

Clearwater River Steelhead Mitigation Program

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2012 LSRCF Program Review

Acknowledgments

- Hatchery staffs
 - Clearwater
 - Dworshak National
- Mark Crew
- IDFG M&E staff
- IDFG Regional Staff



Presentation Outline

- **IDFG Management Objectives**
- **Status of Natural Populations**
- **Management Framework**
- **Mitigation Goals and Approach**
- **Broodstock History and Program Description**
- **Production/Productivity and Harvest Data**
- **Program Summary**
- **Moving Forward**

IDFG Management Objectives for the Clearwater River

- Restore and maintain natural populations in the Clearwater River**
- Restore and maintain recreational and tribal fisheries**
- Meet LSRCP adult mitigation objectives**
- Minimize impacts of the hatchery program on natural populations**

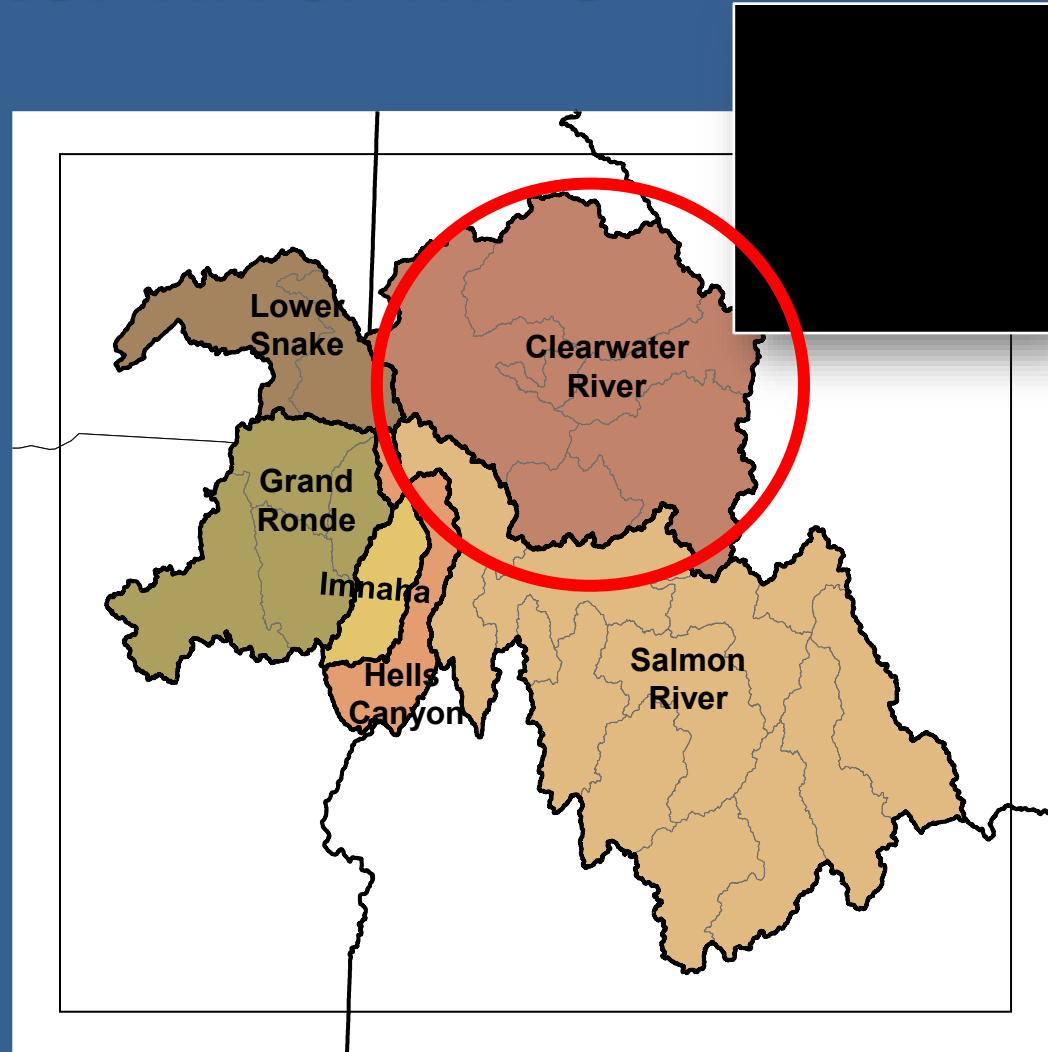
Natural Steelhead Clearwater River MPG

Snake River DPS listed as threatened in 1997

- 5 extant, 1 extirpated
- None meet viability criteria

Clearwater River Major Population Group (MPG)-

- None of the six populations meet viability criteria.
- All natural populations
 - Moderate-high risk for A/P
 - Low -moderate risk for SS/D.
- Lack of population specific A/P estimates.
- North Fork Clearwater population
 - Blocked
 - Sustained as a hatchery program



Natural Populations in the Clearwater River

Natural Population	Tributary	Dworshak Avg. Pairwise F_{ST}
Colt Cr	Lochsa R.	0.023
Storm Cr		0.025
Crooked Fork		0.018
Lake Cr		0.025
Fish Cr		0.018
Canyon Cr		0.013
Selway R	Selway R.	0.024
Little Clearwater R		0.023
Whitecap Cr		0.024
Bear Cr		0.025
NF Moose Cr		0.018
Three Links Cr		0.026
Gedney Cr	SF Clearwater	0.016
O'Hara Cr		0.011
Clear Cr		0.011
Crooked R		0.004
Tenmile Cr		0.021
John's Cr		0.010

Natural Populations in the Clearwater River

Genetic information

– Hatchery Production Area

- Not differentiated from hatchery stocks

– Natural Production Areas

- Differentiated in upper tributaries

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Management Framework Clearwater River

- **No hatchery releases in**

- Upper Middle Fork Clearwater R.

- Lochsa and Selway rivers

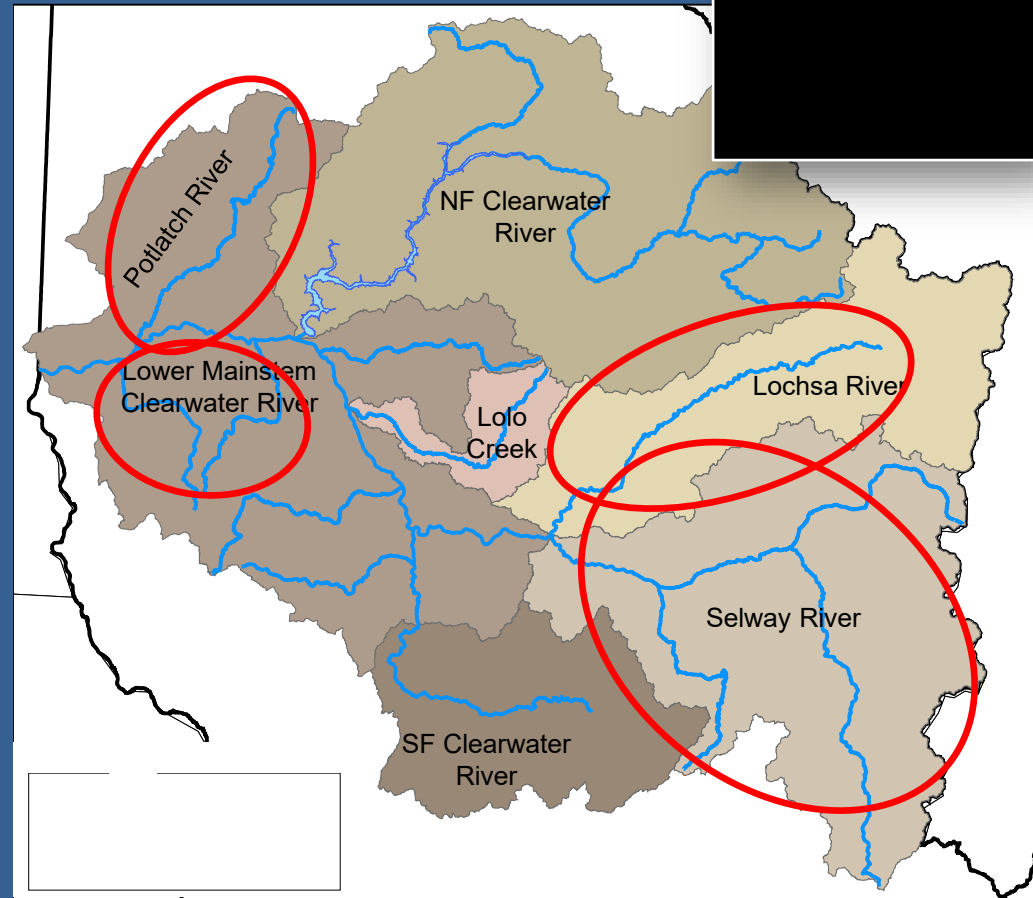
- Tributaries to Lower Clearwater R.

- Potlatch R.
- Lapwai Cr.

- **Hatchery mitigation releases confined to**

- Lower Clearwater R.

- South Fork Clearwater R.



