

Upper Salmon Options Update

Greg Burak - LSRCP

May 1, 2025



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



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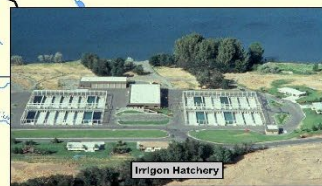
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The LSRCP was authorized by Congress in 1976 to mitigate for fish losses due to the construction and operation of the four dams on the lower Snake River. The program consists of 11 fish hatcheries, 15 spawning and acclimation facilities, 4 fish health labs, and 7 monitoring and evaluation projects. Bonneville Power Administration funds the Fish and Wildlife Service to maintain the LSRCP.



Lyons Ferry Hatchery



Irigun Hatchery

LEGEND

- Fish Health Labs
- Satellite Locations
- Dam
- Hatchery
- M & E Offices
- State Boundary
- Rivers
- Drainages**
- Clearwater
- Lower Snake
- Walla Walla
- Salmon
- LSRCP Project Area

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Scale: 1:500,000 Date: January 2010

0 15 30 60 Miles



LSRCP HARVEST and ESCAPEMENT GOALS

Species	Escapement		Total Production
	Coast Wide Harvest	To/Above Project Area	
Fall Chinook	73,200	18,300	91,500
Spring/Summer Chinook	234,900	58,700	293,500
Steelhead	110,200	\$5,100	165,300
Rainbow Trout	Stock 86,000 lbs into local waters		



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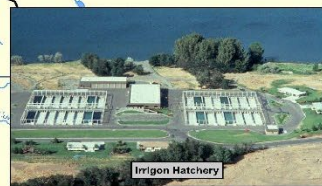
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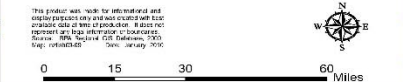
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Drainages

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Table 1. Computation of Lower Snake River Compensation Measures from COE (1975) and modified from Herrig (1990) to include trout. Year, or years, of maximum counts at McNary Dam between 1954-67 are provided in parentheses. Trout mitigation was specific to the State of Washington for lost fishing opportunity due to inundation from the projects. A higher percent passage (68%) for fall Chinook salmon was observed during the passage period but was discounted by the fisheries agencies (Herrig 1990).

	Fall Chinook Salmon (1958)	Spring-Summer Chinook Salmon (1957)	Steelhead Trout (1962-63)	Trout
McNary Dam Count	97,500	222,100	172,600	
Ice Harbor Dam Maximum Percent Passage (1962-67)	33.5%	55%	66.5%	
Estimated Snake River Pre-Project Run	32,663	122,200	114,800	
Lower Snake River Compensation Goals	18,300	58,700	55,100	86,000 pounds into local waters (WA-79,800, ID- 6,200).



