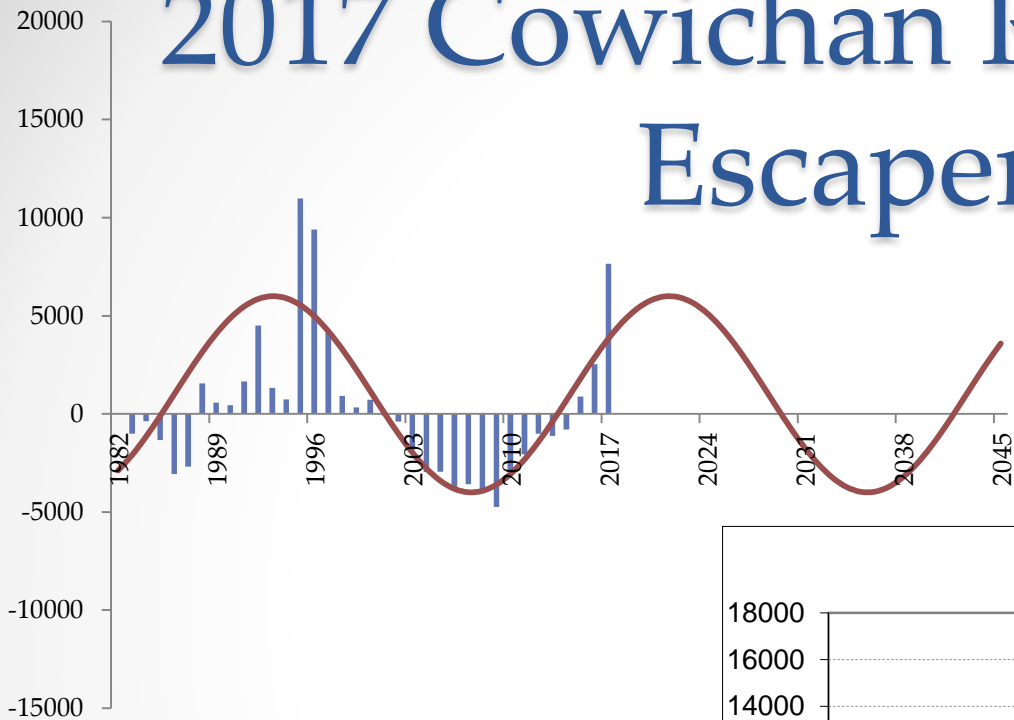
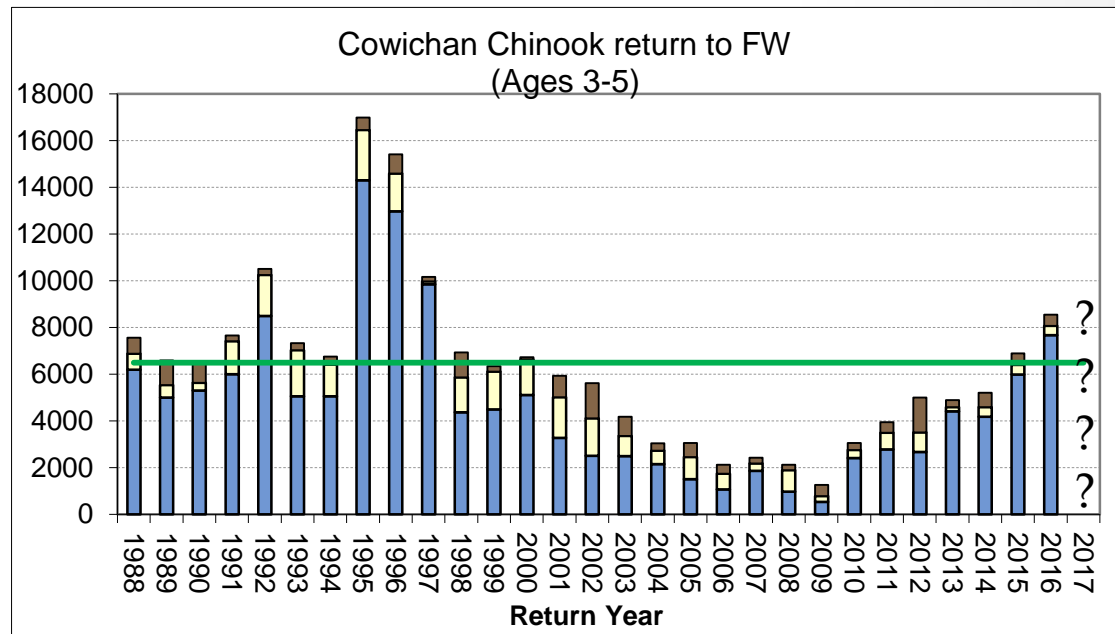


# 2017 Cowichan River Chinook Escapement



Kevin Pellett  
 DFO Stock Assessment  
 June 25, 2018



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 Canada

Pêches et Océans  
 Canada

**Cowichan River**  
**Chimook Indicator Fence**

Great Fish Count Through Fence

Species	Labels	Labels
Salmon	5/17	1/15
Chimook	1/15	1/15
Other		

Subtotal

Illustrations of fish: Salmon, Chimook, and other species.

Fall 2016

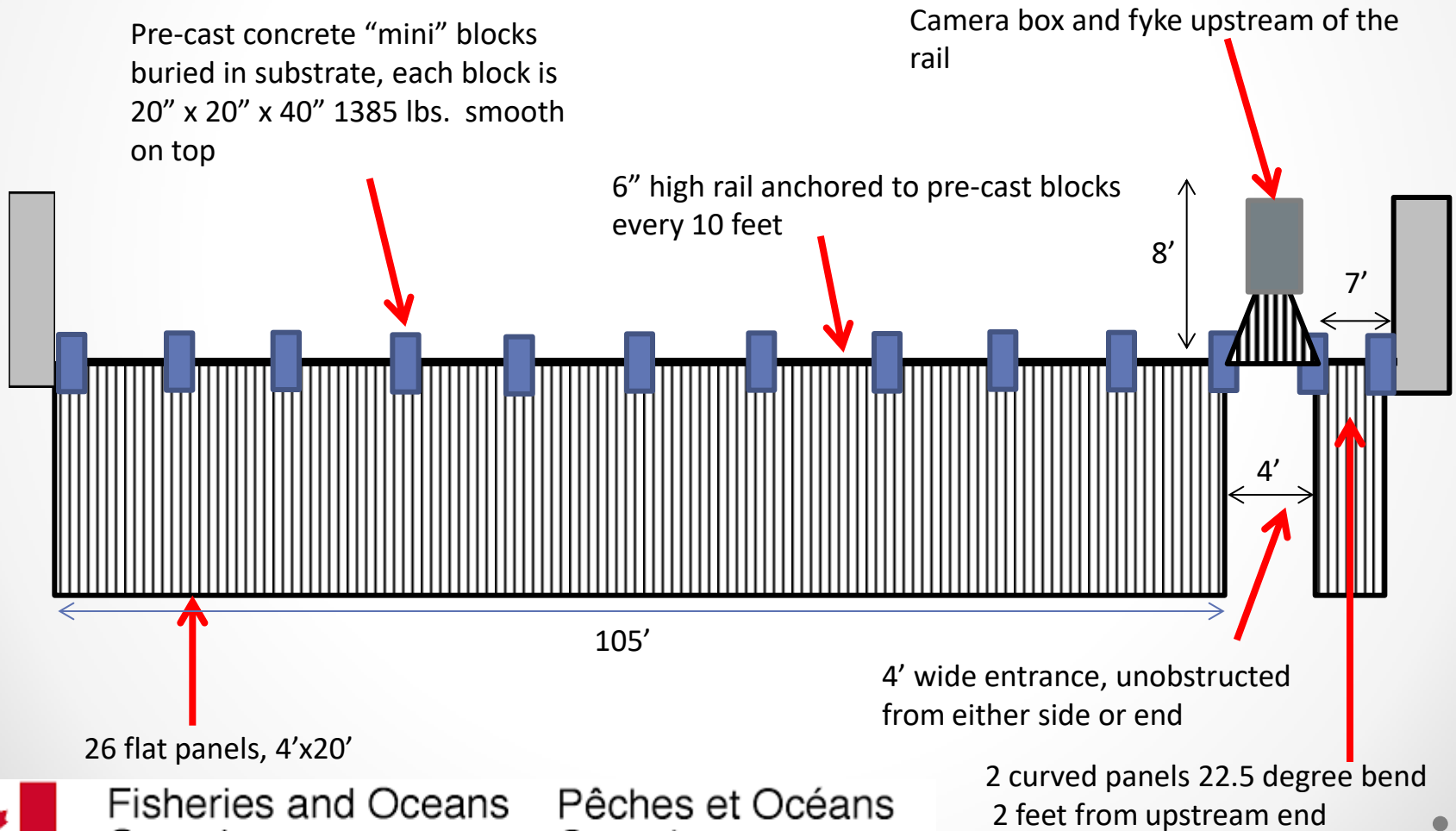
# Old Fence Rail – Aug 17'



