

Juvenile Migration; Upper Basin Tributaries to the SWW

Gonzalo Mendez

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Outline

Methods

Results

- Screw trap operations in tributaries
- Lake Billy Chinook
- SWW Captures
- Survival SWW to Bonneville



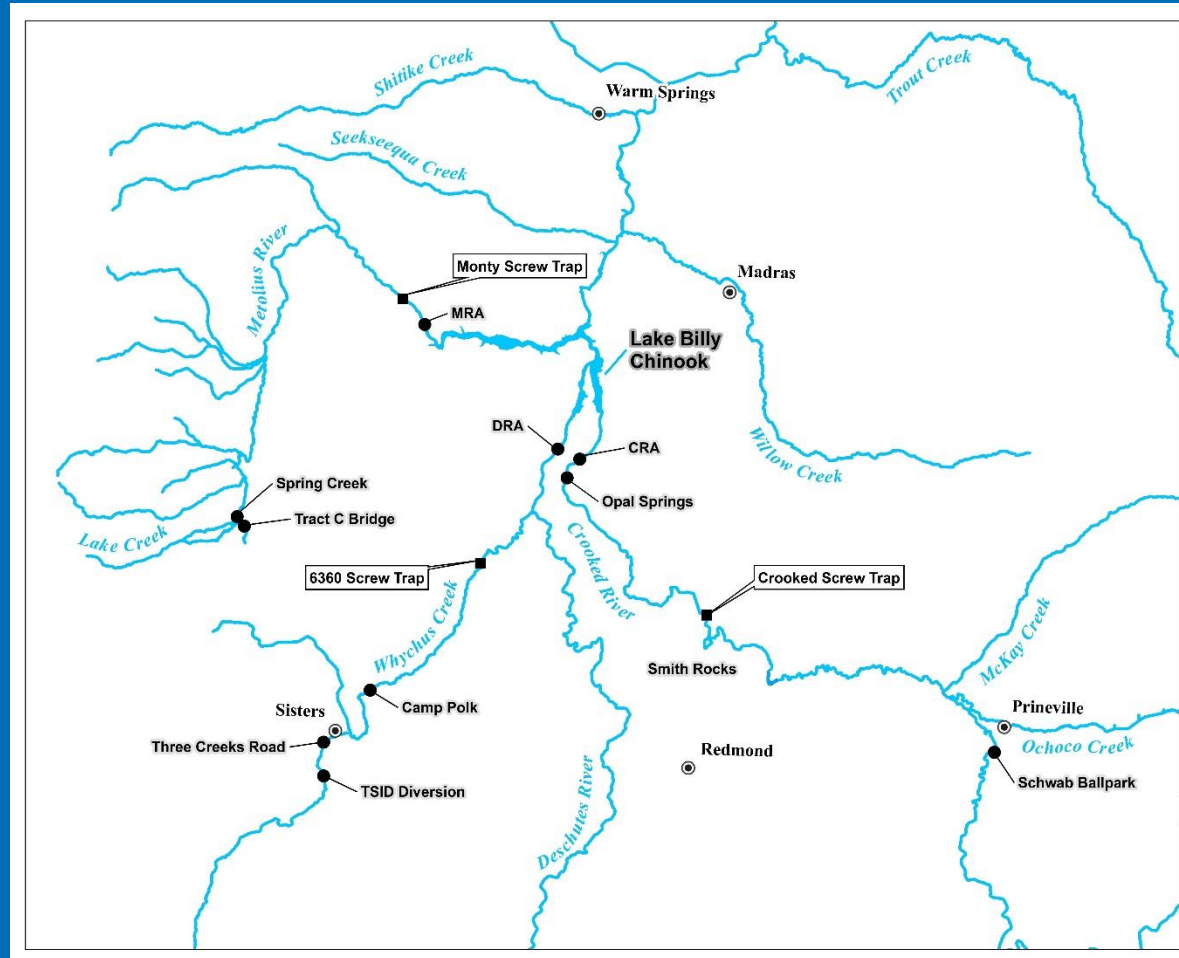
Methods

Naturally Reared (NR) Smolts

- PIT tag out-migrating smolts at screw traps
- Calculate % to SWW by Tributary
- Travel time from tagging to recapture at the SWW.

Hatchery Reared (HR) Smolts

- Release PIT-tagged fish into upper reservoir arms
- Calculate % to SWW
- Measure travel times to SWW