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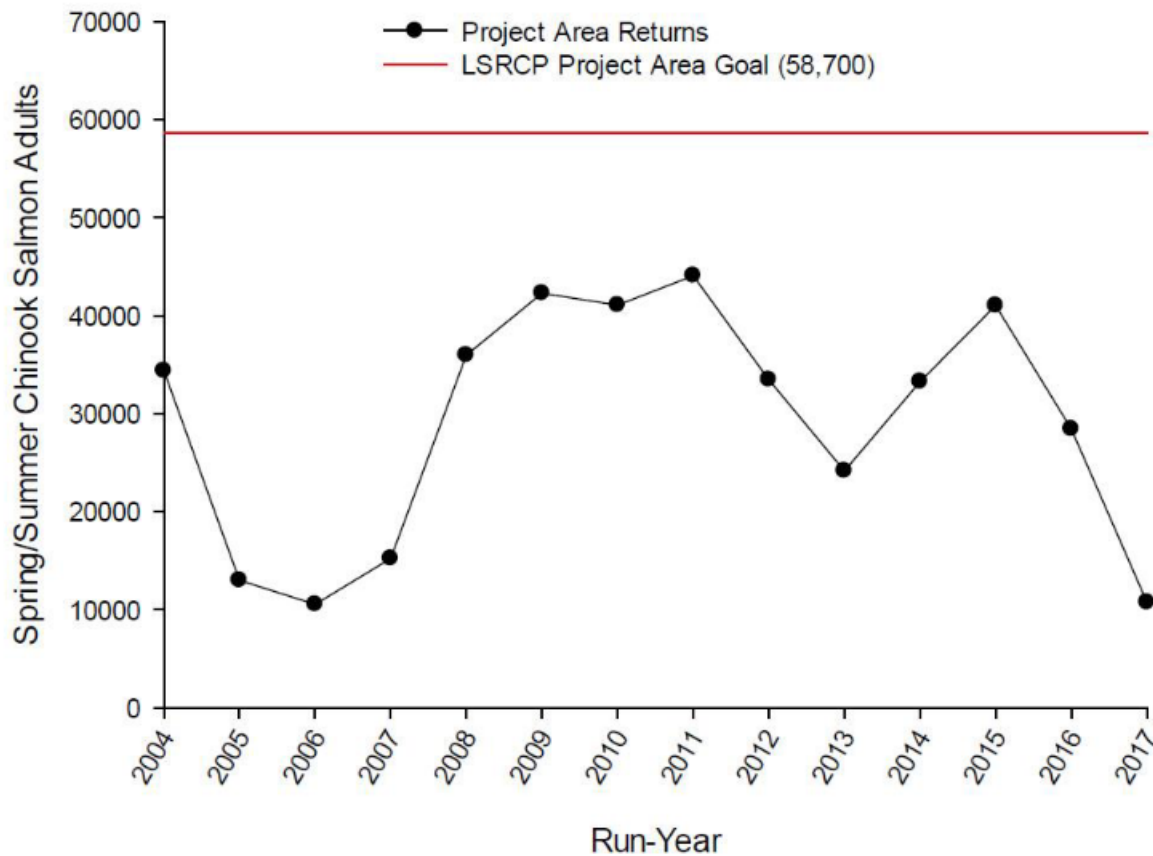


Figure 2. Lower Snake River Compensation Plan project area returns of adult spring/summer Chinook salmon from 2004-2017 (figure from 2018 LSRCP Annual Report). Data for years after 2017 were not available for the LSRCP Program.



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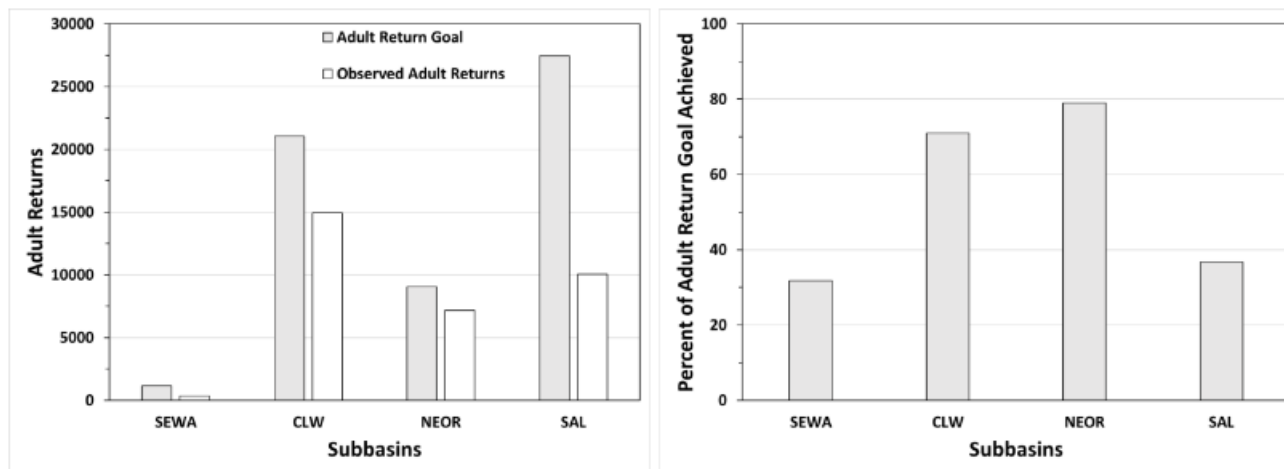
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Average by Basin



Figures 3a and 3b. Adult returns to the LSRCP Program area for Return Years 2010-2020 (3a), and the mean percent of the adult return goal achieved by the four subbasins—Southeast Washington (SEWA), Clearwater (CLW), Northeast Oregon (NEWA), and Salmon (SAL) (3b). Adult estimates include jacks with the exception of the Tucannon River.



