

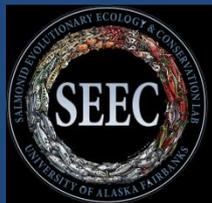
# Tagging Study: Update and Preliminary Results from 2017 and 2018

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Rasmuson Fisheries Research Center Fellowship  
North Gulf of Alaska Applied Research Award



*“Nothing in Evolutionary Biology Makes  
Sense Except in the Light of Ecology”*

-P & R Grant 2008; SEEC Lab Motto



# Tagging Study

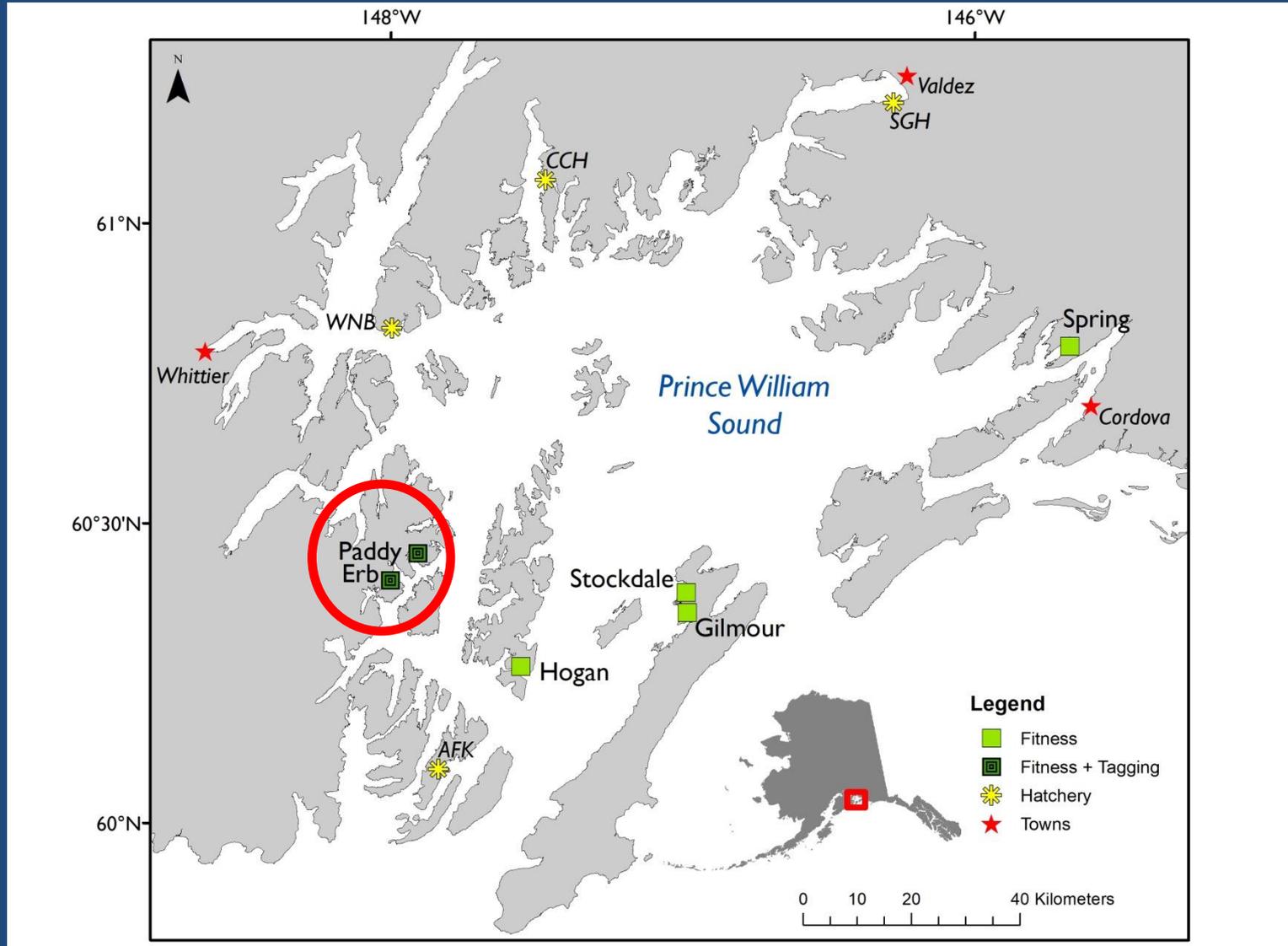


M. Ree



M. Ree

# Paddy and Erb Creeks in Western PWS



# Tag Dates

|                    |           | 2017         |              | 2018      |           |                |
|--------------------|-----------|--------------|--------------|-----------|-----------|----------------|
|                    |           | Early        | Late         | Early     | Mid       | Late           |
| <b>Paddy Creek</b> | Tag Dates | August 11-12 | August 26-27 | August 11 | August 19 | August 28 - 29 |
|                    | <i>n</i>  | 100          | 100          | 100       | 200       | 200            |
| <b>Erb Creek</b>   | Tag Dates | -            | -            | August 12 | August 20 | August 29-30   |
|                    | <i>n</i>  | -            | -            | 99        | 200       | 200            |