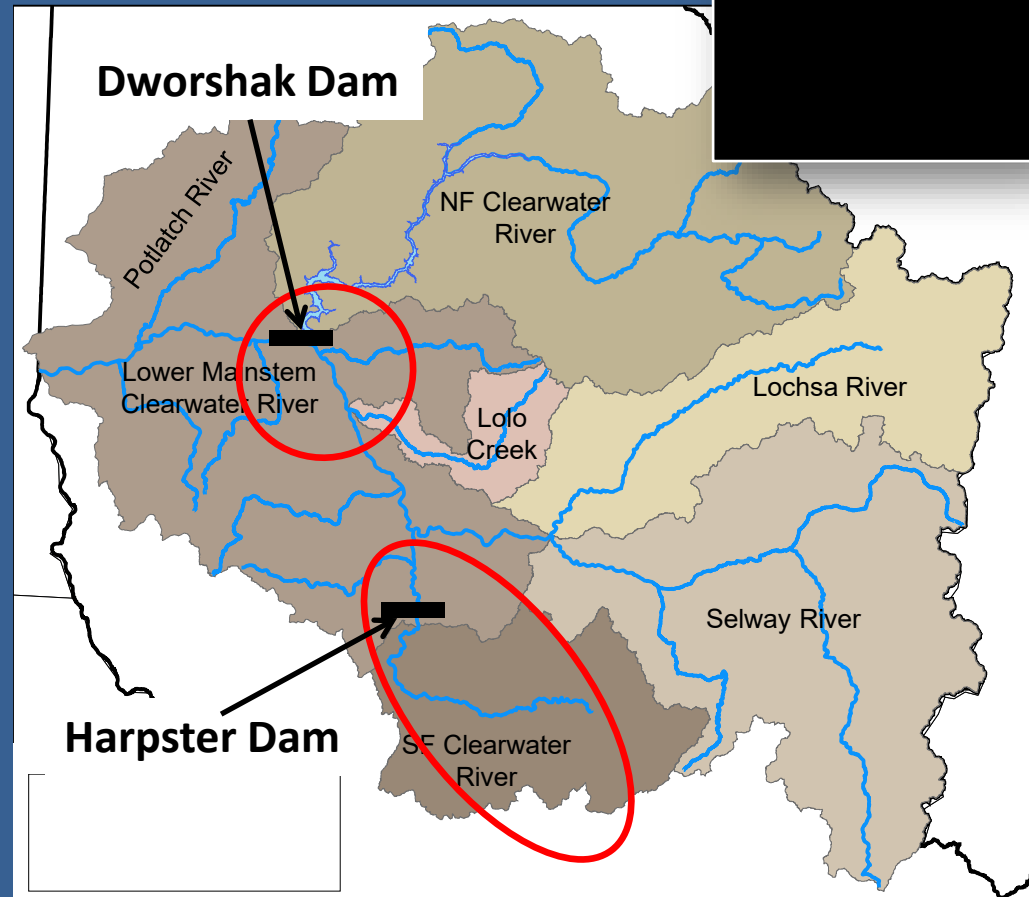
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Clearwater Hatchery Mitigation Goals

	Clearwater Fish Hatchery
Adult Goal-Above Project Area	14,000
Adult Goal-Below Project Area	28,000
Total Mitigation Goal	42,000
Assumed SAR	.87%
Assumed SAS	2.61%
Smolt Release Target (Modeled Value)	1,750,000
Smolt Release Target (Actual)	840,000

Implementing Mitigation Program

- Focus for hatchery program is to achieve harvest mitigation objectives
- 335,000 smolts are AD-intact consistent with US vs. OR agreement
- Utilize both LSRCF facilities and Dworshak National Fish Hatchery
- Annual coordination and collaboration with federal and tribal partners



Clearwater River Broodstock History

- Dworshak stock
 - Wild fish returning to NF Clearwater R.
 - No out of basin fish
- Dworshak NFH primary source of eggs
- Locally adapted SF Clearwater R. Stock
 - Upper SF Clearwater collection failed
 - Fallout
 - Migration impediment
 - Middle SF Clearwater R. collection initiated in 2010
 - Volunteer angler contribution program
 - New infrastructure at Meadow Creek

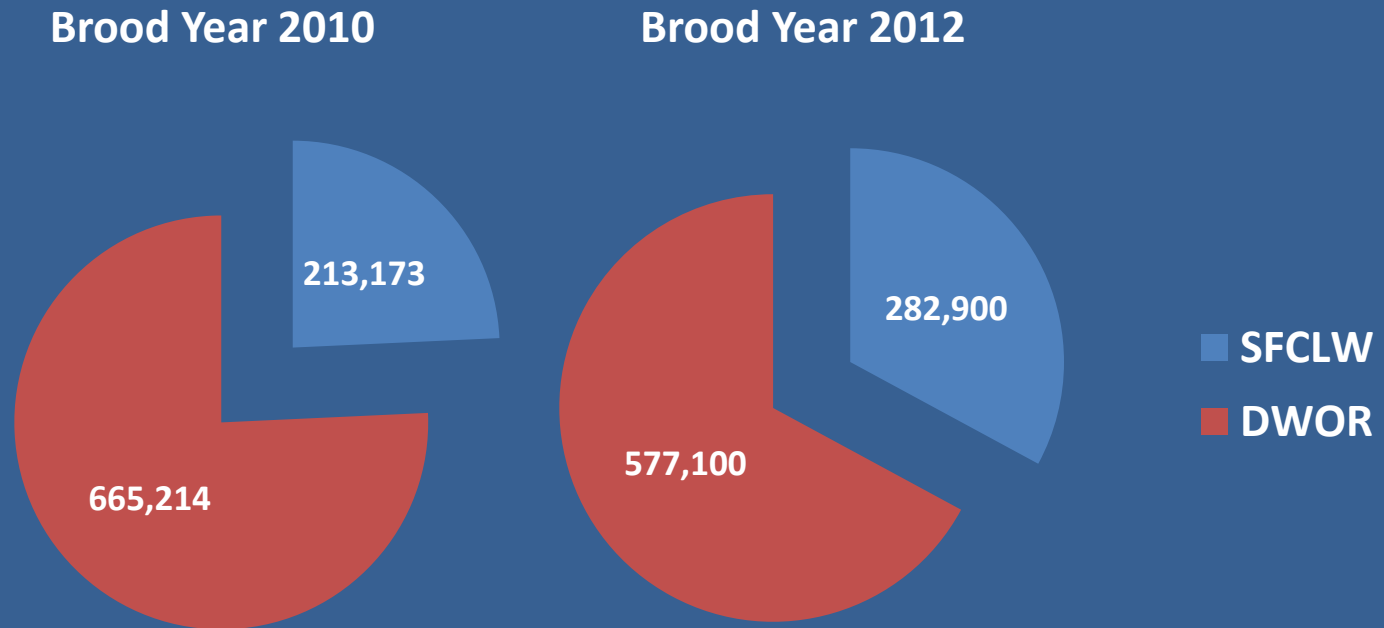


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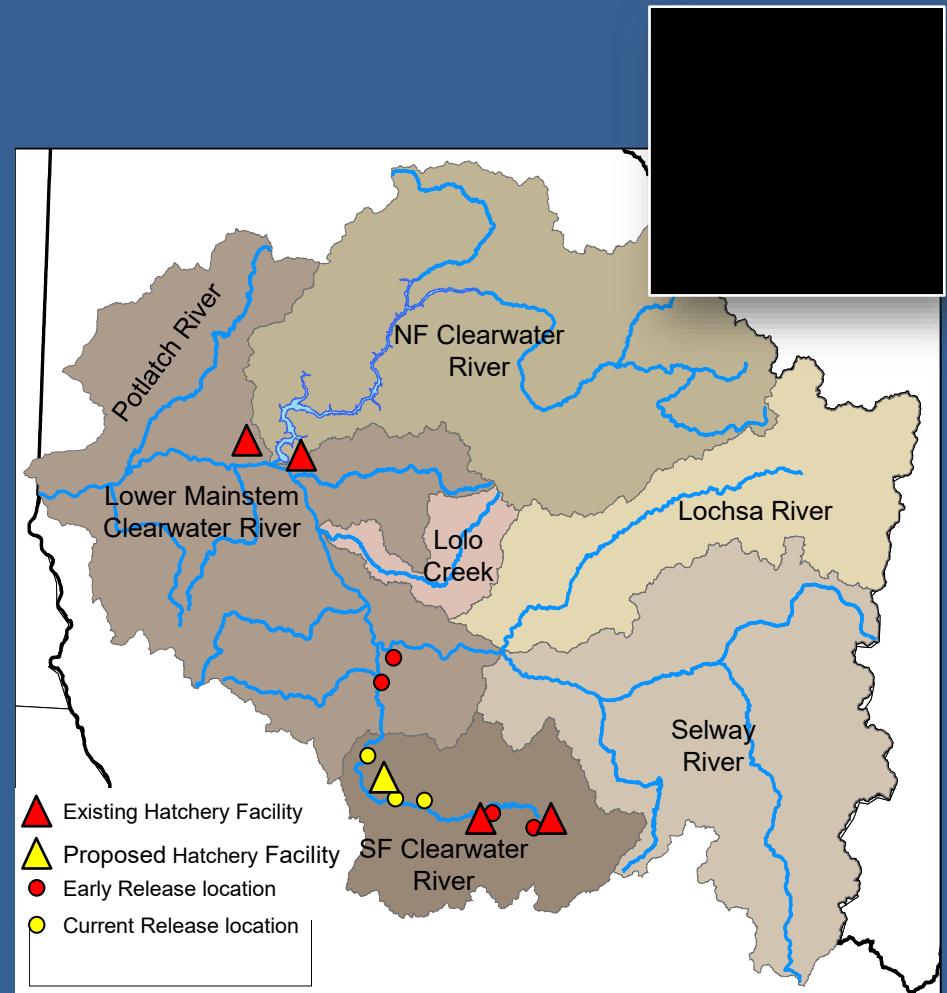
Description of SF Clearwater River LSRCP Hatchery Steelhead Program



IDFG's goal is to phase out DWOR releases in SF Clearwater R. in favor of the locally adapted stock.

