			
	Restoration Sponsor Contracts	R			

Figure 4. Timeline for CEERP activities organized by AM period and supporting leg with reference to CEERP AM component (R = restoration; M = monitoring; L = learning). Descriptions of some of these activities and their effects on success are included in Table 1 and the main text. Activities not included in Table 1 or main text are described in Ebberts et al. (2017).

Gibbons Creek at Steigerwald, January 2020

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CRS Research, Monitoring and Evaluation

- Develop & implement a Columbia Basin tributary habitat RM&E strategy to align with and support the THSC
- Continue RM&E in the Columbia River Estuary as part of the CEERP
- Continue assessing the effect of CRS operations on salmon and steelhead
- Support annual, basin-wide data collection of habitat status and trends data, including stream temperature and flow
- Continue to support fish status & trend monitoring
- Monitor & reduce take of ESA-listed species associated with RME

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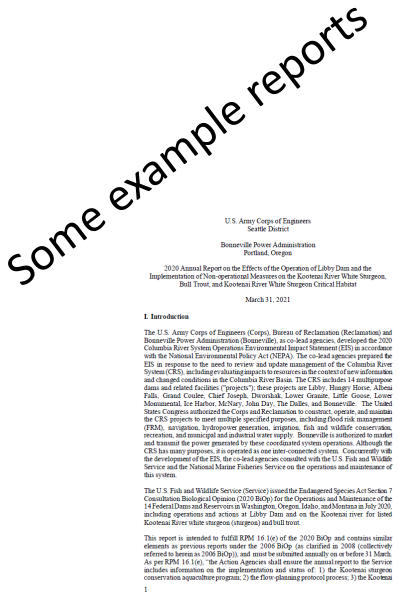
CRS Commitment Reporting

- Annual Implementation Plans
- Annual Implementation Progress Reports
- Other reports and deliverables

Some example reports



U.S. Army Corps of Engineers
Seattle District

Bonneville Power Administration
Portland, Oregon

2020 Annual Report on the Effects of the Operation of Libby Dam and the Implementation of Non-operational Measures on the Kootenai River White Sturgeon, Bull Trout, and Kootenai River White Sturgeon Critical Habitat

March 31, 2021

I. Introduction

The U.S. Army Corps of Engineers (Corps), Bureau of Reclamation (Reclamation) and Bonneville Power Administration (Bonneville), as co-lead agencies, developed the 2020 Columbia River System Operations Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA). The co-lead agencies prepared the EIS in response to the need to review and update management of the Columbia River System (CRS), including evaluating impacts to resources in the context of new information and changed conditions in the Columbia River Basin. The CRS includes 14 multipurpose dams and related facilities ("projects"); these projects are Libby, Hungry Horse, Albeni Falls, Grand Coulee, Chief Joseph, Dworshak, Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles, and Bonneville. The United States Congress authorized the Corps and Reclamation to construct, operate, and maintain the CRS projects to meet multiple specified purposes, including flood risk management (FRM), navigation, hydropower generation, irrigation, fish and wildlife conservation, recreation, and municipal and industrial water supply. Bonneville is authorized to market and transmit the power generated by these coordinated system operations. Although the CRS has many purposes, it is operated as one inter-connected system. Concurrently with the development of the EIS, the co-lead agencies consulted with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on the operations and maintenance of this system.

The U.S. Fish and Wildlife Service (Service) issued the Endangered Species Act Section 7 Consultation Biological Opinion (2020 BiOp) for the Operations and Maintenance of the 14 Federal Dams and Reservoirs in Washington, Oregon, Idaho, and Montana in July 2020, including operations and actions at Libby Dam and on the Kootenai river for listed Kootenai River white sturgeon (sturgeon) and bull trout.

This report is intended to fulfill RPM 16.1(e) of the 2020 BiOp and contains similar elements as previous reports under the 2006 BiOp (as clarified in 2008 (collectively referred to herein as 2006 BiOp)), and must be submitted annually on or before 31 March. As per RPM 16.1(e), "the Action Agencies shall ensure the annual report to the Service includes information on the implementation and status of: 1) the Kootenai sturgeon conservation aquaculture program; 2) the flow-planning protocol process; 3) the Kootenai

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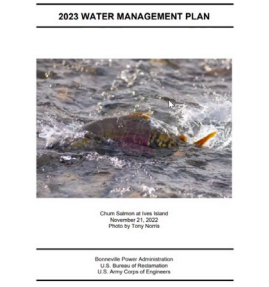
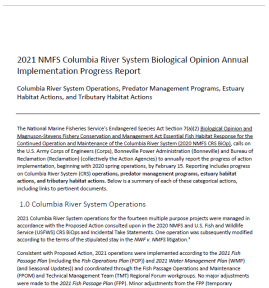


2023 WATER MANAGEMENT PLAN

Chum Salmon at Ives Island
November 21, 2022
Photo by Tony Norris

Bonneville Power Administration
U.S. Bureau of Reclamation
U.S. Army Corps of Engineers



2021 NMFS Columbia River System Biological Opinion Annual Implementation Progress Report

Columbia River System Operations, Predator Management Programs, Estuary Habitat Actions, and Tributary Habitat Actions

The National Marine Fisheries Service's Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Continued Operation and Maintenance of the Columbia River System (2020 NMFS CRS BiOp), calls on the U.S. Army Corps of Engineers (Corps), Bonneville Power Administration (Bonneville) and Bureau of Reclamation (Reclamation) (collectively the Action Agencies) to annually report the progress of action implementation, beginning with 2020 spring operations, by February 25. Reporting includes progress on Columbia River System (CRS) operations, predator management programs, estuary habitat actions, and tributary habitat actions. Below is a summary of each of these categorical actions, including links to pertinent documents.

