DETECTION OF PIT-TAGGED FISH USING PAIR TRAWL AND PILE DIKE ANTENNA SYSTEMS IN THE COLUMBIA RIVER ESTUARY, 2012

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NOAA Fisheries

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Point Adams
Research Station

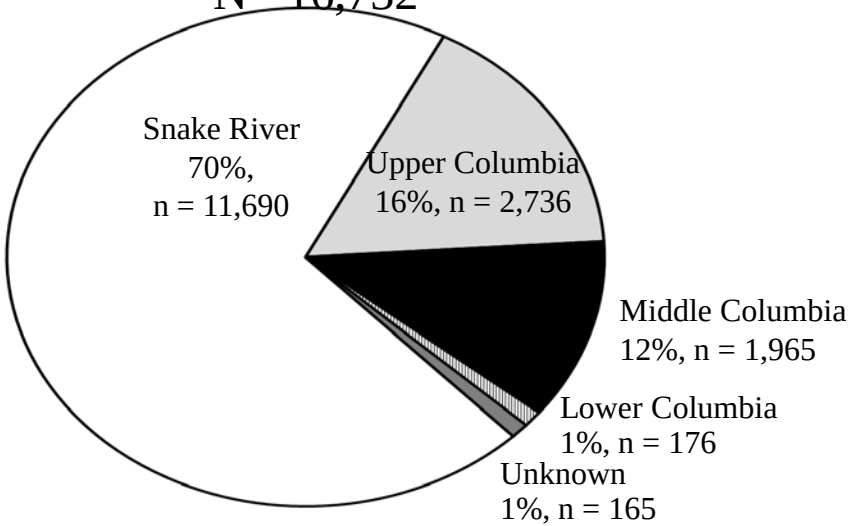
Objectives

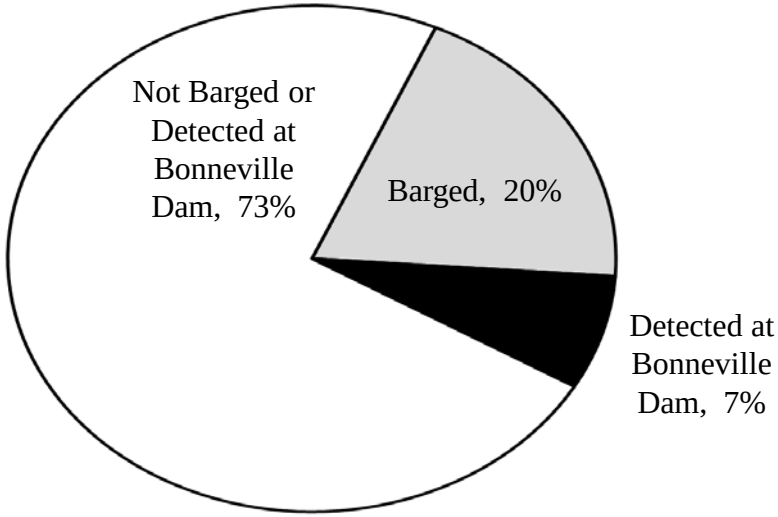
- Complete reach survival estimates to the tailrace of Bonneville Dam for yearling Chinook salmon, steelhead, and sockeye salmon

- Compare migration timing and survival of transported juvenile salmonids to those of fish detected passing Bonneville Dam on the same date

