

2012 Baseline Monitoring of Spring Chinook Salmon Above and Below Project Dams: **South Santiam River**

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Acknowledgments

- Funding: US Army Corps of Engineers and Federal Sport Fish Restoration Fund
- New Analyses and Archival Data
 - Leaburg Passage Counts: Mike Hogansen
 - Maps: David Hewlett
 - Hatchery Records: Brett Boyd
- PGE: Dan Cramer & Tim Shibahara
- Field Staff: Awesome!

- Spawner Surveys
 - Redd Counts and Carcass Recovery
 - Spawner Abundance, Distribution, Biometrics (Size, Age)
 - Spawner Origin (pHOS using fin clips, CWTs, and otoliths)
 - Spawning Success (PSM)
 - Spawn Timing ($H_0: H \approx W?$)
- Video Monitoring
 - Run Size, Species Comp.
 - Run Timing ($H_0: H \approx W?$)

- Hatchery Sampling: Adults
 - Integration Rates (pNOB)
 - Stray Rates (from CWTs)
- Hatchery Sampling: Juveniles
 - Survival
 - Size at Release
 - Migration
- Hatchery Program Changes

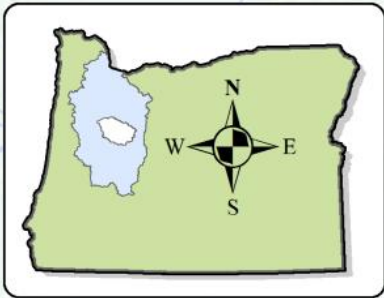
Methods



Redd
Surveys

Carcass
Sampling





Below Lebanon Dam

Dam

N: 0
d: 0
PSM: 100%
PHOS: 100%

Lebanon Dam to

Foster

N: 443
d: 18.5
PSM: 27%
PHOS: 84%

Above Foster

N: 222
d: 7.7
PSM: 15%
PHOS: 19%

Legend

Peak Redd Count



100

PHOS

PNOS

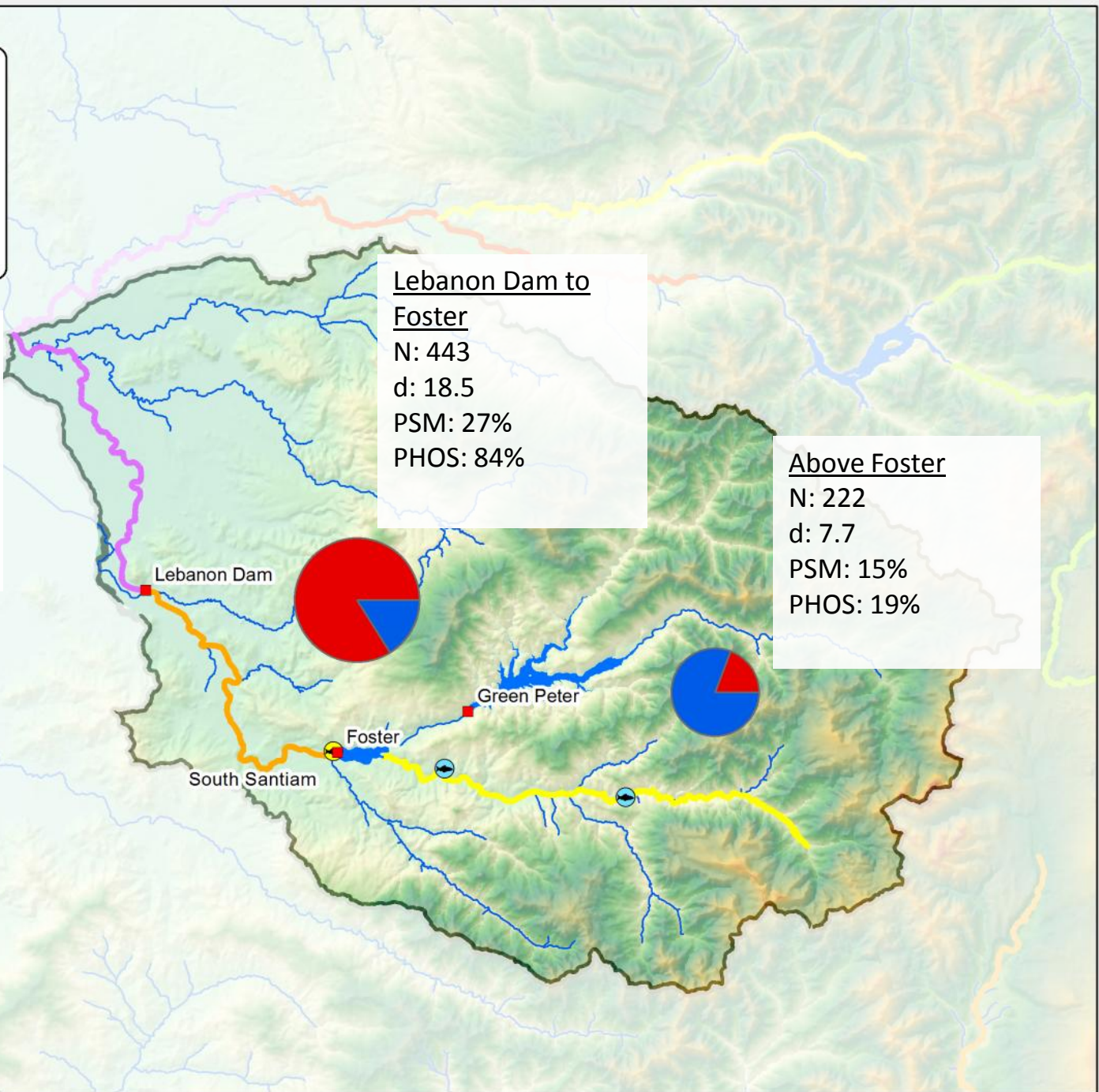
Barriers

Hatcheries

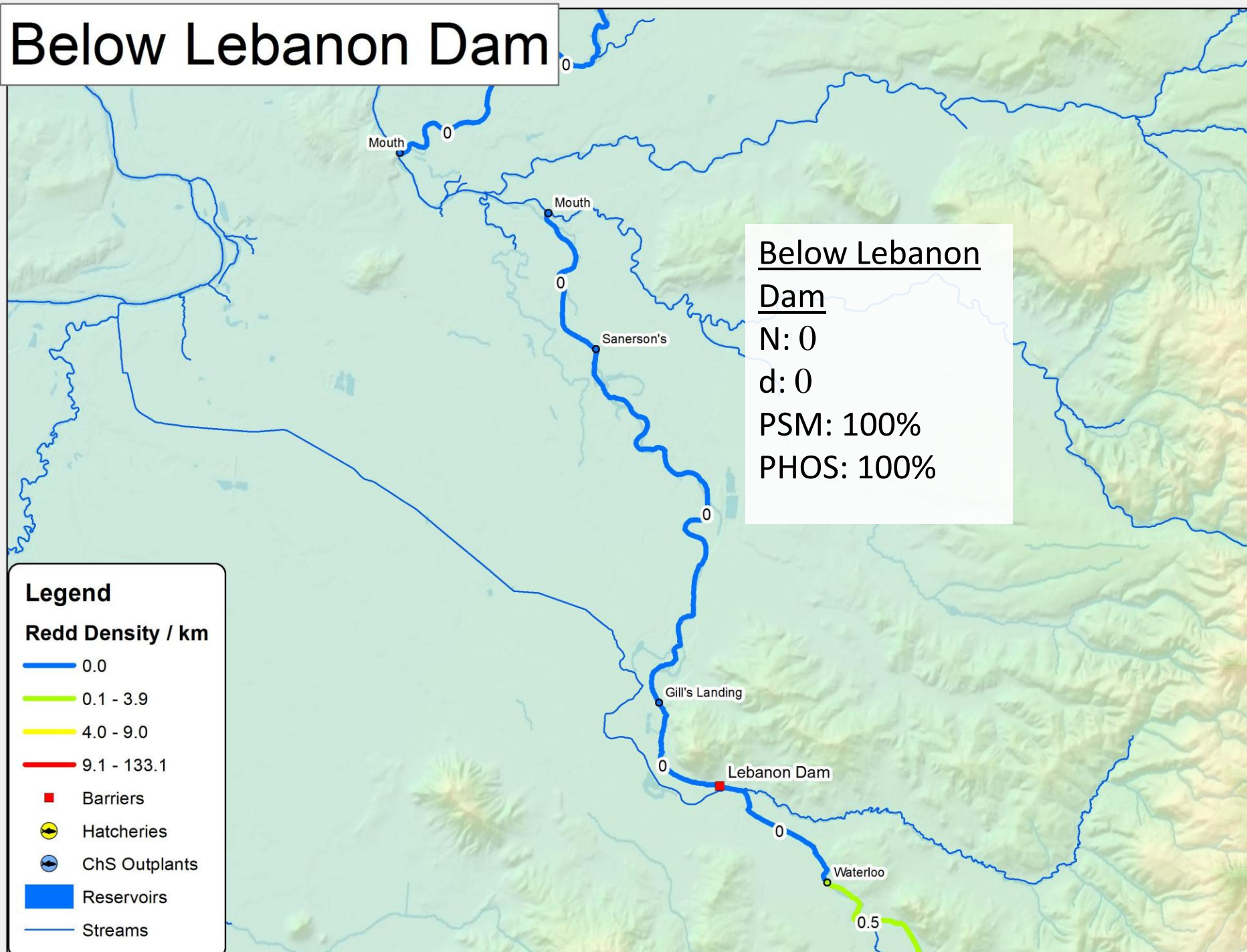
