

# **Evaluation of Steelhead Kelt Passage Through the Bonneville Dam Second Powerhouse Corner Collector Prior to the Juvenile Migration Season**

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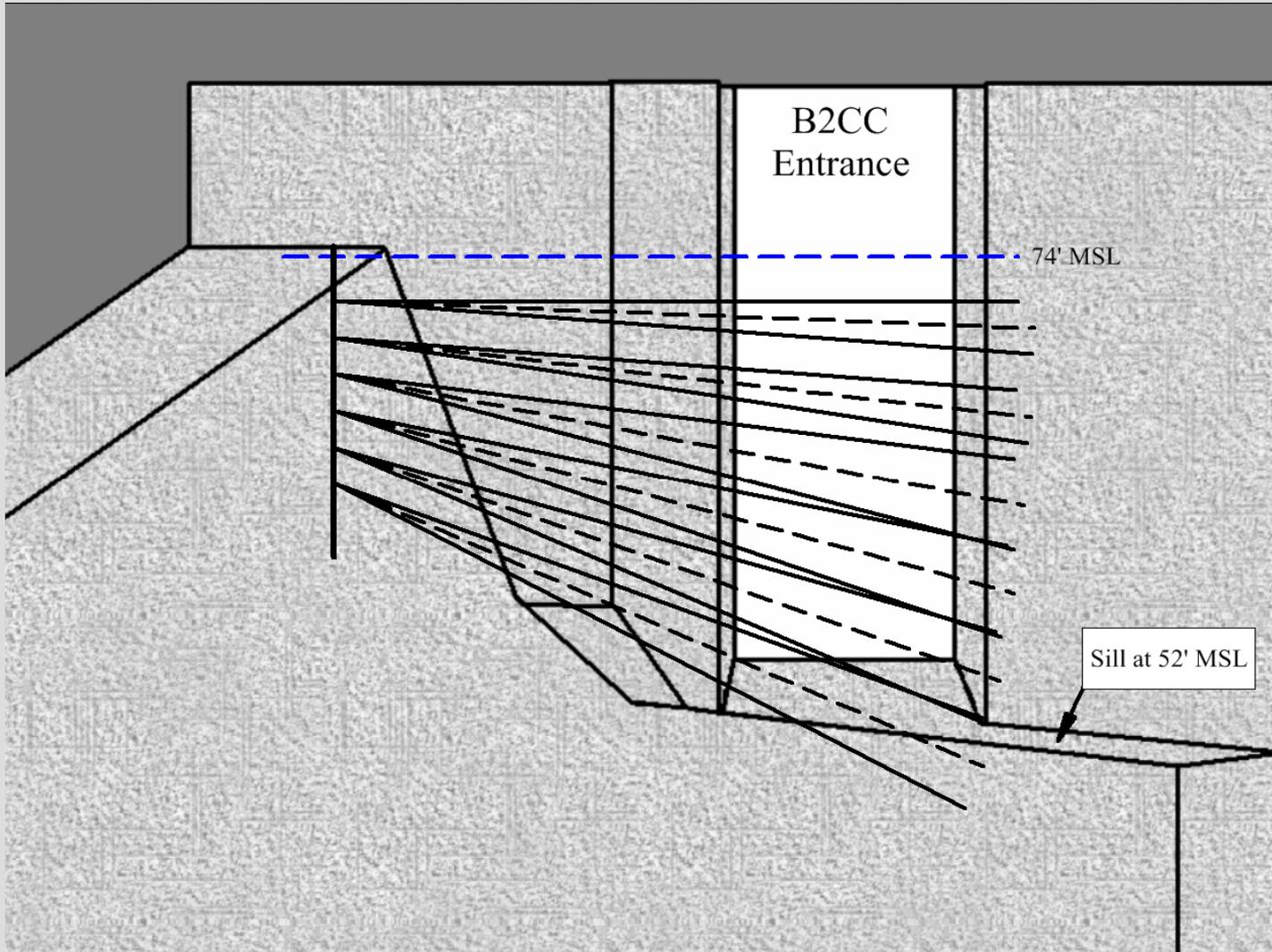
# Goal

- ▶ Estimate the number and distribution of kelt-sized targets that pass at the B2CC between March 1 and April 10

