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

October 7, 2025

MEMORANDUM

TO: **Council Members**

FROM: **Erik Merrill, Independent Science Manager, and Mark Fritsch, Project Review and Implementation Manager**

SUBJECT: **ISRP Review of the Lower Snake River Compensation Plan Steelhead Program**

BACKGROUND:

Presenter: Richard Carmichael, ISRP Vice Chair

Summary: This presentation will share the Independent Scientific Review Panel's (ISRP) review of the Lower Snake River Compensation Plan (LSRCP) Steelhead Program (ISRP 2025-3) and will describe the challenges, areas of high and low performance, and recommendations to improve performance, recognizing that many of the challenges limiting program success cannot be addressed by LSRCP Program actions alone.

Prior to the presentation from the ISRP, Council staff will present a brief overview and history of the LSRCP, including operations and maintenance funding and the review process.

The LSRCP goal for steelhead is to return 55,100 adults annually to and through the LSRCP project area. Returns of adult steelhead produced by the LSRCP to the project area declined 10-fold in recent years, from more than 140,003 steelhead in the 2009-10 run year to only 13,027 in the 2019-20 run year. Considering the recent declines and ongoing risks to some natural populations in the context of the many challenges the LSRCP steelhead program faces, the ISRP finds that the

LSRCP is a highly effective program that has practiced good science, has implemented sound actions, and has adapted to changing conditions and new findings. The steelhead program has achieved impressive success in restoring and maintaining sport fisheries throughout the Snake River Basin, even in years when hatchery and natural adult returns are low for reasons beyond the program's control. Note that although the final returns are not in, the 2025-26 run year returns are already higher than some recent low return years.

Relevance: The 2014 Fish and Wildlife Program calls for ISRP reviews of projects funded through Bonneville's reimbursable program, including the programs of the LSRCP, as recommended in the 1998 U.S. Congress' Senate-House conference report on the Fiscal Year 1999 Energy and Water Development Appropriations bill.

Workplan: Fish and Wildlife Division work plan 2025; Program planning and coordination, Program implementation.

Background: The Council, in cooperation with the U.S. Fish and Wildlife Service (USFWS), asked the Independent Scientific Review Panel (ISRP) to review the Steelhead Hatchery Programs of the Lower Snake River Compensation Plan (LSRCP). The LSRCP is a federal program designed to mitigate the impacts of construction and operation of the four lower Snake River federal dams (Ice Harbor, Lower Monumental, Little Goose, and Lower Granite) on Chinook salmon and steelhead populations in the Snake River Basin. The LSRCP goal for steelhead is to return 55,100 adults to and through the LSRCP project area to compensate for the estimated annual loss of 48% of the return relative to the base period of the late 1940s and early 1950s. To pursue this goal, the LSRCP program rears steelhead at five separate hatchery production facilities and operates numerous adult collection and smolt acclimation facilities in Washington, Oregon, and Idaho. These facilities are spread throughout all the major subbasins in the lower Snake River, including the Tucannon, Clearwater, Grande Ronde, Imnaha, and Salmon and also in the Walla Walla subbasin in the mid-Columbia River. The USFWS owns the hatchery facilities and administers the LSRCP program through a direct funding agreement with the Bonneville Power Administration (BPA). State, federal, and tribal fish and wildlife agencies in the region operate the LSRCP facilities.

The LSRCP monitors and evaluates in-hatchery performance, annual adult returns, smolt-to-adult return (SAR), smolt-to-adult survival (SAS), straying, harvest, catch-escapement distributions, and ecological interactions with natural populations. Overall, during the past 14 run years (2009-10 to 2022-23), the LSRCP steelhead hatchery programs slightly exceeded their goals for adult returns on average, although the high average is driven in part by very high returns for three run years from 2009-10 to 2011-12. Moreover, the results varied greatly within and between programs. Overall, six of twelve programs achieved their goal.

One of the many strengths of the LSRCP Program is the high level of in-hatchery performance. The excellent in-hatchery performance has little scope for improvement and indicates that alternatives for the LSRCP to address overall survival challenges through hatchery management changes are generally limited to improving rearing and release strategies to enhance smolt quality and smolt-to-adult survival. The mean SAR and percent of SAR goal achieved of individual programs varied greatly. The percent of goal achieved ranged from less than one-half to over two-times the target.

Straying of LSRCP adults into ESA-listed natural populations within Mid-Columbia River Steelhead Distinct Population Segment (DPS) was identified as a significant problem in the past but declined significantly beginning with the 2012-13 return year. From the late 1980s through 2006, high proportions of outmigrating Snake River steelhead smolts were barged to the lower Columbia River. After barging was greatly reduced, stray rates into and the proportion of strays spawning in natural populations (pHOS) in the Deschutes and John Day rivers have been negligible and within acceptable risk.

Contributions to mainstem Columbia River recreational and tribal fisheries below the project area were lower in the most recent years than in the past due to low returns and harvest management changes. The LSRCP provided recreational harvest opportunities in Washington, Oregon, and Idaho in the project area every year, although the number of fish harvested and the fishing effort was substantially lower than during the period prior to the last review in 2013.

Multiple factors have limited the achievement of the LSRCP goals and management objectives during the past decade including:

- The SARs for the most recent years have been very low because of high mortality rates at multiple life stages in the life cycle following release of smolts.
- The low abundance of natural- and hatchery-origin steelhead adult returns in recent years has prevented achieving broodstock and smolt production objectives for some programs, especially the integrated broodstocks.
- There is limited hatchery rearing capacity and water availability to reduce rearing densities to improve smolt quality while maintaining current production goals.
- Monitoring is inadequate for the four supplementation programs that use integrated brood stocks, so the natural populations abundance and productivity responses to supplementation is unclear.
- The overshoot of Tucannon River and Touchet River adults to areas above Lower Granite Dam reduces returns to those rivers, and the strays pose significant risk to natural populations in other Snake River Basin tributaries.
- The limited opportunity for harvest in traditional tribal fishing areas has affected the ability of tribes to fish in those areas with traditional methods.

Some areas designated for tribal harvest pose difficulties for tribal members to access.

- Climate change will likely continue to influence smolt-to-adult survival, hatchery operations, and performance by reducing water supplies and creating frequent and severe flow variation and severe floods, influencing adult collection and acclimation facility operations.
- Funding availability hampers many aspects of hatchery operations, hatchery maintenance, infrastructure improvements, monitoring and evaluation, and adaptive management actions.
- Decreasing water supplies at core smolt production facilities like Irrigon Hatchery, Magic Valley Fish Hatchery (MVFH), and Hagerman National Fish Hatchery (HNFH) and deteriorating hatchery infrastructure at many facilities will continue to limit production capacity, rearing density indices, increase disease challenges, and influence the success of individual programs.

The LSRCP Program has demonstrated adaptability and capacity to address factors such as those listed above and to implement adaptive changes. The LSRCP's most prevalent management changes for steelhead have been to decrease smolt production to address water availability and hatchery infrastructure limitations, change brood stock sources, and alter release locations. This production effort is coupled with extensive monitoring, evaluation, and research to provide information for adaptive management decision processes and to improve program performance. The LSRCP is forward thinking in initiating major deferred maintenance projects, identifying critical hatchery infrastructure improvement needs, and conducting some climate change impact assessments.

In the report, the ISRP identifies thirteen key findings and programmatic issues that affect program performance and make the following summary recommendations for future actions by the LSRCP Program:

- Continue to monitor sport and tribal fisheries in the project area to estimate key performance metrics and characterize success.
- Continue to monitor straying by LSRCP steelhead adults into Mid-Columbia River natural populations to determine if the recent reduced levels are sustained in the future.
- Use a structured decision process to evaluate the benefits and risks of the proposed future alternatives for both the Tucannon and Touchet river programs. Under current conditions, there appears to be a limited set of actions that can be taken to address performance, overshoot, and straying. Exceptions include exploring the politically complex option of restoring reservoirs back to free-flowing reaches or providing adequate downriver passage in the lower Snake River for adult steelhead that overshoot and seek to return to their home river.
- Develop and implement sound study designs to assess the benefits and risks of supplementation programs in the Touchet, Tucannon, Imnaha, and East Fork Salmon rivers.

