ODFW-WDFW Wallowa Stock Steelhead Reciprocal Study

Using Science to Optimize Hatchery Programs

ODFW M&E and O&M
WDFW M&E and O&M
Abernathy Fish Technology Center

Funded by the USFWS - Lower Snake River Compensation Plan

LSRCP ISRP Steelhead Program Review 1/24/2025

Wallowa Stock Steelhead Origins

- Developed for Harvest Mitigation under the LSRCP for losses due to the four Lower Snake River Dams
- Late 70's – Adults trapped at Little Goose Dam (consisted of both A and B run fish)
- Adults transported to Wallowa Hatchery – became "Wallowa Stock". Releases in the Grande Ronde by ODFW and WDFW [1982]
- WDFW received eggs from ODFW until 1992

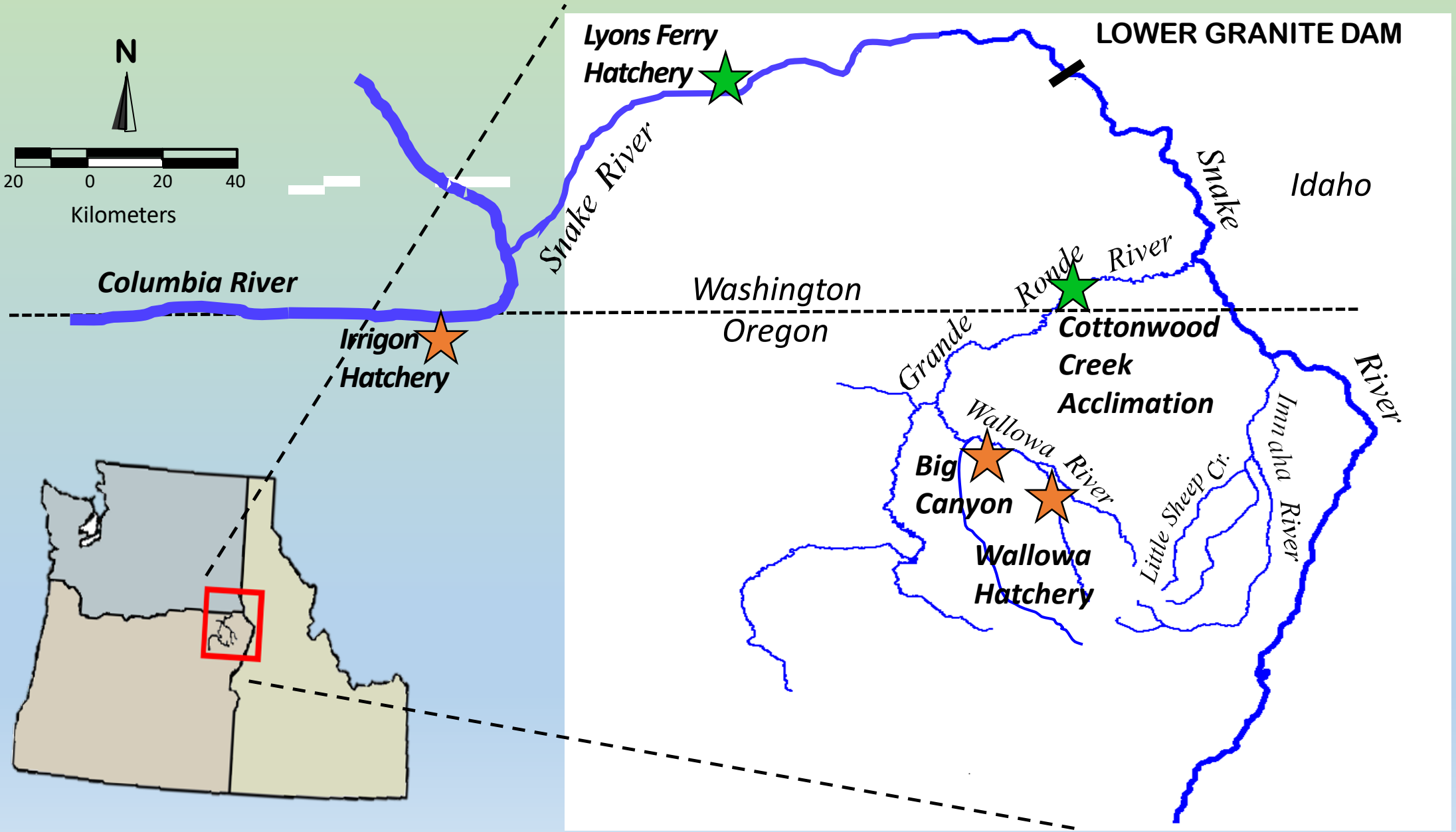
(trap built on Cottonwood Creek)