ChS Outplants

Reservoirs

Streams



Below Lebanon Dam



Below Lebanon Dam

N: 0

d: 0

PSM: 100%

PHOS: 100%

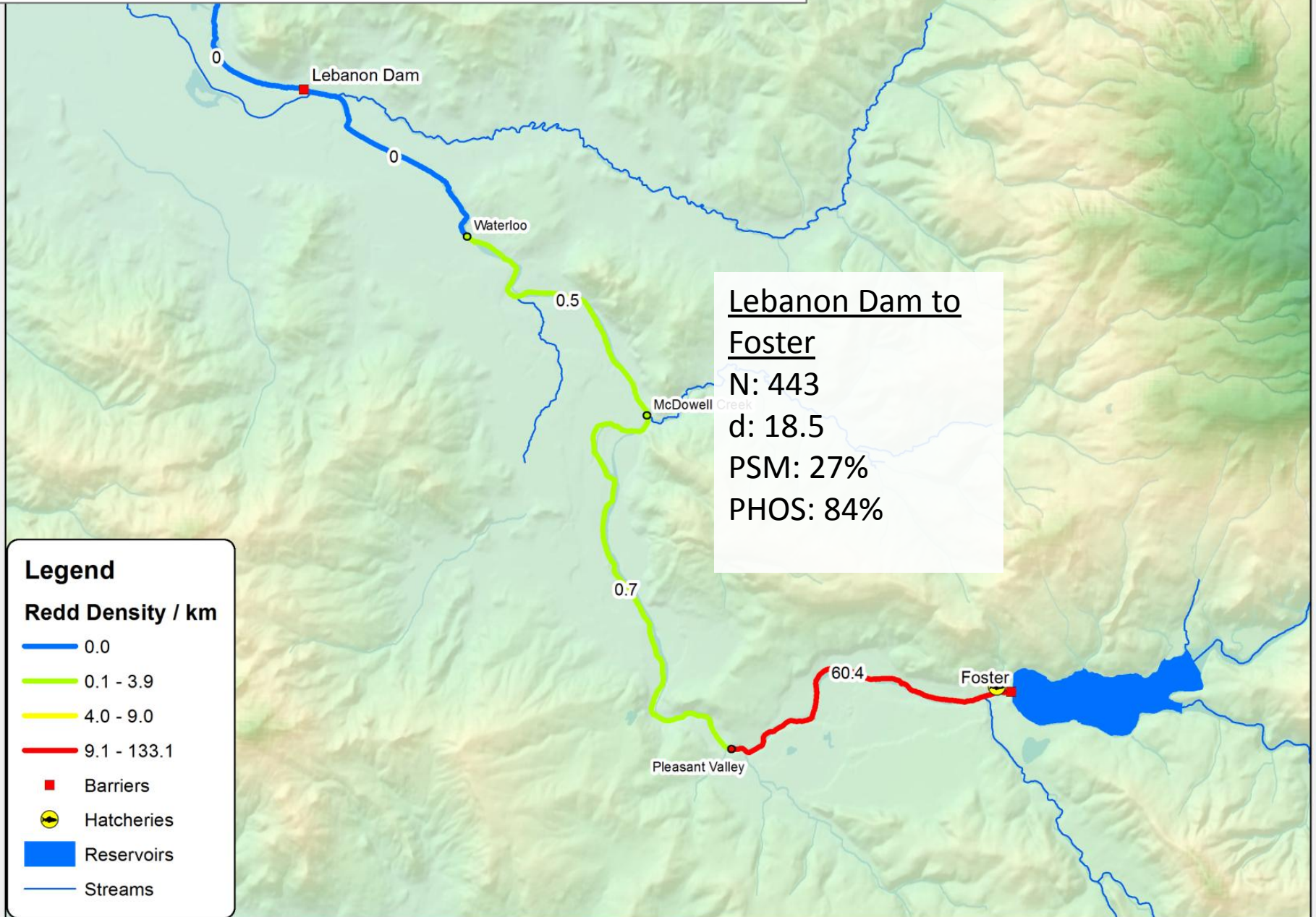
Legend

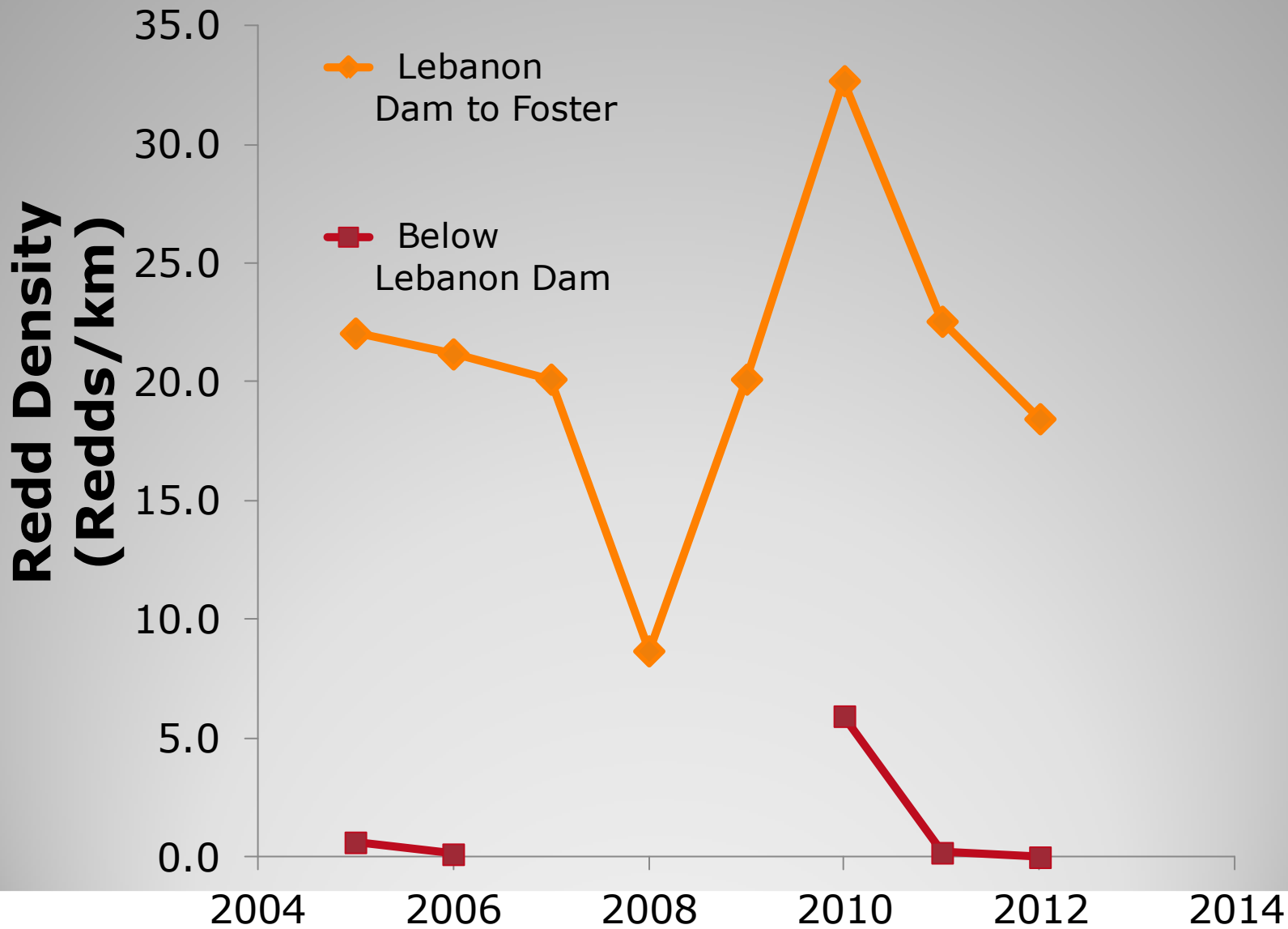
Redd Density / km

- 0.0
- 0.1 - 3.9
- 4.0 - 9.0
- 9.1 - 133.1

- Barriers
- Hatcheries
- ChS Outplants
- Reservoirs
- Streams

Lebanon Dam to Foster Dam

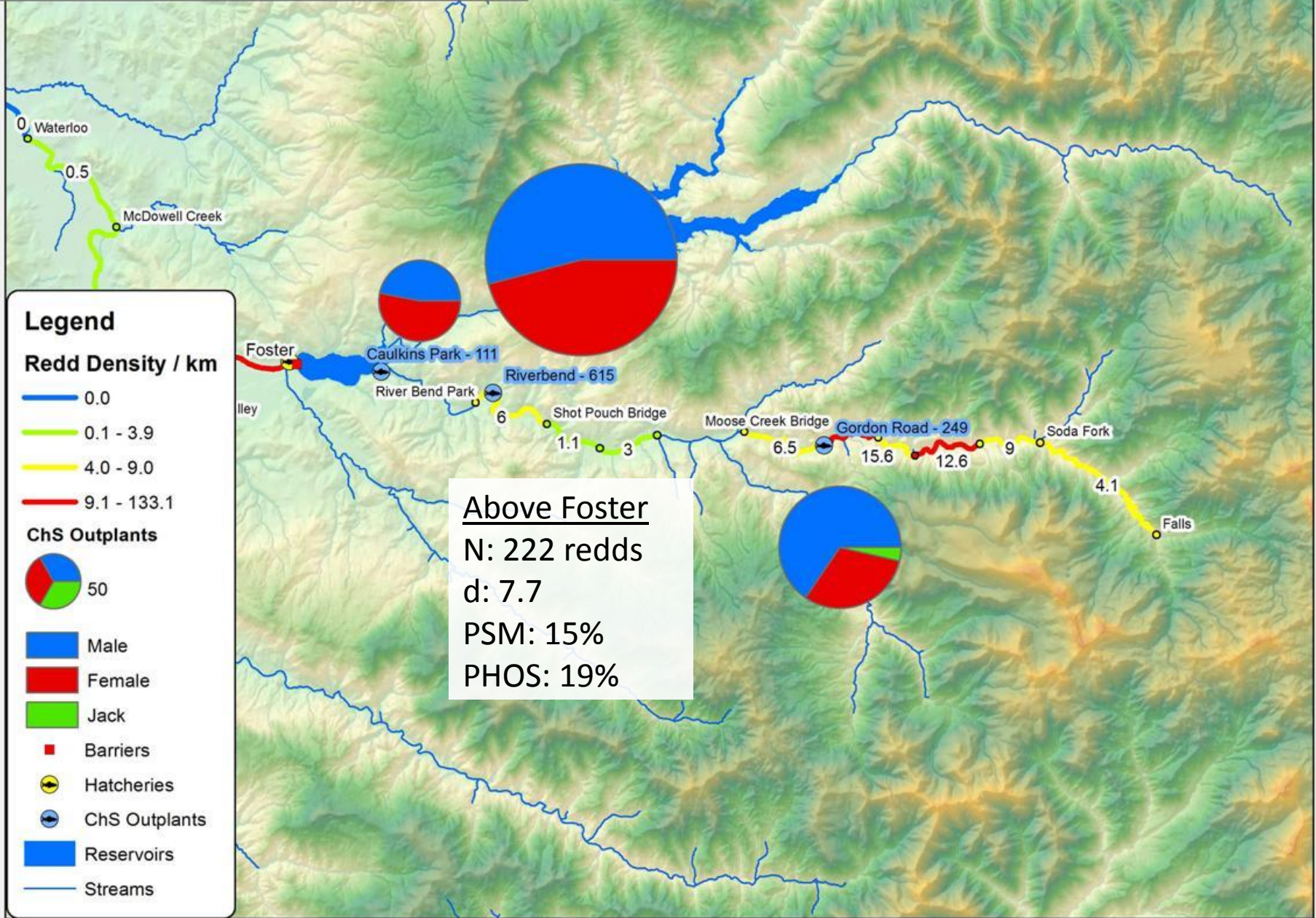




- Outplanting from Foster Dam Trap
 - Chinook and steelhead volunteer to trap in Foster Dam
 - All fish mechanically crowded and anesthetized with CO₂
 - All unclipped Chinook and winter-run steelhead loaded and trucked upstream
 - New facility under construction now