Source and Migration History of Detected Fish, 2012

PIT-tagged Juvenile Salmonids
Detected in the Estuary, 2012
N= 16,732

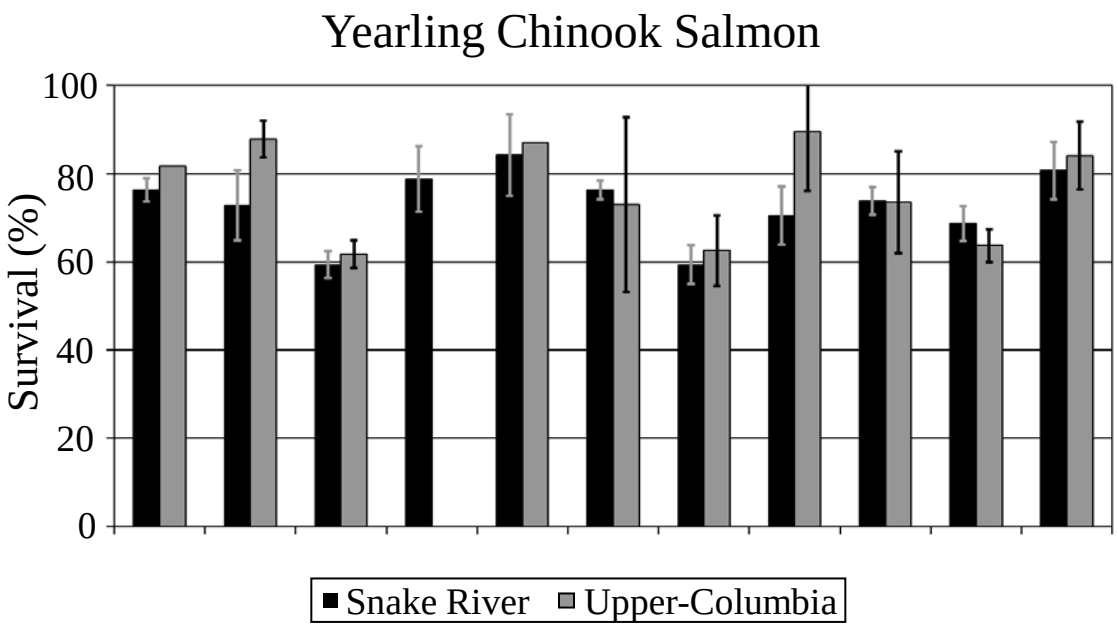


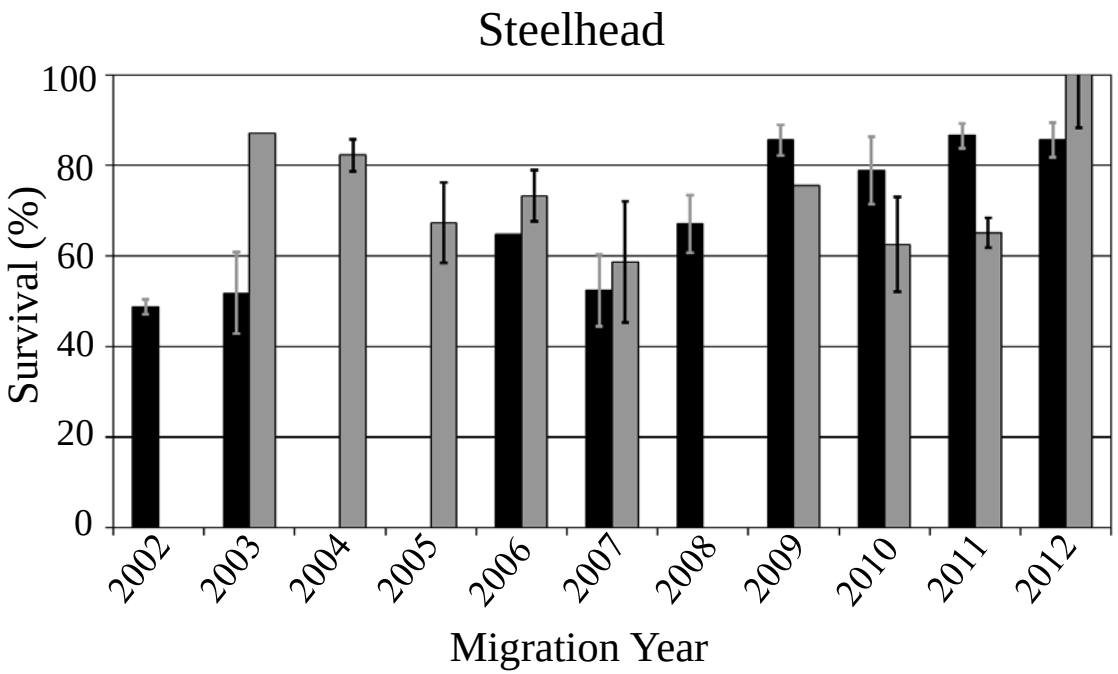


Mobile Separation by Code

PIT-tagged and released:
2.6 million fish
(175 thousand transported)

