

Utilizing PIT Tag Arrays to Detect Translocated Adult Pacific Lamprey in the Clearwater River Basin, Idaho

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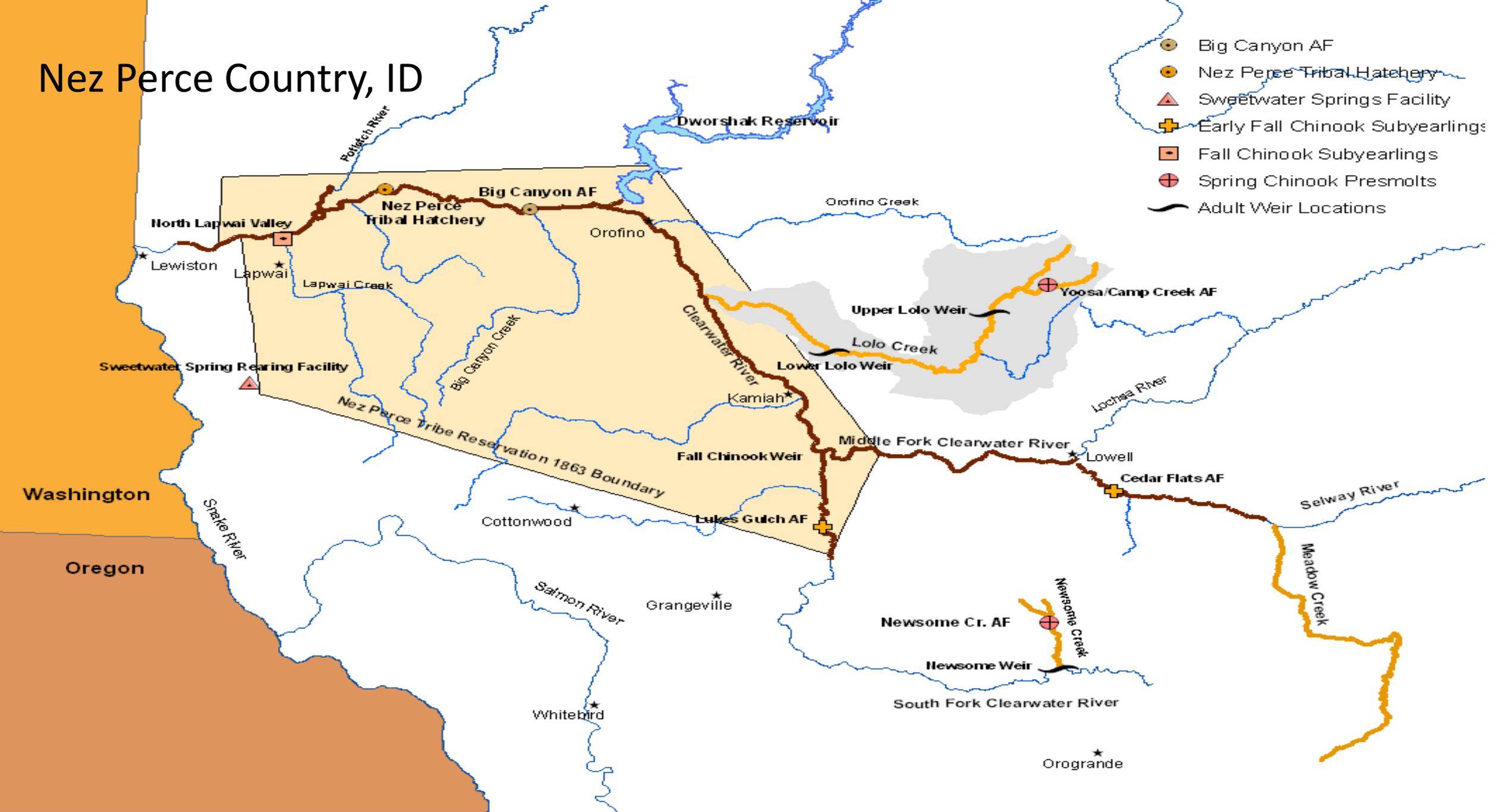
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Nez Perce Country, ID