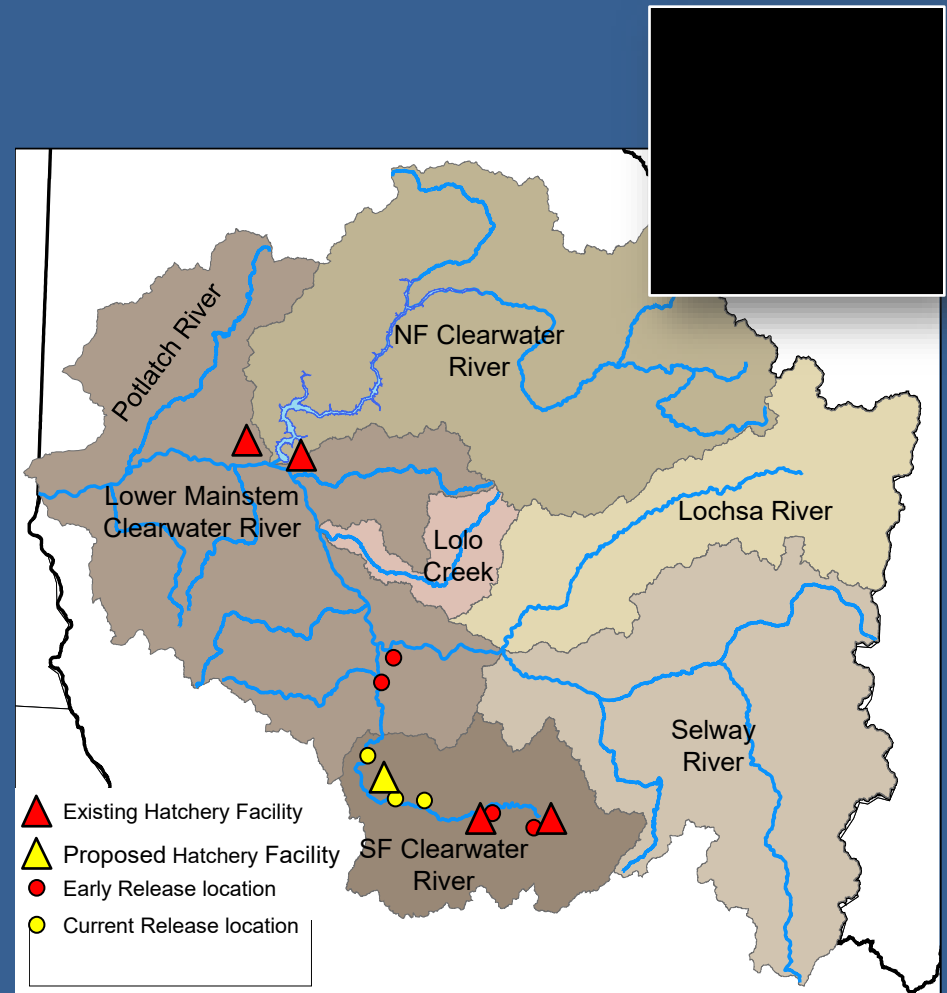
Release Locations for Clearwater Fish Hatchery

- Clearwater FH
 - SF Clearwater Releases
 - 843,000 DWOR smolts
- Dworshak NFH
 - Main stem Clearwater and Lolo Cr.
 - 1,560,000
 - SF Clearwater Releases
 - 540,000 DWOR smolts



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Hatchery Production and Survival Data

- **Broodstock Performance**
- **In-hatchery survival**
- **Juvenile releases and survival**
- **Adult production and productivity**

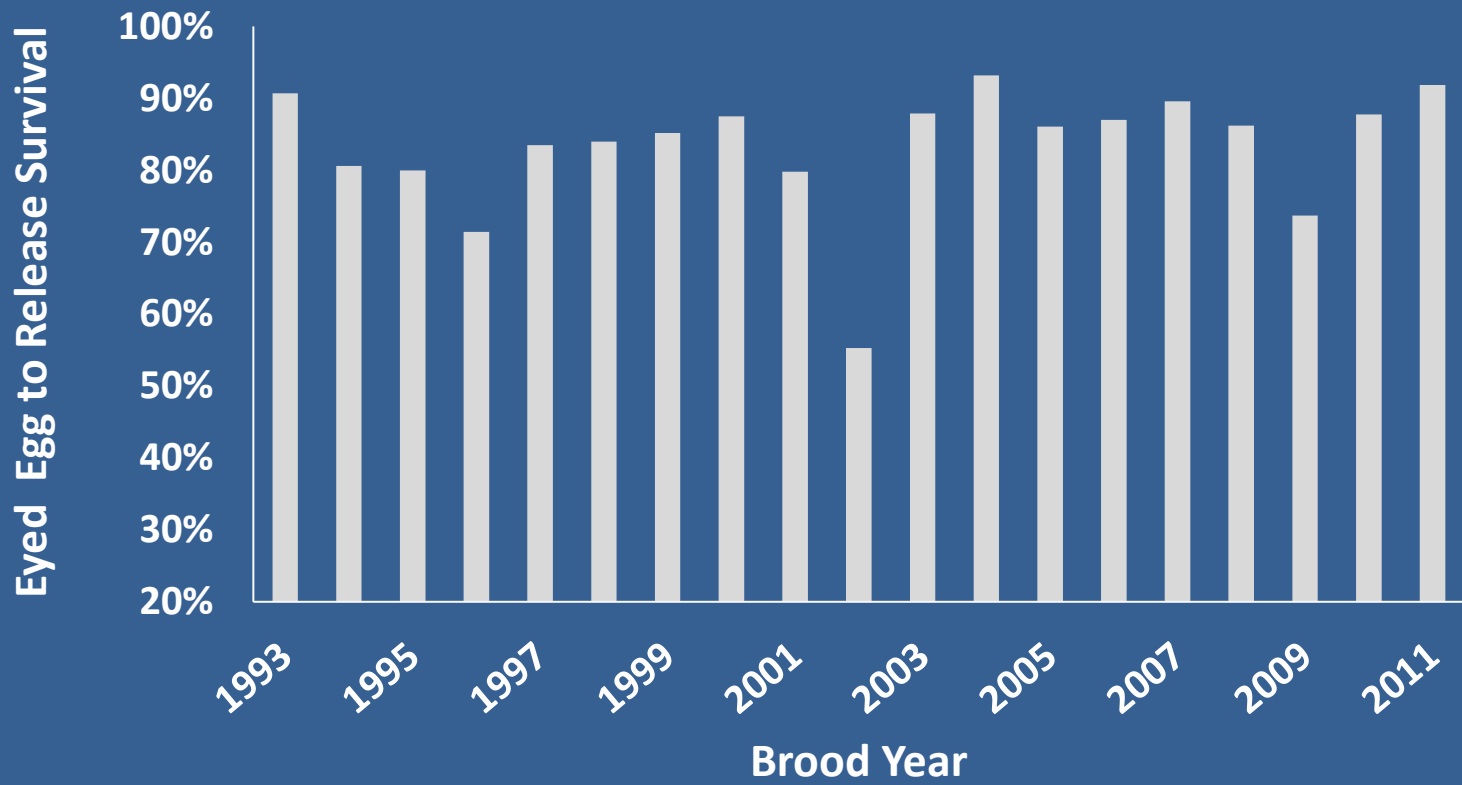
Hatchery Production and Survival Data

- **Broodstock is collected at:**
 - Dworshak Fish Hatchery (USFWS)
- **Final incubation and Rearing occurs at:**
 - Clearwater Fish Hatchery (IDFG)