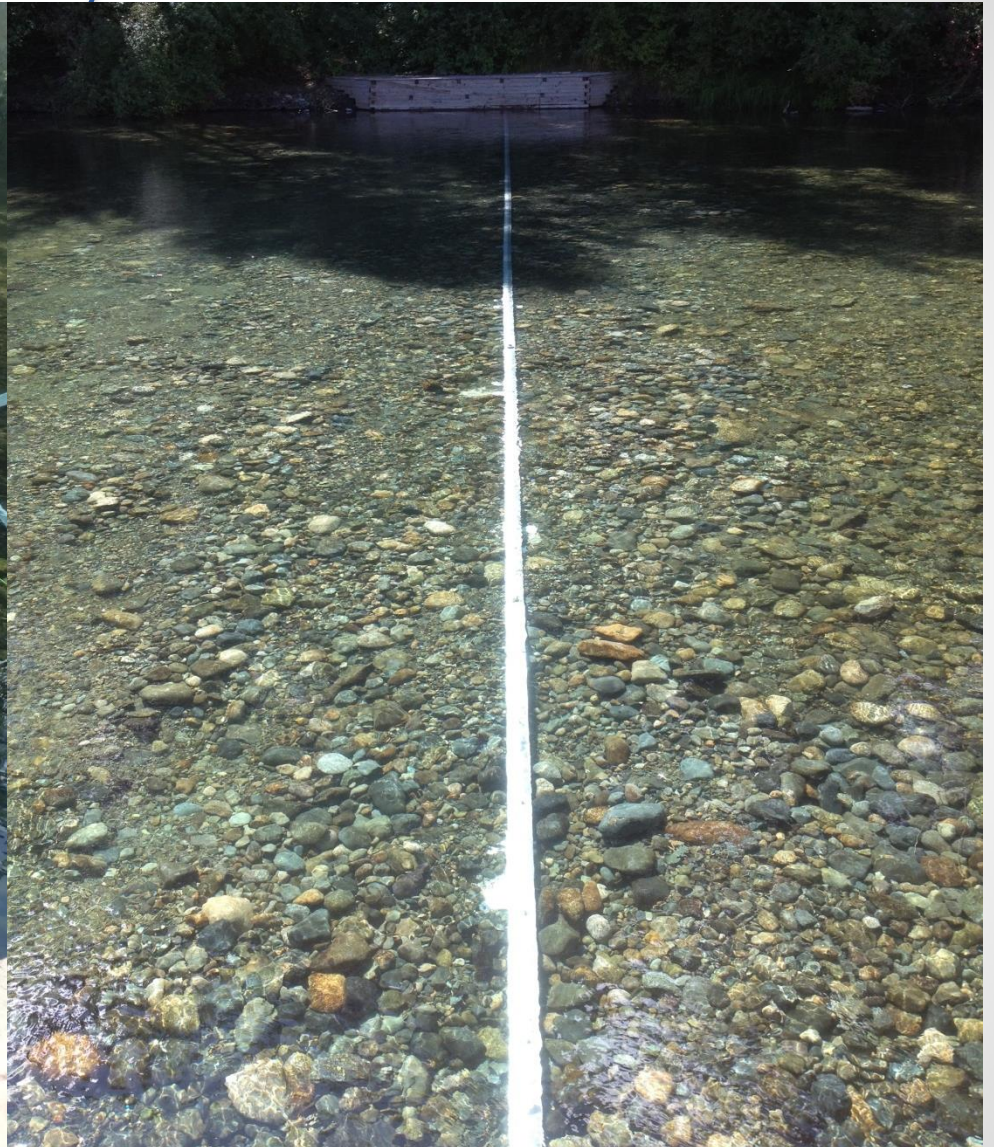
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# Design Changes



# 1.5 days later



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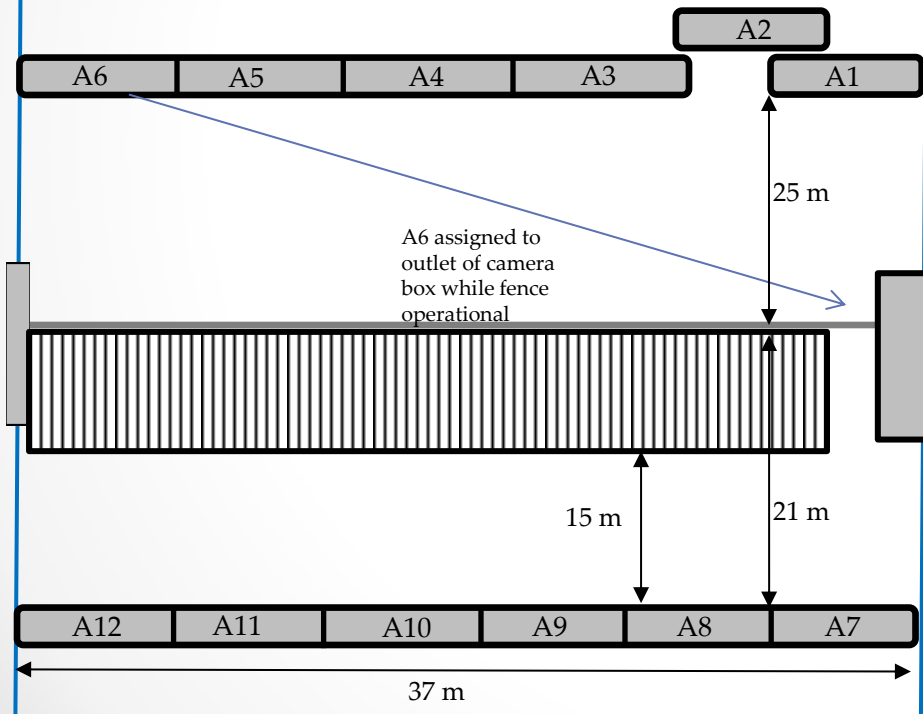
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# Allenby Road Bridge

Cowichan River

Church Road



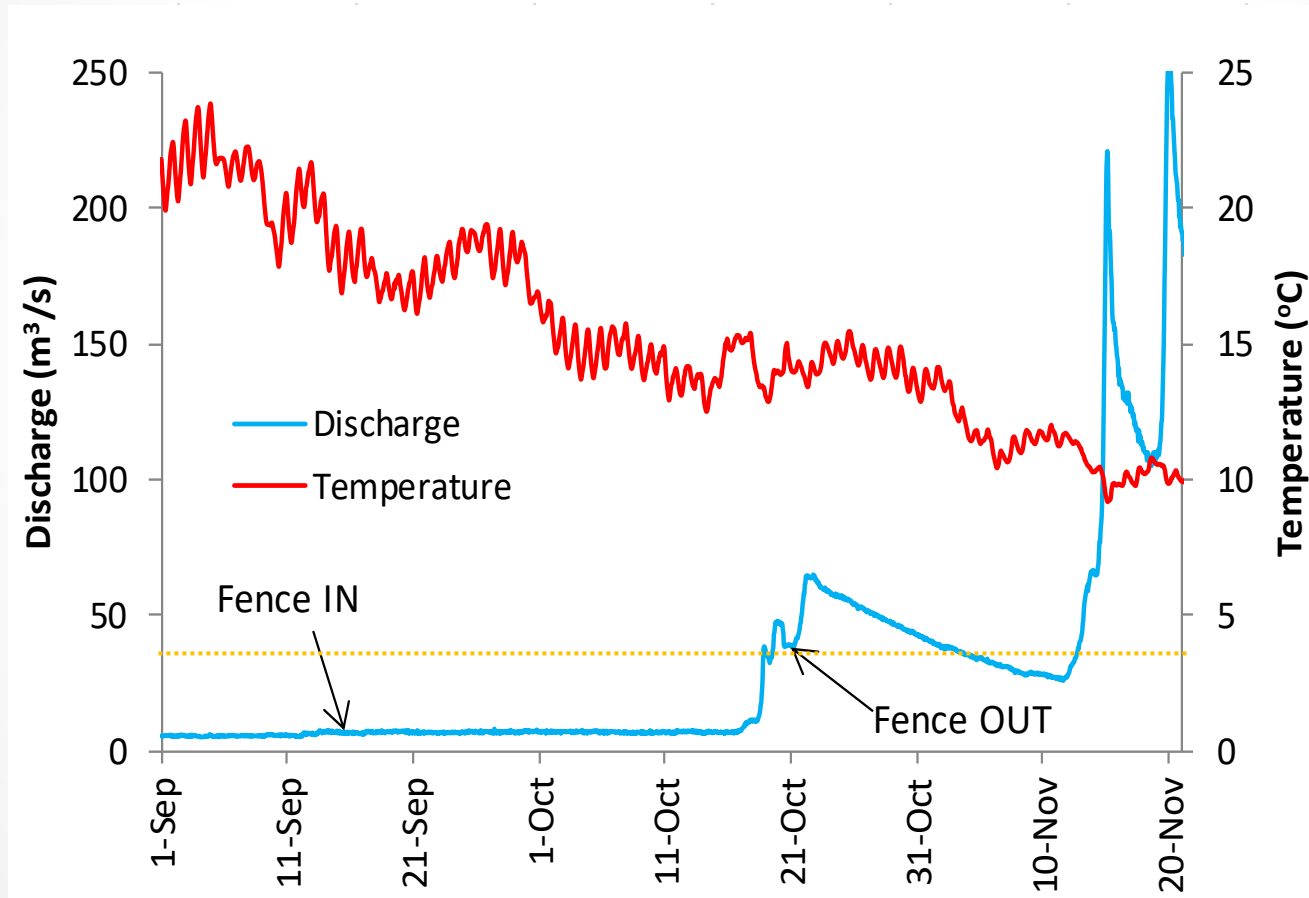
A6 assigned to outlet of camera box while fence operational





