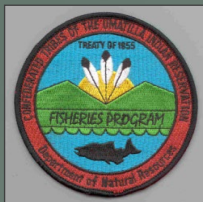


WDFW Summer Steelhead Program Reviews

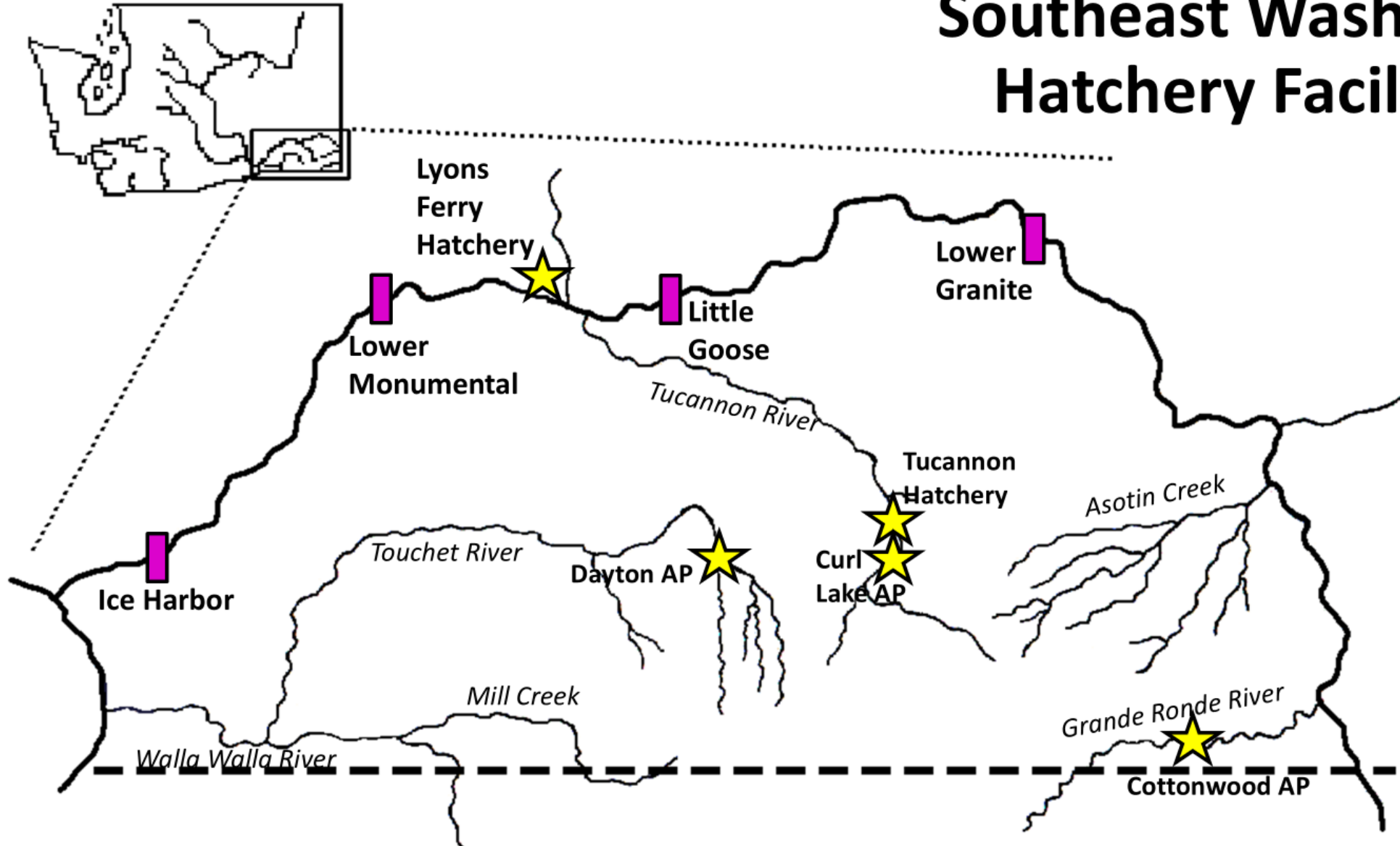


Touchet and Tucannon Integrated Stocks
Michael Herr-WDFW

1/23/2025



Southeast Washington Hatchery Facilities



HOR_{TOU} Broodstock History

- Conservation stock, not marked for retention
- Original brood fish collected at DAT, still collected there
- Only supplementation, no harvest

HOR_{TUC} Broodstock History

- Conservation stock, originally not marked for retention
- Original brood fish collected from H/L and temporary weirs, TFH
- Harvest Mitigation began after LFH stock

Touchet Stock

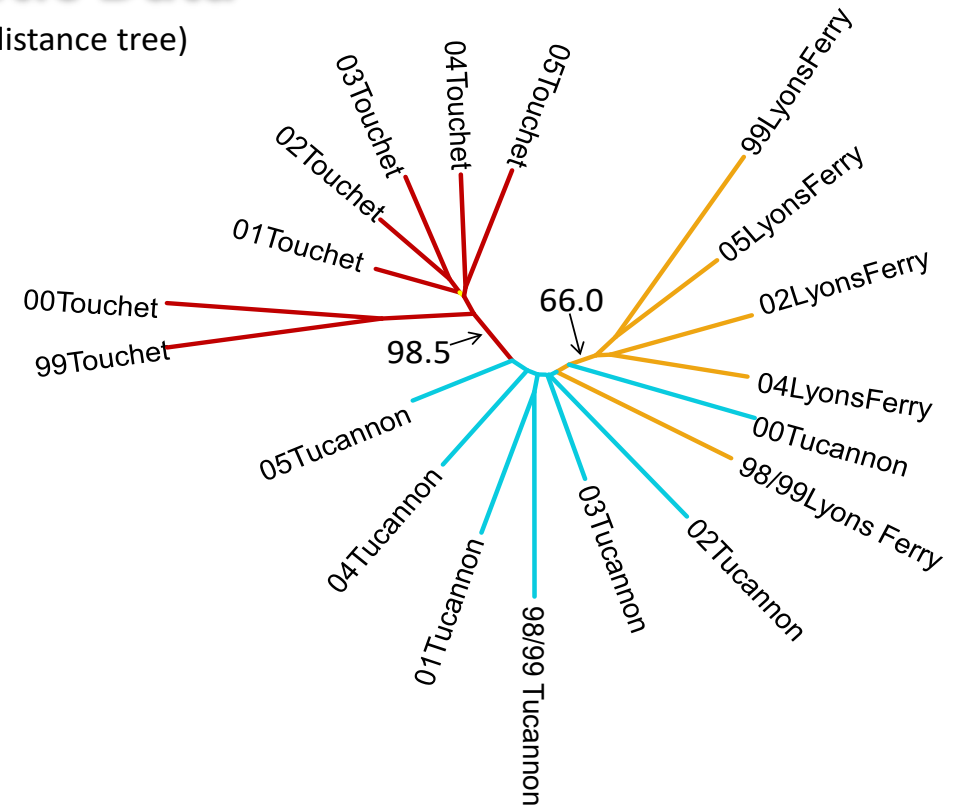


Tucannon Stock



Genetic Data

(Chord-distance tree)



HOR_{TOU} Stock

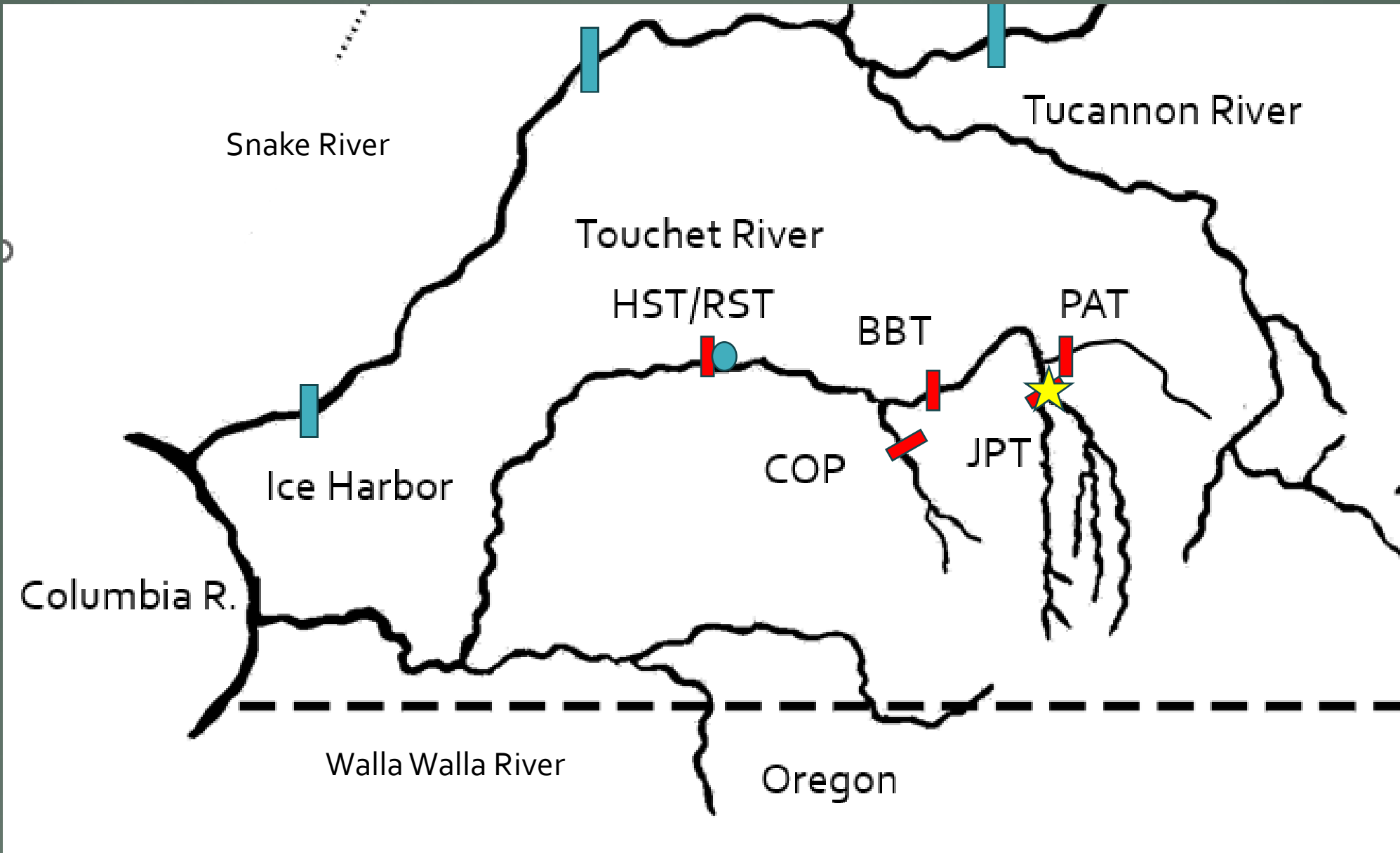


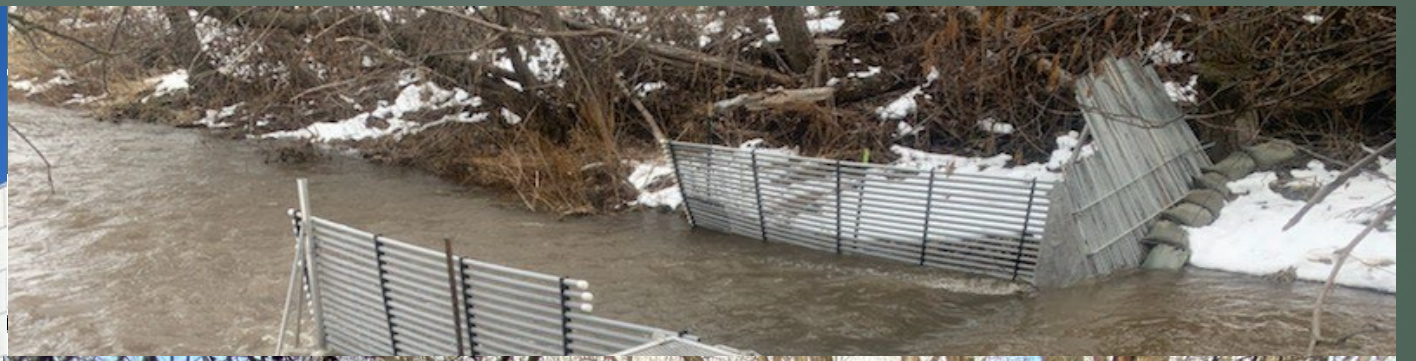
HOR_{TOU} Program Management Goals



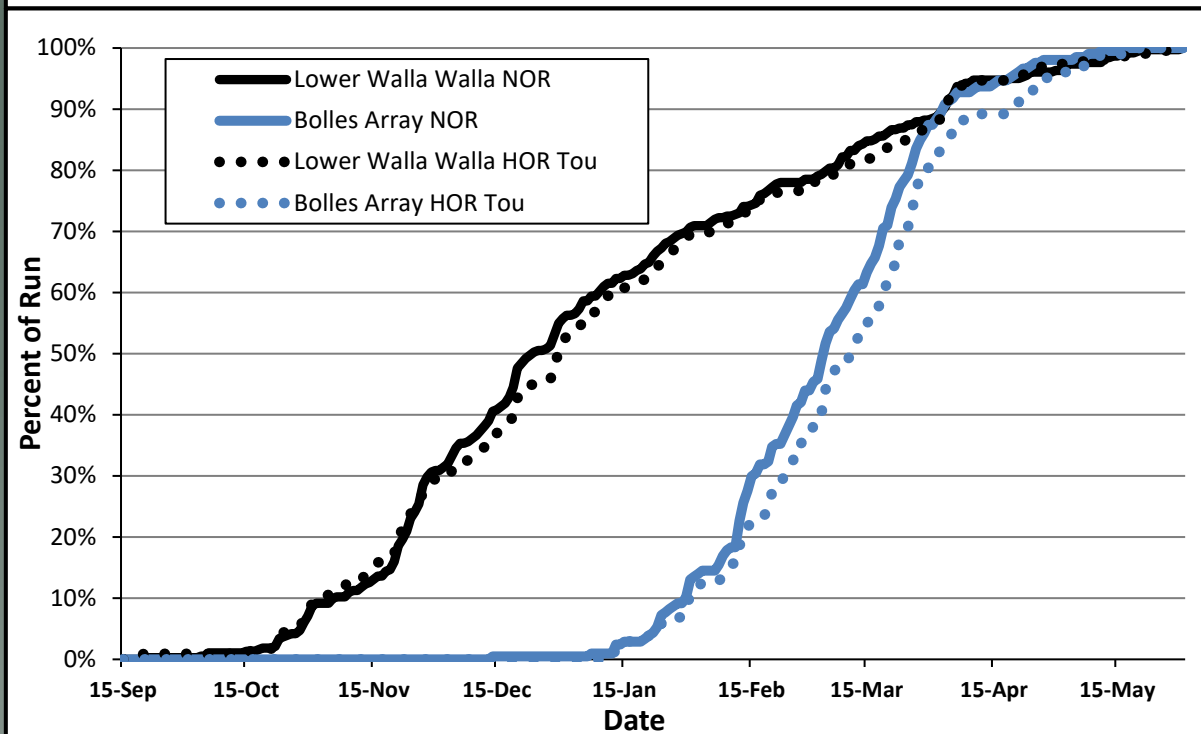
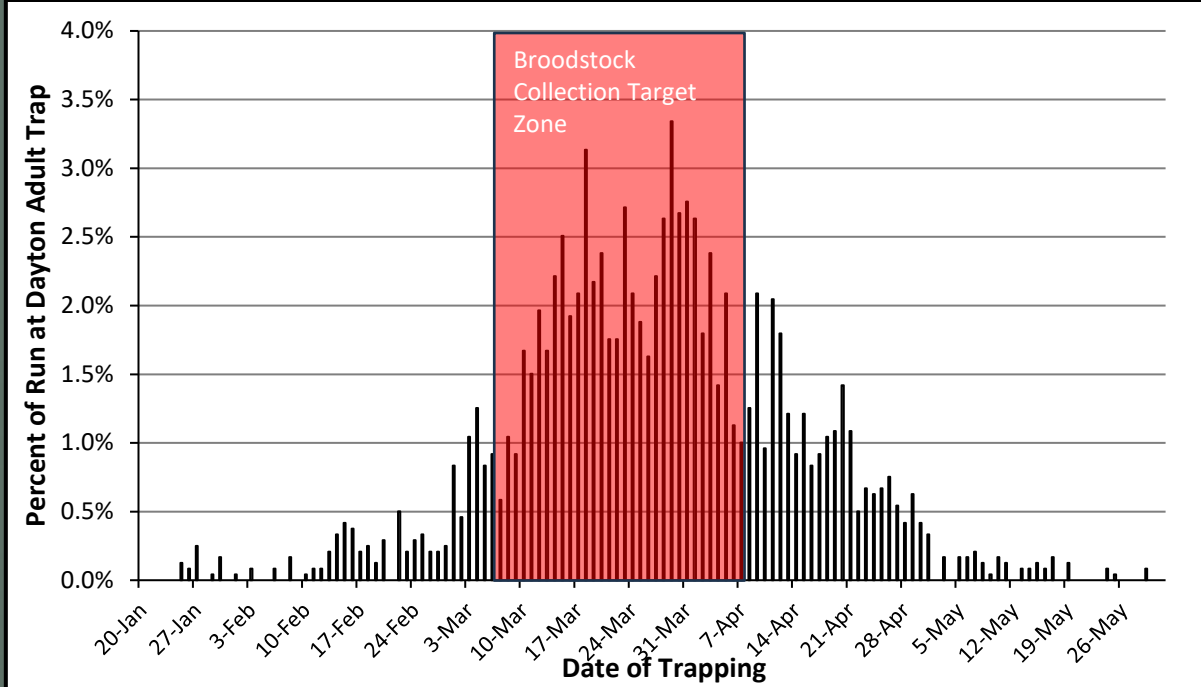
- Integrated stock, recover depressed NOR_{TOU}
- Monitor status and trends of NOR_{TOU} steelhead population
- Maintain ESA compliance and WDFW policies to protect and recover natural stocks

BPA Contract #2000-039-01

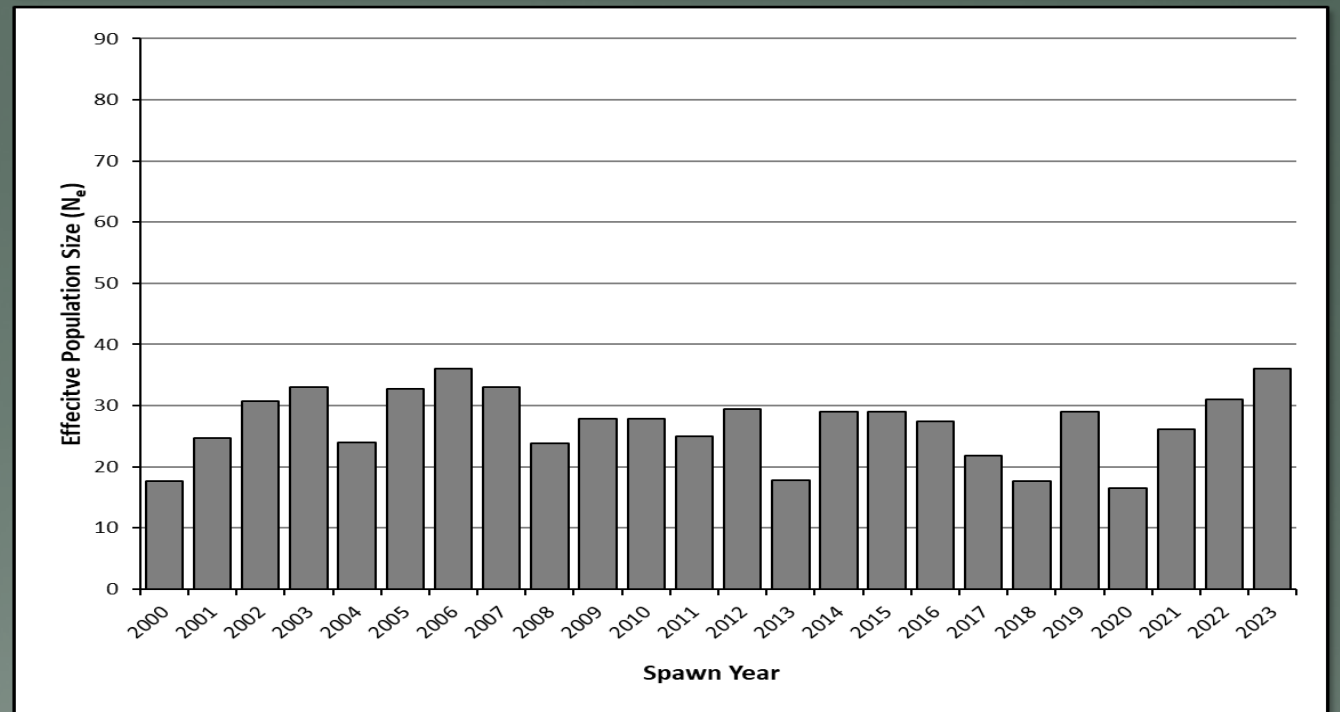
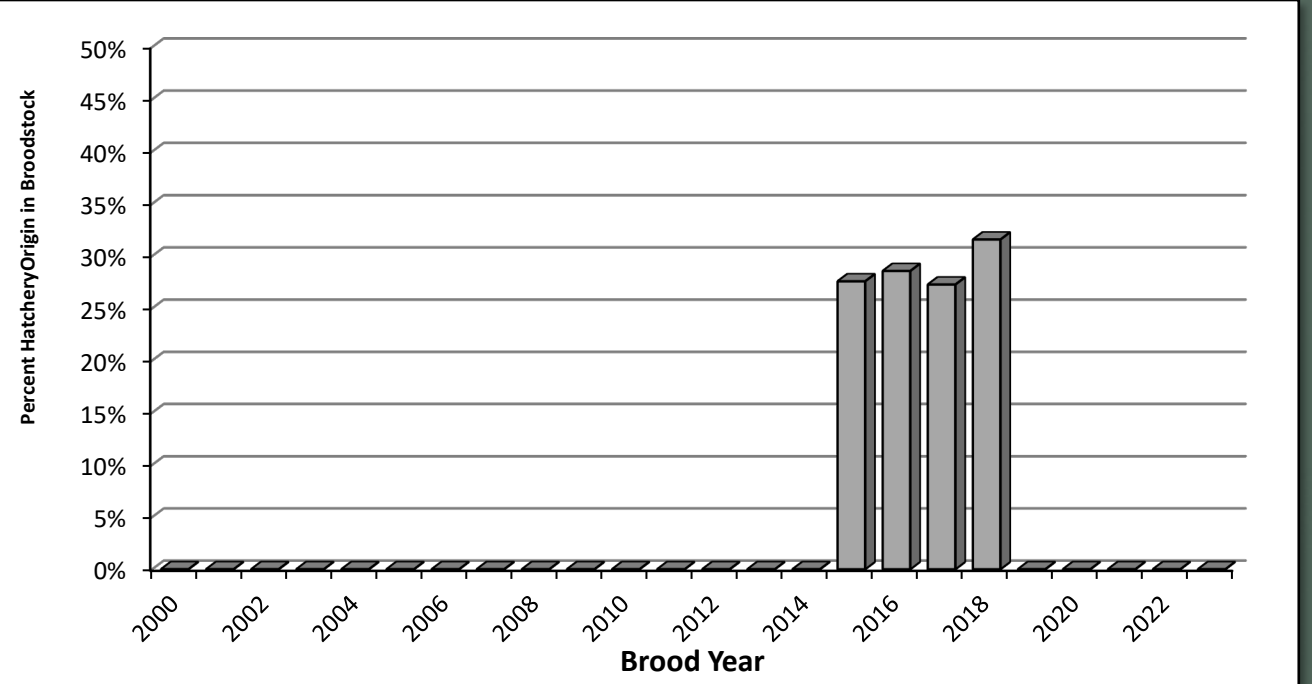




