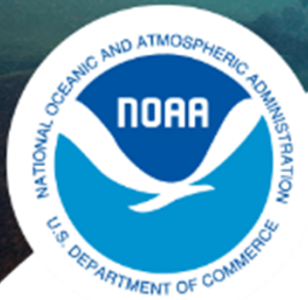




NOAA
FISHERIES

**Northwest
Fisheries
Science Center**



Ecosystem Monitoring Program 2021

Fish Community Preliminary Results

Regan McNatt, Susan Hinton, Jeff Grote,
and Dan Lomax

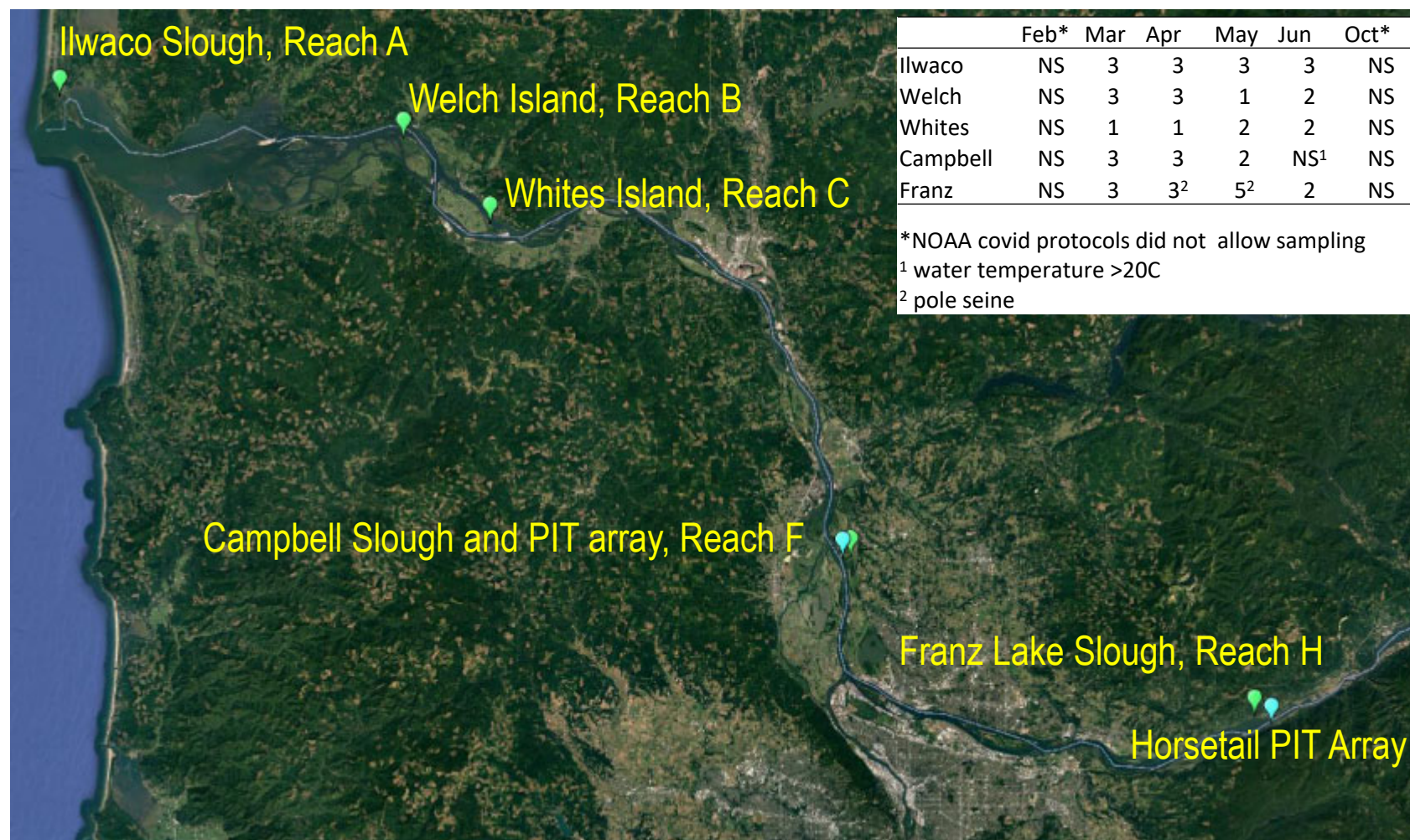
October 26, 2021

Outline

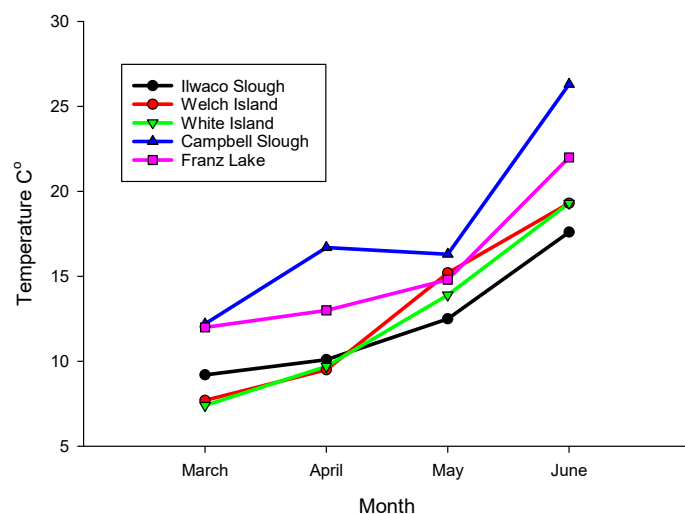
- Sites sampled
- Physical properties
- Fish Community
- Salmonid Community
 - Manuscript preview
- PIT arrays



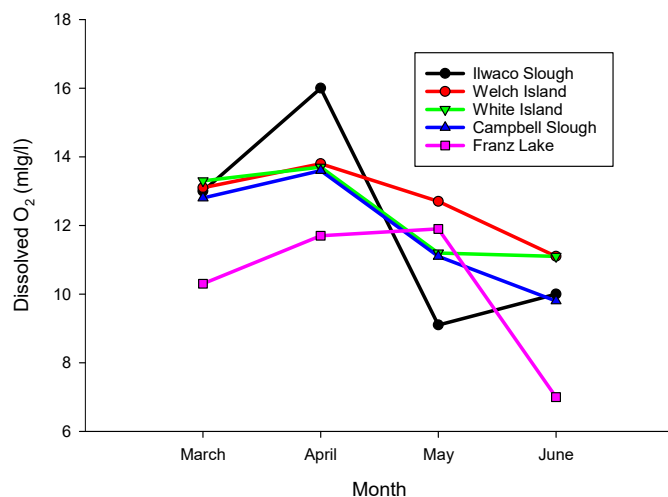
Trend Sites and PIT Arrays



Temperature and DO at time of sampling

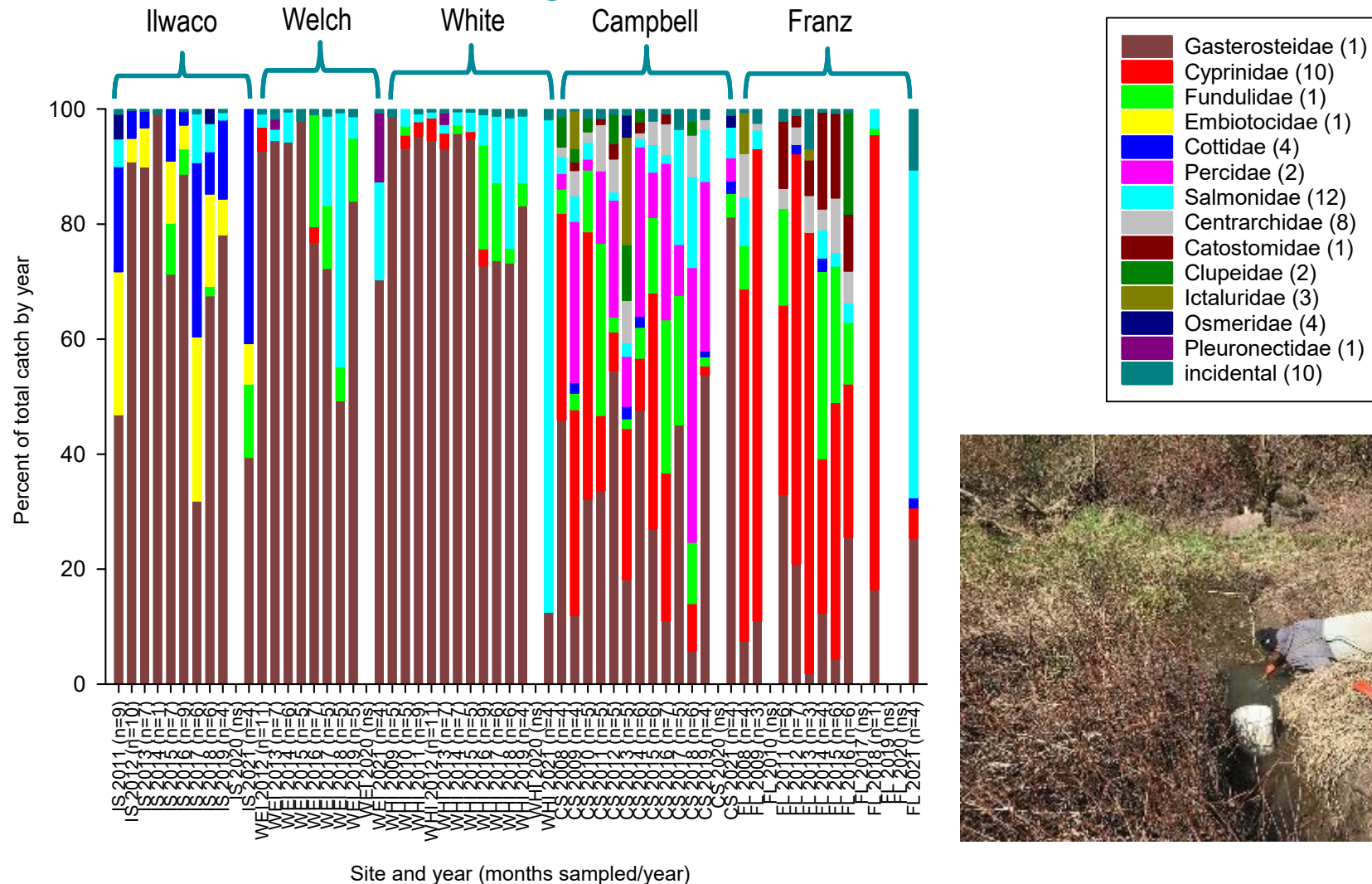


- Water temperature increasing with time
- Transitioned to stressful levels by June
- Campbell warmest (lower water levels and low water exchange with mainstem?)