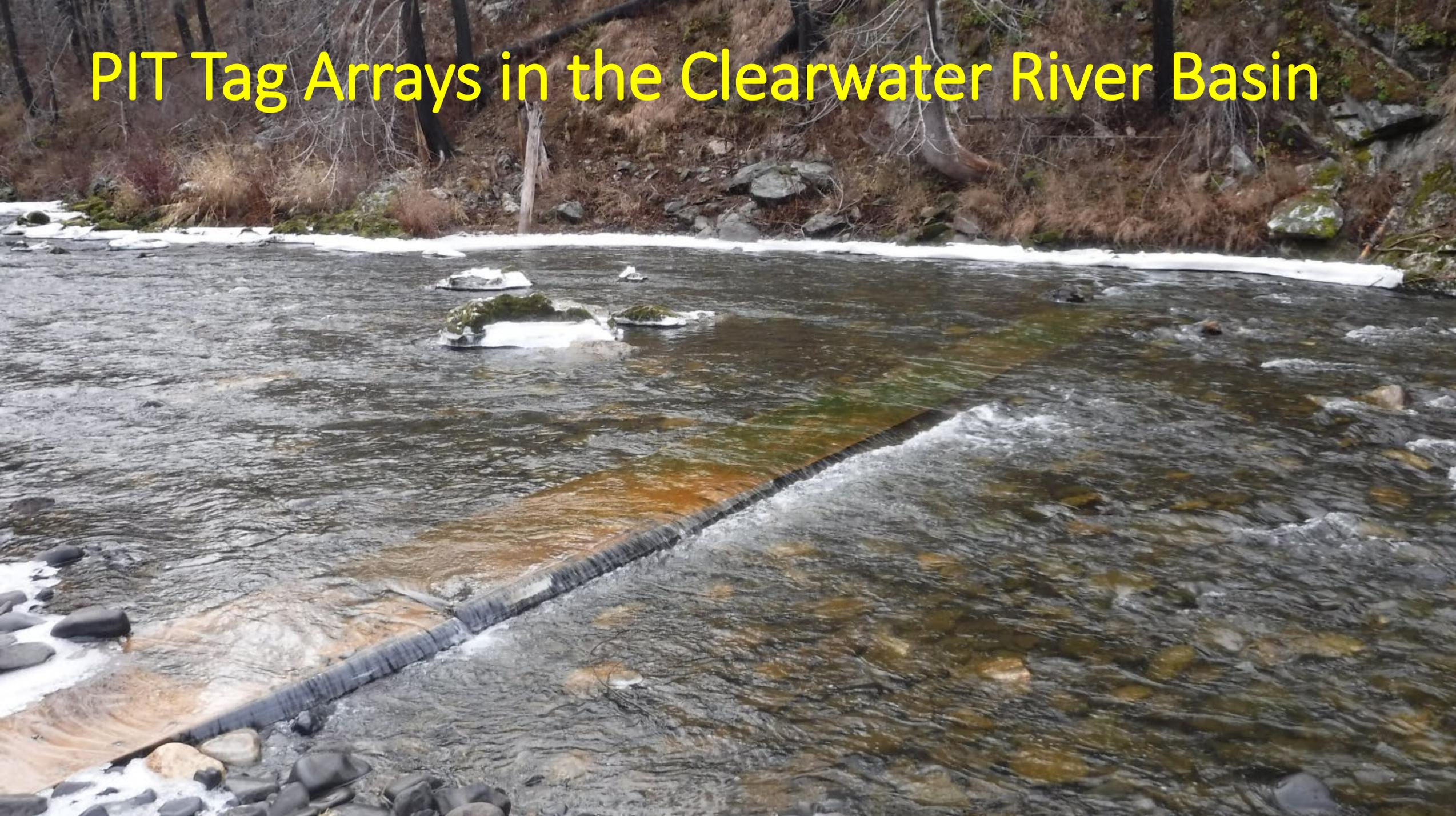


Lamprey holding tanks at Nez Perce Tribal Hatchery

A Good Problem, and a Little Experiment

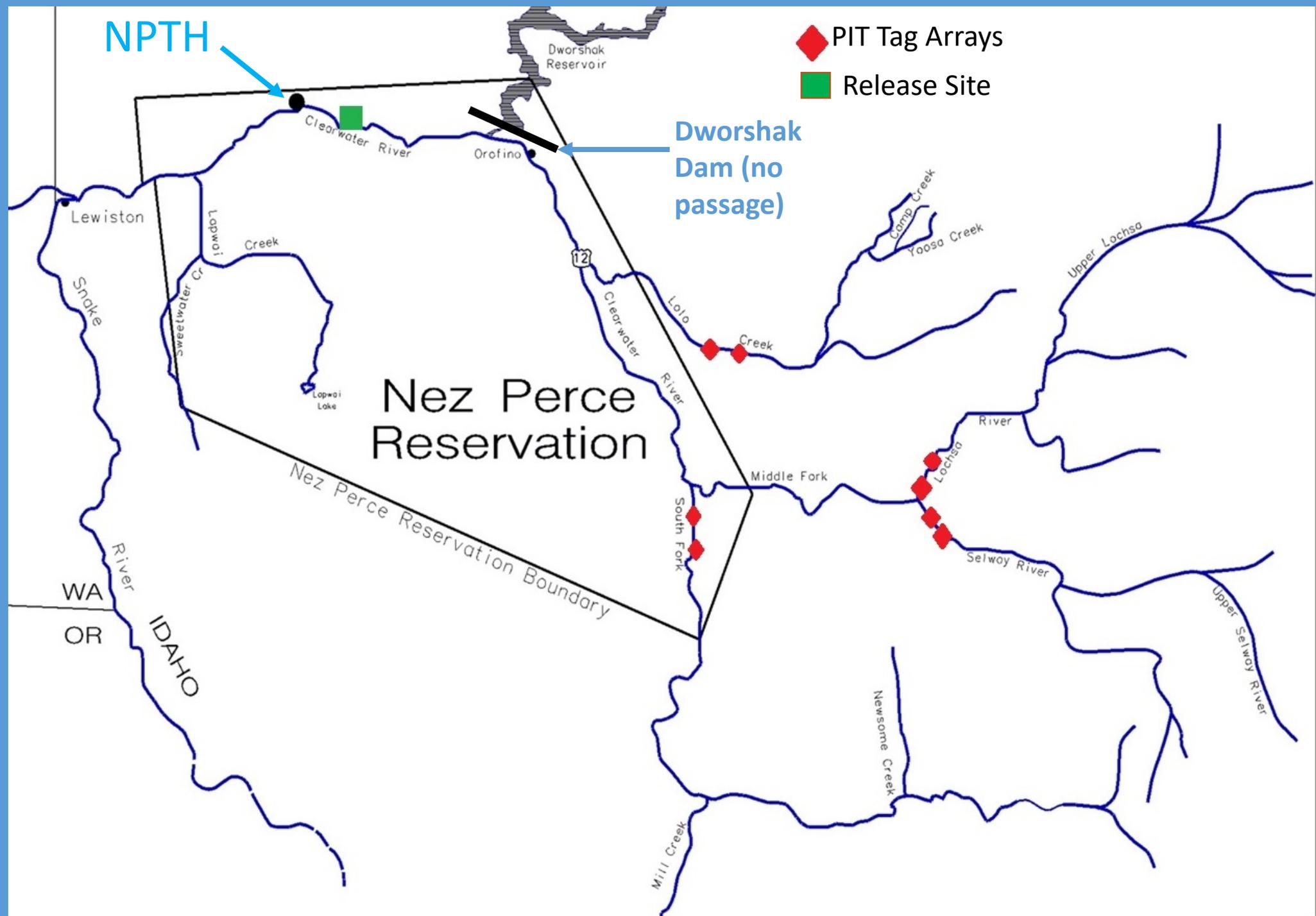
- 2018 – a good return of adult Pacific Lamprey to the Columbia resulted in a “surplus” allocation to NPT
- July 2018 - 212 translocated adult lamprey are PIT tagged at NPTH
- Lamprey were released the same day they were tagged in to the mainstem Clearwater River near NPTH