- Complete climate change assessments for the hatcheries that are at most risk.
- Develop and implement a systematic decision process to prioritize infrastructure improvements. Investment of $200M for infrastructure improvements is critical to the future success of the program. It is essential that the most important and beneficial projects are implemented, especially because $400M in projects have already been proposed.
- Develop approaches and conversion factors to maintain continuity and comparability of SAR and SAS data generated with new Parentage Based Tagging (PBT) and PIT tag methods with past data generated using Coded Wire Tag (CWT) methods.
- Clearly articulate the basis and justification for adjusting SAR and SAS targets when smolt production levels are changed.
- The LSRCP and cooperators should develop a shared database for all data including Parental Based Tagging (PBT), develop systematic data quality assurance and analytical processes to maintain up-to-date estimates of key performance metrics, and work with the Coordinated Assessments Partnership (CAP) to complete entry of data and metadata into the Coordinated Assessments Data Exchange (CAX) database for key hatchery performance indicators.

As stated in the 2022-2023 Spring/Summer Chinook Review, the ISRP appreciates the USFWS and the LSRCP partners' constructive and cooperative approach to evaluation, review, and coordination, and the ISRP hopes its recommendations can help the program address its many daunting challenges and move the program closer to meeting its goals consistently. That stated, the ISRP understands that many of the challenges that limit success, especially post-release survival, cannot be fully addressed by LSRCP Program actions alone. The lack of consistent achievement of objectives in recent years is often despite, not because of, the extensive efforts of the program implementers.

More info: The ISRP's full report is available online (ISRP 2025-3).

ISRP Review of the Lower Snake River Compensation Plan (Steelhead Program)

October 2025

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

Lower Snake River Compensation Plan

- Congress authorized the Lower Snake River Compensation Plan (LSRCP) in the Water Resources Development Act of 1976 (that is, *before* the Northwest Power Act of 1980)
- Adopted by Congress to mitigate and compensate for fish and wildlife resource losses caused by the construction and operation of the four federal dams in the lower Snake River:

Ice Harbor (1961)
Lower Monumental (1969)
Little Goose (1970)
Lower Granite (1975)

LSRCP Operations, Construction and Administration

- The LSRCP is to replace some of those losses through production of salmon and steelhead.
- Congress appropriated funds to the Corps of Engineers to construct LSRCP hatchery facilities.
- Ownership and management of the facilities eventually turned over to the US Fish and Wildlife Service (FWS).
- LSRCP hatcheries and acclimation facilities are operated by the cooperators through agreements with the FWS:
    - Confederated Tribes of the Umatilla Indian Reservation (CTUIR)
    - Idaho Department of Fish and Game (IDFG)
    - Nez Perce Tribe (NPT)
    - Oregon Department of Fish and Wildlife (ODFW)
    - Shoshone-Bannock Tribes (SBT)
    - Washington Department of Fish and Wildlife (WDFW)

LSRCP Operations and Maintenance Funding

- Until 2000, Congress appropriated funds to the FWS for LSRCP facility operations and maintenance. Bonneville annually reimbursed the Treasury for these expenses. Thus, the LSRCP funding is in the “reimbursable” category of Bonneville’s fish and wildlife funding responsibilities.

- In 2001, Bonneville and FWS signed a “direct fund” agreement for the “Direct Funding of Power-related Operations and Maintenance Costs of the Lower Snake River Compensation Plan Program.” Five-year agreements that have been repeatedly renewed.

- Thus since 2001, Bonneville has *directly* funded the LSRCP O&M expenses, although still considered a “reimbursable” funding activity.

ISRP and Council Review

- The 1996 amendment to the Northwest Power Act that added the ISRP and Council project review applied to “projects proposed to be funded through that portion of [Bonneville’s] annual fish and wildlife budget that implements the Council's fish and wildlife program.”

- The LSRCP obligation and funding at Bonneville pre-dated the Power Act, thus the LSRCP activities and funding are not considered part of the Power Act/Fish and Wildlife Program. And the LSRCP activities were not considered part of the ISRP/Council project review process created by the Power Act amendment.

ISRP and Council Review

- A 1998 *Conference Report to the Fiscal Year 1999 Energy and Water Development Appropriations Act* "recommended" that the Council and its ISRP review annually "the Columbia Basin fish and wildlife projects, programs, or measures proposed in a federal agency budget to be reimbursed by the Bonneville Power Administration," using the same standards and criteria of the 1996 amendment. The reimbursable programs include the LSRCP.

- In cooperation with the FWS, the ISRP and Council have reviewed the LSRCP a number of times since, either the program as an entirety or certain elements or facilities – in 1999, 2001, 2002, 2011-2014, and the recent round of reviews beginning with spring/summer Chinook 2022-23.

Review of the Lower Snake River Compensation Plan Steelhead Program 2024-2025

Presentation to the Northwest Power and Conservation Council

October 15, 2025

ISRP INDEPENDENT SCIENTIFIC REVIEW PANEL

ISRP 2025-3, September 19, 2025

ISRP Members

- **Richard Carmichael, M.S.,** Retired, Oregon Department of Fish and Wildlife
- **Patrick Connolly, Ph.D.,** Emeritus, United States Geological Survey
- **Kurt Fausch, Ph.D.,** Emeritus, Colorado State University
- **Kurt Fresh, M.S.,** Retired, Northwest Fisheries Science Center, NOAA Fisheries
- **Dana Infante, Ph.D.,** Michigan State University
- **Josh Korman, Ph.D.,** Ecometric Research and Adjunct Professor, University of British Columbia
- **Yolanda Morbey, Ph.D.,** Professor, Department of Biology, Western University, Ontario, Canada
- **Thomas P. Quinn, Ph.D.,** Emeritus, University of Washington
- **Kenneth Rose, Ph.D.,** University of Maryland
- **Thomas Turner, Ph.D.,** University of New Mexico
- **Ellen Wohl, Ph.D.,** Colorado State University