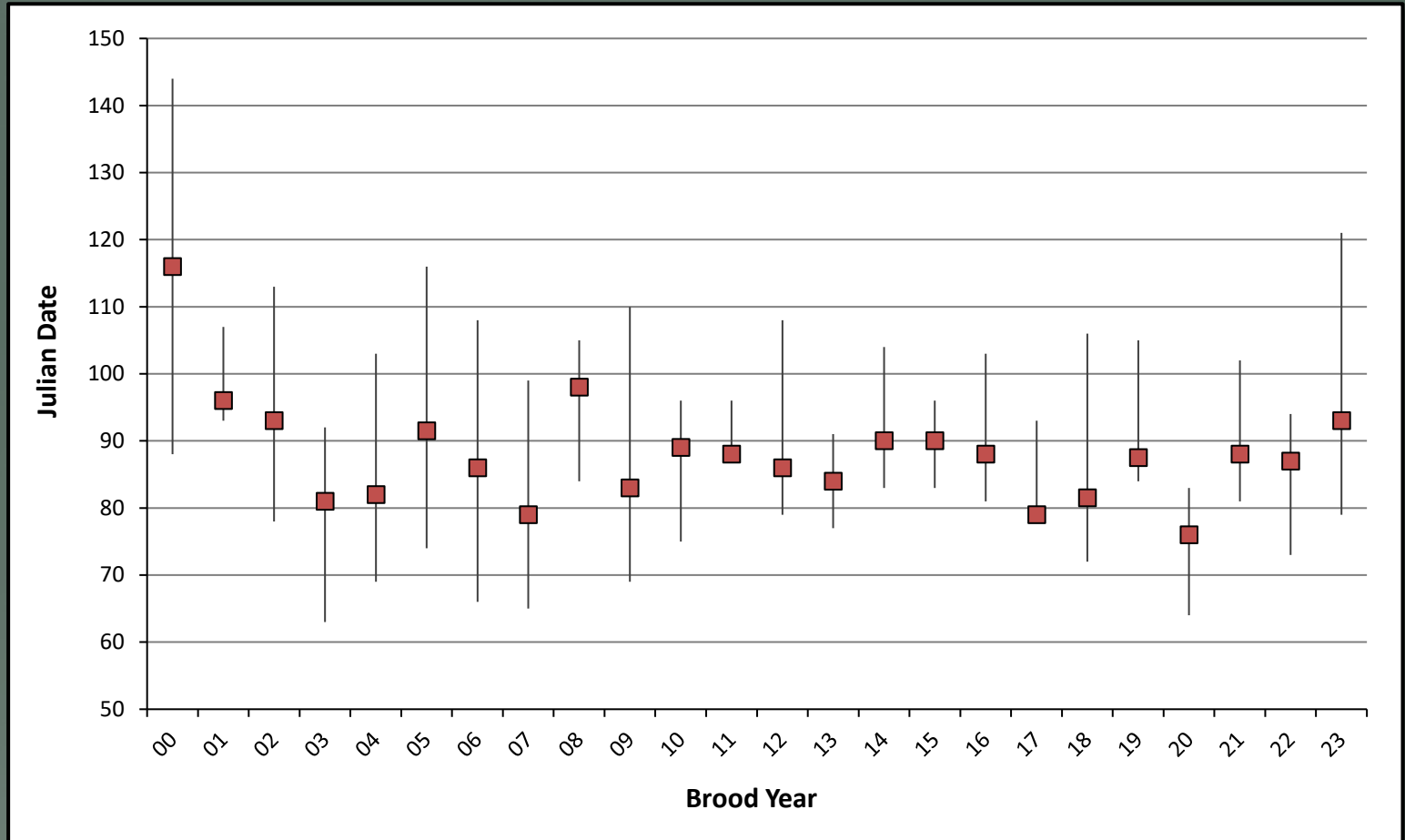
HOR_{TOU} brood stock



HOR_{TOU} broodstock

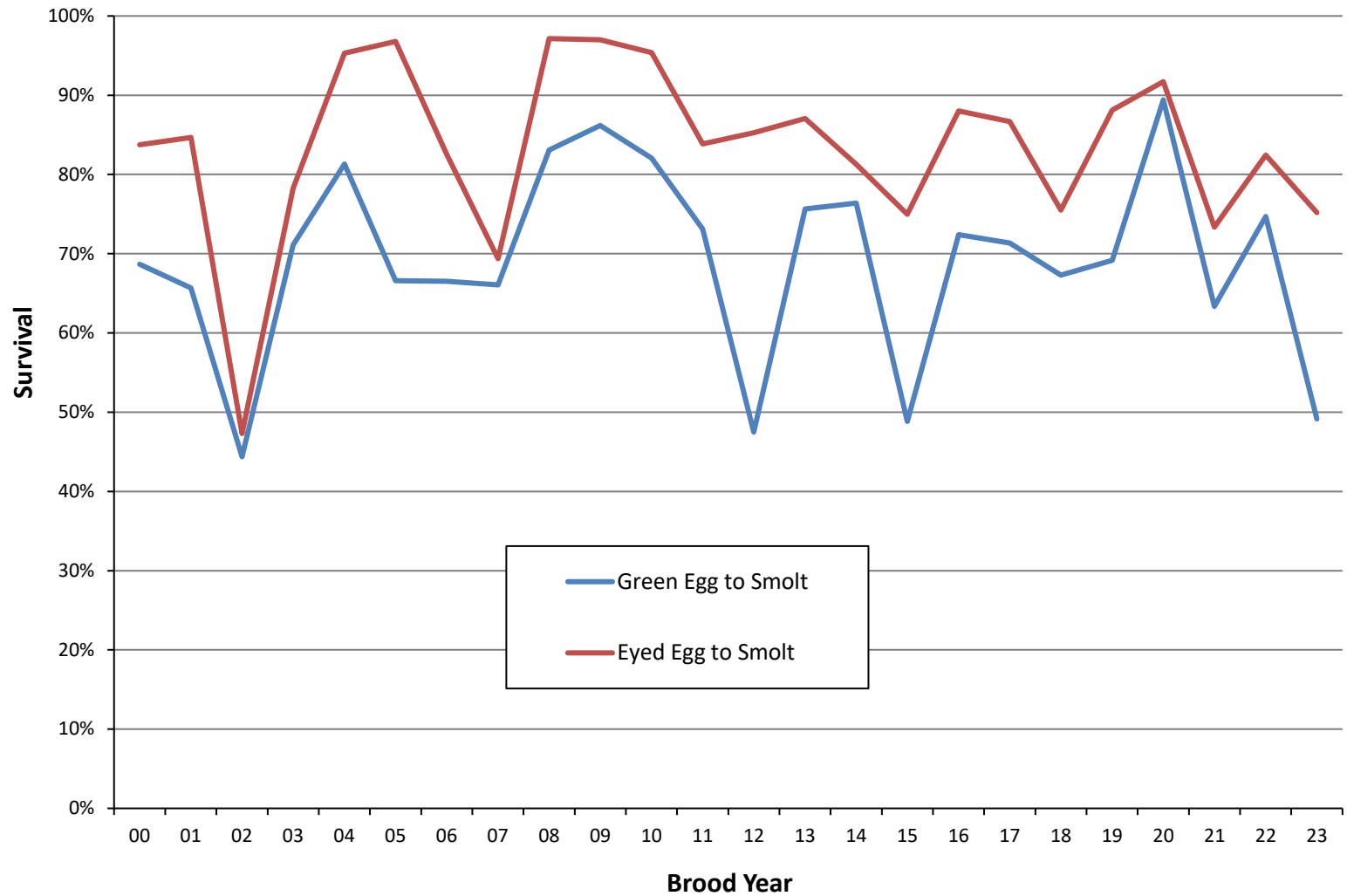


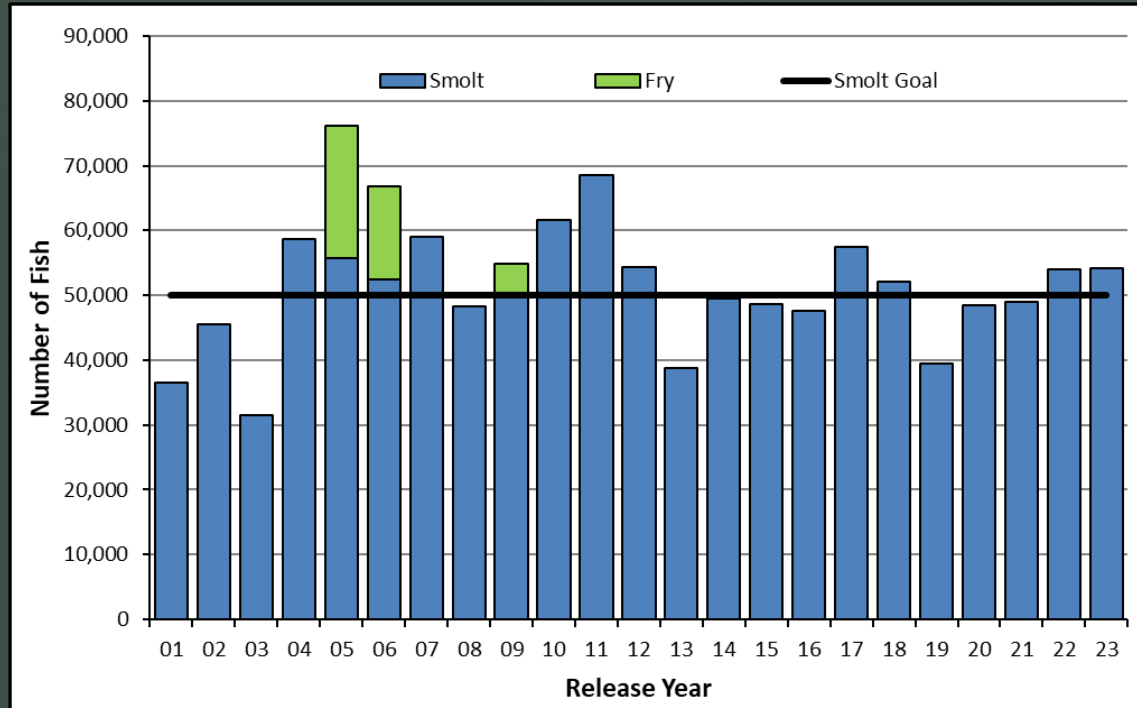
HOR_{TOU} broodstock



In-hatchery performance:

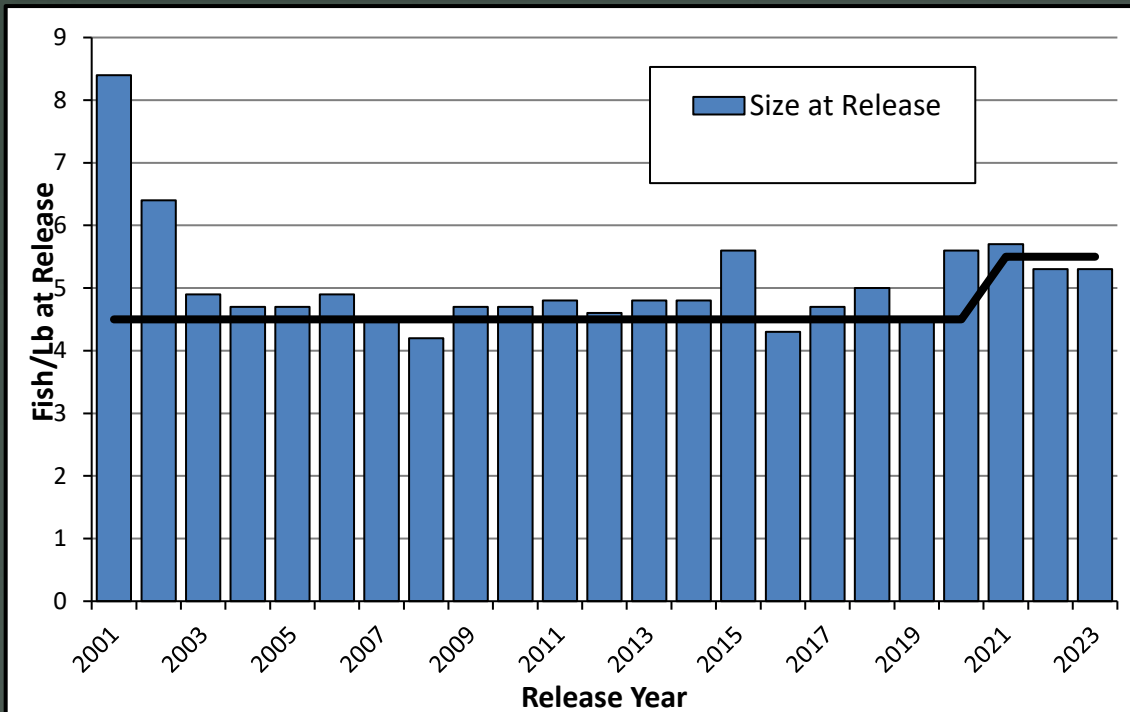
- Low PSM
- Green egg-smolt 68% avg
- Disease issues minimal:
 - IHN
 - Bacterial coldwater disease





Smolt release goals:

- 50K
- Fry releases on high fecundity years
- All CWT, Adipose intact
- 5K PIT tags/year

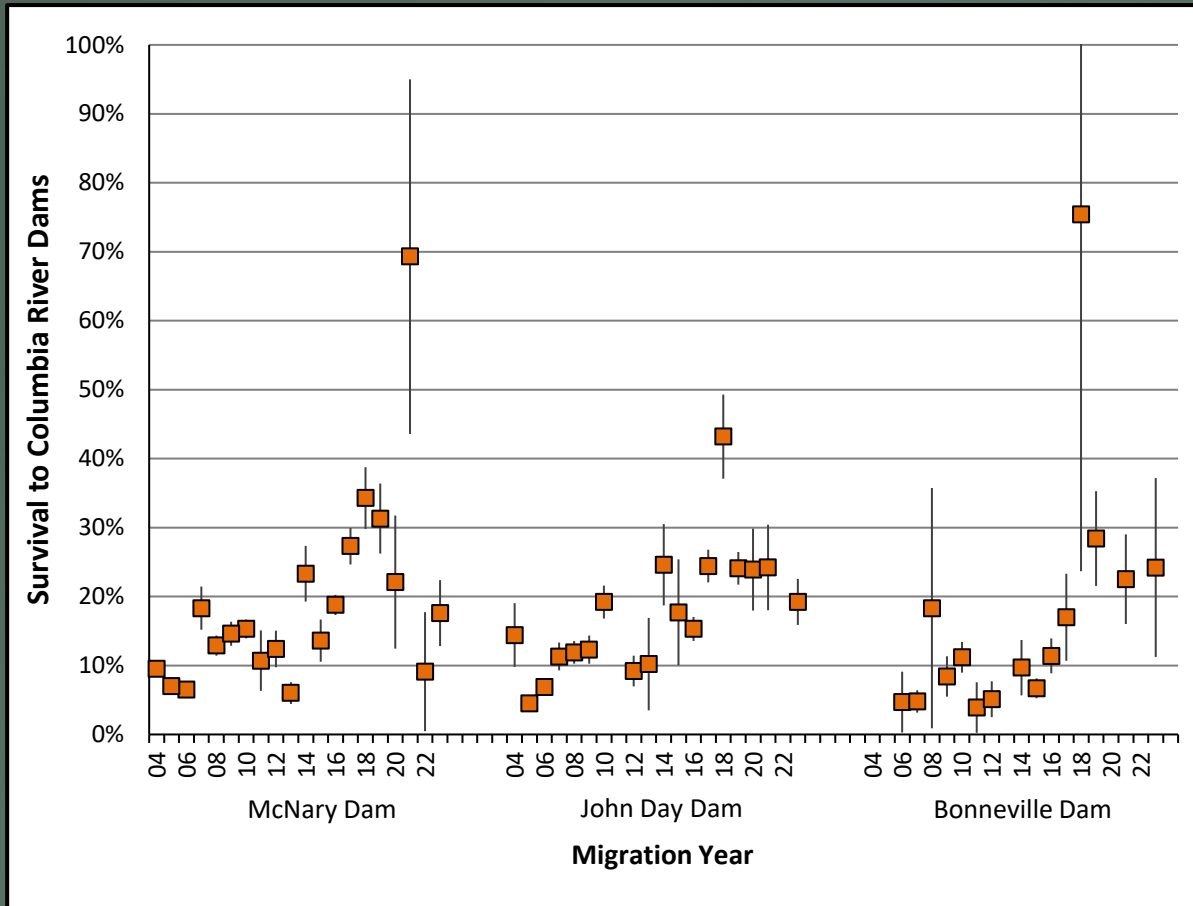


Size at release goals:

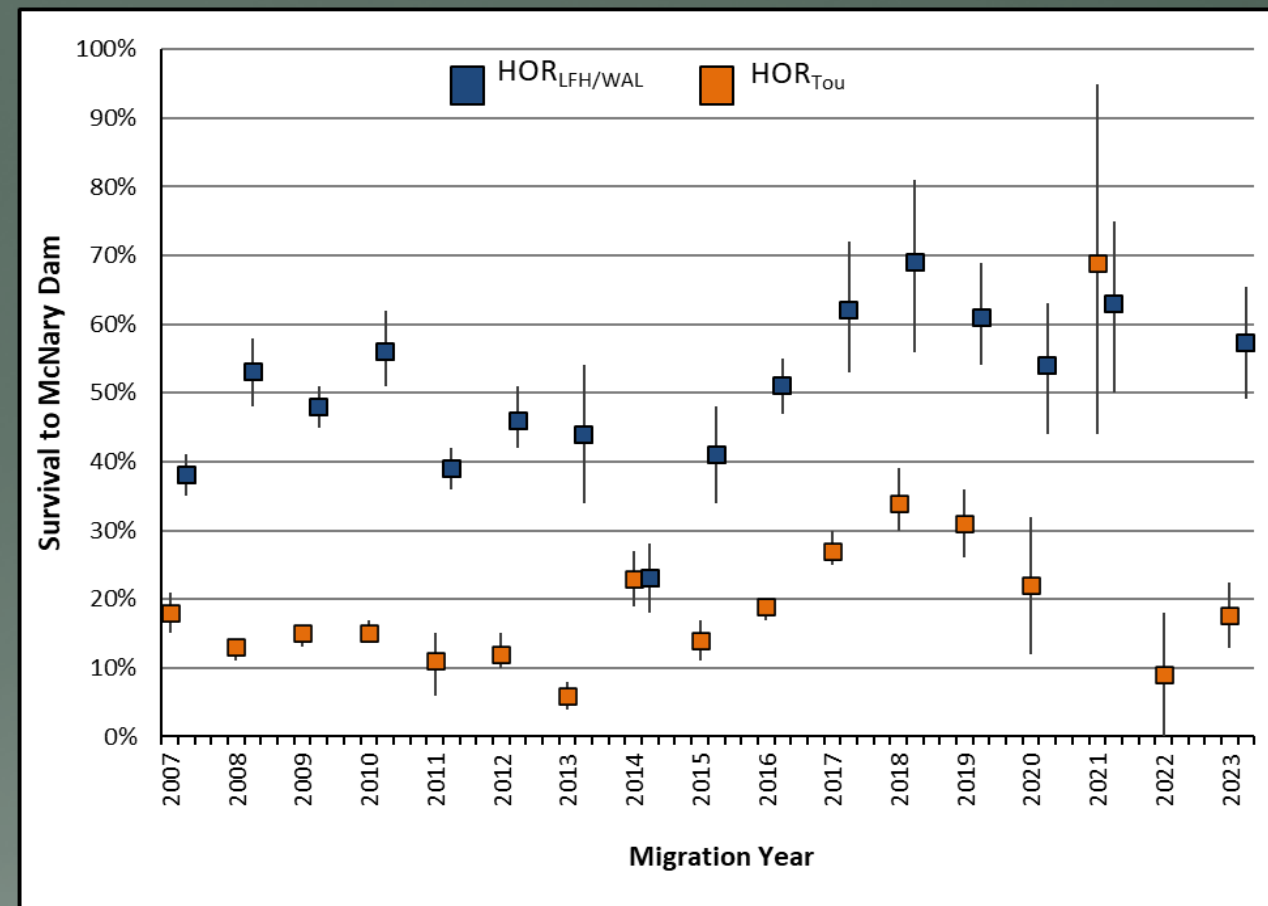
- 4.5 fpp like other LFH programs
- Increased to 5.5 in 2021

Juvenile outmigration survival

HOR_{TOU} Survival Columbia R. 5k PIT



HOR_{TOU} vs HOR_{WAL}

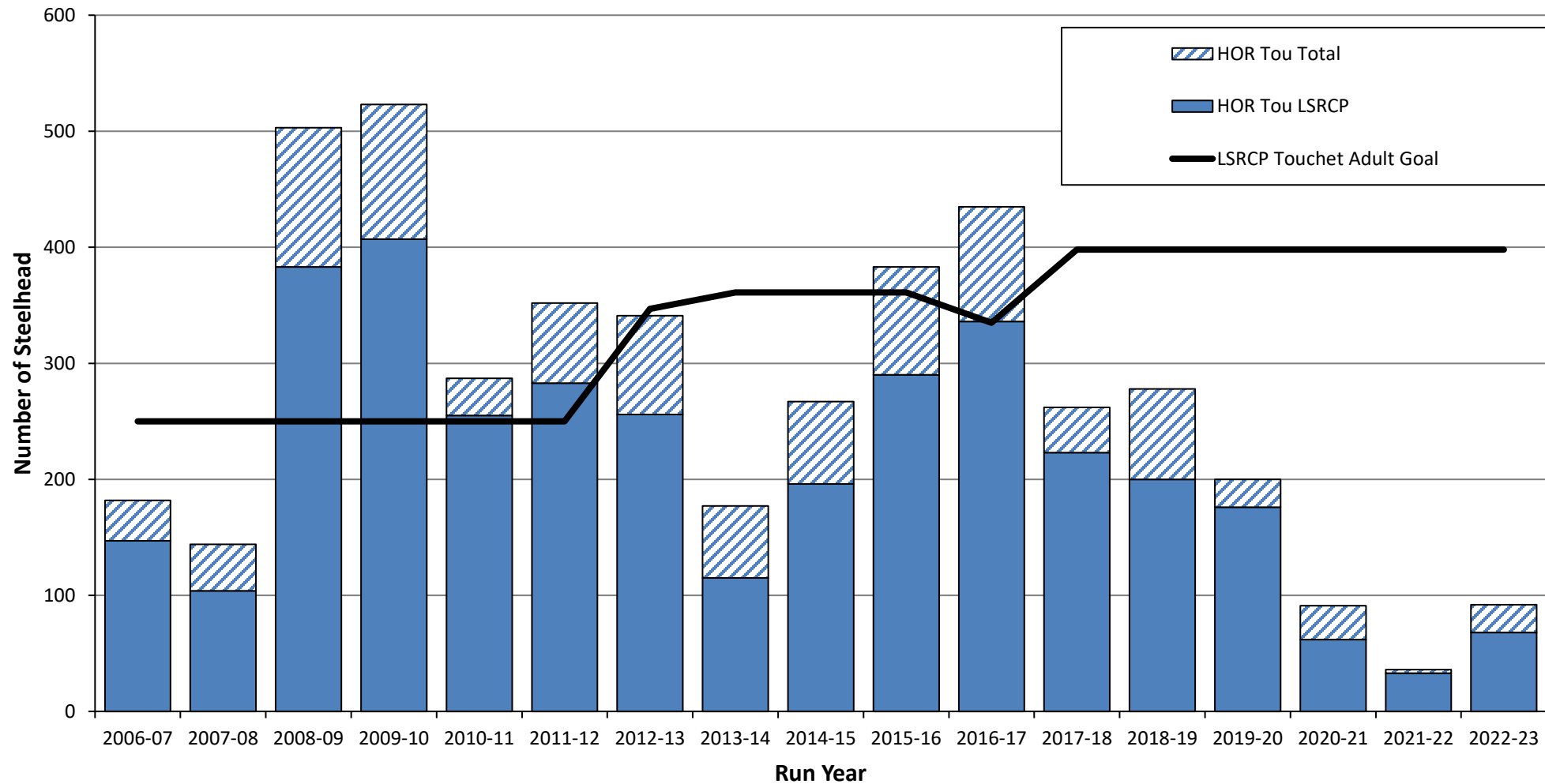


Residualism Monitoring

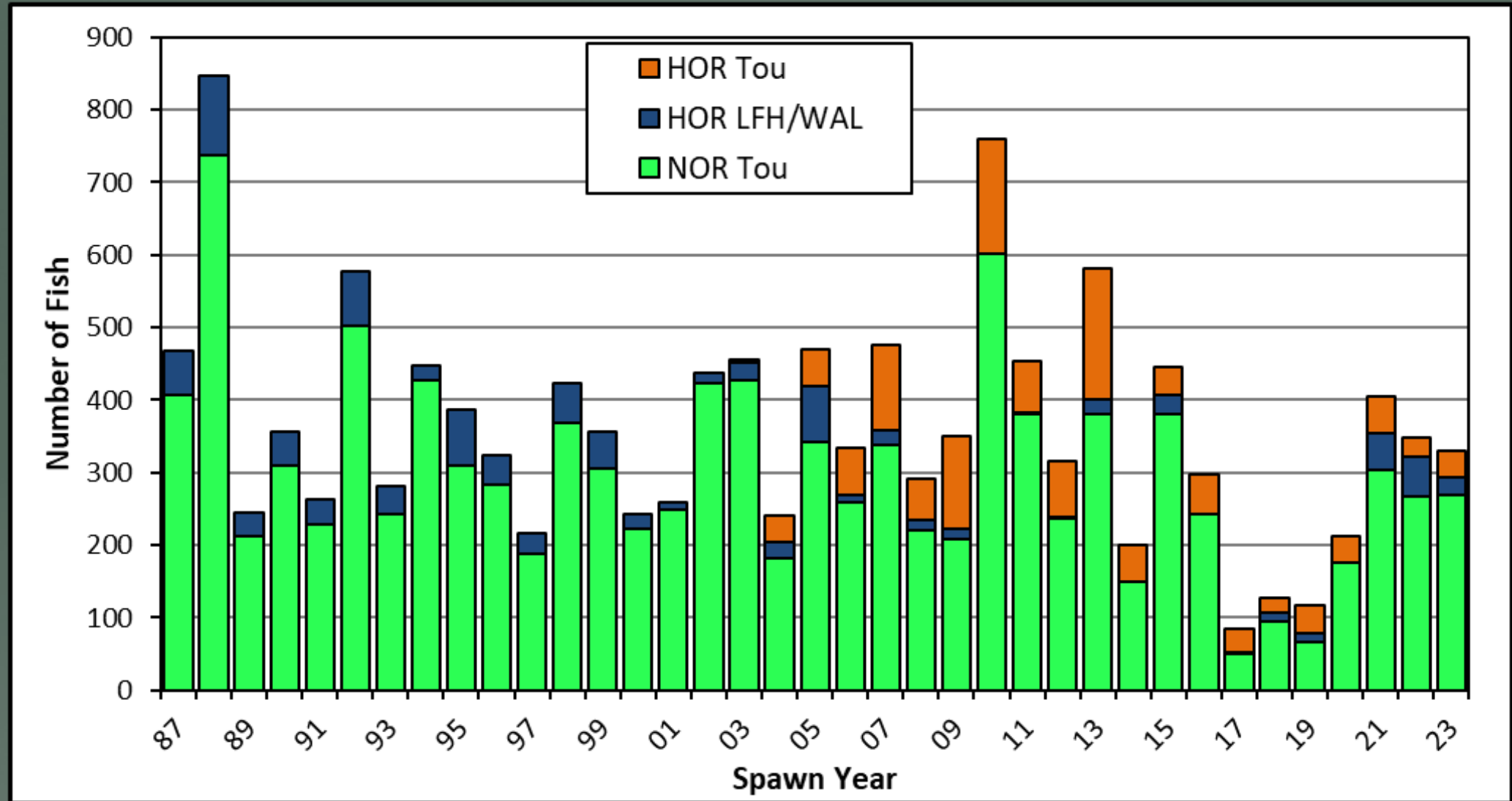
- Not currently monitored*
- Current data gap for Dayton AP releases (both WAL and TOU stocks)
- PIT tags with natural production monitoring infrastructure