Survival McNary Dam to Bonneville Dam

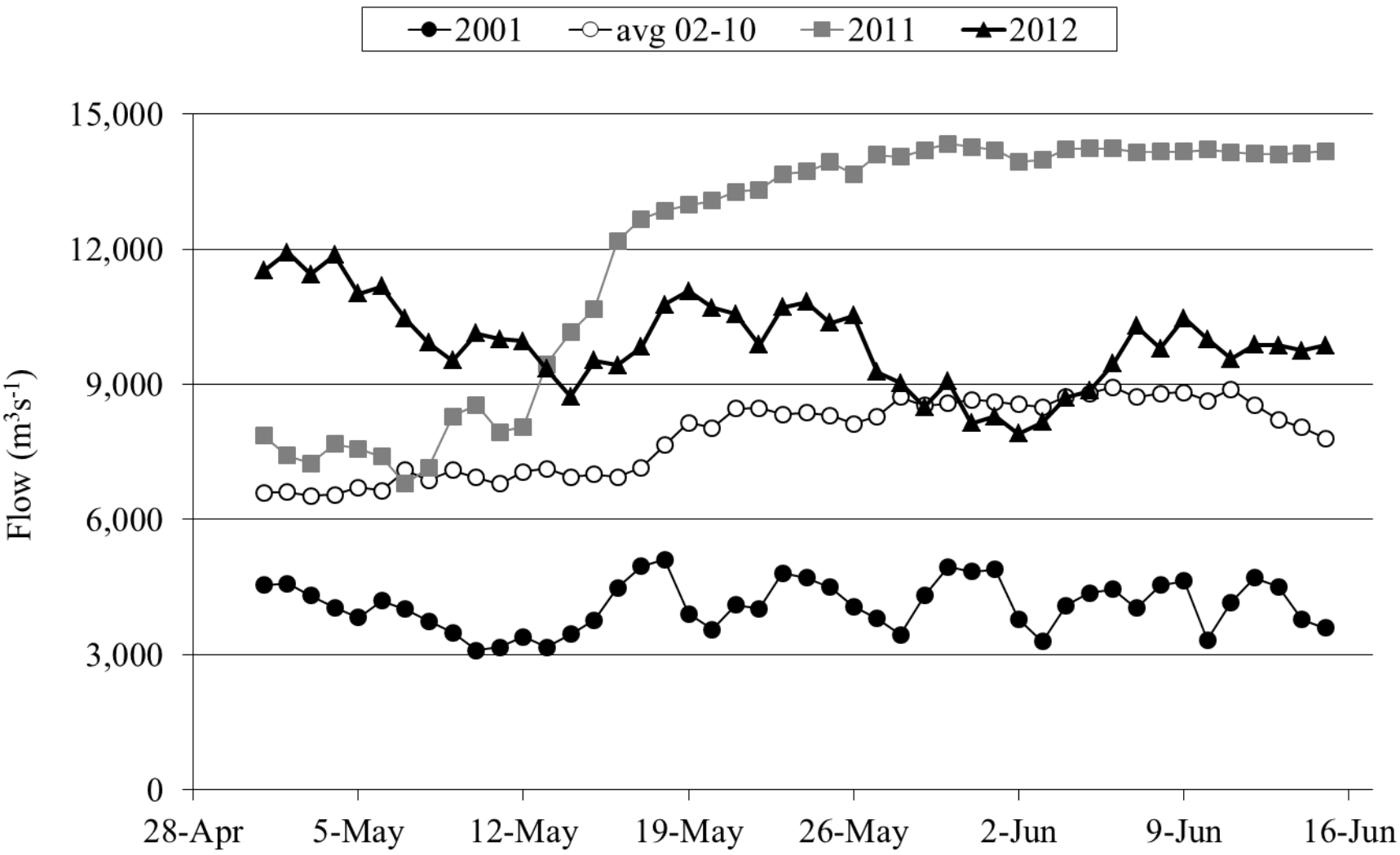