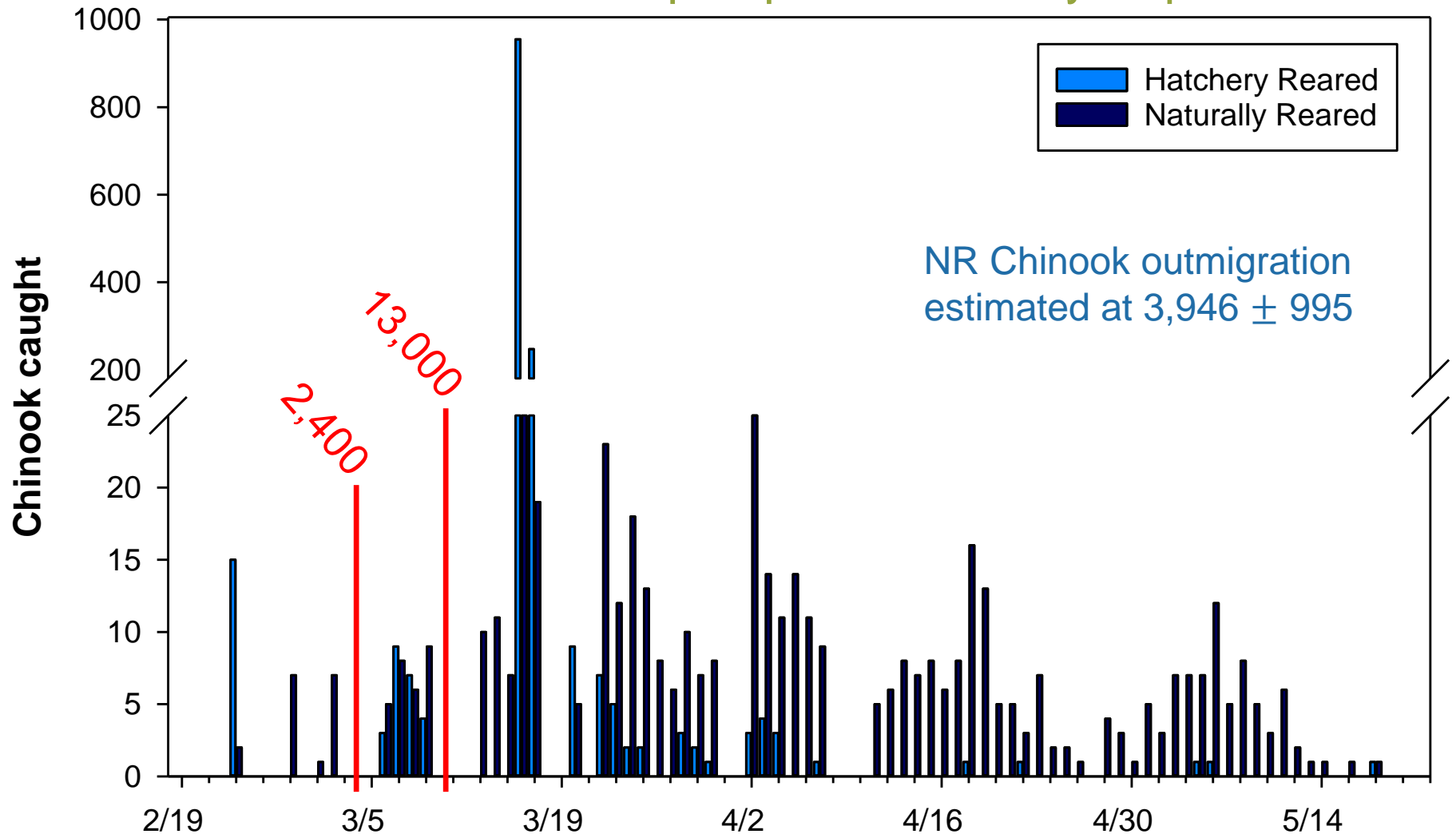
Metolius River screw trap

- Trap operated:
Feb 23 to May 24, 2018
- We captured:
 - HR Chinook – 1,287
 - NR Chinook - 587
 - Bull trout – 417
- Other species:
 - Kokanee/sockeye
 - redband trout
 - suckers
 - mountain whitefish