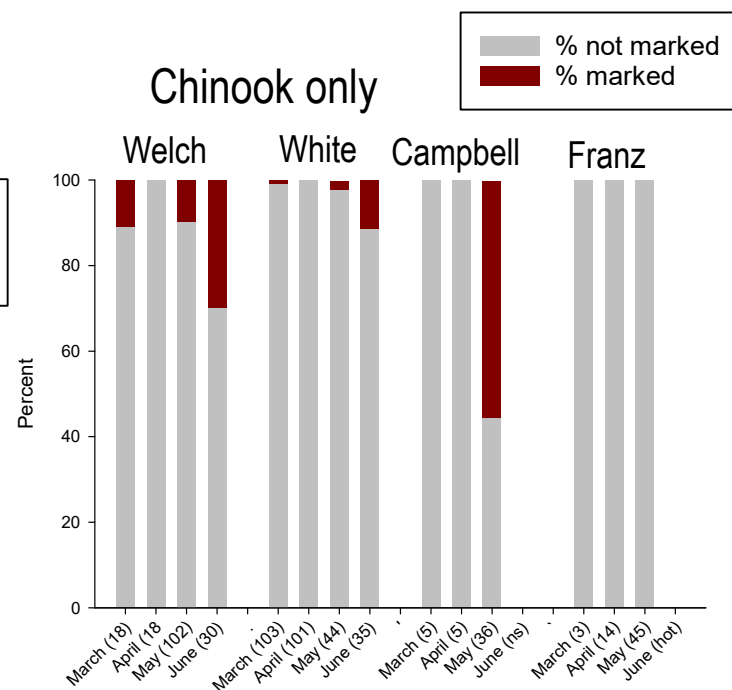
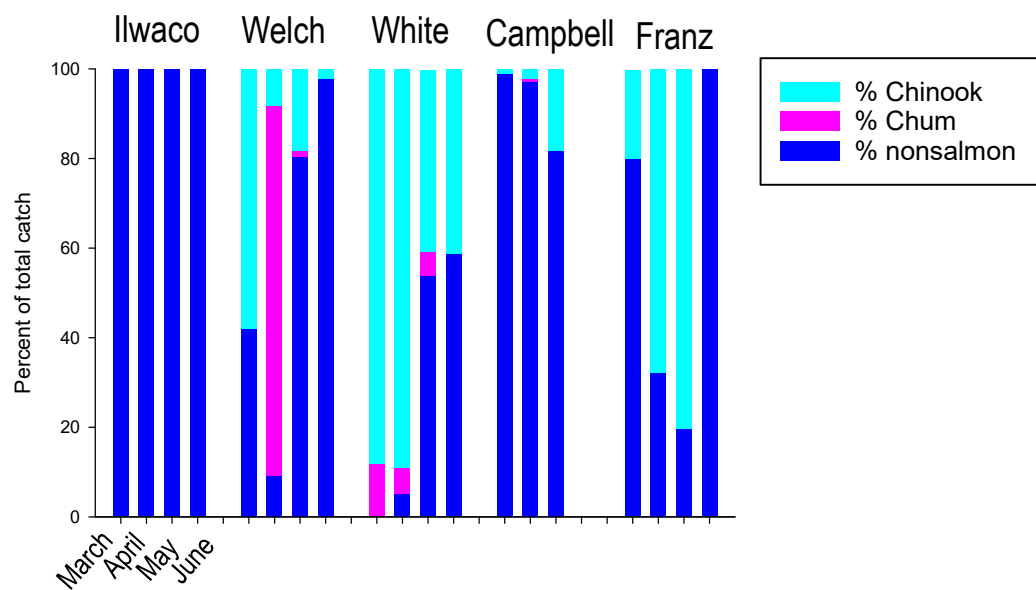
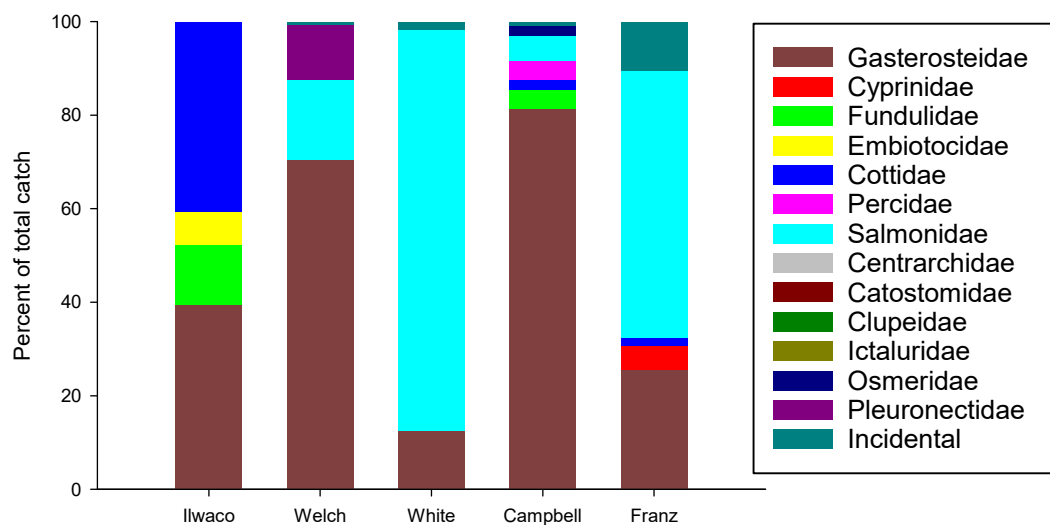
- All declined with warming temps
- Levels taken at time of sampling are within parameters of adequate water quality

Fish Community Composition



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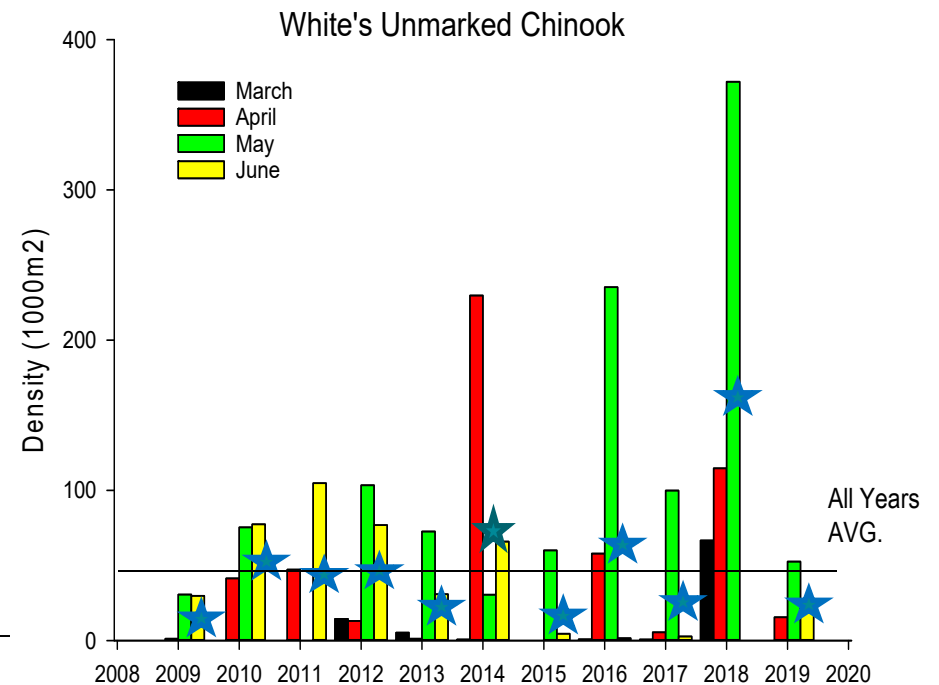
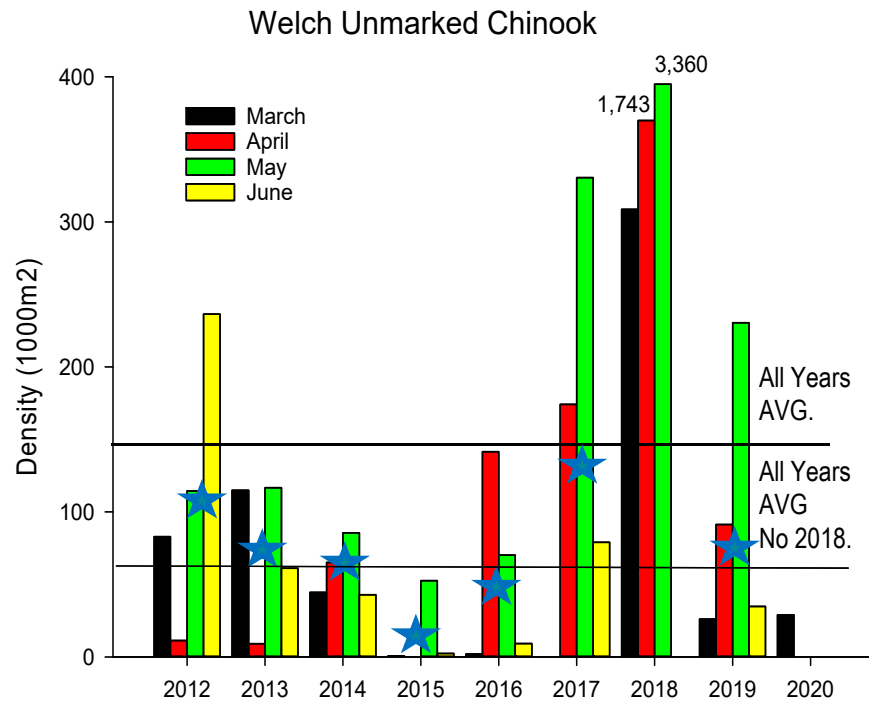
2021 Fish Community