Outplanting: South Santiam

Above Foster Dam

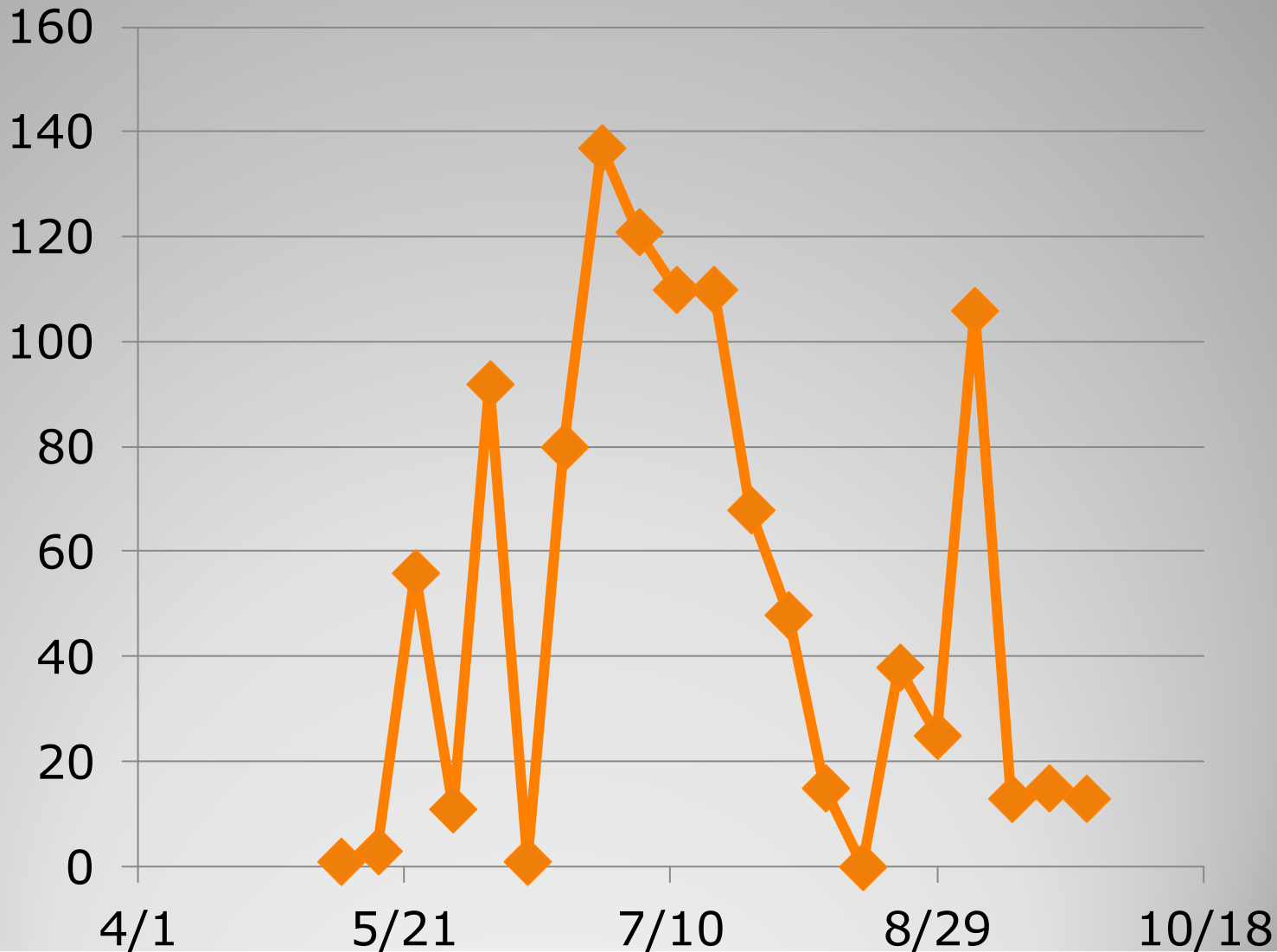


Above Foster
 N: 222 redds
 d: 7.7
 PSM: 15%
 PHOS: 19%

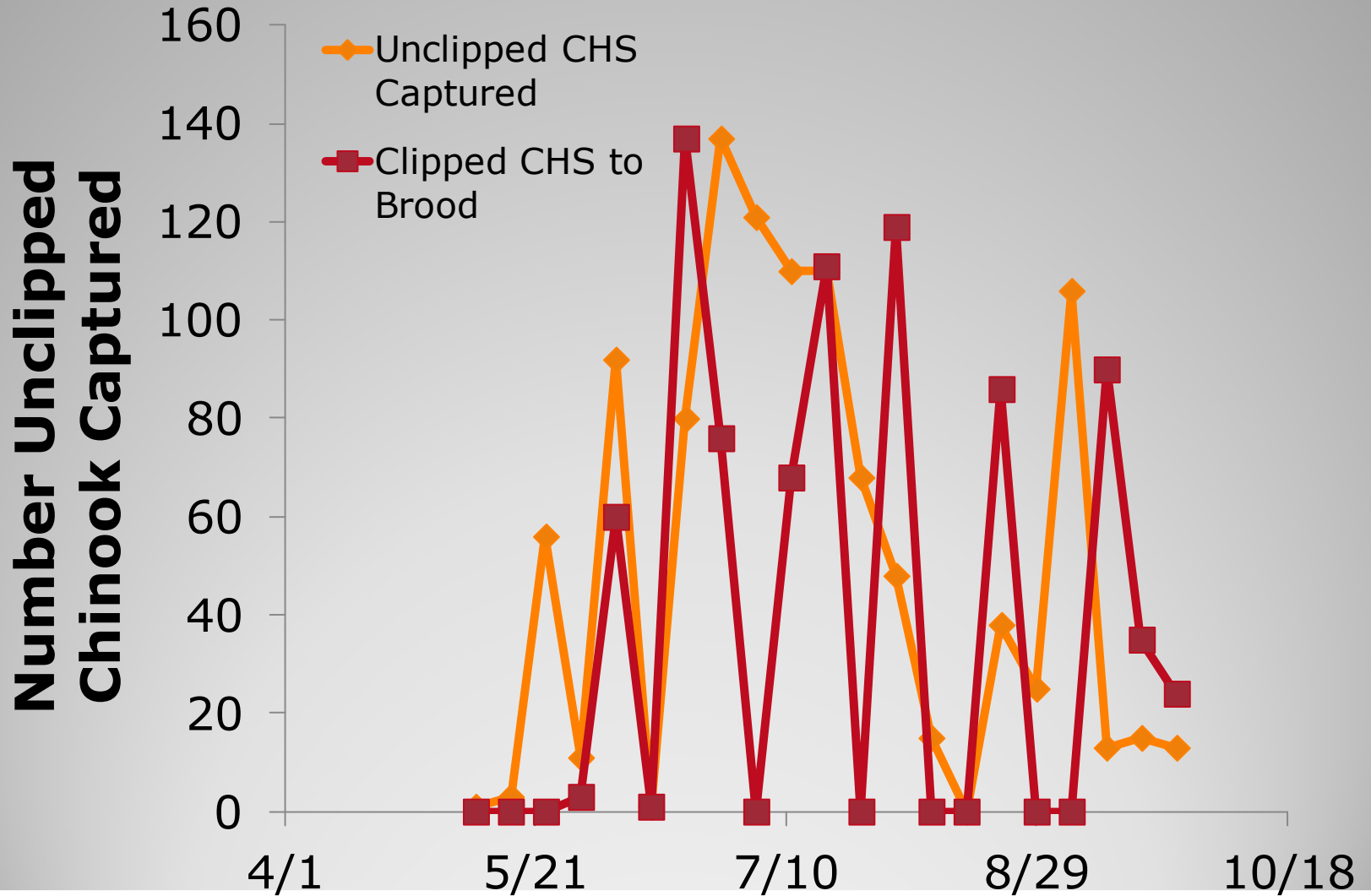
Group	Low PSM (<20%)		Medium PSM (20 - 50%)		High PSM (>50%)	
	2011	2012	2011	2012	2011	2012
Early Outplants (< Aug 1)	14%	8%				
Late Outplants (\geq Aug 1)			24%	25%		
Lower River Outplants (Calkins & Riverbend)	15%	9%				
Upper River Outplants (Gordon Road)			22%	21%		
<u>2011</u>			<u>2012</u>			
1210 Total Floy Tagged Outplants			1040 Total Floy Tagged Outplants			
175 Floy Tag Recoveries			142 Floy Tag Recoveries			
70 Floy tagged females recovered with known spawn status			75 Floy tagged females recovered with known spawn status			
14 Pre-Spawn Recoveries (Females w/> 50% eggs remaining)			17 Pre-Spawn Recoveries (Females w/> 50% eggs remaining)			

Run Timing: Does timing of collection into the hatchery (broodstock) match run timing of naturally-produced fish?

