

Okanogan Adult Temporary Weir

Objectives

- Install early July or August, operate through September under allowable flow (< 3,000 cfs) and temperature (<22.5 °C) conditions
- Adult management tool for broodstock needs, meet pHOS (<30%) and PNI (> .67) target
- Refine trap configuration to meet the CJHP's biological and brood-take goals
- Remove HOR summer/fall Chinook fish; fish from this "adult management" activity are destined for tribal member ceremonial and subsistence purposes
- Collect late arriving natural-origin broodstock summer/fall Chinook and transport safely to the hatchery
- Document weir effects and conduct observations around vicinity of the weir for species composition, abundance, health, and timing to inform management decisions and future program operations

2020 Operation

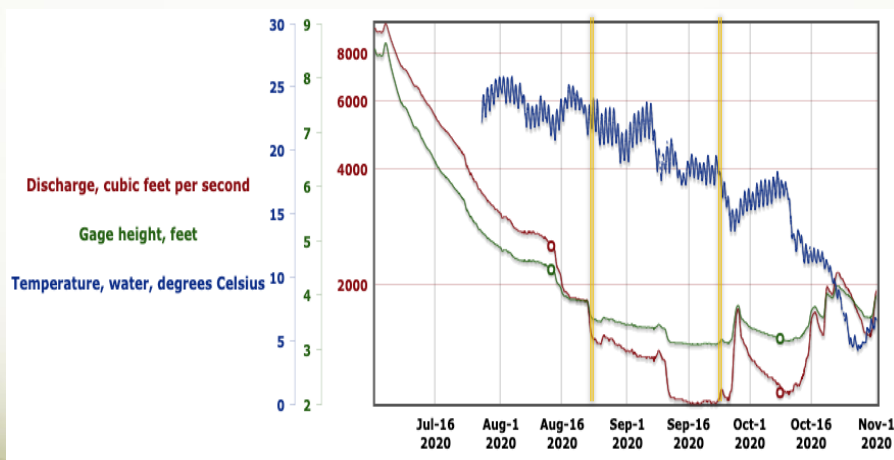
- Deployed on August 17th at 1,900 cfs flow @ Malott
- Completed August 21st with underwater video system
- Daily monitoring activities began following week
- Trapping began on August 27th
 - Trapped for month, except for 2 days
 - Ended on September 24th after brood goal met
- Configuration
 - River right- 1" picket spacings
 - River left- 1" picket spacings, set of (5) 2" picket spacings for passage, similar to previous years