Adult Returns HOR_{TOU}

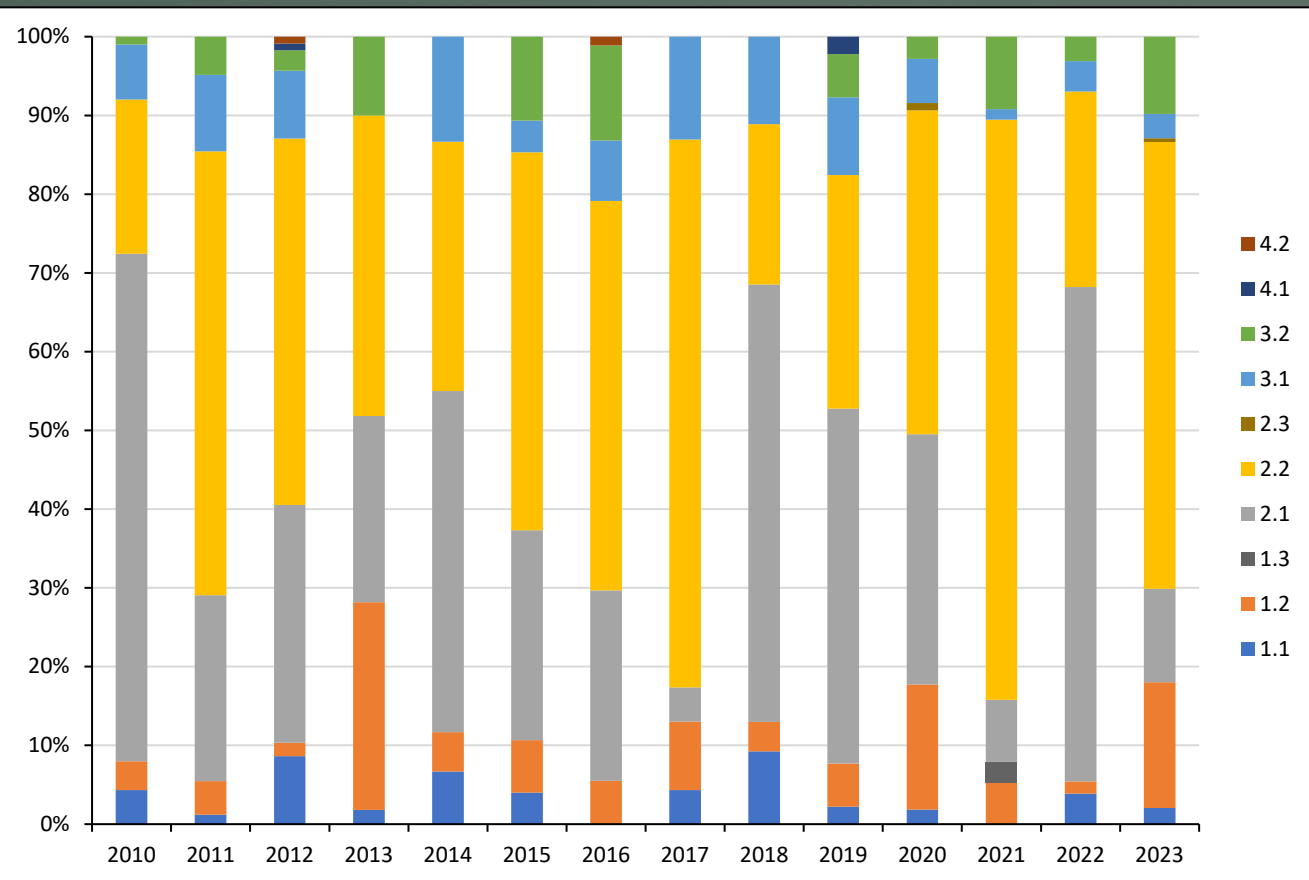


Adult Returns Index areas

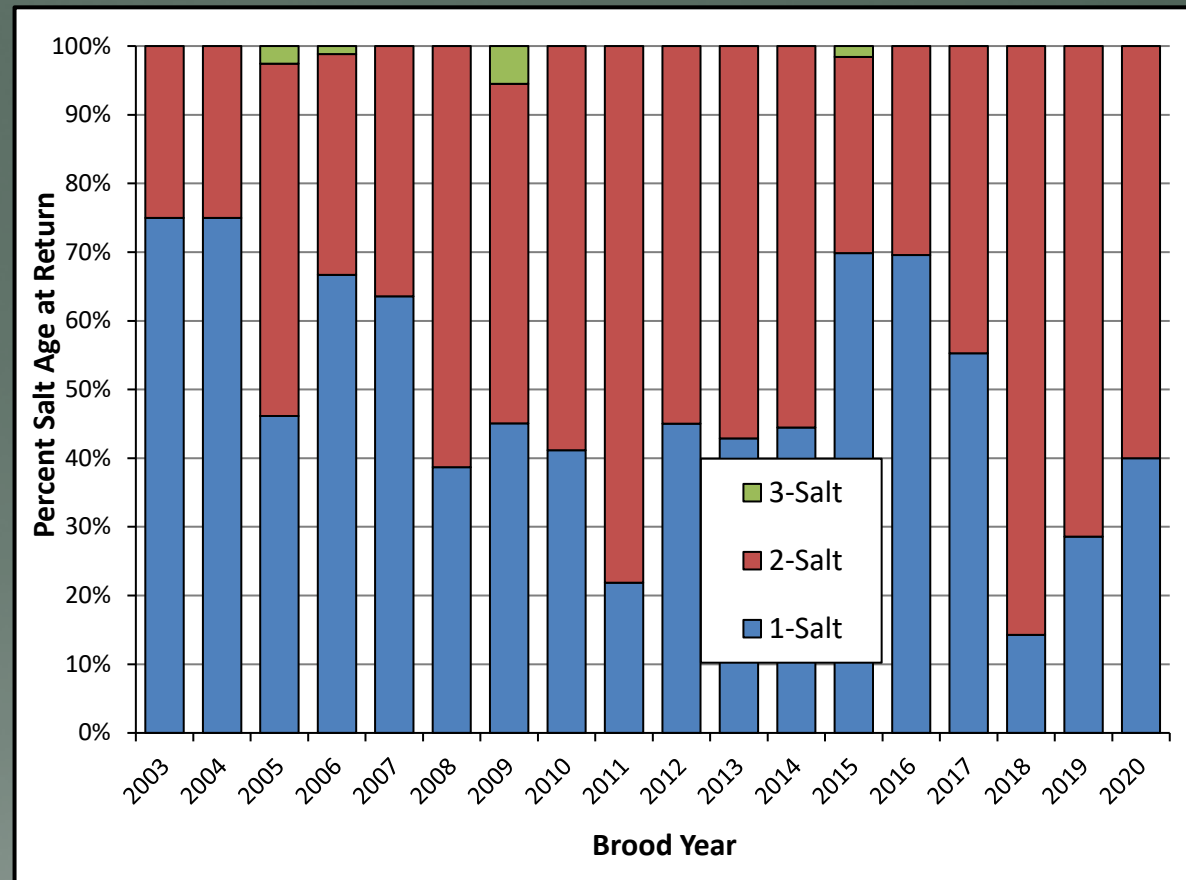


Age at Return

NOR_{TOU}

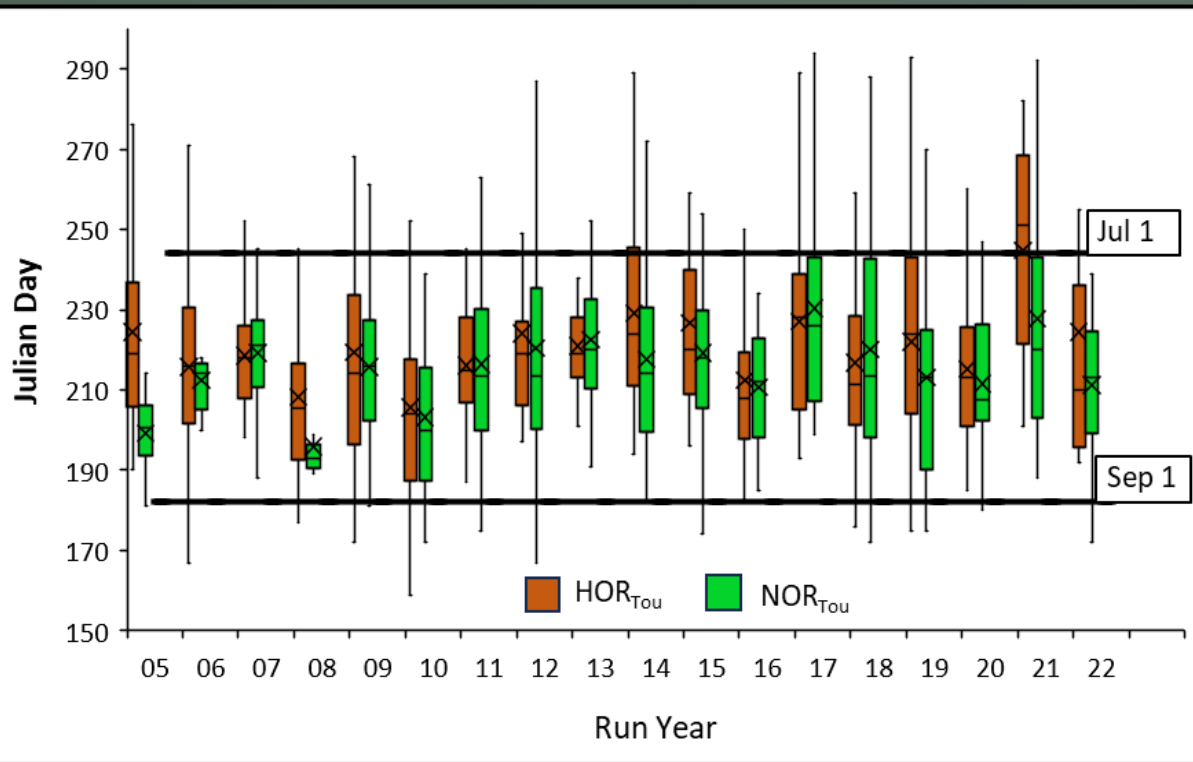


HOR_{TOU}

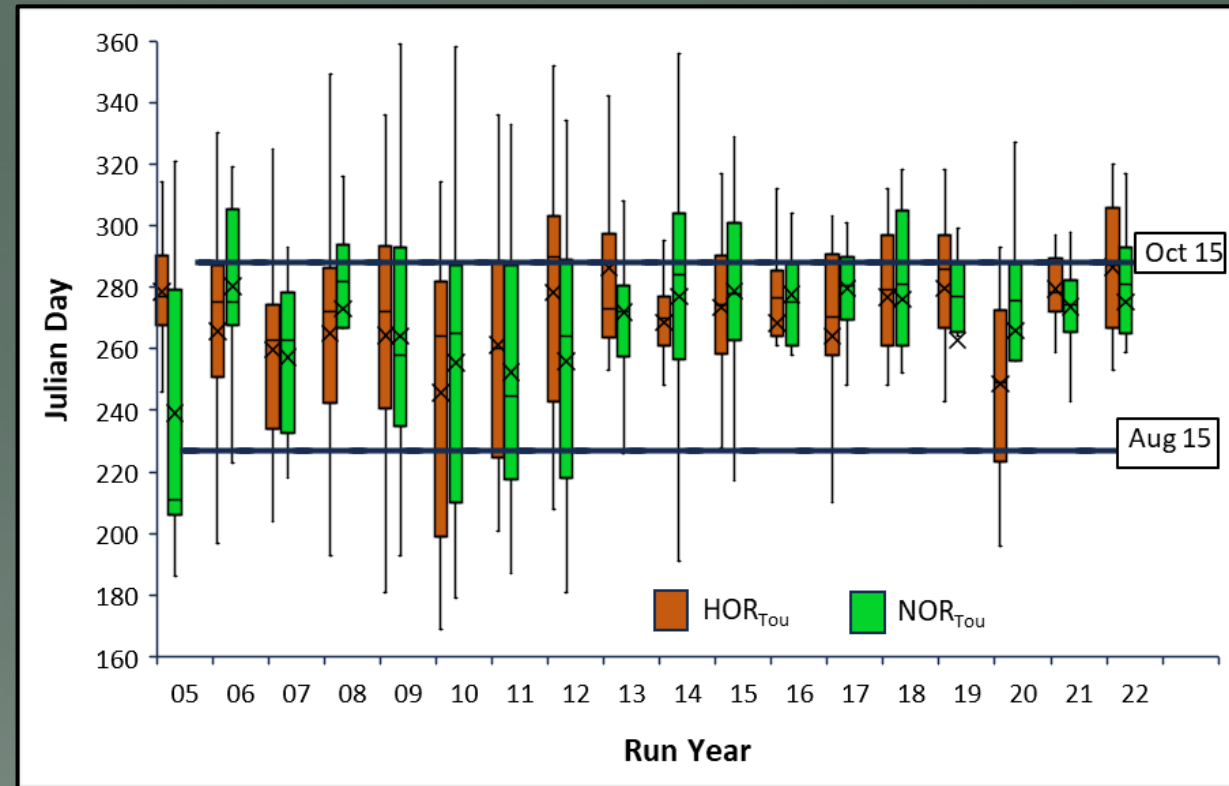


Adult Return Timing

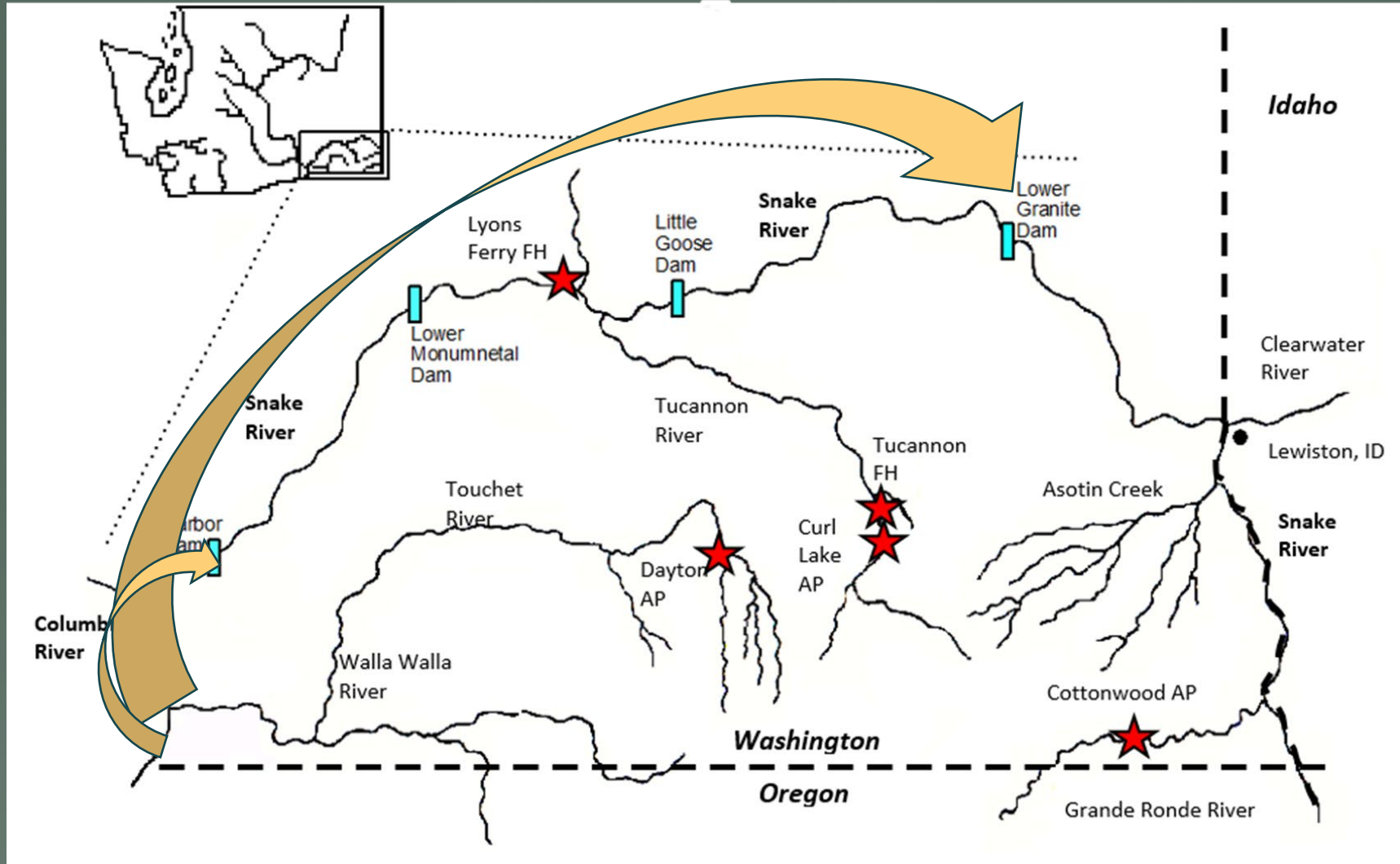
Bonneville Dam



McNary Dam (Project Area)

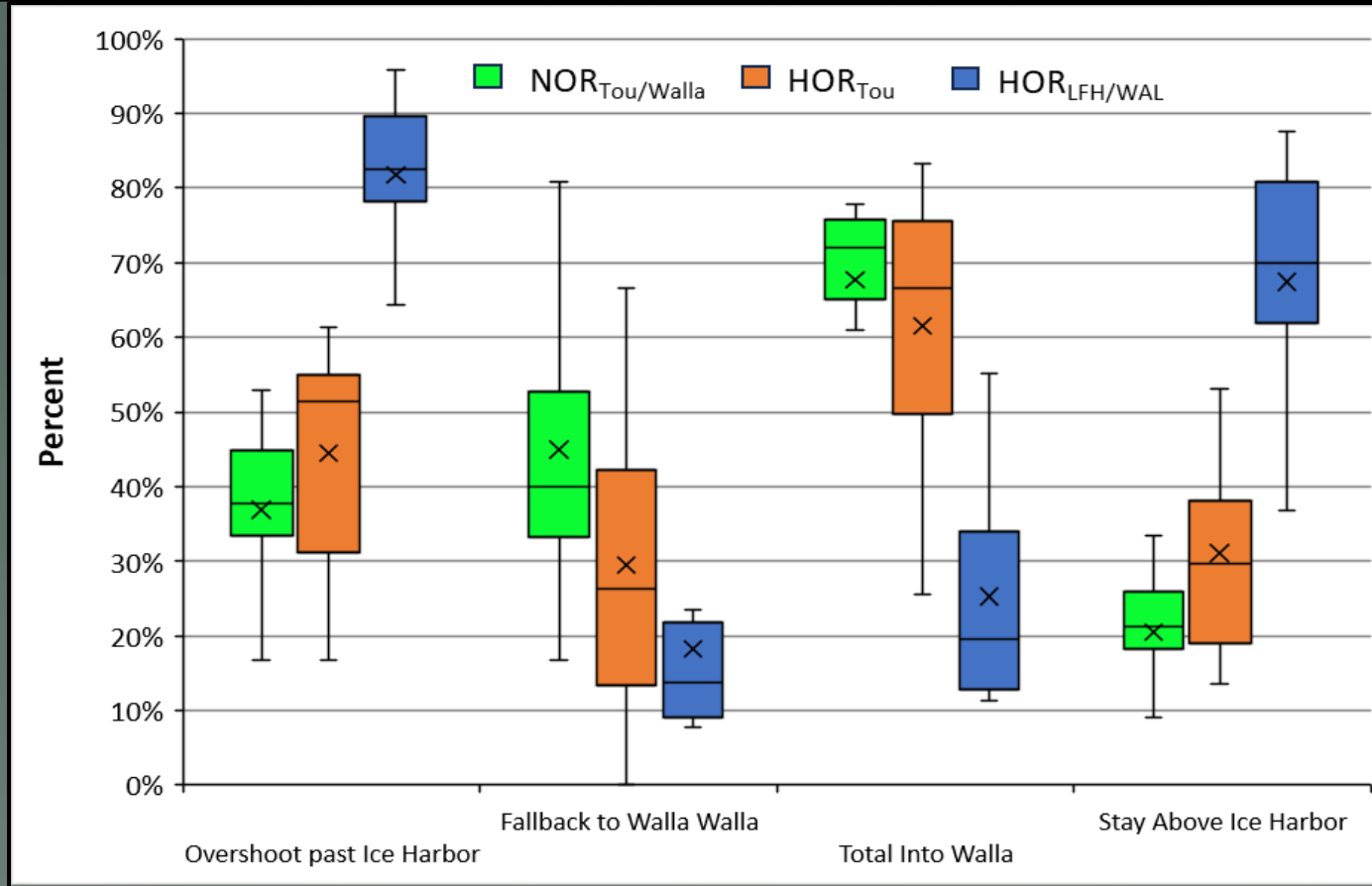


Overshoot/Straying

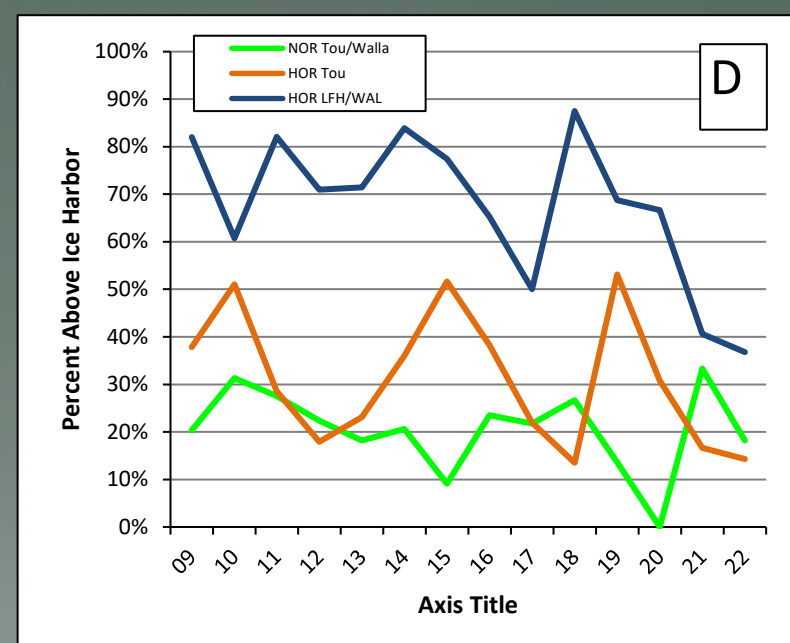
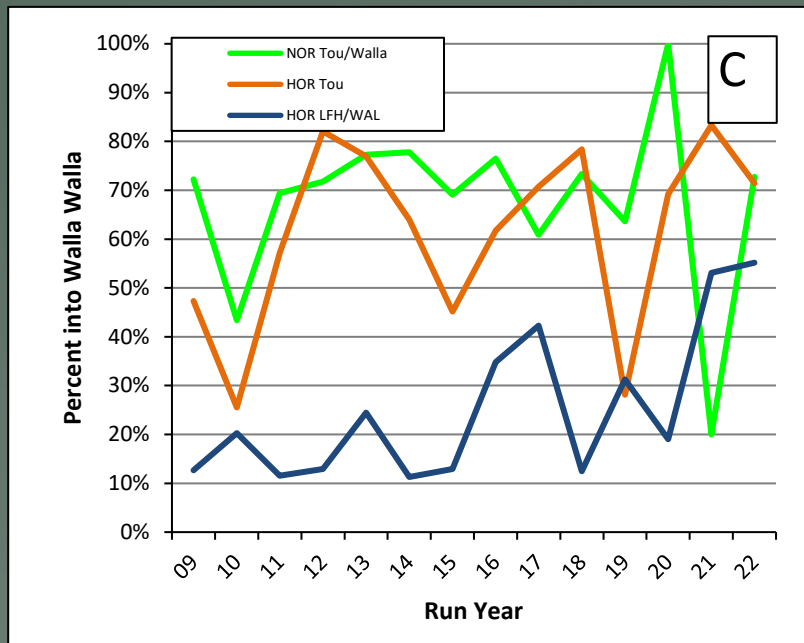
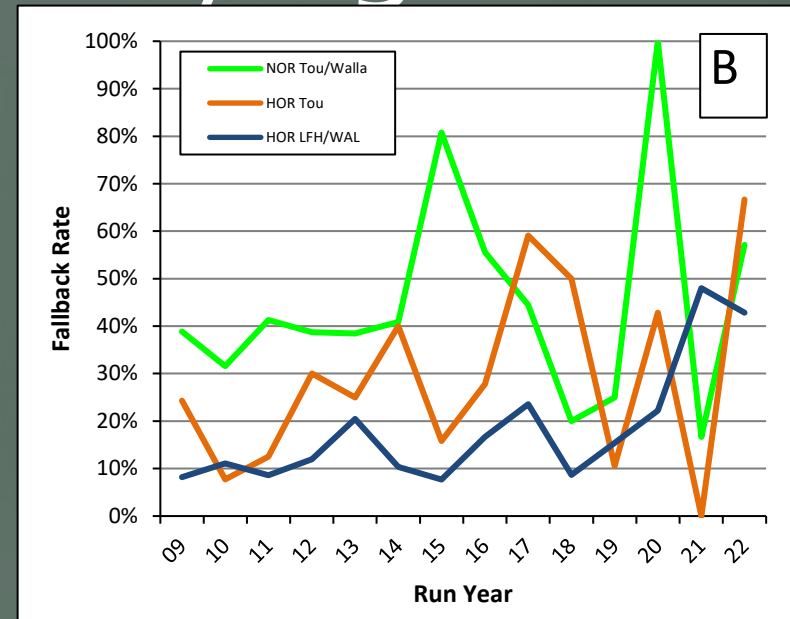
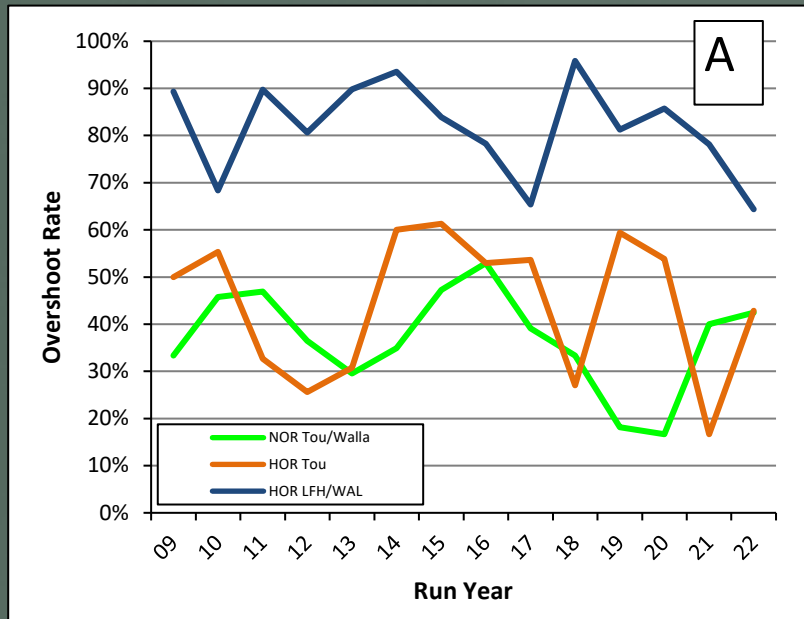