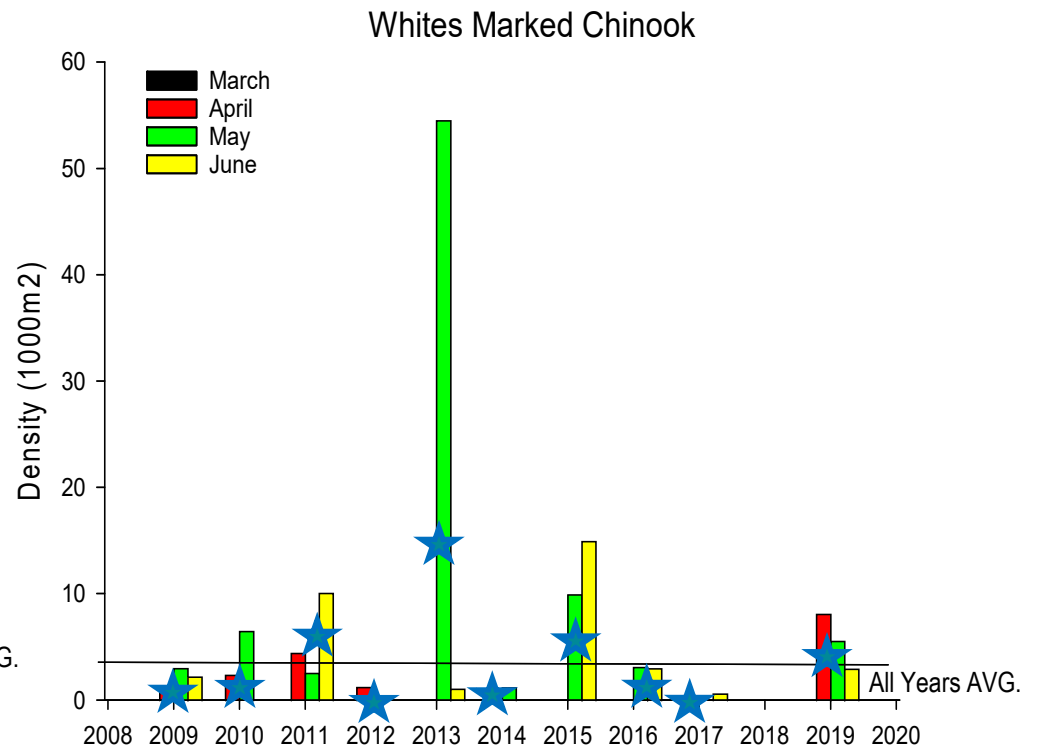
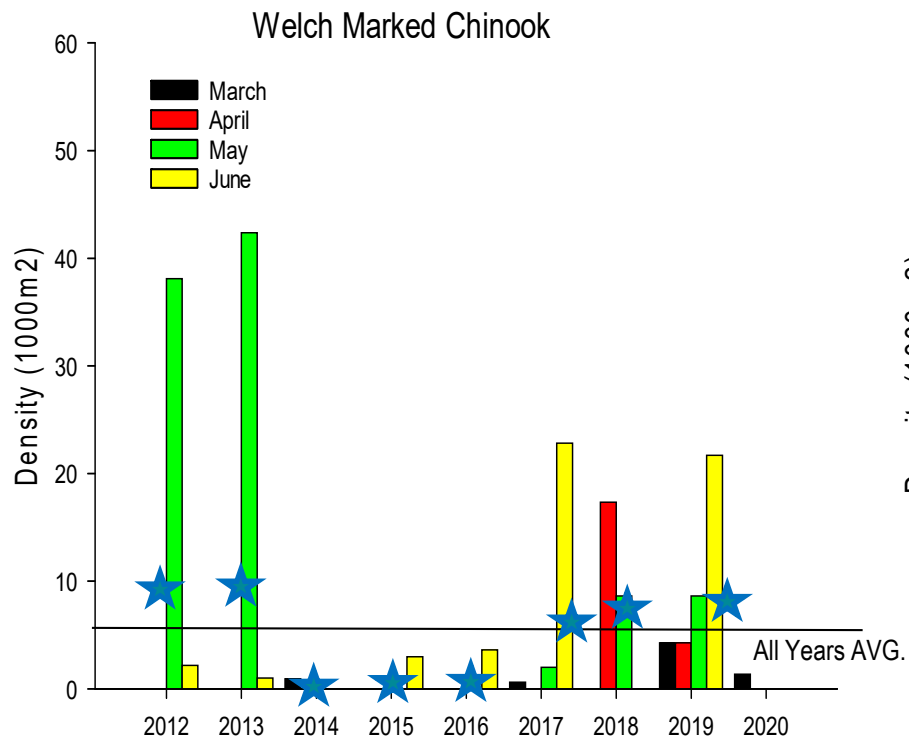
Data Exploration 2008-2019



Welch & Whites Island: Unmarked Chinook Density

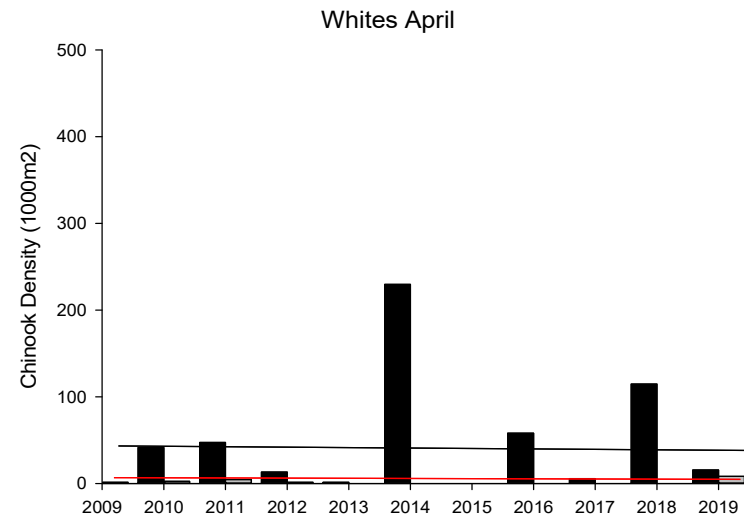
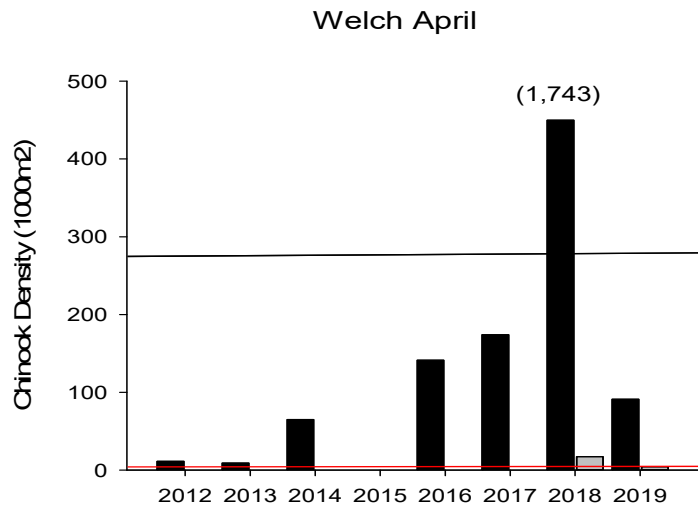
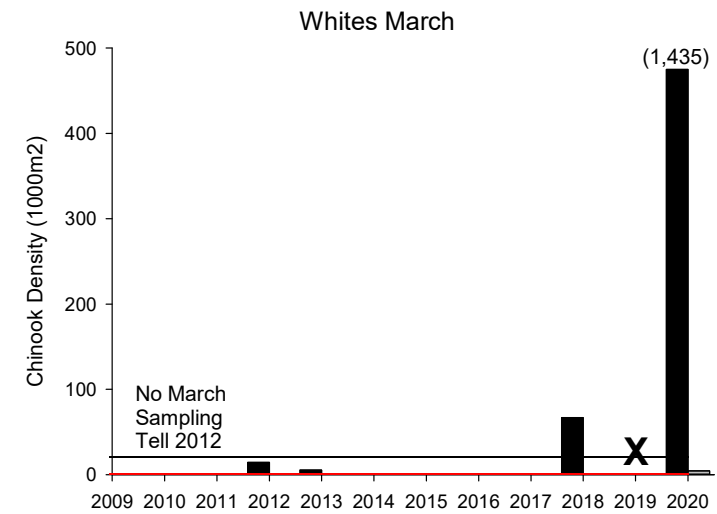
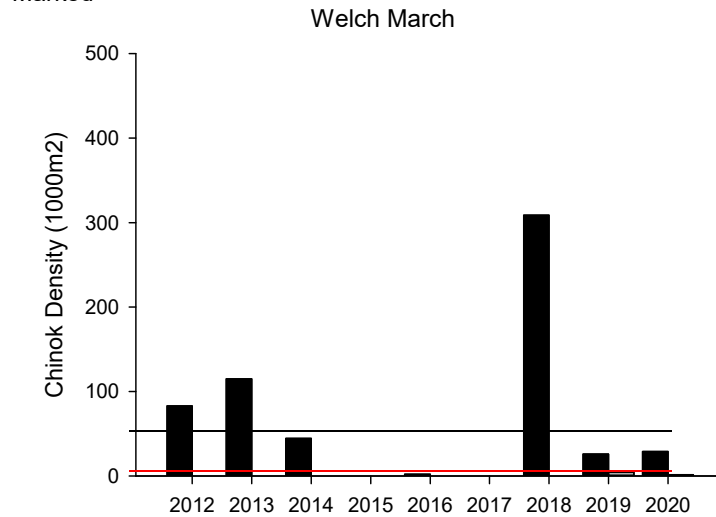