Metolius River results

Chinook screw trap capture at Monty trap 2018



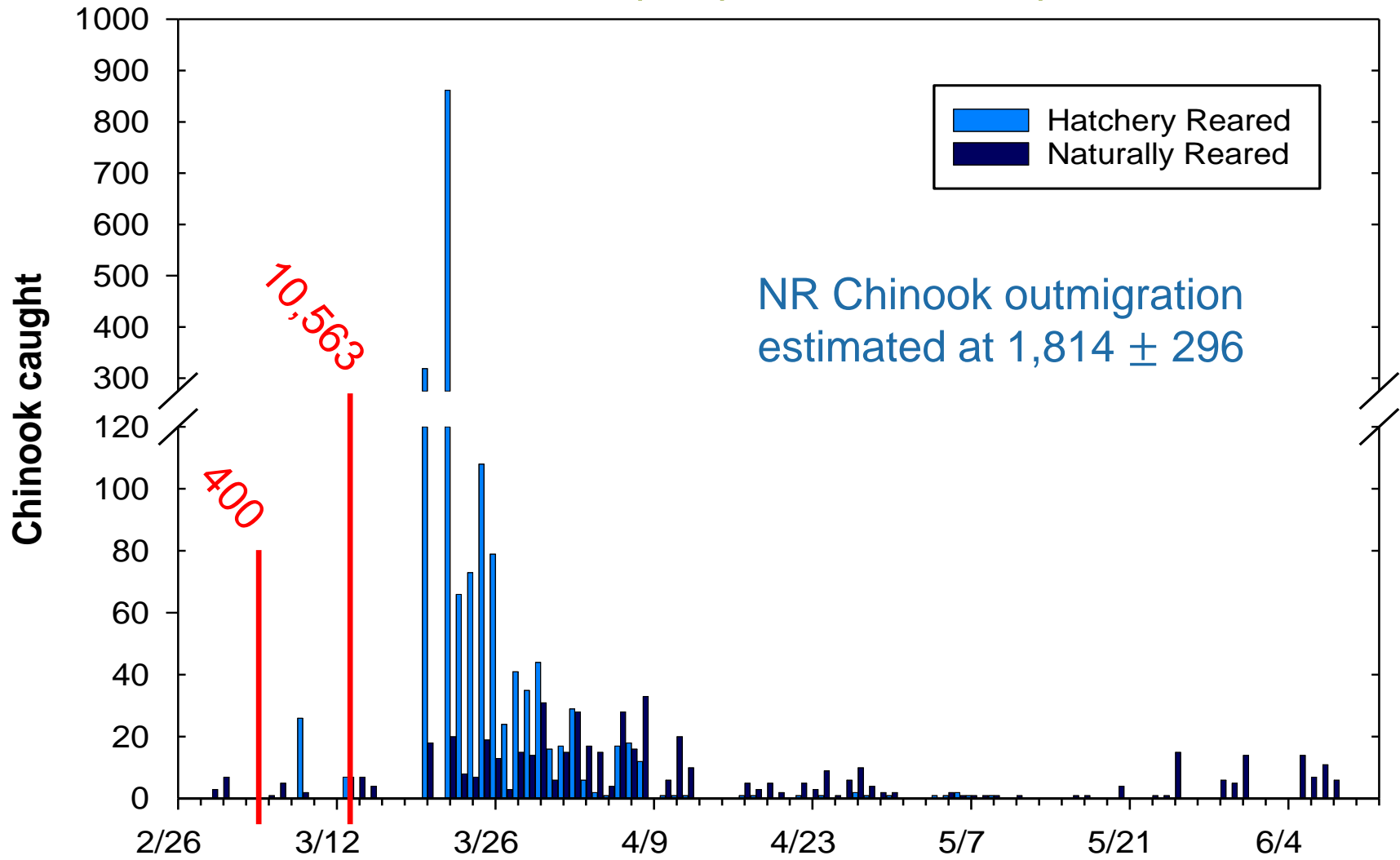
Whychus Creek screw trap

- Trap operated:
Feb 26 to June 6, 2018
 - HR Chinook – 1,819
 - NR Chinook - 532
 - HR Steelhead – 1,530
 - NR Steelhead – 342
- Other species:
 - redband trout
 - brown trout
 - mountain whitefish
 - suckers
 - dace