PIT Tag Arrays in the Clearwater River Basin



NPTH

- ◆ PIT Tag Arrays
- Release Site

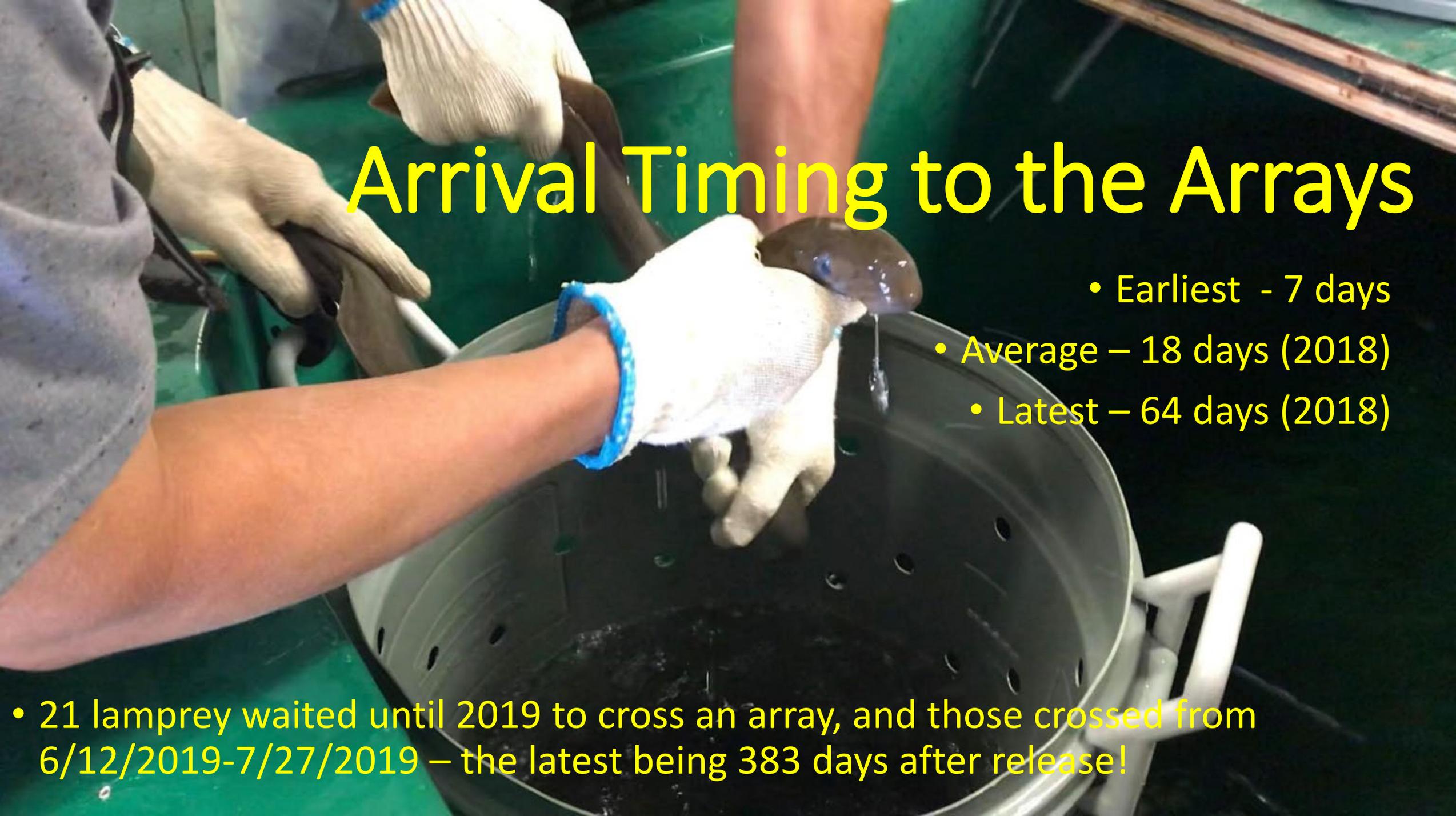


Release Groups

- N= 212
 - 100 from John Day Dam collection (released 7/9/2018)
 - 100 from Bonneville Dam collection (released 7/9/2018)
 - 12 from The Dalles Dam collection (Released 7/12/2018)
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- All lamprey PIT tagged the morning of the day of release

Did they get detected?

- Yes!
- 139 of the 212 tagged lamprey were detected at the arrays
- Using known efficiencies of these arrays, this gives us an estimate of 185 lampreys detected
- 87% calculated passage above the arrays
- No other PIT tag arrays in the Snake River basin detected any of our lamprey

