

Scientific & Programmatic Review of the Lower Snake River Fish & Wildlife Compensation Plan for Spring Chinook Program



Scott Marshall
LSRCP Administrator
US Fish & Wildlife Service

Welcome & Introductions

- Agency Project Leaders
- Invited speakers: Robin Waples & Tom Cooney
- ISRP members & NWPCC staff
- State & tribal agency leaders
- BPA staff
- LSRCF staff & volunteers
- Audience

THANK YOU

Other Recent Reviews

- HSRG: Congressional mandate to review and recommend program changes needed to balance hatchery mitigation programs with conservation needs (2008 & 09).
- FWS-HRT: Assess benefits & risks of Service operated mitigation programs & the program's scientific defensibility (2008 – 2010)
- NOAA HGMPs: Biological assessment of program on ESA listed stocks. In progress.

Another Review !!!

Why ?

- Why the LSRCP scheduled this review:
 - Provide opportunity for agency policy staff to review our progress and set future program direction.
 - Internal LSRCP goals
 - Develop a consensus set of evaluation metrics.
 - Develop a consensus set of methods to estimate those metrics.
 - Identify program gaps to help establish funding priorities.
 - Produce a single, consistent set of data to evaluate progress towards achieving program goals.

Why ISRP Participation?

- ISRP has a congressional mandate to review BPA reimbursable programs as well as NWPCC Fish & Wildlife programs.
- Merging our previously scheduled internal review with ISRP saves time & resources.
- We hope the ISRP can help us evaluate:
 - Have we identified & prioritized the proper suite of questions and associated metrics?
 - Are our methods sound?
 - Does the data support our conclusions?
 - Are we effectively communicating and coordinating our programs with others?

Policy Questions for Agency Leaders

- Is our production program properly aligned with your agency's management goals & objectives?
- What changes, if any, would you recommend in our program to better meet your agency's fishery and/or conservation goals?

Structure of this Review

- LSRCP Review Cycle (including ISRP):
 - 2010 Spring Chinook
 - 2011 Steelhead
 - 2012 Fall Chinook
- History – 1
- Context: Limiting factors & status of natural Snake River stocks – 2
- Program specific results – 12
- Overall program results – 1
- *Selected research results - 6*
- ISRP Q&A sessions end of each day for talks that day & written report to NWPCC
- LSRCP – Proceedings report

House Keeping

- Registration: See Margaret or Tammy
- Lunches (2) & breaks 2 included -
- Restrooms are down the hall on left.
- Power Point Presentations – Loaded each afternoon – see Lynn Palansky.
- Tight schedule – Time card @ 5 min.
- Social @ 6:00 pm Wed in lounge.
- ISRP each afternoon – Public invited to listen, but its their time for questions.

Development of the Lower Snake River Compensation Plan: A Brief History

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LSRCP Program Administrator
U.S. Fish & Wildlife Service

Dams of the Snake were Controversial

- 1945 - Congress authorized construction of four dams on the lower Snake, but no funding. A controversy that had been brewing erupted.
- 1950 – COE requested \$2 M for construction of Ice Harbor – the request was denied citing concerns over fish, runaway govt. spending, cost in relations to options and belief that private capital should participate.
- 1953 – Pres. Truman requested \$5.0 M but when Pres. Eisenhower assumed office he cut the funding stating “no new starts on dams”.
- 1955 Sen. Sen. W. Magnuson “slips” \$1.0 M into omnibus spending bill and once construction started, there was no going back.