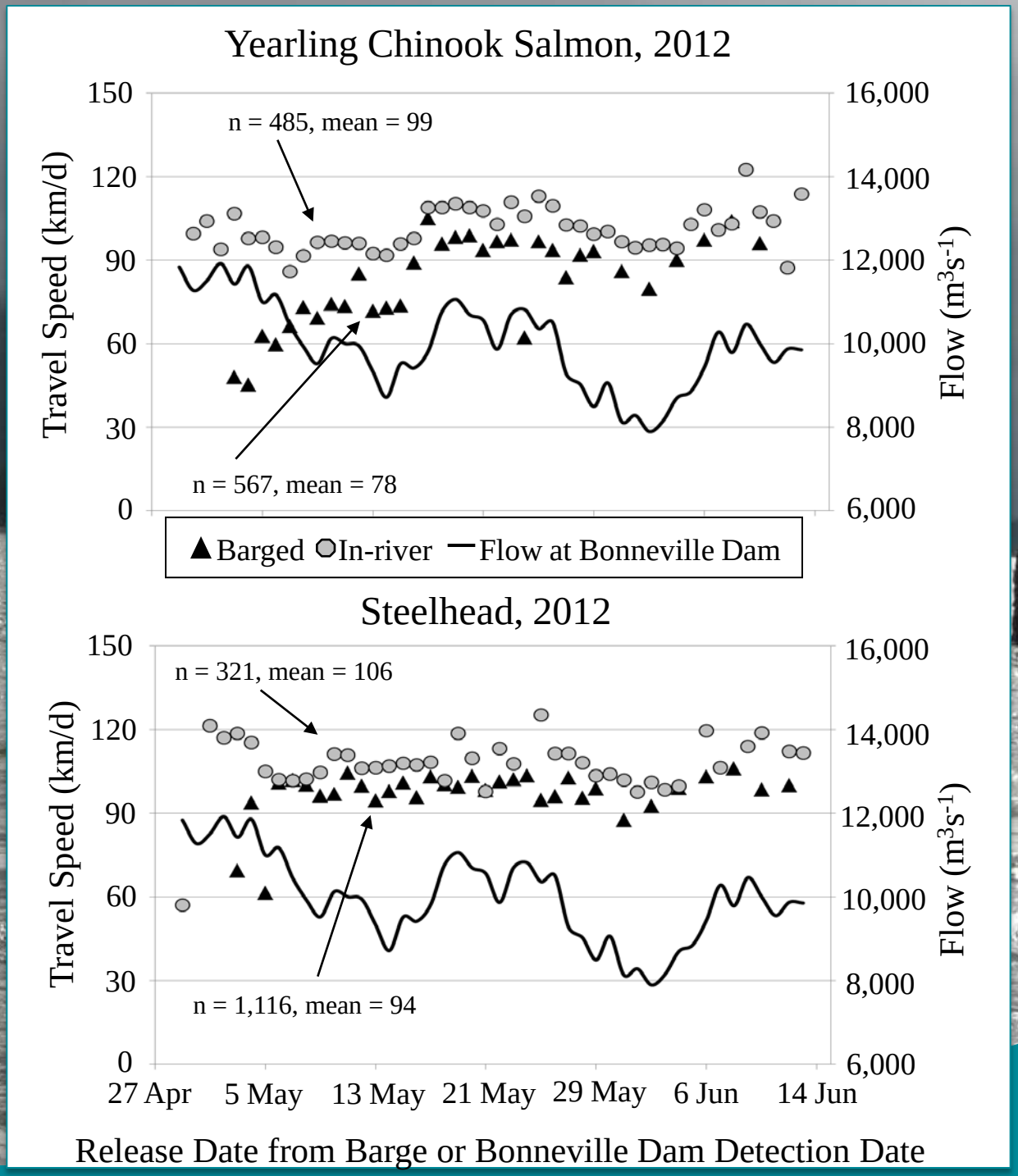
Survival from Lower Granite Dam to tailrace of Bonneville Dam, 2012:

Yr. Chinook salmon: 64.2%
Steelhead: 59.7%

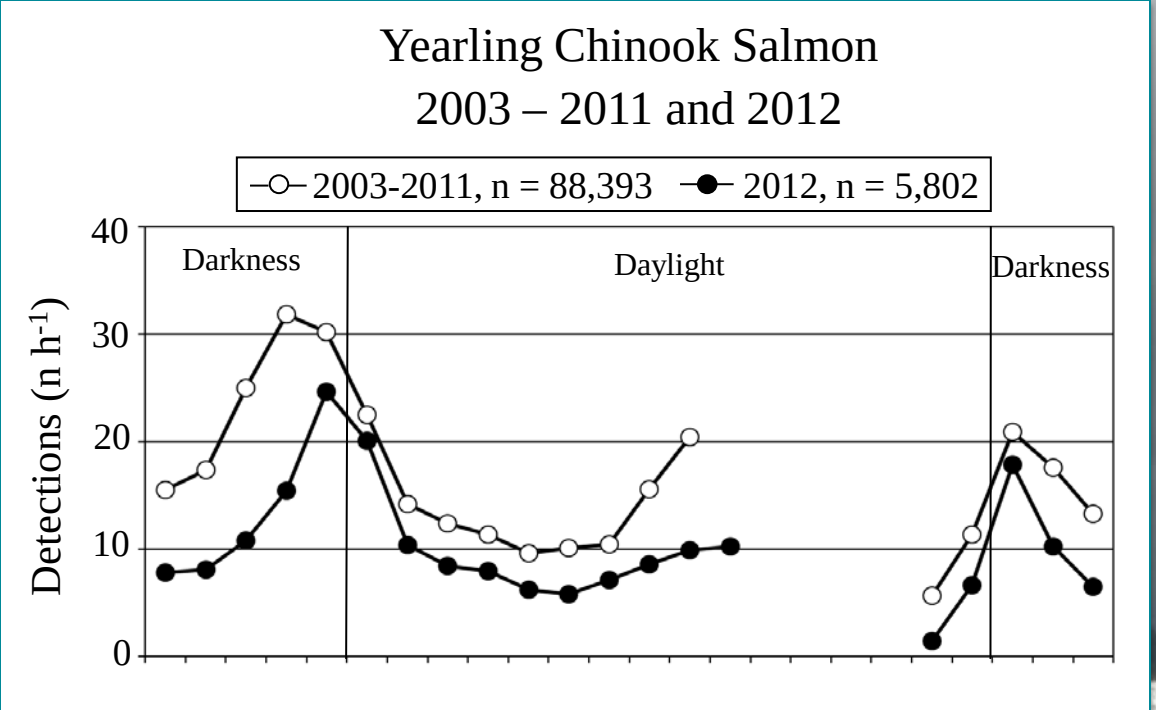
Data for 2012 is preliminary

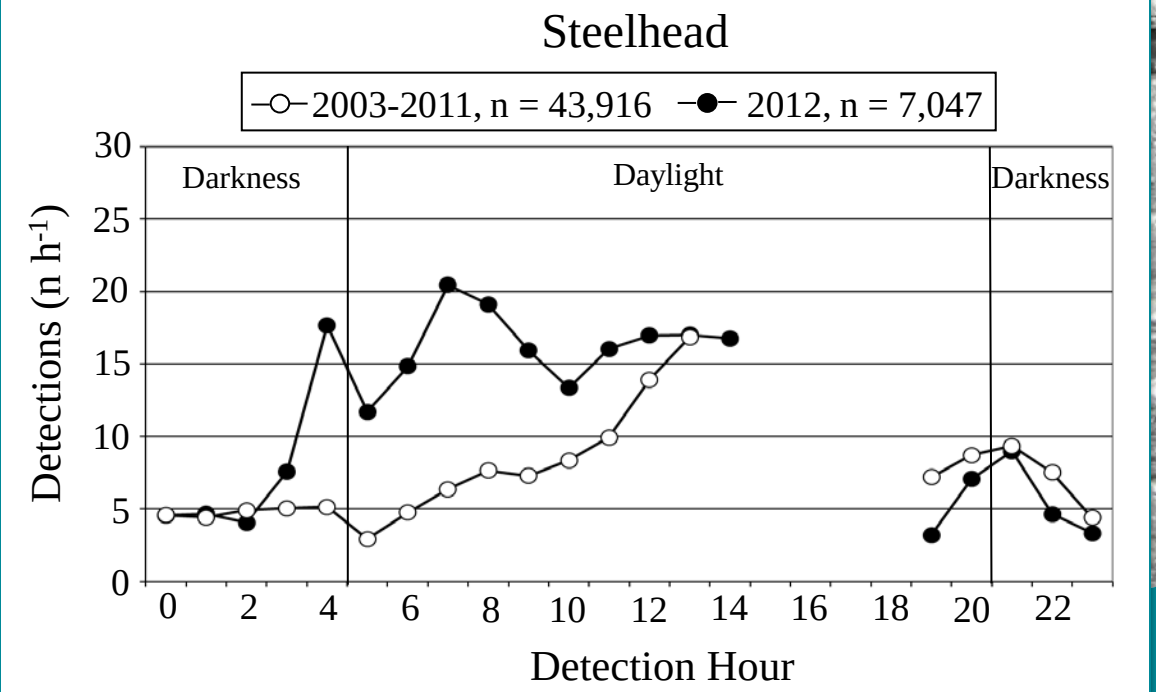

Columbia River Flow Volume at Bonneville Dam, 1998 - 2012
2001
avg 02-10
2011
2012
15,000
12,000
9,000
6,000
3,000
0
Flow (m3s-1)
28-Apr
5-May
12-May
19-May
26-May
2-Jun
9-Jun
16-Jun

Travel Speed -- Barged ▲ vs. Inriver ● (Detected at Bonneville Dam)