- WDFW will still occasionally get eggs from

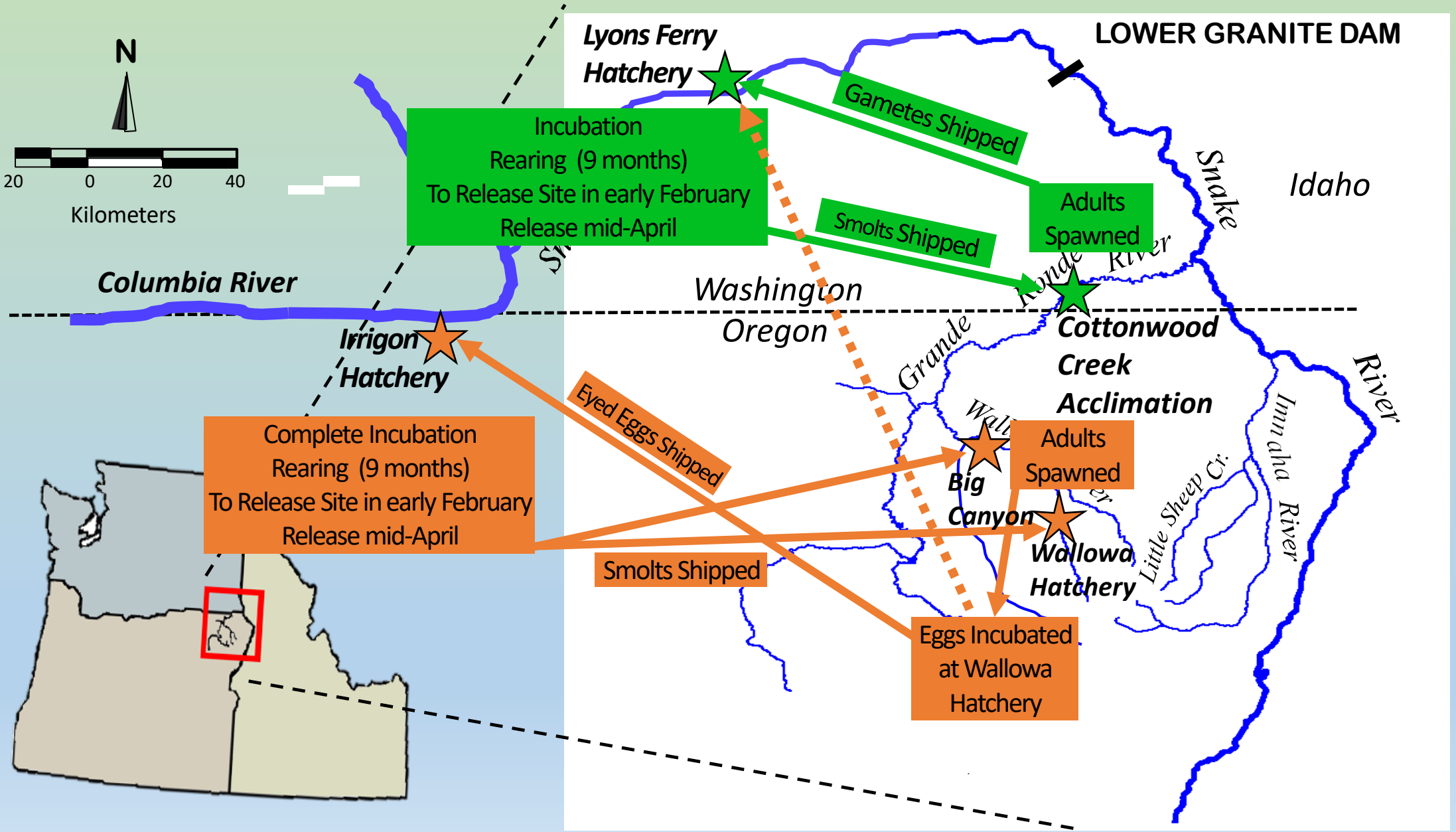
ODFW to backfill broodstock shortages

Cottonwood Creek Adult Trap

Wallowa Steelhead Stock Hatchery Facilities



Grande Ronde Basin Hatchery Facilities



Washington Dept. of Fish and Wildlife Facilities