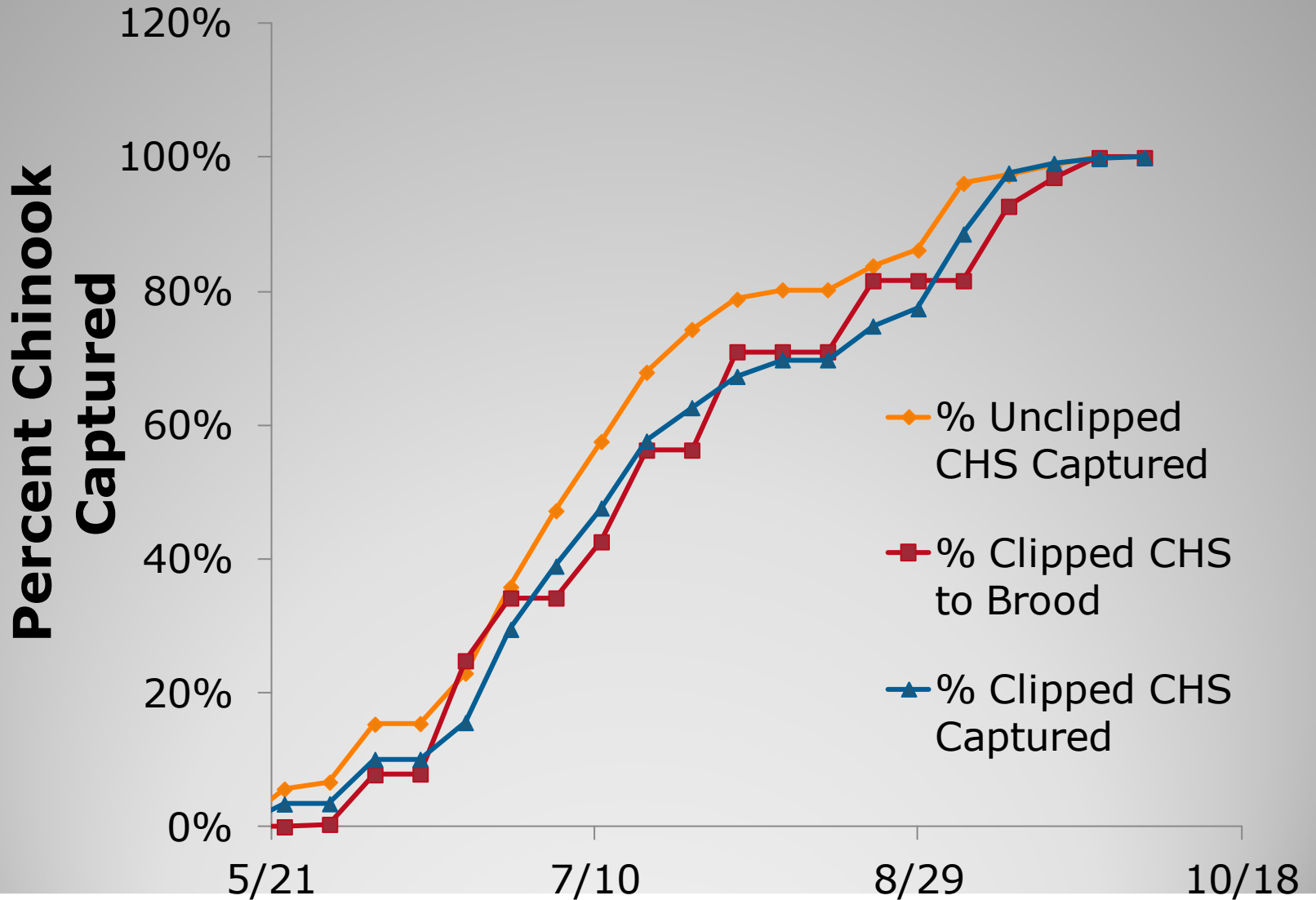
**Number Unclipped
Chinook Captured**



Unclipped Chinook at Foster



Hatchery Collections vs. Run-Of-River

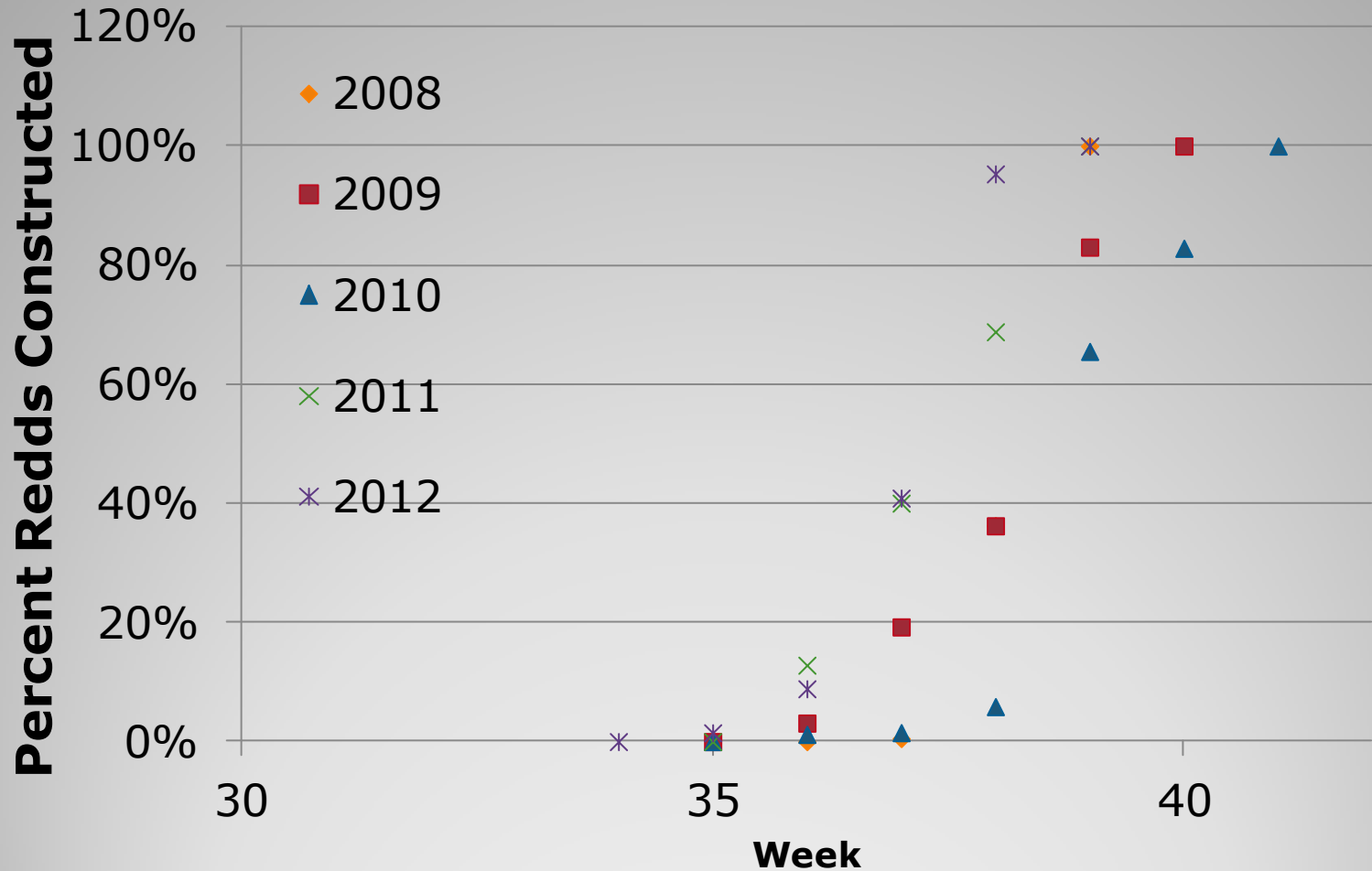