Diel Availability

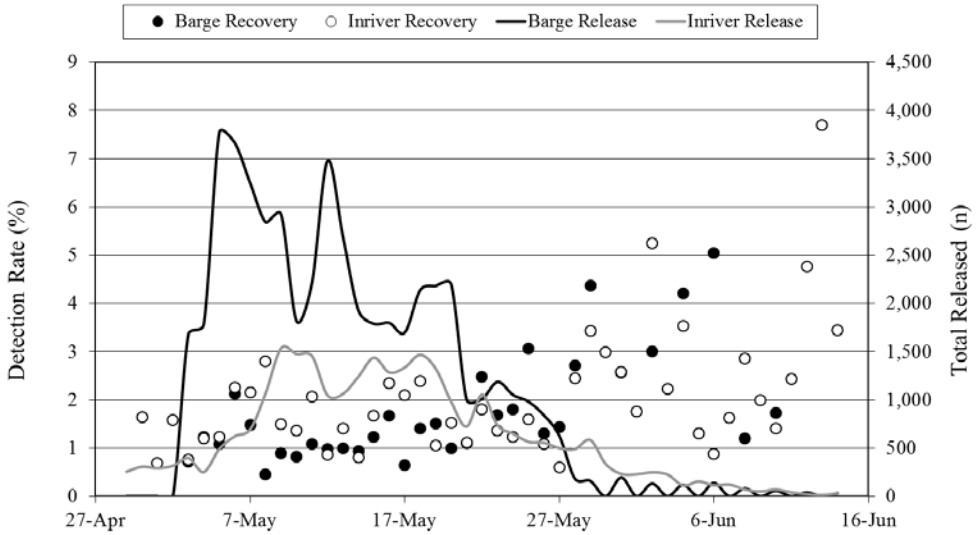




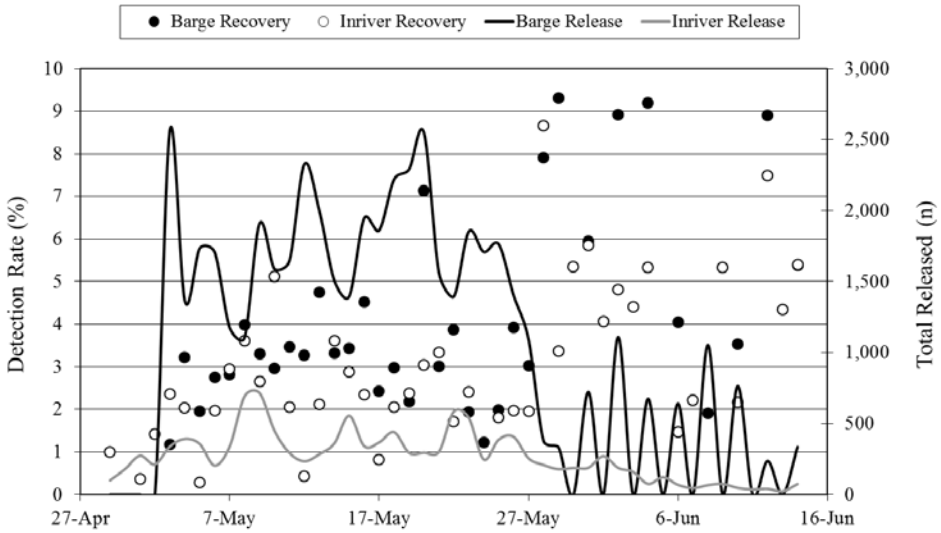
1 May – 15 June
(2 daily crews)