# Results

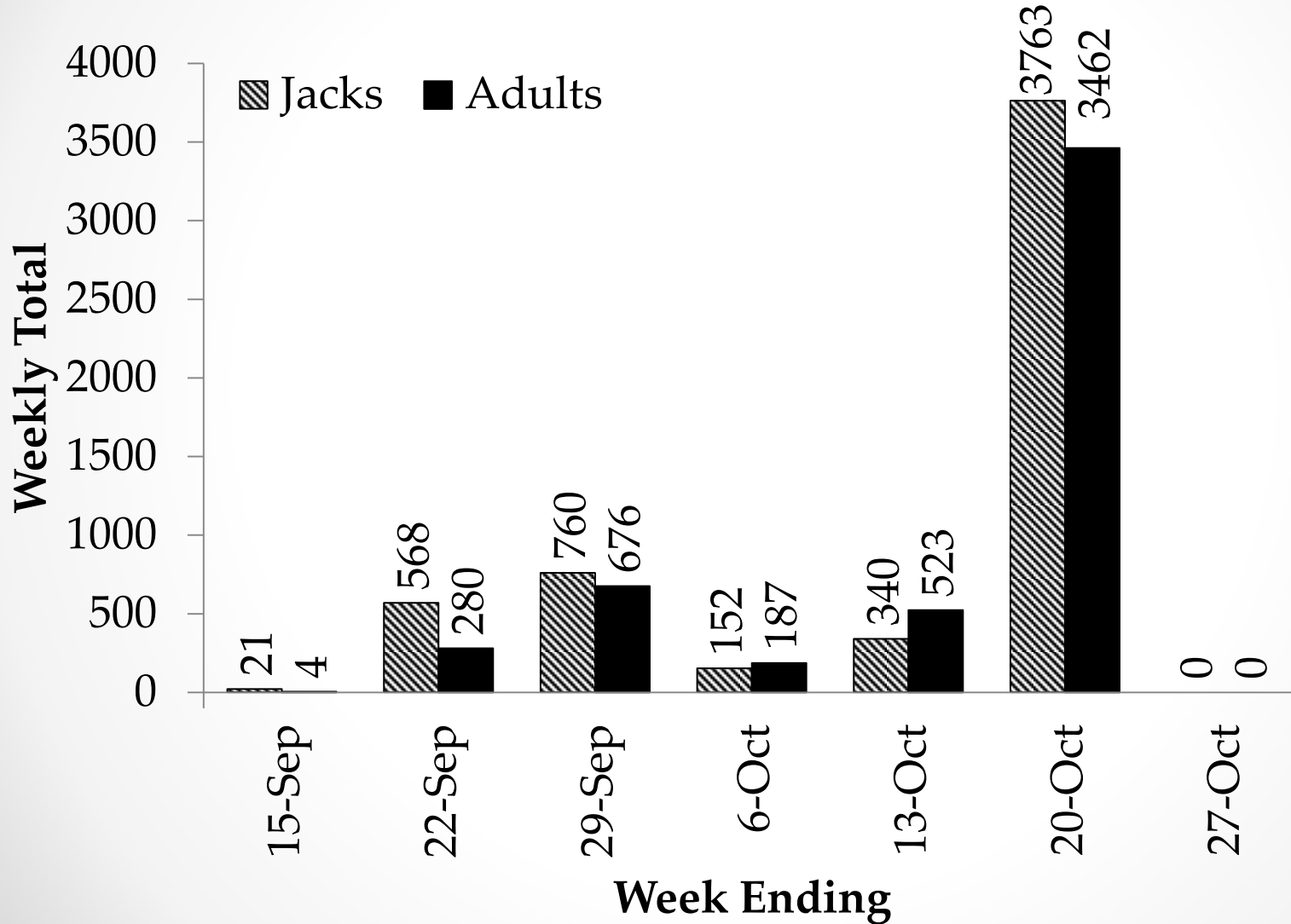
- Fence installed September 15, removed Oct 21