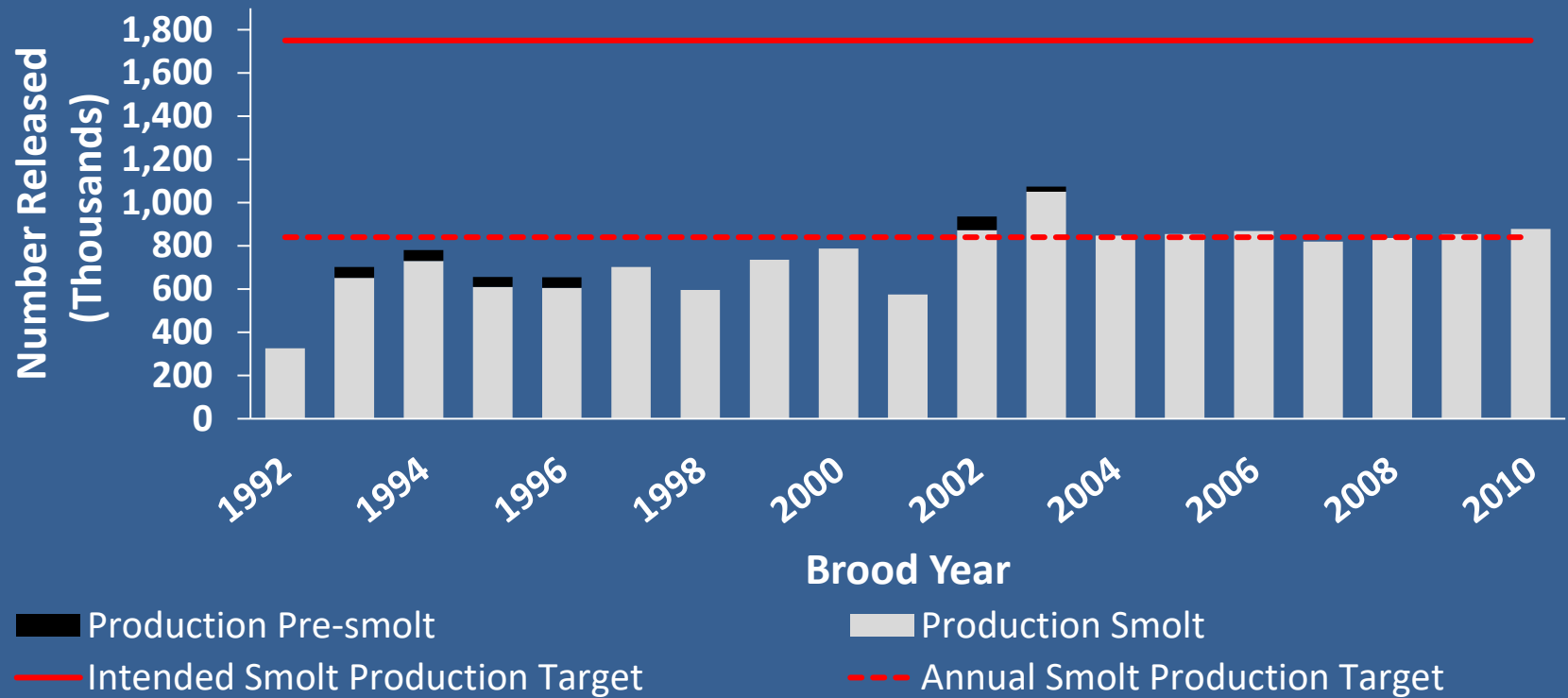
Hatchery Production and Survival Data

In-Hatchery Survival



Hatchery Production and Survival Data

Juvenile Releases

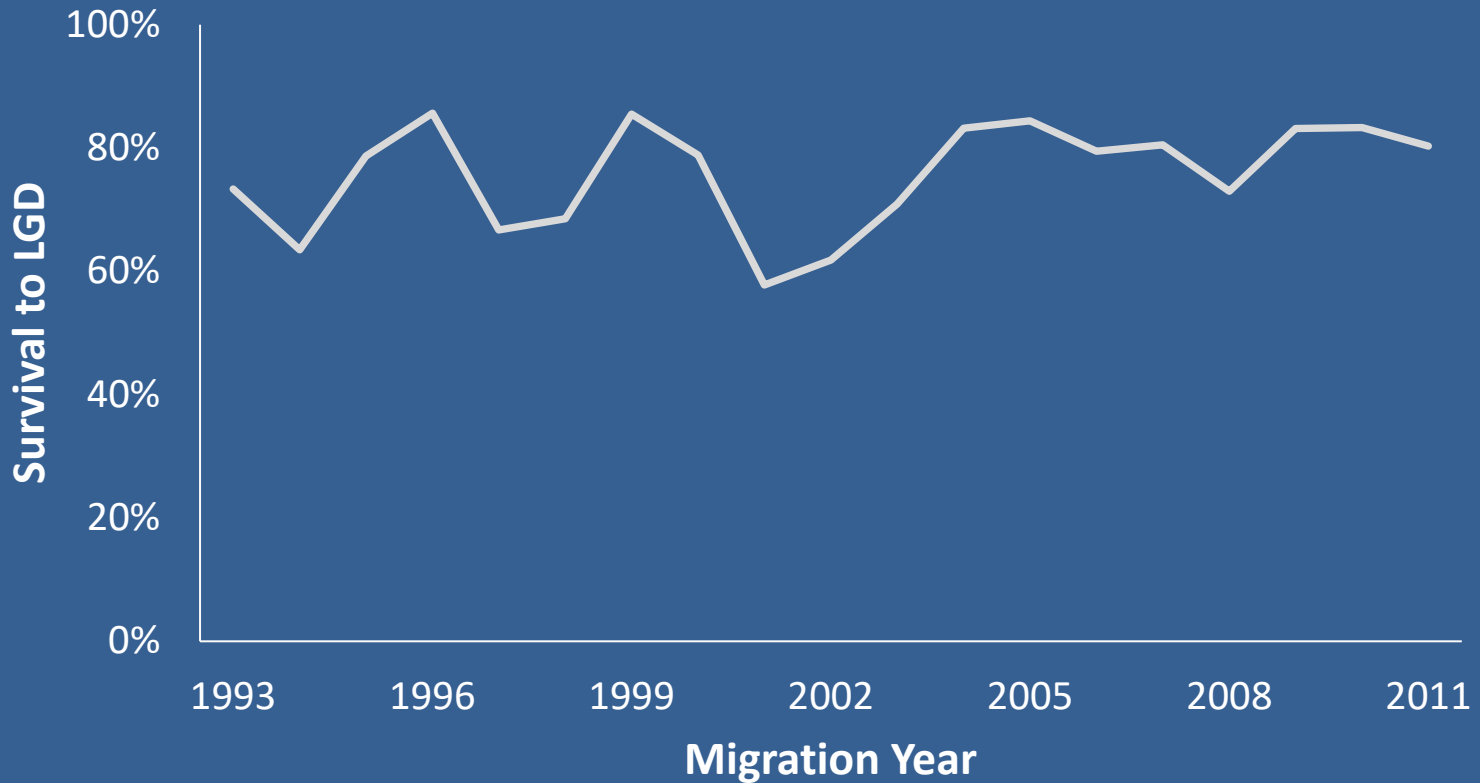


Disease / Pathology

- Disease has not limited the ability to meet smolt production targets.
- Eggs from IHN positive females culled prior to arriving on station.
 - IHN free water source
 - No IHN outbreaks to date in production.
- Diseases with low prevalence/impacts.
 - Coldwater Disease
 - External parasite (water temps > 14°C)