Lyons Ferry Hatchery

100% Well Water – Constant 11 °C

Max Density ~ 1.0 kg/m³

Cottonwood Acclimation Pond

River Water – Seasonal Temps

Max Density ~ 2.0 kg/m³

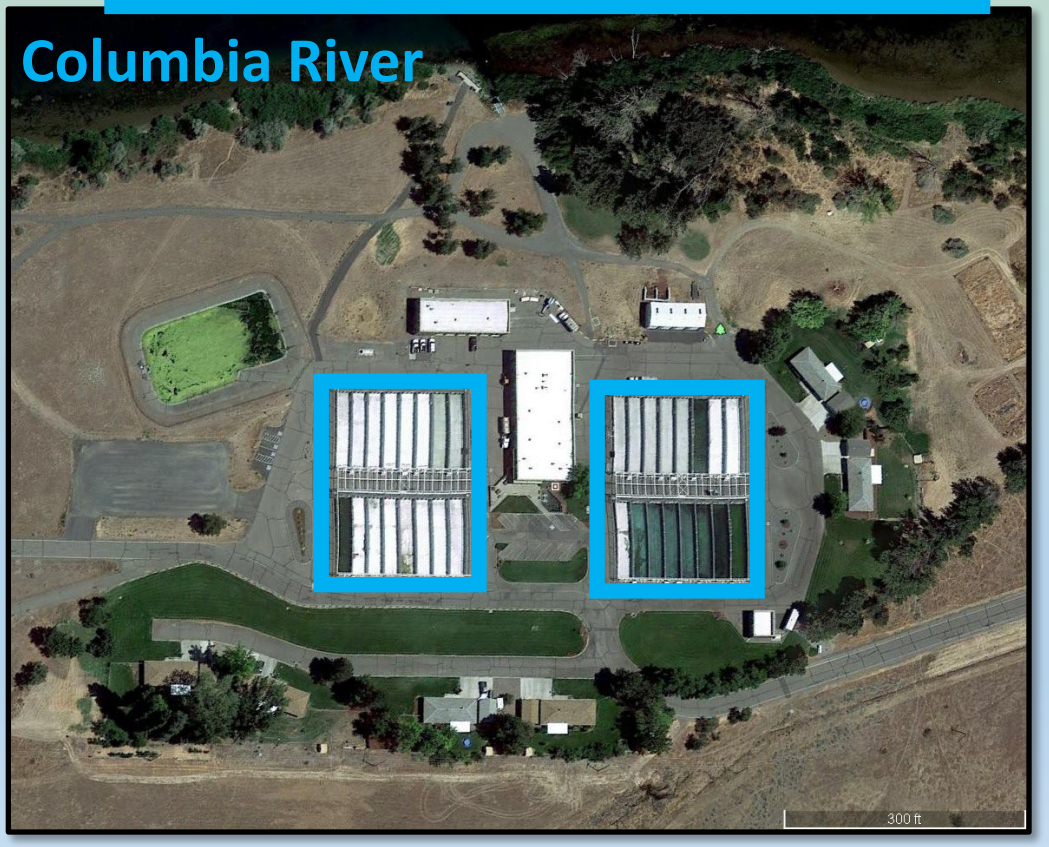
Images from Google Earth

Oregon Dept. of Fish and Wildlife Facilities