Peer Review Group member

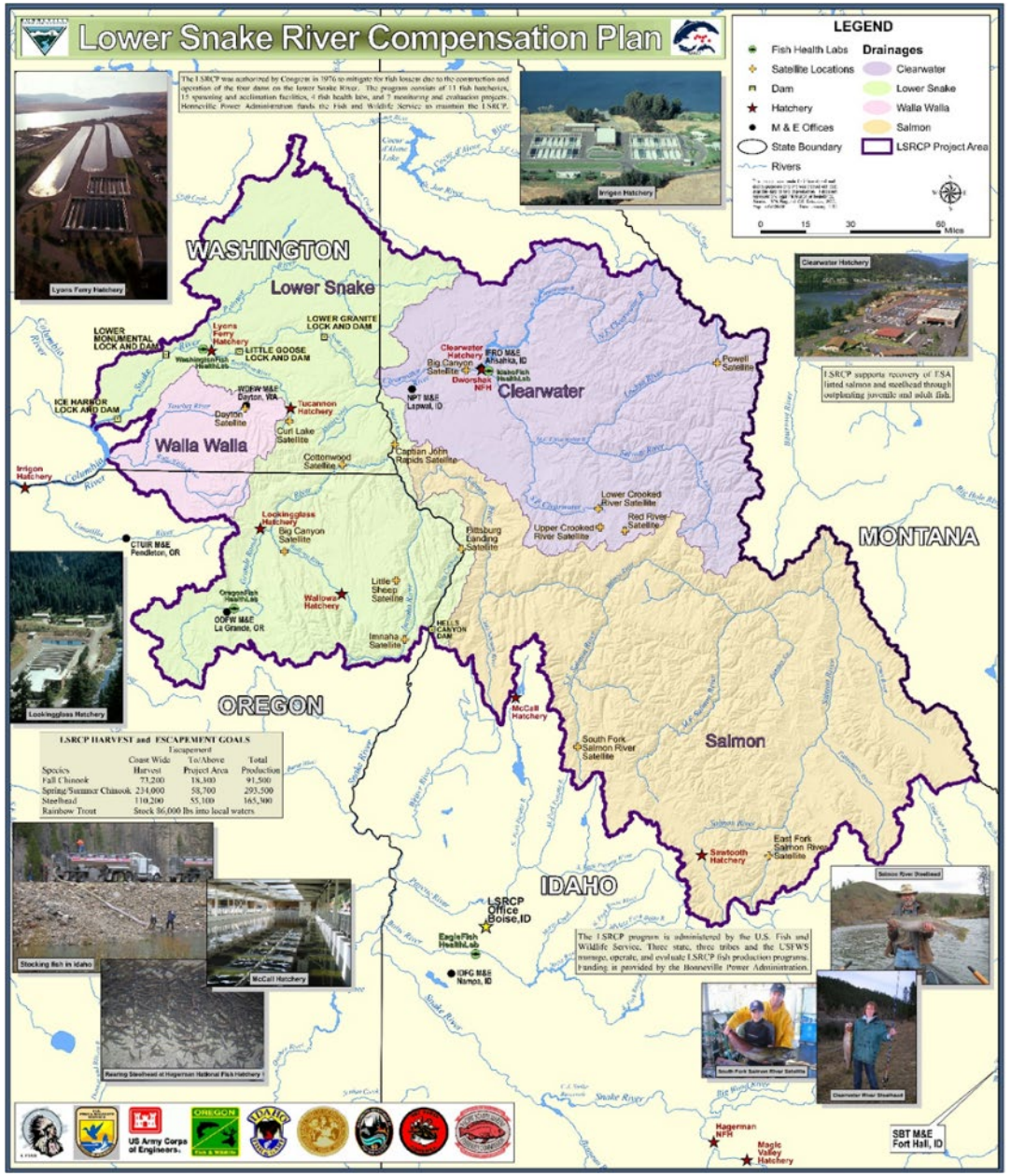
- **Stan Gregory, Ph.D.,** Emeritus, Oregon State University
- **Steve Schroder, Ph.D.,** Retired, Washington Department of Fish and Wildlife

Staff

- **Erik Merrill, J.D.,** Independent Science Manager, Northwest Power and Conservation Council

Lower Snake River Compensation Plan

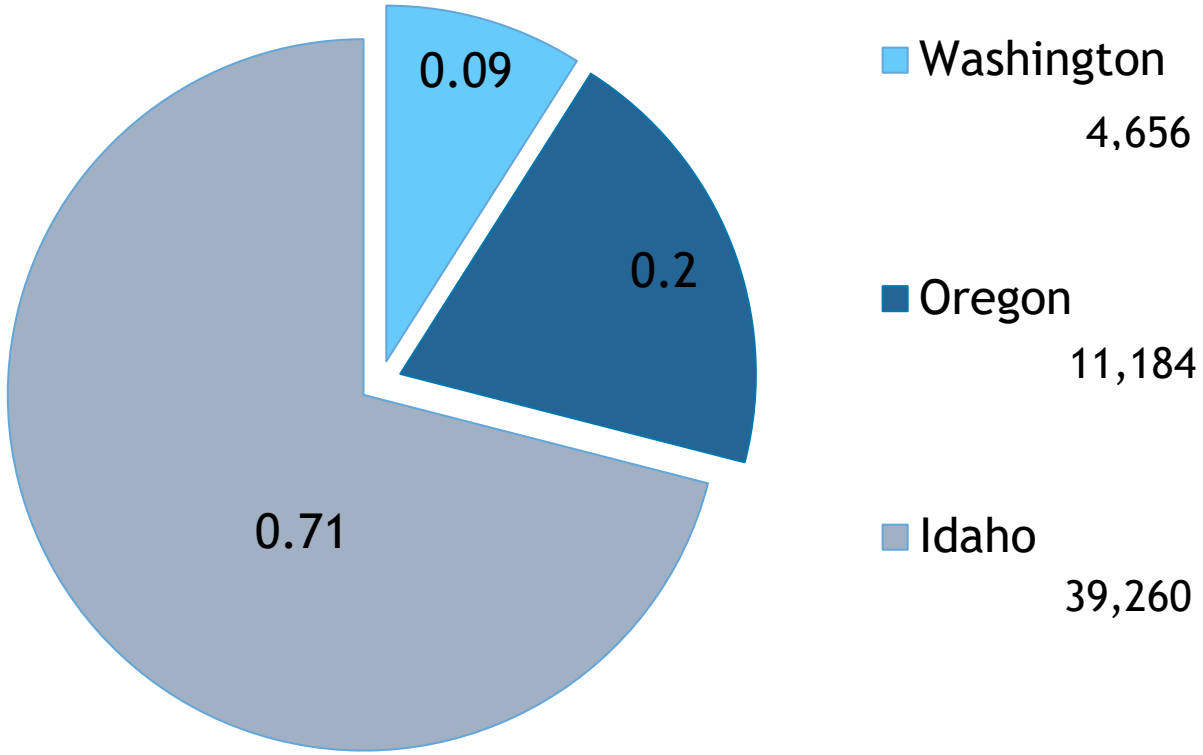
- Designed to mitigate the impacts of construction and operation of the four lower Snake River federal dams on Chinook salmon and steelhead populations in the Snake River basin. Annual loss of 48% of harvest and returns.



Summer Steelhead Programs

- Touchet River Subbasin – WDFW and CTUIR
- Tucannon River Subbasin – WDFW, NPT, and CTUIR
- Snake River Lyons Ferry – WDFW, NPT, and CTUIR
- Clearwater River Subbasin – IDFG and NPT
- Grande Ronde River Subbasin – ODFW, WDFW, CTUIR, and NPT
- Imnaha River Subbasin – ODFW and NPT
- Salmon River Subbasin – IDFG, NPT, SBT

Lower Snake River Compensation Program – Annual Goals



- 55,100 steelhead (Project Area)
  - In-kind
- Programs placed in specific subbasins based on loss
  - In-place

Image source: Wild Salmon Center

Management Objectives

- Meet annual broodstock and smolt production objectives
- Maximize smolt-to-adult survival
- Meet the LSRCP adult return goal
- Restore and enhance tribal and recreational fisheries
- Enhance natural production with supplementation
- Produce hatchery fish with similar life history as natural fish
- Minimize ecological effects on native fishes

Major Challenges for the LSRCP Steelhead

- Steelhead migrate long distances downstream, in the ocean, and on return.
- Most hatchery fish pass through eight major hydropower dams and reservoirs.
- Climate change and habitat degradation have reduced freshwater and ocean productivity.
- ESA listing and threatened status of natural populations.
- Natural-origin returns to the Snake River have been well below the 59,692 adults that were assumed would continue to return annually after dam construction.