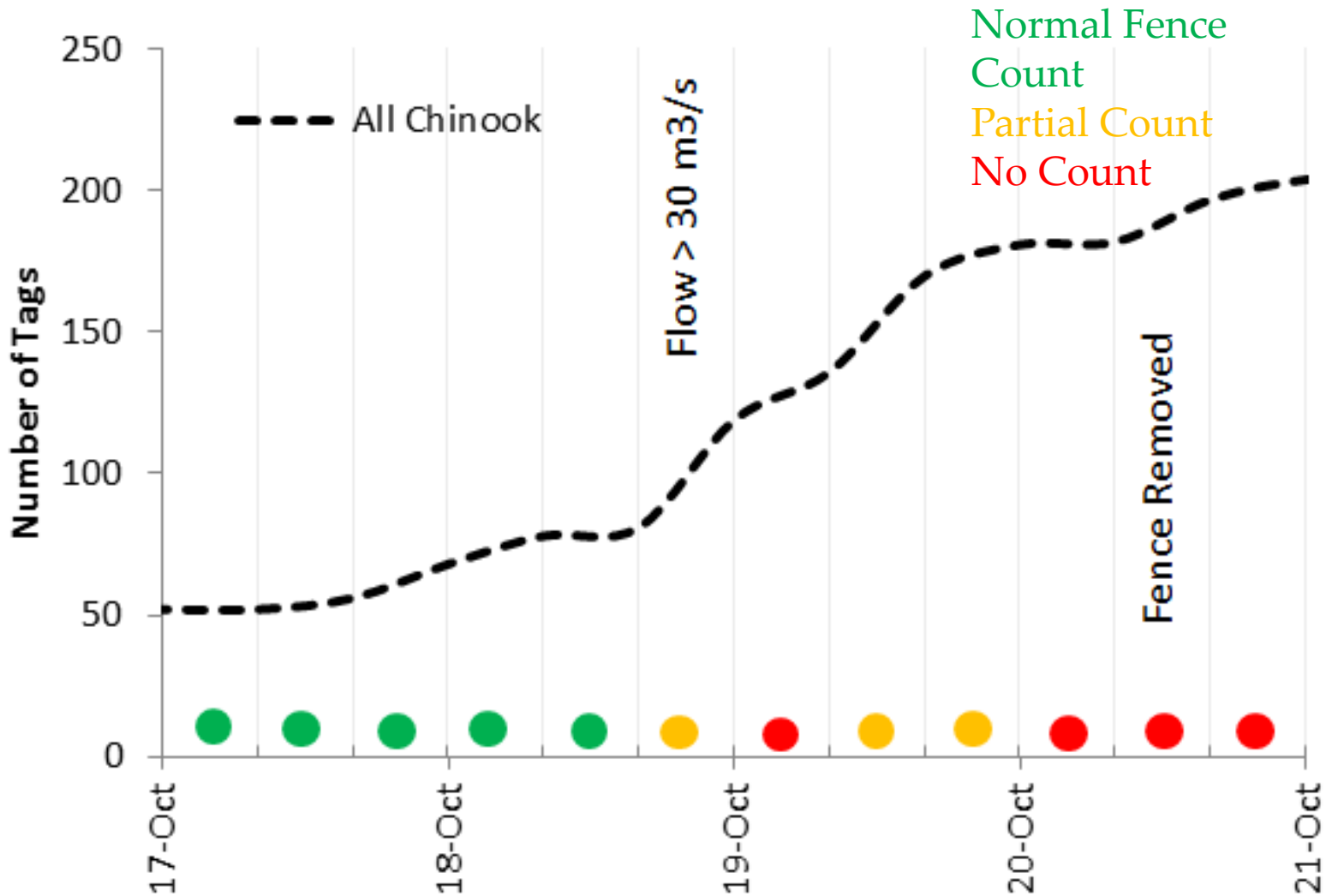
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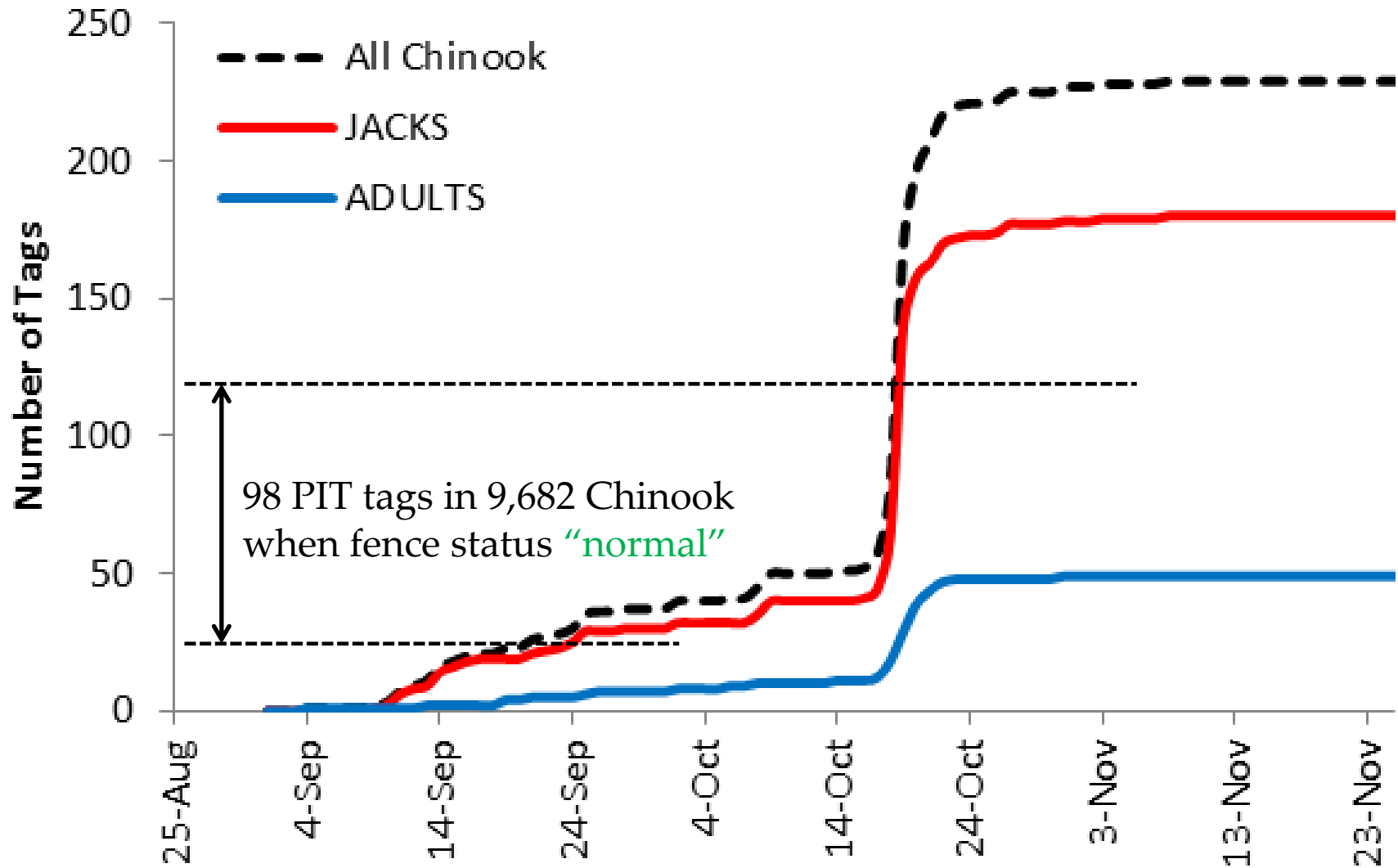
# 10,736 Chinook Counted



# PIT Tag Detections



# Cumulative PIT Tags



# The Math

- 9,682 Chinook carried 98 PIT tags
- Therefore **1 PIT tag = 98.8 fish**
- 17 tags before fence was installed = 1,680
- 98 during normal counts = 9,682
- 55 during partial and no count shifts = 5,434
- 61 after the fence was removed = 6,027
- 31 were detected but did not pass upstream = 3,062
- **Total = 25,985**



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# Did we miss any tags?

- Antenna operated in Skutz Falls fishway detected 63 tags.
- All 63 tags were previously detected at the fence = 100% efficiency (no expansion)
- 61 of 63 were properly assigned as upstream migrants. Both missed events were traced back to antenna maintenance.



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# Grand Total 26,337

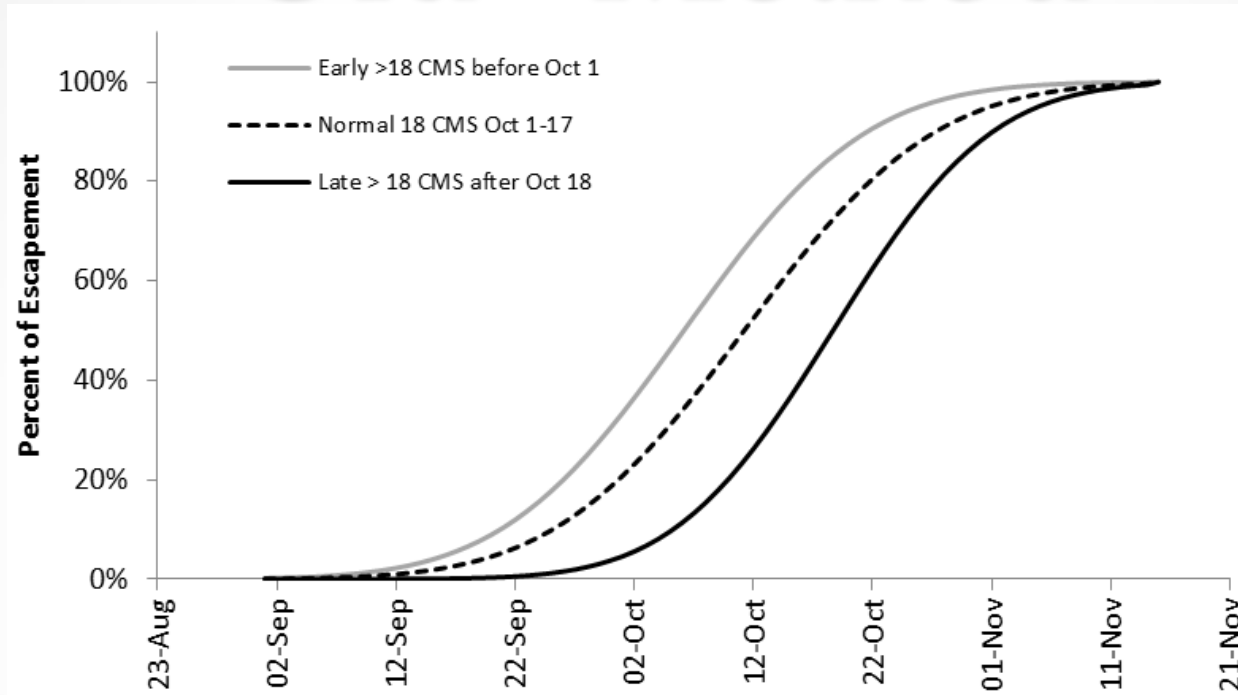
- 22,823 fish upstream (natural spawners)
- 3,062 did not pass the fence (natural mortalities, lower river spawners or FSC catch)
- 452 brood stock
- Expansion from raw fence count to upstream migrants  $22,823/10,736 = 2.1X$



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# “Old” Method



- 2017 = late run timing based on flow
- 43.5% of the run enumerated by Oct 18
- Expansion =  $1/0.435 = 2.3X$
- $2.3 \times 9782 = 22,498$