Irrigon Fish Hatchery

100% Well Water – Variable 10-15 °C

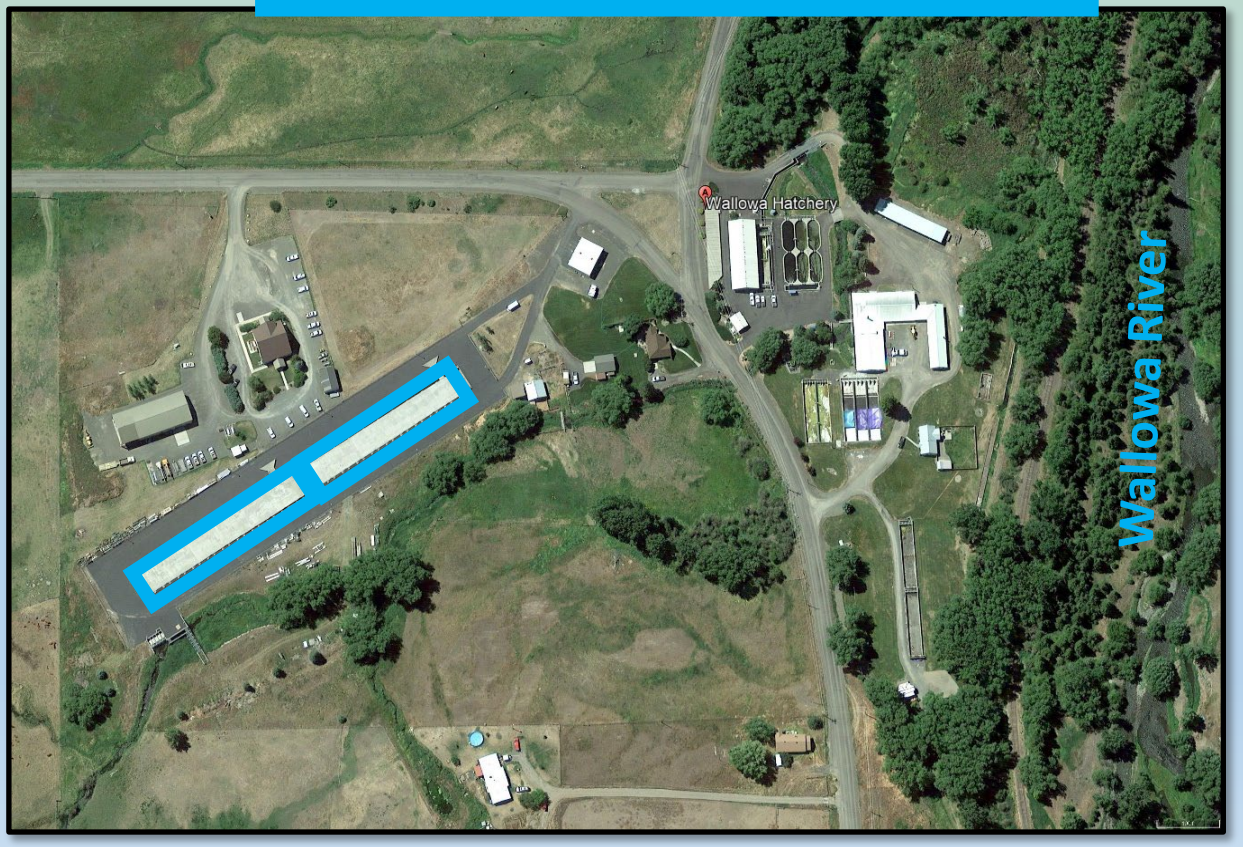
Max Density ~ 19.5 kg/m³



Wallowa Fish Hatchery

River Water – Seasonal Temps

Max Density ~ 19.3 kg/m³



Images from Google Earth

What initiated a study?