Welch & Whites Island: Marked Chinook Density

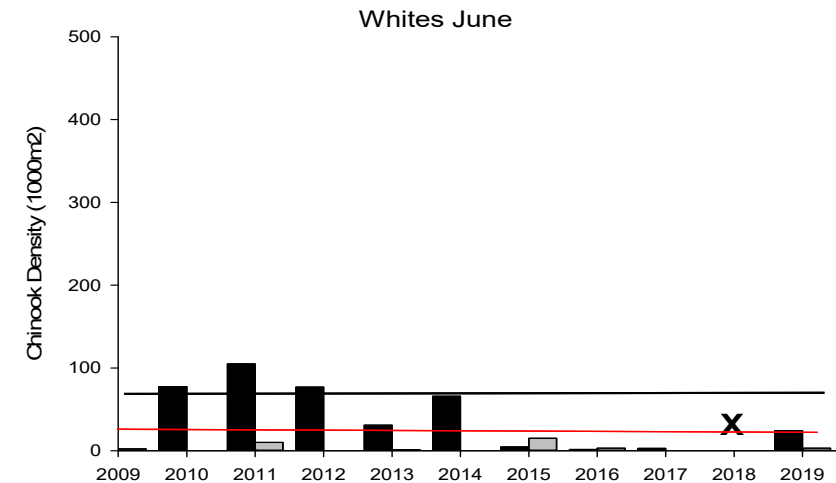
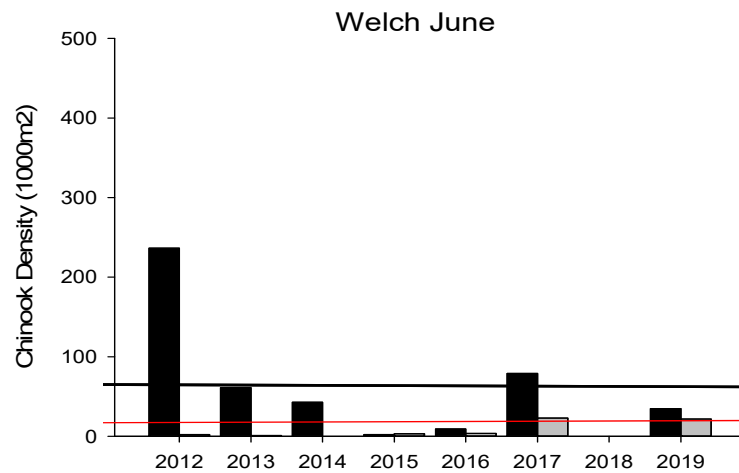
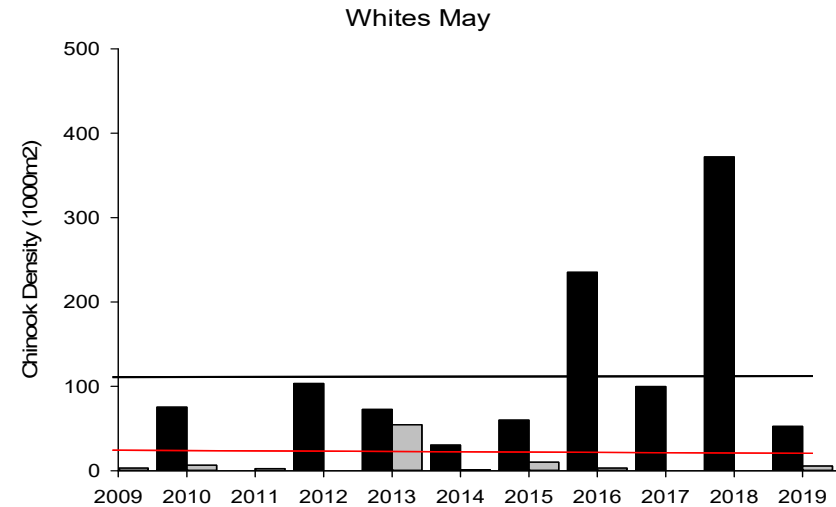
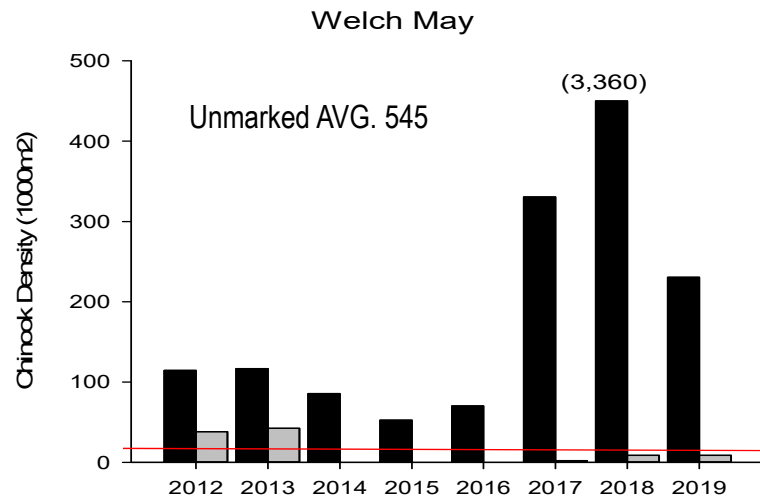


Welch & Whites Island: Chinook Density by Month

Unmarked
 Marked



Welch & Whites Island: Chinook Density by Month

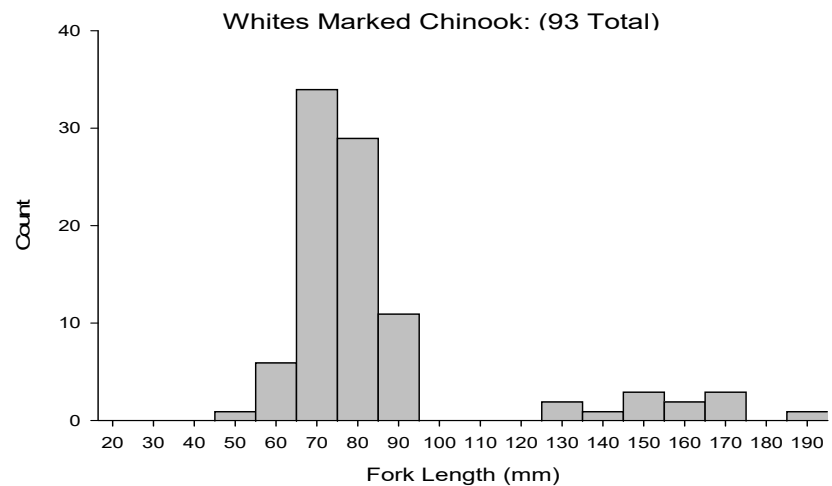
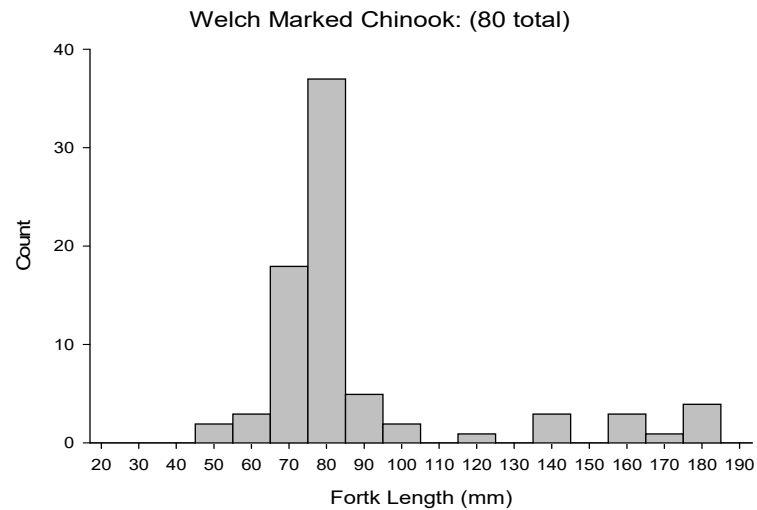
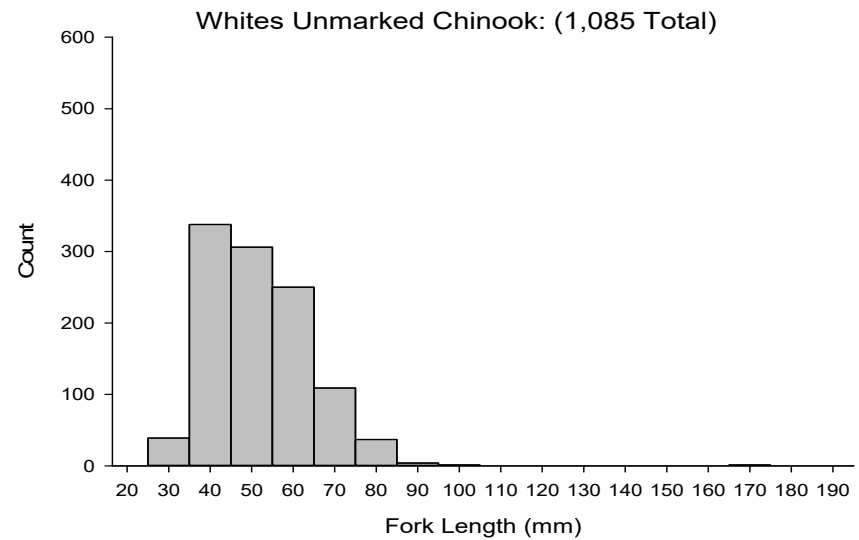
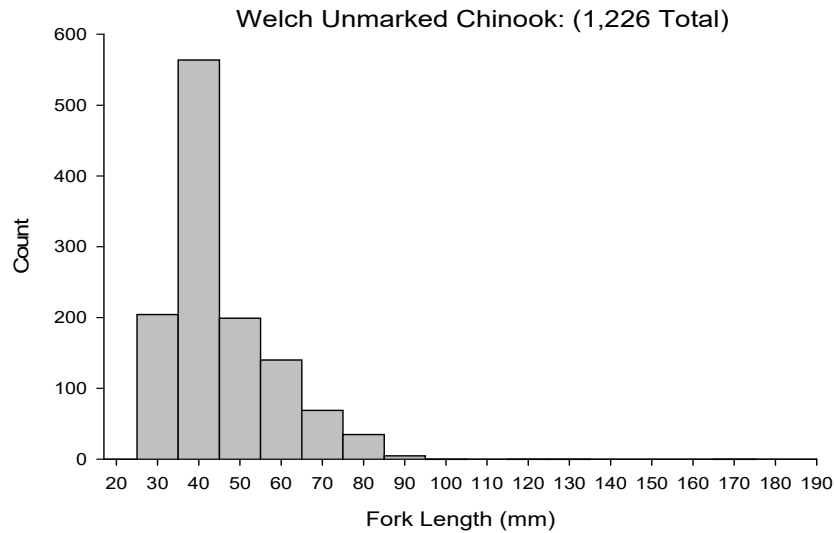