1.0 Columbia River System Operations

2021 Columbia River System operations for the fourteen multiple purpose projects were managed in accordance with the Proposed Action consulted upon in the 2020 NMFS and U.S. Fish and Wildlife Service (USFWS) CRS BiOps and Incidental Take Statements. One operation was subsequently modified according to the terms of the stipulated stay in the *NWF v. NMFS* litigation.[1]

Consistent with Proposed Action, 2021 operations were implemented according to the *2021 Fish Passage Plan* including the *Fish Operations Plan* (FOP) and *2021 Water Management Plan* (WMP) (and Seasonal Updates)) and coordinated through the Fish Passage Operations and Maintenance (FPOM) and Technical Management Team (TMT) Regional Forum workgroups. No major adjustments were made to the *2021 Fish Passage Plan* (FPP). Minor adjustments from the FPP (temporary modifications to spill patterns, unit priority order, dates for planned operations, etc.) were coordinated with the region via the FPOM workgroup. Following is an overview of a subset of operations and associated reporting that are of particular interest to NMFS.

1.1 Fish Passage Plan and Fish Operations Plan

The FPP was coordinated monthly with regional sovereigns through the FPOM. See http://pweb.crohms.org/tmt/documents/fpp/. The FPP is a living document and is updated annually, typically before March 1 of each year and modified in season as needed.

The 2022 FOP is an appendix to the FPP (Appendix E) that focuses on planned operations for juvenile fish

[1] Term Sheet for Stay of Preliminary Injunction Motion and Summary Judgment Schedule, NWF, et al. v. NMFS, et al. (3:01-cv-00640-SI).

2022 Fish Passage Plan

Lower Columbia & Lower Snake River Hydropower Projects

March 1, 2022 – February 28, 2023

U.S. Army Corps of Engineers Northwestern Division
Columbia Basin Water Management, Reservoir Control
CENWD-PDW-R

NOTE:

The Fish Passage Plan is a "living document" and may be updated throughout the year as coordinated with FPOM.

Changes made after March 1 are NOT included in printed copies.

For the most current version, please reference the online FPP at:

http://pweb.crohms.org/tmt/documents/fpp/

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Regional Forums

Regional Implementation Oversight Group

➔ key decision milestones

Technical Management Team

➔ in-season project & reservoir operations

System Configuration Team

➔ Corps' Columbia River Fish Mitigation (CRFM) Program priorities

Studies Review Work Group

➔ Anadromous Fish Evaluation Program study development

Fish Facility Design Review Work Group

➔ fish passage engineering & design reviews

Fish Passage Operations & Maintenance

➔ fish passage O&M

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Review New CRS Commitments to Benefit ESA-listed Fish

U.S. Fish and Wildlife Service

- Assess Kootenai River tributary confluences
- Albeni Falls Fish Passage
- Kootenai River nutrient additions
- Mainstem riparian habitat assessment
- Snake River cold water refugia evaluation
- PIT tagging of bull trout
- Tributary habitat reporting
- Improved reporting and data management

Mostly continue what we've been doing for KRWS

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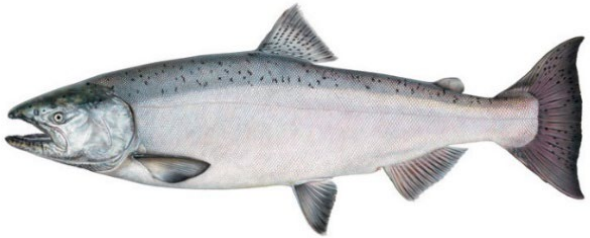
Review New CRS Commitments to Benefit ESA-listed Fish



NOAA FISHERIES

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National Marine Fisheries Service

- Structural improvements
- Improved Tributary Habitat Program Processes
- Biological evaluation of the effects of high spill
- Improve steelhead monitoring
- Fall/Winter spill at Lwr Snake and McNary
- Deter avian predator use at the projects
  - John Day Operations
- Reducing electrofishing - NPMP
- Tracking of ESA-listed species take from CRS Monitoring

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Summary

Collaborative and structured approach to implementing CRS Commitments to benefit ESA-listed Fish

- Greater emphasis on CRS operations and maintenance
- Non-operational conservation measures
- Continue to operate CRS projects to meet multiple authorities
- Improve fish passage through the system
- Use Regional Forum processes
- Predictability and accountability
    - Non-operational conservation measures
- Monitoring and Reporting
    - Demonstrate fulfillment of CRS Commitments

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QUESTIONS / COMMENTS

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