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Upper Salmon Options Planning - Progress to Date

- Started regular meetings with cooperators in early 2024 to discuss “Options” to increase spring/summer Chinook returns
 - 6 meetings to date with NPT, SBT, and IDFG
 - Primary discussions around production changes
- Challenges
- Recent Achievements
- Future Efforts



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Challenges

- ESA-listed stocks in Upper Salmon
 - Can affect production and harvest levels
- Poor juvenile survival to LGD is affecting both wild and hatchery fish
- Existing infrastructure and permitting is limited



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Challenges

		Risk Rating for Spatial Structure and Diversity			
		Very Low	Low	Moderate	High
Risk Rating for Abundance/Productivity	Very Low (<1%)				
	Low (1–5%)				
	Moderate (6–25%)				
	High (>25%)		<i>Secesh R.</i> <i>East F- Johnson Creek</i> <i>Little Salmon R.</i> <i>– Insf. data</i>	<i>So. Fork Mainstem</i>	

Figure 5. South Fork Salmon River MPG population risk ratings integrated across the four VSP parameters. Viability key: dark green - highly viable; light green - viable; orange - maintained; and red - high risk (does not meet viability criteria) (Ford 2022, Table 14, p. 50).



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Challenges

Risk Rating for Abundance/Productivity		Risk Rating for Spatial Structure and Diversity			
		Very Low	Low	Moderate	High
	Very Low (<1%)				
	Low (1–5%)				
	Moderate (6–25%)				
			<i>Secesh R.</i> <i>East F- Johnson</i>	<i>So. Fork Mainstem</i>	

four VSP parameters.
red - high risk (does not meet

Risk Rating for Abundance/Productivity		Risk Rating for Spatial Structure and Diversity			
		Very Low	Low	Moderate	High
	Very Low (<1%)				
	Low (1–5%)				
	Moderate (6–25%)		<i>Marsh Creek</i> <i>Bear Valley Creek</i>		
	High (>25%)		<i>Chamberlain Crk</i>	<i>Big Creek</i> <i>Loon Creek-Insuf. data</i> <i>Camas Creek</i> <i>Lwr Main MF</i> <i>Upr Main MF</i> <i>Sulphur Creek</i>	

Figure 6. Middle Fork Salmon River MPG population risk ratings integrated across the four VSP parameters. Viabilitykey: dark green - highly viable; light green - viable; orange - maintained; and red - high risk (does not meet viability criteria) (Ford 2022, Table 14, p. 50).



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Challenges

Risk Rating for Abundance/Productivity		
		Very Low
	Very Low (<1%)	
	Low (1–5%)	
	Moderate (6–25%)	
	High (>25%)	

Figure 6. Middle Fork Salmon River MPG population risk ratings integrated across the four VSP parameters. Viability key: dark green - highly viable; light green - viable; orange - maintained; and red - high risk (does not meet viability criteria) (Ford 2022, Table 14, p. 50).

Risk Rating for Abundance/Productivity		Risk Rating for Spatial Structure and Diversity			
		Very Low	Low	Moderate	High
	Very Low (<1%)				

Risk Rating for Abundance/Productivity		Risk Rating for Spatial Structure and Diversity			
		Very Low	Low	Moderate	High
	Very Low (<1%)				
	Low (1–5%)				
	Moderate (6–25%)				
	High (>25%)		Salmon Lwr Main Salmon Upr Main North Fork-Insuf data	Valley Creek	Pahsimeroi R. Lemhi R. Salmon E Fork Yankee Fork Panther Creek-Insuf. data

Figure 7. Upper Salmon River MPG population risk ratings integrated across the four VSP parameters. Viability key: dark green - highly viable; light green - viable; orange - maintained; and red - high risk (does not meet viability criteria) (Ford 2022, Table 14, p. 51).