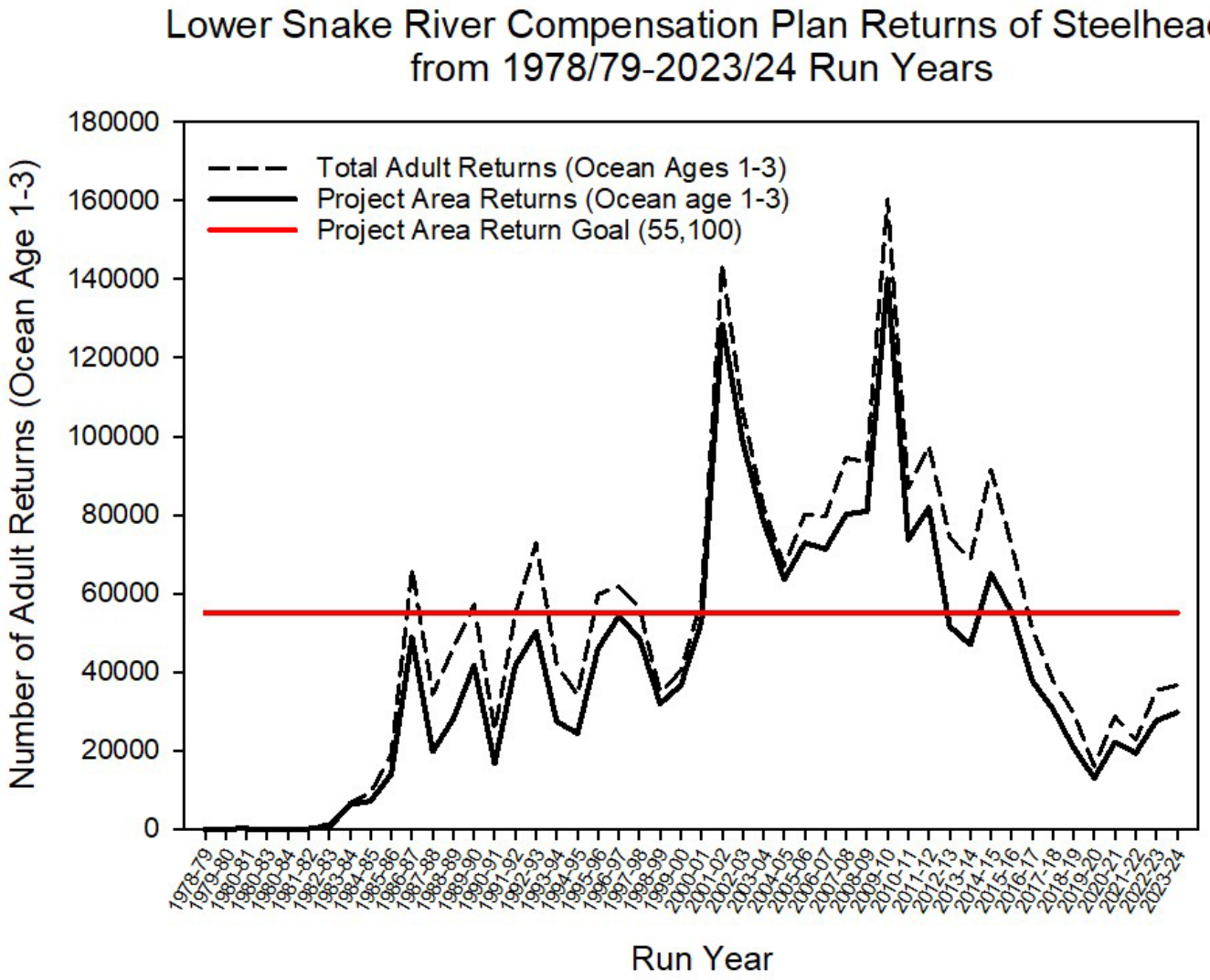
Council and LSRCP Review Questions

- How is each hatchery program performing and contributing toward the LSRCP adult return goal for steelhead, including at specific release sites, in co-manager defined aggregations, and in LSRCP program in-place, in-kind goals?

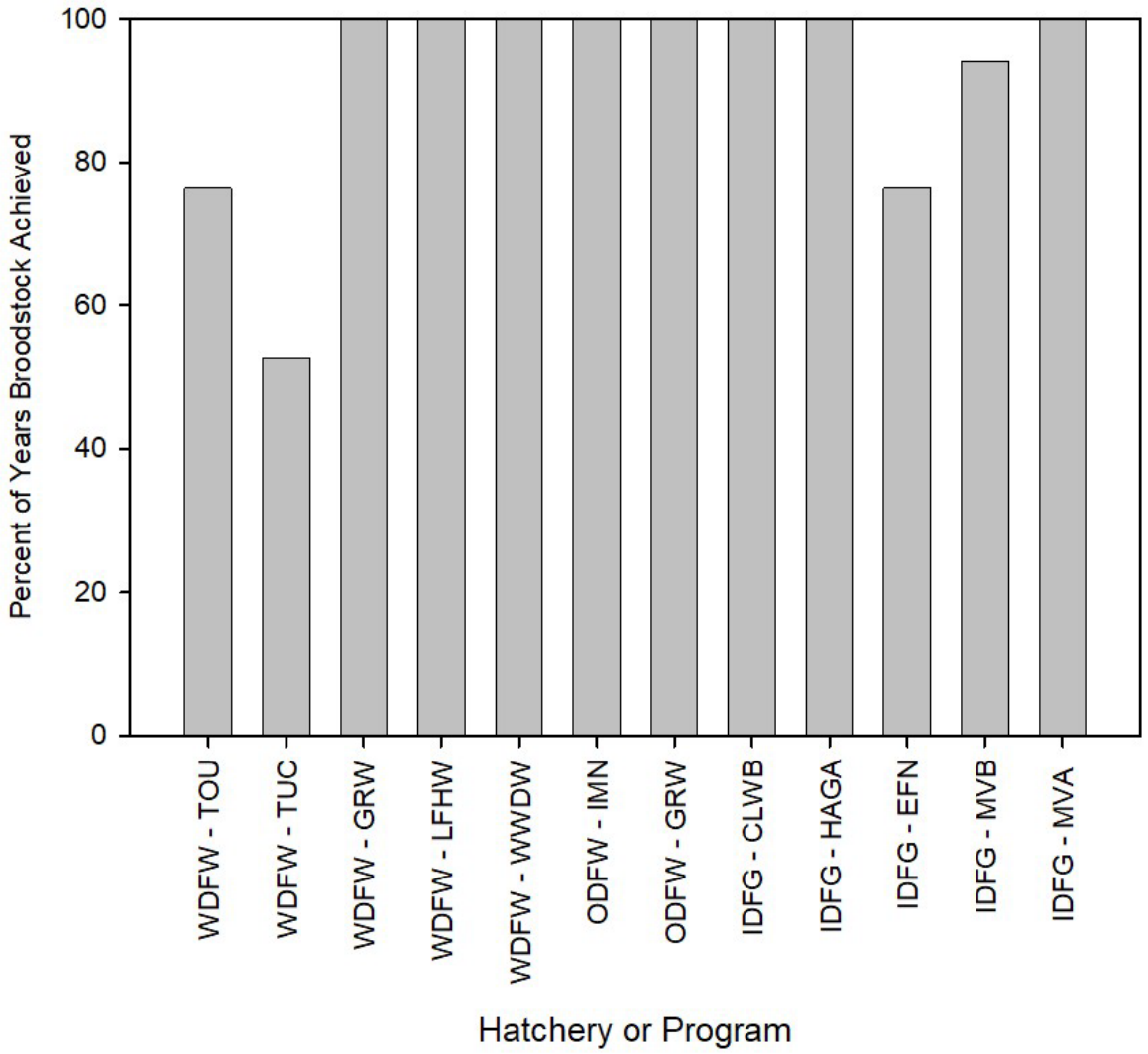
- What are the demographic, ecological, and genetic effects on wild fish?

- How are the programs being modified to achieve adult return goals and contribute to program-specific management objectives (i.e., fishery and/or supplementation)?