Overshoot/Straying

Stock	Number of PITs Detected McNary Dam	Overshoot Rate to Ice Harbor	Fallback Rates from Ice Harbor Dam or Above	Total Into Walla Walla Basin	Remain above IRH Dam	Believed to have spawned In Tucannon River of those that crossed McNary Dam
$HOR_{LFH/WAL}$	709	82%	16%	24%	69%	11%
HOR_{Tou}	448	46%	27%	57%	34%	11%
$NOR_{Tou/Walla}$	619	39%	44%	67%	22%	8%



Overshoot/Straying



Harvest

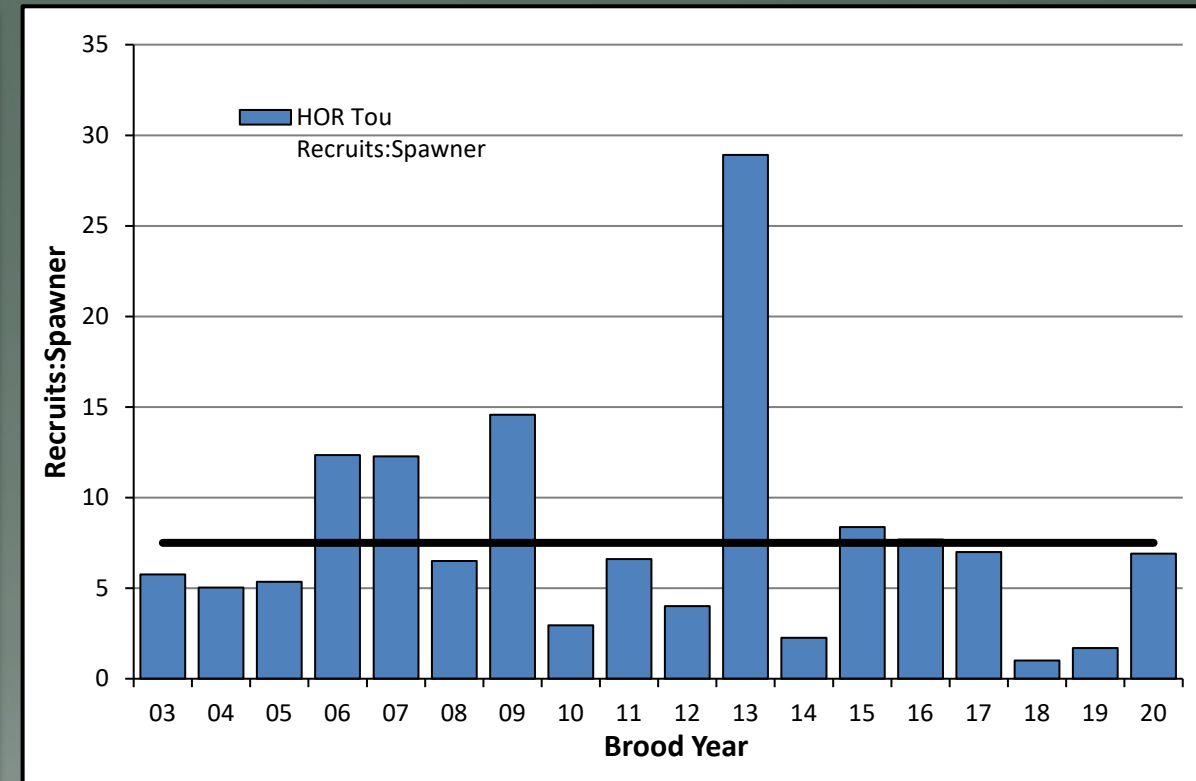
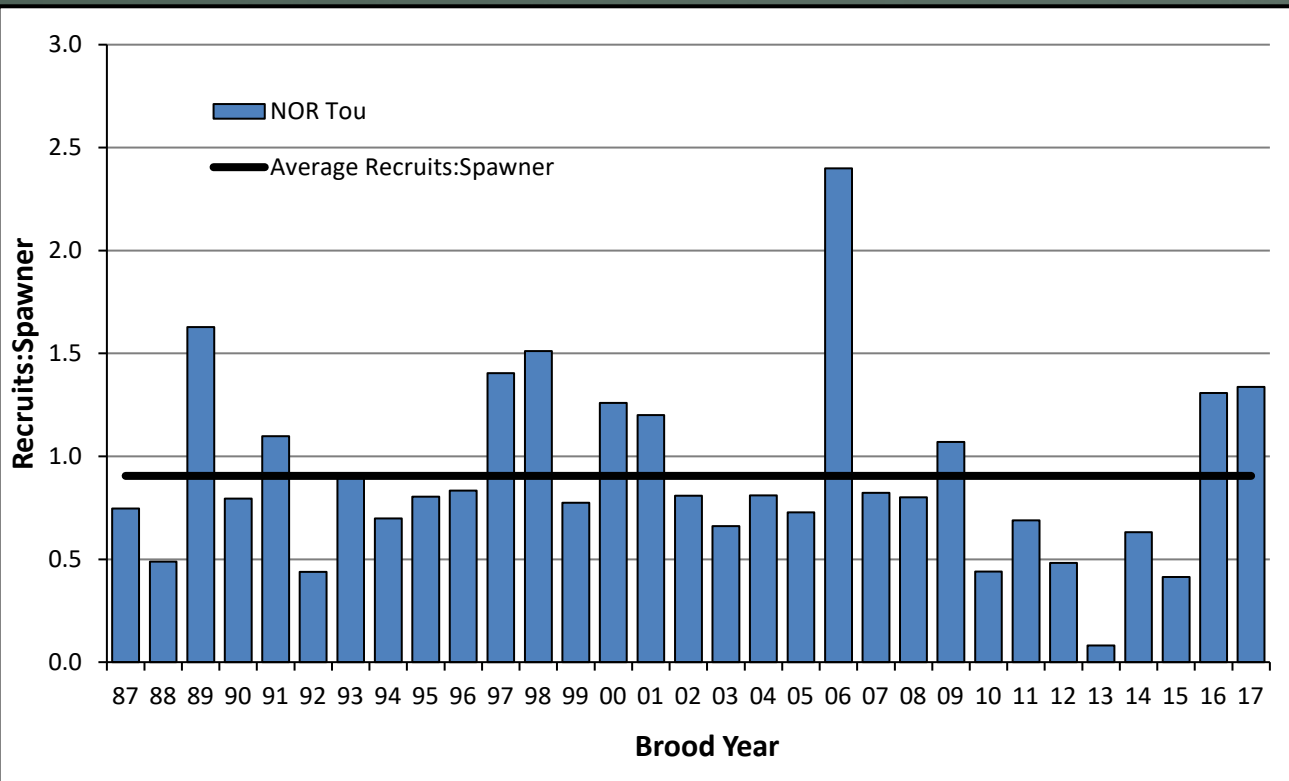
- Not marked for retention (~2/year)
- Some harvest in Zone 6 (~10/year)



Productivity: R/S

NOR_{Tou}

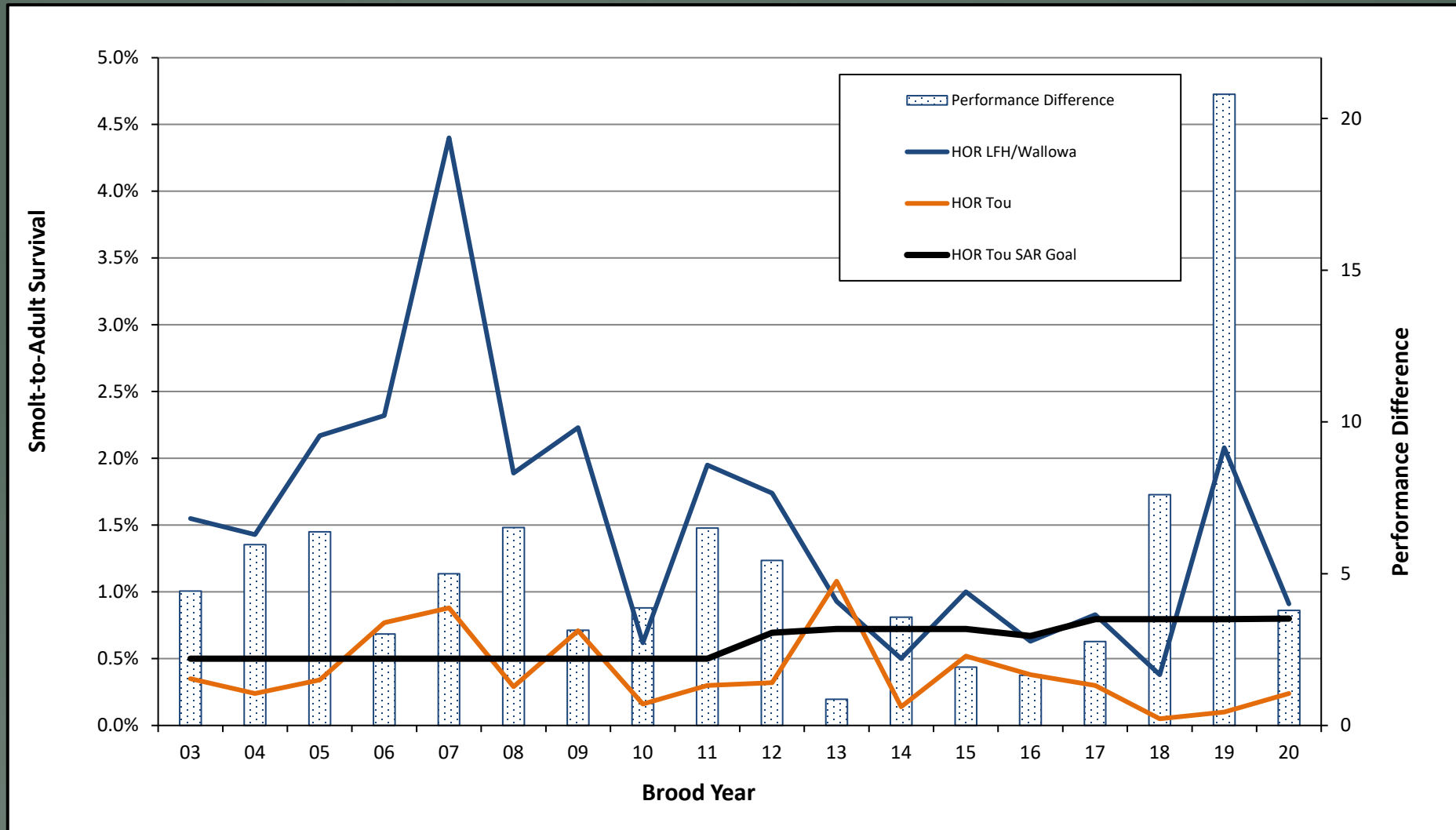
HOR_{Tou}



Productivity: SARs

SAS average:
0.51%

SAR average:
0.39%



HOR_{TOU}Summary

The good

- In-hatchery performance
- NOR monitoring improving



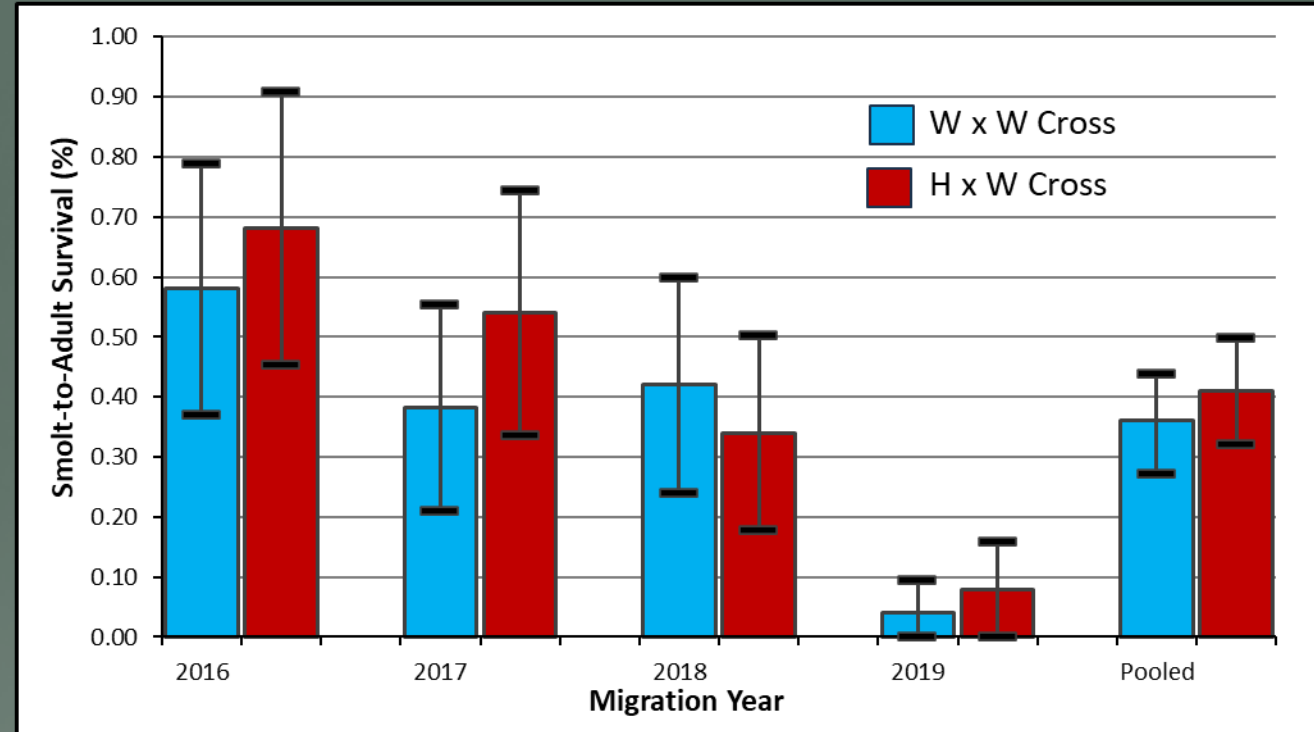
The not as good

- Overshoot
- Is it working?
 - NOR?
- Poor Survival
- Residualism monitoring



Adaptive management:

- Ceased HOR_{LFH} releases
- Modified size at release goals
- Attempted 2-year smolts
- Attempted F1 hatchery crosses in attempt to increase SAS





Next steps HOR_{TOU}:

- Cease HOR_{TOU} stock production
 - Utilize space at LFH for other steelhead production
- Refine NOR monitoring techniques RST/PIT/Array
 - Residualism monitoring using PIT tags



Questions?

HOR_{TUC} Stock



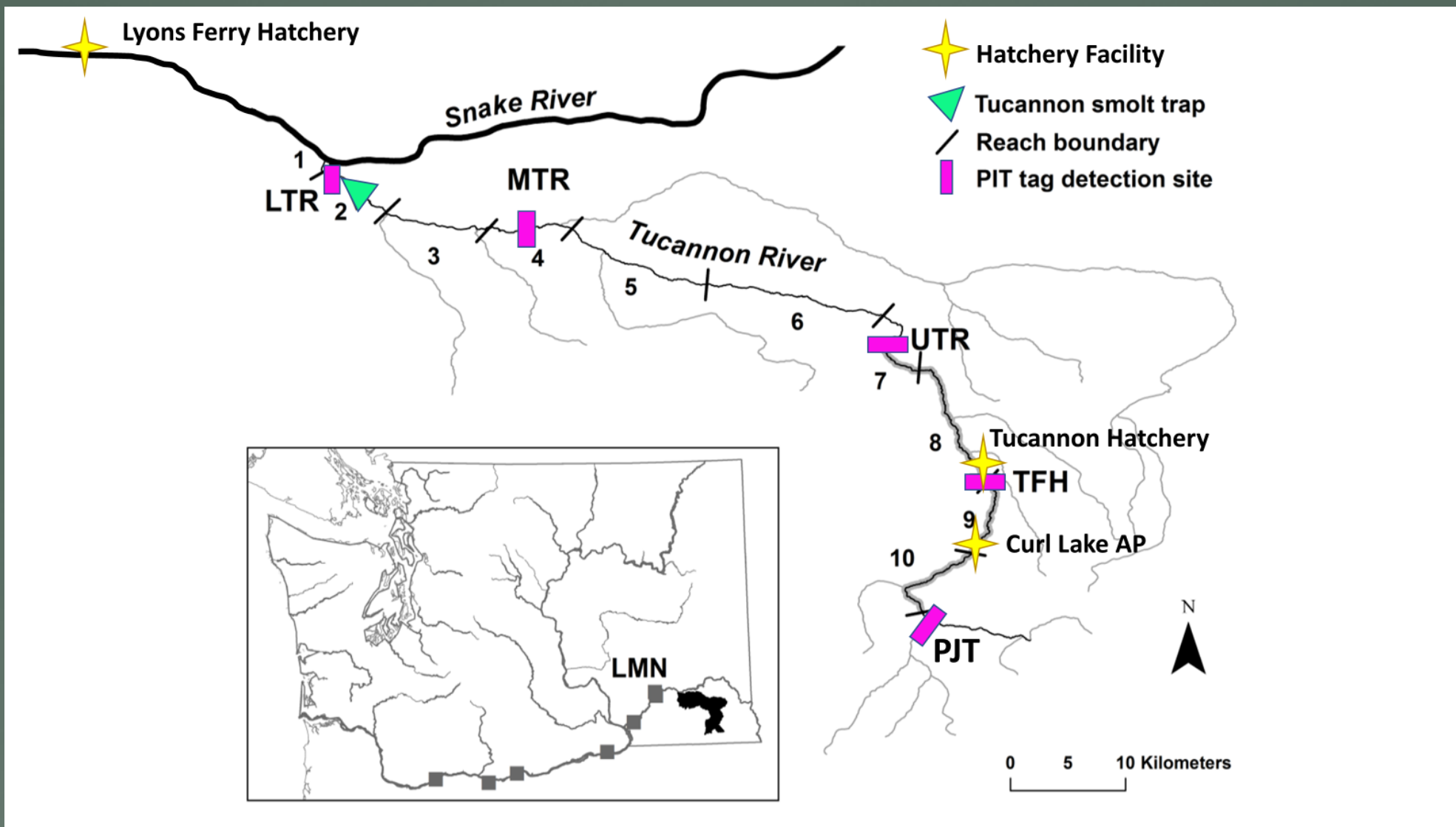
HOR_{TUC} Program Management Goals



- Integrated stock, recover depressed NOR_{TUC}
- Provide Harvest Mitigation to replace HOR_{LFH} releases in the Tucannon R.
- Monitor status and trends of the NOR_{TUC} steelhead population

BPA Contract #2010-050-00

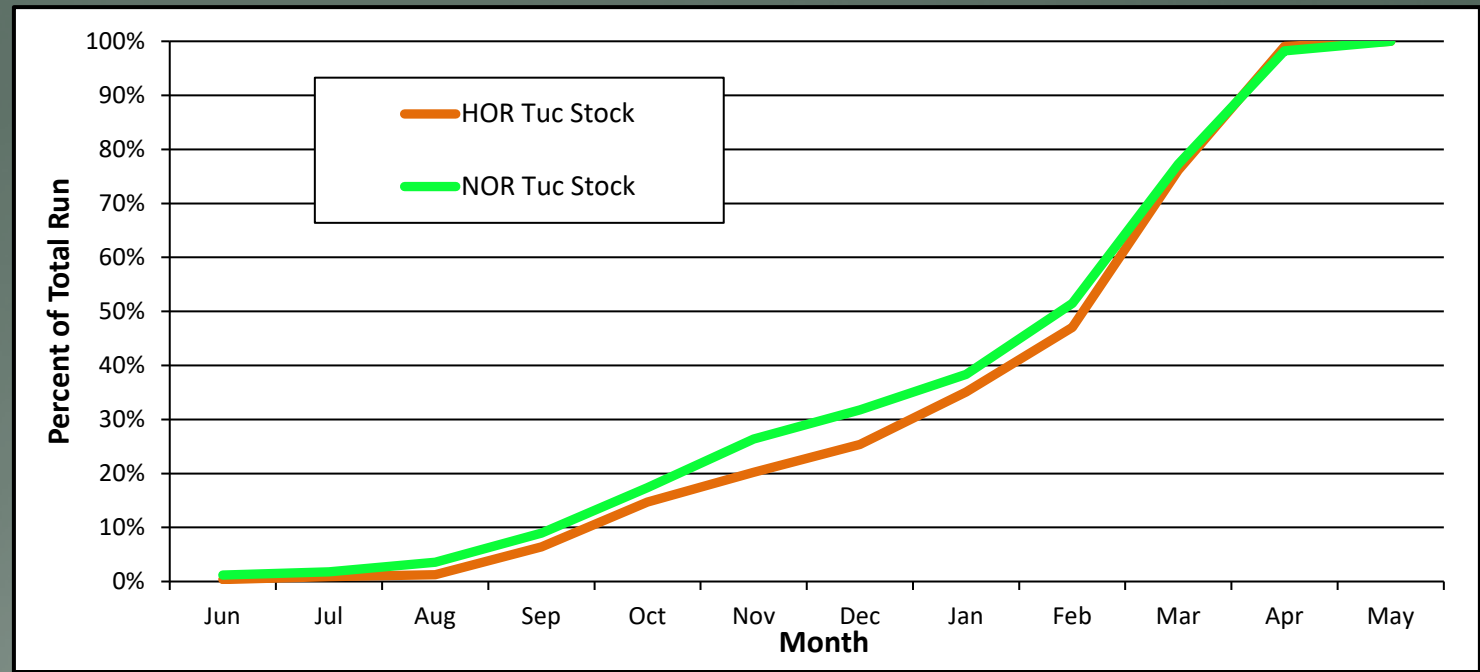
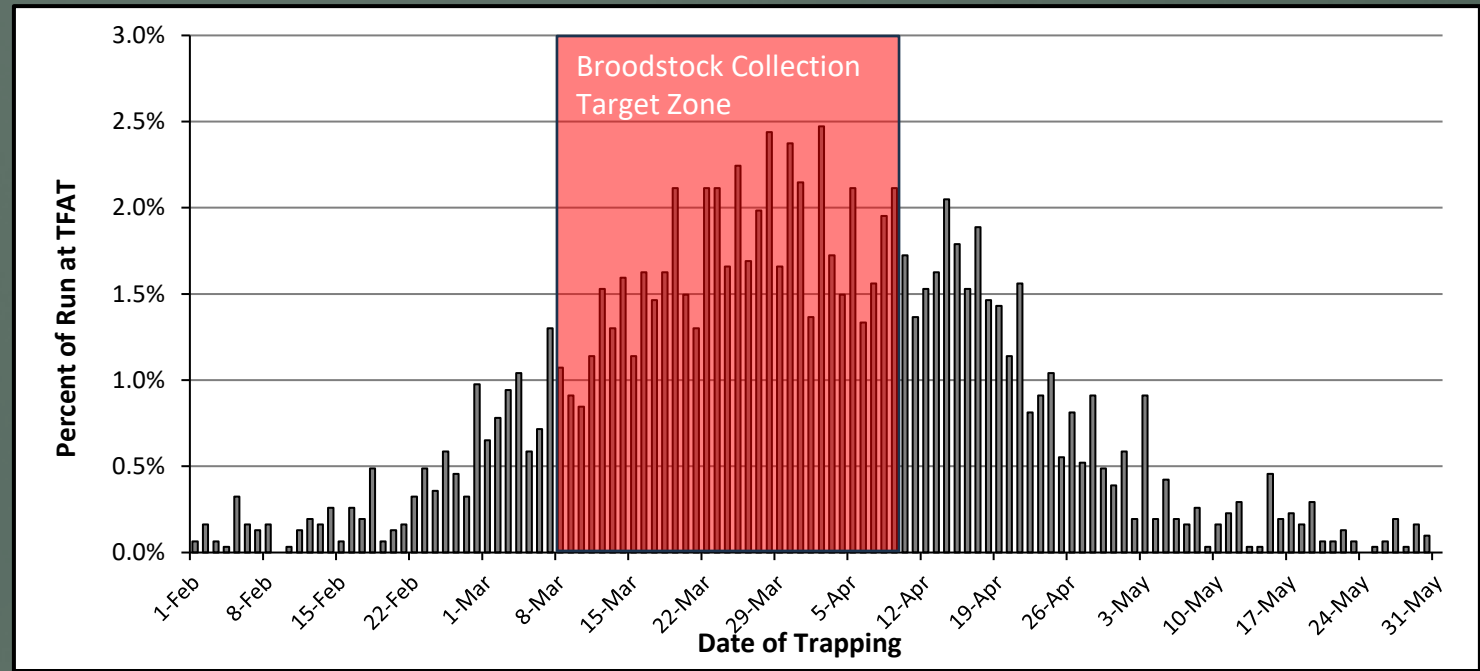
BPA Contract #2002-053-00