Upr Main MF Sulphur Creek



Juvenile Survival to Lower Granite Dam – Migration Year

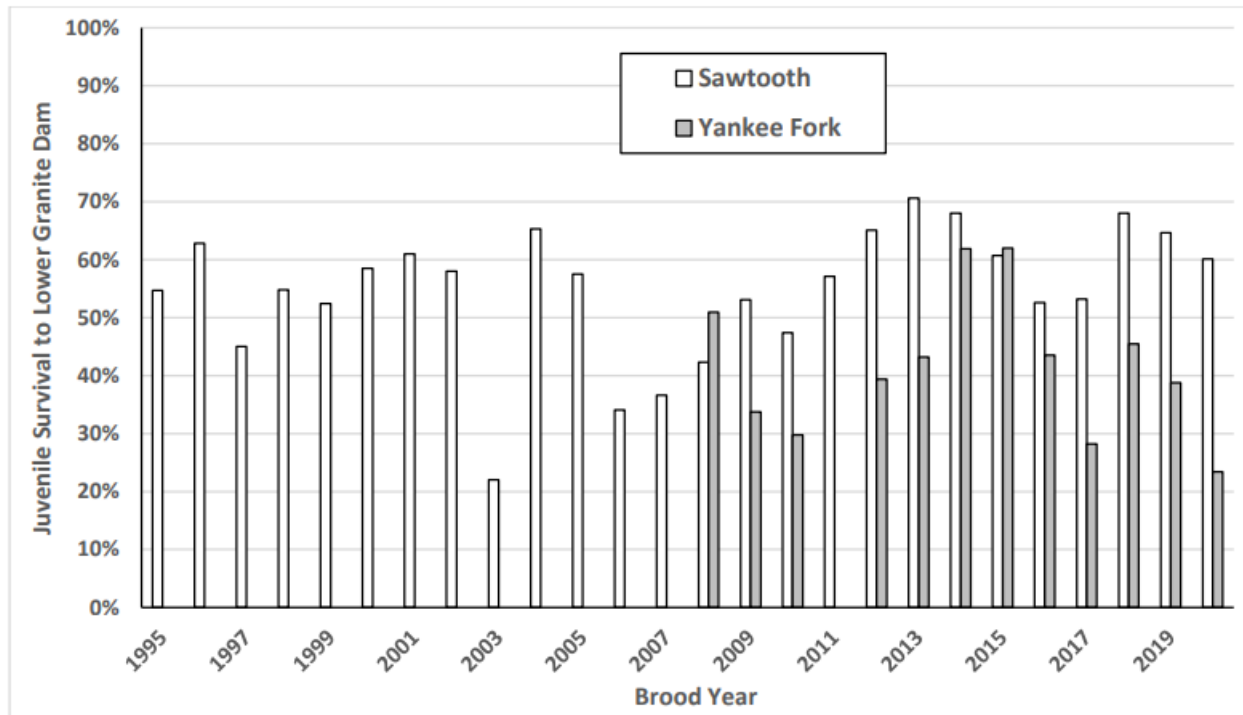


Figure 6. Estimated survival, from release to Lower Granite Dam, of juvenile spring Chinook Salmon from released from Sawtooth Fish Hatchery for brood years 1995-2020.



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ACHIEVEMENTS TO DATE



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McCall Fish Hatchery

- Expanded rearing space with new adult holding ponds
 - Hold adults from S. Fork Salmon River due to increasing river temperatures
 - Also Increases juvenile rearing space from 1 to 1.38 million
 - Rearing use presently limited by NPDES issues and the lack of permitting



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Irrigon Fish Hatchery

- 2023/2024 – 200K Age-0 smolt trial
Investigating out of basin rearing potential
 - Released in the Yankee Fork
 - Potential acclimation associated effects that led to low out migration survival