Summary Answers to Council/LSRCP Questions

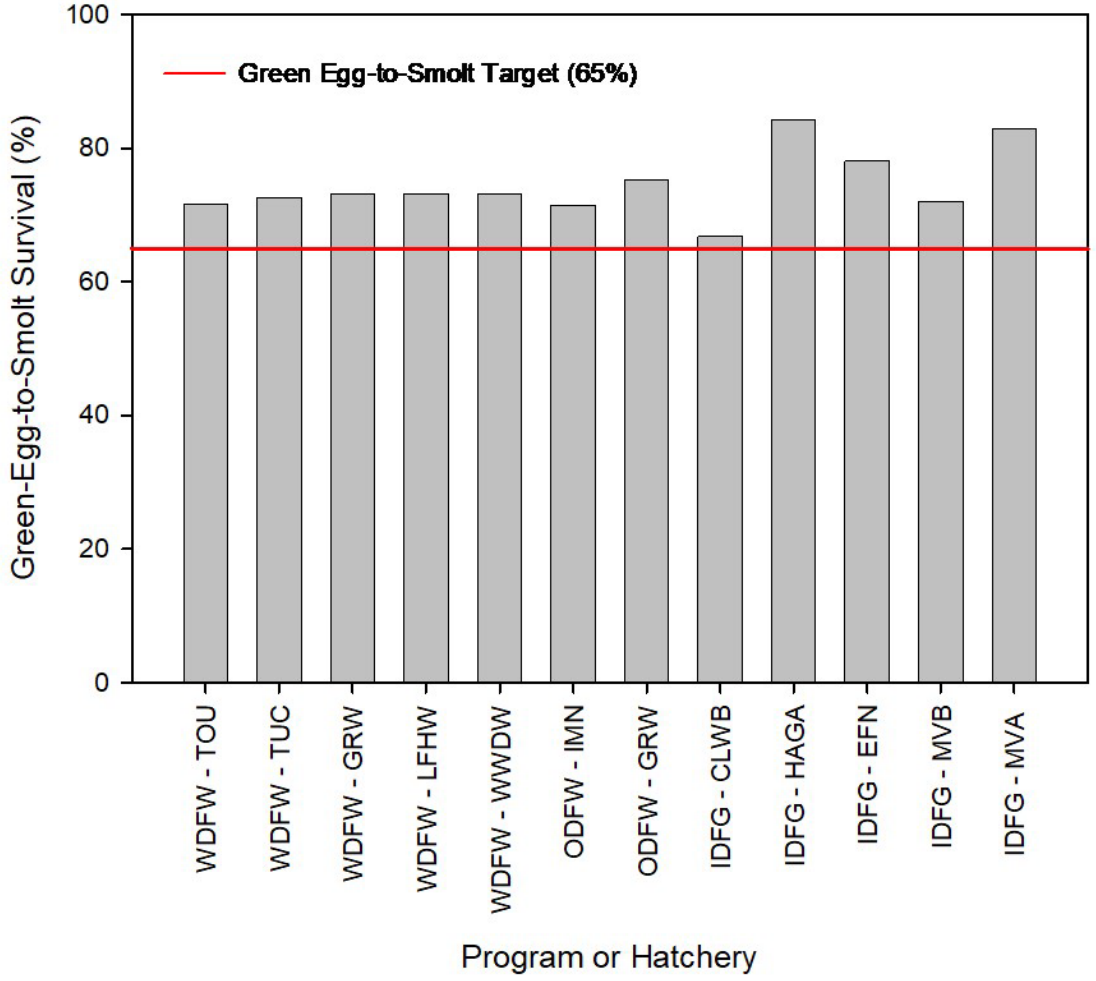


High Performance: Broodstock objectives met in most years (2007-2023 BY)



Photos from IDFG

High Performance: Egg-to-smolt survival exceeds 65% objective in all hatcheries on average and in most years (2007-2023 BY).



Photos from WDFW and IDFG

Mixed Performance: High variability in meeting smolt production goals among programs (2007-23 BY).