Brood Collection vs. Run-Of-River

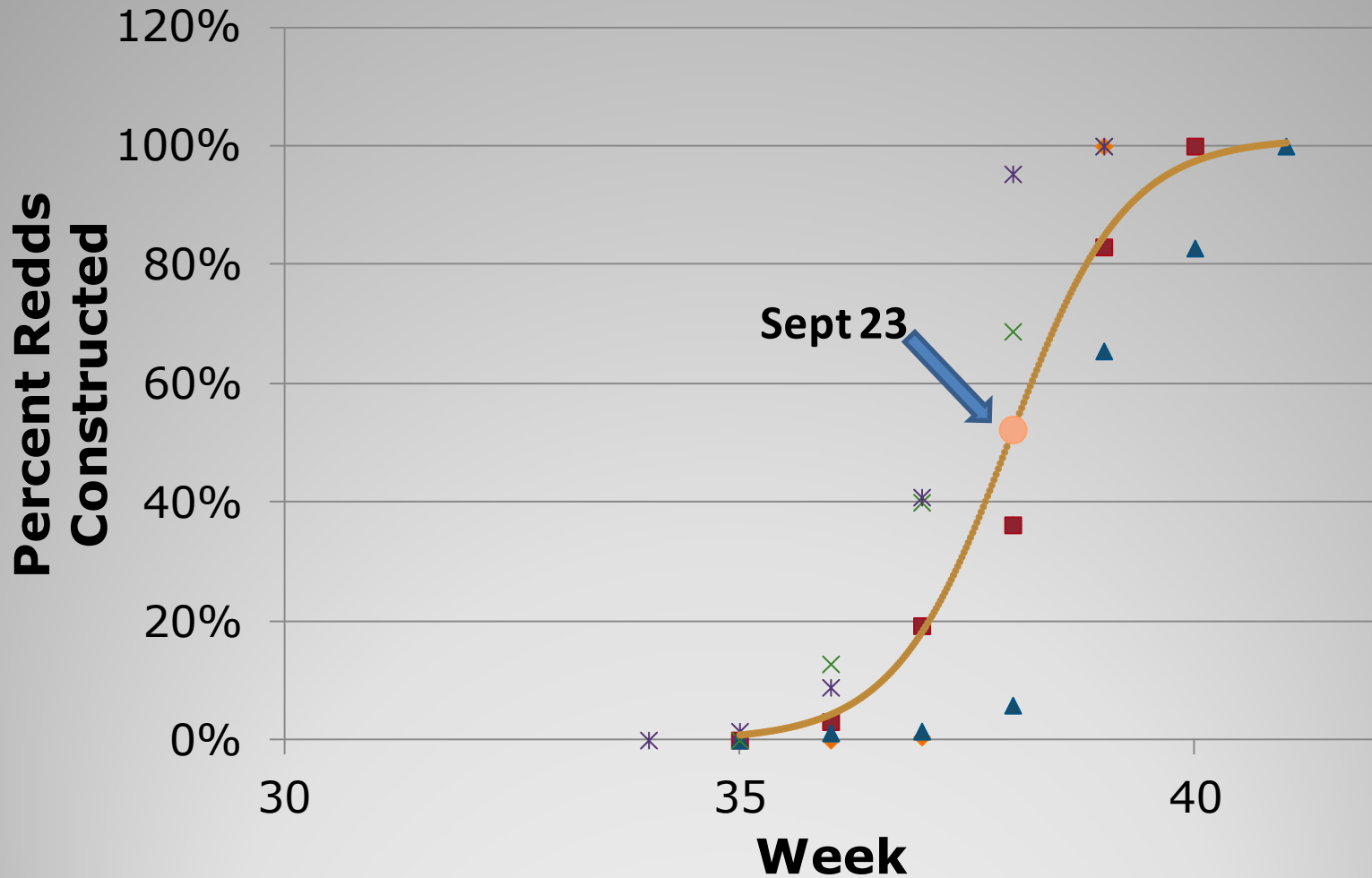
Spawn Timing:

Does timing of spawning in the hatchery match timing of naturally-spawning fish?

