Pacific Northwest
NATIONAL LABORATORY
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Evaluation of Juvenile Salmonid Passage and Behavior at Foster Dam Utilizing Radio Telemetry, 2015

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Presentation Outline

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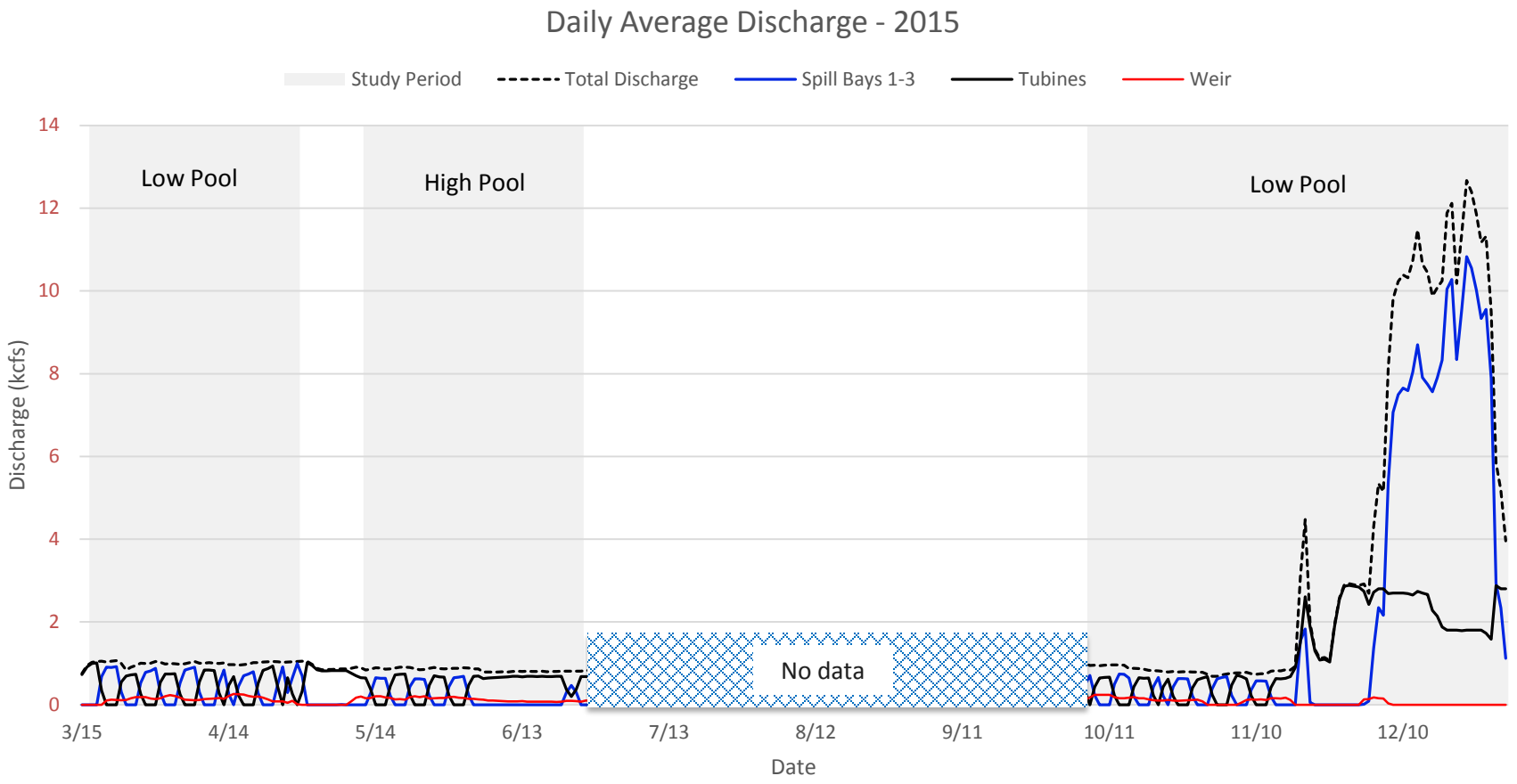
Chinook Salmon and Steelhead

1. Spring – Low Pool; March - April
   - Reservoir residence
   - Passage distributions
   - Survival
2. Spring – High Pool; May - June
3. Fall – Low Pool; October - December
4. Summary and conclusions