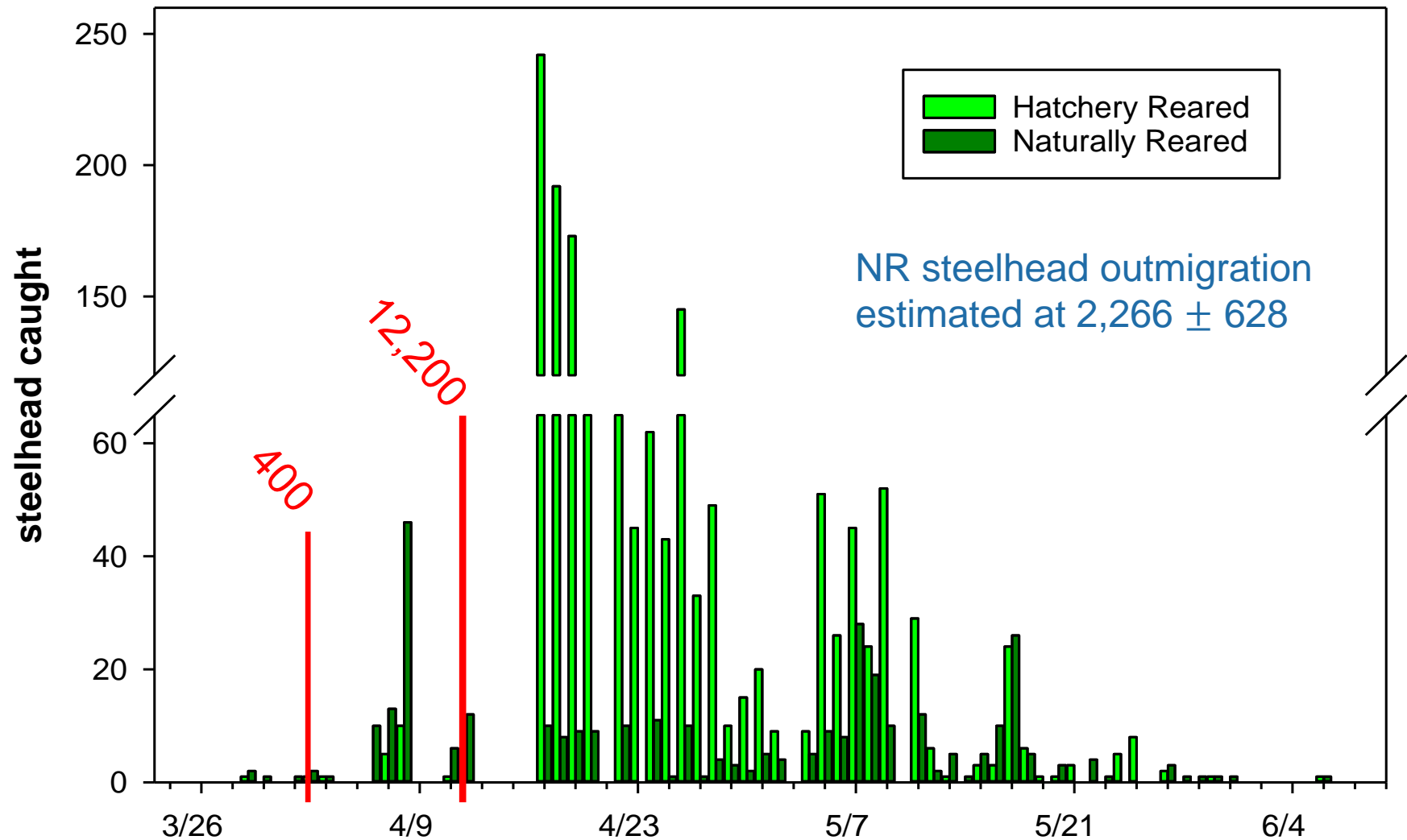
Whychus Creek Results

Chinook screw trap capture at 6360 trap 2018



Whychus Creek Results

steelhead screw trap capture at 6360 trap 2018



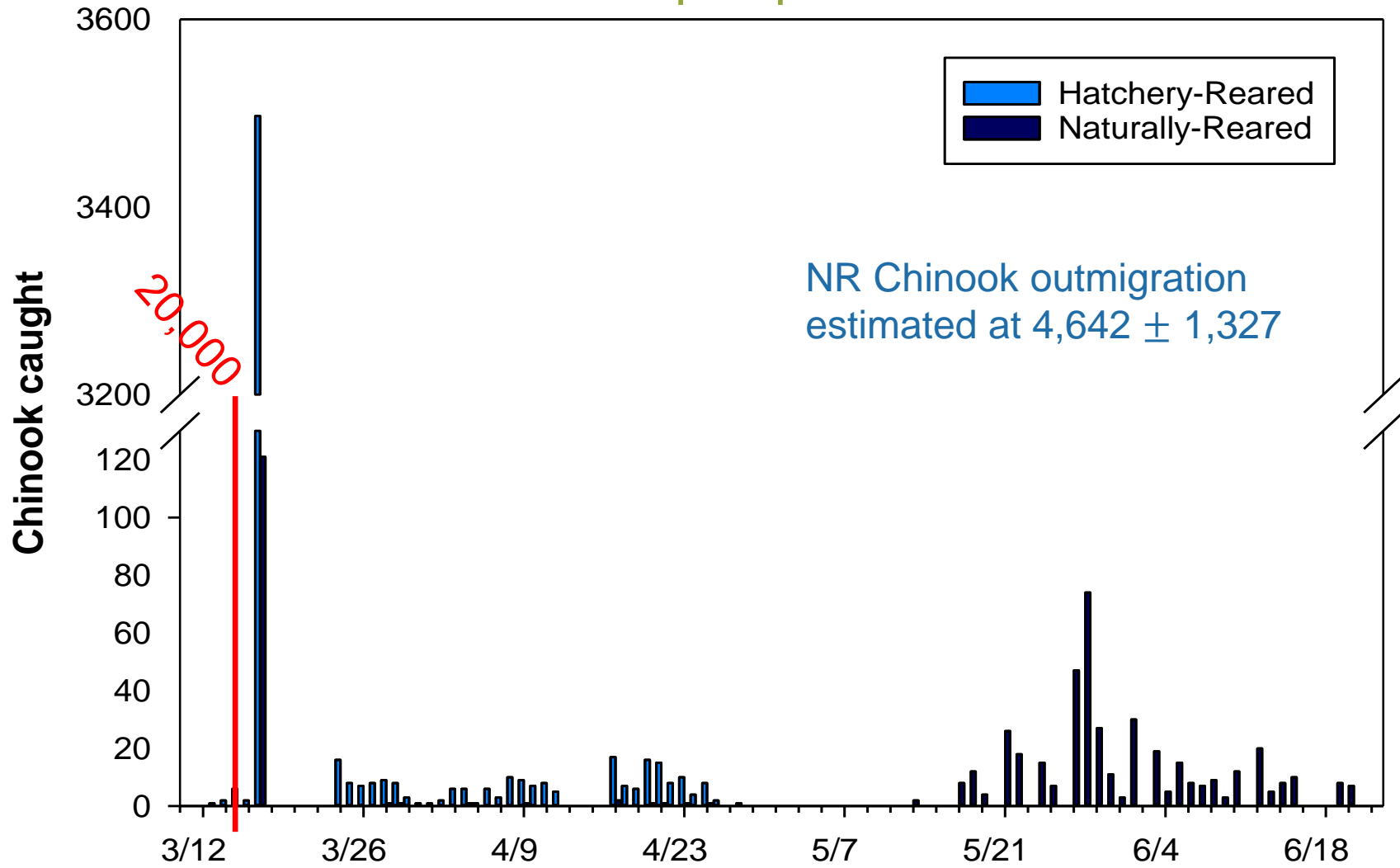
Crooked River

- Trap operated:
March 12 to June 15, 2018
 - HR Chinook – 3,726/1,325*
 - NR Chinook – 551
 - HR Steelhead – 142
 - NR Steelhead – 154
- Other species:
 - redband
 - bluegill
 - suckers
 - chiselmouth
 - sculpin
 - dace
 - mountain whitefish
 - northern pikeminnow
 - stickleback