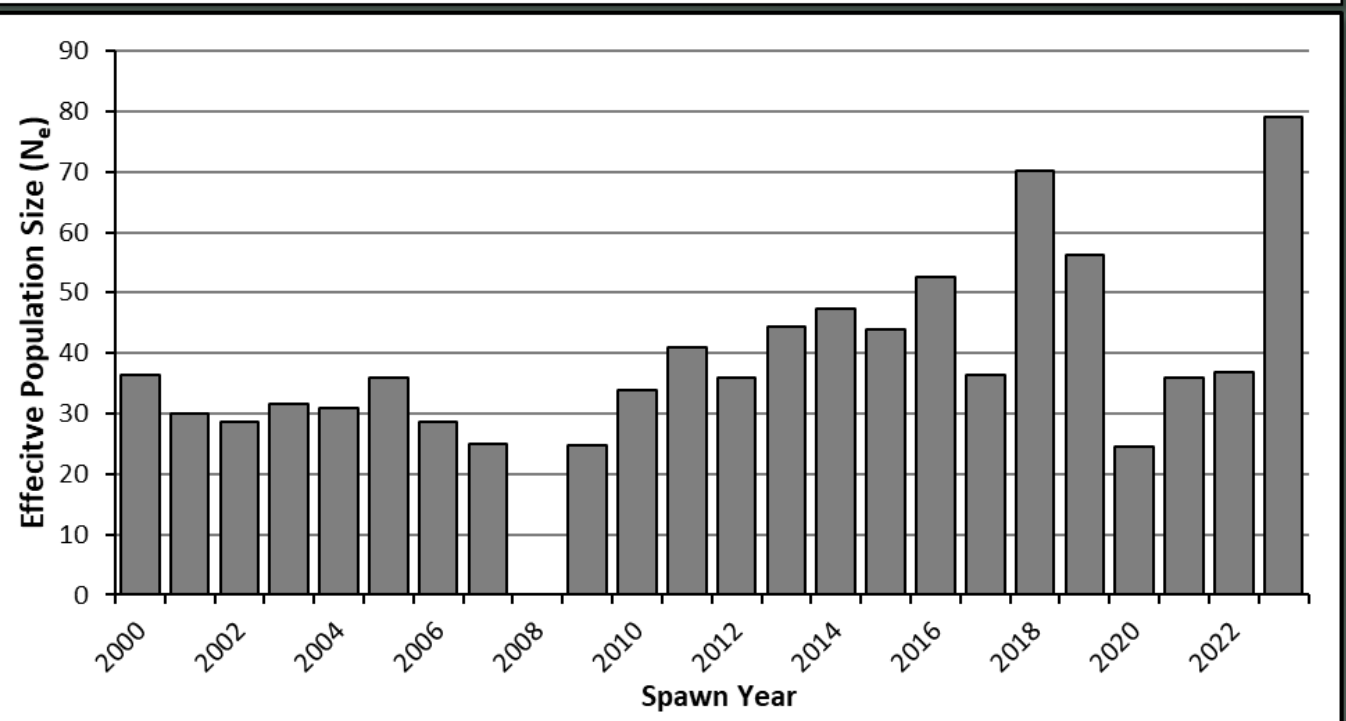
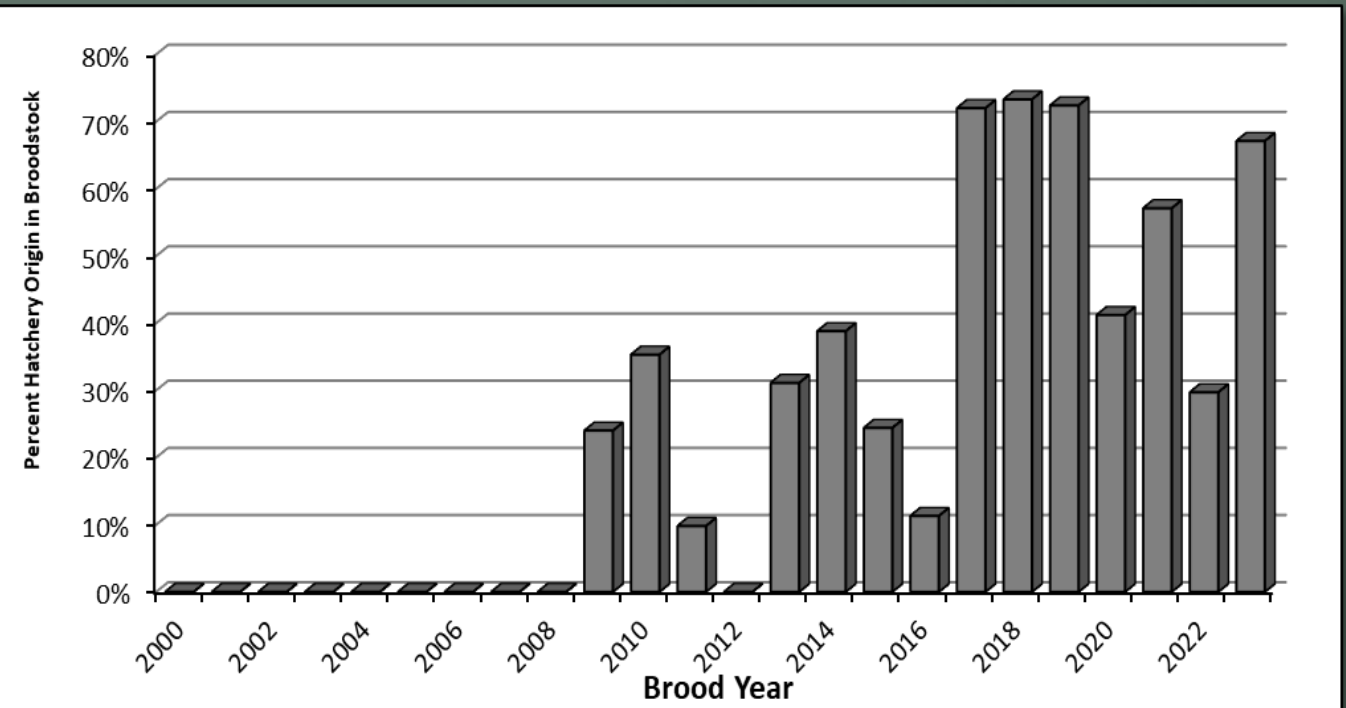
BPA Contract #2010-050-00
BPA Contract #2002-053-00



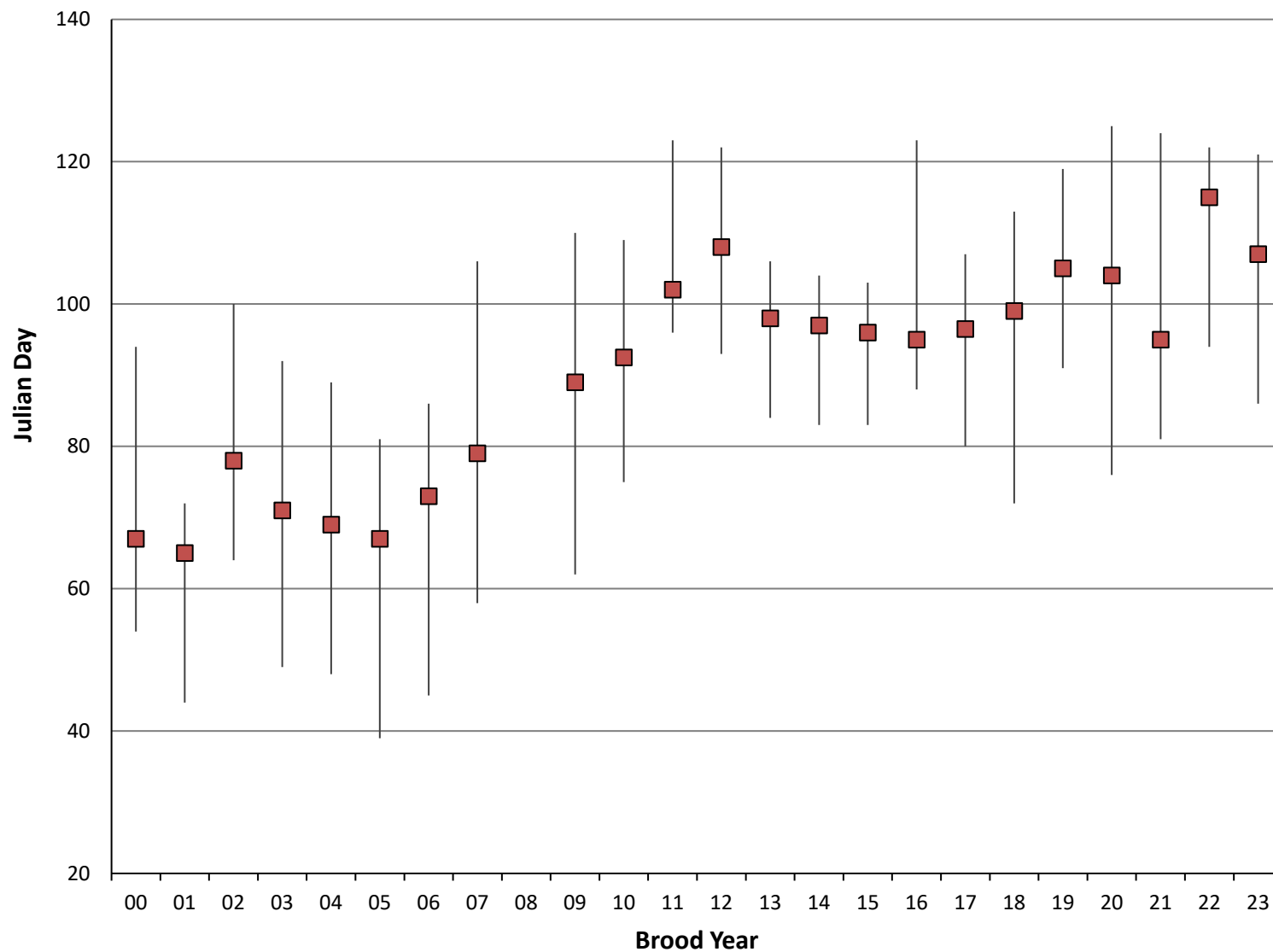
HOR_{TUC} broodstock

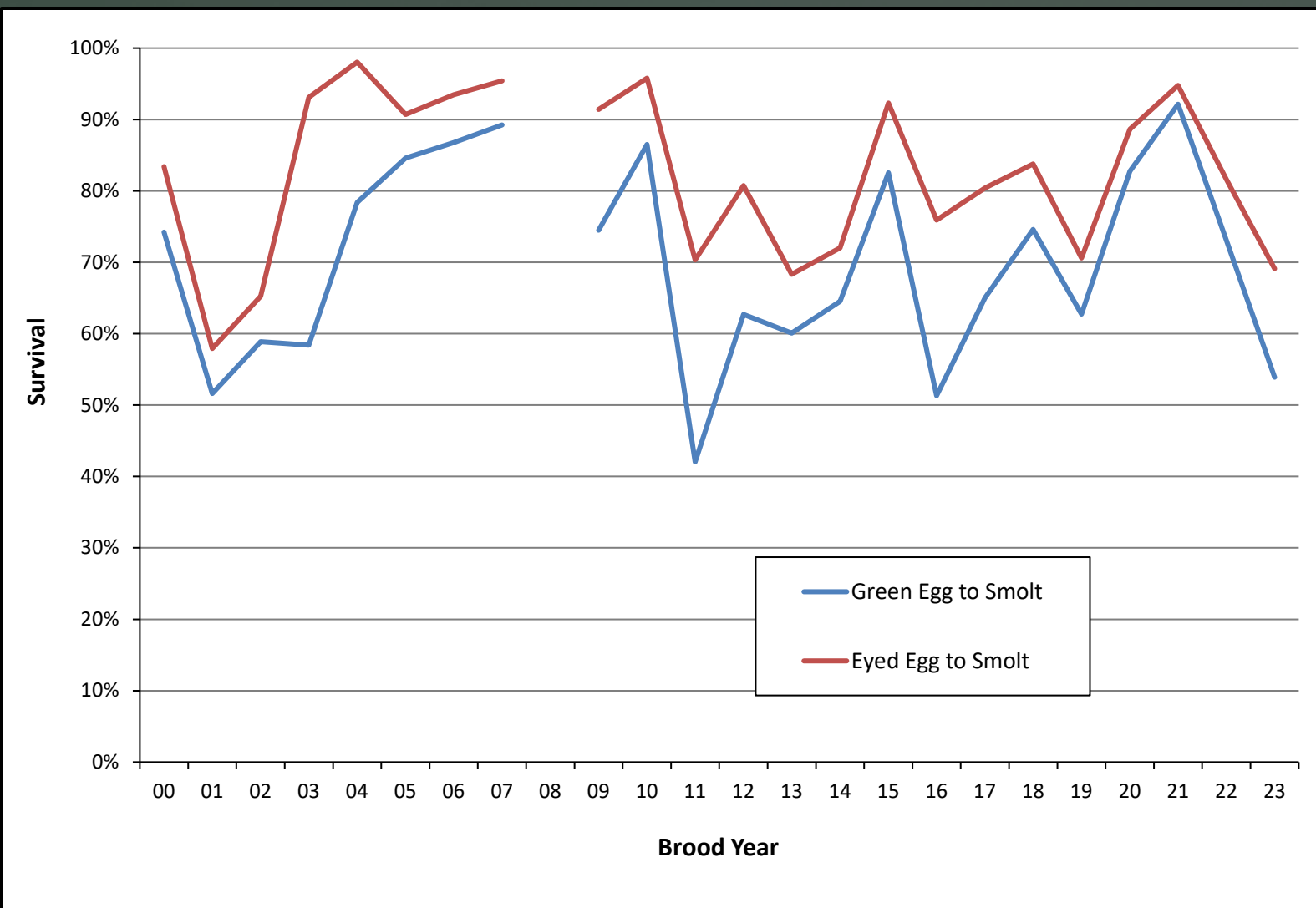


HOR_{TUC} broodstock



HOR_{TUC} broodstock

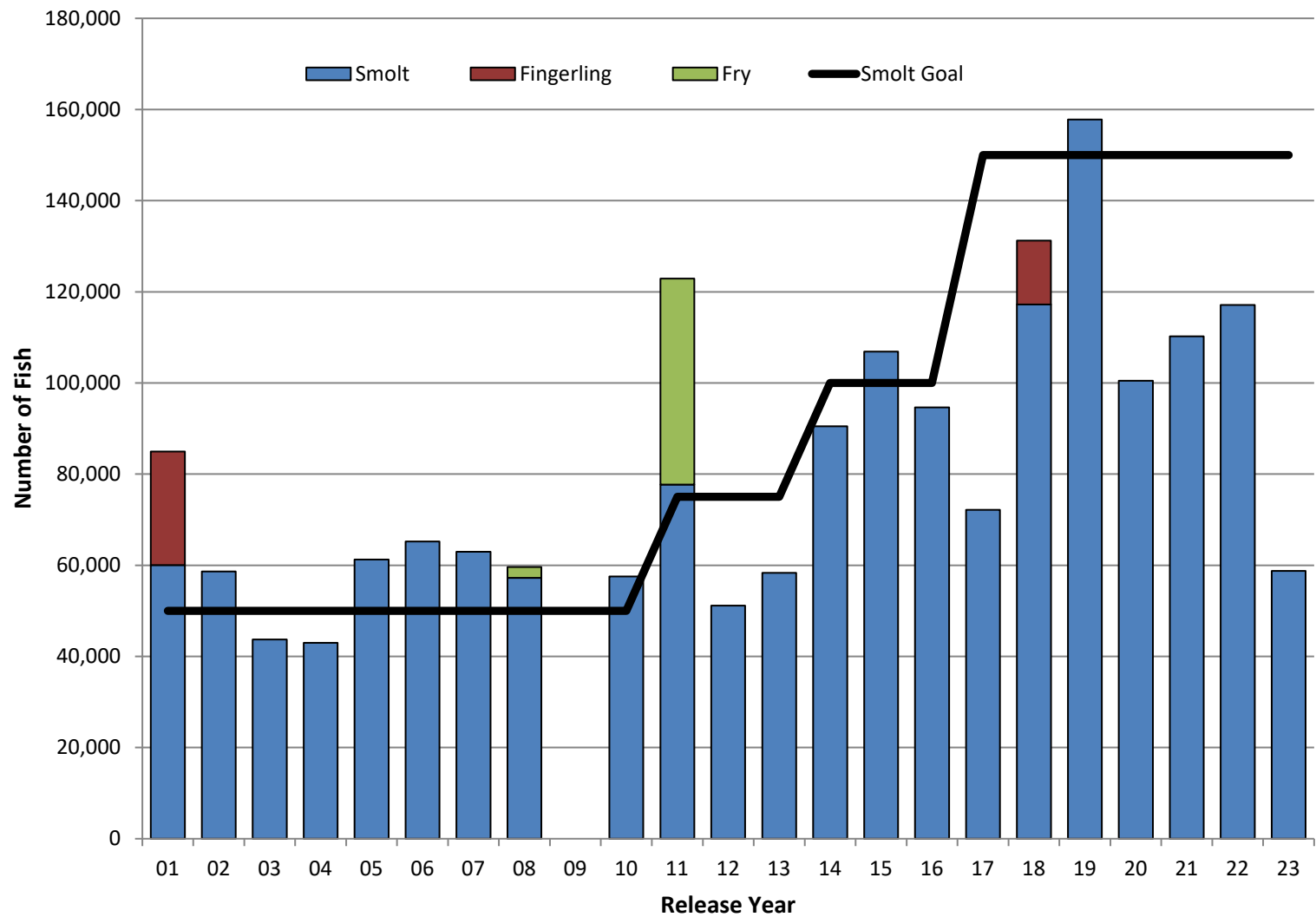




In-hatchery performance:

- Low PSM
- Green egg-smolt 70.1% avg
- Disease issues minimal:
 - IHN sporadically
 - Bacterial coldwater disease

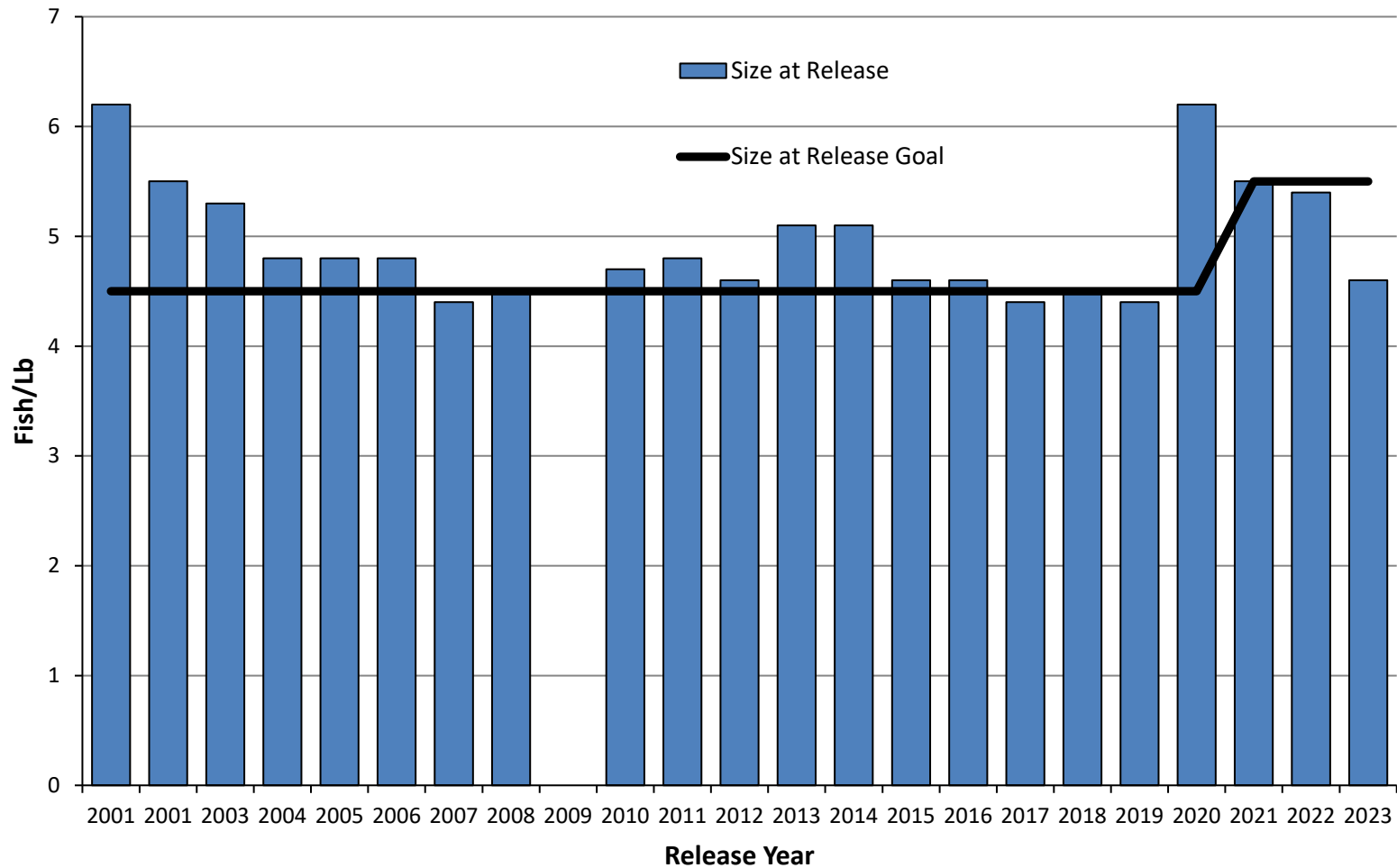




Smolt release goals:

- 50k Conservation
 - Adipose Intact/CWT
- 100k Mitigation
 - AD Clipped/CWT group
- Fry/parr releases on high fecundity years
- 15K PIT tags/year





Size at release goals:

- 4.5 fpp like other LFH programs
- Increased to 5.5 in 2021

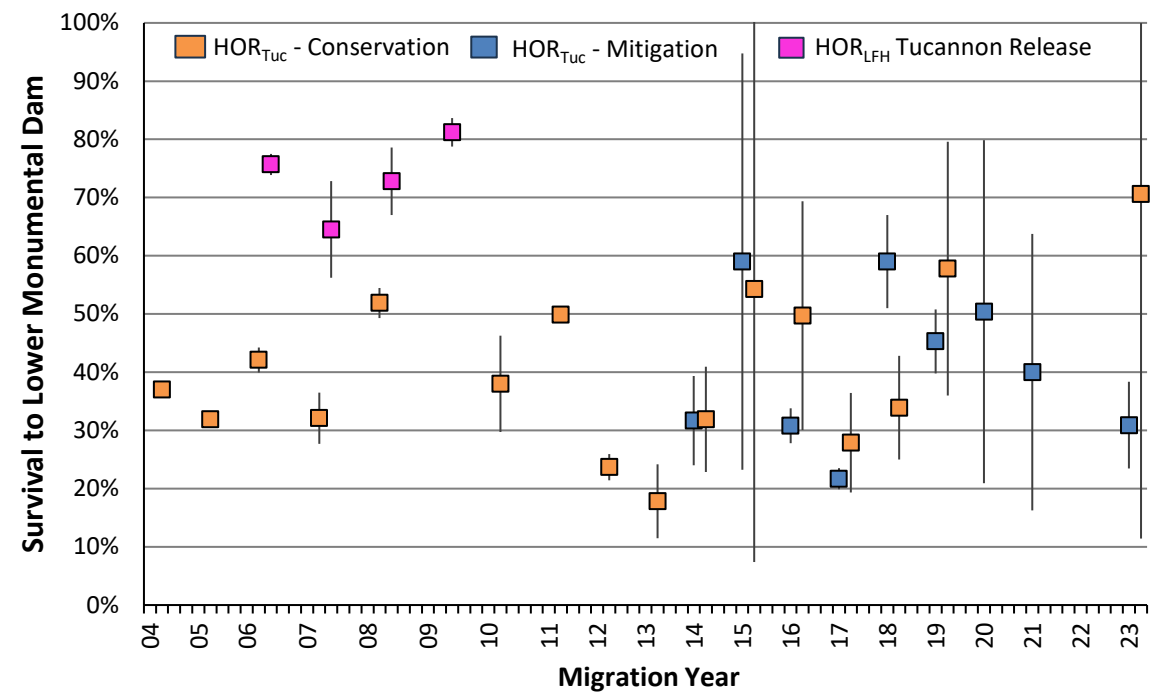
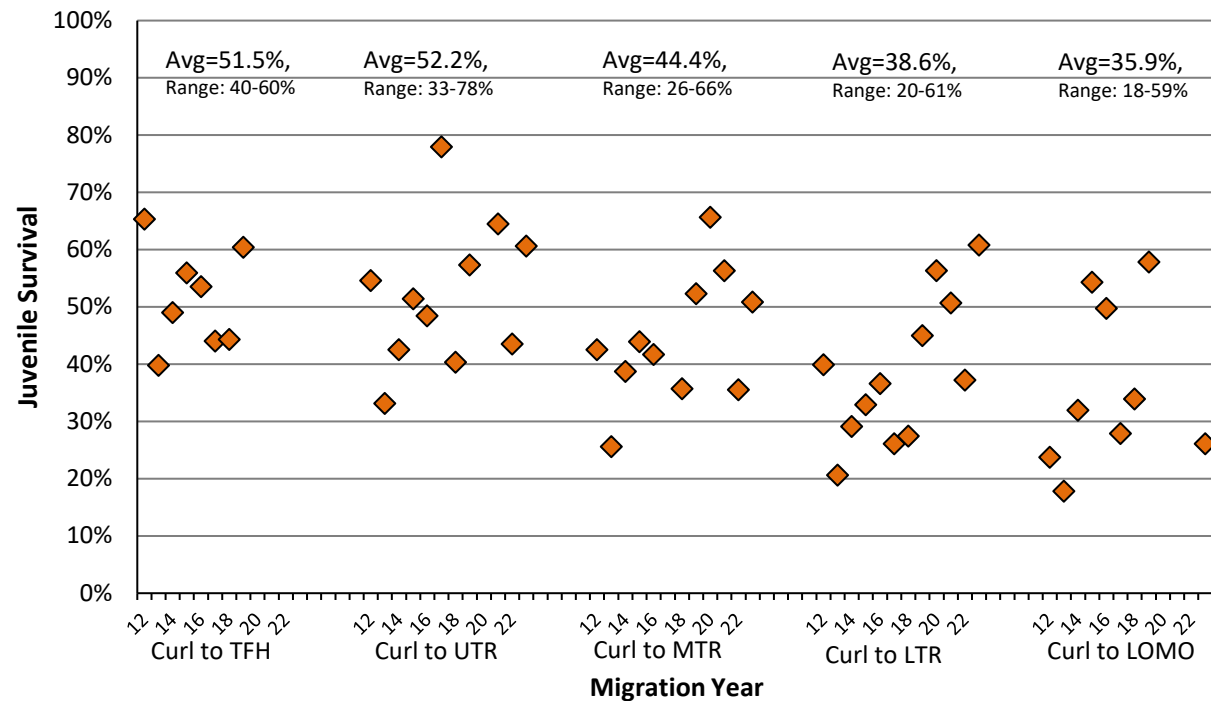