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Crystal Springs Hatchery

- 2024/2025 - Initiated a 50k Age-0 smolt trial with the Shoshone-Bannock Tribe



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2.4 million at Sawtooth

- Successfully increased from 2.0 to 2.4 million eggs in 2024



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Scour Hole – Sawtooth weir



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Scour Hole – Sawtooth weir



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Scour Hole – Sawtooth weir



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Scour Hole – Sawtooth weir



August 2021



August 2024



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Yankee Fork Resistance Board Weir



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FUTURE EFFORTS



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Yankee Fork Acclimation

- A LSRCP objective in the Yankee Fork is establishment of a natural spring Chinook salmon population that would integrate with a hatchery population. Both will provide harvest opportunity for the Shoshone-Bannock Tribes.



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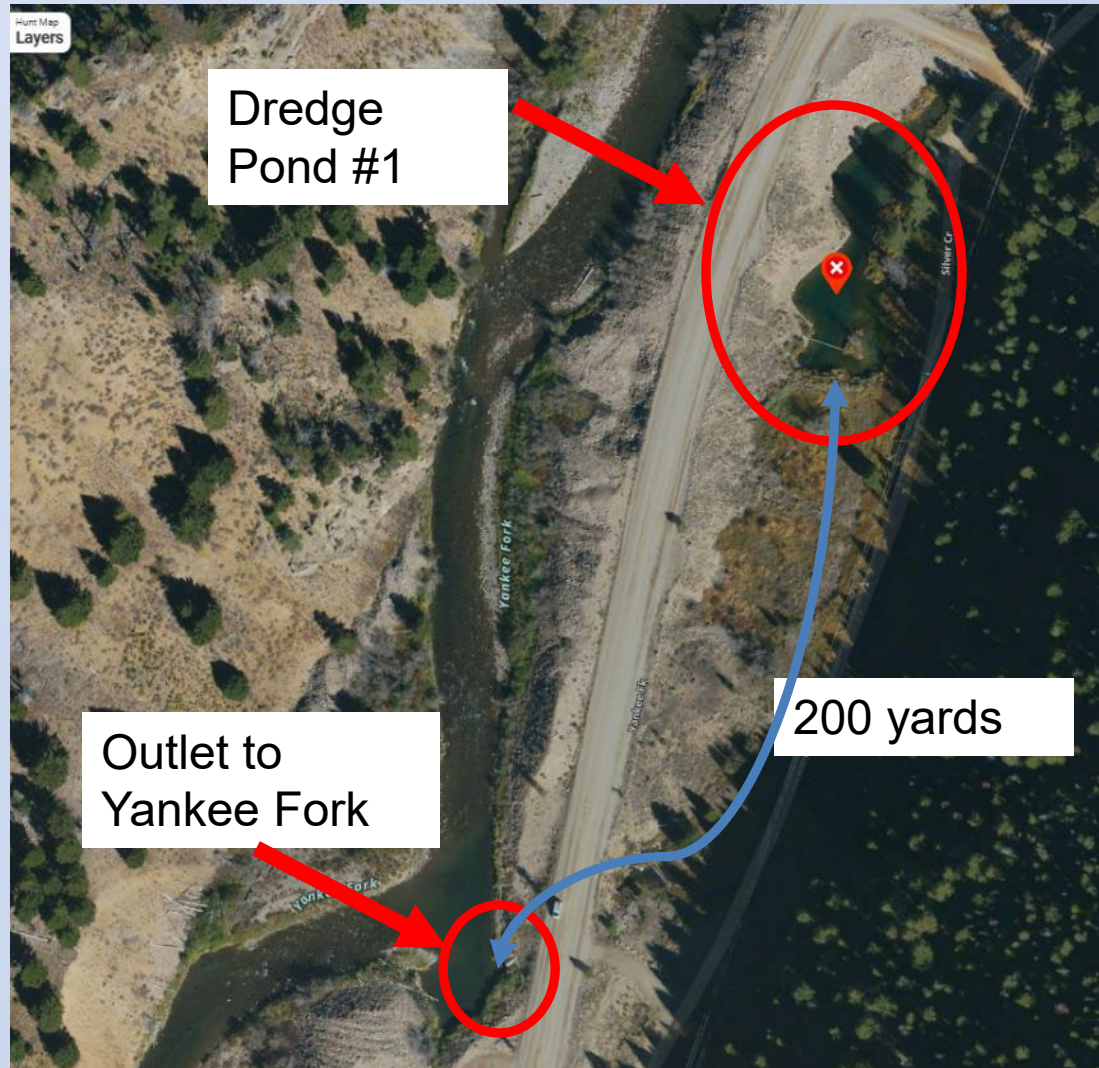
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Dredge Pond #1