Hatchery Production and Survival Data

Juvenile Survival to LGD



Adult Production and Survival



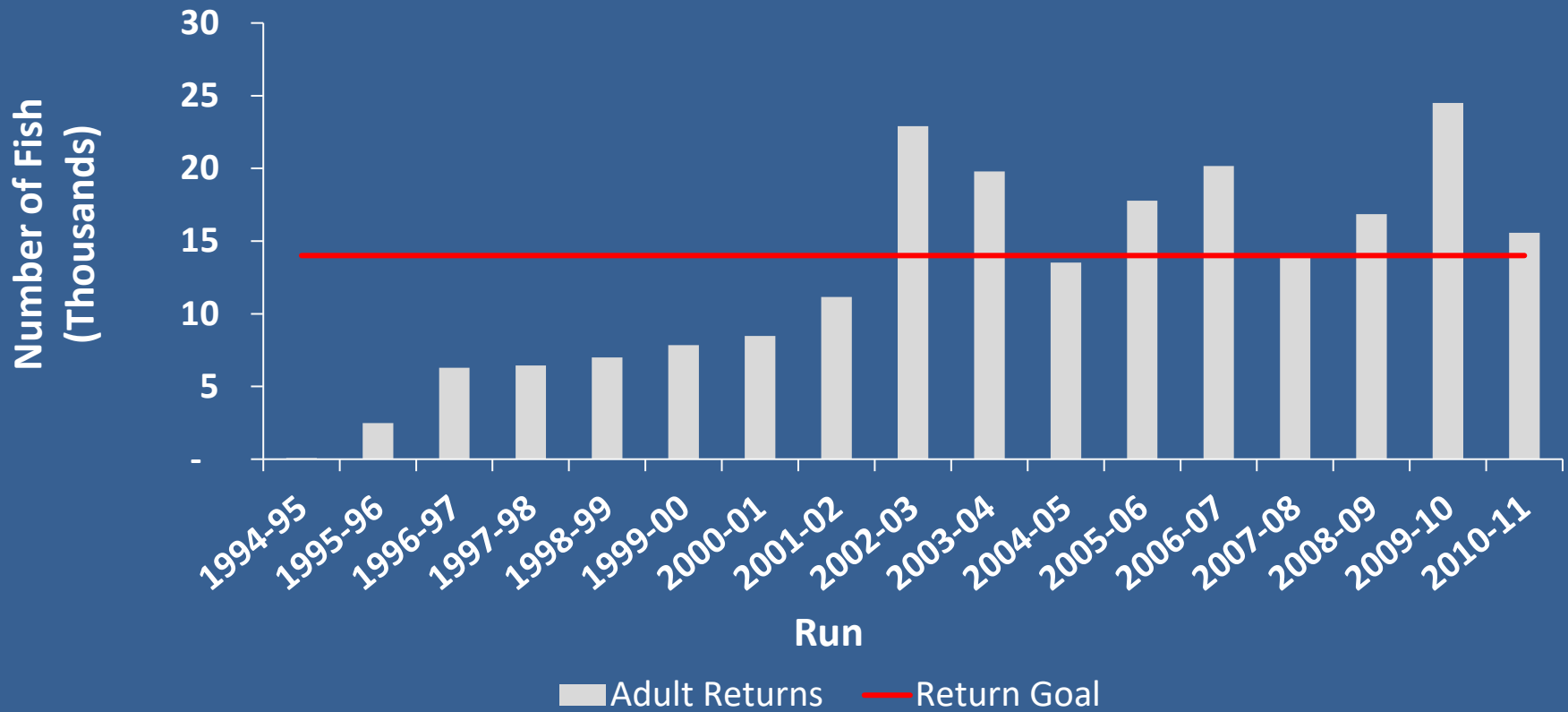
Adult Return Estimate Methods

- Downstream of LGD
 - CWT recoveries reported to RMIS
- Upstream of LGD
 - Harvest
 - Mail/phone creel survey
 - Facility contribution based on CWT recoveries
 - Total adult returns
 - Hatchery traps in the SF Clearwater do not provide an adequate escapement estimate.
 - Fall out
 - Migration impediment
 - Dworshak SAR estimates used as a surrogate

Adult Returns-Total Adults Produced



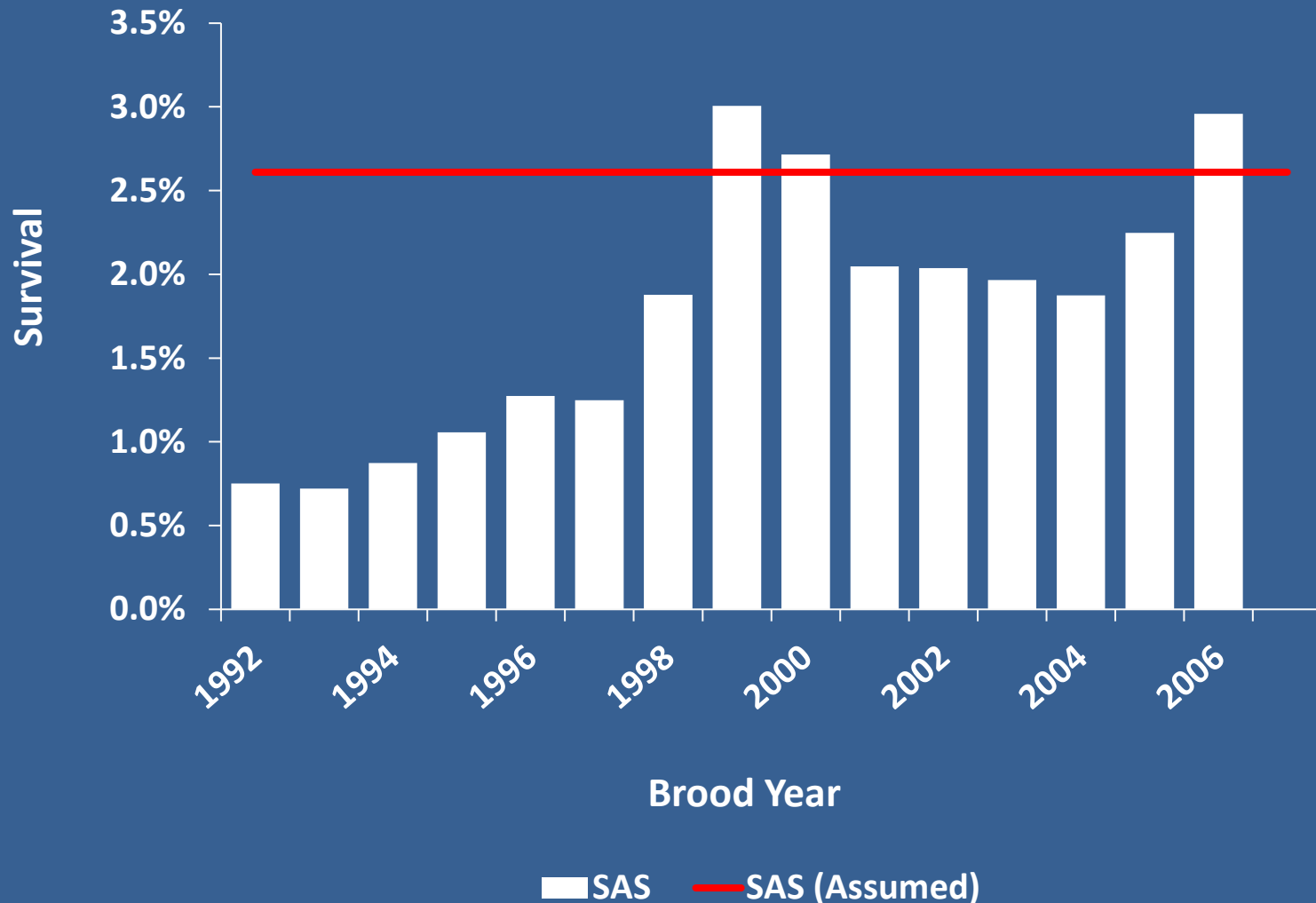
Adult Returns-Lower Granite Dam



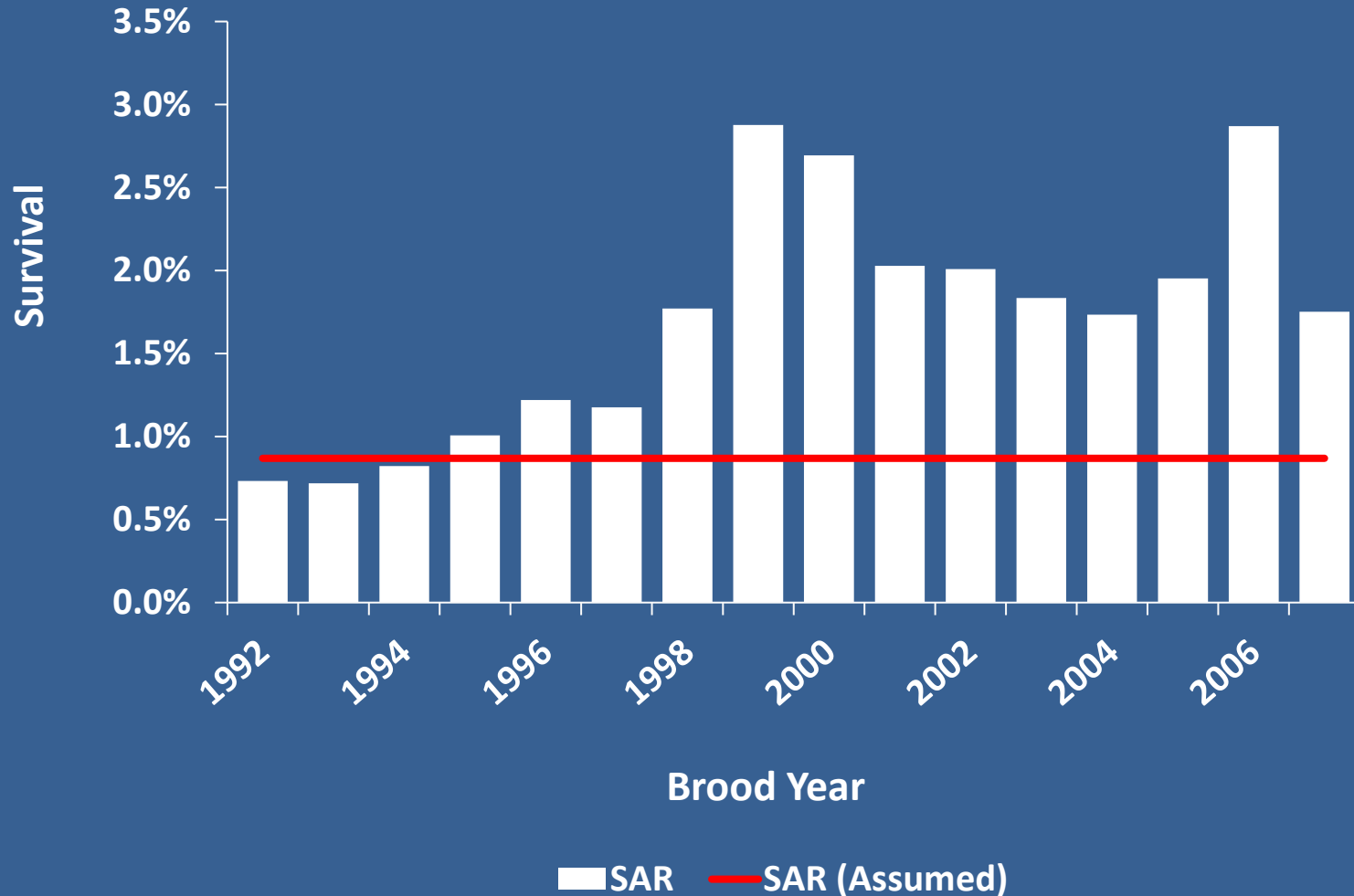
Adult Returns-Lower Granite Dam



Smolt to Adult Survival (SAS)