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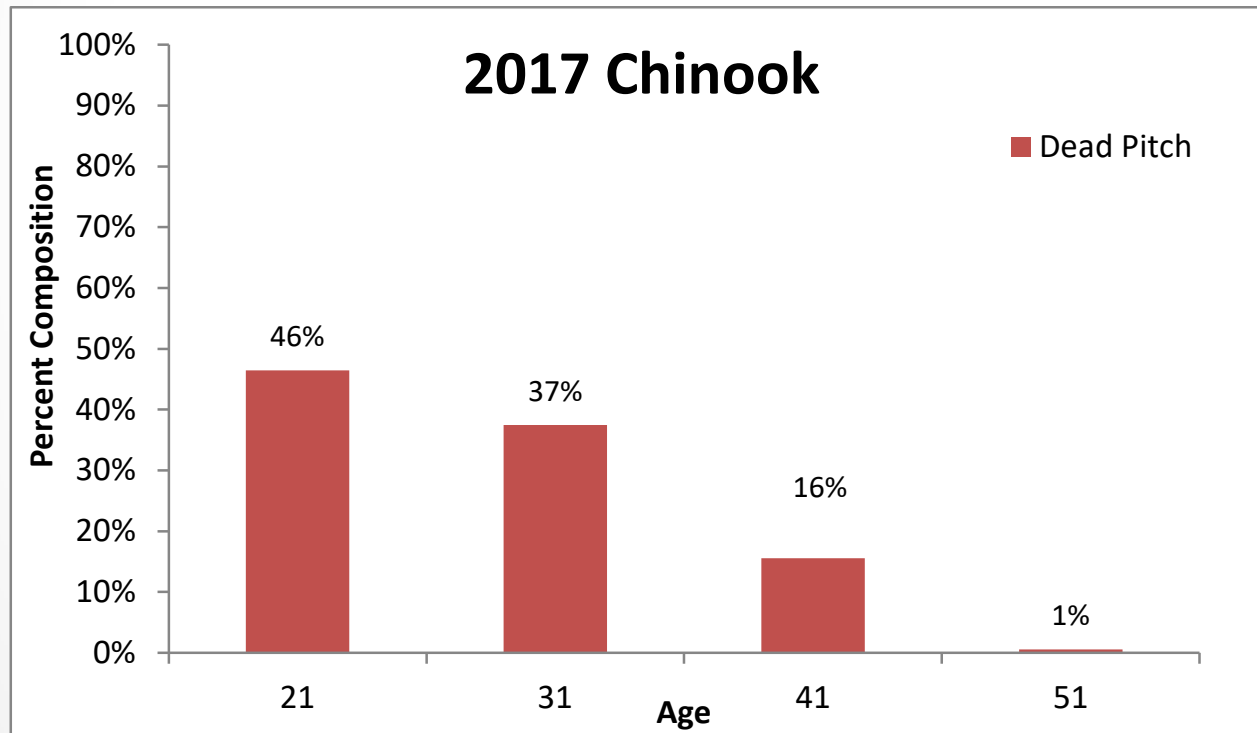
# Age and Sex Composition

20,452 males = 77%

46% Age 2 “jacks”

7.9% hatchery

4,347 adult female natural  
spawners (target 3,250)