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Yankee Fork Work



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Cottonwood at Yankee Fork



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Sawtooth Stream Gage

- To be installed summer of 2025
- Existing closest gage is below the Yankee Fork - multiple tributaries enter between the hatchery and that gage
- Will better help understand river flows for management of the Sawtooth hatchery intake and weir
- Inform Sawtooth compliance and expansion study



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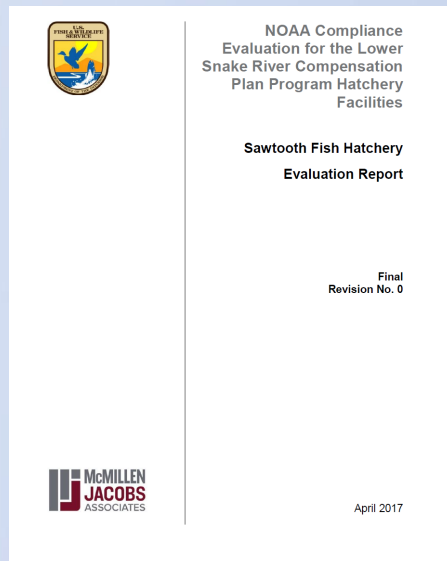


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Sawtooth Hatchery Alternative Analysis

- SOW for Planning being developed to cover both alteration study of the intake and weir and an expansion study
 - Intake and weir NOAA non-compliance



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Upper Salmon Options Planning – Next Steps

- Our next meeting is May 13th to continue discussions
 - Improve juvenile survival
 - Ensure broodstock availability
 - Improve performance to meet mitigation goals
 - Increased production as appropriate
- Envision a proposal of options
 - Aiming for end of 2025
- Will also inform the Sawtooth Hatchery Compliance and Expansion Study



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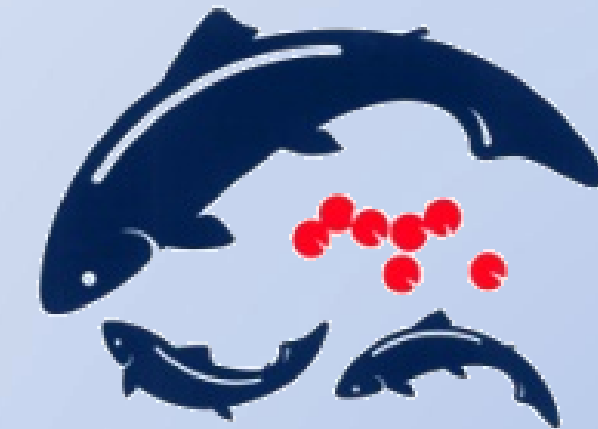
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Lower Snake River Compensation Plan Program



LOWER SNAKE RIVER COMPENSATION PLAN *Hatchery Program*



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Additional Slides



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Phosphorus removal at McCall

- Limited to additional production due to meeting TMDL limits for phosphorus



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Production Changes

Facility	Current Smolt Release	Current Egg Box Release	Permitted Smolt Release	Proposed Smolt Release		Expected SAR
				Adult Target	Release	
Sawtooth	1,700,000	-	2,000,000	10,000	6,622,516	0.15%
Yankee Fork	300,000	-	600,000	4,000	2,649,006	0.15%
Panther Creek*	400,000	800,000	400,000	4,000	2,649,006	0.15%
McCall FH	1,000,000	300,000	1,000,000	8,000	3,493,450	0.23%
EF Salmon**	-		-	1,445	956,954	0.15%
Total	3,400,000	1,100,000	4,000,000	27,445	16,370,932	0.17%