Dam Operations



Spring (March-April) – Low Pool

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Chinook Salmon	Steelhead
Passage	
Total Released - 505 Total Passed - 465 **Percent Pass - 92%**	Total Released - 465 Total Passed - 112 **Percent Pass - 24%**
Mean Reservoir Residence Time	
2.3 days	**6.6 days**

Spring (March-April) – Low Pool

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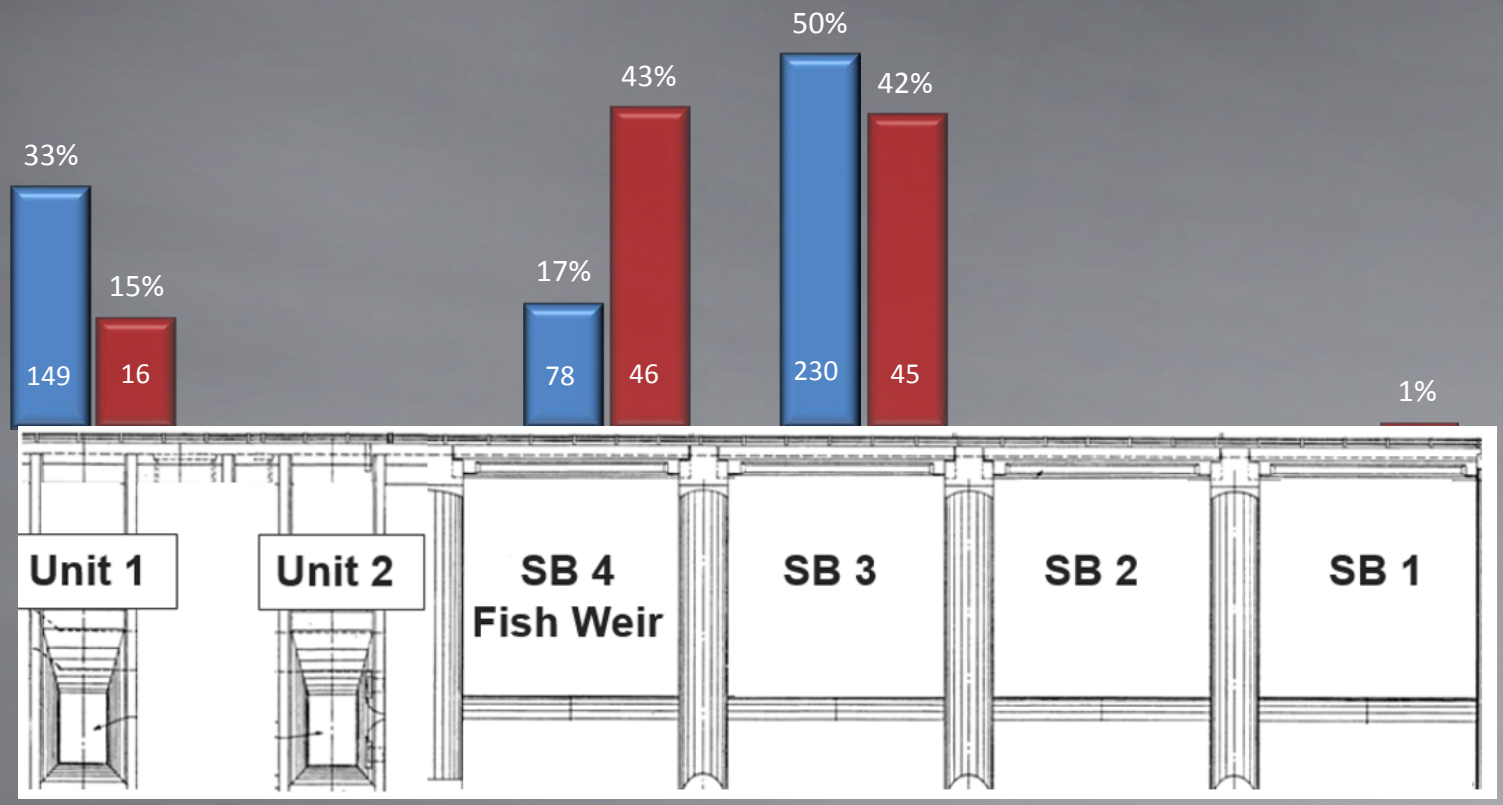
Passage Distributions