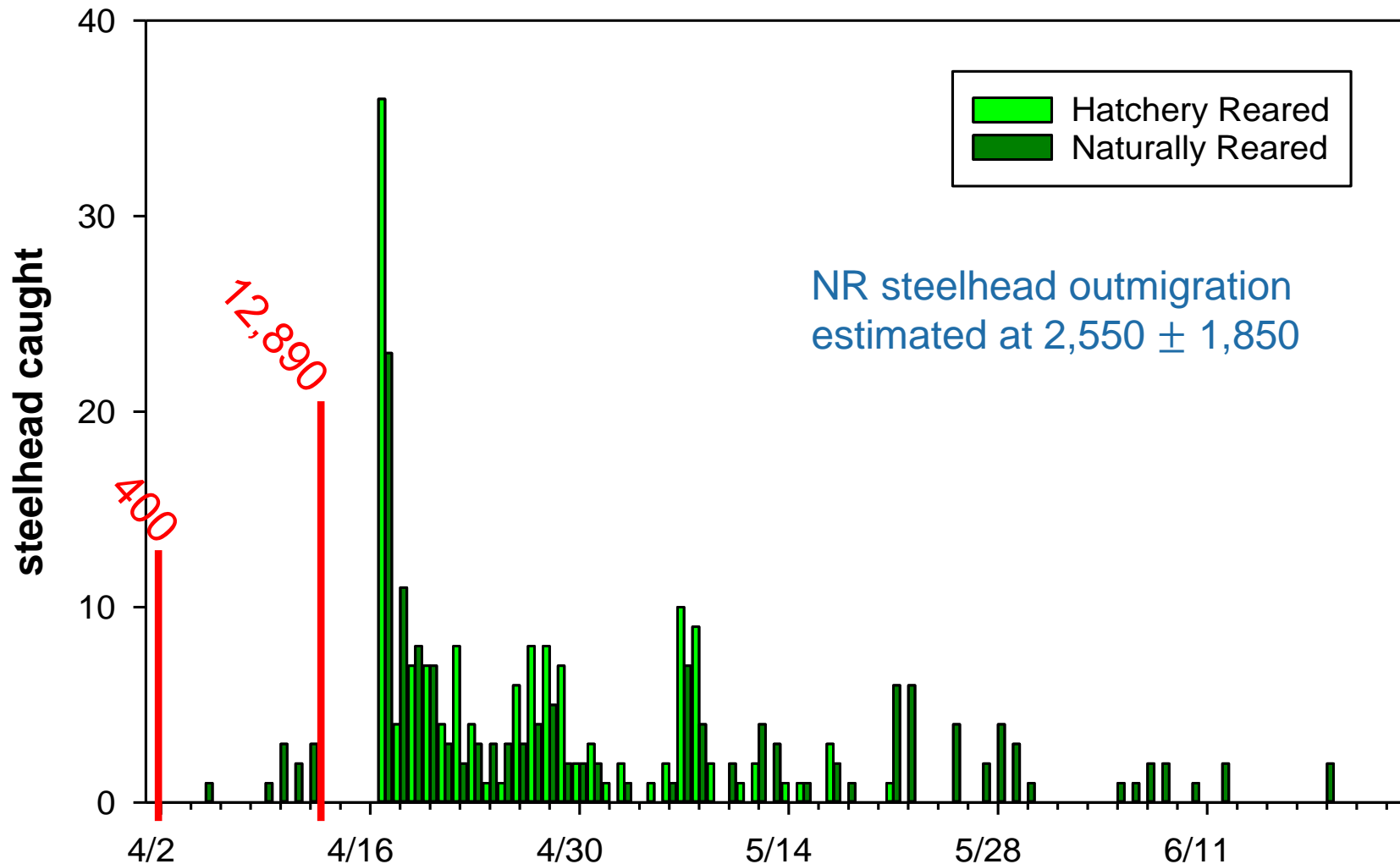
Crooked River Results

Chinook screw trap capture at Smith Rock 2018



Crooked River Results

steelhead screw trap capture at Smith Rock 2018

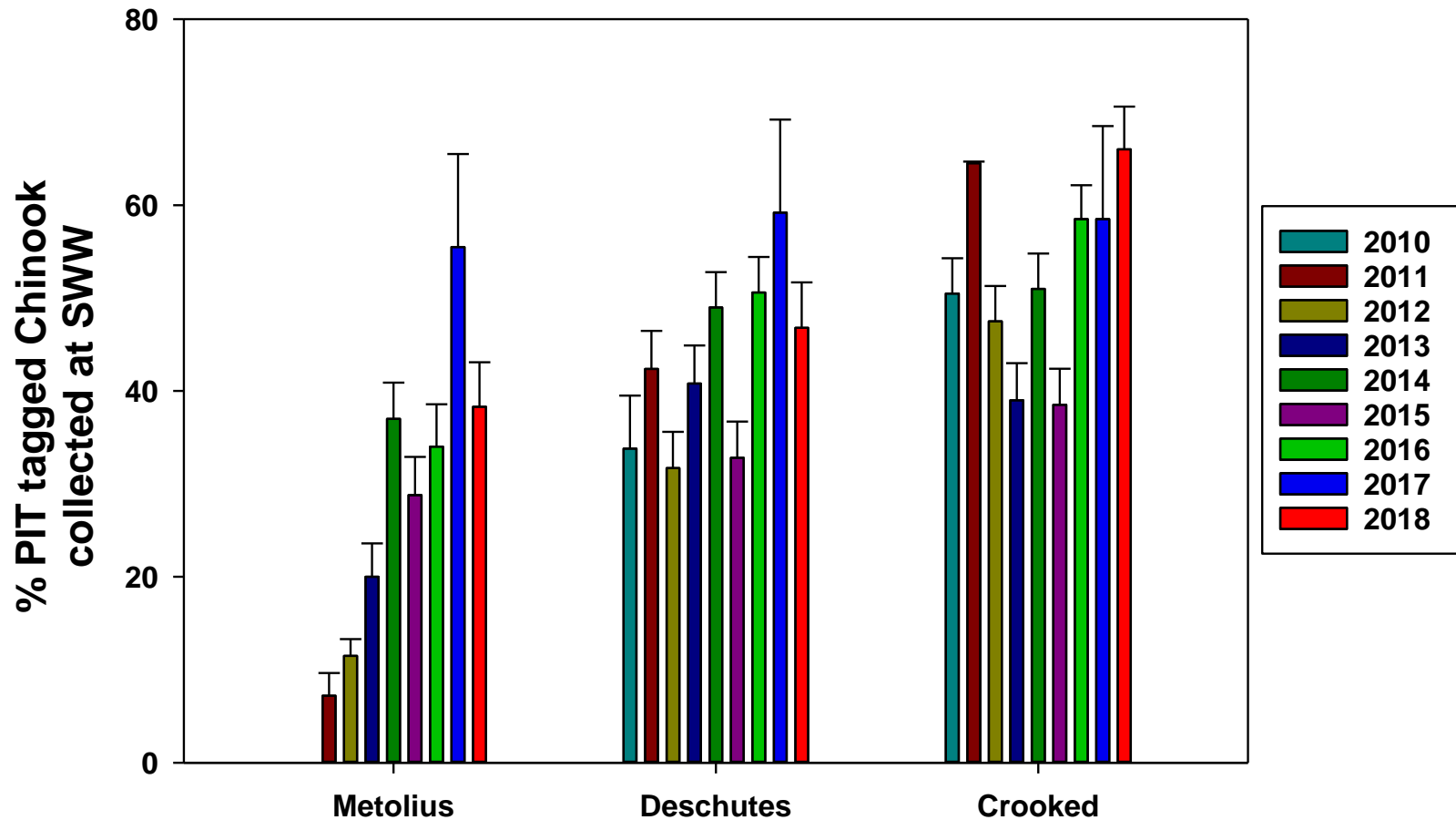


Lake Billy Chinook- SWW Results



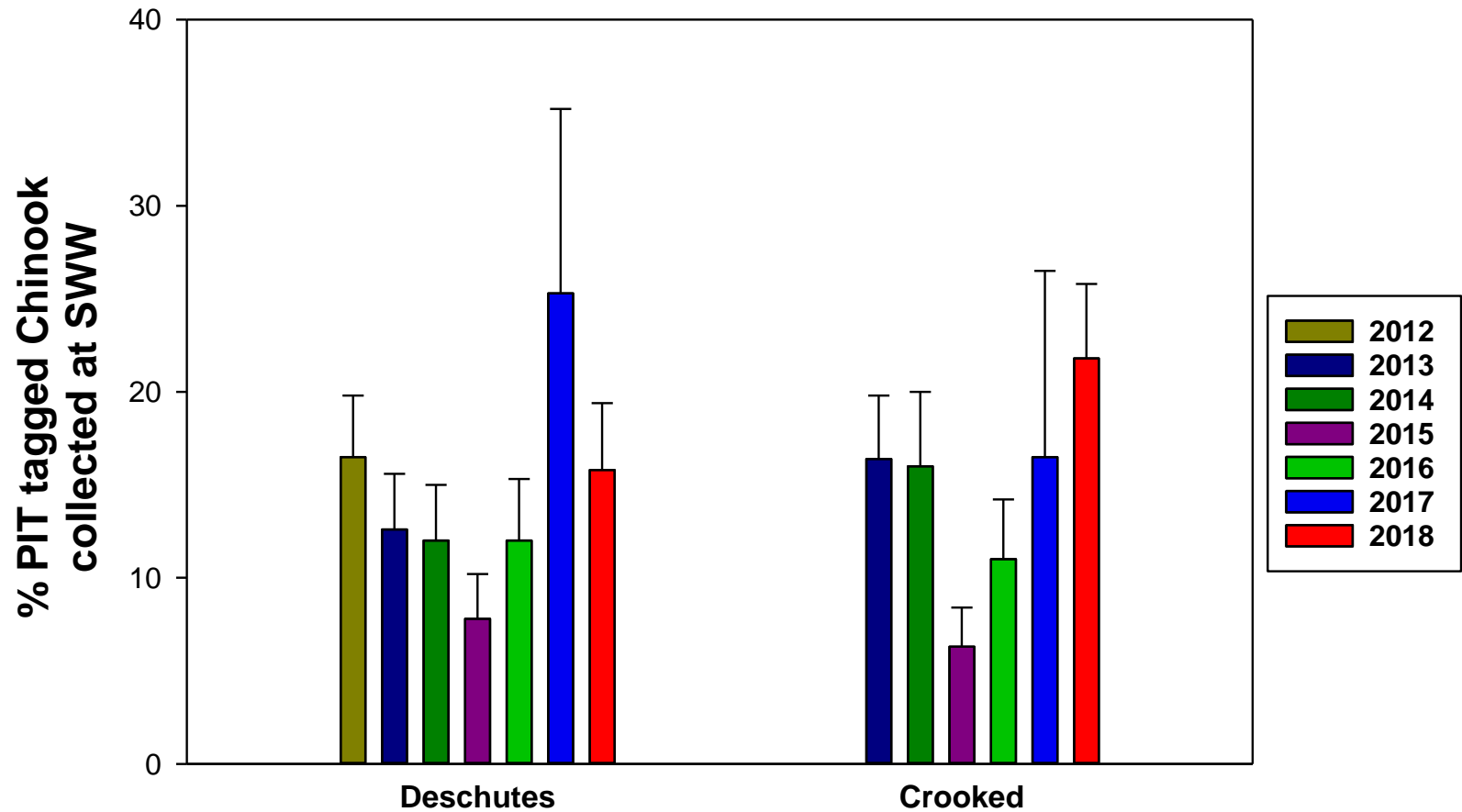
Lake Billy Chinook behavior