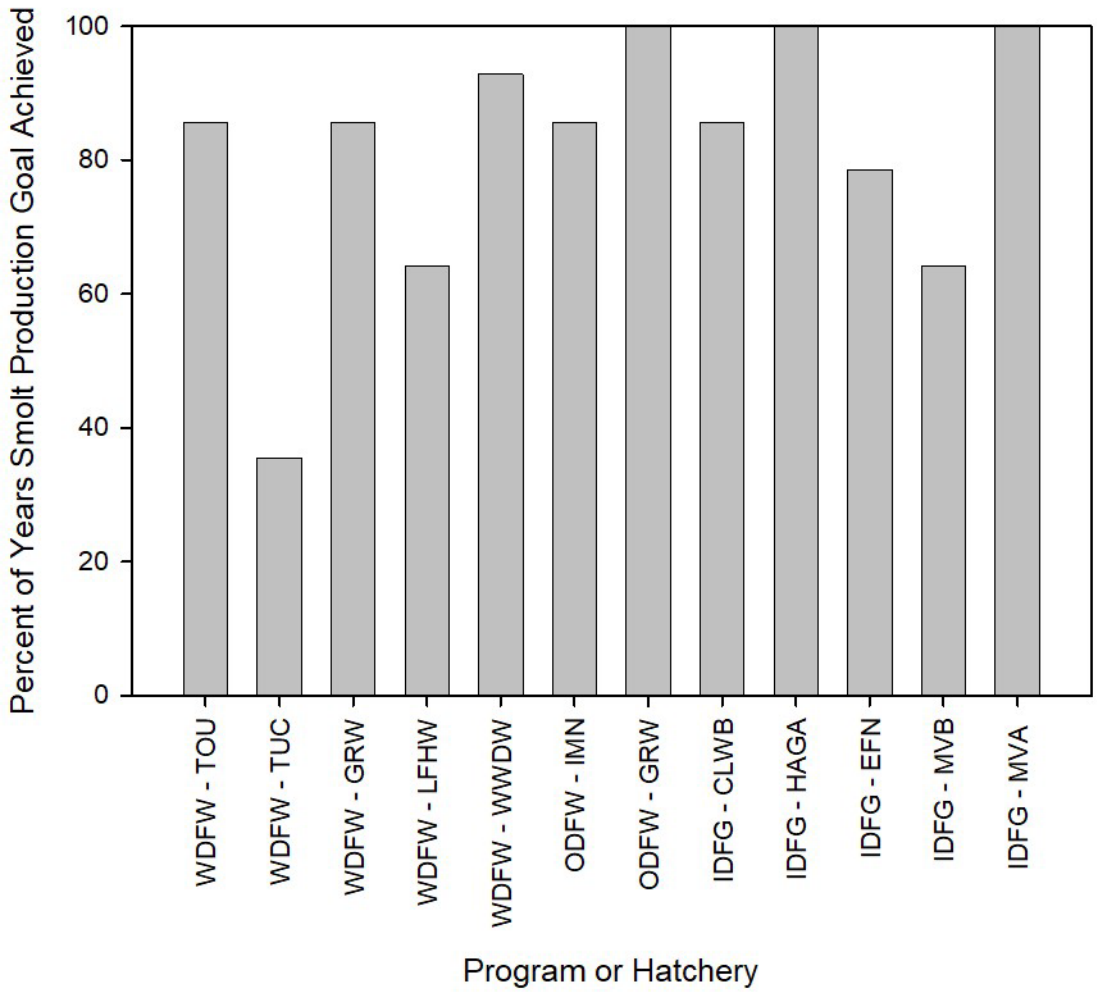
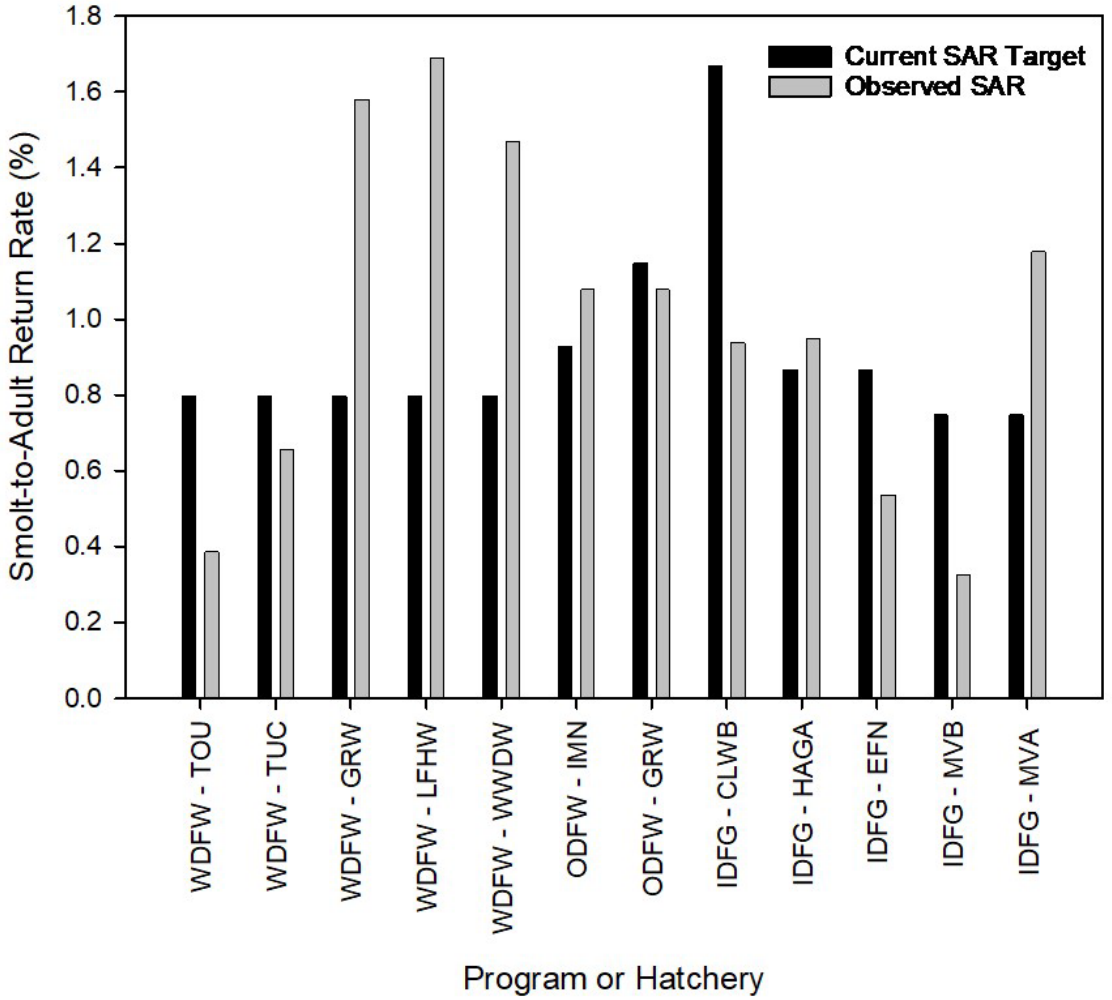
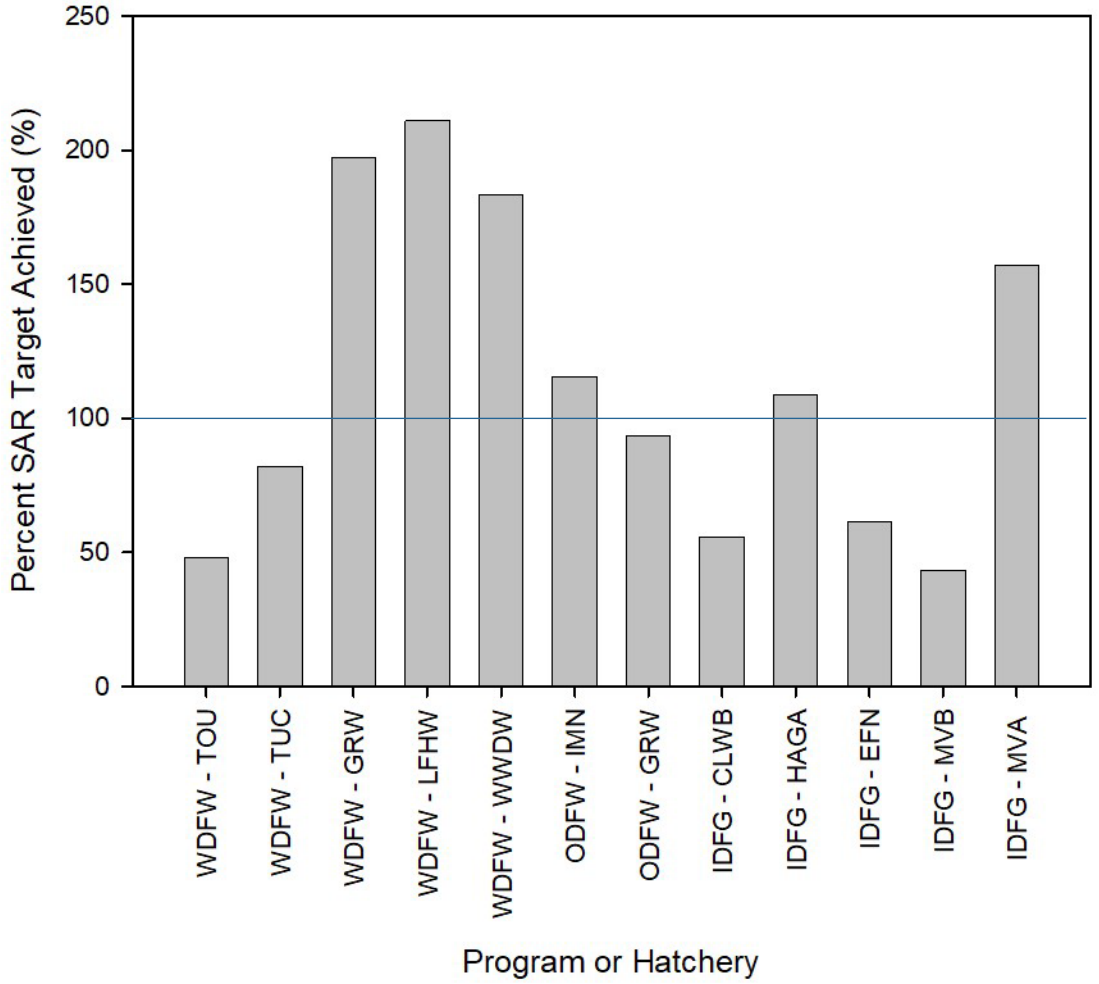