Smolt to Adult Return (SAR)

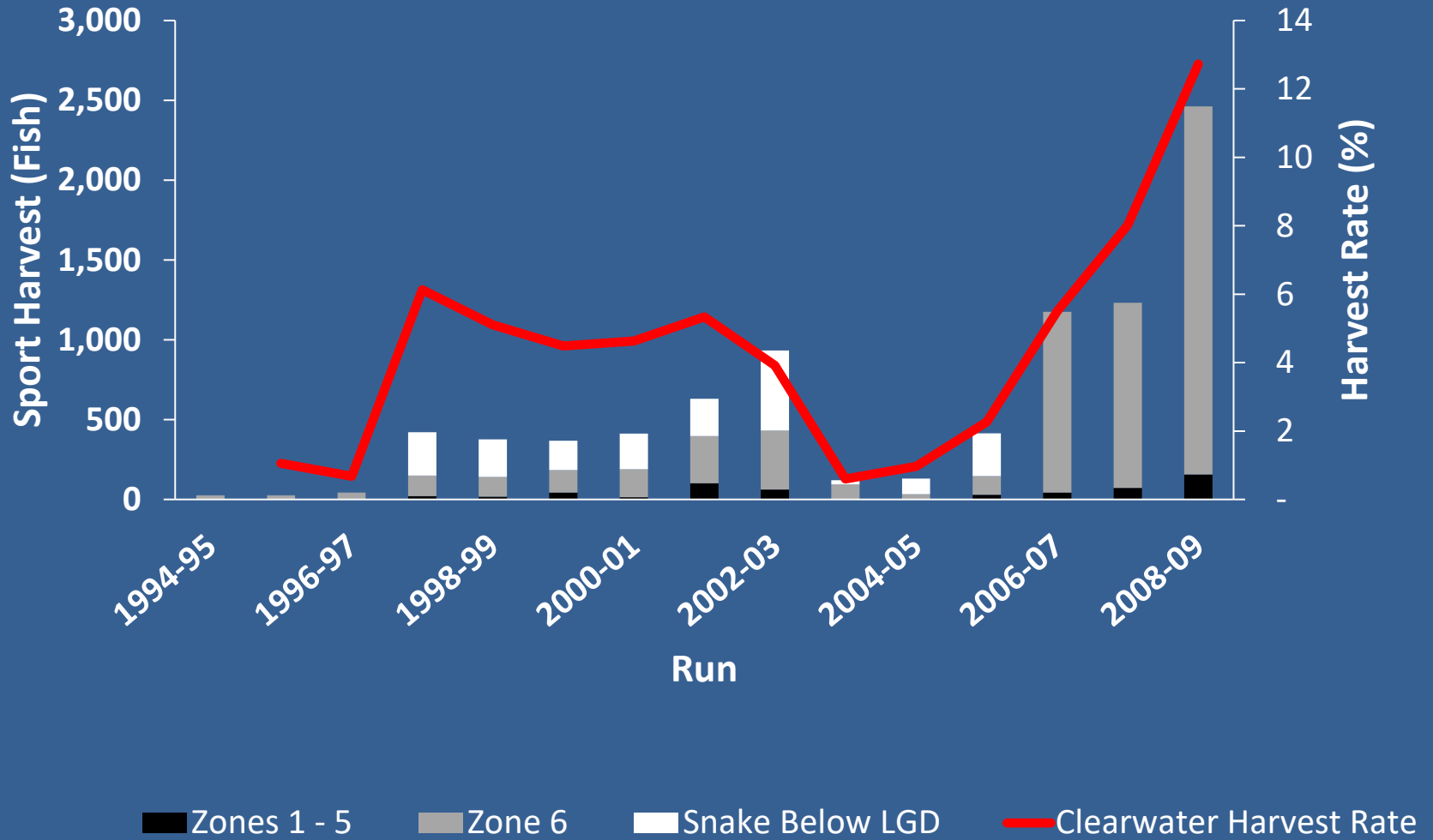


Harvest and Escapement

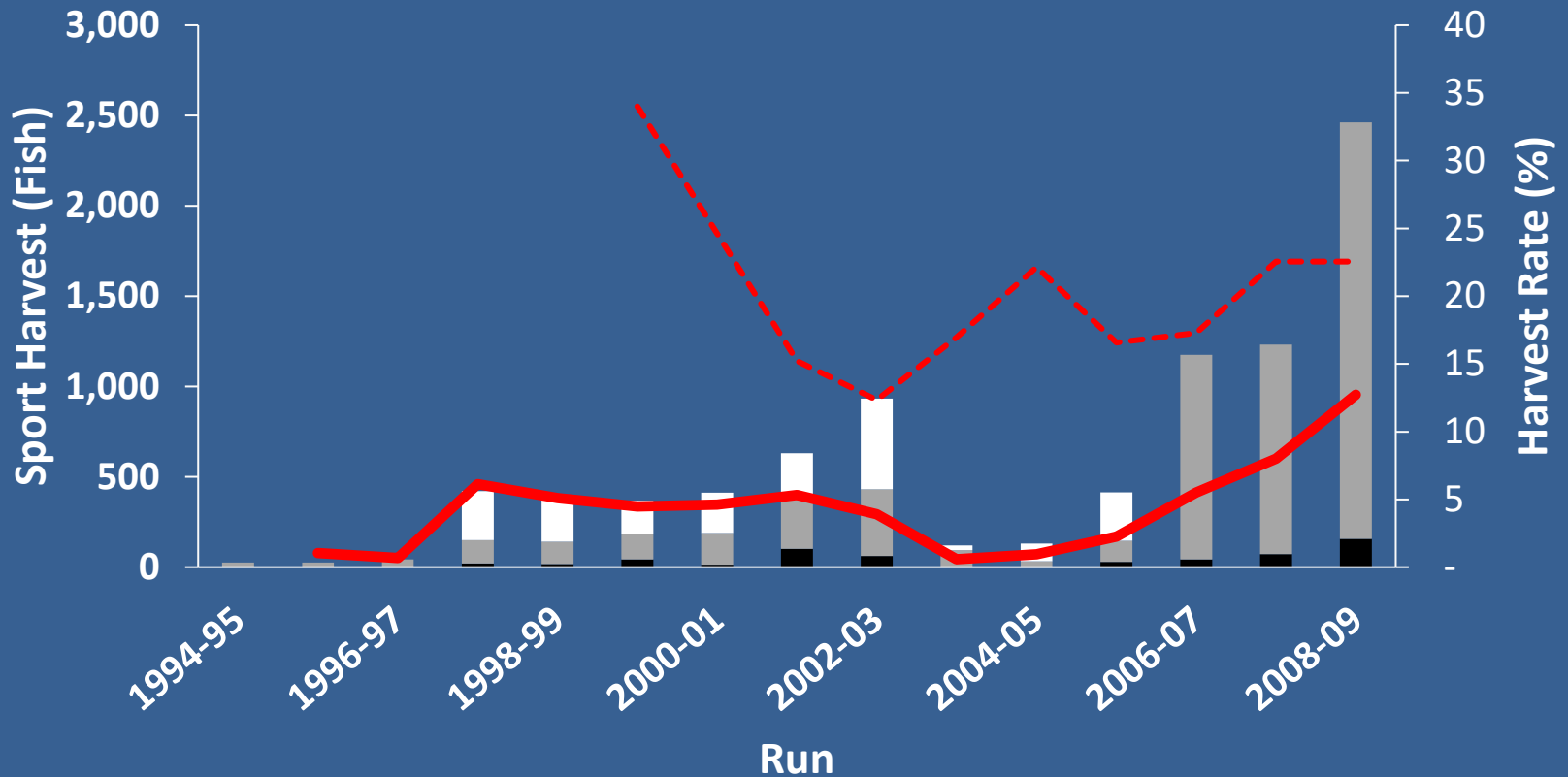
- Angler Effort and Harvest
- Harvest Opportunity
- Strays