- Chinook Salmon
- Steelhead



Spring (March-April) – Low Pool

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Survival

- Chinook Salmon

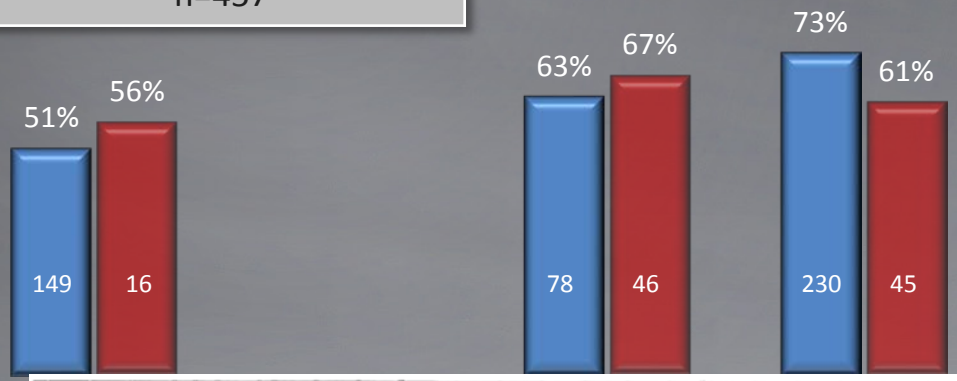
Dam Passage Survival

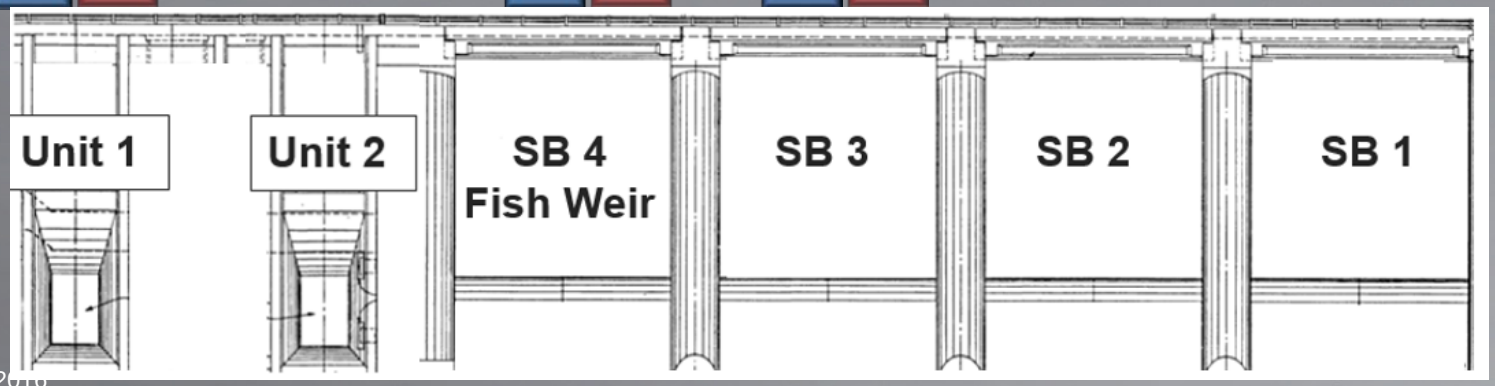
0.639 (0.025)
n=457

- Steelhead

Dam Passage Survival

0.632 (0.048)
n=108





Spring (May-June) – High Pool

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Chinook Salmon	Steelhead
Passage	
Total Released - 189 Total Passed - 110 **Percent Pass - 58%**	Total Released - 306 Total Passed - 173 **Percent Pass - 57%**
Mean Reservoir Residence Time	
9.0 days	**25.3 days**