Welch & Whites Island: Marked Chinook Salmon

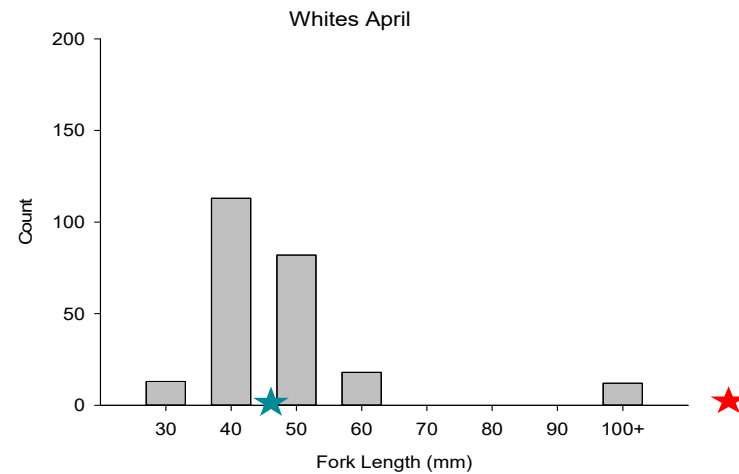
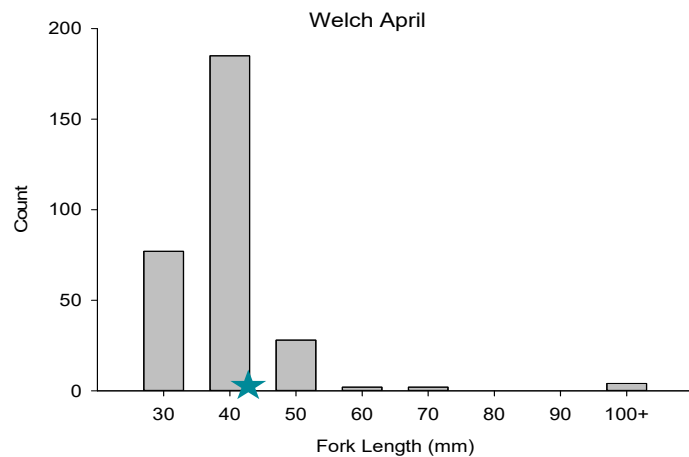
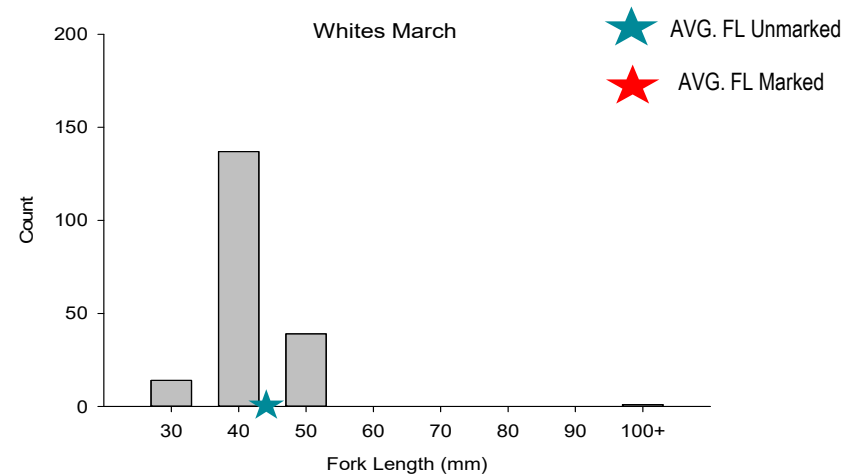
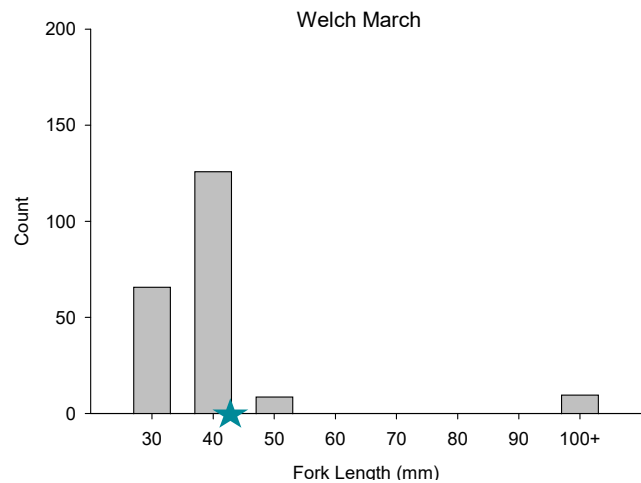
- Total Number and Percent of MARKED Chinook Measured for each month at Welch and Whites.

	March	April	May	June	Total
Welch	9/211	4/299	20/391	27/199	60/1,100
%	4.2	1.3	5.1	13.5	5.4
Whites	1/191	13/238	26/406	13/225	53/1,060
%	0.5	5.4	6.4	5.7	5.0

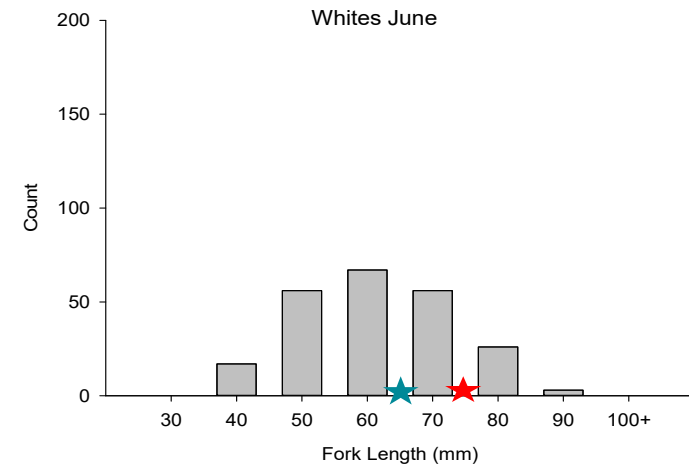
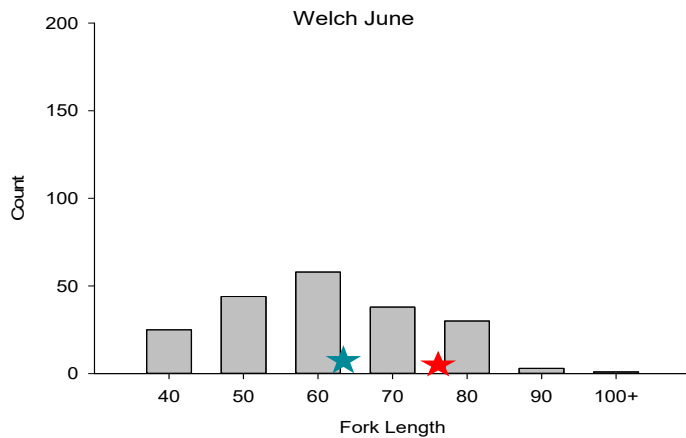
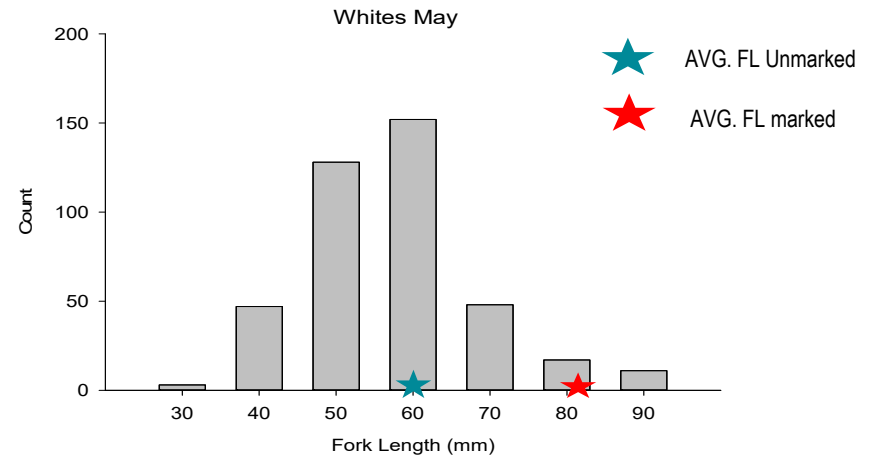
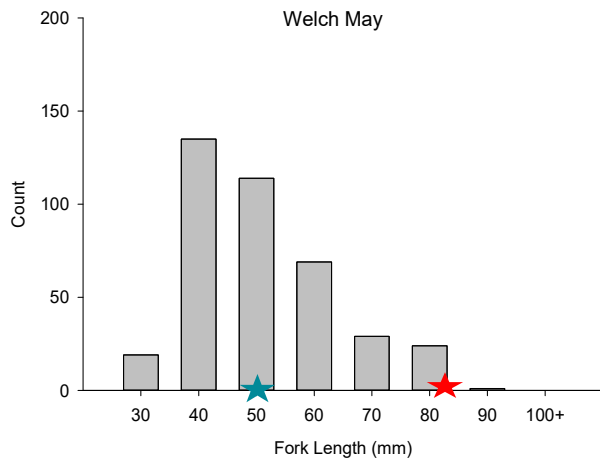
Welch & Whites Island: Chinook Length Frequency