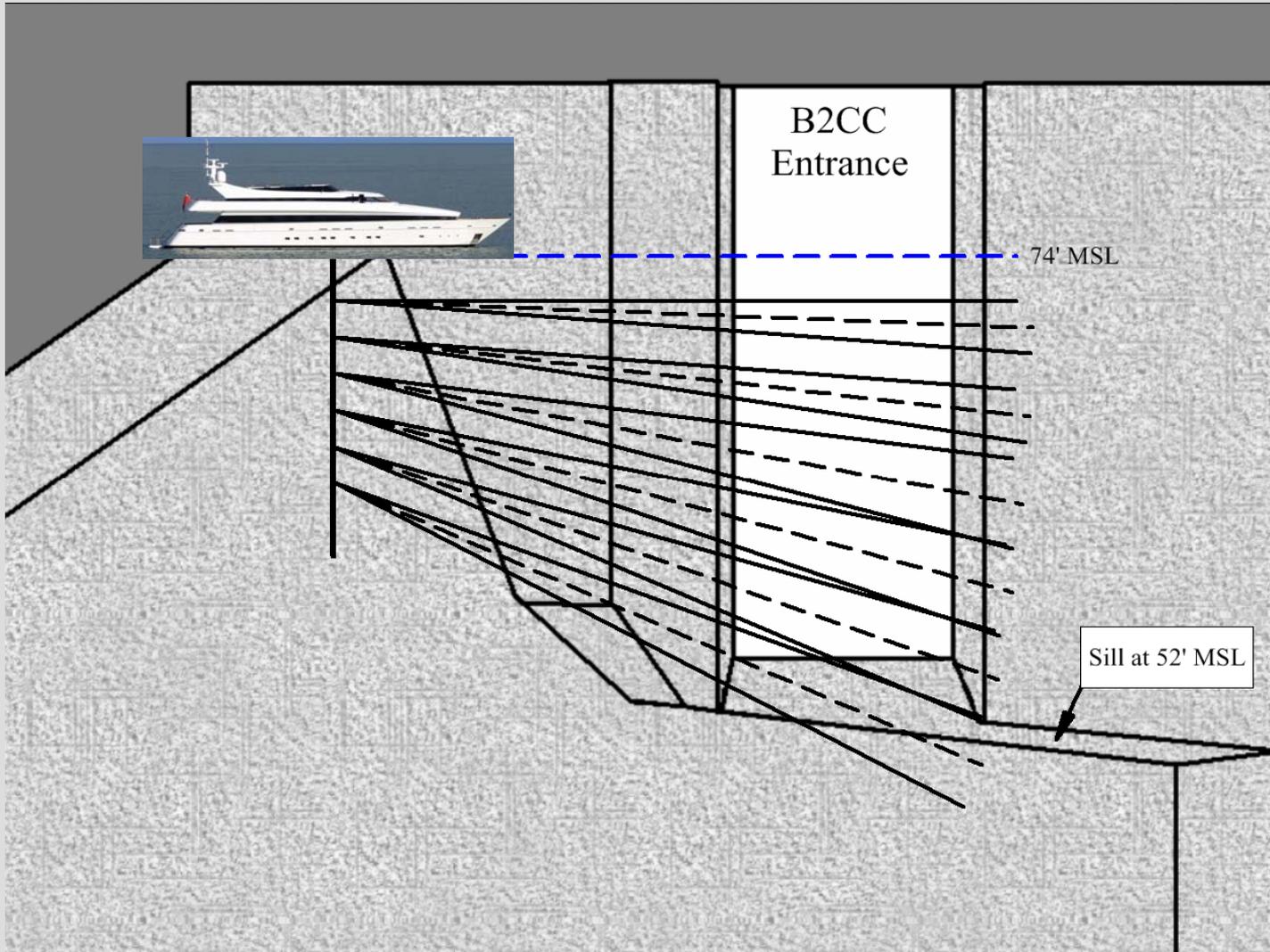
# Methods

- ▶ Deploy six split-beam hydroacoustic transducers from a barge aiming across the opening to the B2CC.
  - Upper 2 transducers 3-degree nominal beam width
  - Bottom 4 transducer 6-degree nominal beam width
- ▶ Ping rate = 33 pings/second