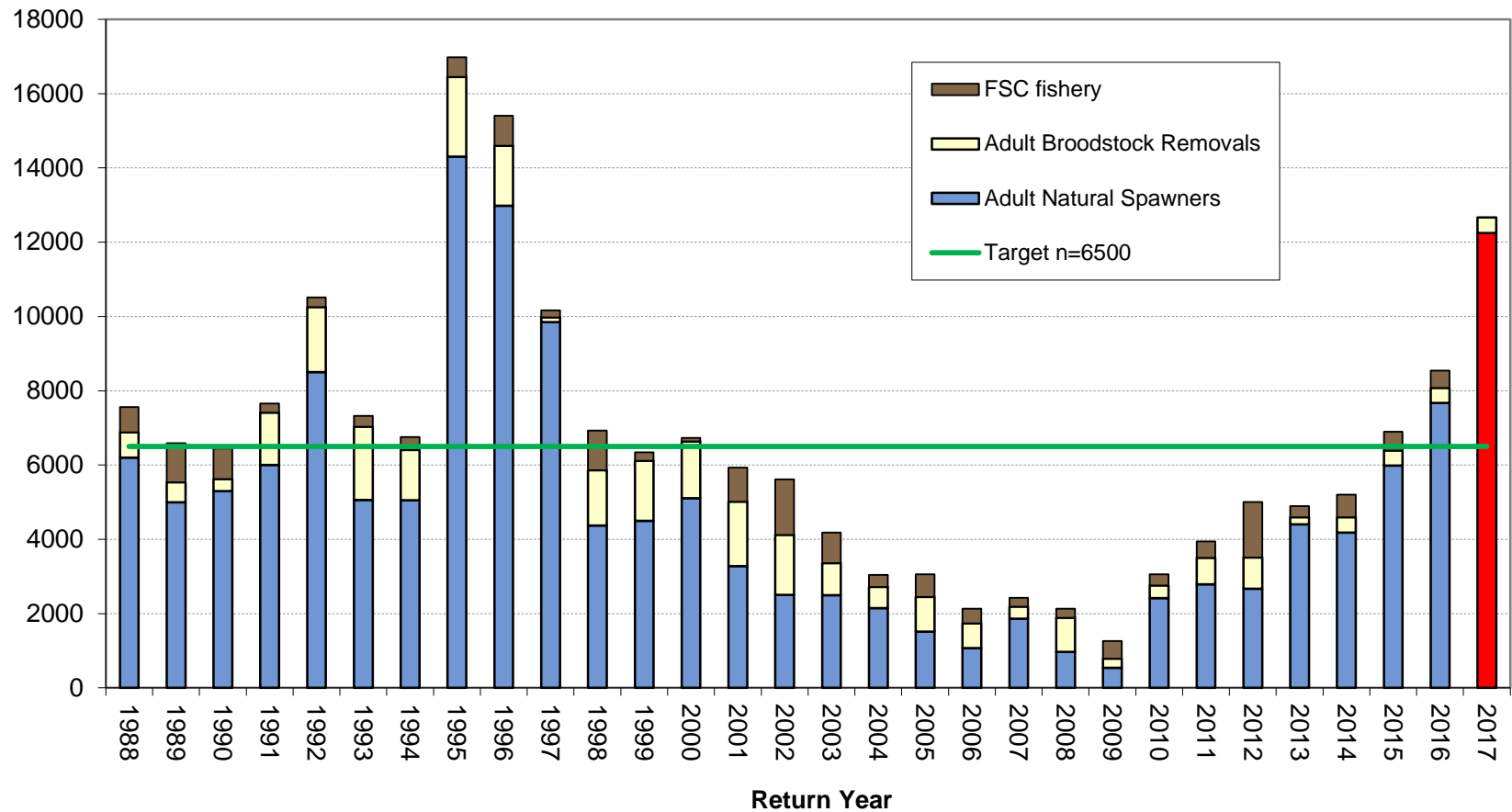


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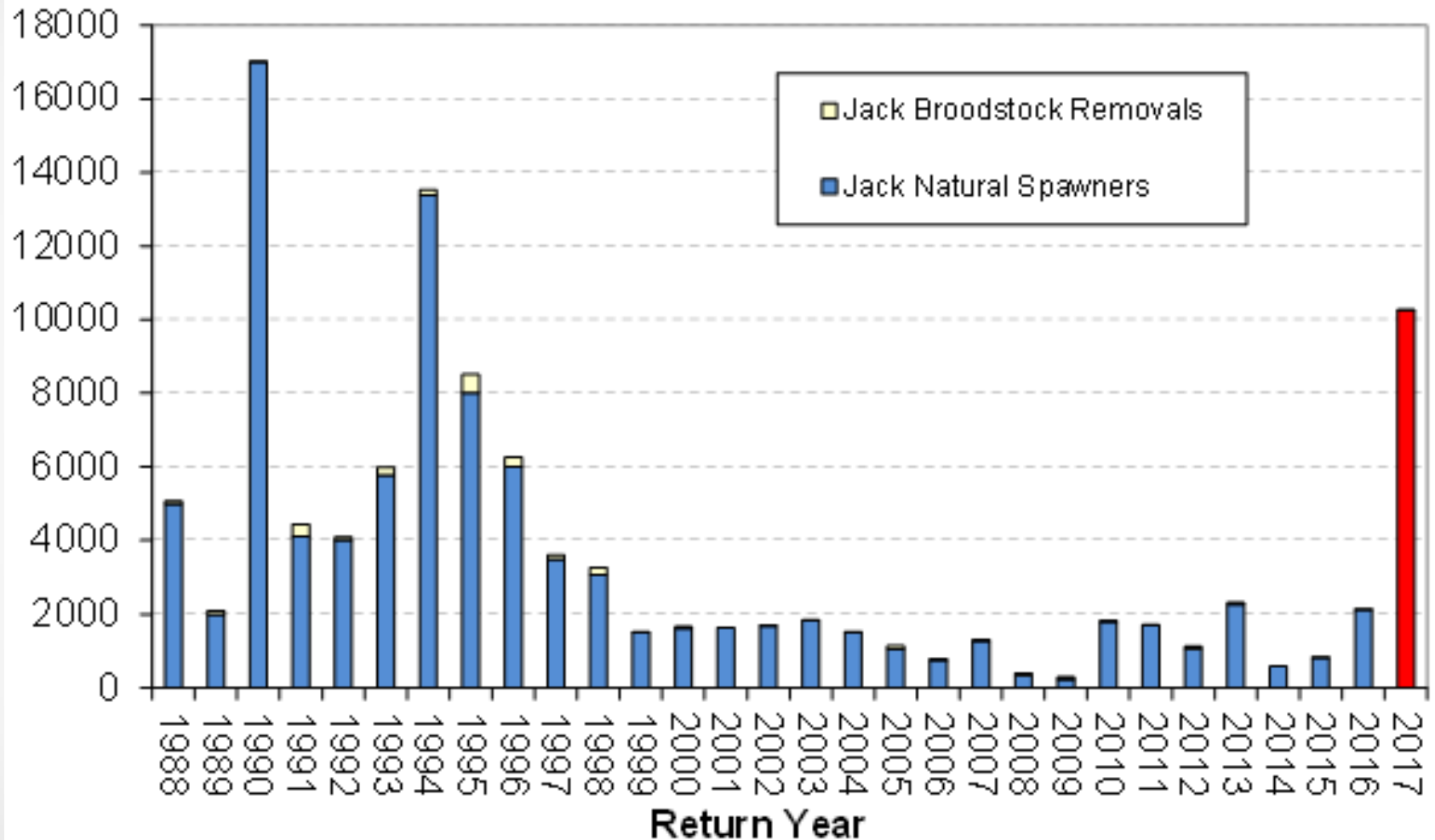
# How does 2017 Compare?

## Cowichan Chinook Adult return to FW (Ages 3-5)



# Unusually high jack return

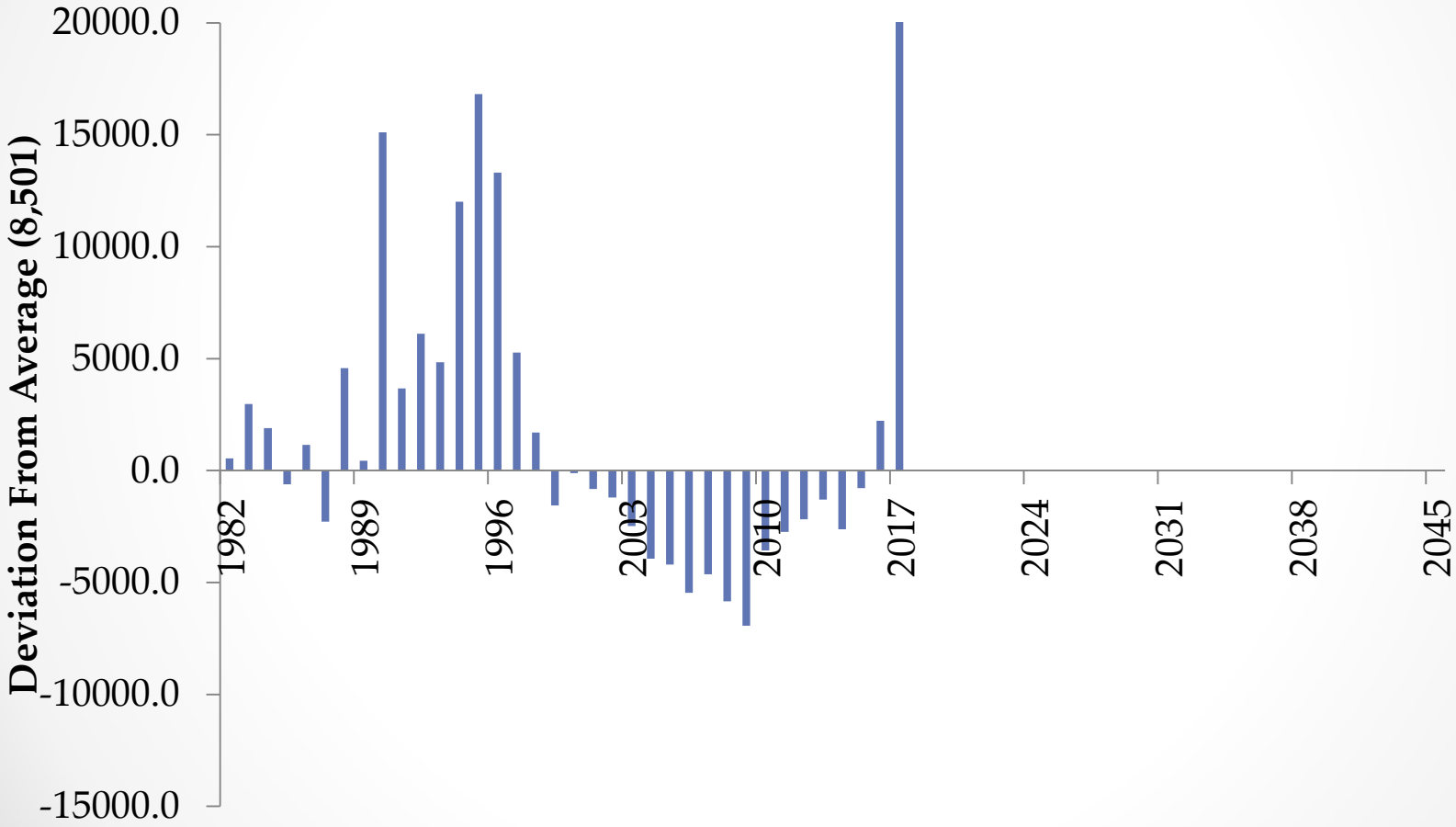
Cowichan Chinook spawners (Age 2)



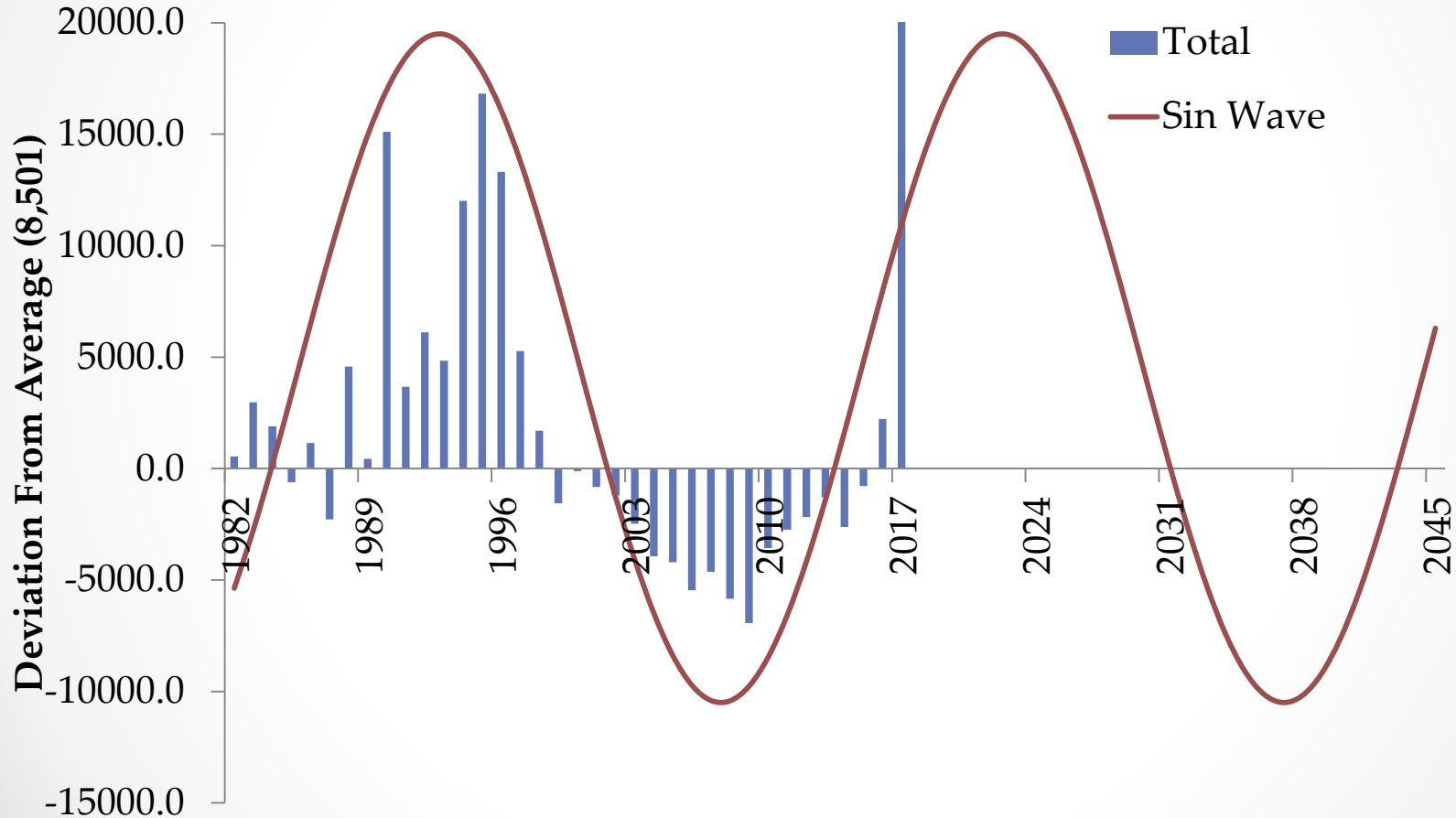
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# Escapement Patterns?