Welch & Whites Island: Length Frequency

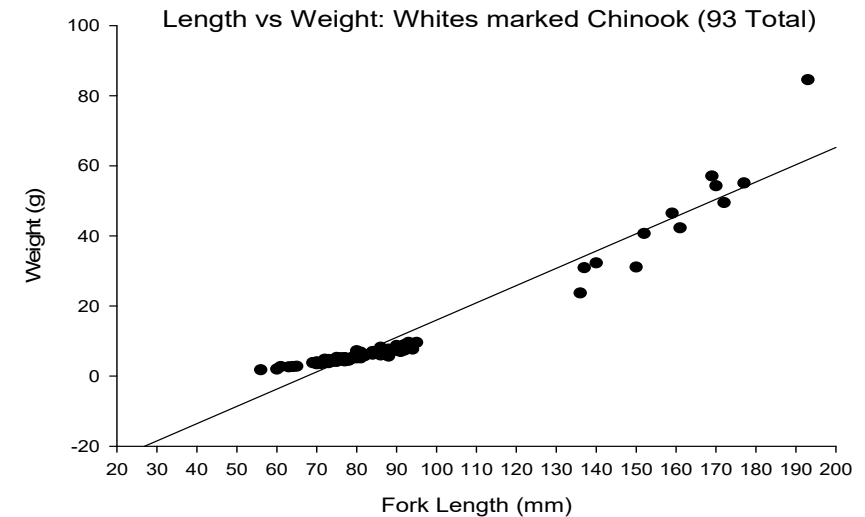
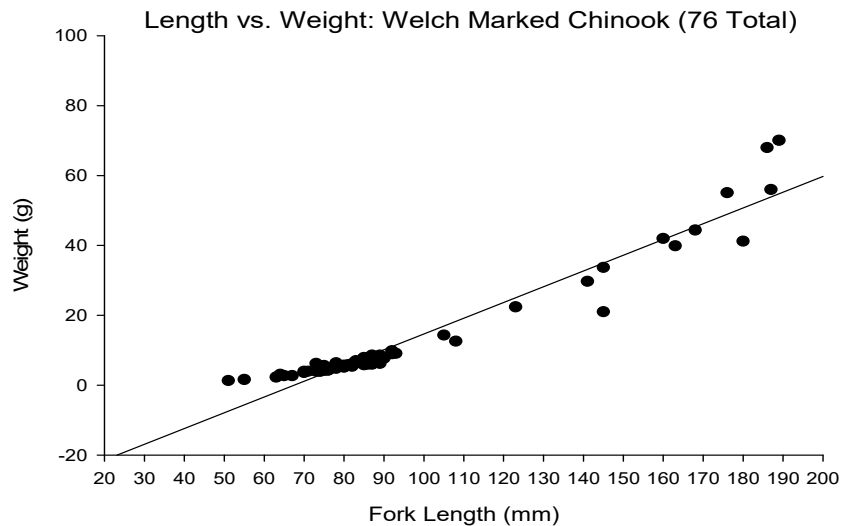
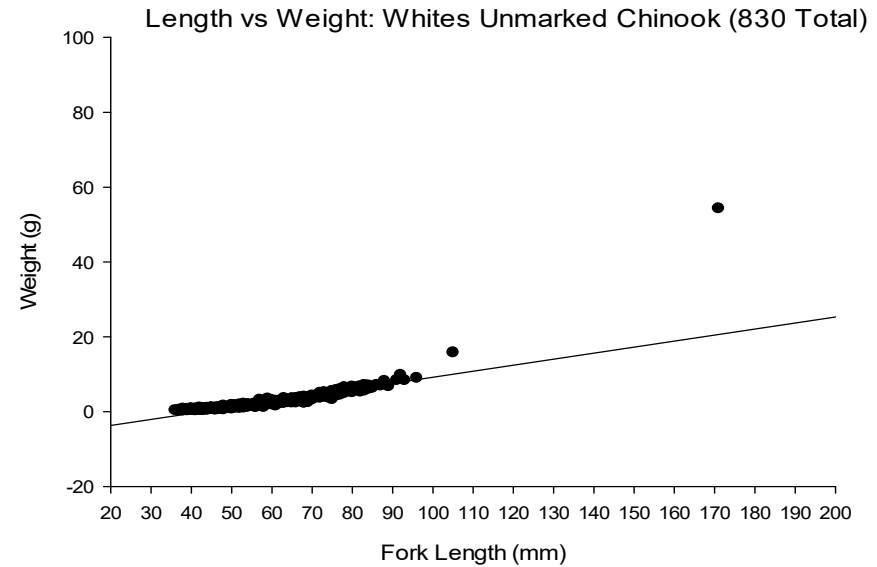
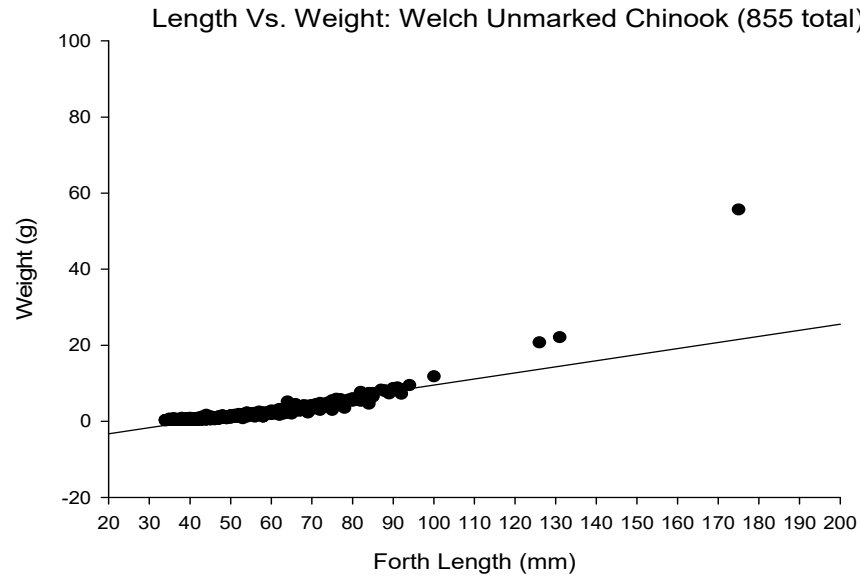


Welch & Whites Island: Length Frequency

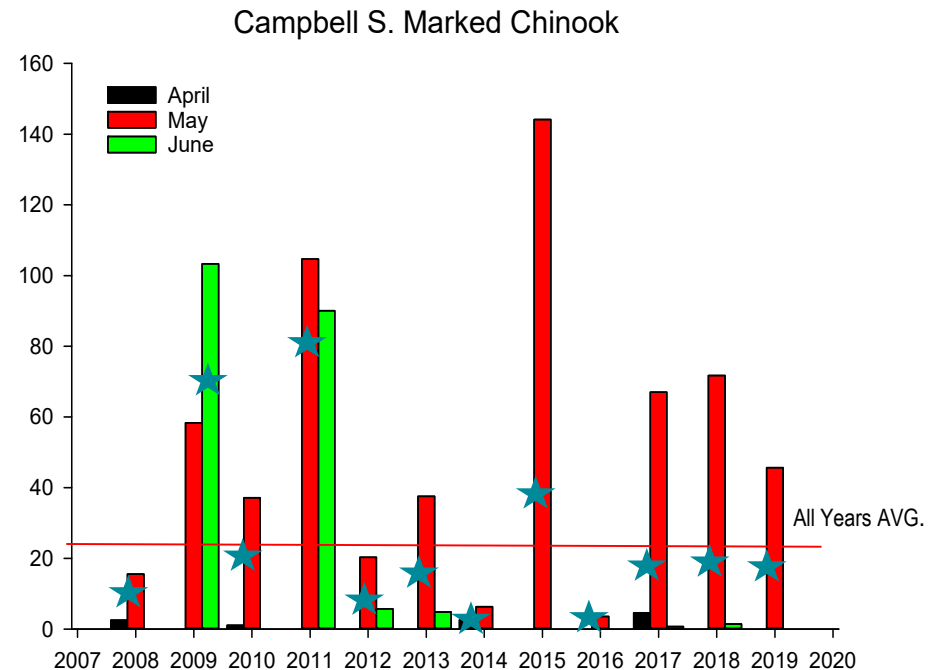
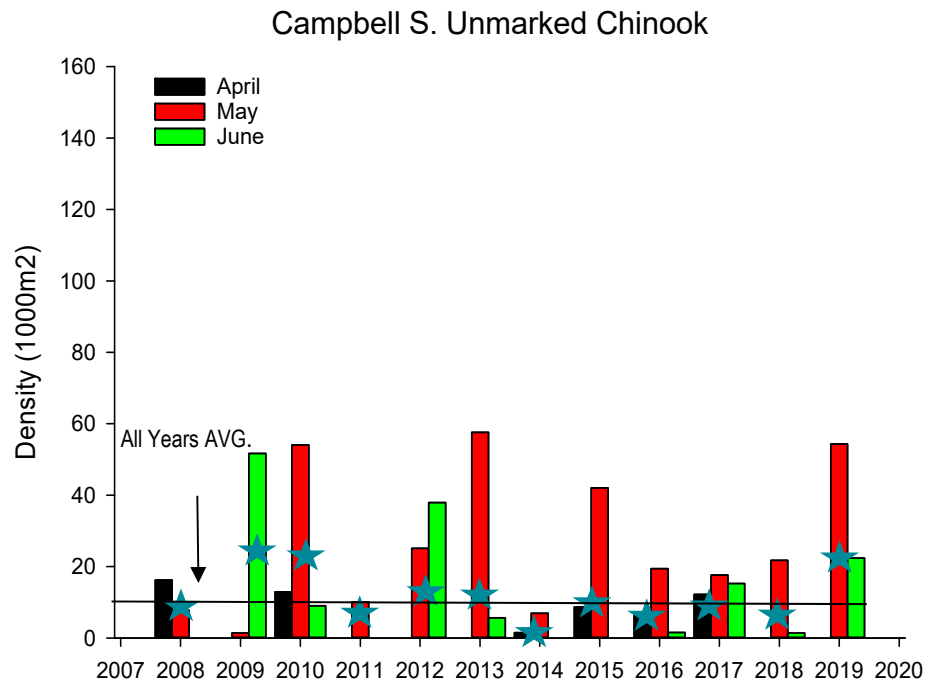