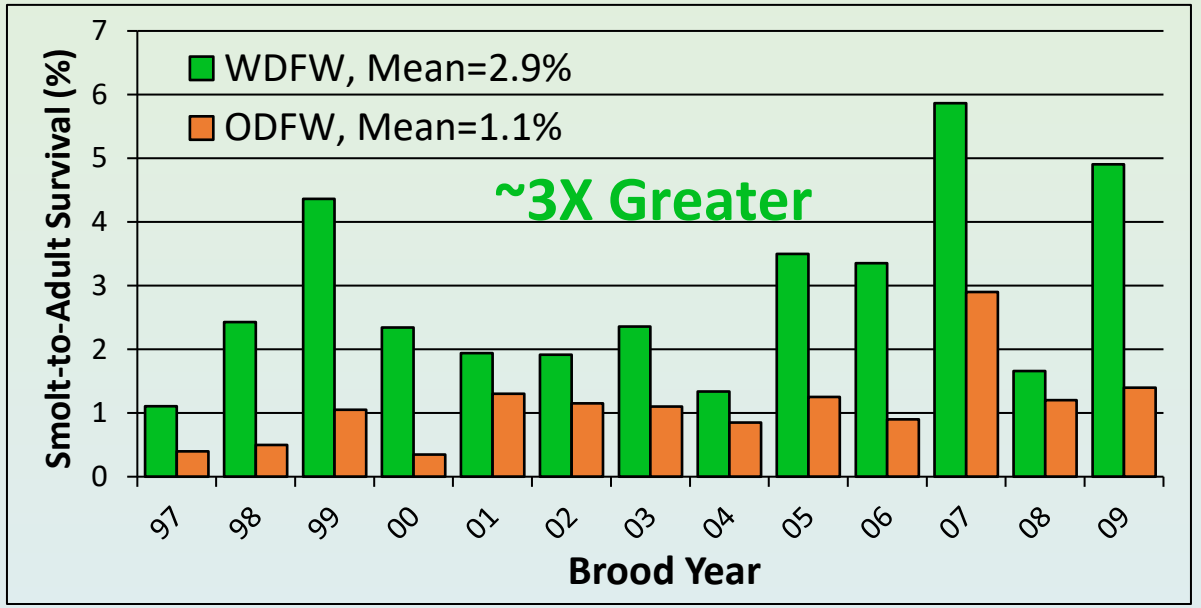
Summer Steelhead Program Review

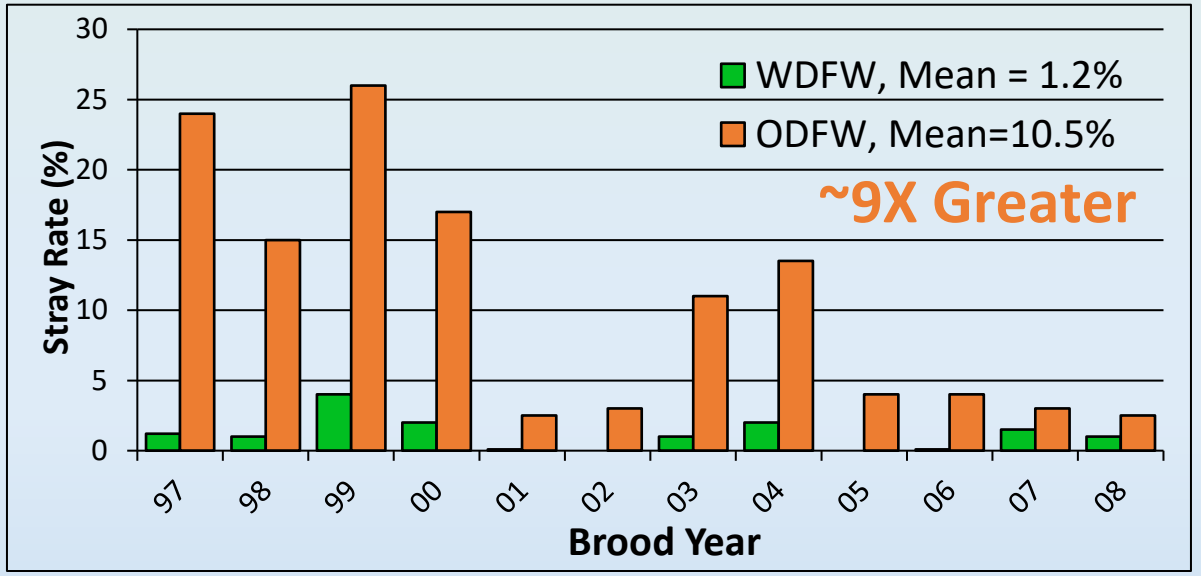
Lower Snake River Compensation Plan

June 20, 21, 2012

Clarkston, WA

Wallowa Stock Steelhead Performance





Why do a study?

Not a direct comparison

release locations and travel distance, rearing environments (densities, water temperatures), size at release