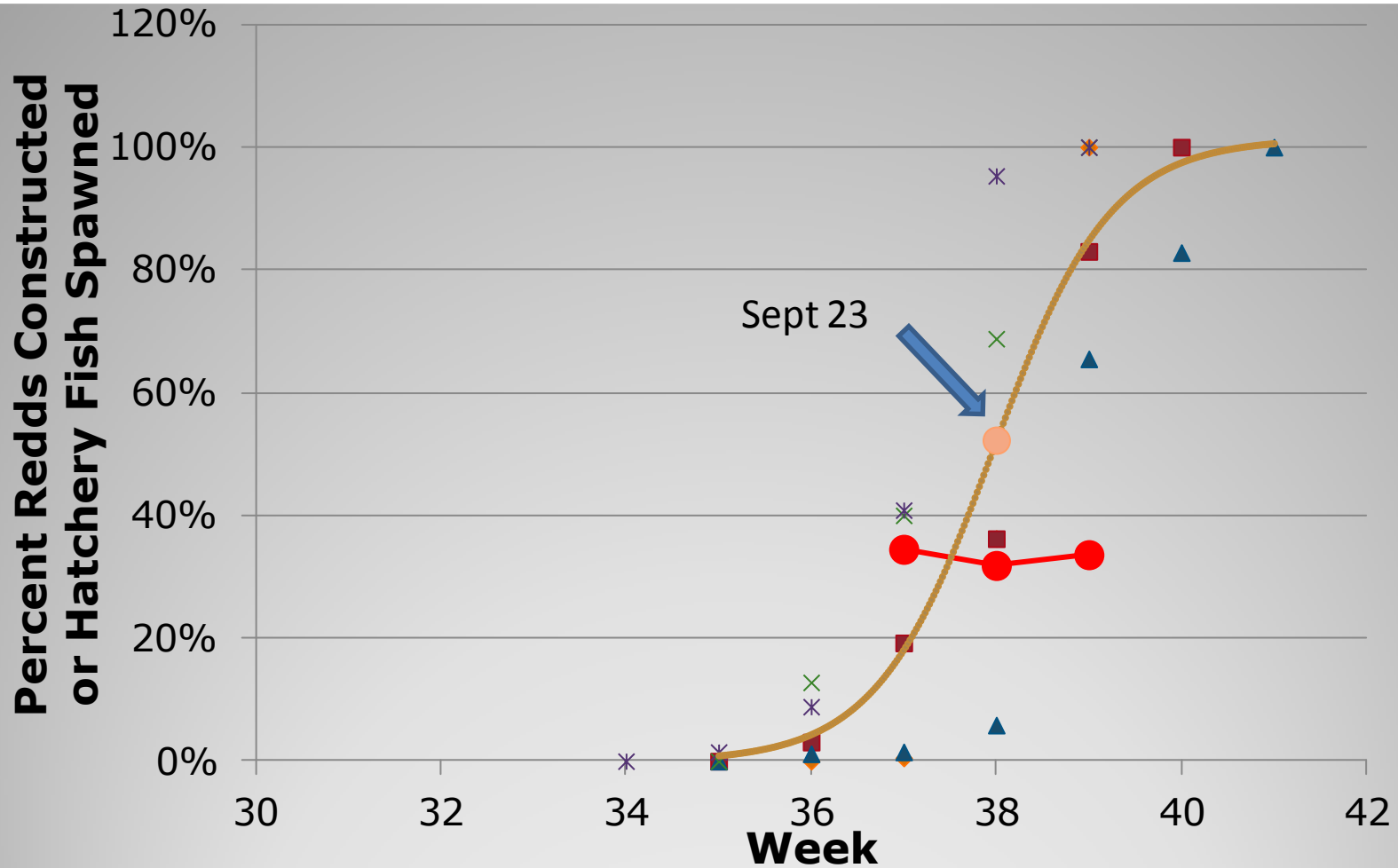
South Santiam



**Cumulative S. Santiam Redd
Counts: 2008 - 2012**



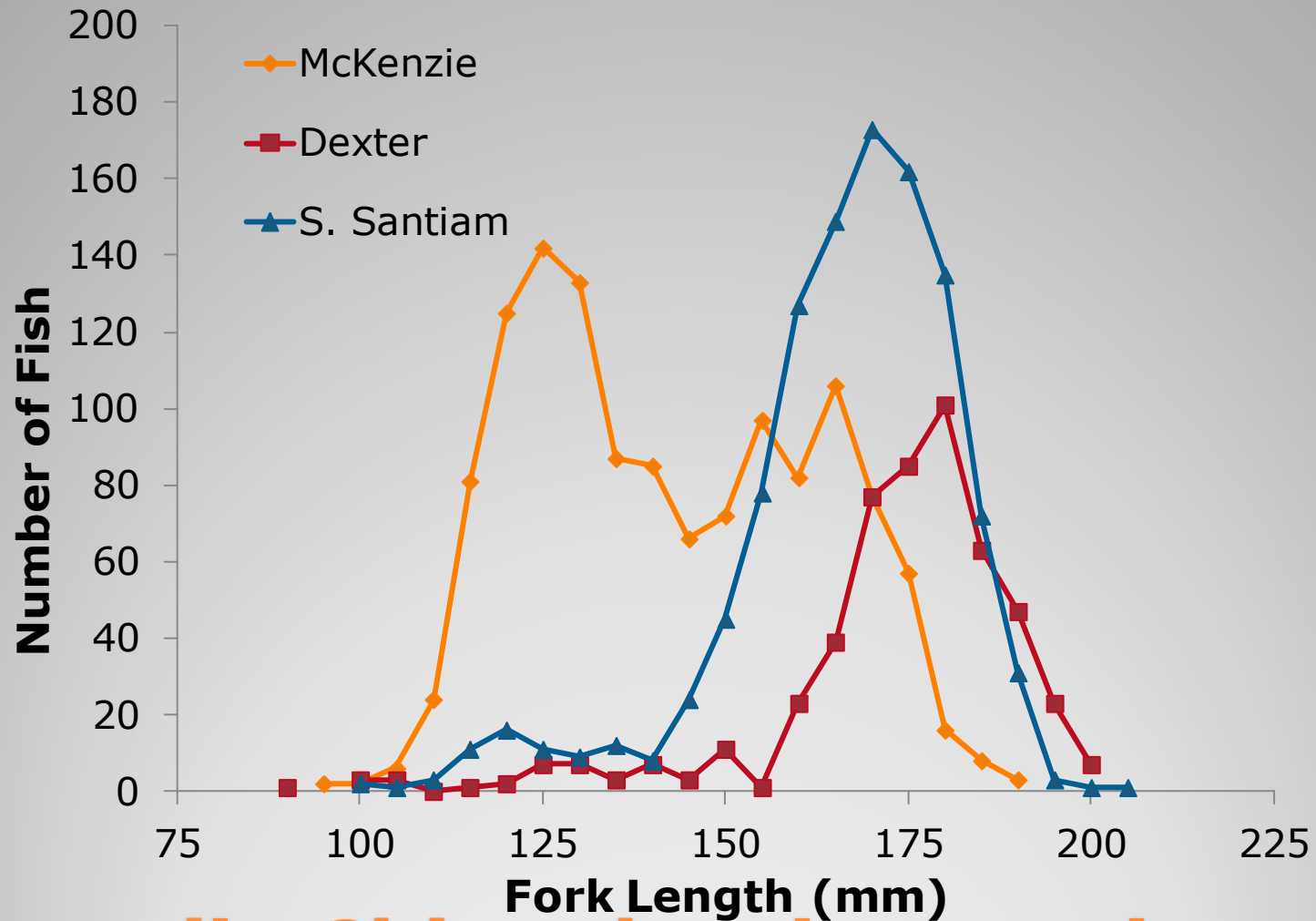
Maximum rate of redd construction



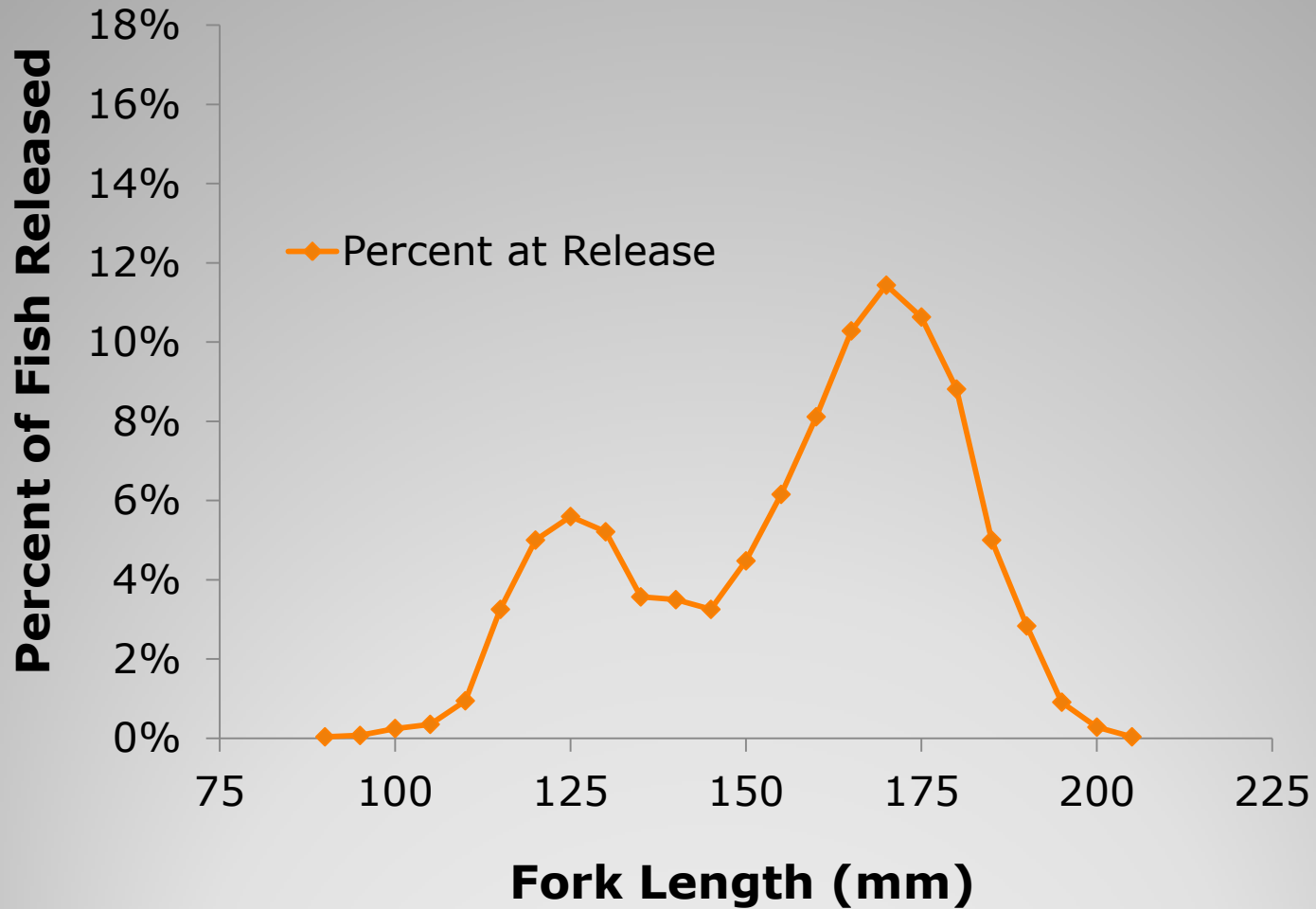
Spawning at S. Santiam Hatchery in 2012

- Pre-liberation Samples
 - November 2012 release only
- Migrant Samples
 - November 2012 release only
- Fish Pathology
 - Brood Year 2010 Spring Release & BY 2011 Fall Release

Juvenile Monitoring: S. Santiam H.



**Juvenile Chinook salmon released
in 2012 (November Release)**



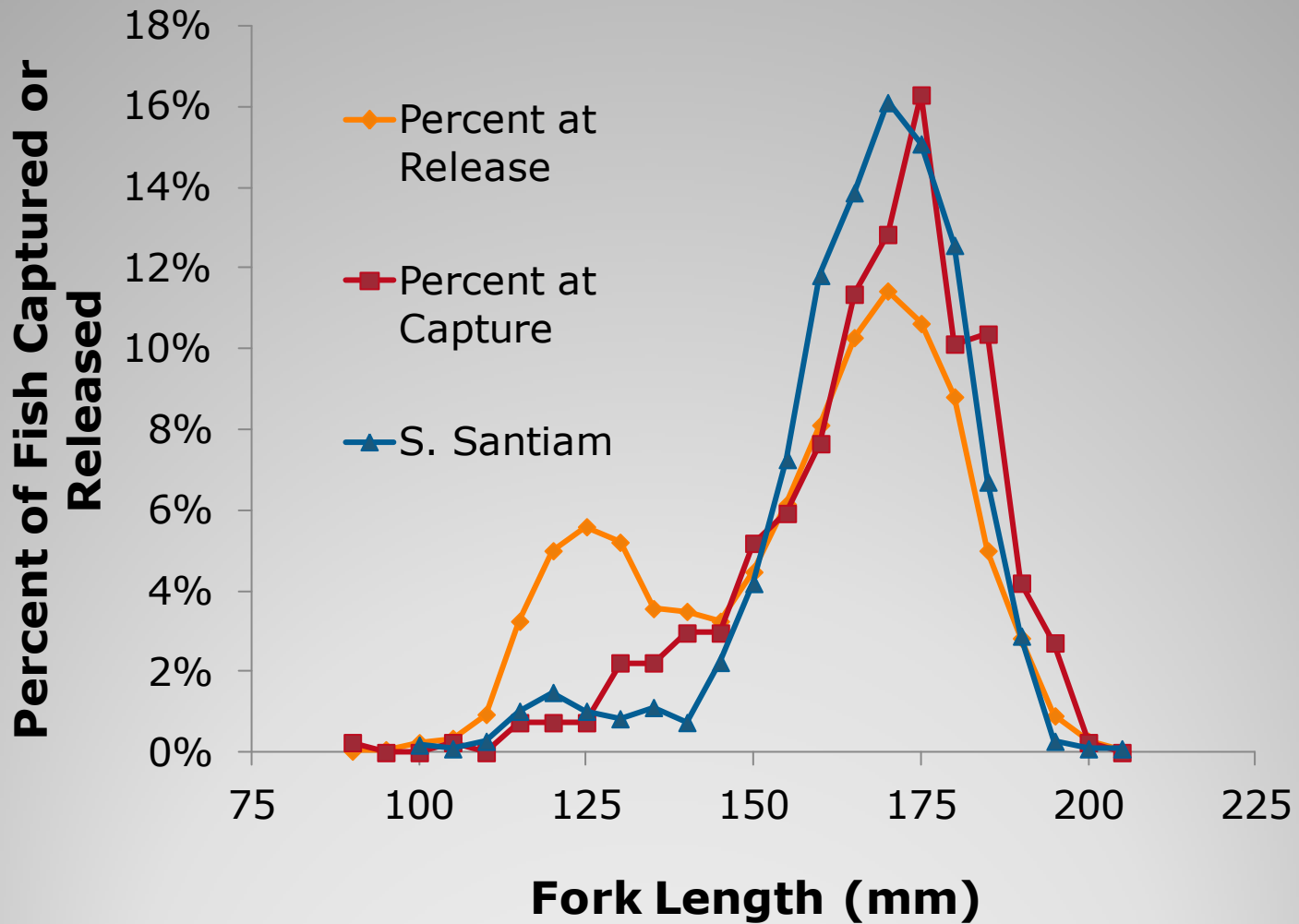
**Juvenile Chinook salmon released
in 2012 (November Release)**







- Willamette Falls Sampling
 - Species Composition (Hatchery and Wild)
 - Biometrics (FL, Wt, Morphology)
 - CWT detection/recovery
 - PIT tag detection



Released vs. Captured at Willamette Falls

- Fish Pathology
 - CHS: No significant problems–
No treatment required
 - StS: No significant problems (low
CWD – no treatment). Some
IHNV results on spawners are
pending.

Fish Pathology Report: South Santiam Hatchery

- Program Changes
- New Fish Collection Facility under construction

Program Changes: S. Santiam H.

- Willamette BiOp and SFR Website
- <http://oregonstate.edu/dept/ODFW/willamettesalmonidrme/home>

WRITE THIS DOWN!!!



Photo by Brian Franklin 9/21/2012