# Methods



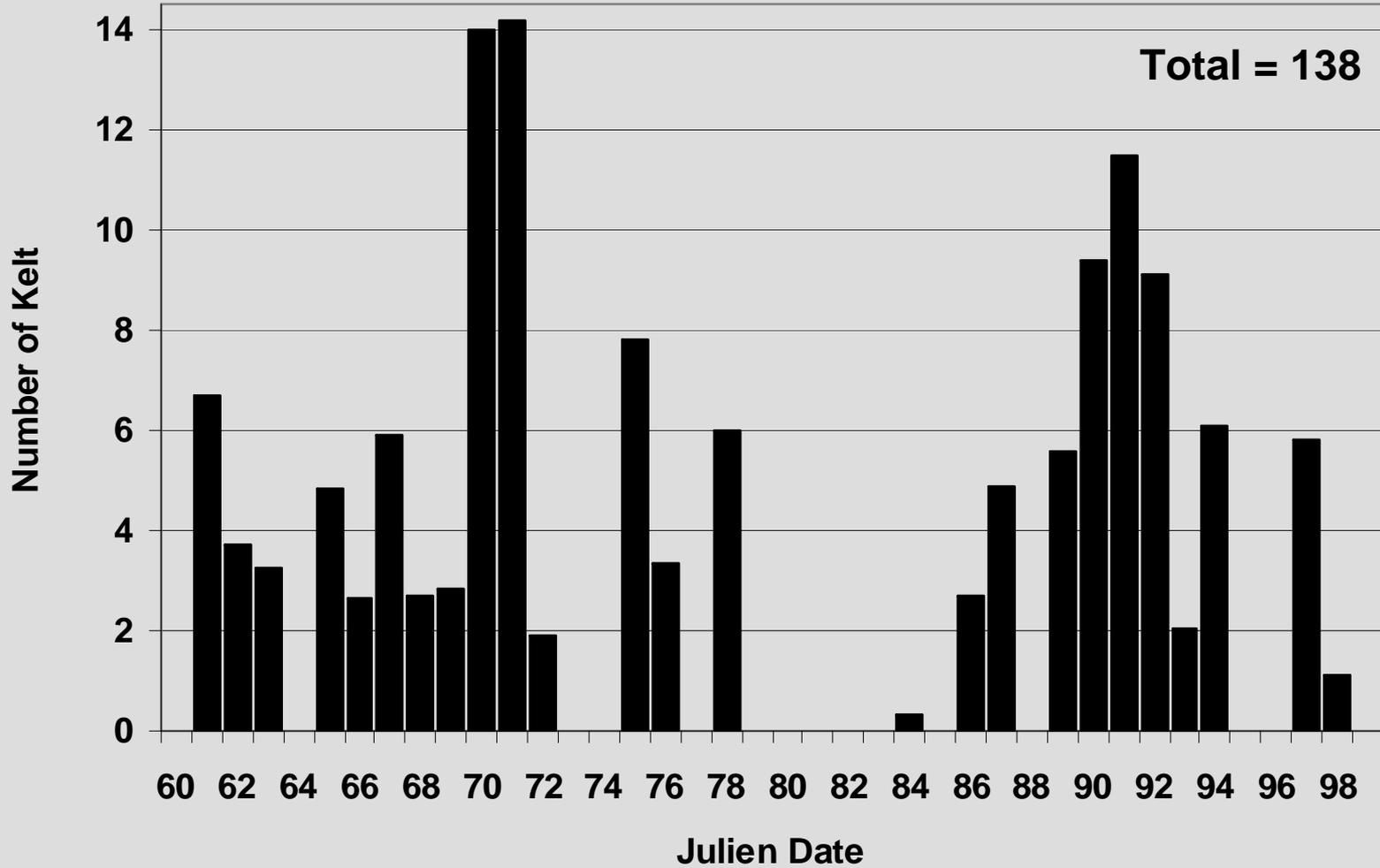
# Methods



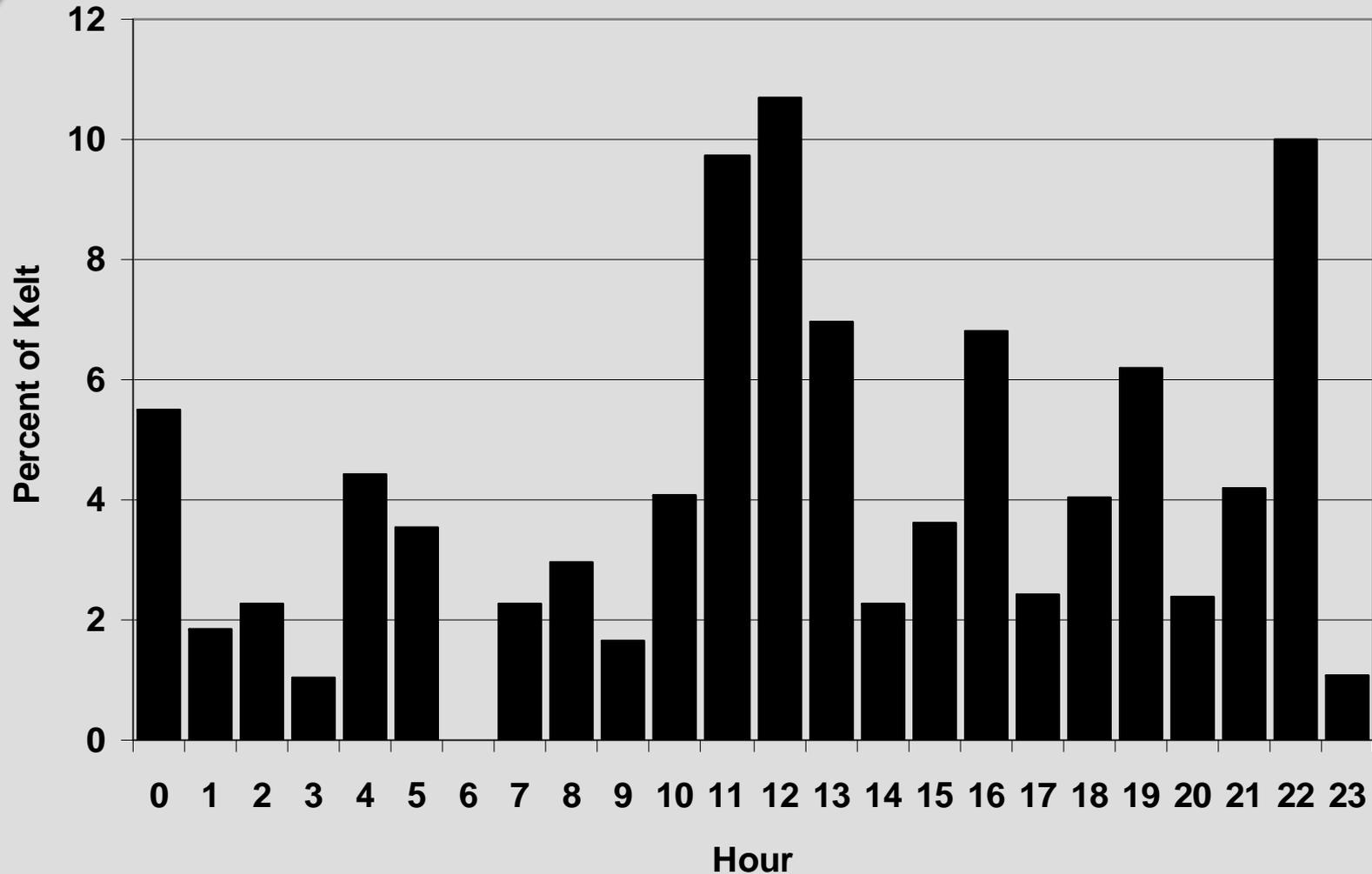
# Methods

- ▶ Data quite “noisy”
- ▶ Vortices at the same target strength as kelt sized targets
- ▶ Suite of filters used on the data to remove noise but retain targets of interest

# Results – Daily Passage



# Results – Diel Pattern



# Conclusions

- ▶ B2CC is a noisy environment
  - Vortices have similar TS to Kelt
  - Data was heavily filtered and remaining files manually checked (over 25,000 detections checked to reduce the expanded count to 138 fish)
- ▶ DIDSON would be useful in truthing of HA data
- ▶ Kelt size targets we distributed through out the water column
  
- B2CC was used for smolt passage at this time, specifically Spring Creek released fish.

# Acknowledgements

## ▶ USACE

- Jon Rerecich, Ben Hausman, Tammy Mackie, and BON rigging crew

## ▶ PNNL

- Robin Durham

## ▶ Cascade Acquatics

- Keith Pitts