Juvenile outmigration survival

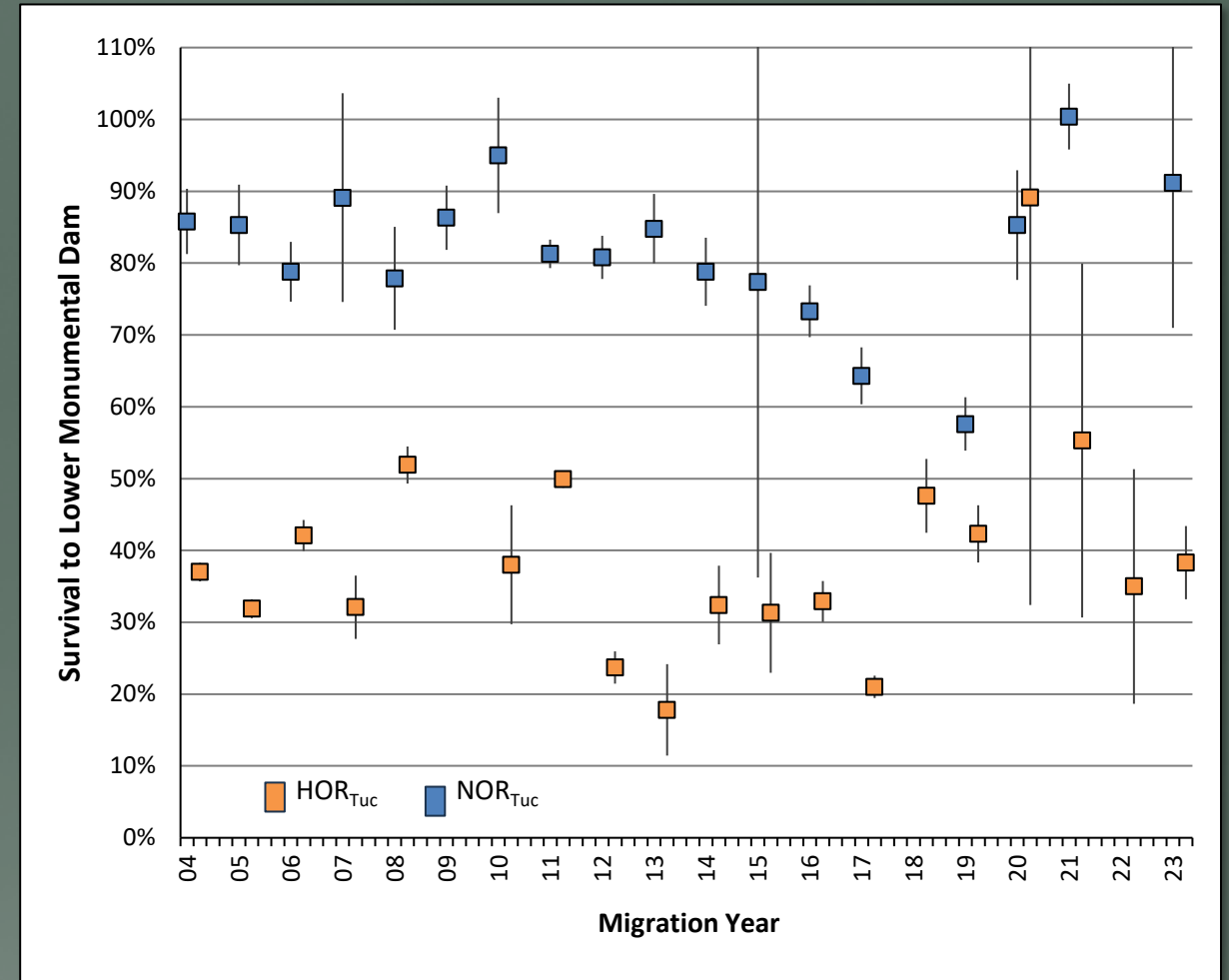
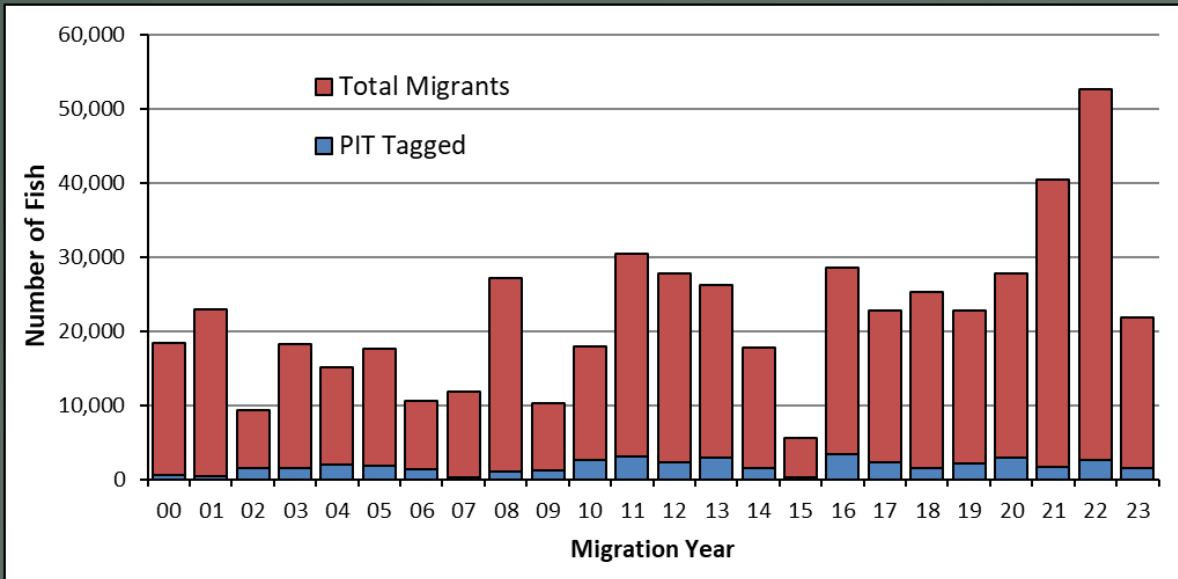


HOR_{TUC} Conservation Group 5K PIT

HOR_{TUC} and HOR_{LFH}



NOR/HOR Comparison*

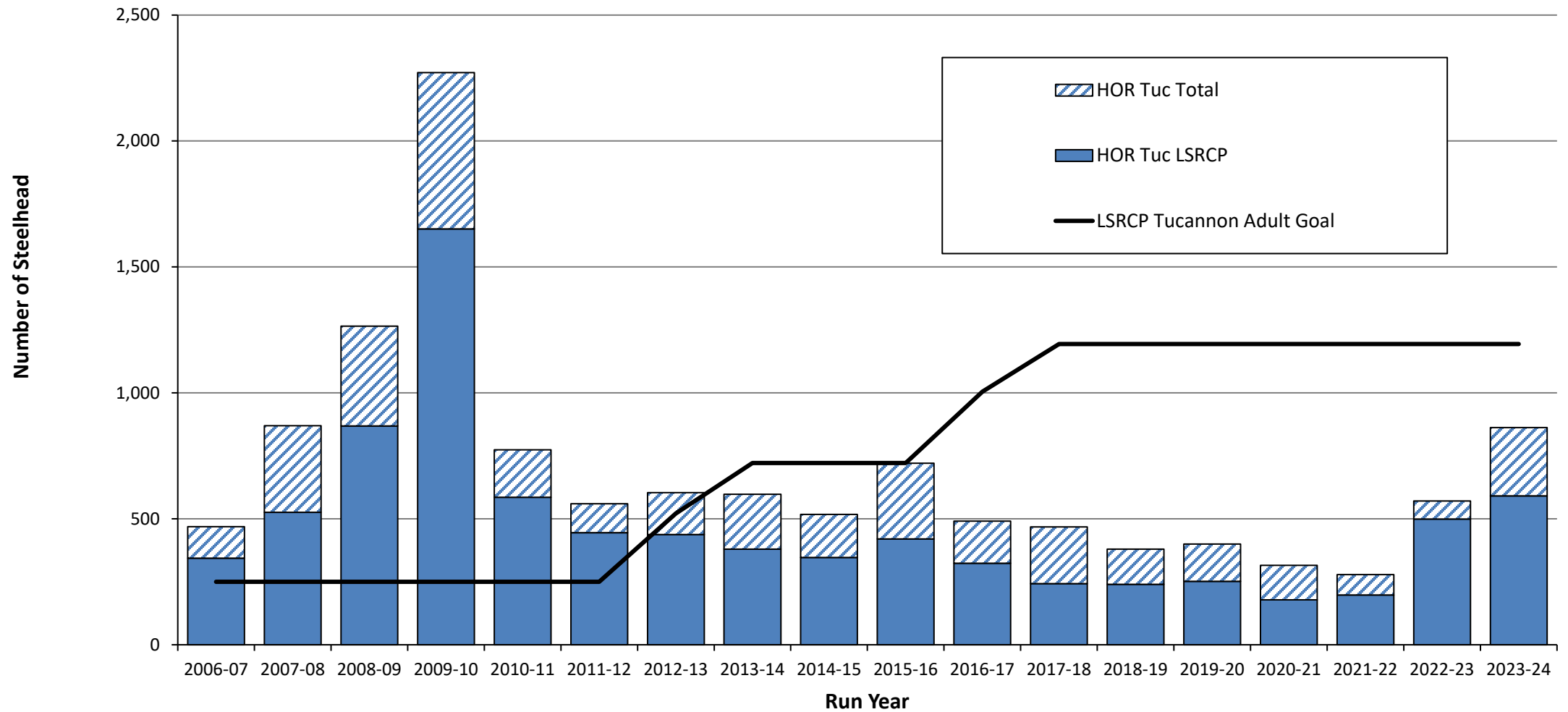


Residualism Monitoring

- 2020 ISRP Review
- 2022/2023 H/L
Mark/Recapture
- Current data gap, priority
going forward

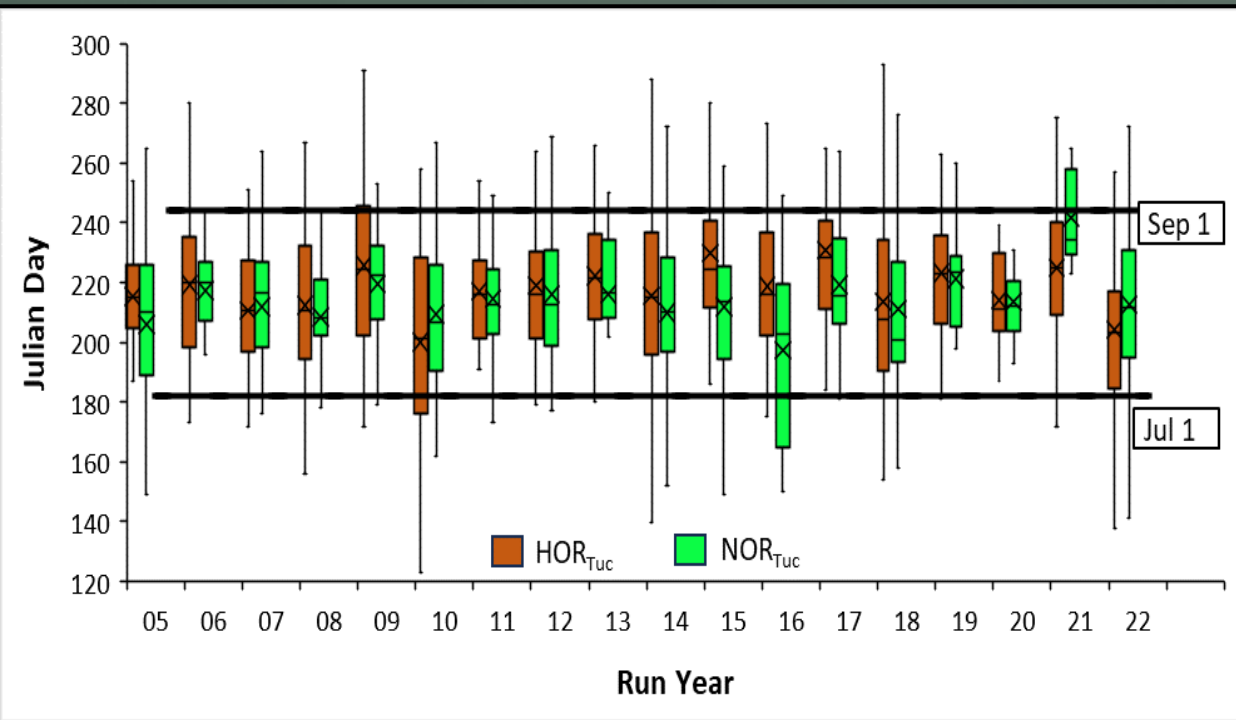


Adult Returns HOR_{TUC}

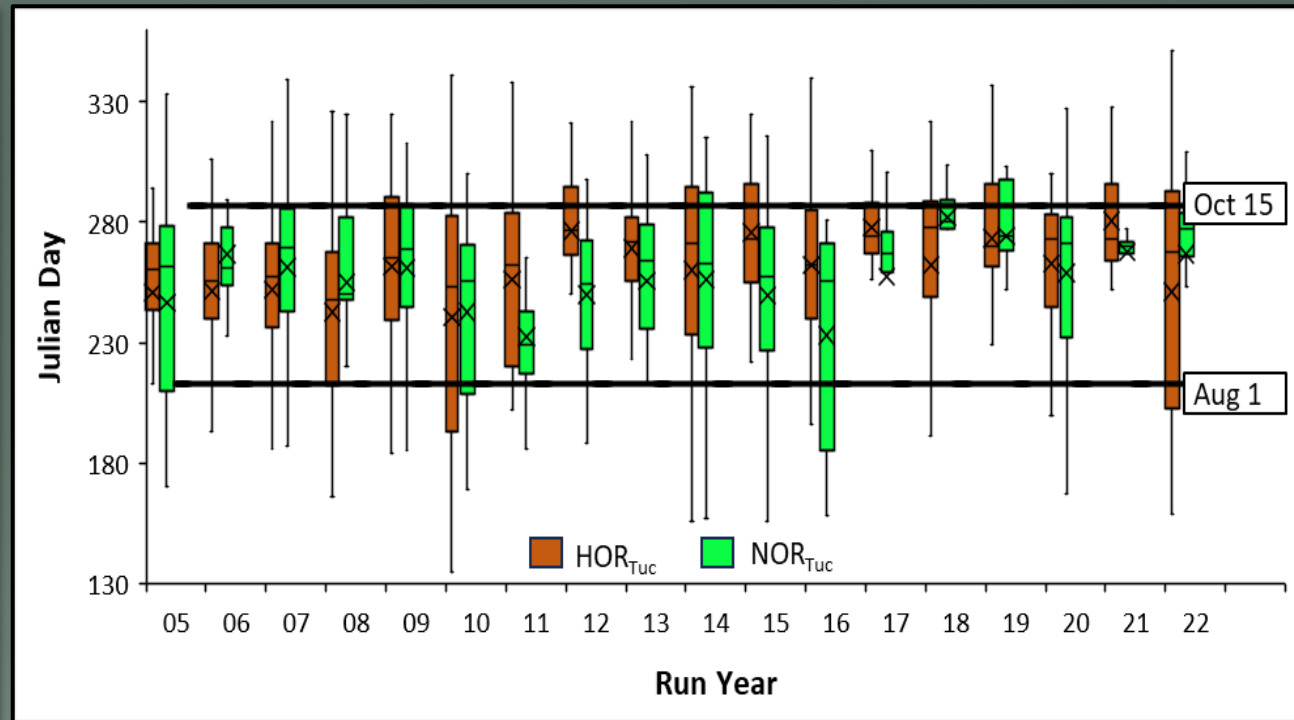


Adult Return Timing

Bonneville Dam

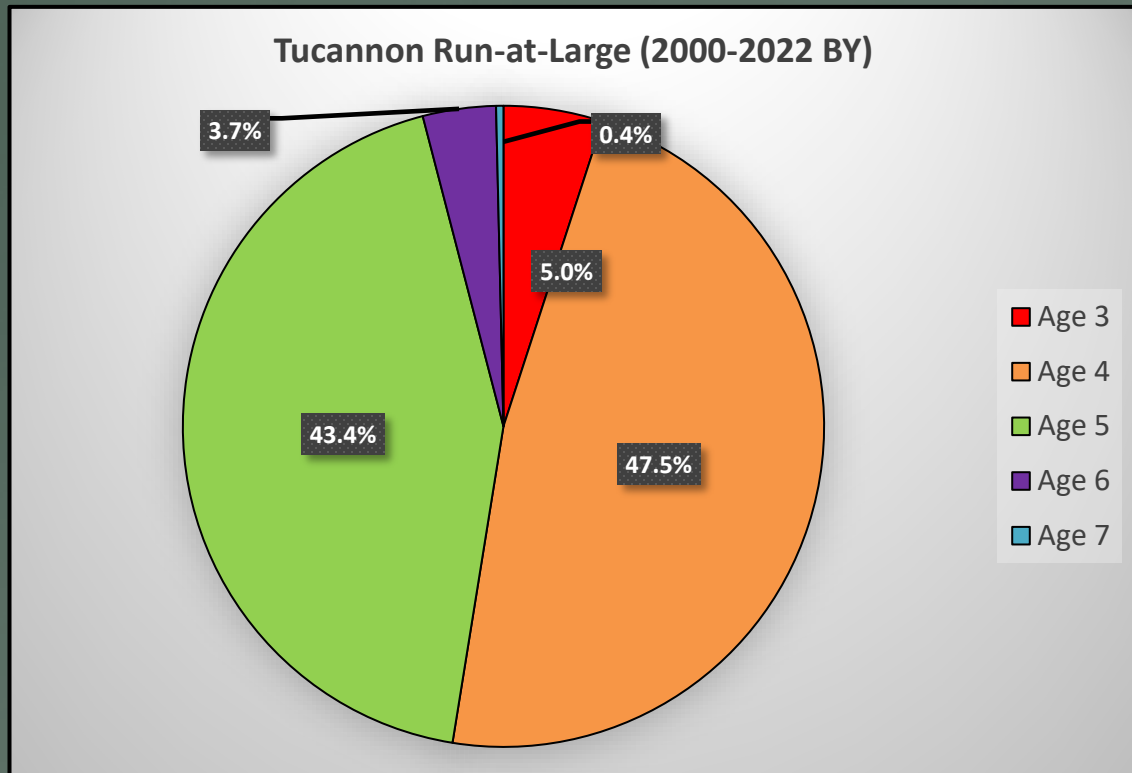


Ice Harbor Dam (Project Area)