Ice Harbor Lock & Dam was completed in 1961

(photo credit U.S Army COE)



Ice Harbor Lock & Dam

Lower Monumental Lock & Dam was completed in 1969

(photo credit U.S Army COE)



(photo credit U.S Army COE)

Lower Monumental Lock & Dam

Little Goose Lock & Dam was completed in 1970

(photo credit U.S Army COE)



Little Goose Lock & Dam

Lower Granite Lock & Dam was completed in 1975

(photo credit U.S Army COE)



Lower Granite Lock & Dam

Plan Development

- 1959 – 1965: FWS begins evaluating impacts on a by-project basis.
- 1966: COE requests FWS to do one report for entire 4 dam project.
- 1966 – 1972: FWS, NMFS & state fish & wildlife agencies work to prepare a comprehensive impact analysis report.
- 1972 – 1975: COE questions results, seeks & obtains review by Univ. of Wash. (E. Salo) who concludes results are reasonable given available information.
- 1975: COE finalizes LSRCP Plan & Congress authorizes LSRCP ‘substantially in accordance’ with the COE Plan.

Purpose of the LSRCP

To provide the number of salmon and steelhead needed in the Snake River system to help maintain commercial and sport fisheries for anadromous species on a sustaining basis in the Columbia River and Ocean (NMFS & FWS 1972)

LSRCP Spring Chinook Goal

- Escapement prior to construction estimated to be 122,000 adults.
- Loss based on 15% mortality of smolts at each dam for a total mortality of 48%.
- Estimated number lost adults = 58,700.
- This established adult return goal back to project area.
- Other than broodstock for hatcheries, no other use of returning fish identified.

Mitigation Fishery Impacts Below Project Area

- Assumed a 4:1 catch to escapement ratio.
- $4 \times 58,700 = 234,800$ lost harvest.
- 3/4 of lost harvest to commercial fisheries, primarily in mainstem Columbia = 176,100.
- 1/4 of lost harvest to sport fisheries primarily in mainstem Columbia = 58,700.

Hatchery Development Plan

- Desire to replace lost adults back to the watersheds where loss occurred.

Drainage	Washington	Oregon	Idaho
Tucannon	1,152		
Snake River at/above Hells Canyon Dam			1,200
Clearwater River			288
Grande Ronde River		5,856	
Imnaha River		3,216	
Salmon River			46,656
Small tributaries			288
Total by State	1,152	9,072	48,432
Program Total	58, 656		
Percent of Program	2.0%	15.5%	82.6%

Hatchery Production Goals

Adult loss level for basing hatchery size (rounded)	58,700
Estimated smolt to adult survival rate back to Lower Granite Dam after harvest below project area	0.87%
Estimated number of smolts that would have to be produced	6,750,000
Target size of smolts in fish per pound	15
Target number of pounds of smolts to be produced	450,000
Estimated percent survival from eggs to smolt	70%
Estimated number of eggs needed	9,650,000

The Hatcheries & Satellite Facilities

Hatchery (Operator)	Pounds of smolt	Satellite Facilities	Year Completed
Lookingglass (ODFW)	69,600	Lookingglass Hatchery	1982
		Imnaha River	1989
Lyons Ferry (WDFW)	8,800	Lyons Ferry Hatchery	1983
		Tucannon Hatchery	1984
		Curl Lake	1985
Sawtooth (IDFG)	149,000	Sawtooth Hatchery	1985
		East Fork Salmon R.	1983
Dworshak (FWS)	70,000	Dworshak Remodel	1982
Clearwater (IDFG)	91,300	Clearwater Hatchery	1991
		Red River	1986
		Crooked River	1990
		Powell	1989
McCall (IDFG)	61,300	McCall Hatchery	1981
		South Fork Salmon	1980

Funding

- 1975: COE Report - Operations & maintenance funded through future appropriations.
- 1977: COE, FWS & NMFS sign agreement that FWS will administer the program.
- COE determined 100% of benefits are assigned to generating electric power.
- BPA, as marketer of power, must reimburse treasury for all costs, including construction.
- 2001: FWS & BPA agree to a direct funding agreement that sets stage for new partnership.

Decades of Dynamic Change

- Assumptions used to size program not realized & flow of benefits has shifted.
- Survival rate of smolts less than assumed.
- Listing of spring Chinook has resulted in curtailment of fisheries & higher percent of returning adults to & above project area.
- U.S. vs. OR Management Plan & ESA has diversified programs in response to conservation concerns of wild stocks.