Abundance and Daily Detection Rates

Percent Total Yearling Chinook Salmon Detected
Barged versus Inriver, 2012



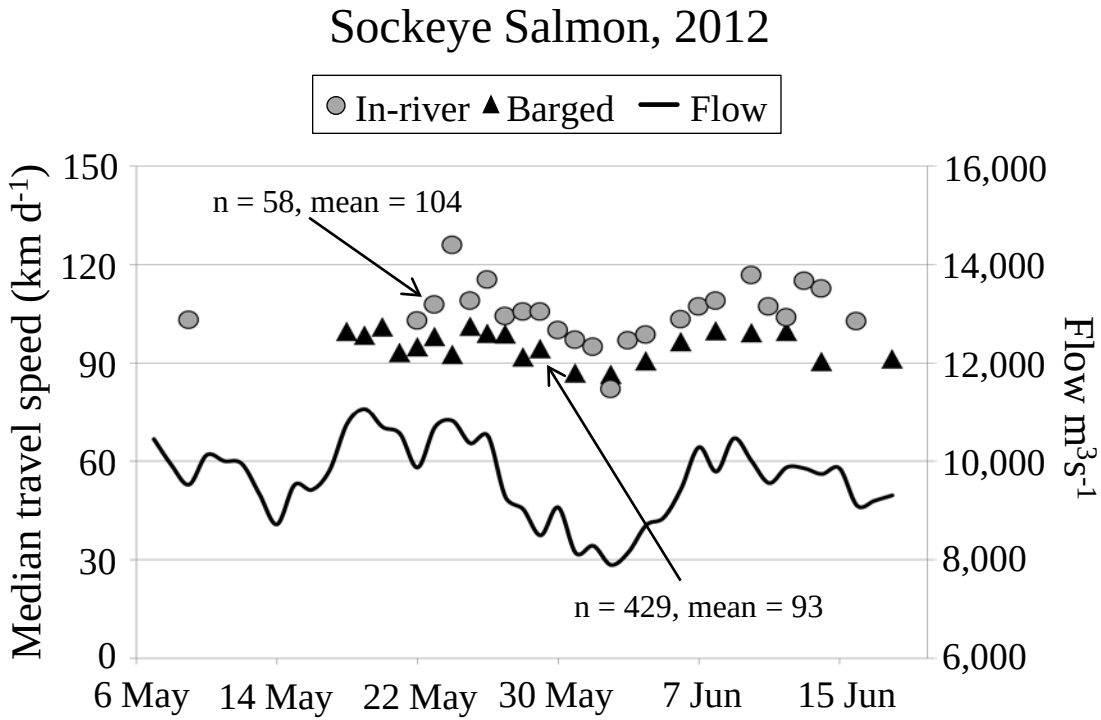
Percent Total Steelhead Detected
Barged versus Inriver, 2012