Spring (May-June) – High Pool

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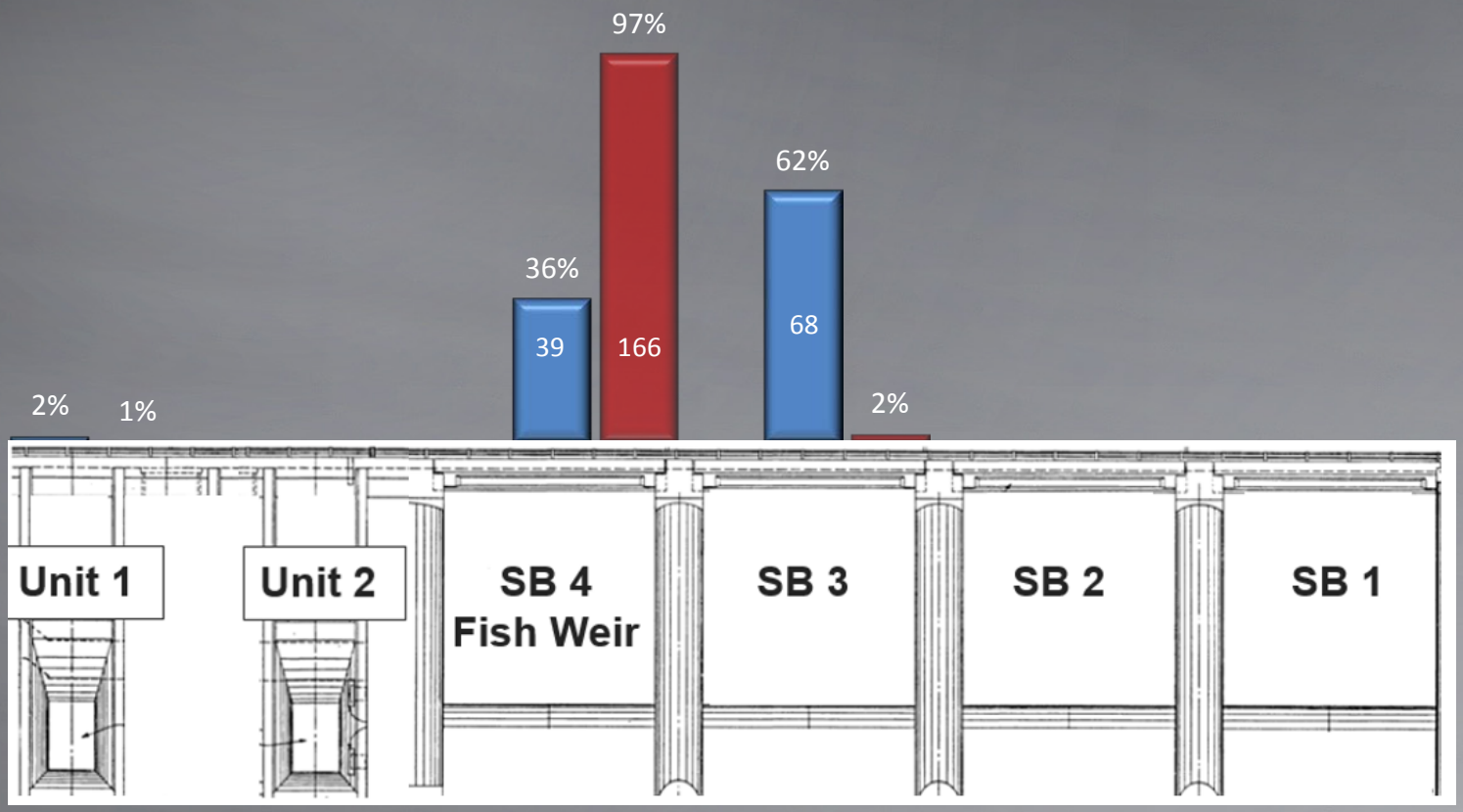
Passage Distributions

