

Jun 25th, 1:30 PM - 1:50 PM

Concurrent Sessions B: Reintroduction Efforts on the Upper Deschutes River - Successes and Challenges During The First 3-Years Of The Upper Deschutes Basin Downstream Fish Passage Assessment

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Successes and challenges during the first 3 years of the Upper Deschutes Basin fish passage assessment

Megan Hill & Cory Quesada

Portland General Electric &

The Confederated Tribes of the Warm Springs Reservation of
Oregon

Fish Collection System

- Two fish entrances
 - 40 ft by 45 ft each
 - ~3,000 CFS each
- Fish collection is tied to generation
 - Attraction flow varies within the hour
 - Up to ~6,000 through top-structure, additional flow through bottom gates
 - 100% screened



Study Objectives

- Determine percentage of smolts collected by the SWW (four year average)
- Identify potential delays to smolt migration in the forebay
- If fewer than 50% are collected, investigate the cause(s), including the identification of mortality factor(s), and identify potential solutions



Study Area



Round Butte forebay

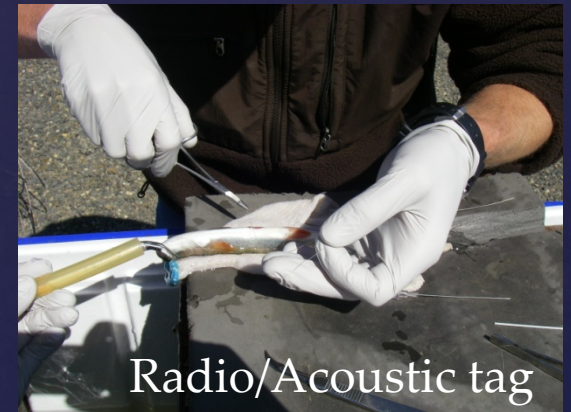
2010-2011



2012



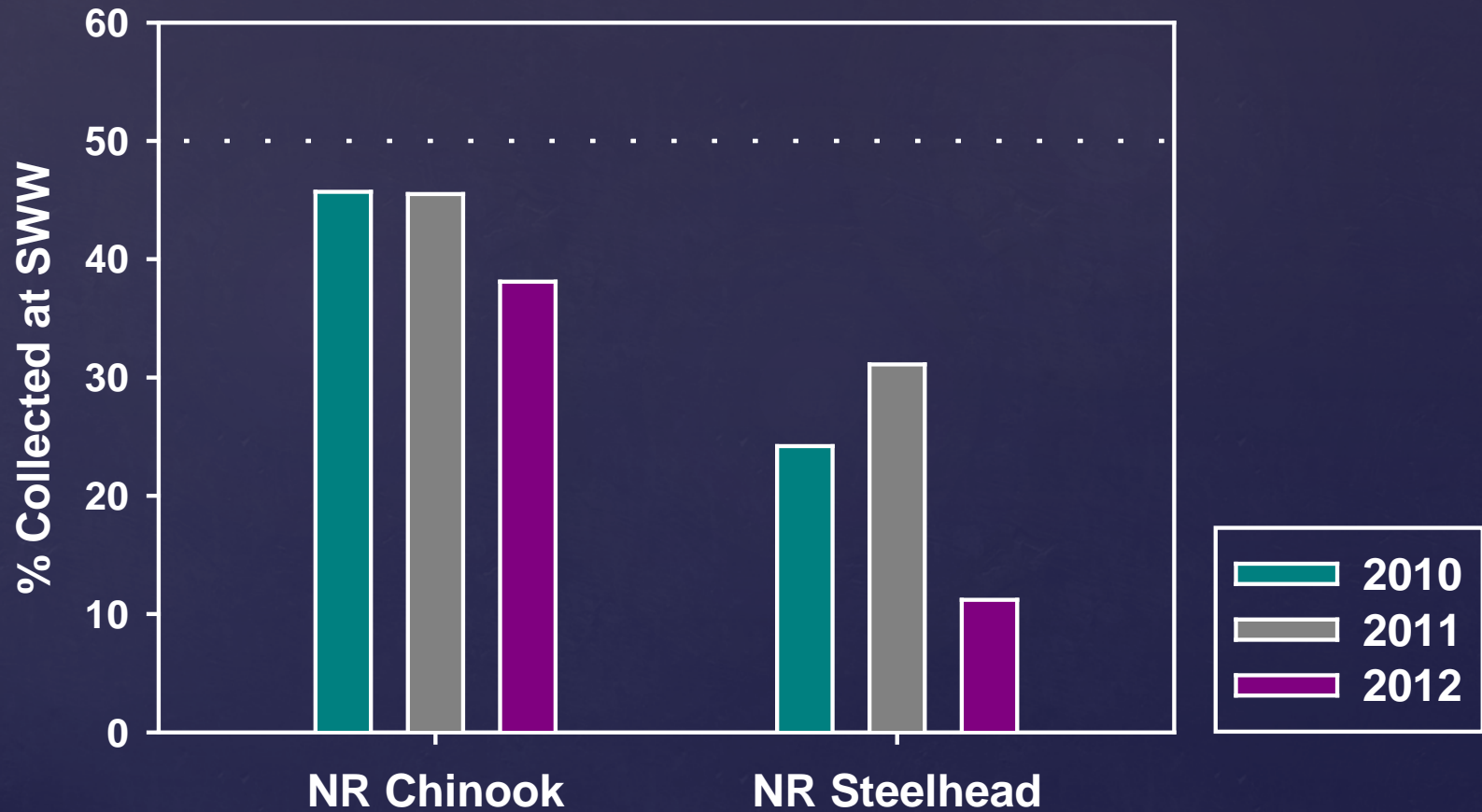
Methods