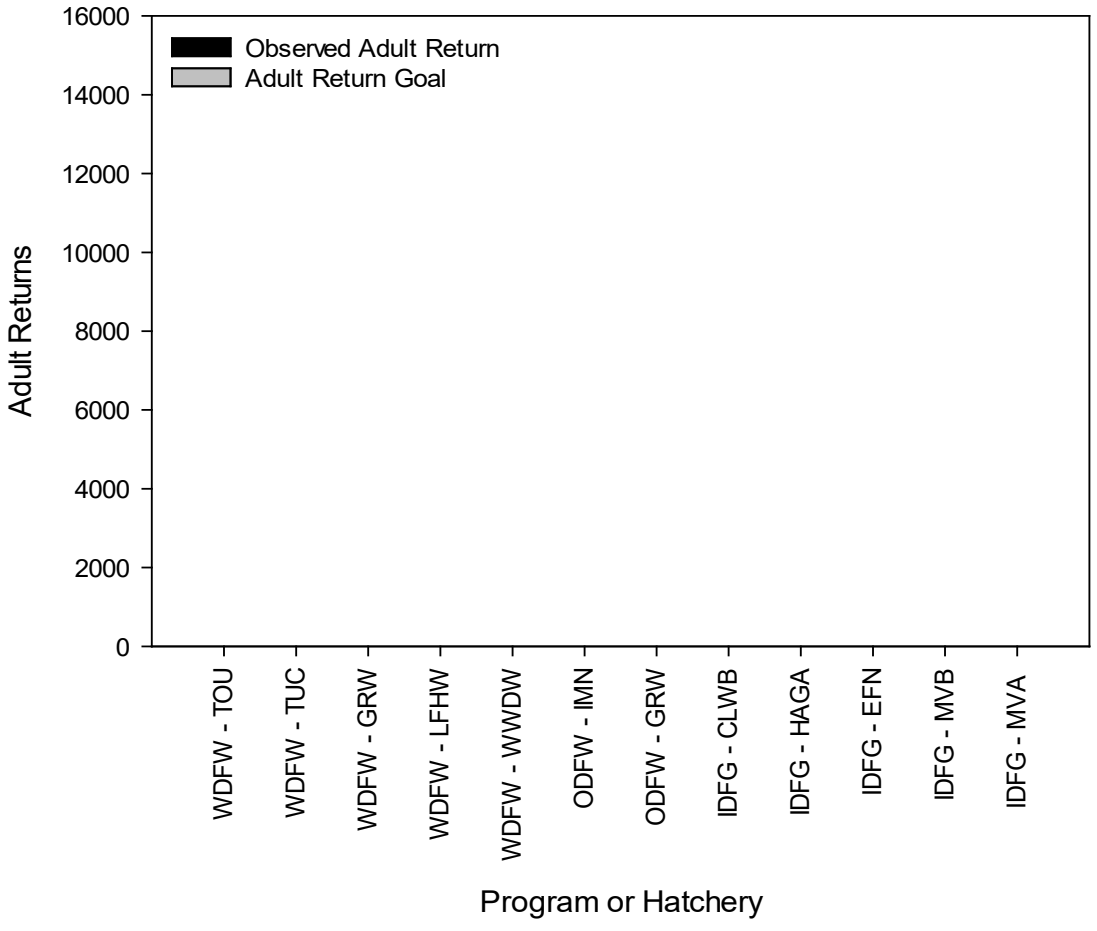
Photo from IDFG

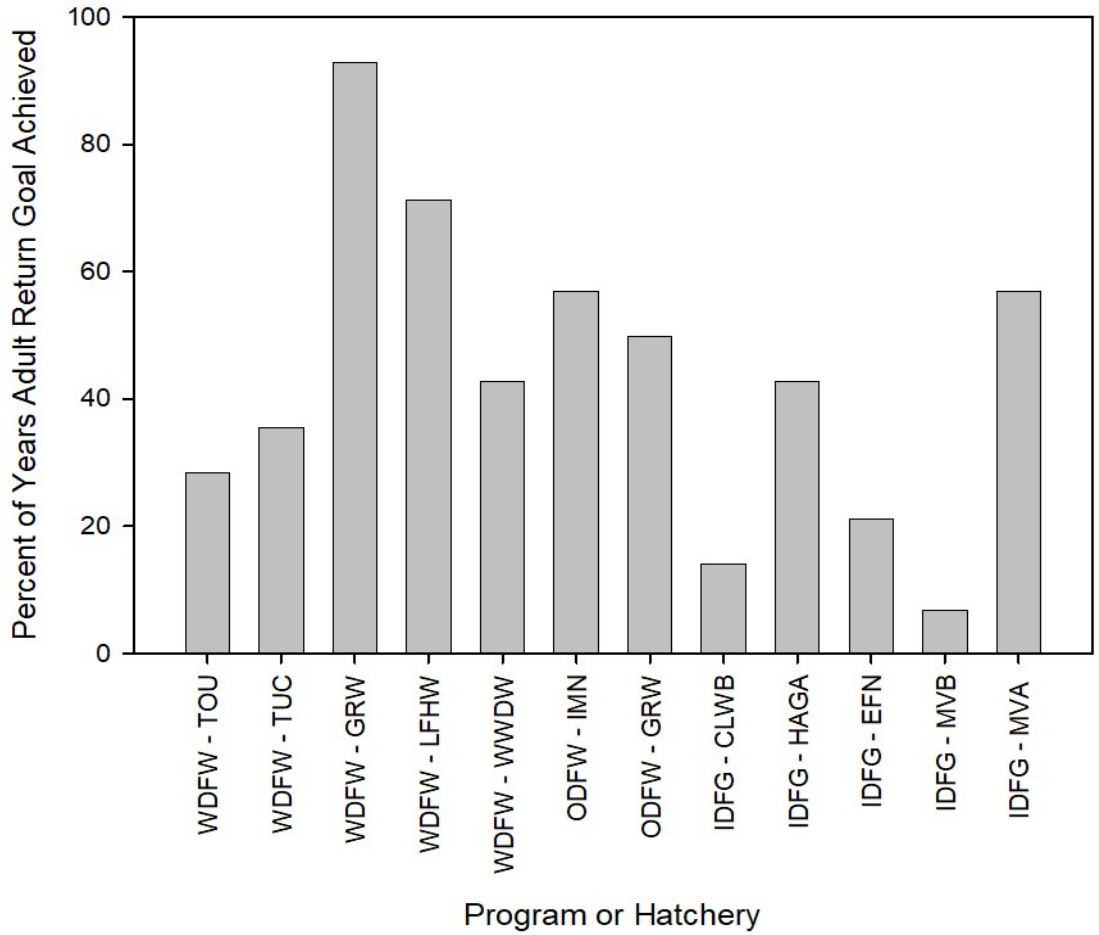
Mixed Performance: Smolt-to-adult return rates are highly variable - range from less than one-half to over two-times the target (2007-2020 BY).





Low Performance: Few programs met their adult return goal on average and most attain less than 60% (2009-10 -2022-23 run years)





Accomplishments

- Attained ESA Compliance for all hatcheries and M&E programs
- Maintained traditional sport fisheries within ESA impact limits
- Achieved high returns and survival in some years and met smolt production targets consistently for most programs
- Made many program modifications, including changes to broodstock, smolt production allocations, and rearing and release strategies

Photo from IDFG

Accomplishments

- Straying and proportion of strays spawning in natural populations (pHOS):
  - Straying into the Deschutes and John Day populations, a significant problem in the past, was reduced to a negligible level due primarily to major reductions in Snake River barge transportation of smolts.
  - Low stray rates for most LSRCP hatchery programs and pHOS is very low in most Snake River populations except Tucannon, Asotin, South Fork Clearwater, East Fork Salmon, and Upper Salmon populations.

Accomplishments

- LSRCP supports extensive monitoring and evaluation to inform adaptive management decisions.
- Improved methods for estimating adult returns and smolt-to-adult survival (PIT and PBT)
- Numerous studies conducted to improve smolt performance and adult returns
- Completed deferred maintenance and infrastructure needs assessments for all steelhead hatcheries
- The LSRCP Program has demonstrated adaptability and capacity to change throughout the history of the program

Programmatic Issues

- Overshoot and straying of Touchet and Tucannon adults has a major impact on success.
- Endemic broodstock development programs in the Touchet, Tucannon, and East Fork Salmon rivers have limited success.

Programmatic Issues

- The LSRCP has initiated a modeling assessment of climate change impacts and associated needs for facilities modifications, but it may take more than a decade to complete.
- Water supply declines, infrastructure needs, and funding for improvements and rebuilds are major challenges. There are $400 million identified for projects and uncertain funding ($200 million rescinded from US government commitments).
- Considerable inconsistency in analysis and presentation of key metrics including changes in methodology (PBT and PIT) for estimating SAR and SAS which has created some inconsistency with past estimates (CWT).

Photo from IDFG

Recommendations

Apply to LSRCP USFWS coordinators and agency and tribal cooperators.

- Continue to maintain and monitor sport fisheries to document key performance indicators.
- Elevate the importance of actions and reporting of ESA goals and management objectives.
- Maintain and continue to document stray rates and pHOS of LSRCP steelhead in Mid-C listed populations.
- WDFW and co-managers - Use a structured decision process to evaluate the multiple proposed alternatives for modifying the Touchet, Tucannon, and Wallowa stock programs to address overshoot, straying, and other performance issues.