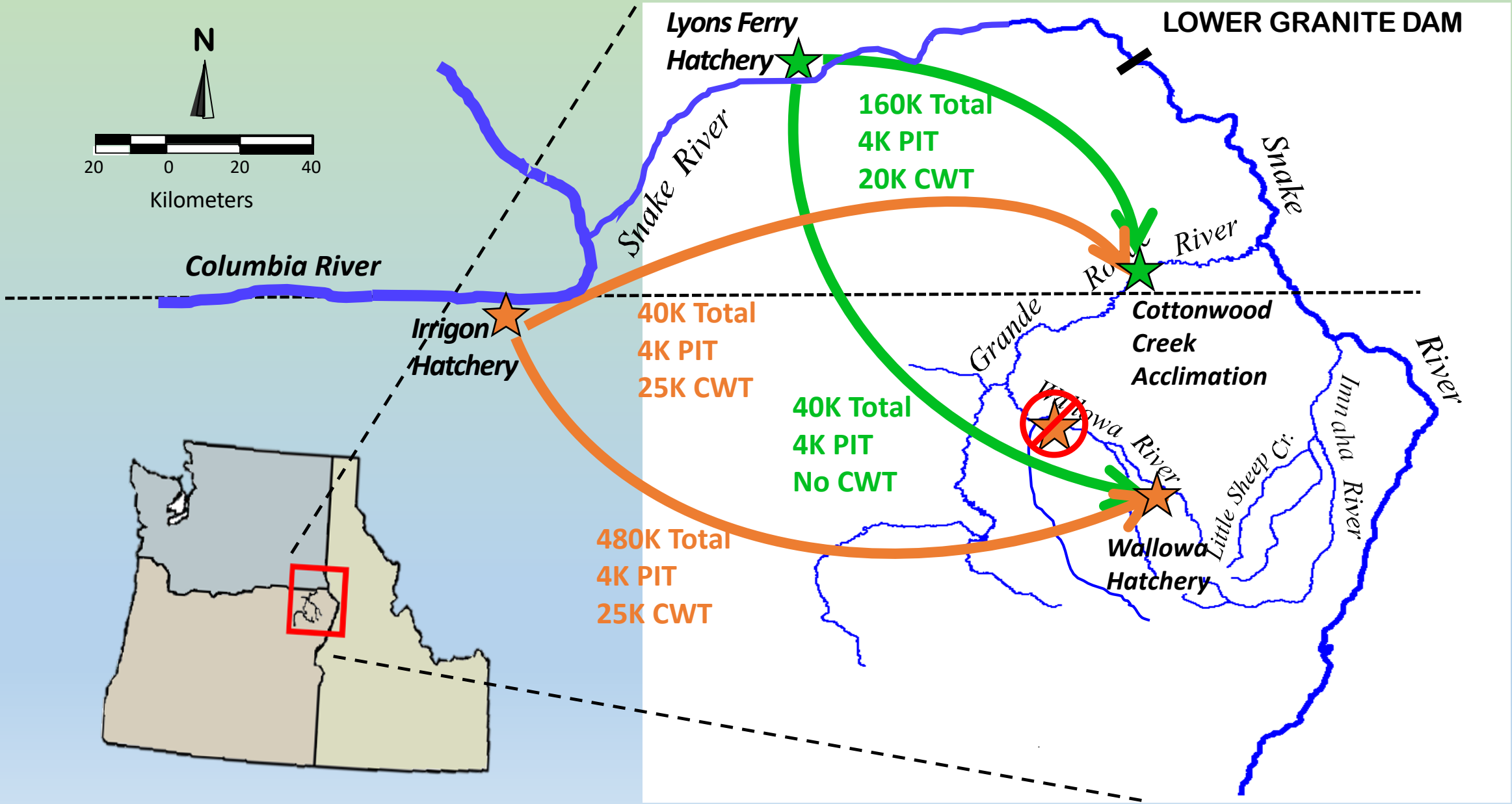
Cost? Cheap!

4,000 additional PIT Tags were needed

Would we use the science and implement results?