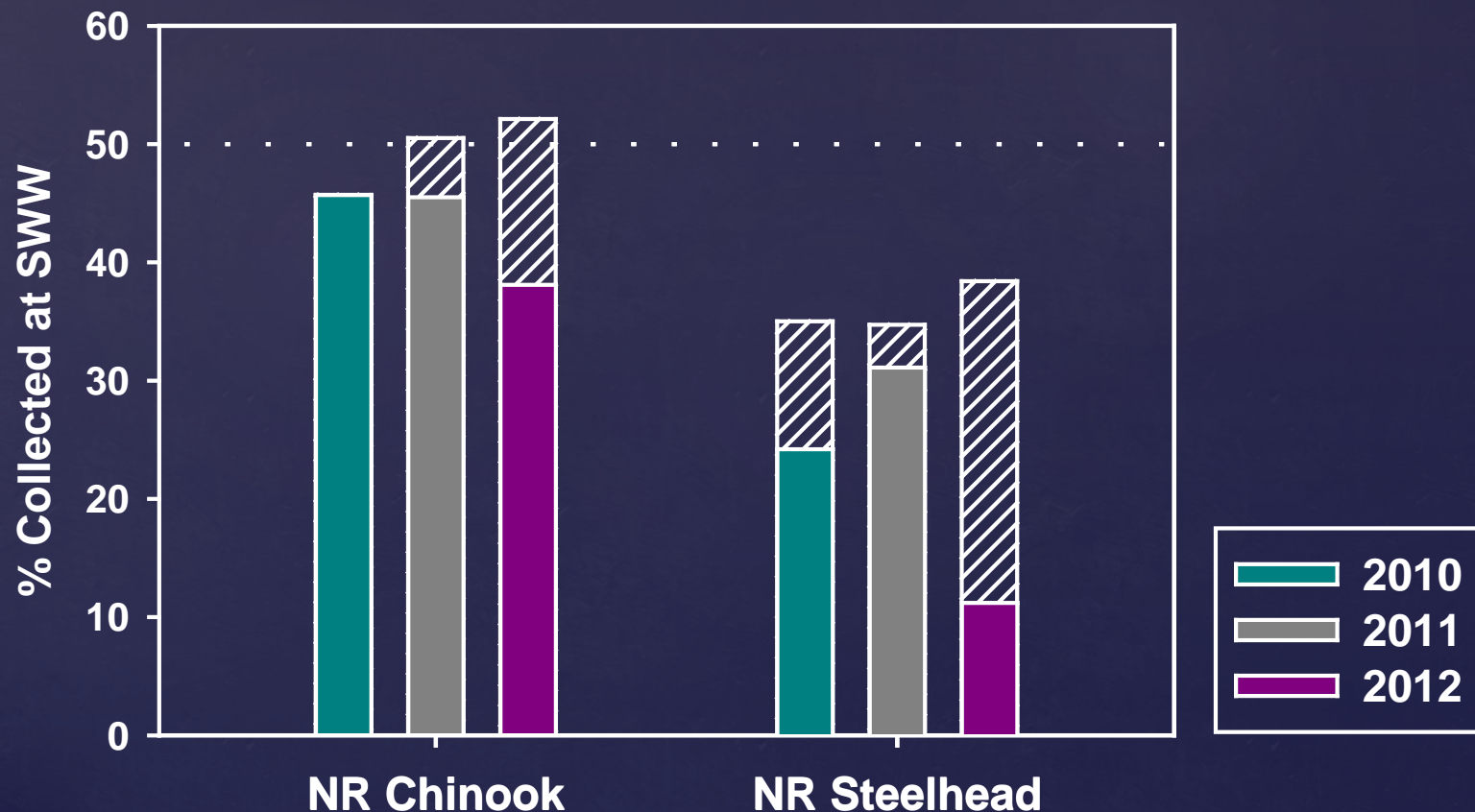
Results



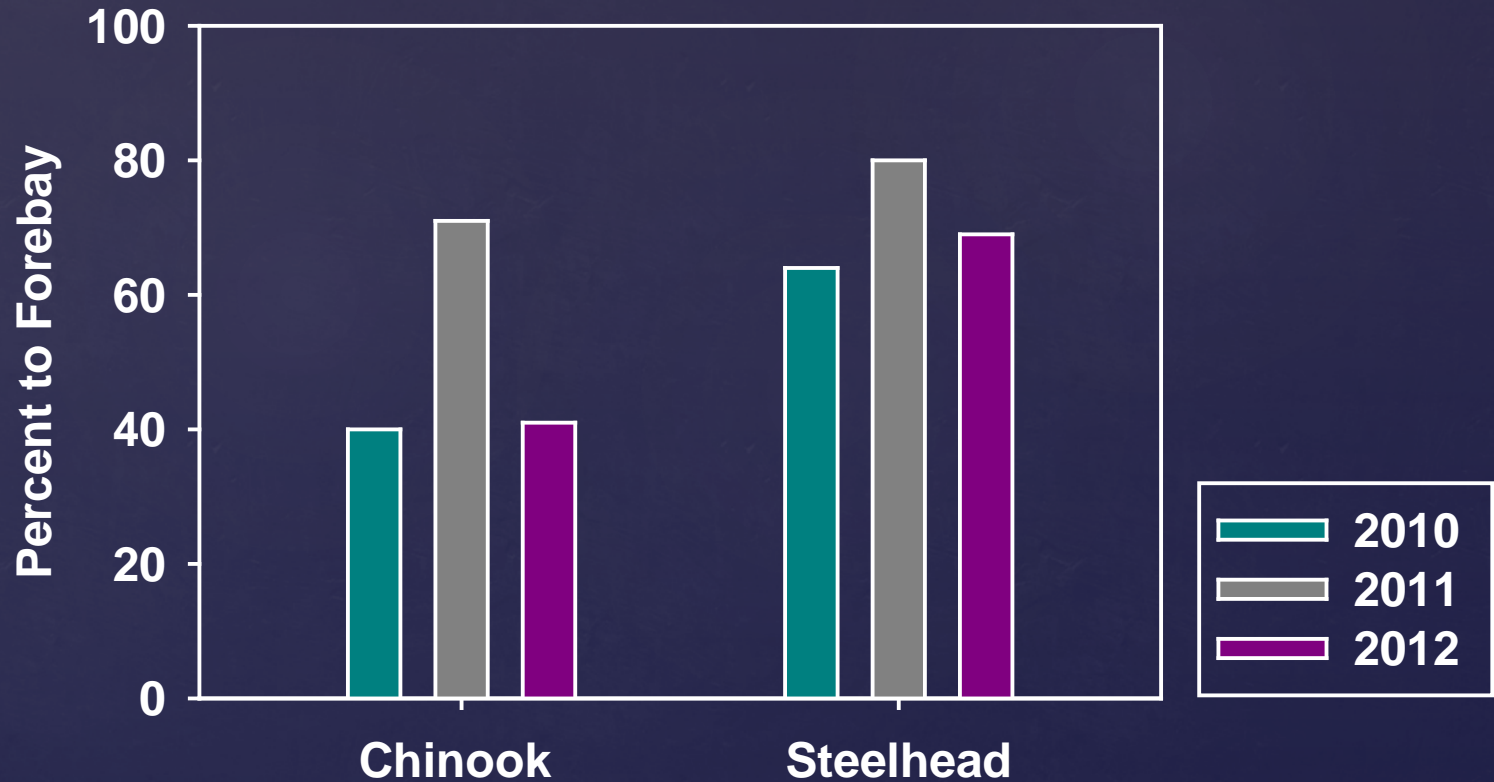
Collection <50% most of the time



Collection < 50% most of the time



High percentage of fish find the forebay, varies by year



Fish find the SWW

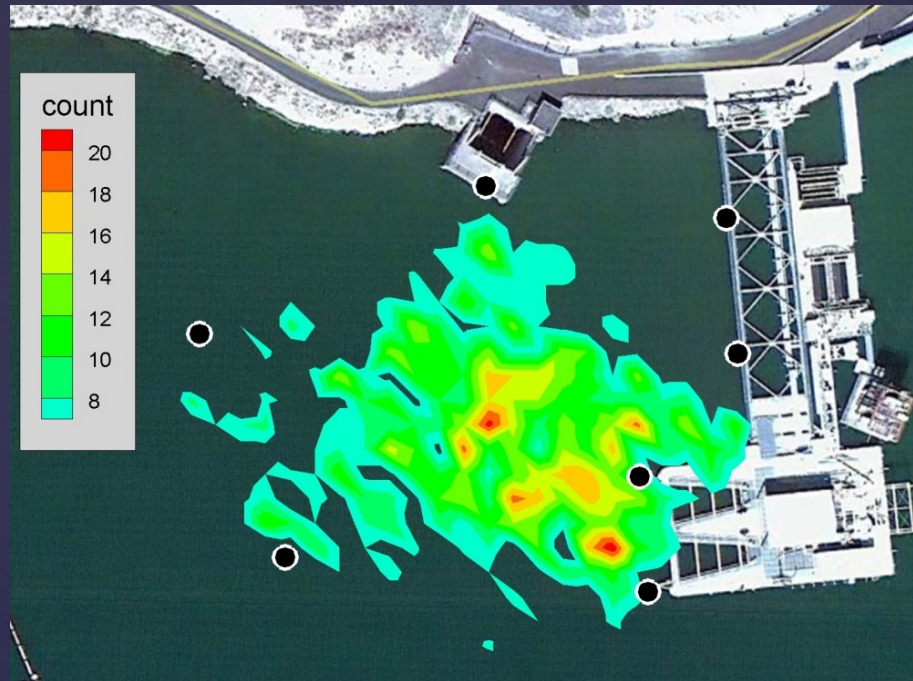
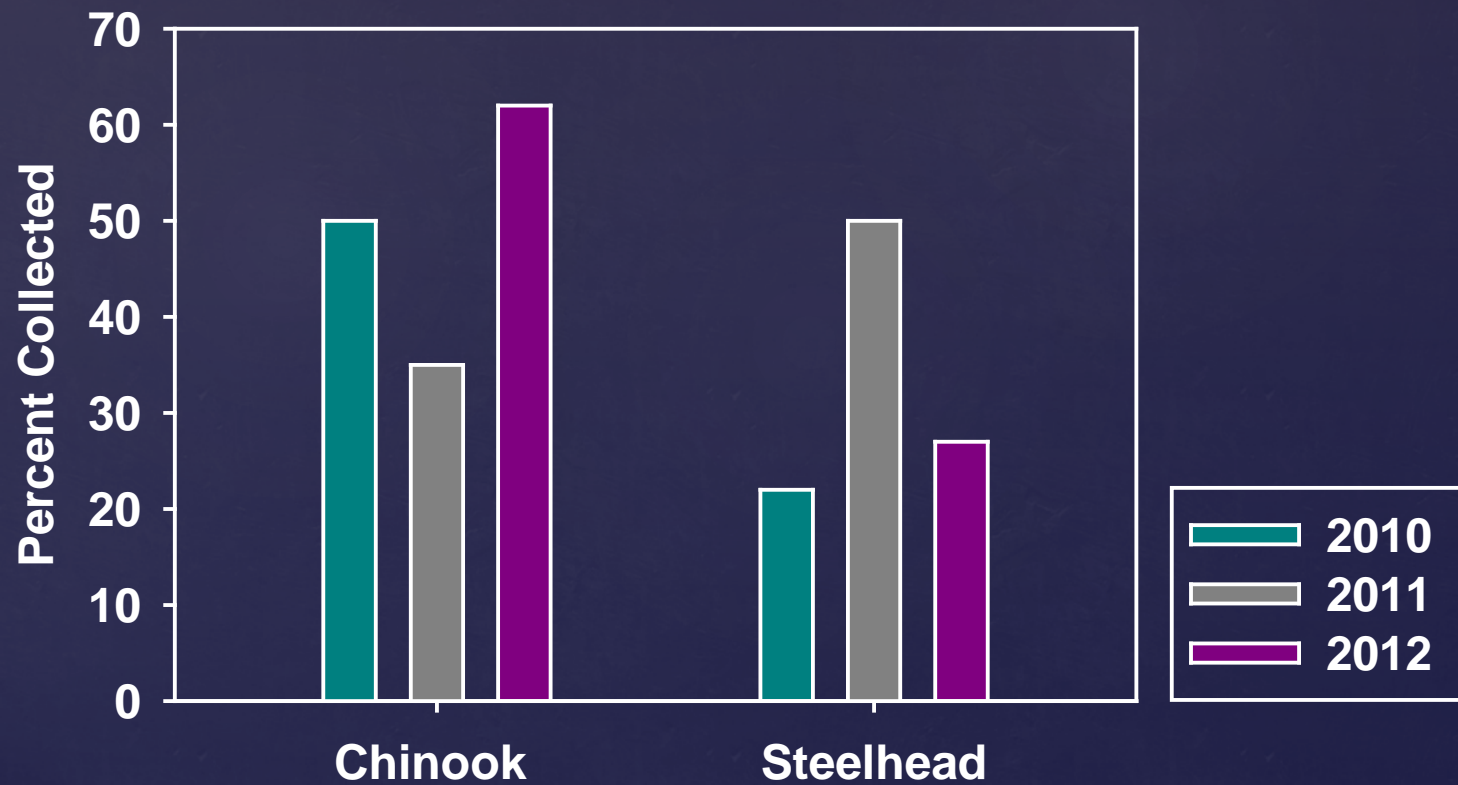