- Chinook Salmon
- Steelhead



Spring (May-June) – High Pool

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Survival

Chinook Salmon

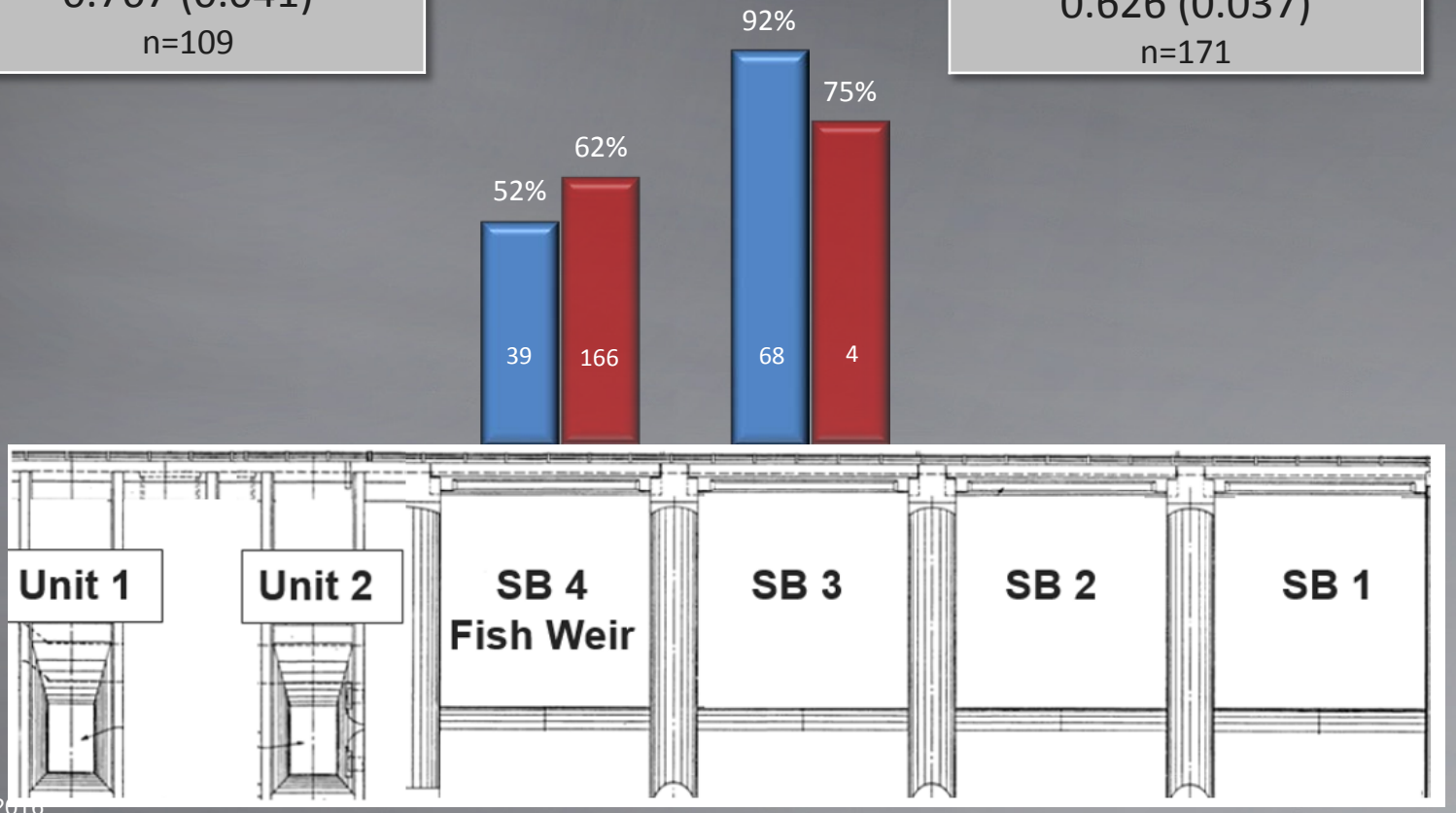
Dam Passage Survival

0.767 (0.041)
n=109

Steelhead

Dam Passage Survival

0.626 (0.037)
n=171



Fall (Oct-Dec) – Low Pool

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Chinook Salmon	Steelhead
Passage	
Total Released - 1222 Total Passed - 871 **Percent Pass - 71%**	Total Released - 94 Total Passed - 4 **Percent Pass - 4%**
Mean Reservoir Residence Time	
10.1 days	**1.3 days**

