

# Evaluating Dewatering Approaches to Protect Larval Pacific Lamprey

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# Background



## Goal

**Provide guidance for planned dewatering events that allow lamprey the best opportunity to regain access to water and avoid being stranded**

### Approach

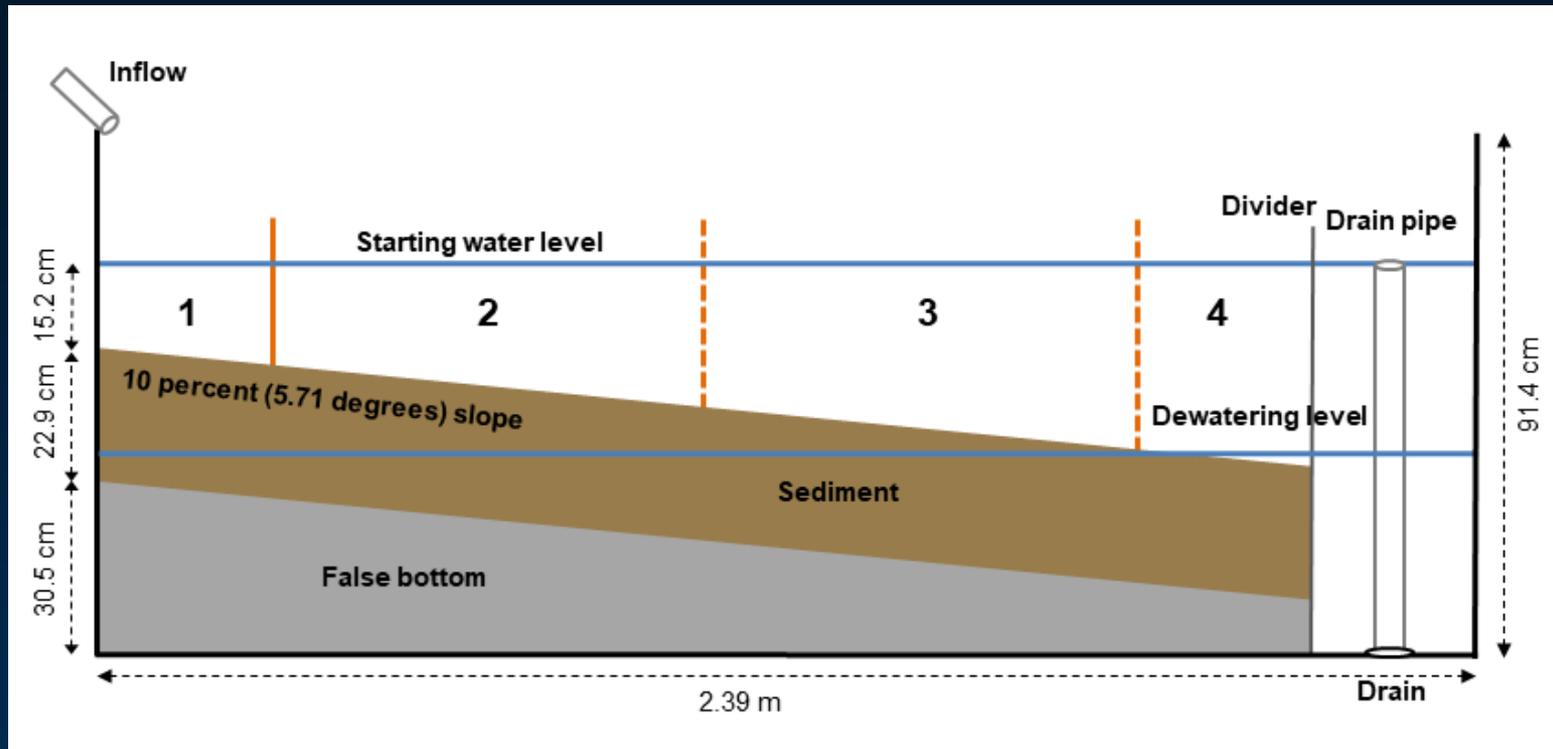
- 5 dewatering rates
- Light conditions (dark vs. light)

# Methods: Fish Source

- Fish collection – Wind River
- Identified as Pacific Lamprey
- Fish size 36 to 123 mm
- Acclimation 2 weeks, completed testing within 6 weeks of collection