Harvest Downstream of LGD



Harvest Downstream of LGD



■ Zones 1 - 5

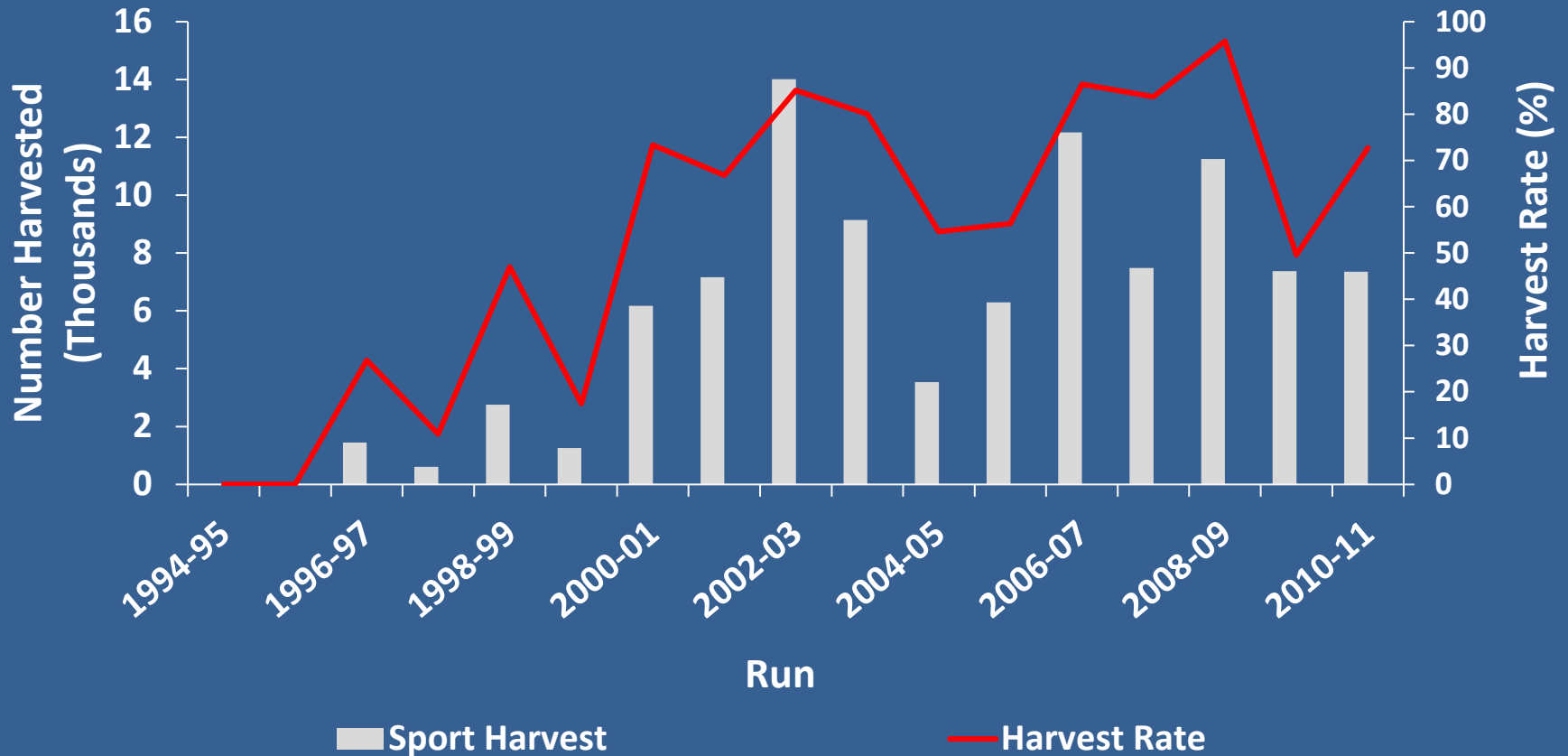
■ Snake Below LGD

--- Zone6 Tribal and Non-Tribal

■ Zone 6

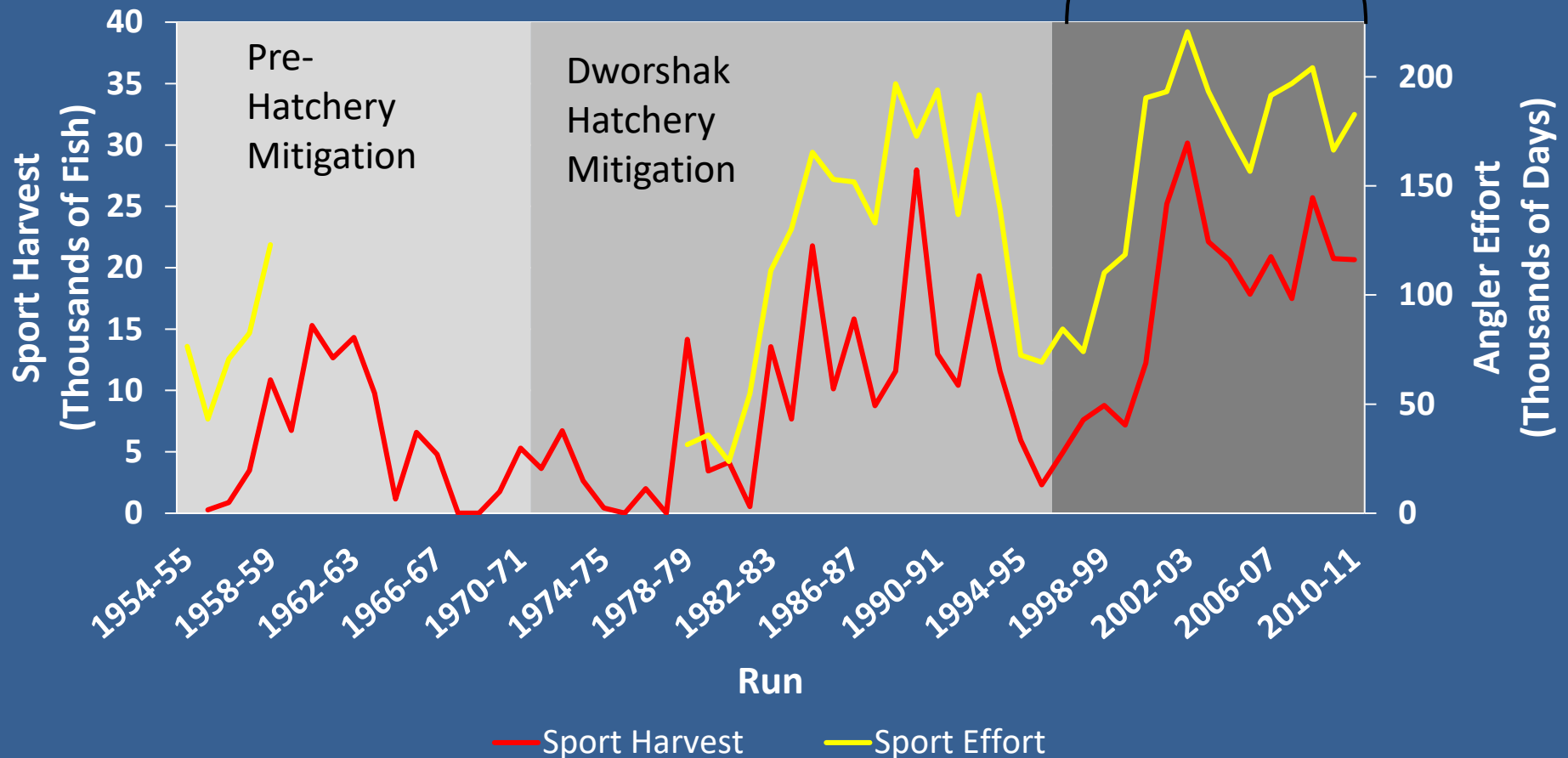
— Clearwater Harvest Rate

Harvest Upstream of LGD for Clearwater Fish Hatchery Releases

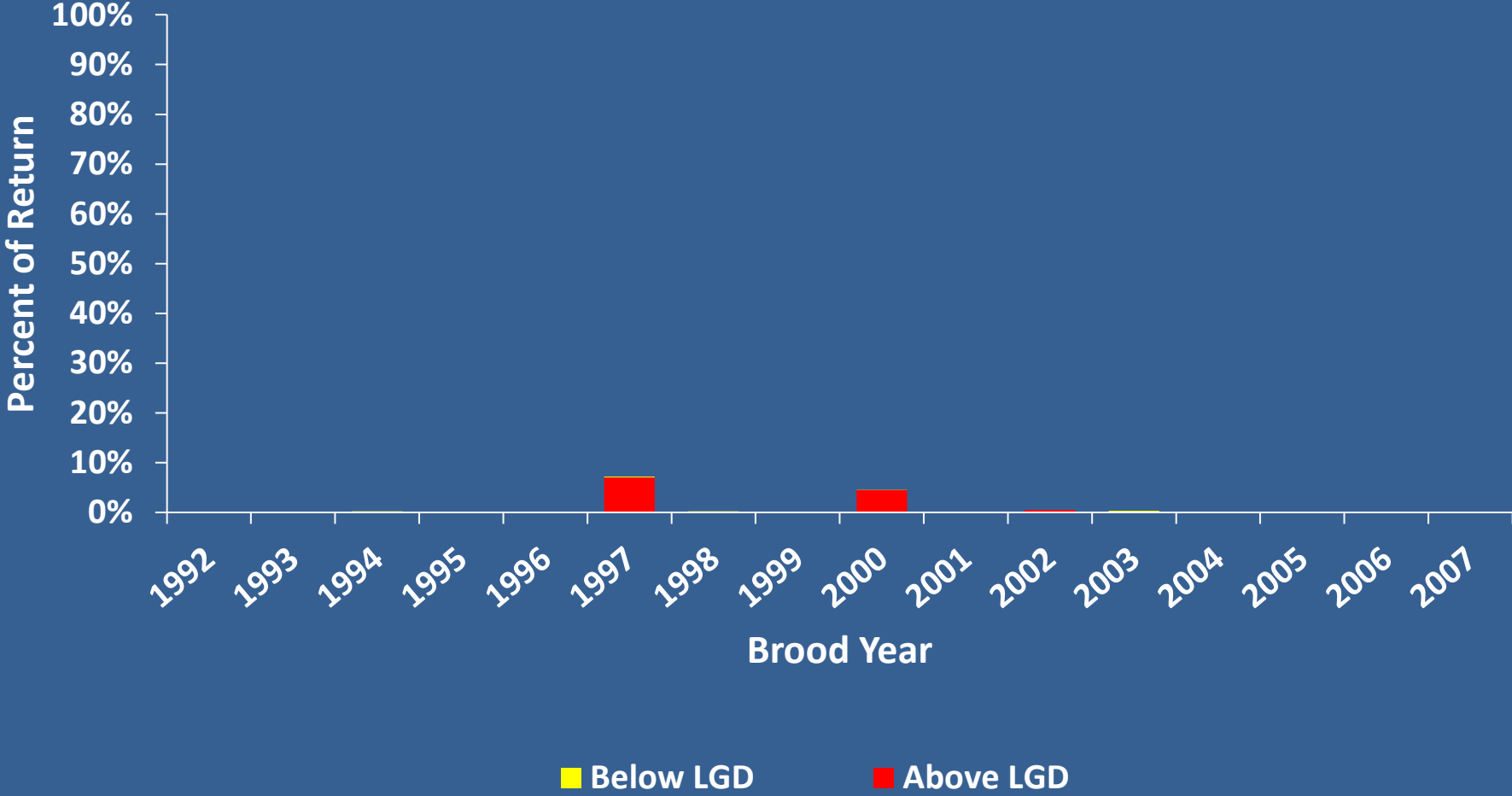


Sport Angler Effort in Clearwater River

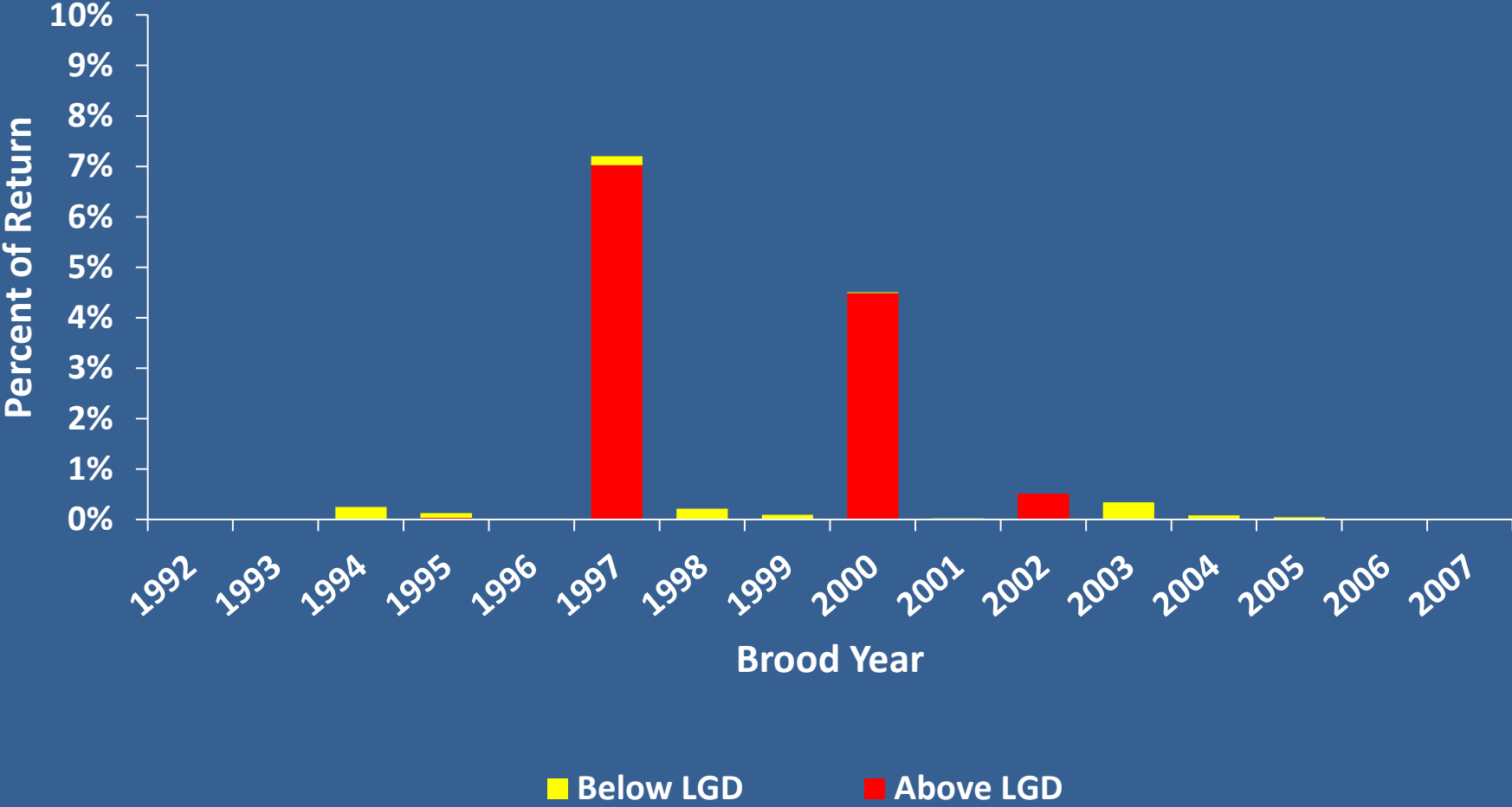
- Sport Fishing Regulations Allowed For
 - Since the 1994-95 Run
 - Season Duration ≥ 272 days
 - 227 RKM open to Angling



Minimum Stray Rate Estimate



Minimum Stray Rate Estimate



Summary of Clearwater Program

- **Fish Culture operations**
 - Produces 843,000 of the intended 1,750,000 smolts
 - Low prevalence of disease during rearing
 - High onsite survival
- **Juvenile survival to LGD**
 - Consistently >60% (Average 75%)
- **Adult survival**
 - The facility is at or near LGD adult return goal of 14,000 during last decade
 - Consistently below total return goal of 42,000

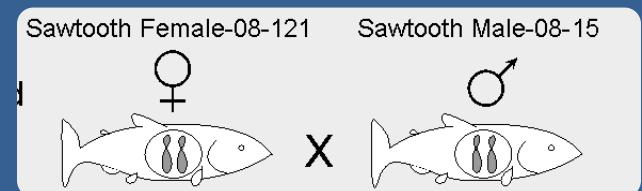
Summary of Clearwater Program

- **Harvest Benefits**
 - **Below LGD**
 - Average 600 fish annually (Range 25-2,500)
 - **Above LGD**
 - Ensures a consistent robust fishery in the SF Clearwater each year
 - Harvest averaged 6,500 adult steelhead (range 600-14,000)
 - Averaged 140,000 anglers days in the Clearwater Basin (range 23,000-220,000)
 - In combination with Dworshak NFH
 - Harvest rates during more recent years average 70% (range 50-90%)
- **Strays**
 - **Downstream of LGD**
 - Average <1%
 - **Upstream of LGD**
 - Average <1%