Fall (Oct-Dec) – Low Pool

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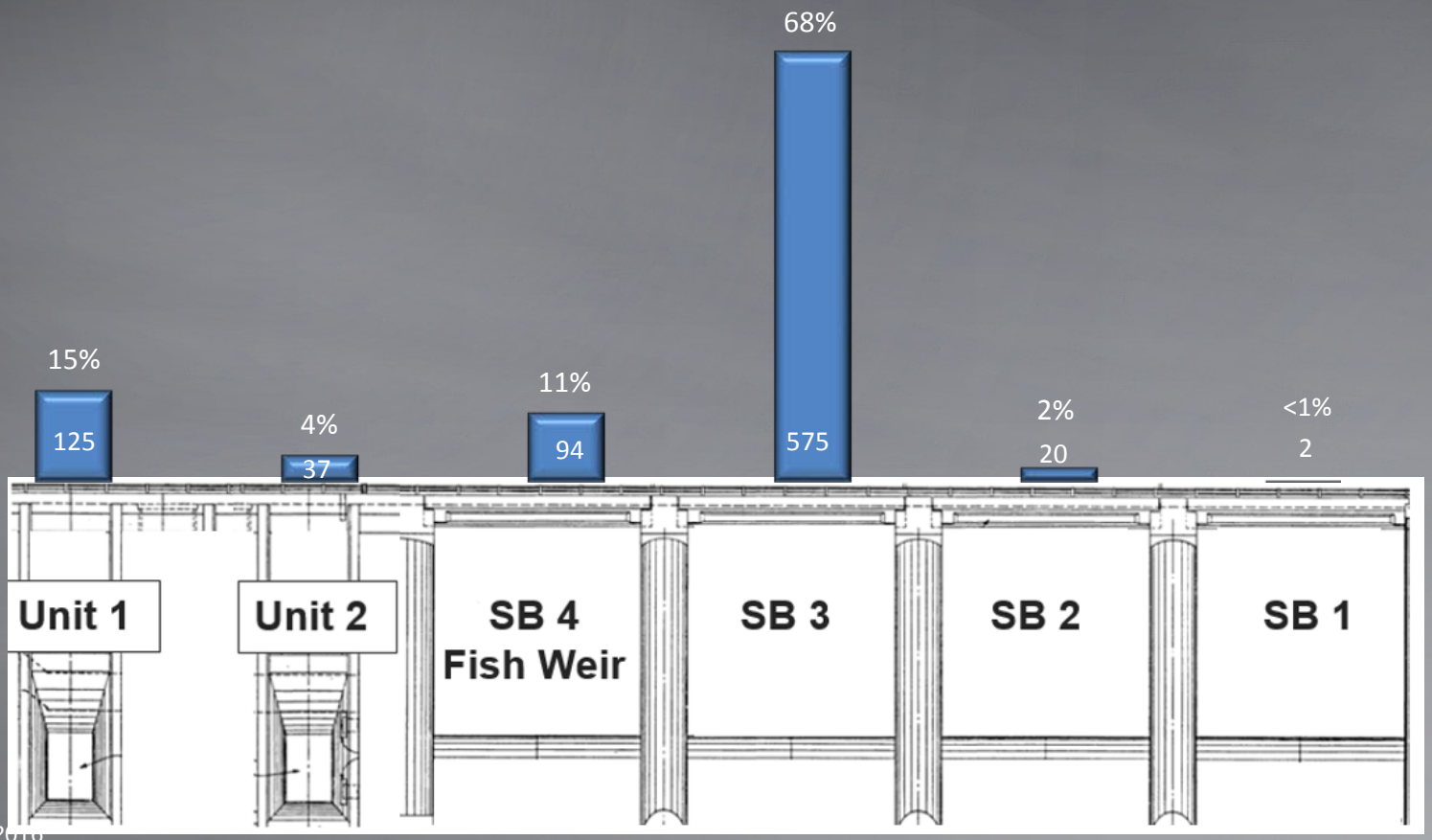
Chinook Salmon Passage Distributions