# Methods: Dewatering Rate Trials

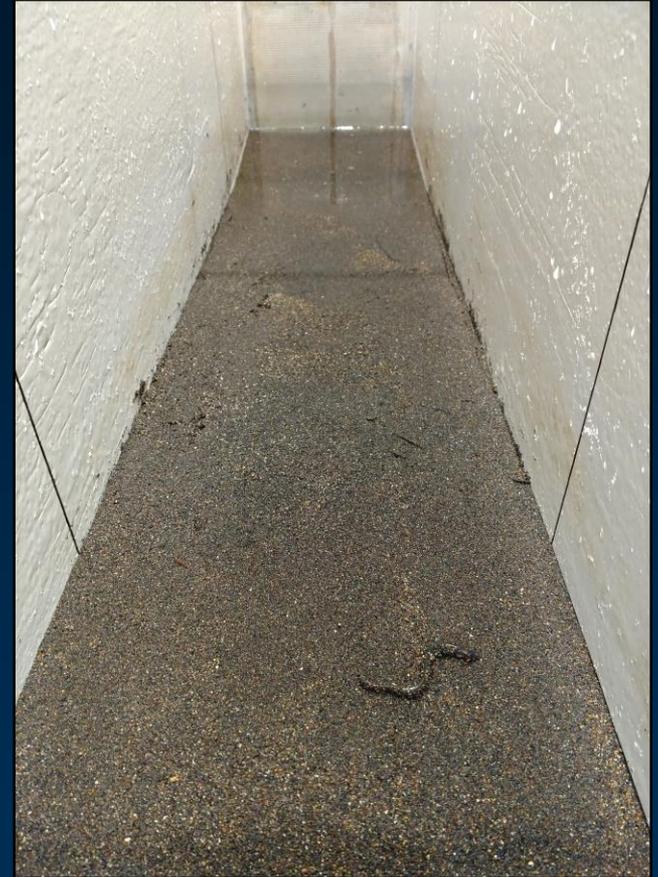


## Test tank

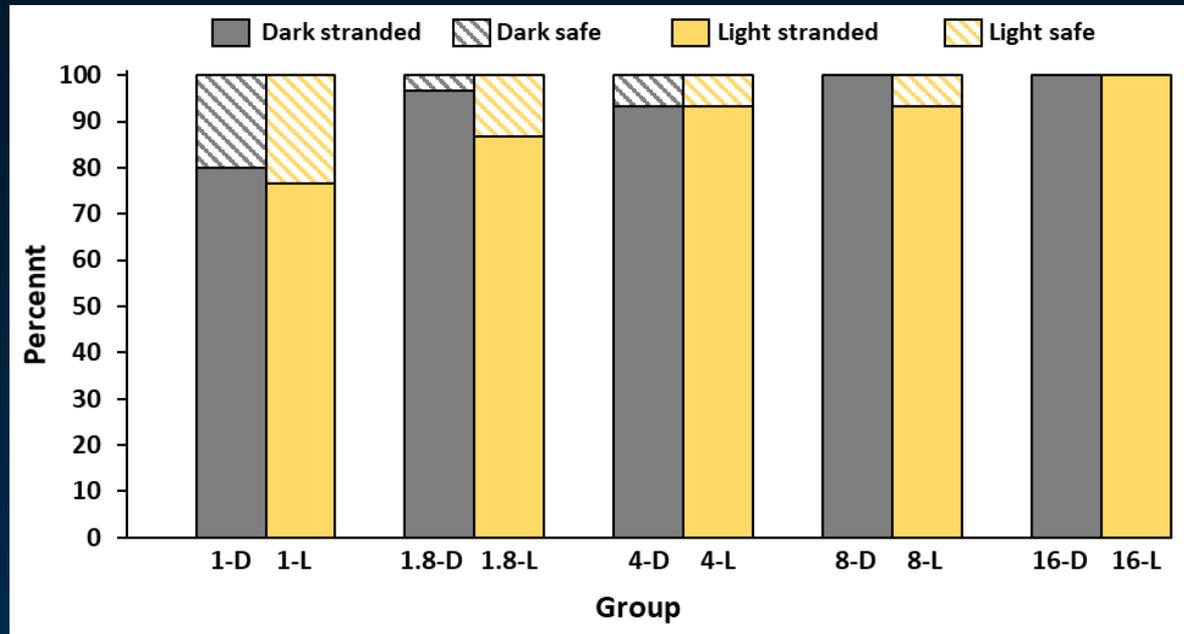
- 10% slope
- Sediment collected from field
- Water temperature ~ 9°C
- 4 tank sections