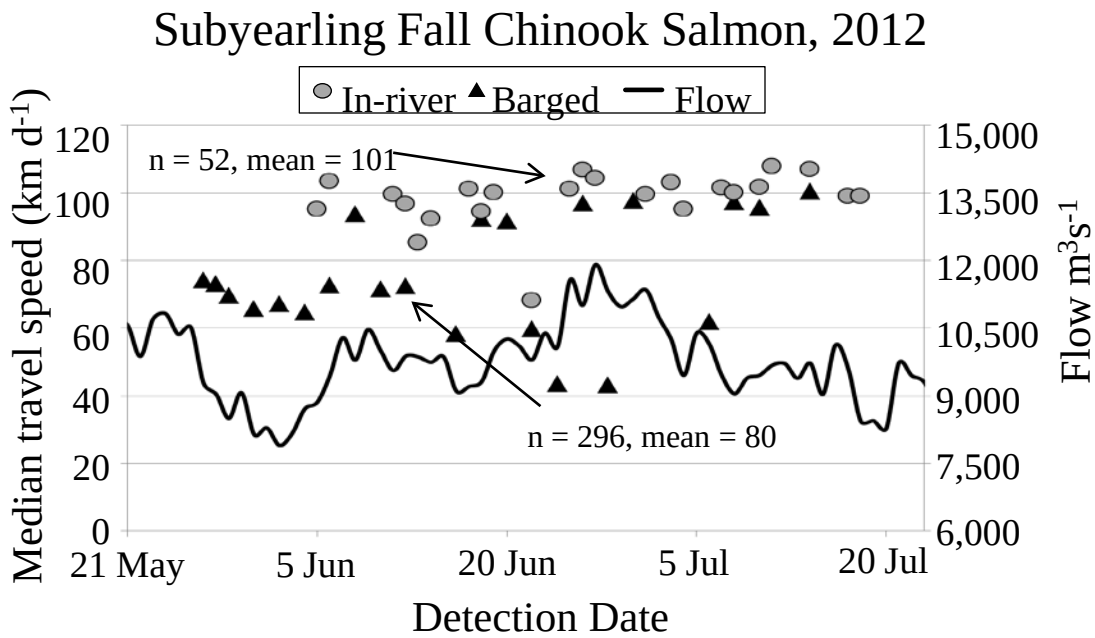


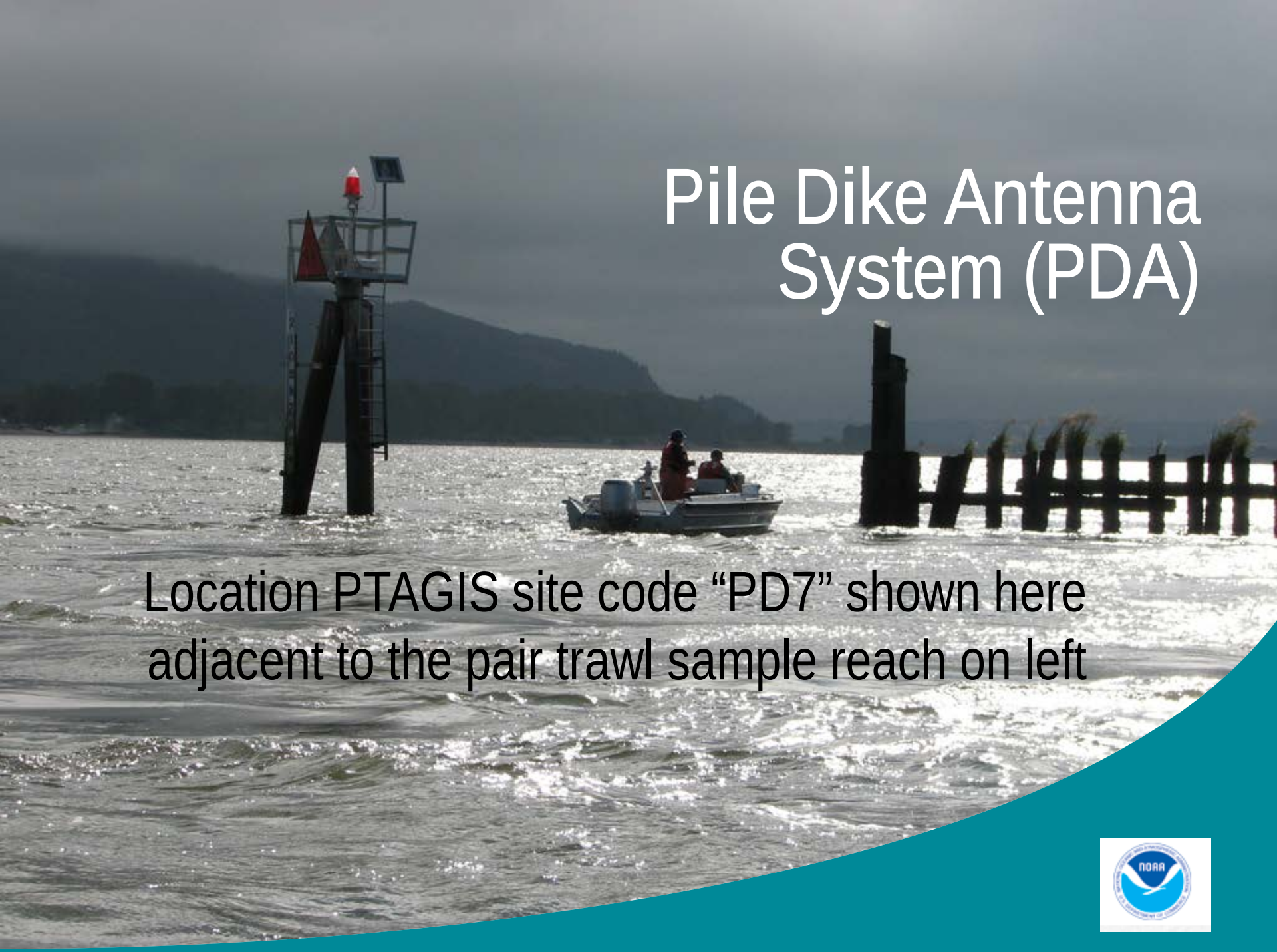
Barged ●
vs.
Inriver ○

Preliminary, not adjusted for effort

Travel Speed -- Barged ▲ vs. Inriver ● (Detected at Bonneville Dam)







Pile Dike Antenna System (PDA)

Location PTAGIS site code “PD7” shown here adjacent to the pair trawl sample reach on left

Summary of "PD7" detections 2011-2012.

	Fall Chinook salmon	PD7 (N)	Detected BON	Survival (%)	Travel Time (days)	Willamette Falls (days)
2011	Adult	3	3	100	4.3	
	Jack	1	0	0		
2012	Adult	25	22	88	3.9	
	Jack	7	5	71	3.8	
	Spring Chinook salmon					
2012	Adult	4	4	100	17.6	13.6
	Jack	7	6	86	4.9	
	Steelhead					
2011	Adult	7	7	100	4.5	5.4
2012	Adult	17	12	71	5.3	
	Coho					
2012	Jack	1	1	100	7	

Misc.	
Sturgeon	15 (three detected multiple times in both years).
Juvenile salmonids	41
Northern Pikeminnow	1

2011: 9 August through 25 October
2012: 21 March through 24 October

Questions about Trawling or Pile Dike Research?

Acknowledgements

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