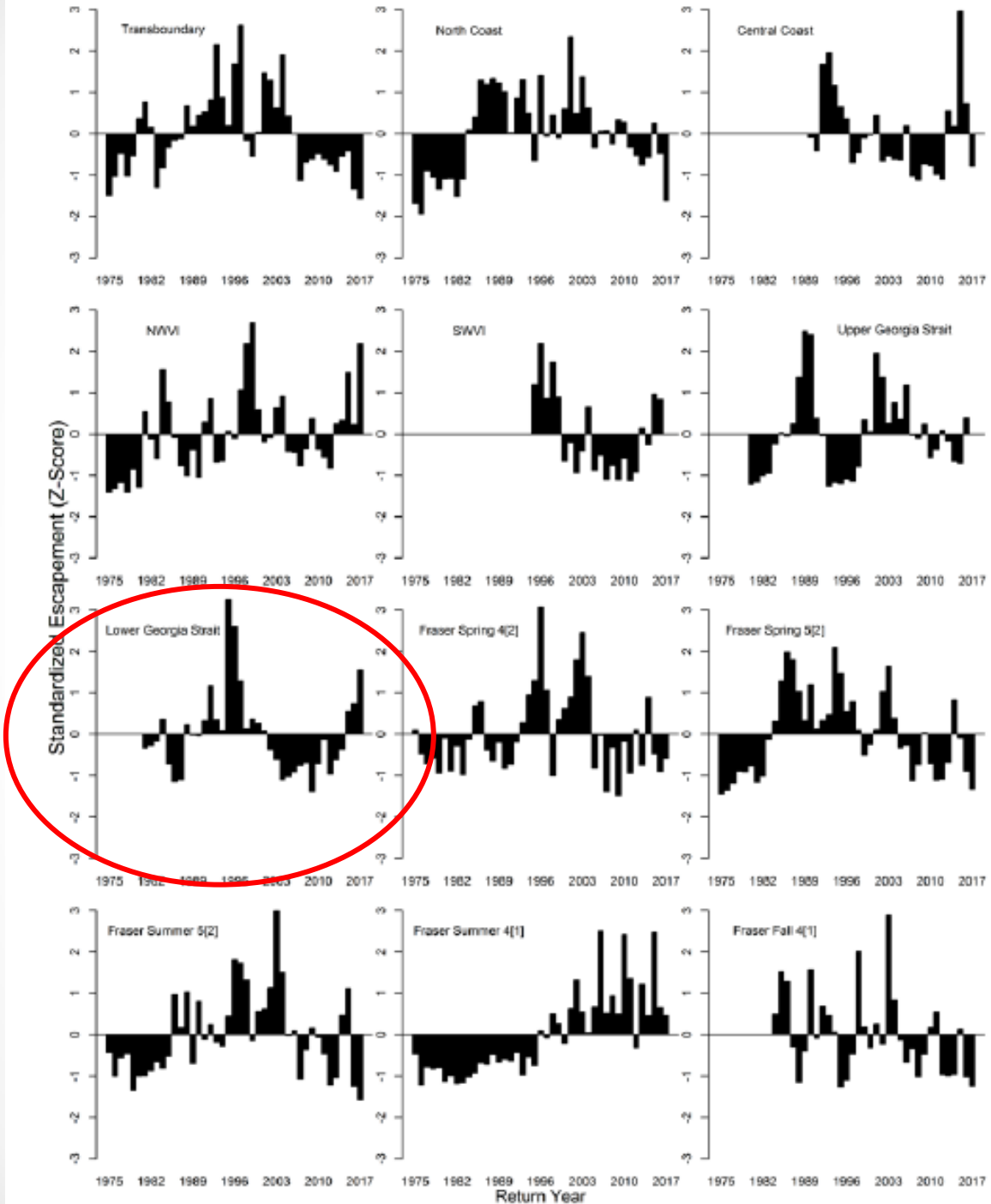


# Forecasting



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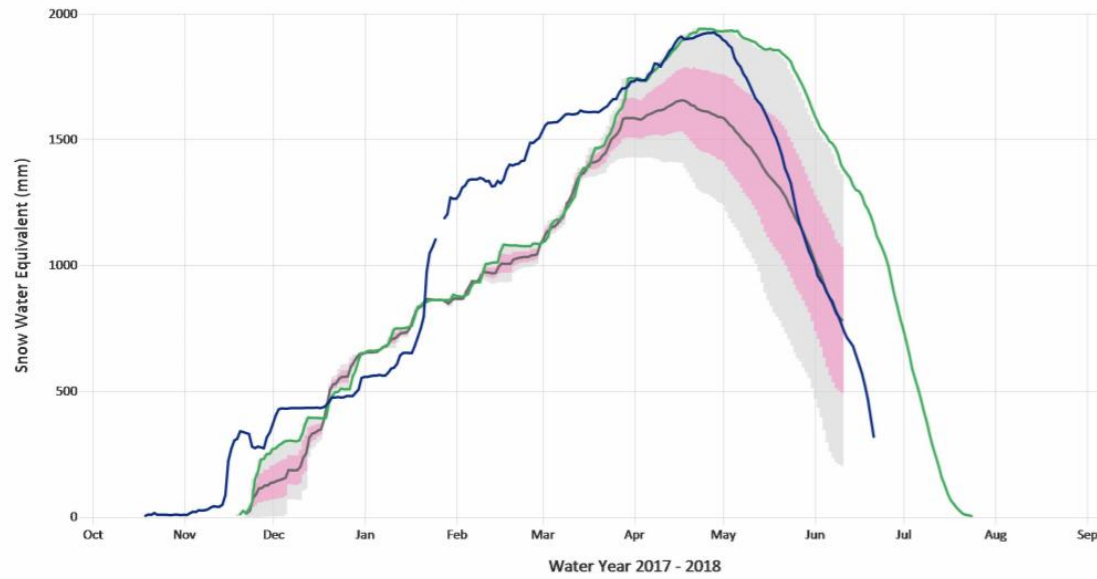


# Shaw Creek Hydromet



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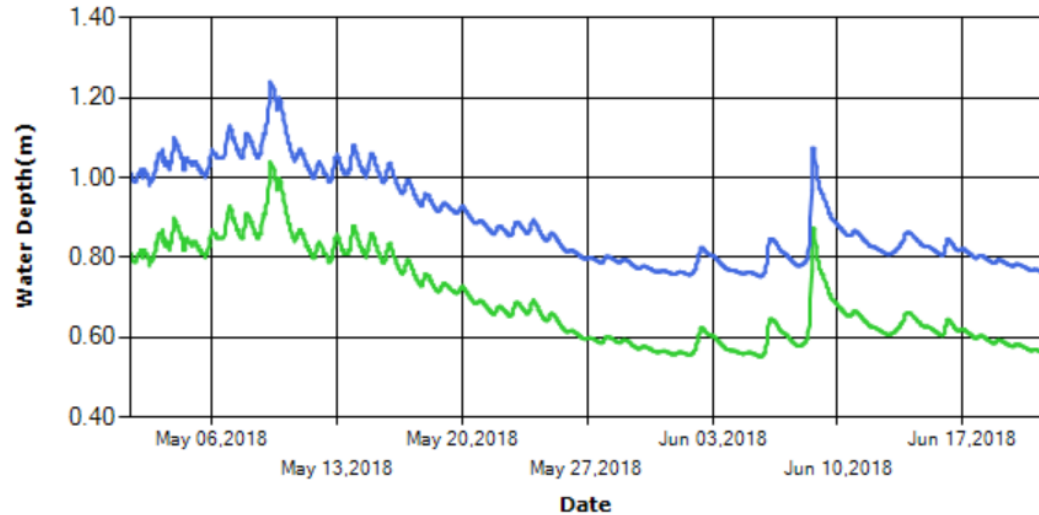
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— 2017 - 2018 — 2016 - 2017 — Historical Daily Median — Historical 25-75 — Range of Min & Max (Jul 31, 2015 - Sep 29, 2017)