Moving Forward

Hatchery M&E

- Continued monitoring of hatchery production and productivity
 - Estimation methodology
 - PIT Tagging
 - Estimating adult survival
 - Migration timing and inter-dam conversion
 - In-season fisheries management
 - Straying In-stream PIT Arrays
 - Parental Based Tagging (PBT)
 - Adult accounting
 - Catch contribution
 - Run Reconstruction
 - Cooperative effort between states and tribes



Moving Forward

Natural Population M&E

Monitoring efforts for natural steelhead populations

- New work at LGD
 - GSI (Campbell presentation to follow)
 - PIT tags and in stream arrays (Vogel presentation to follow)
- Population specific
 - Fish Cr.
 - Potlatch River
- Newly implemented
 - Lolo Cr. (NPT)
 - SF Clearwater (NPT & IDFG)
- Run Reconstruction
 - Cooperative effort between states and tribes

Moving Forward

Management

- **Continue to develop a locally adapted stock for the SF Clearwater River**
 - Further reduce potential impacts to natural populations
- **Construct new adult collection facility in SF Clearwater River**
 - Completely phasing out DWOR releases in SF Clearwater R. with locally adapted stock is not feasible without this weir
- **Explore options to increase smolts production to achieve the programs intended targeted smolt production level**

Moving Forward Management

- Continue to maintain conservation management areas for wild populations
- Hatchery program will continue to focus on harvest mitigation
- Continued coordination between state, tribal, and federal managers
- Continue to incorporate new information into the decision process

Questions?