% Hatchery Chinook Collected at SWW by Tributary



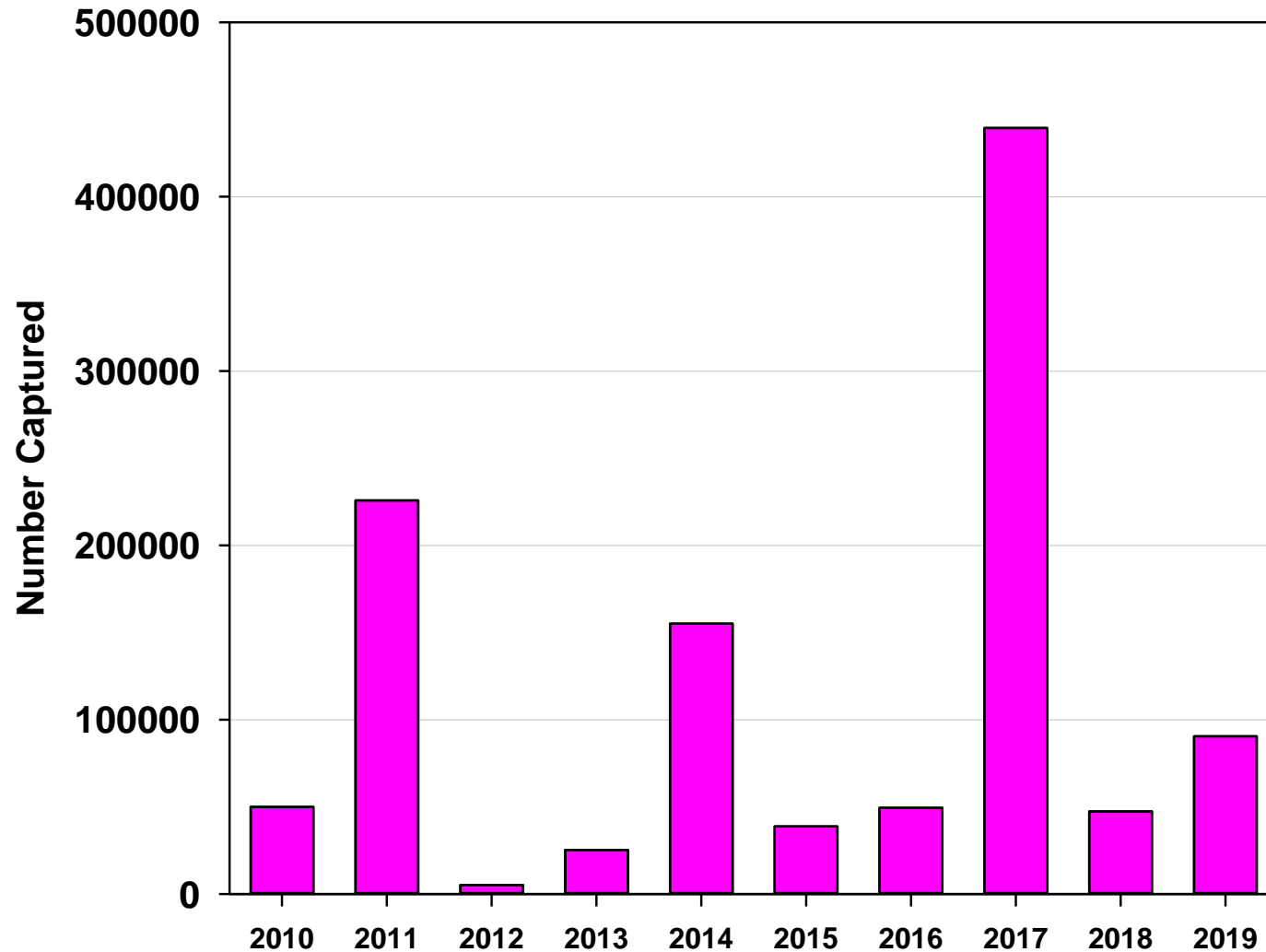
Lake Billy Chinook behavior

% Hatchery steelhead Collected at SWW by Tributary



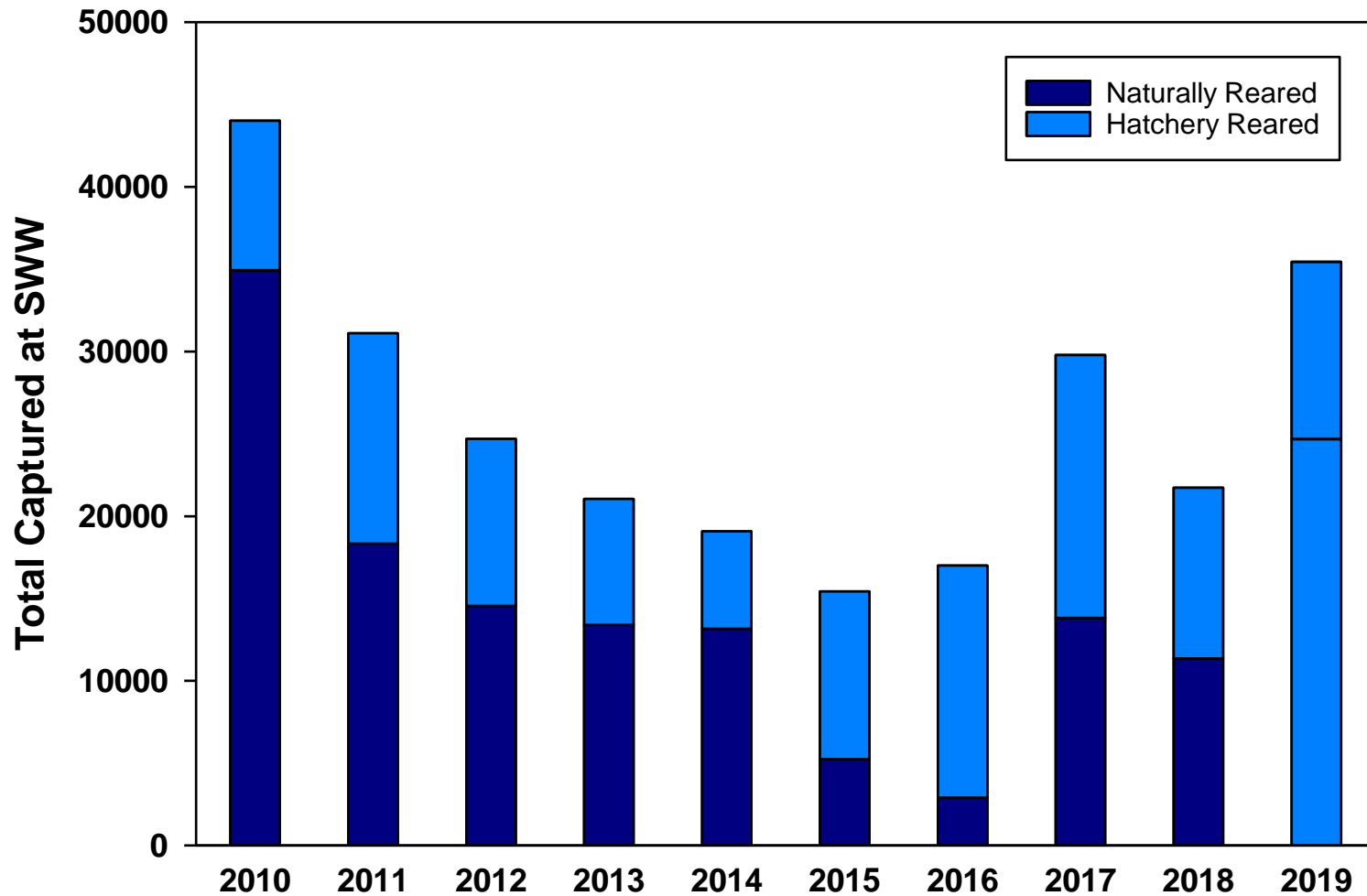
SWW Captures

Sockeye 2010-2019*



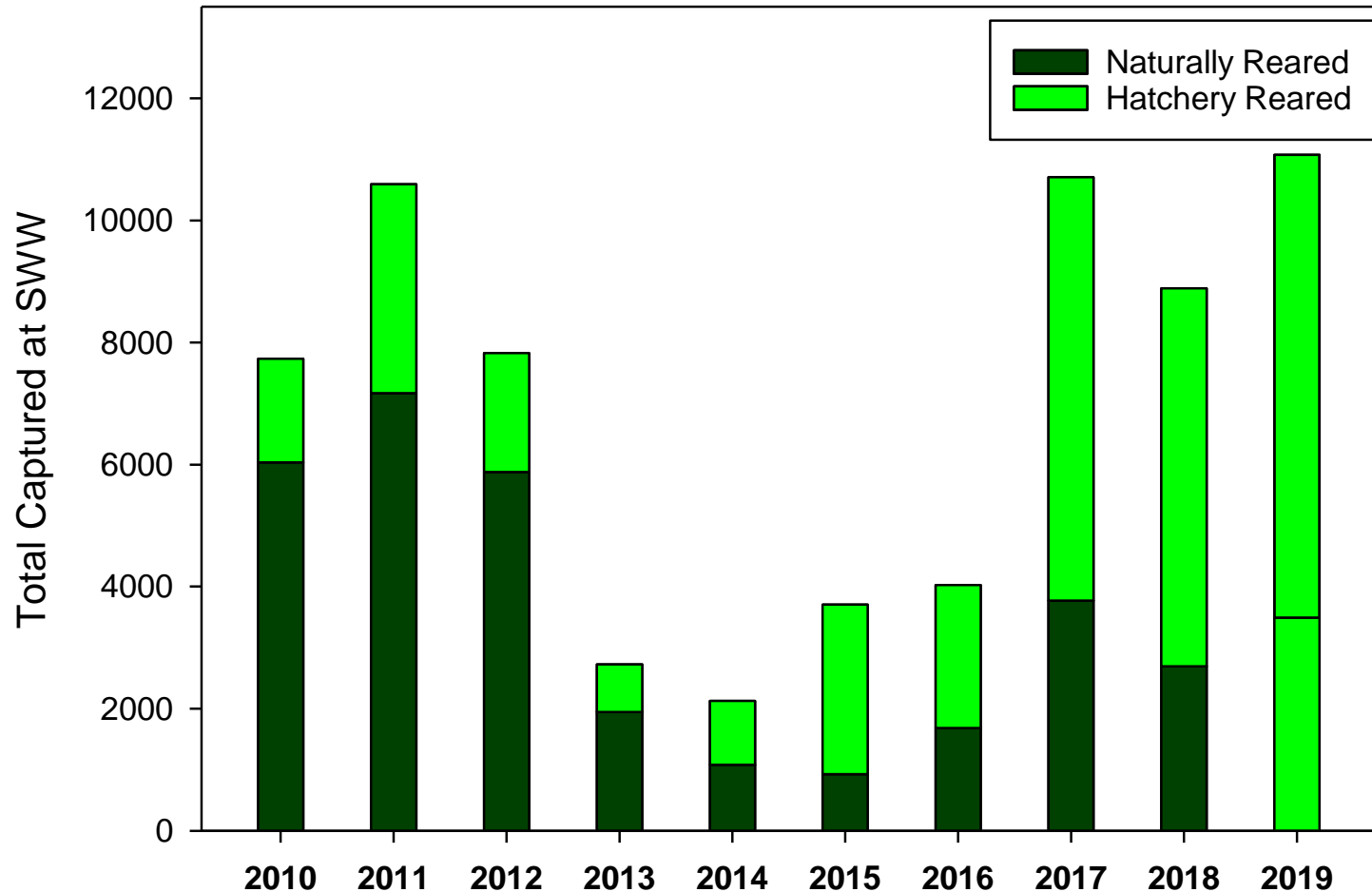
SWW Captures Breakdown

Chinook smolts captured at SWW by Origin 2010-2019*



SWW Captures Breakdown

Steelhead smolts captured at SWW by Origin 2010-2019*



Pelton Round Butte to Bonneville Dam



Pelton Round Butte to Bonneville Dam

CJS Model Results 2018

Species	Origin	Survival Estimate	95% C I
Sockeye	Natural	39.2%	26.2% - 53.9%
	Hatchery	44.8%	37.0% - 52.8%
Chinook	Natural	35.6%	25.8% - 46.7%
	Hatchery	61.8%	41.8% - 78.5%
Steelhead	Natural	43.5%	30.2% - 57.7%
	Hatchery	61.8%	41.8% - 78.5%



Continued Improvement

Adaptive Management Framework

- Discontinue fry releases
- Acclimation of HR smolts & Increase Numbers 100K
- Night Generation improved SWW efficiency
- Guidance Net install



Thank You