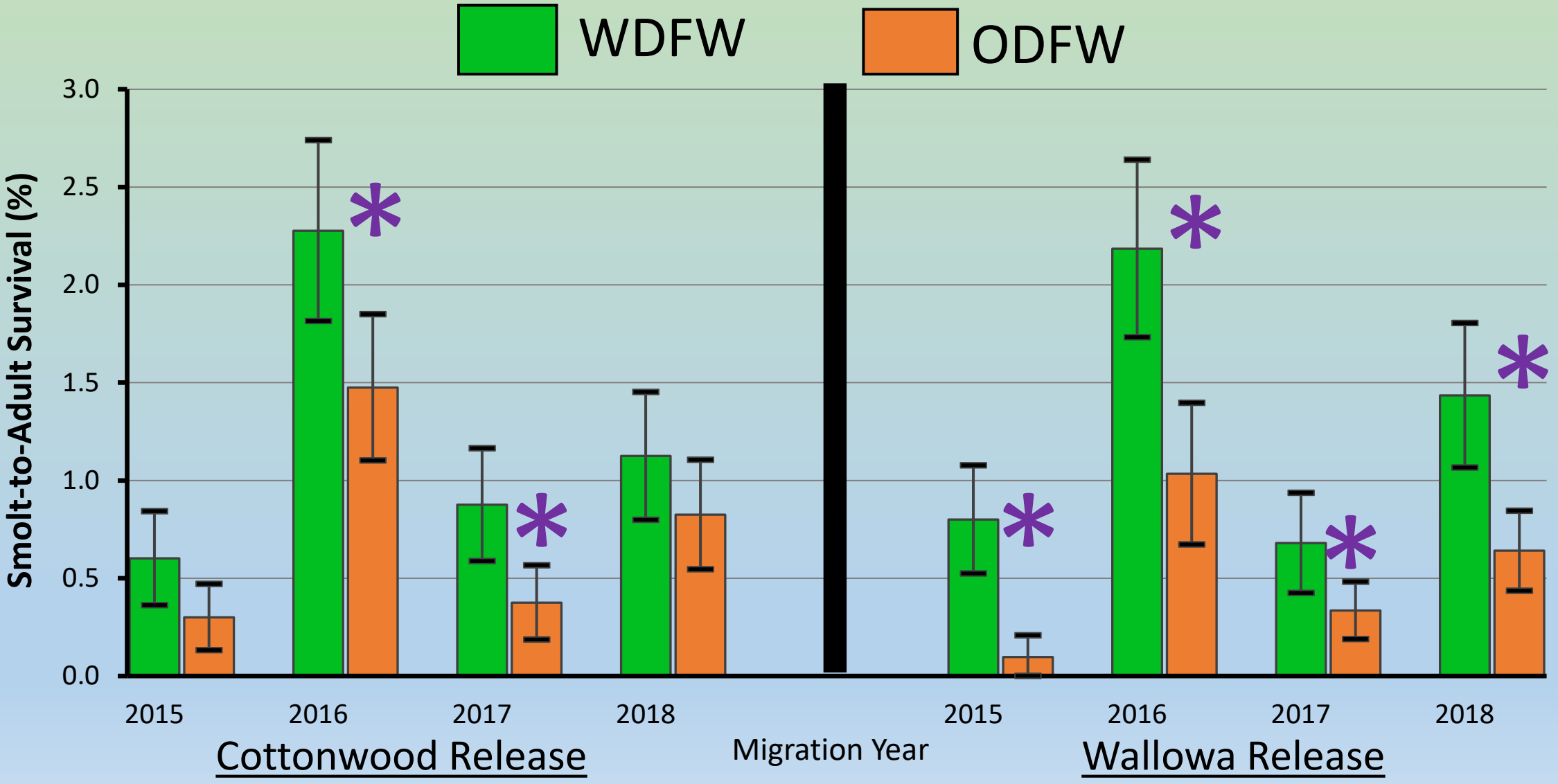
Competing programs for rearing space, Different Agency Priorities