Daily Monitoring Activities

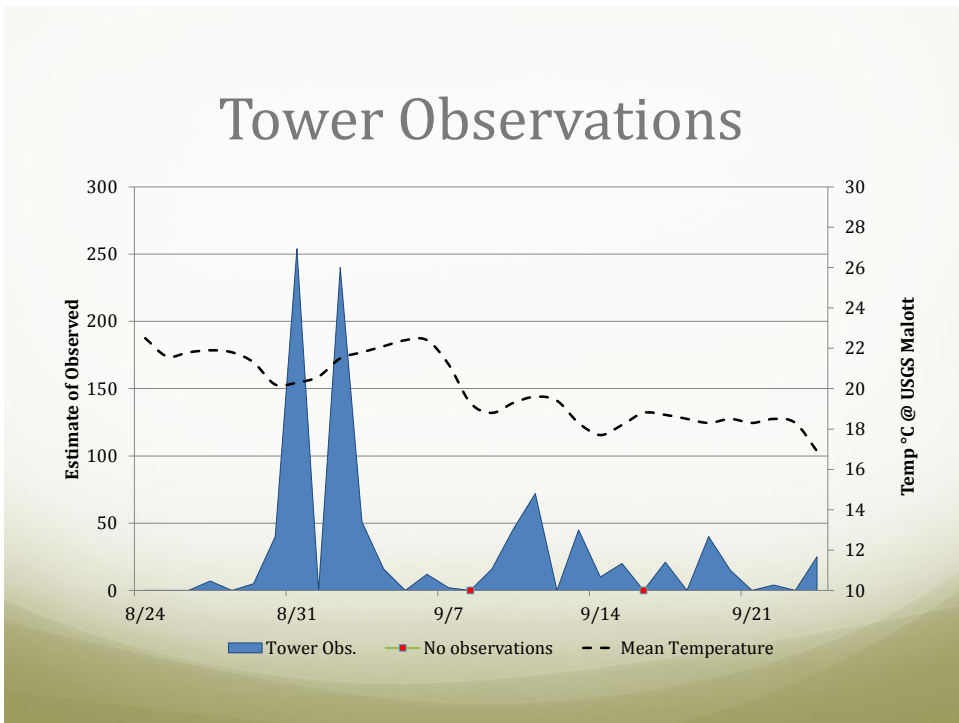
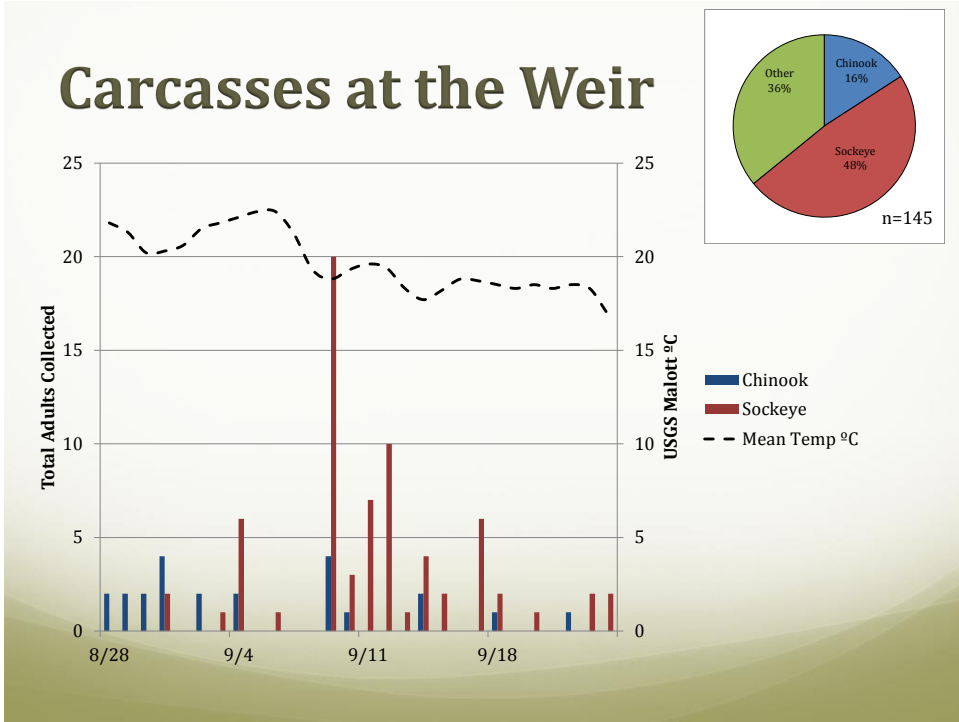
- **Daily maintenance**- debris, carcass removal, cameras, lights
- **Water quality:** temperature, dissolved oxygen, and turbidity
- **Water velocity and head differential***
- **Direct observations** (estimates)
 - Tower- 3x/day, 5 minutes, morning, afternoon, evening
 - Bank- about .8 river km downstream, 2x/day, 10 minutes
- **Mortalities**
 - Collected, assessed, biological information
 - 23 total Chinook (21 NOR, 3 HOR)
 - 67 Sockeye, 1 Steelhead
 - Coded wire tag snout recovery
- **Underwater video review**
 - 2 cameras along the chute (1 DS, 1 US), 1 camera inside trap (west panel)
 - Live monitoring to assist in daytime trapping