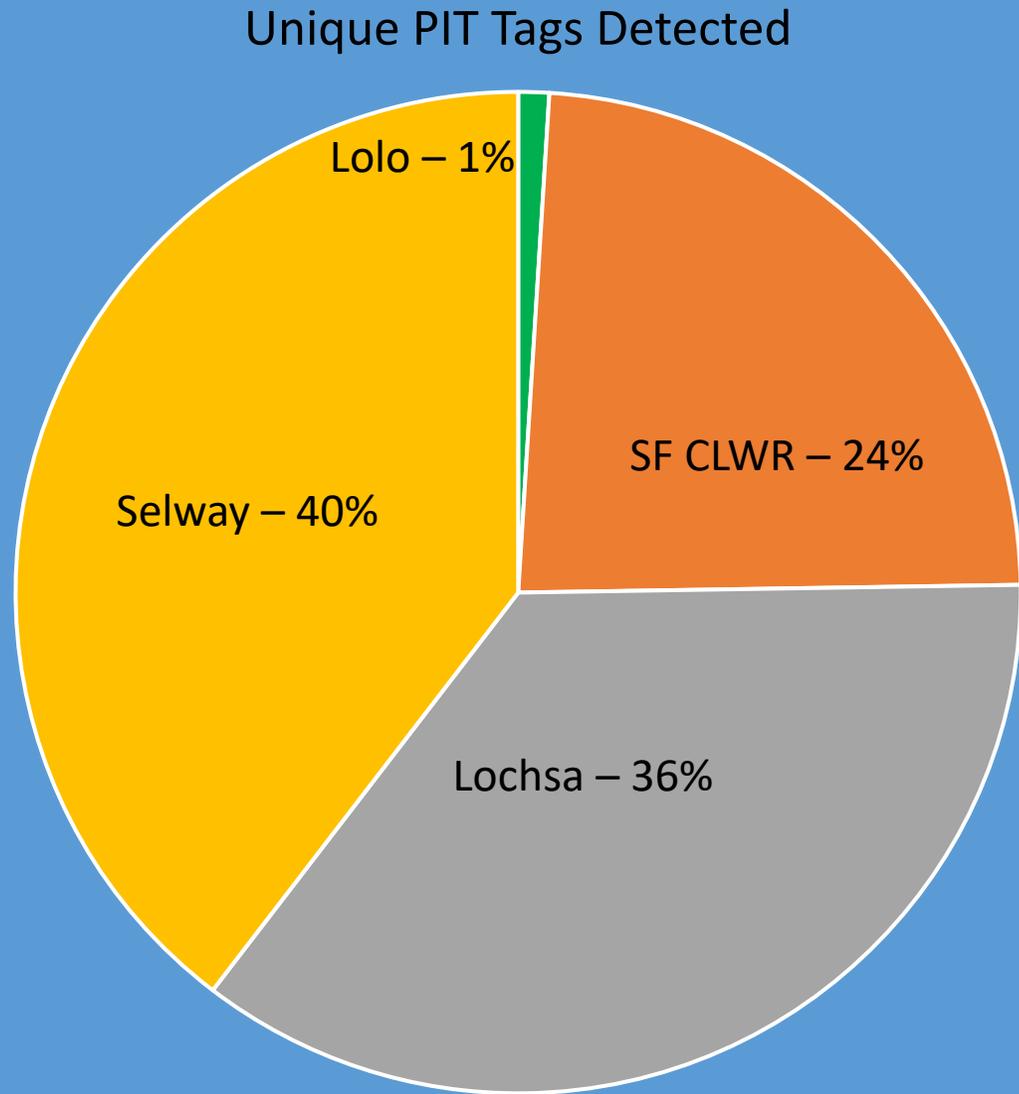


Arrival Timing to the Arrays

- Earliest - 7 days
- Average – 18 days (2018)
- Latest – 64 days (2018)

- 21 lamprey waited until 2019 to cross an array, and those crossed from 6/12/2019-7/27/2019 – the latest being 383 days after release!

Where did they swim to?



Our lamprey prefer the cover of darkness

Anywhere else they could have went?

- Some fish could have shed a tag, or been “missed” by the arrays
- Not every tributary of the Clearwater River has an array installed

Closing Thoughts

- NPT has been releasing translocated lamprey in to Lolo Creek and Newsome Creek (tributary of the SFCWR) for years, and those streams hold thousands of ammocoetes.
- Despite the known pheromone plume coming from these streams, most lamprey opted to swim to the Lochsa and Selway rivers, where natural populations occur.
- Lolo and the SFCWR are low elevation/low volume where they meet the mainstem Clearwater, thus producing warm, low flows
- Lochsa and Selway Rivers drain from higher elevations and contain much greater flows, and potentially colder in late summer

The Future

- Direct release of translocated lamprey in the year they are collected would reduce the risk of holdover mortality in the hatchery
- With spring translocation we can direct where the lamprey will spawn, this is not possible with summer time translocation/mainstem release
- Direct release translocation could be yet another tool for the Nez Perce Tribe to help sustain lamprey populations above the Columbia-Snake Hydrosystem