# Methods: Dewatering Rate Trials

- Rates: 1, 1.8, 4, 8, 16 in/h and control
- 49 min for 16 in/h rate and ~ 13 h for the 1 in/h rate
- Emergence time monitored
- Final fish position-surface or burrowed and tank section
- Stranded vs safe

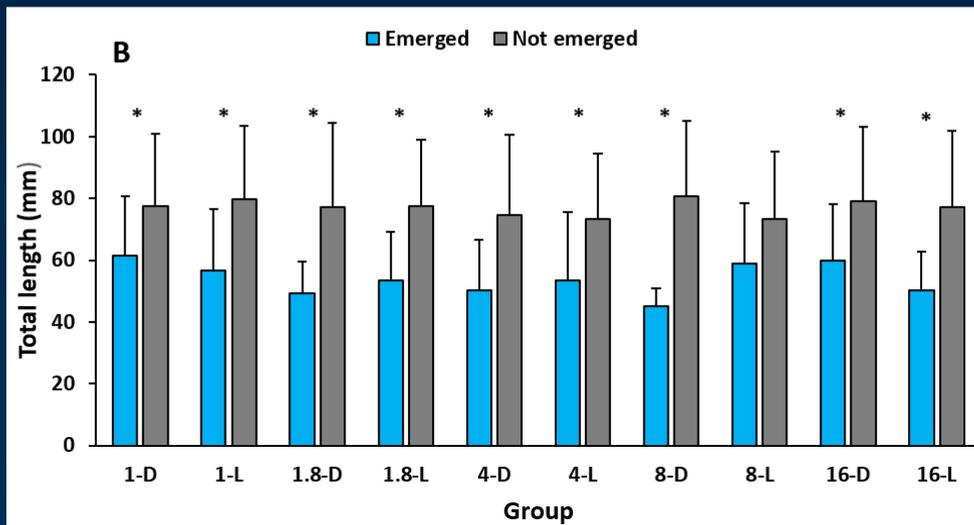
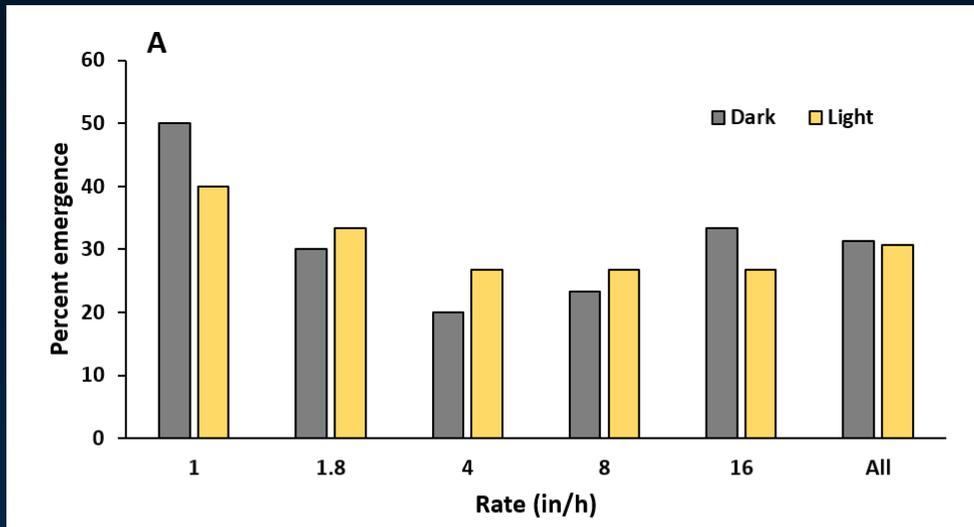


# Movement Results



- Completed 36 dewatering trials
- Treatment groups—high rate of stranding
- Lowest rate stranded the fewest fish
- No clear reduction in stranding in dark
- Most stranded fish remained in section 1 (50% to 80%)

# Emergence Results



- Overall emergence ~ 30%
  - 31.3% Dark
  - 30.7% Light
- Emerged fish were smaller
- Recorded timing of emergence for 58 larvae (62% of fish)
- Median time to emerge 37 min

# Summary & Future Directions

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## Summary

- Dewatering rate and light conditions are not the only variables
- Size matters; small fish respond differently
- Not presenting all the data

## Directions forward

- Cues for emergence
- Field studies
- Sediment type

# Questions?

**Final report in review and  
available online in January 2020**