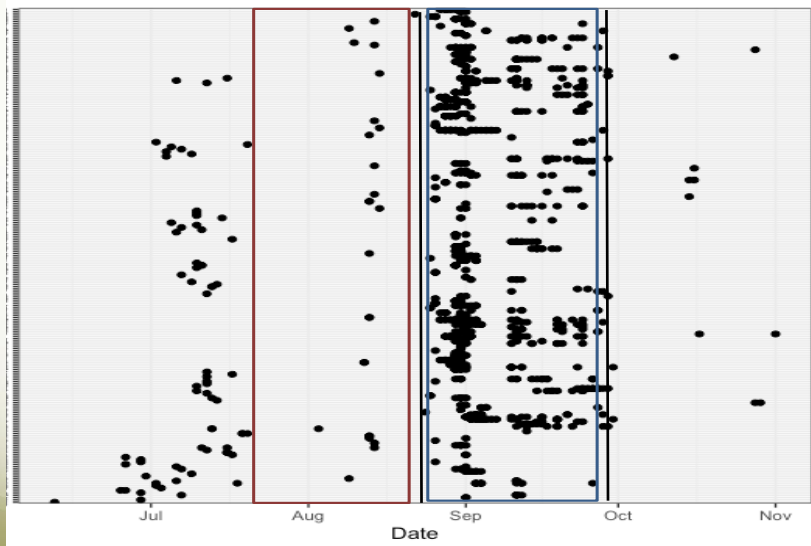
Water Quality



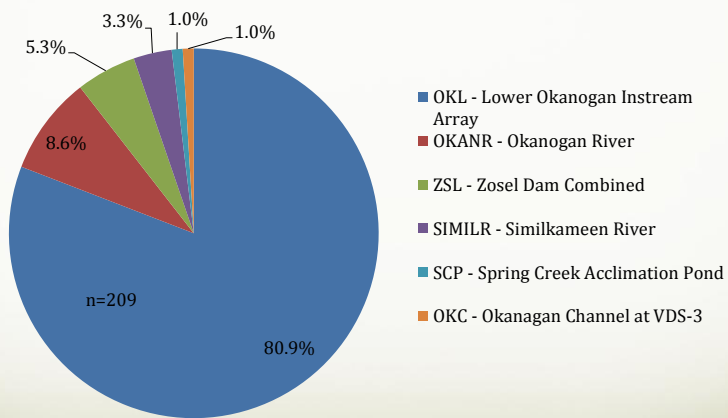
<https://nwis.waterdata.usgs.gov/wa/nwis/uv?>