**Shaw River Water Level from:  
May 01, 2018 11:00 AM to Jun 21, 2018 11:00 AM**



— Staff Gauge — Sensor Depth



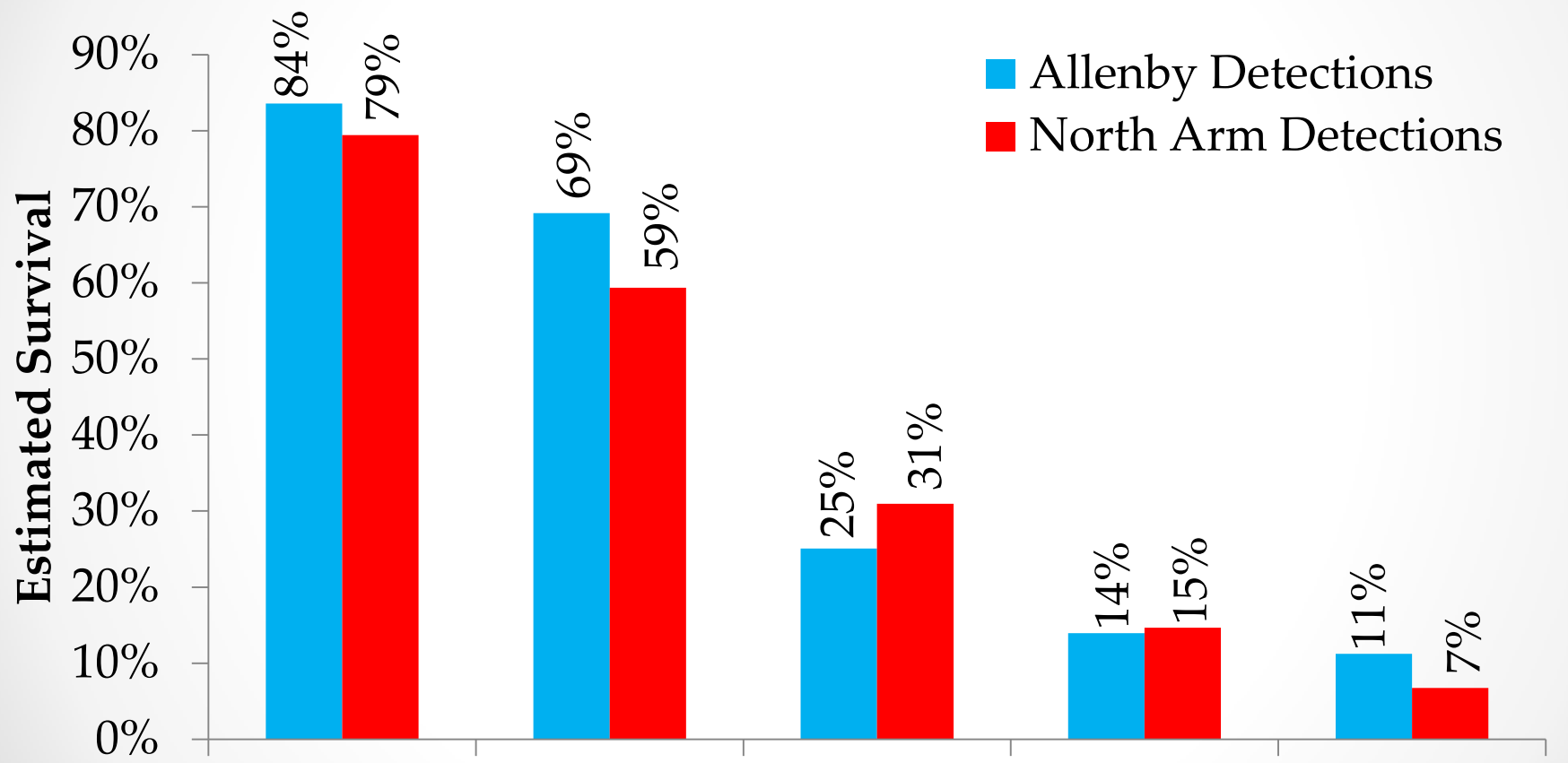
# Questions?



# Elusive S-1 Chinook



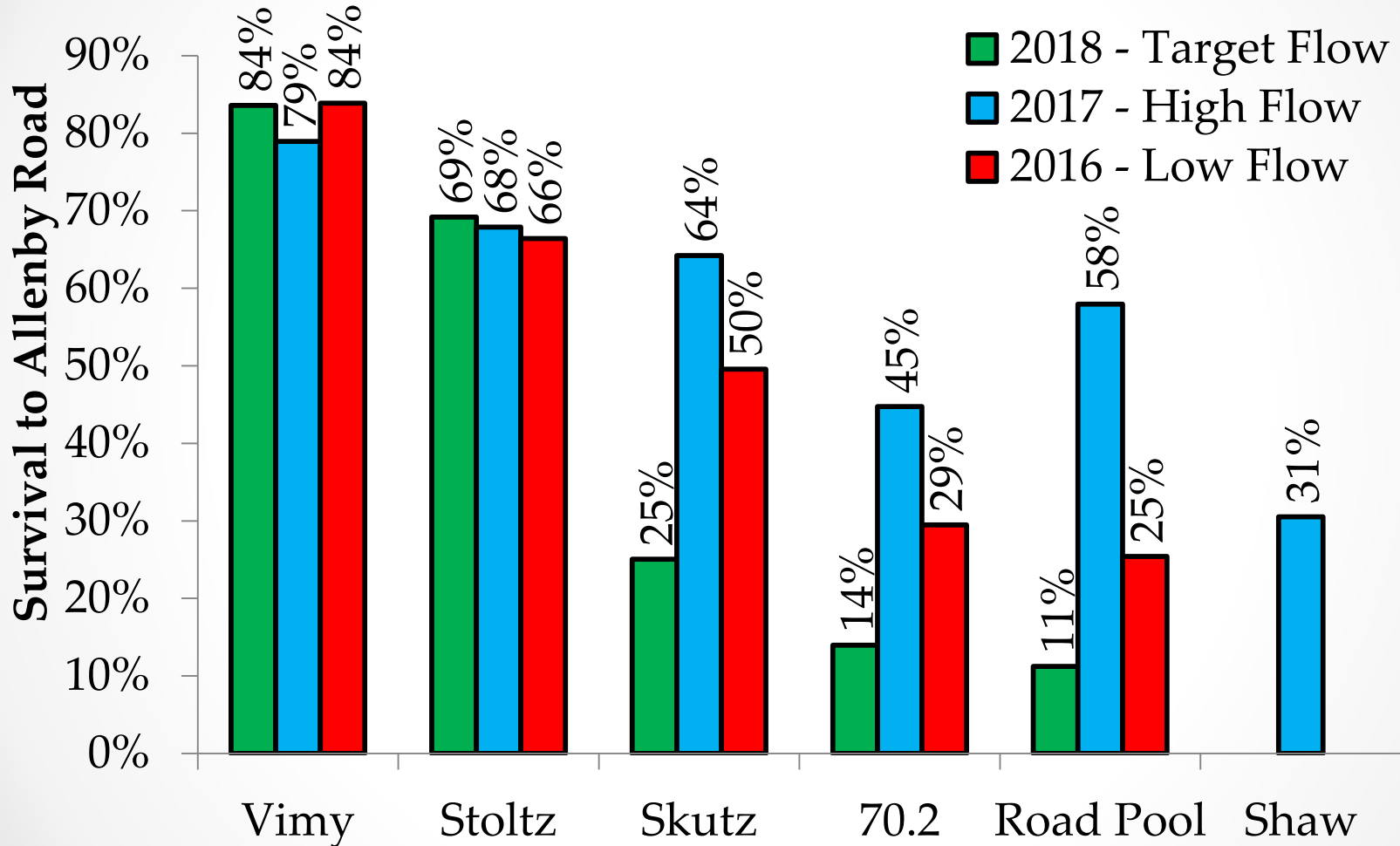
# Downstream Survival- 2018



VIMY STOLTZ SKUTZ 70.2 ROAD POOL

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# 2016-2018 Comparison



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