Fall (Oct-Dec) – Low Pool

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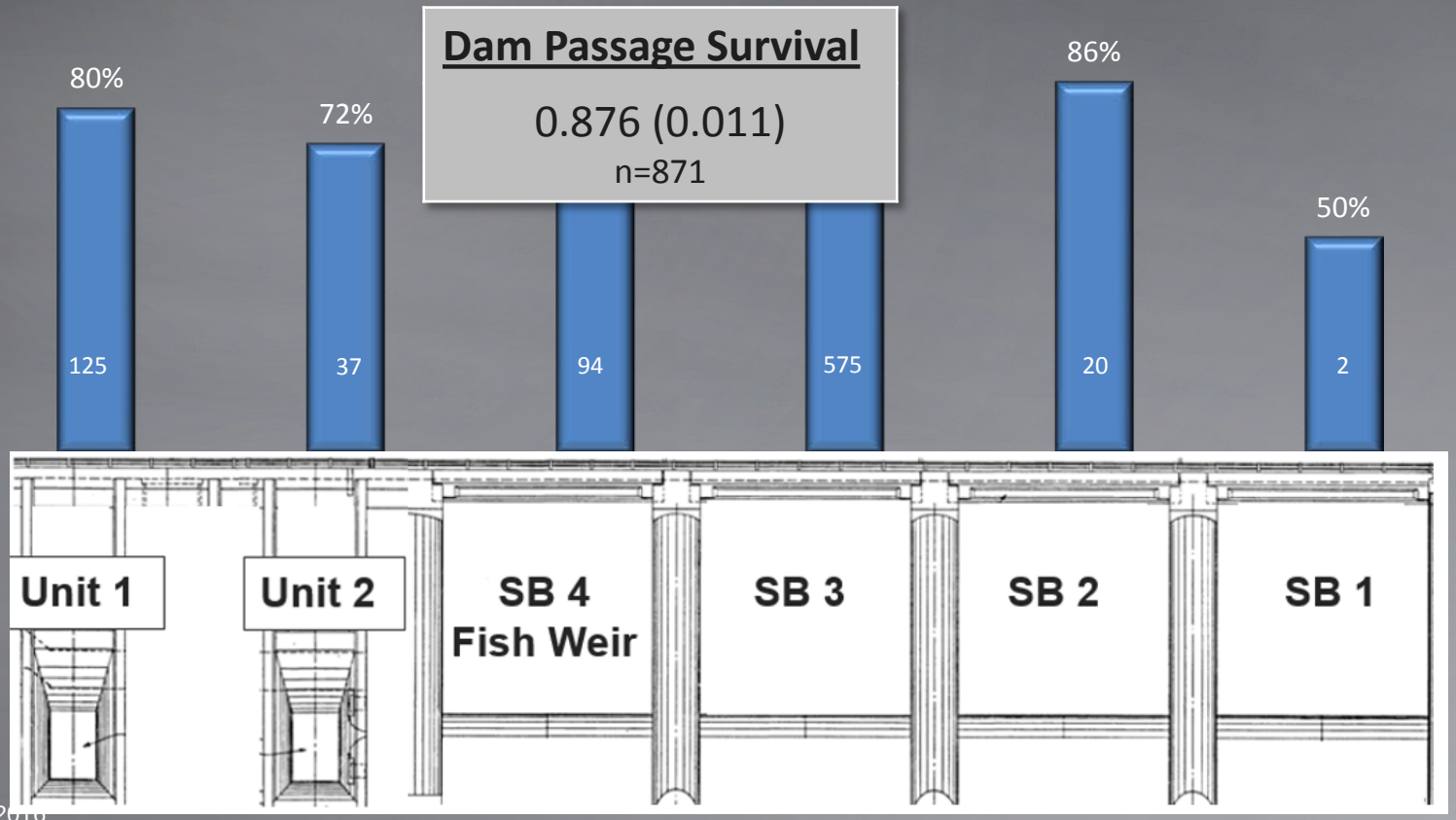
Survival

Chinook Salmon



Summary and Conclusions

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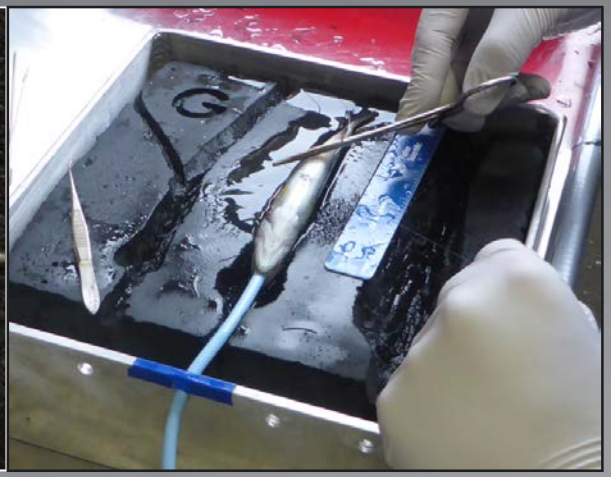
- Spring
  - Low Pool (March-April)
    - Majority of steelhead did not pass Foster (76% holdover)
    - Passage distributions weighted towards non-turbine routes of passage (Fish Weir and Spill Bays 1-3)
    - Survival was highest through the Fish Weir and Spill Bays 1-3 for both Chinook salmon and steelhead (61%-73%)
  - High Pool (May-June)
    - Almost half of Chinook salmon and steelhead did not pass Foster
    - Less than 1% turbine passage for both stock
    - Almost all steelhead passing Foster did so via the Fish Weir
    - Survival lower through the Fish Weir at high pool than at low pool (Chinook – 11% less; steelhead – 5% less)

Summary and Conclusions

- Fall - low pool (October-December)
  - Majority of Chinook salmon passed Spill Bay 3 (68%)
  - Dam passage survival higher for Chinook in fall than spring low pool
    88% vs. 64%, respectively
  - Daily total project discharge exceeded 10,000 cfs in December



Acknowledgments

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