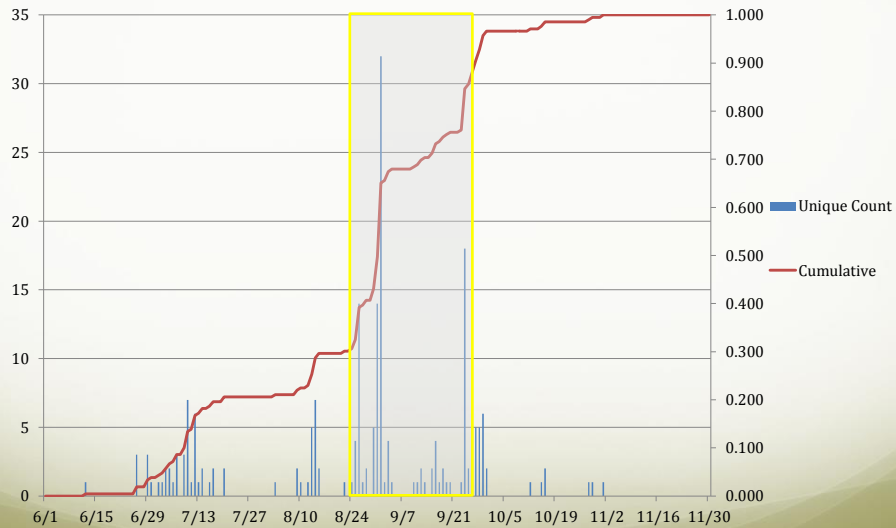
OKL Array 2020



Last Detection Site



Last Detection OKL

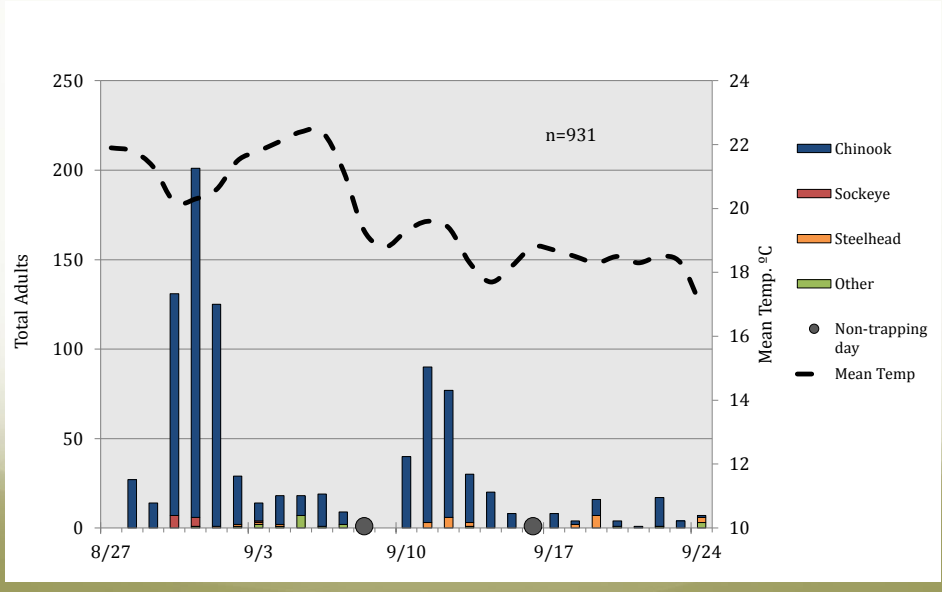


Trapping Operations

- Trapping began on August 24th, ended on Sept. 24th
- 845 adult summer Chinook
 - 606 NOR released
 - 84 NOR brood
 - 152 HOR removed
 - 25 jacks
- 13 adult sockeye (mostly in August)
- 27 steelhead (10 ad present, 17 ad clipped)
- 9 coho in last week of trapping (all ad present)

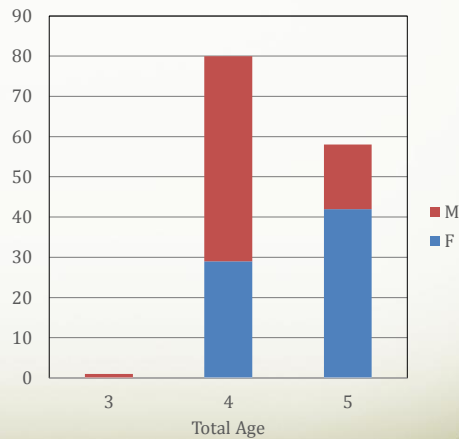


Daily Trapped



CWT Results- Weir Surplus

- 152 HOR surplussed
- 143 CWTs Extracted
 - 141 tags read
- 136 Recoveries from integrated summer releases (97%)
 - 81 from Omak Pond
 - 55 from Sim. Pond
- 1 recovery from Segregated program



Survey Year	Chinook Adults Encountered in the Weir Trap		Chinook Spawning Escapement Estimates ^{c,d}		Weir Metrics	
	Natural Origin (NOR)	Hatchery Origin (HOR)	Natural Origin (NOS)	Hatchery Origin (HOS)	Weir Efficiency ^a	Weir Effectiveness ^b
	2013	73	18	5,627	2,567	0.010
2014	2,006	318	10,402	1,762	0.147	0.138
2015	35	19	10,350	3,398	0.004	0.005
2016	135	34	8,661	1,944	0.014	0.016
2017	344	103	5,283	1,285	0.057	0.066
2018	32	16	3,322	1,538	0.009	0.001
2019	82	24	2,619	2,834	0.017	0.000
2020	709	161	8,030	2,989	0.065	0.044

^a Estimates for weir efficiency are adjusted for prespaw mortality and include Chinook adults that are harvested, released, and collected for brood.

^b Estimates for weir effectiveness are adjusted for prespaw mortality and include Chinook adults that are harvested or removed for pHOS management.

^c Estimates do not include Chinook Zosel Dam counts.

^d NOS and HOS estimates determined by 'reach-weighted' pHOS calculations

2020 Conclusions

- Flow not an issue for deployment- Installed in mid- August at 1,900 cfs (maximum flow of 2,300 for current trap location) before major thermal barrier breakdown
- Based on adult pit detections at Wells and OKL, we suspect that 30% had migrated past the weir before the weir was functional on August 24th
- Met NOR brood goal for 15% component
- 97% of hatchery recoveries in the trap were from the integrated program
- Use similar trap location in 2021
 - Provided enough water in trap box
 - Just above riffle zone and out of the pool
 - Redesign Whooshh chute so that it aligns with the point of access at the bank

THANK YOU TO OUR CCT FIELD STAFF

Vertis Campbell

Tatum Gunn

Jesse Marchand

John Pakootas Jr.

Tony Cleveland

Matthew Laramie

Kirsten Brudevold