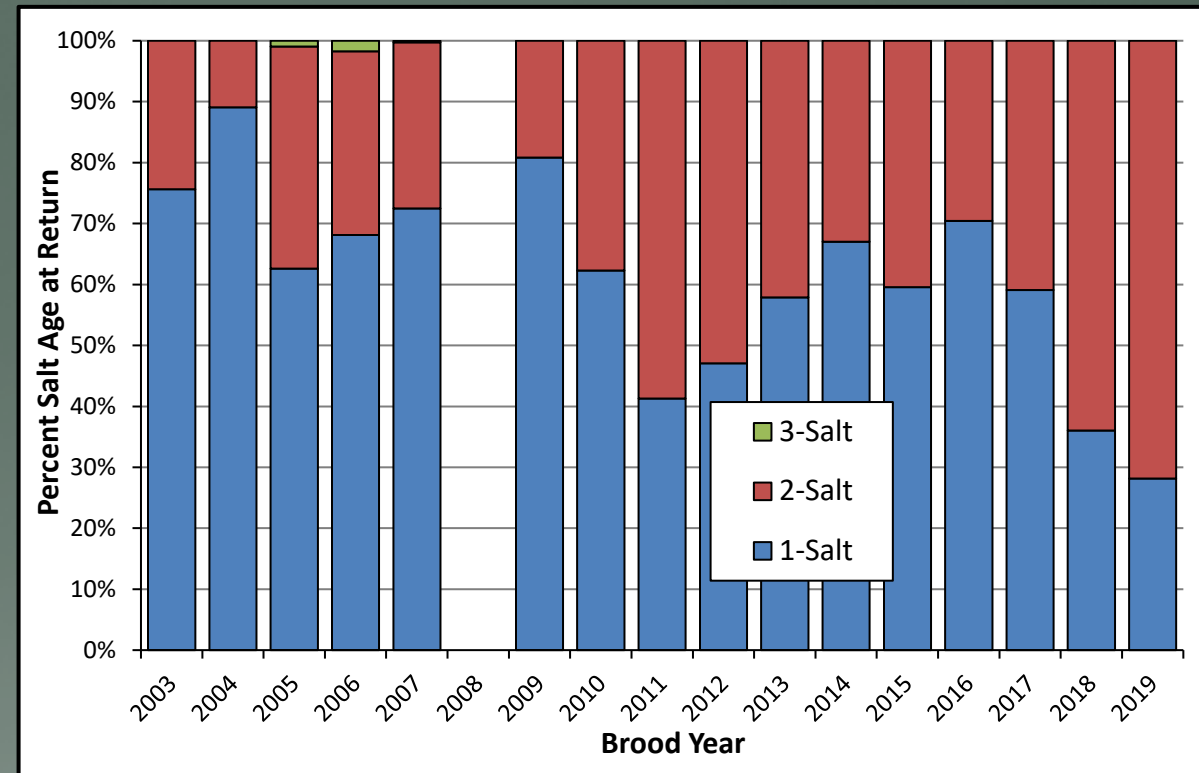


Age at Return

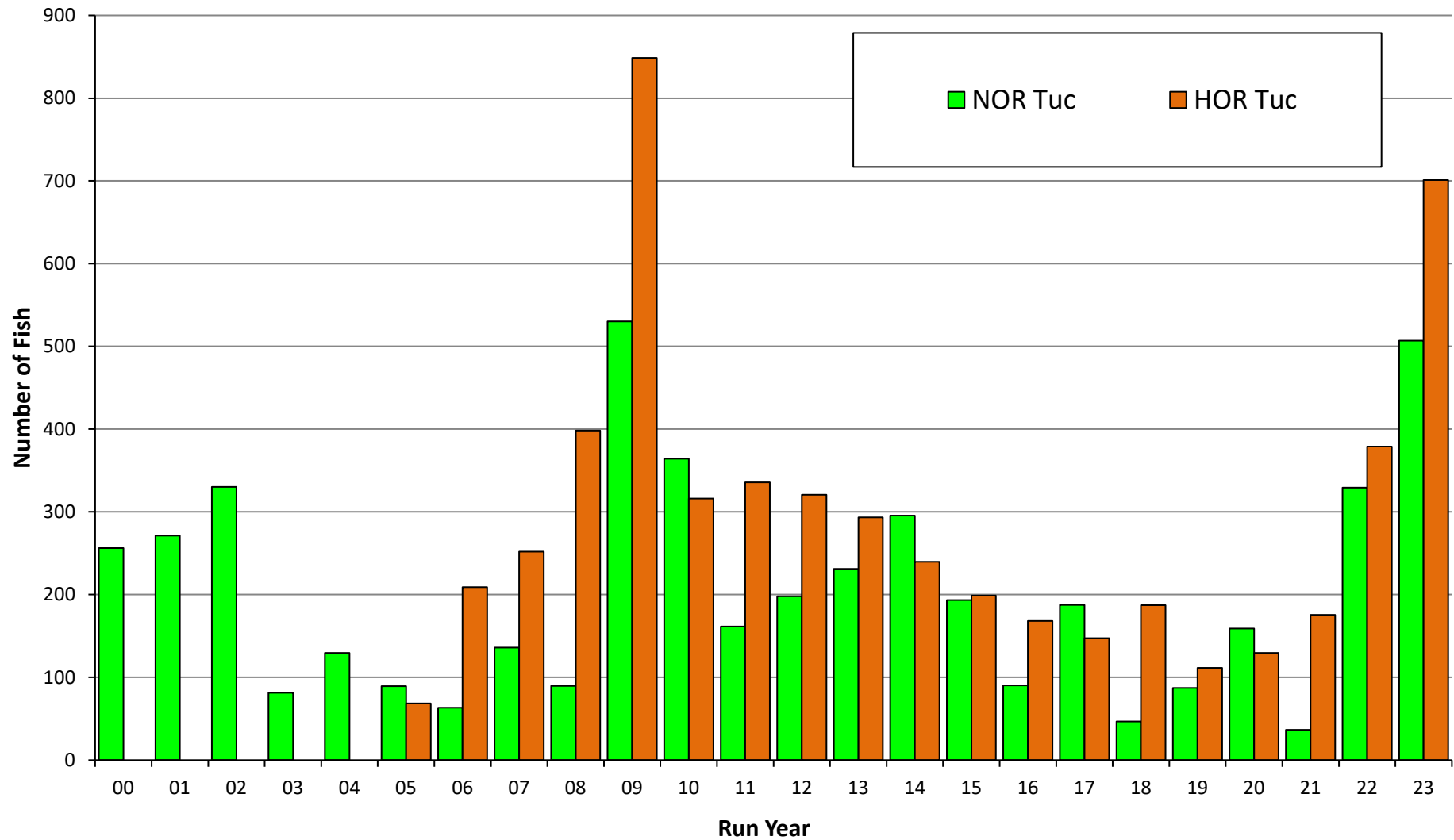
NOR_{TUC}



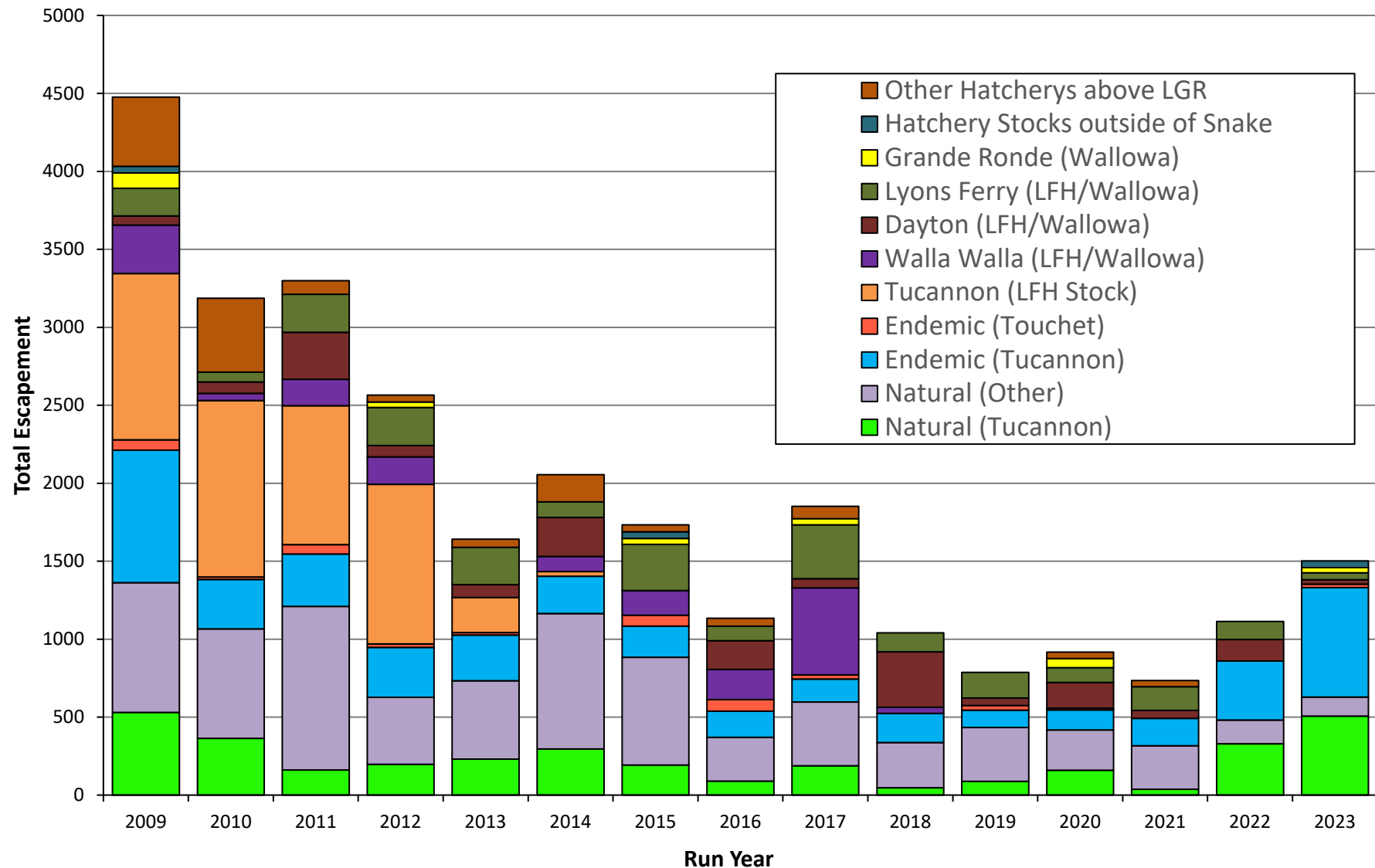
HOR_{TUC}



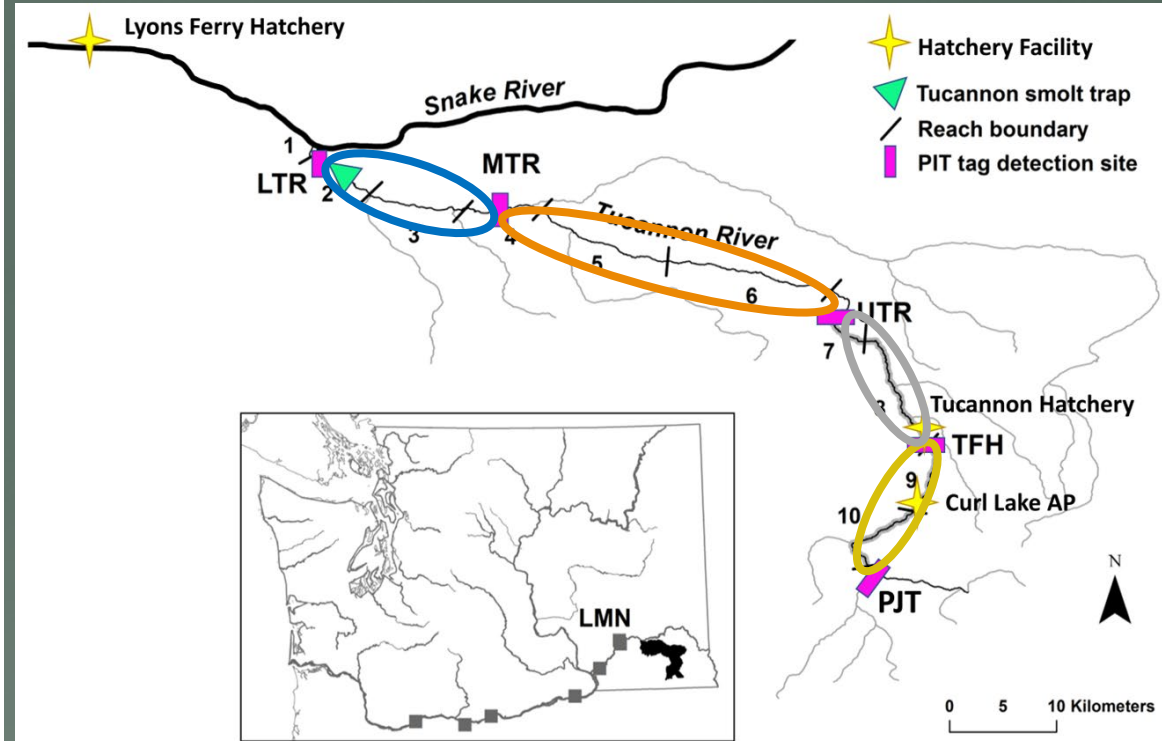
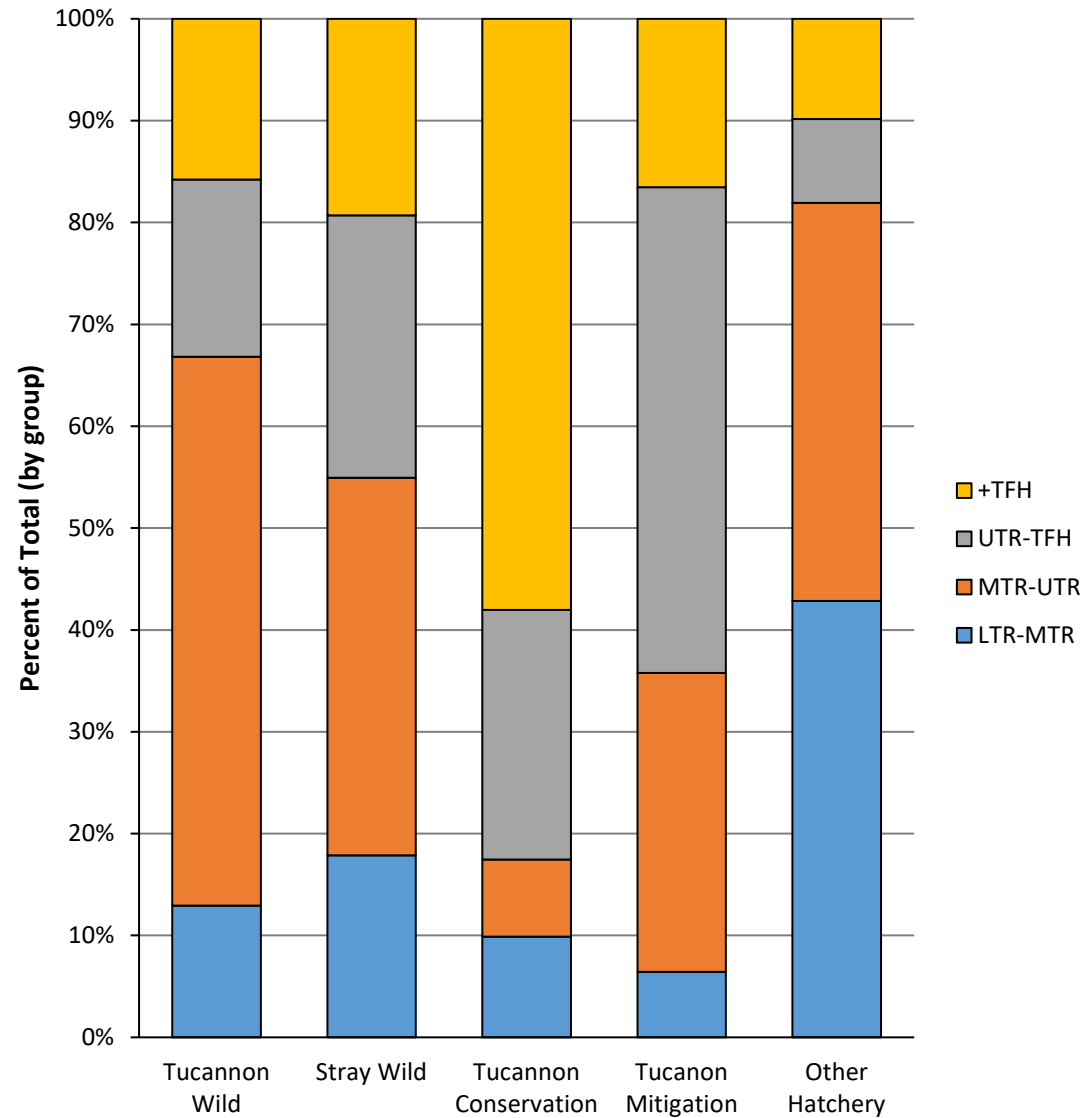
Adult Returns to Tucannon R.



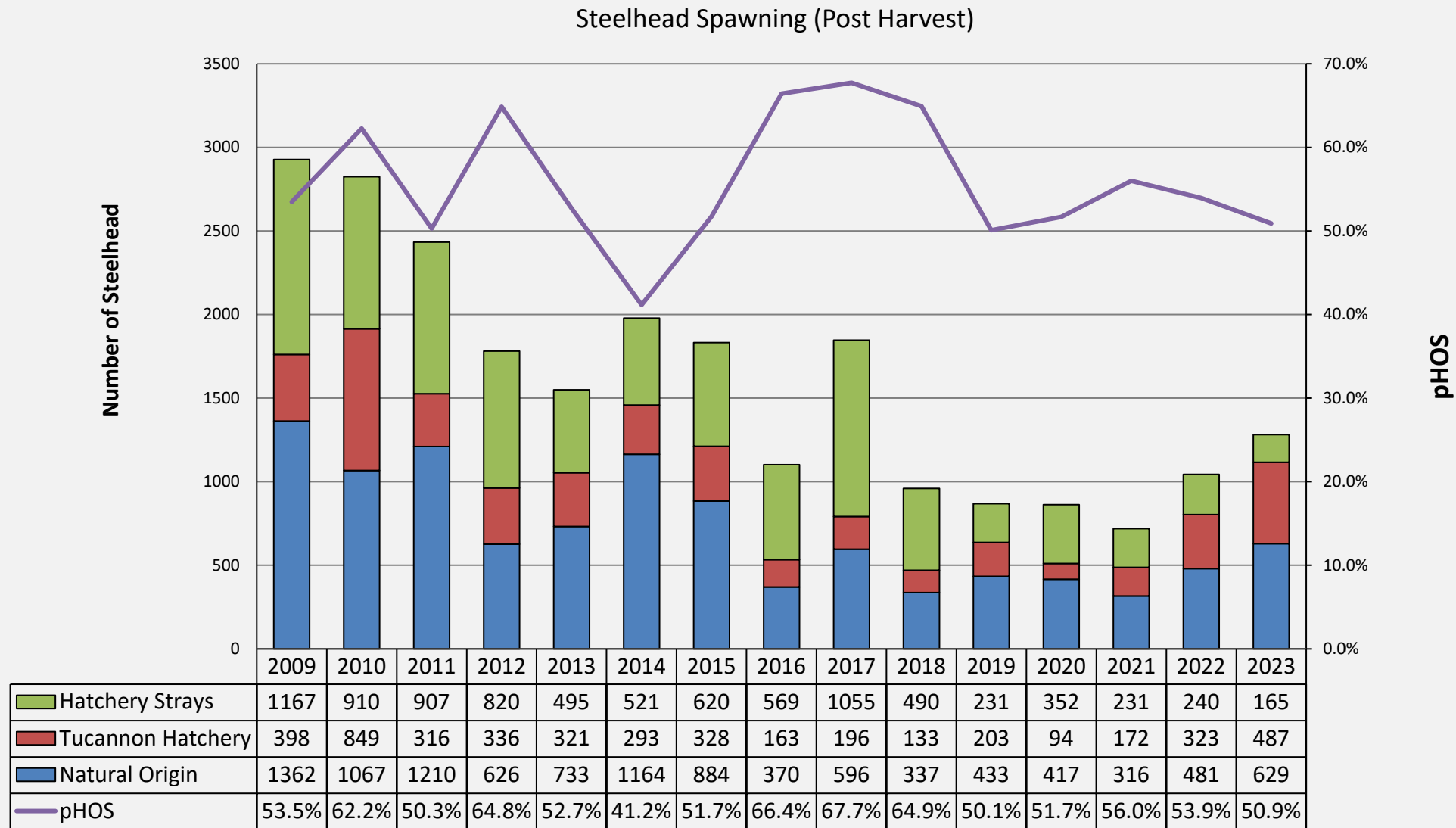
Adult Returns to Tucannon R.



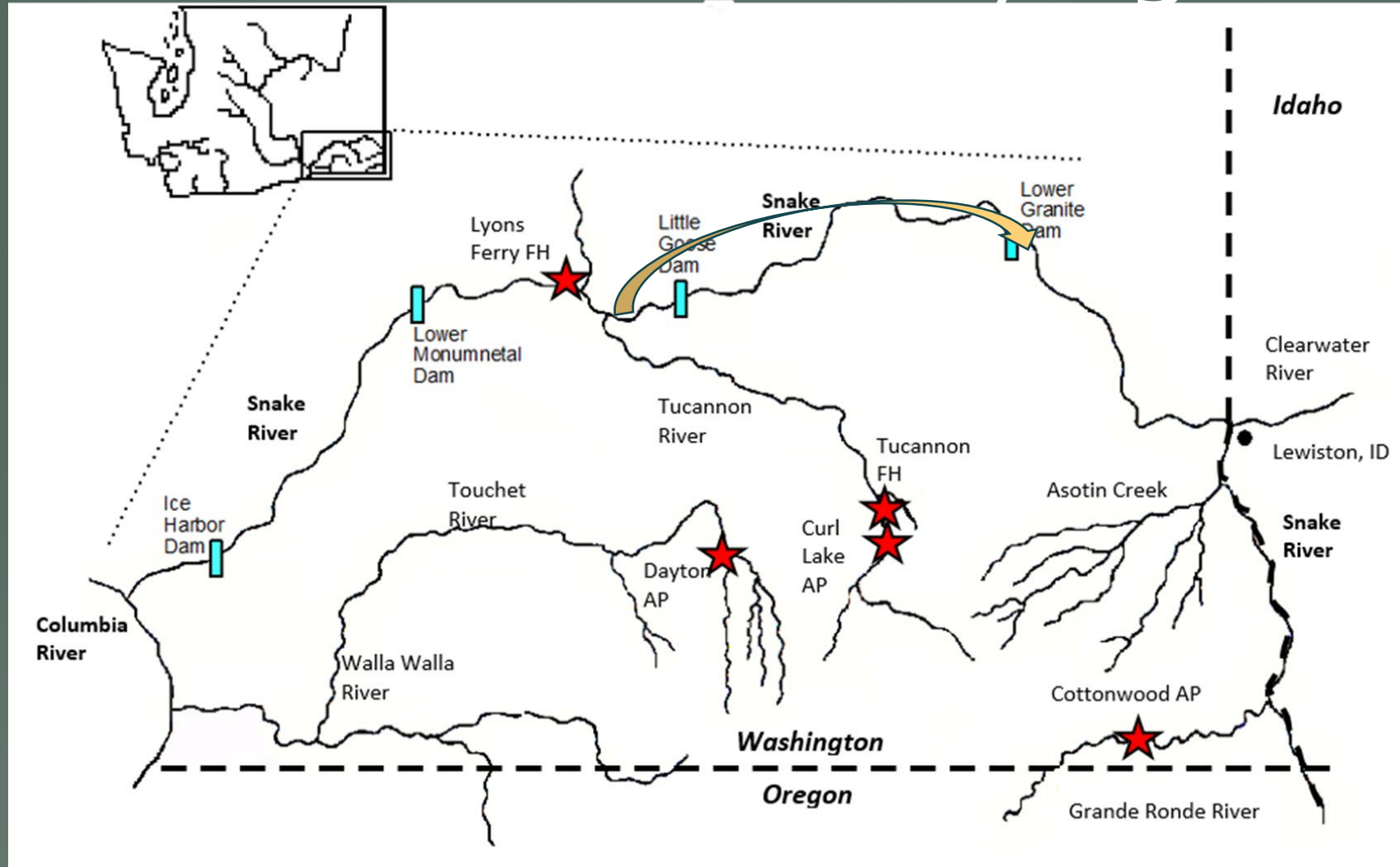
Spatial distribution of spawners



Adult Returns to Tucannon R.