ALL Chinook

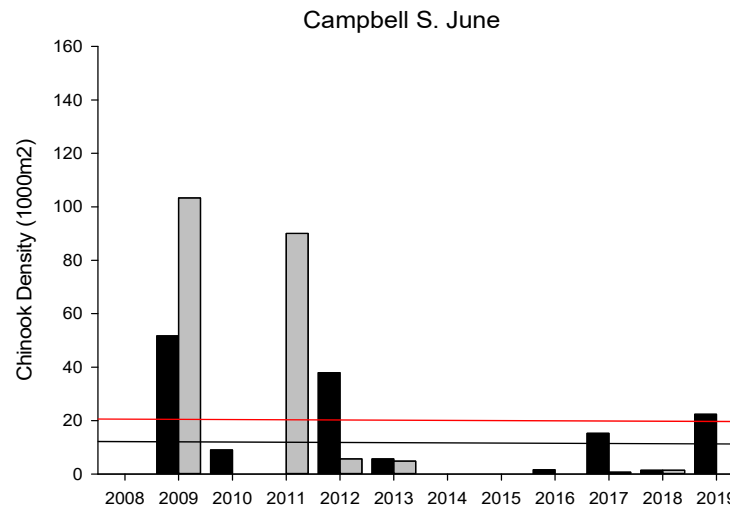
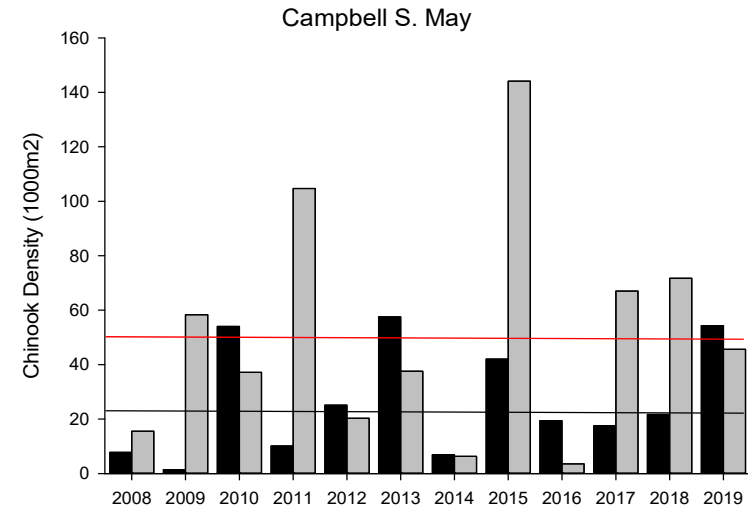
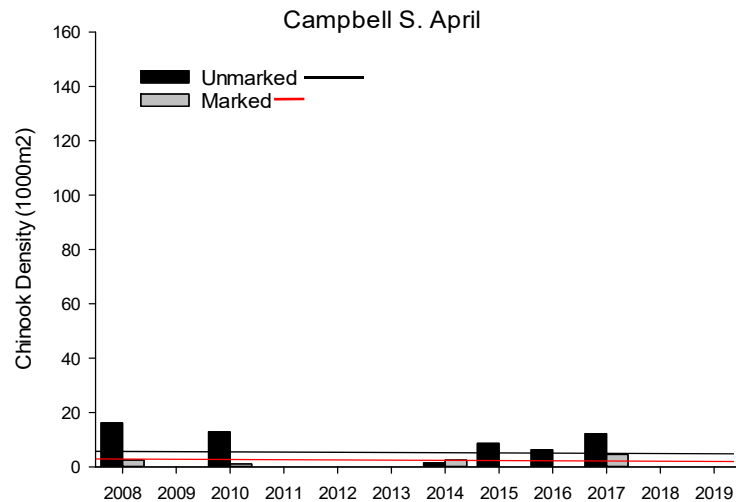
Welch & Whites Island: Length vs Weight



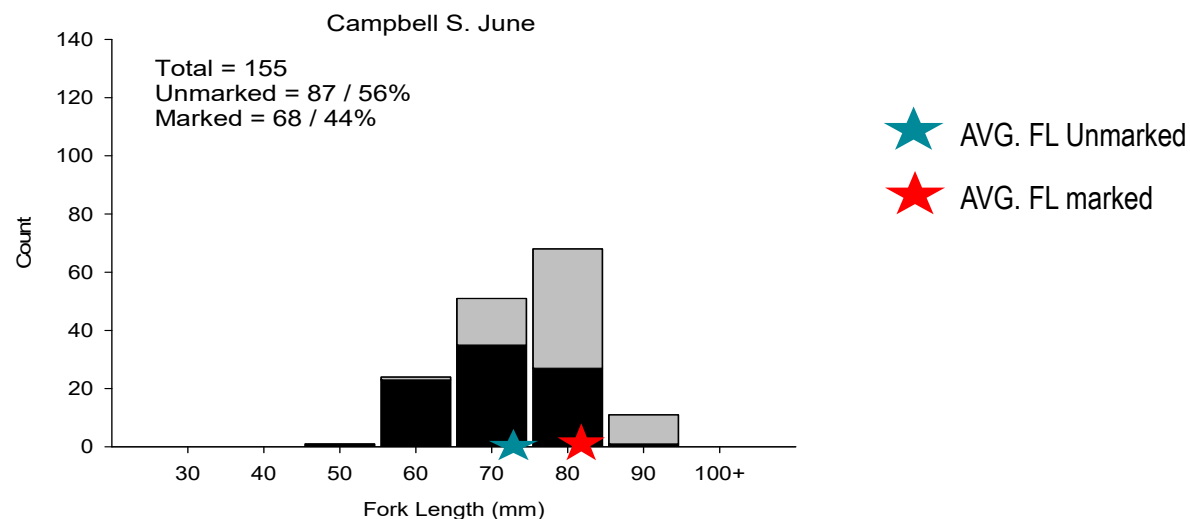
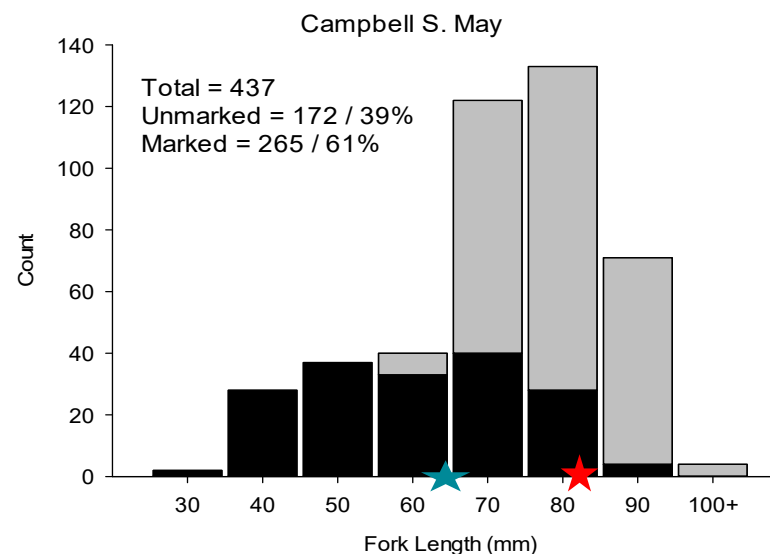
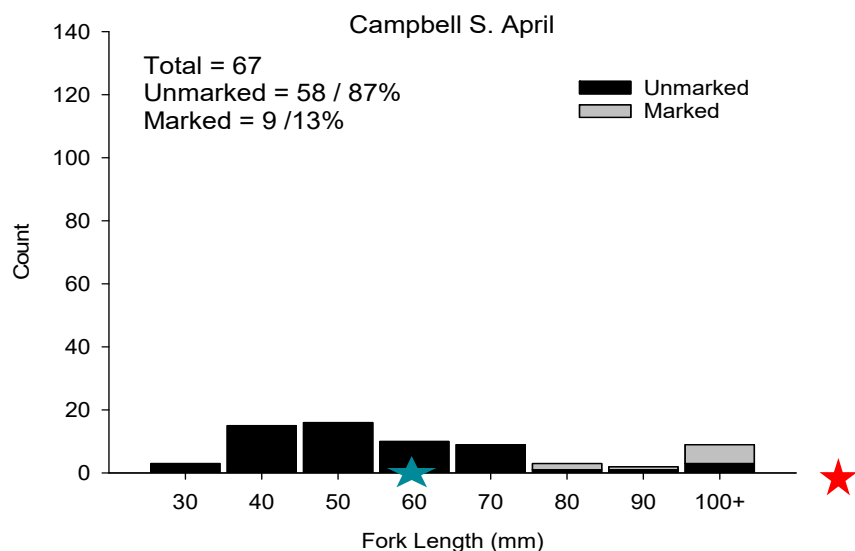
Campbell Slough: Chinook Density