Reciprocal Study Design 2015-2018 Release Years

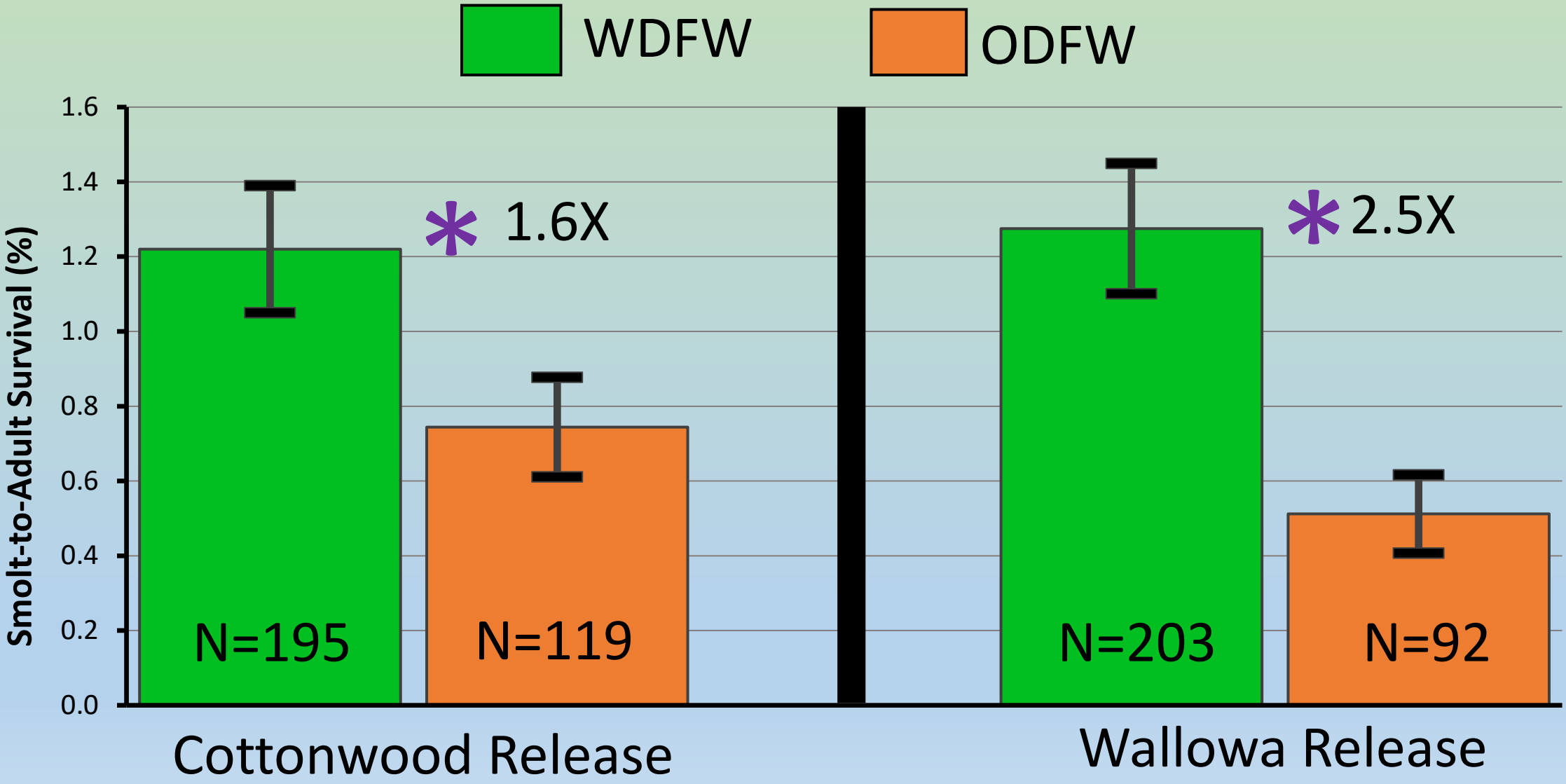


Study Metric		ODFW	Neutral	WDFW	Comment
Growth Rates during Rearing			XXXX		
Smolt Characteristics					
	Length	XXXX			ODFW generally greater in length
	Weight				
	K-Factor			XXXX	WDFW lower K-Factor – “more smolty”
	Lipid Index (Dry Weight)		XXXX		
	ATPase		XXXX		
Survival to Lower Granite Dam		XXXX			ODFW generally survived better to LGR
Migration Timing and Rate (mainstem dams)			XXXX		
Predation Index (Avian Colony PIT Recoveries)				XXXX	WDFW slightly fewer PIT Tag Recoveries
Adult Return Timing @ Bonneville			XXXX		
Adult Age Composition			XXXX		WDFW slightly more 1-salt returns
Adult Size (Length) Composition			XXXX		
Stray Rates			**XXXX**		**~1% for both groups**
Smolt-to-Adult Return Rates				**XXXX**	**Significantly greater**

Smolt-to-Adult Survival to Bonneville Dam – PIT Tags



Smolt-to-Adult Survival to Bonneville Dam – PIT Pooled Years



Results – Face Value

- Stray rates ~1% overall (all groups) – Not the issue it was
- Overall 2:1 Survival Advantage if reared at Lyons Ferry
- Could reduce ODFW program by 400,000 smolts, and theoretically get the same number of adults back
- Cost Savings (feed, water pumping, marking/tagging, etc..)

Actions

- WDFW developed 10 options, ODFW another 8
- Some assumed reciprocal study results, some not, others focused on modifying other existing programs
- WDFW/ODFW narrowed down to 5 options (Agency Priorities)
- Every preferred option had impacts to other salmon/steelhead programs at Lyons Ferry and/or Irrigon
  - ***Quickly broadens the scope of co-manager involvement***

Current Outcomes

- **Wallowa stock steelhead changes**
  - **Lyons Ferry** – No planned changes
    - 50K-250K possible if desired by ODFW (dependent on WDFW steelhead program changes)
  - **Irrigon** – implementing changes to address rearing densities

Other Program Changes (Continuing Discussions)

- ***Changes*** to Snake River fall Chinook production for release year 2025
- ***Potential*** changes that could increase spring Chinook production