Figure Created By Blueleaf Environmental

Mean nearest approach distances

- Chinook- 8 m
- Steelhead- 16 m

Many fish that enter the forebay are not collected

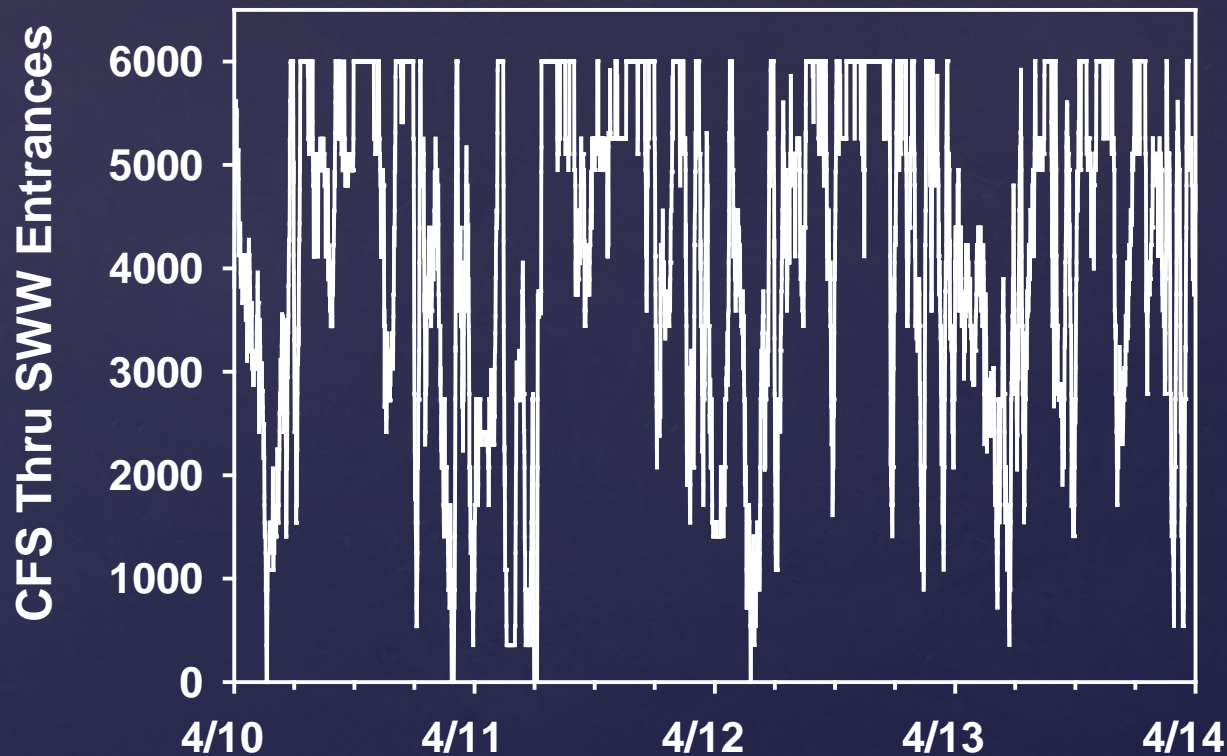




Many fish make multiple trips, have long residence times in the forebay

- Spent >24 consecutive hours in the Forebay
 - 55-67% of Steelhead
 - 41% of Chinook
- Multiple Trips to the Forebay
 - 40-76% of Steelhead
 - 41% of Chinook

Investigating the causes- generation flow



In 2012 acoustic study- no acoustic-tagged fish entered when mean hourly flow <3,000 CFS

Investigating the causes- predation



Lessons learned

- Anticipate future studies during passage design
 - Anchor points
 - Flow data collection
 - Store raw data from consultants in-house
- Anticipate change
 - Don't assume present operations will be future operations
 - Build in flexibility
- Understand multiple demands on structure when designing studies
 - Start early
 - Coordinate with all users
 - Educate, set realistic expectations



1st Upper Basin Chinook to Return