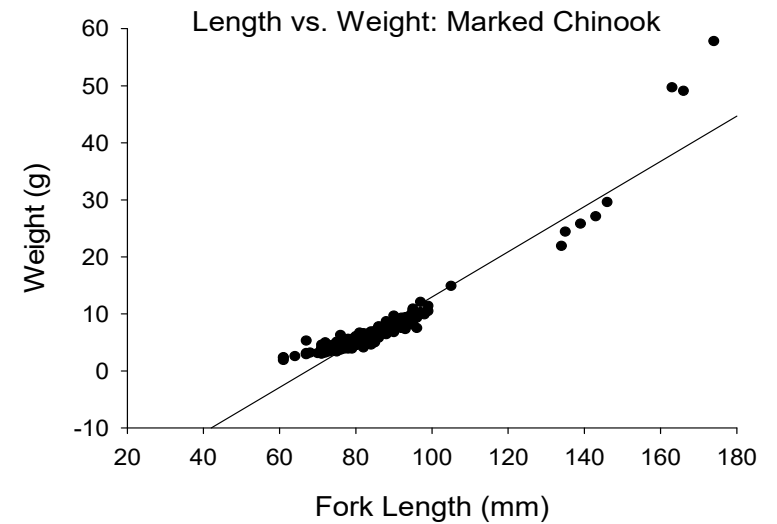
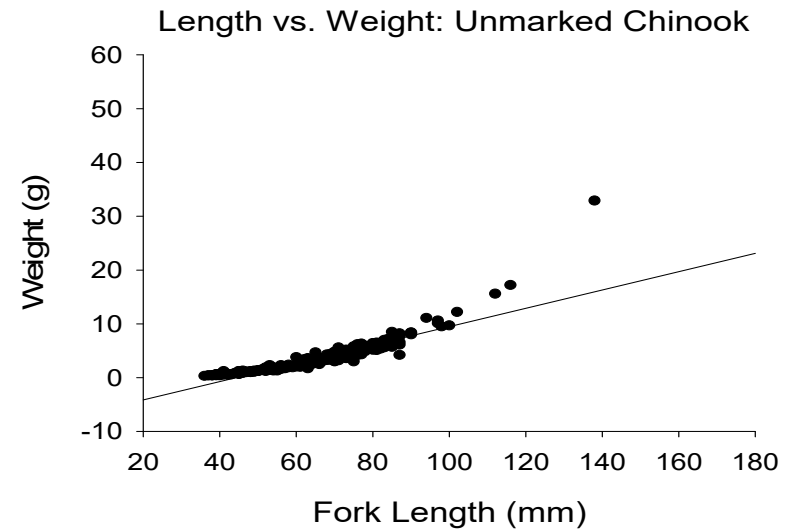
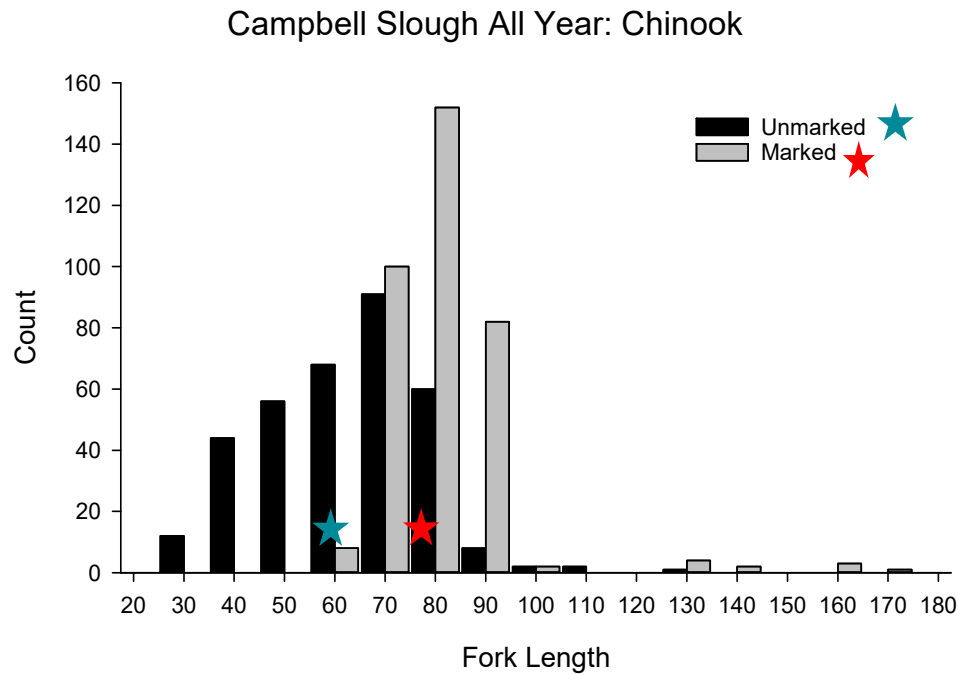
Campbell Slough: Chinook Density by Month



Campbell Slough: Chinook Length Frequency



Campbell Slough: Chinook Length & Weight



PIT Arrays 2020-21



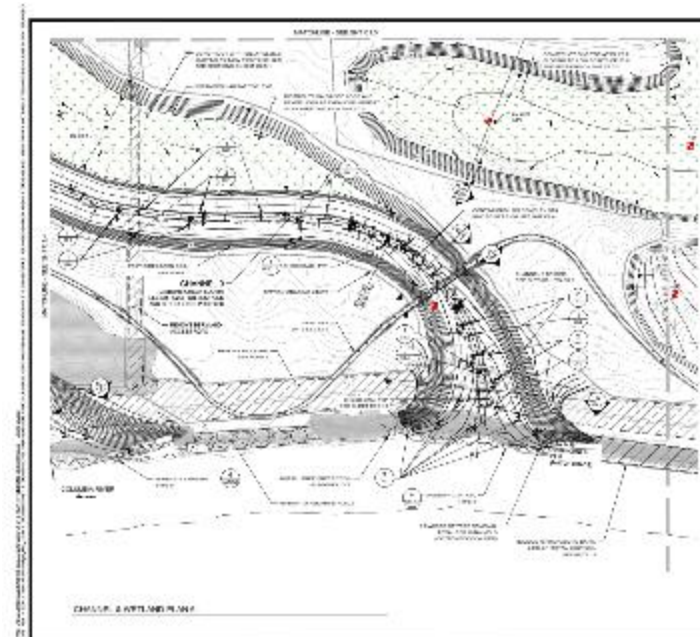
Horsetail Restoration Site



- Culvert underneath I-84 in Columbia River Gorge
- Installed in May 2013, intermittent operation from 2014-2016
- 2017 three upstream (Horsetail/Oneonta Creek) and two downstream (Columbia) antennas
- 2018 two antennas on upstream side and three antennas on the downstream side of culvert
- 2019 four antennas each on upstream and downstream sides

Horsetail Restoration Site

- Unable to get to site in 2020
- In the process of decommissioning
- Using equipment for Campbell
- Installing site at Steigerwald



Campbell Slough Site

- Old antennas were broken, did not span the channel well at various water levels, and cables were frequently damaged by rodents
- Revamped site in February 2018
- Operational 2018-2019, non-operational in 2020

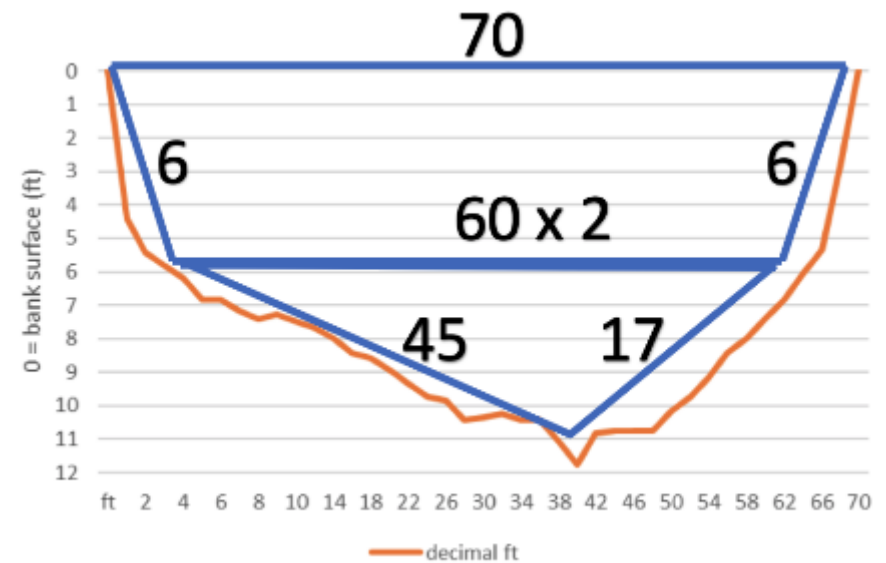


Campbell Slough Site

- After a year of not being able to access the site we found the array in disrepair in March 2021
- Able to remove equipment from water, but not able to do repairs



Planning rebuild in 2022, testing new antenna configuration



Summary

- Low water year: freshet not large and short-lived
- Unmarked subyearling Chinook still predominant salmonid in wetlands
- Able to sample Franz all months, resulting in higher Chinook numbers; observed subyearling coho
- No salmon at Ilwaco, not even chum; good numbers of Chinook at Whites
- Began analyzing all Salmon catch data from 2008- 2019 at 3 sites (Campbell Slough, Welch and Whites Islands) for future manuscript.
 - All data presented represents preliminary data analysis.
- Decommission Horsetail PIT array, upgrade Campbell PIT array

Questions