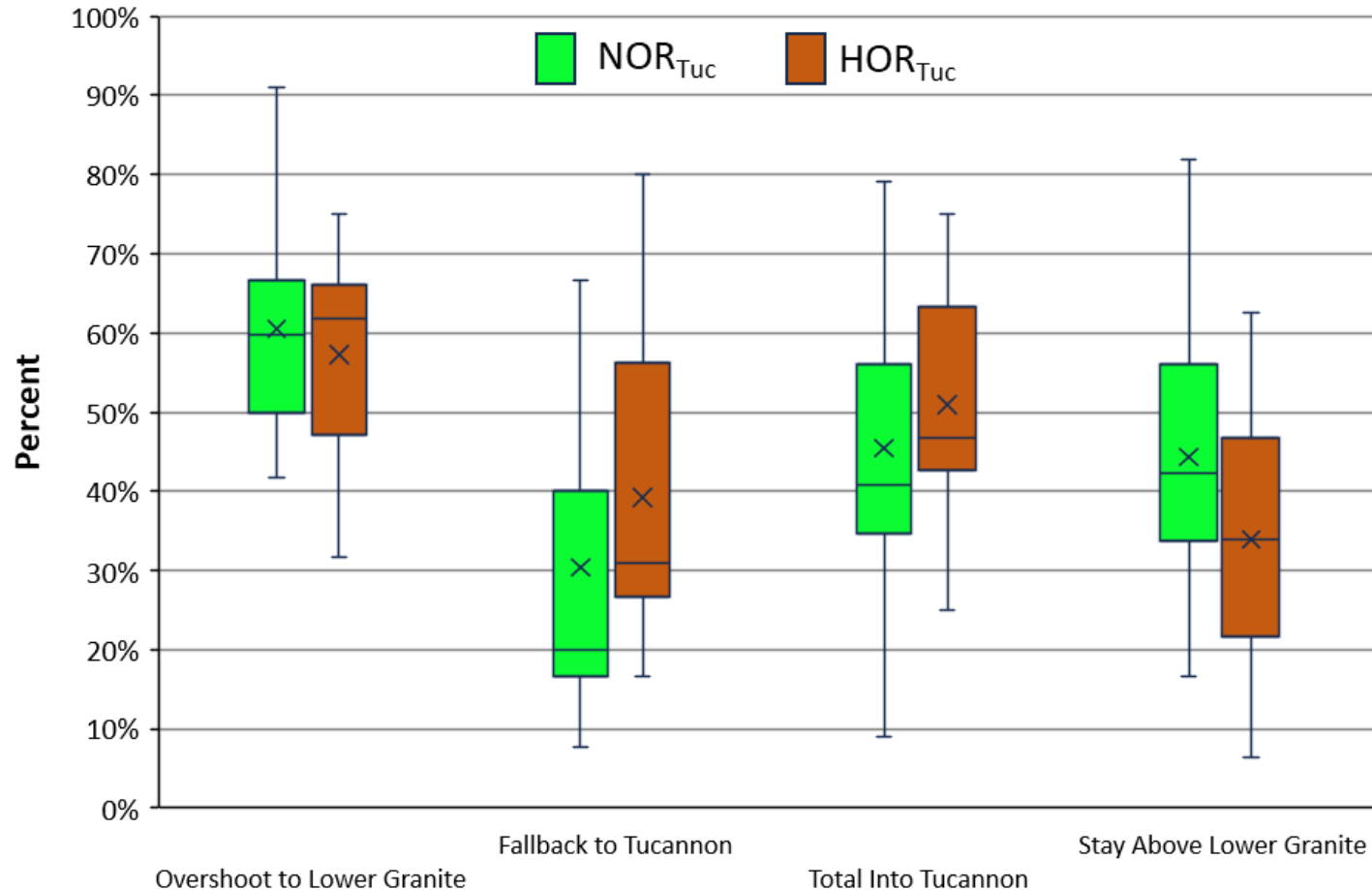


Overshoot/Straying

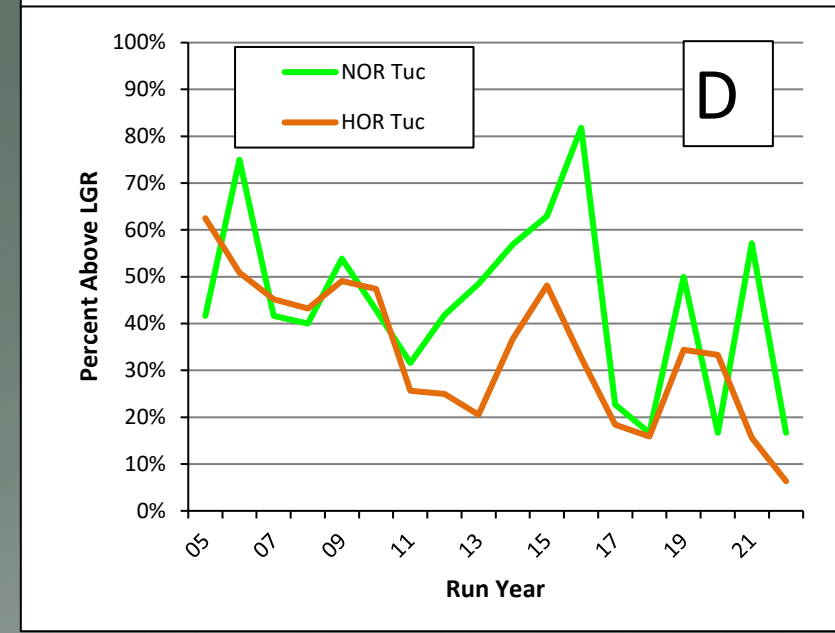
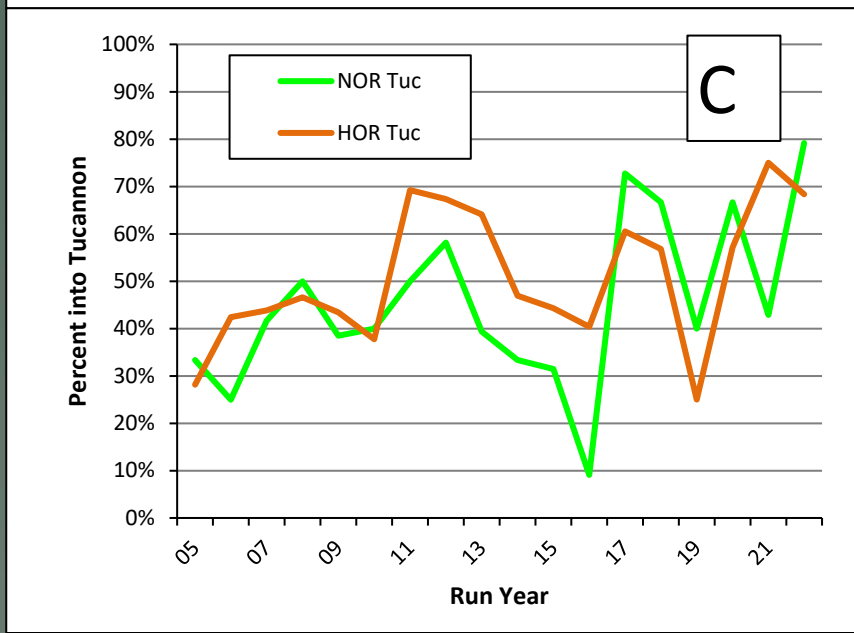
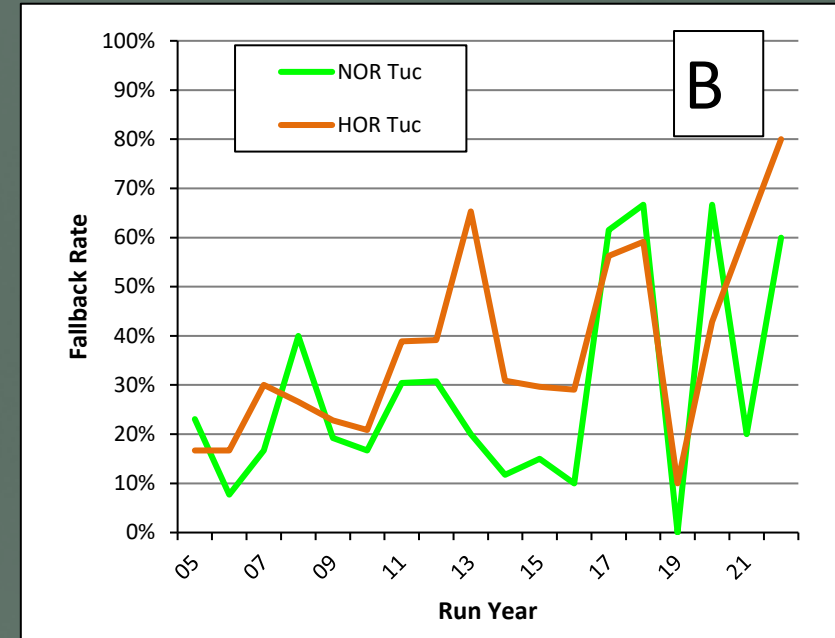
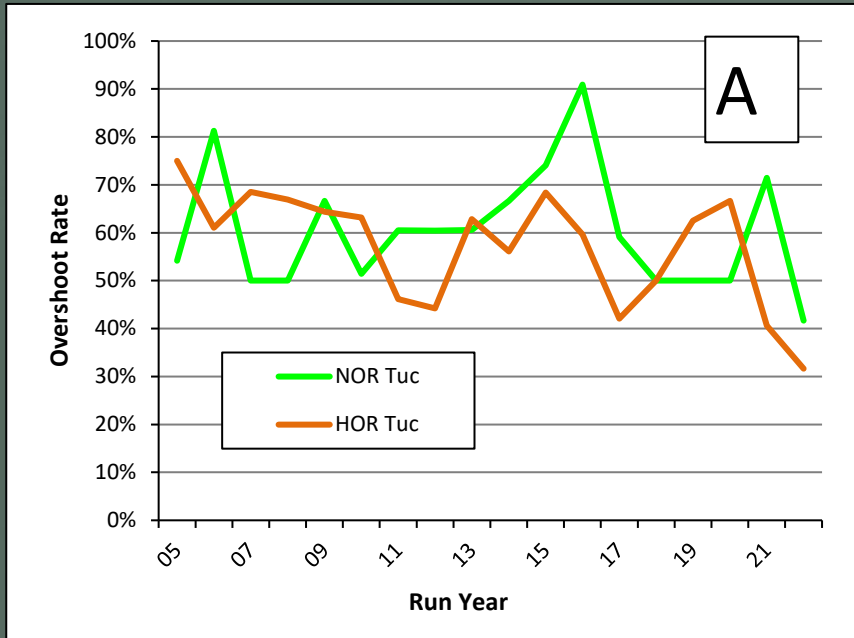


Overshoot/Straying

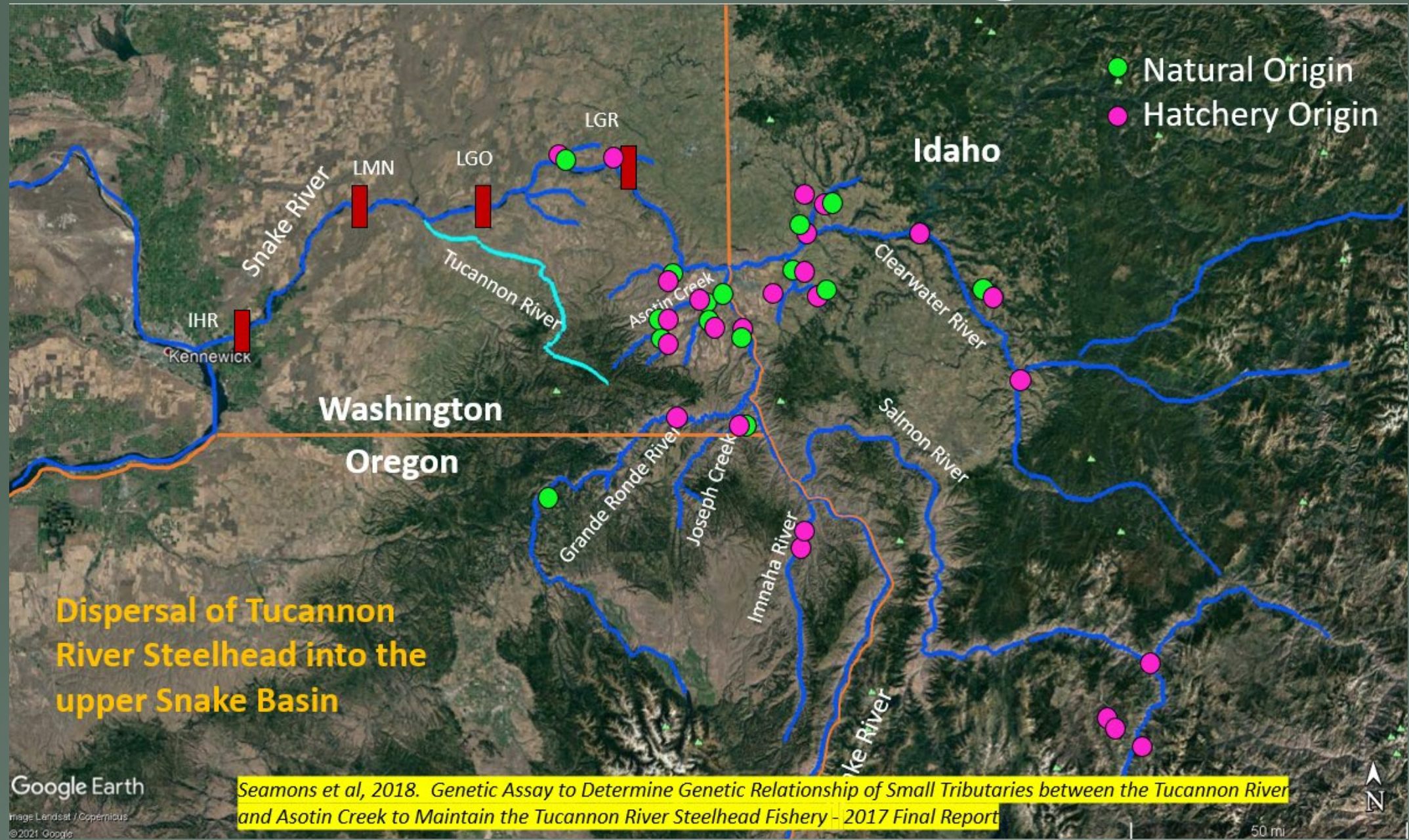
Stock	Number of PITs Detected at IHR Dam (N)	Overshoot Rate to LGR	Fallback Rate to Tucannon River	Total Into Tucannon River	Remain above LGR Dam	Between IHR and LGR
HOR_{Tuc}	1,966	59%	32%	49%	38%	13%
NOR_{Tuc}	592	61%	24%	44%	46%	10%



Overshoot/Straying

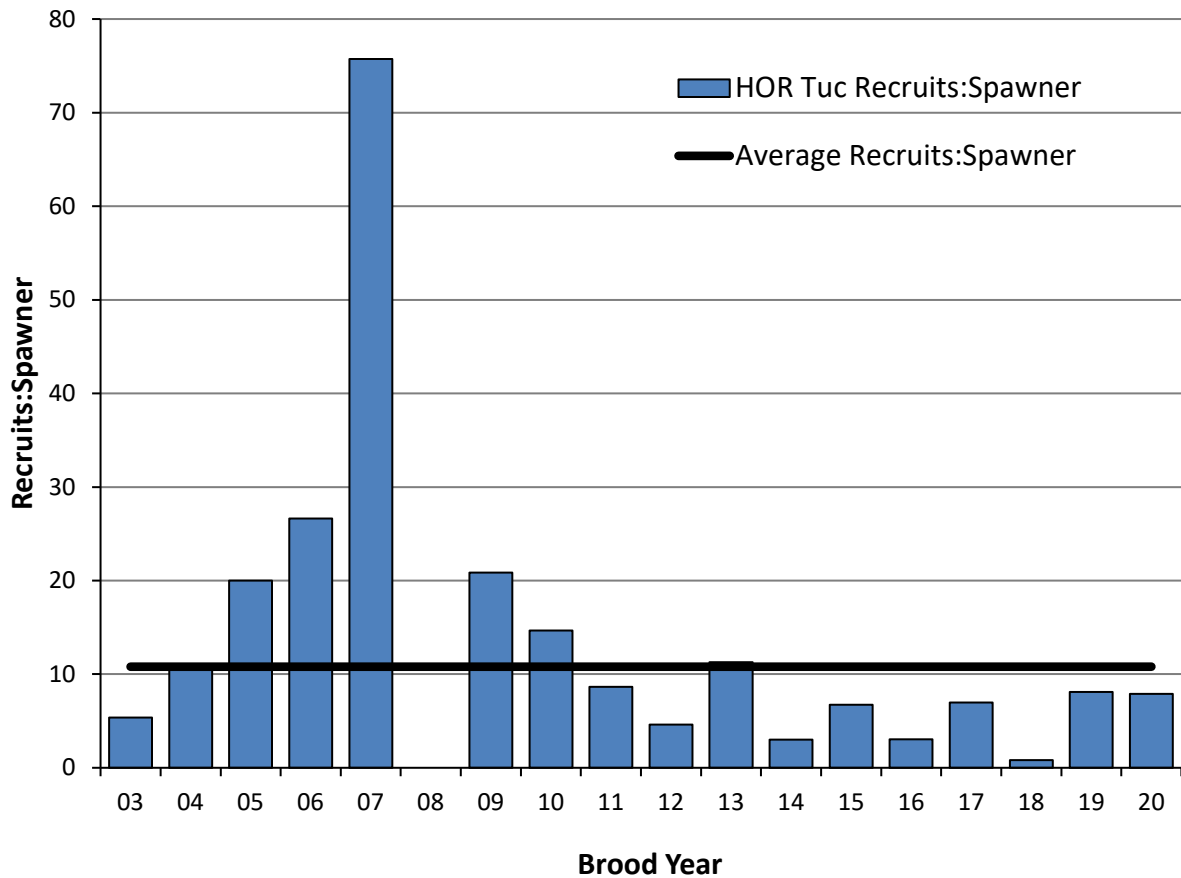


Overshoot/Straying

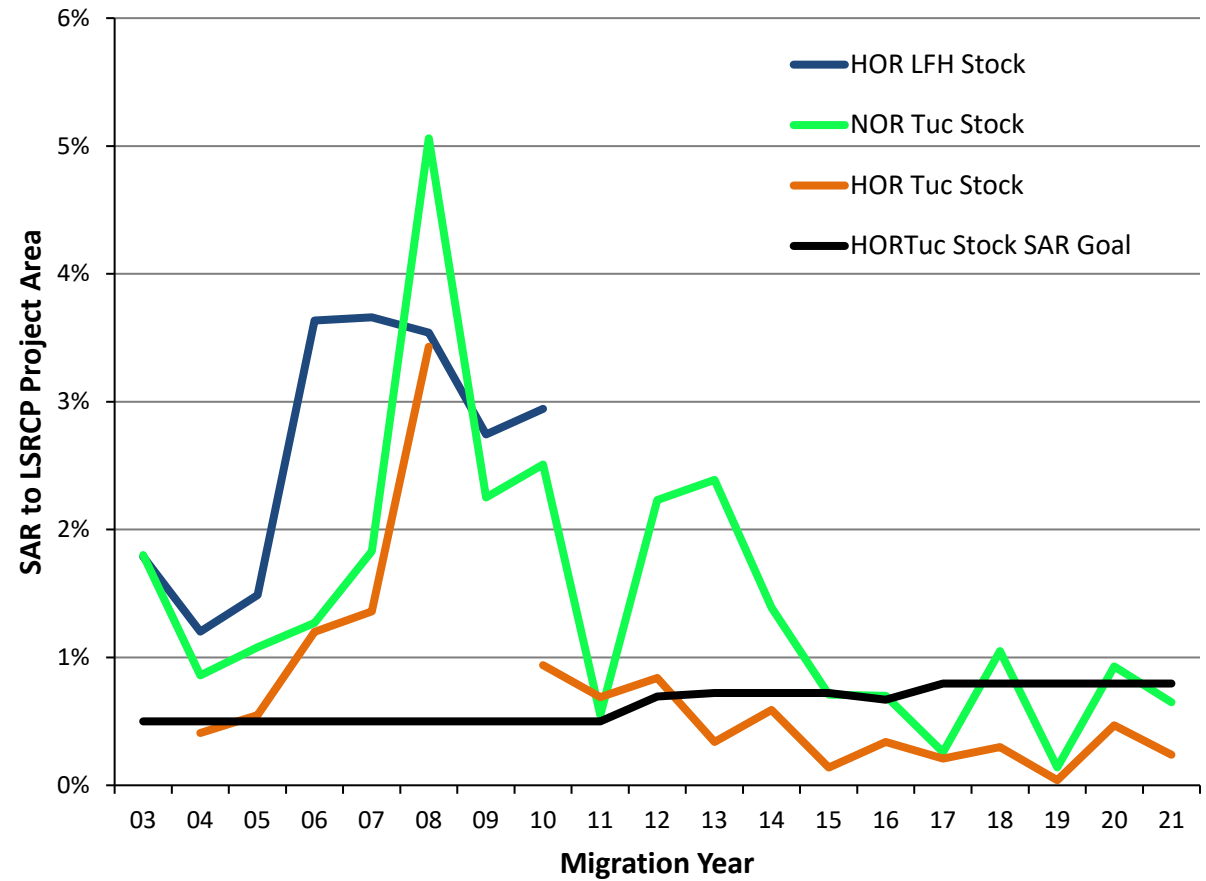


Productivity

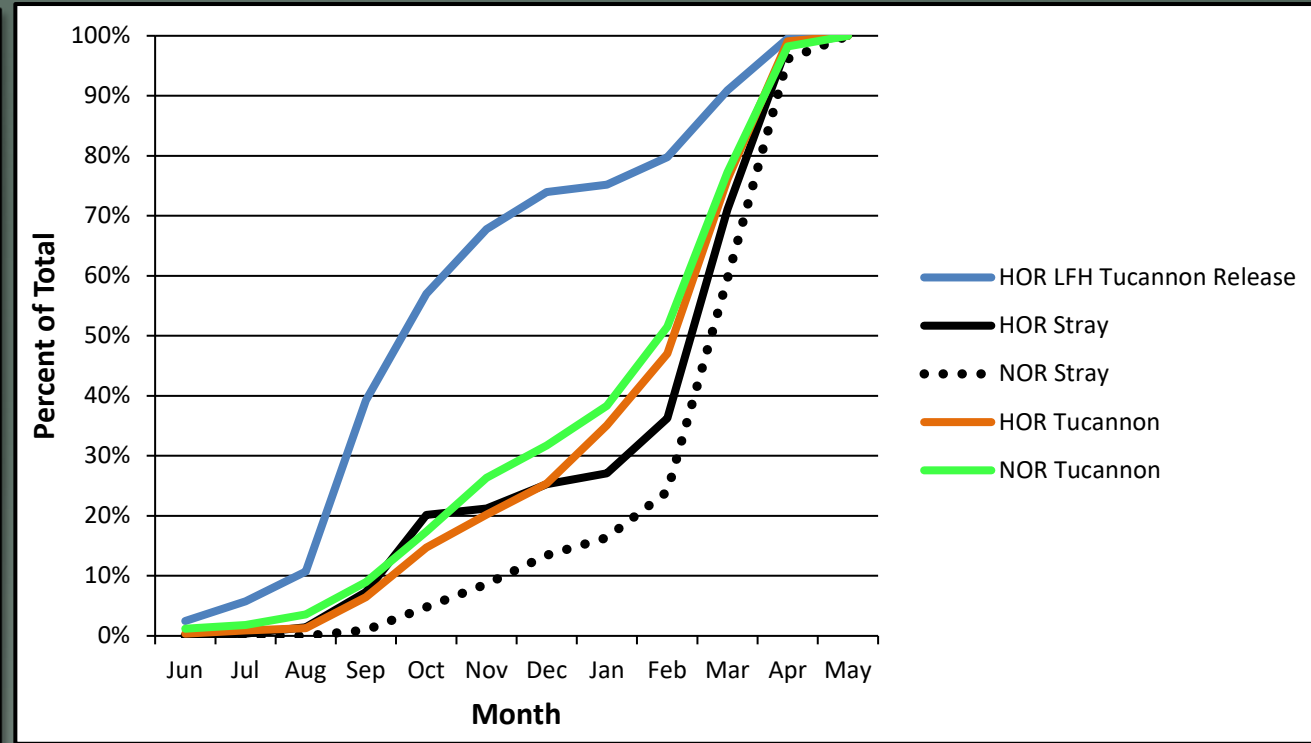
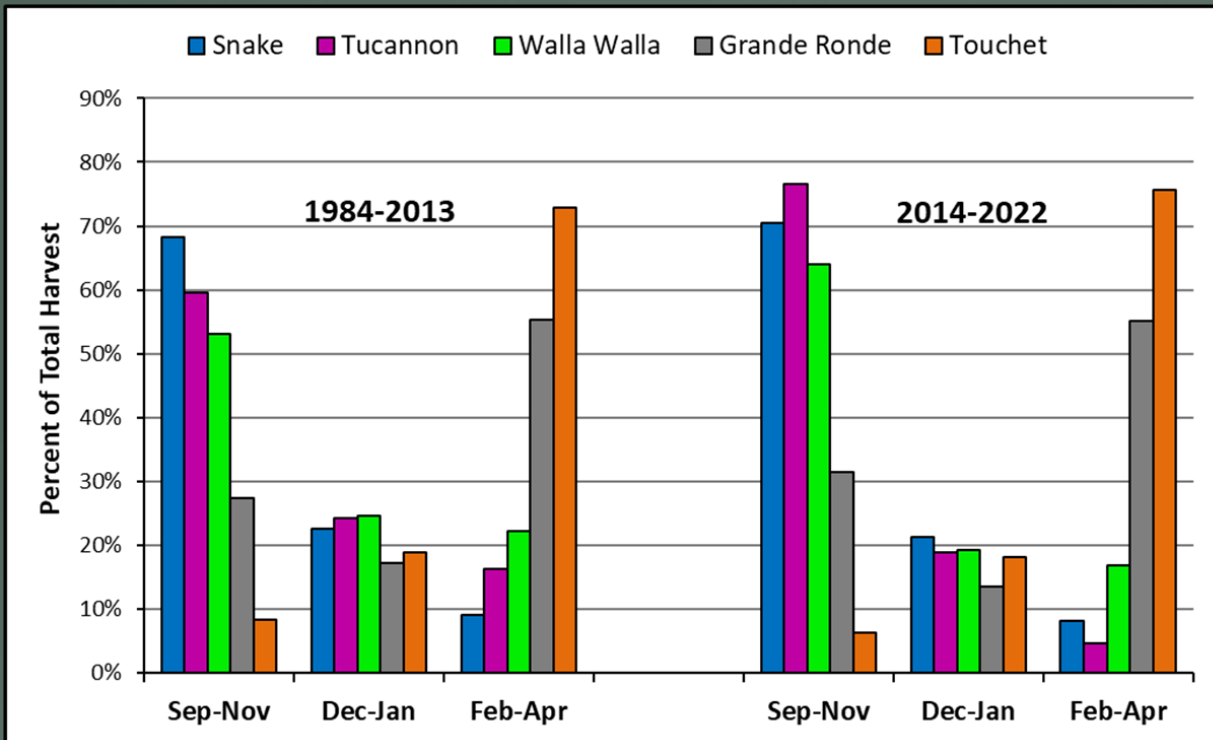
R/S HOR_{TUC}



SARs

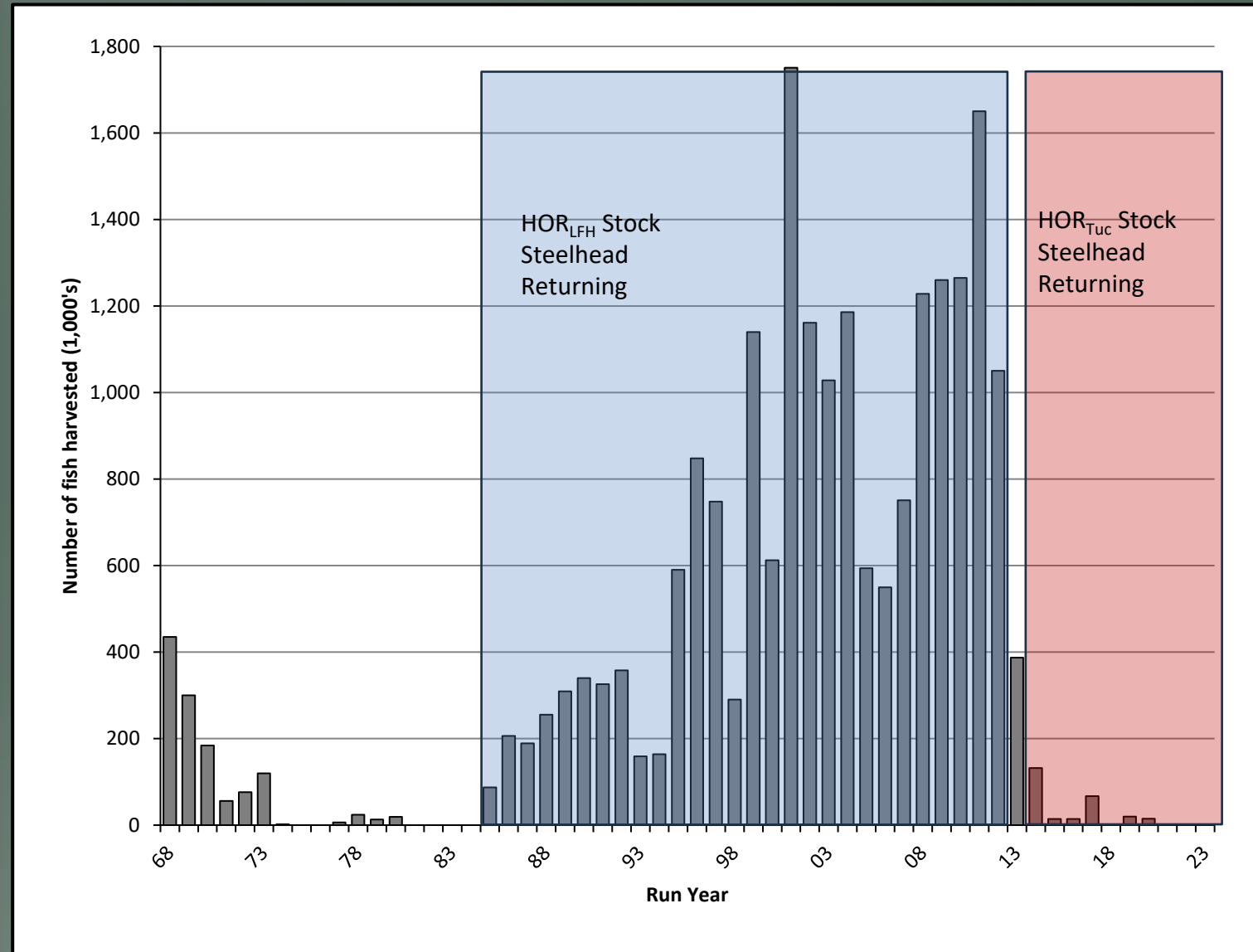


Harvest



Harvest

- Significant Tucannon River harvest reduction with ending HOR_{LFH}
- Mitigation release contribute to mainstem fisheries



HOR_{TUC} Summary

The good:

- In-hatchery performance
- Stock changes/less stray hatchery fish
- Mitigation Group beginning to perform better

The not as good:

- Overshoot
- Is it working?
 - NOR?
 - Not for harvest*
- Residualism monitoring



Next steps HOR_{TUC}:

- Expand HOR_{TUC} stock utilizing space at LFH
 - Lake #1
 - New construction
 - Domestication of HOR_{TUC} mitigation group
- Replace HOR_{WAL} releases with HOR_{TUC} stock
 - On-station Release
 - Minimize impacts donating to Tucannon R., Lower Snake Tribs
 - Dayton AP release
 - Overshoot into Snake R. ~82%, donating 66% adult returns to Lower Snake

Questions?