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Production Changes

- Outside the Box ideas
 - Conservation release downstream to replenish/expand upstream programs
 - Captive brood program at an out of basin location



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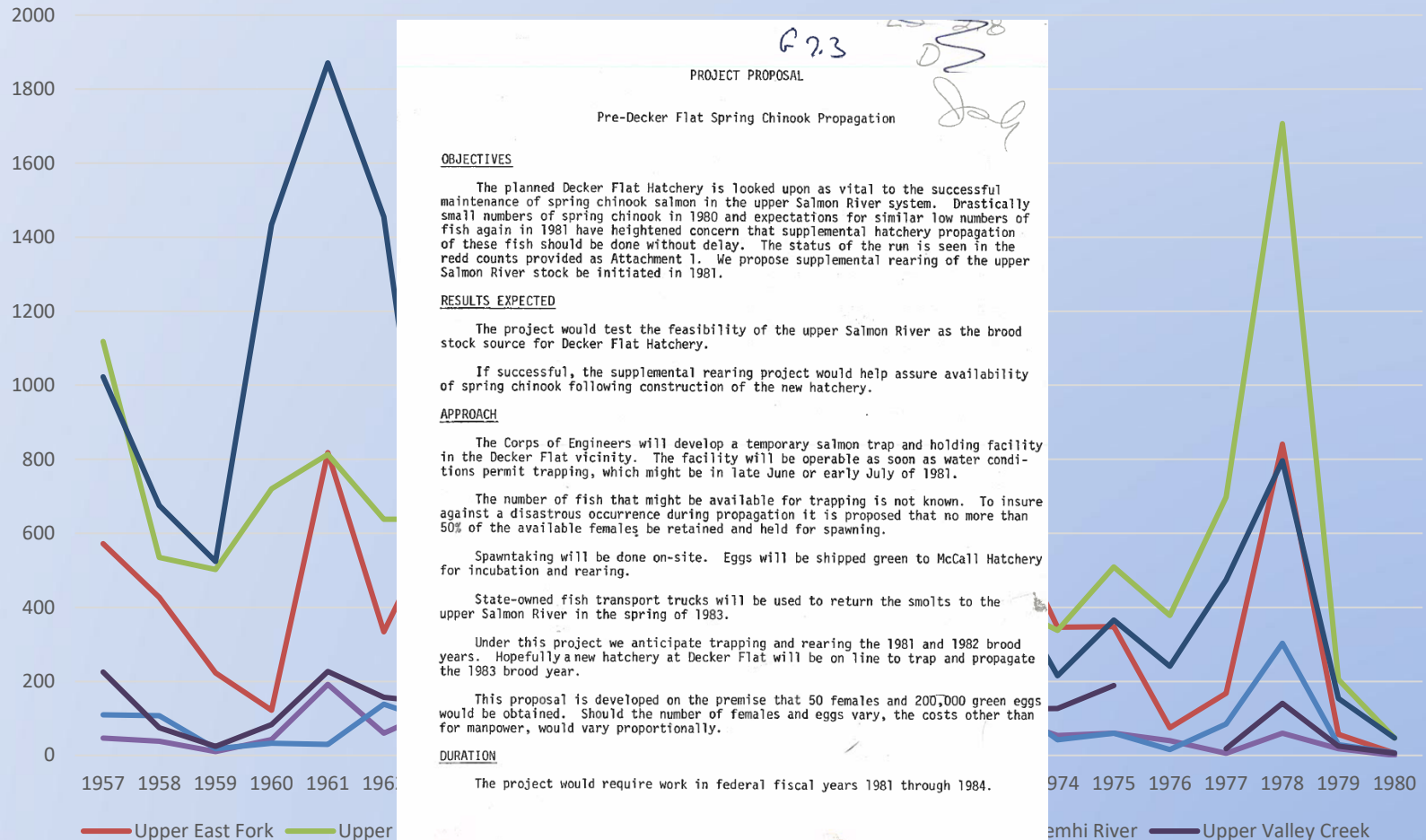