Recommendations

- Develop sound and robust supplementation evaluation studies for the four supplementation programs.
- Continue to pursue essential funding for infrastructure and water supply improvements. Complete hatchery climate vulnerability assessments.
- Develop a systematic decision process that documents decisions and rationale for prioritizing infrastructure and maintenance projects.

Recommendations

- Develop actions to better achieve Tribal harvest share (50%) and provide fisheries in traditional areas. Document success in restoring tribal fisheries.

Image source: Shoshone Bannock Tribe presentation

Recommendations

- In future reviews provide consistent data among programs for key performance metrics. Develop systematic data quality assurance and analytical processes to maintain up-to-date estimates.

- Develop a shared standard metric data system and use the performance metrics table to regularly assess program performance and alternative management options.

Table 1. ISRP assessment of the reporting of objectives and performance metrics in individual hatchery program reports.
prepared for the 2022 LSRCP Spring Chinook Program Review, brood years 2007-2016. This table provides summary information only since the last ISRP review (2010).
Note that Joseph Feldhaus provided revised estimates for the Imnaha, Lookinglass, Catherine Creek, and Lostine Hatchery Programs, which are included in this table

Brood Years Reporting	*Metric (reporting guidance in cell comments)*	*Sawtooth*	*McCall*	*Clearwater Spring*	*Clearwater Summer*	*Dworshak*	*Tucannon*	*Touchet*	*Imnaha*	*Lookingglass*	*Grande Ronde*	*Catherine Creek*	*Lostine*
BY2007-2020	Broodstock Collection Goals (2007-2020)	1,105	817	2,078	440	1,372	170	176	296	160	172	102	166
	Years Achieved	10 of 14	14 of 14	12 of 14	9 of 12	12	3	NA	9	8	3	7	6
	Program Type	BY98-09 Segregated, BY10-Current Integrated	BY98-09 Segregated, BY10-Current Integrated	Segregated	Segregated	Segregated	Integrated	Segregated	Integrated	Integrated	Integrated	Integrated	Integrated
	Pre-spawning Mortality	2% (0 - 3%)	18% (0 - 71%)	5% (1 - 17%)	8% (0 - 28%)	3.6	7% +/- 6.03	NA	9% (1–28)	6% (1–15)	11% (1–34)	5% (1–24)	11% (2–18)
	Egg to Smolt	83% (69 - 99%)	81% (63 - 97%)	85% (65 - 97%)	82% (63 - 97%)	76.9%	81% (64.2-95.7)	NA	81% (53–96)	89% (71–99)	88% (72–98)	80% (38–95%)	78% (23–88)
	Smolt Release Goal	1,700,000 - 2,000,000	1,000,000	2,135,000 -	200,000 - 640,000	1650000	225,000	250,000	490,000	250,000	250,000	150,000	250,000
	Years Achieved	10 of 14	14 of 14	12 of 14	10 of 12	11	2	3/3	5	6	6	9	9
	B. Post-Release Performance												
	Density Index	0.30	≤0.25	≤0.30	≤0.30	0.3	0.16	0.16	0.17 (0.15–0.19)	0.19 (0.17–0.20)	0.15 (0.14–0.16)	0.20 (0.19–0.21)	0.15 (0.14–0.16)
	Size at Release	20 fpp (14 - 28)	19 fpp (17 - 21)	17 fpp (15 - 20)	16 fpp (14 - 20)	20	12 fpp (2011 BY on)	11-13 fpp	20–25 fpp	20–25 fpp	20–25 fpp	20–25 fpp	20–25 fpp
	Survival to LGD/LoMO/MCN Target (smolts)	54% (37% - 68%)	67% (51% - 78%)	70% (54% - 93%)	63% (53% - 77%)	76%	0.52%	0.51% (0.45-0.57)	0.66% (0.58–0.72)	0.69% (0.57–0.77)	0.43% (0.35–0.54)	0.34% (0.22–0.50)	0.59% (0.45–0.67)
BY07-16	1976 Program Sizing SAR	0.87%	0.80%	0.87%	N/A	0.87%	0.87%	NA	0.87%	0.87%	0.87%	0.87%	0.87%
	2022 Program Sizing SAR	0.97%	0.80%	0.38%	N/A	0.55%	0.24%		0.65%	0.65%	0.65%	0.65%	0.65%
	1976 SAS Target	4.35%	4.00%	4.35%	N/A	4.30%	3.48%	NA	3.48%	3.48%	3.48%	3.48%	3.48%
	2022 SAS Target	4.85%	4.00%	1.92%	N/A	2.20%	0.96%		2.60%	2.60%	2.60%	2.60%	2.60%
	Observed SAR Average	0.30% (0.08% - 0.65%)	0.50% (0.06% - 1.03%)	0.33% (0.16% - 0.59%	0.26% (0.05% - 0.47%	0.48%	0.18% (0.02-0.37)	NA	0.62% (0.12–1.26)	0.57% (0.14–1.21)	0.44% (0.07–1.29)	0.38% (0.13–0.97)	0.86% (0.17–2.13)
	Observed SAS Average	0.41% (0.12% - 1.02%)	0.80% (0.08% - 2.07%)	0.45% (0.18% - 0.78%	0.43% (0.06% - 0.92%	0.53%	0.19% (0.02-0.37)	NA	0.83% (0.13–1.83)	0.68% (0.15–1.41)	0.49% (0.08–1.31)	0.45% (0.16–1.17)	1.03% (0.19–2.34)
Return years 2010-2020	Return to Project Area Goal	19,445	8,000	9,882	2,033	9,135		1,152	3,210	1,617	1,617	970	1,617
	Return to Project Area Average	4,013 (831 - 7,521)	6,053 (1,032 - 14,263)	8,703 (3,676 - 15,958)		6,236	366 (50-711)	NA	2,516	1,201	972	578	1,895
	Years Project Area Goals Achieved	0	4	2		4	0	NA	5	3	0	2	6
	Years of Tribal Harvest	11	11			14	0	NA	11	11	7	7	10
	Years of Sport Harvest	9	8	11		13	NA	NA	7	7	0	1	4
	C. Interaction Performance												
	Natural Origin or Interaction Monitoring projects	Yes	Yes	Yes		NA	LSRCP	2000-039-00 ??	1992-026-04		1992-026-04	1992-026-04	1992-026-04
	BACI Assessment	No	No	No	No	NA	Yes	No	Yes	No	No	No	No
	Other Supplementation Effectiveness Evaluation	Yes	Yes	No	No	NA	Yes	No					
	RRS Assessment	Yes	Yes	No	No	NA	No	No	No	Yes	No	Yes	Yes
	PBT Baseline (Year Initiated)	2008	2008	2008	2008	2008	2014	2018-2019, 2022	2008	2008	2008	2008	2008

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- **USFWS, Abernathy Fish Technology Center:** Doug Peterson
- **NOAA Fisheries:** Ewann Berntson
- **Northwest Power and Conservation Council:** Maureen Hess, Mark Fritsch, Patty O'Toole; Trina Gerlack, Kendra Coles, Jasmine McIntosh (intern), and Eric Schrepel

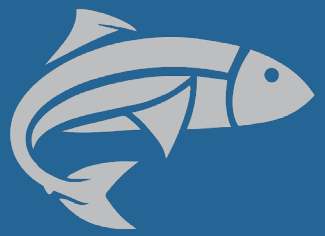
Staff will draft a letter requesting that

- Bonneville and the U.S. Fish and Wildlife Service and cooperators consider the ISRP's key findings and programmatic recommendations (ISRP document 2025-3) associated with the steelhead programs.

- Upon completion of the fall Chinook program review, ~2027, Bonneville and the USFWS report to the Council on how ISRP key findings and programmatic recommendations have been or are being addressed for all programs.

Questions

ISRP INDEPENDENT SCIENTIFIC REVIEW PANEL



ISRP

INDEPENDENT
SCIENTIFIC
REVIEW PANEL

Northwest **Power** and
Conservation Council