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“Pre-Decker Flat Spring Chinook Propagation” (1980)

Spring Chinook Redd Counts 1957-1980



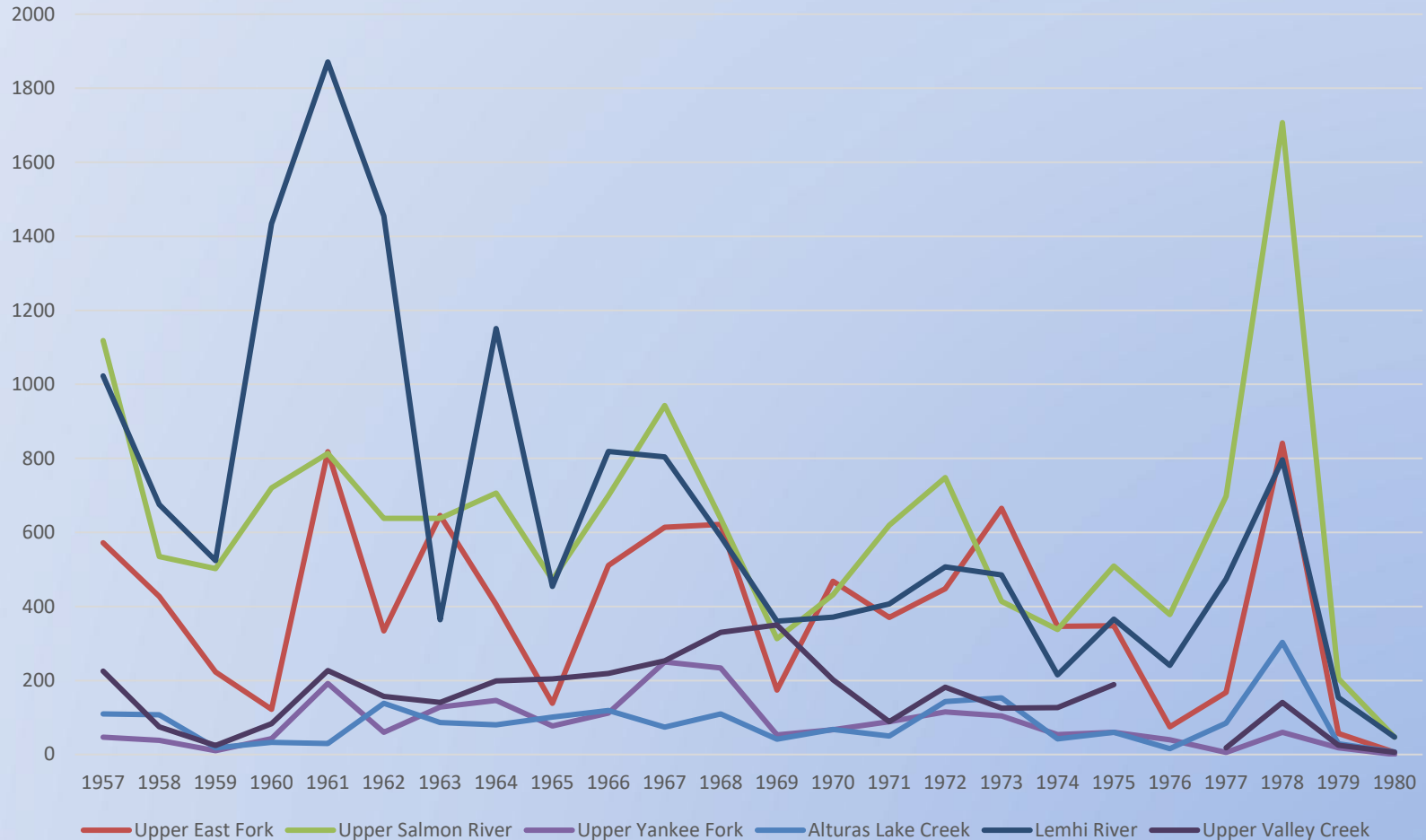
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