# Tag Study Methods



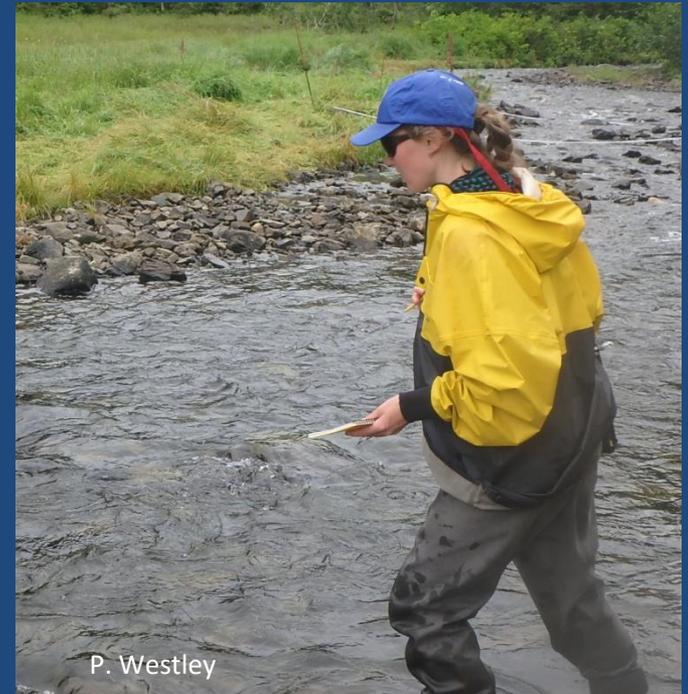
D. Lindow



D. Lindow



D. Lindow



P. Westley

# Tagging Summary



|                         | 2017        | 2018        |           | Overall |
|-------------------------|-------------|-------------|-----------|---------|
|                         | Paddy Creek | Paddy Creek | Erb Creek |         |
| Tagged fish             | 200         | 500         | 499       | 1199    |
| Tag recovery rate       | 50%         | 73%         | 71%       | 68%     |
| Carcasses recovery rate | 90%         | 58%         | 97%       | 79%     |
| Carcasses with otoliths | 77          | 118         | 328       | 523     |
| Hatchery origin         | 12          | 7           | 18        | 37      |

# Exploratory Questions for Tagging Data

Do hatchery and wild pink salmon exhibit differences in life-history traits of:

- Length
- In-stream lifespan
- Egg retention rates



# Length



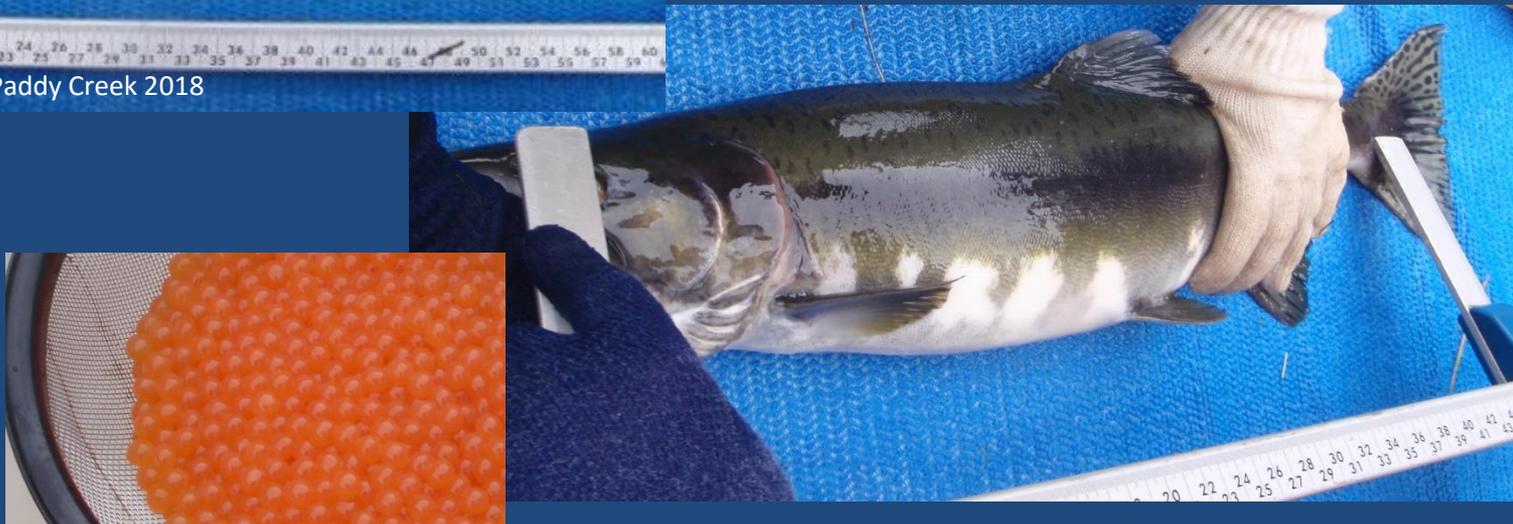
Photos: Craig Purchase; Paddy Creek 2018



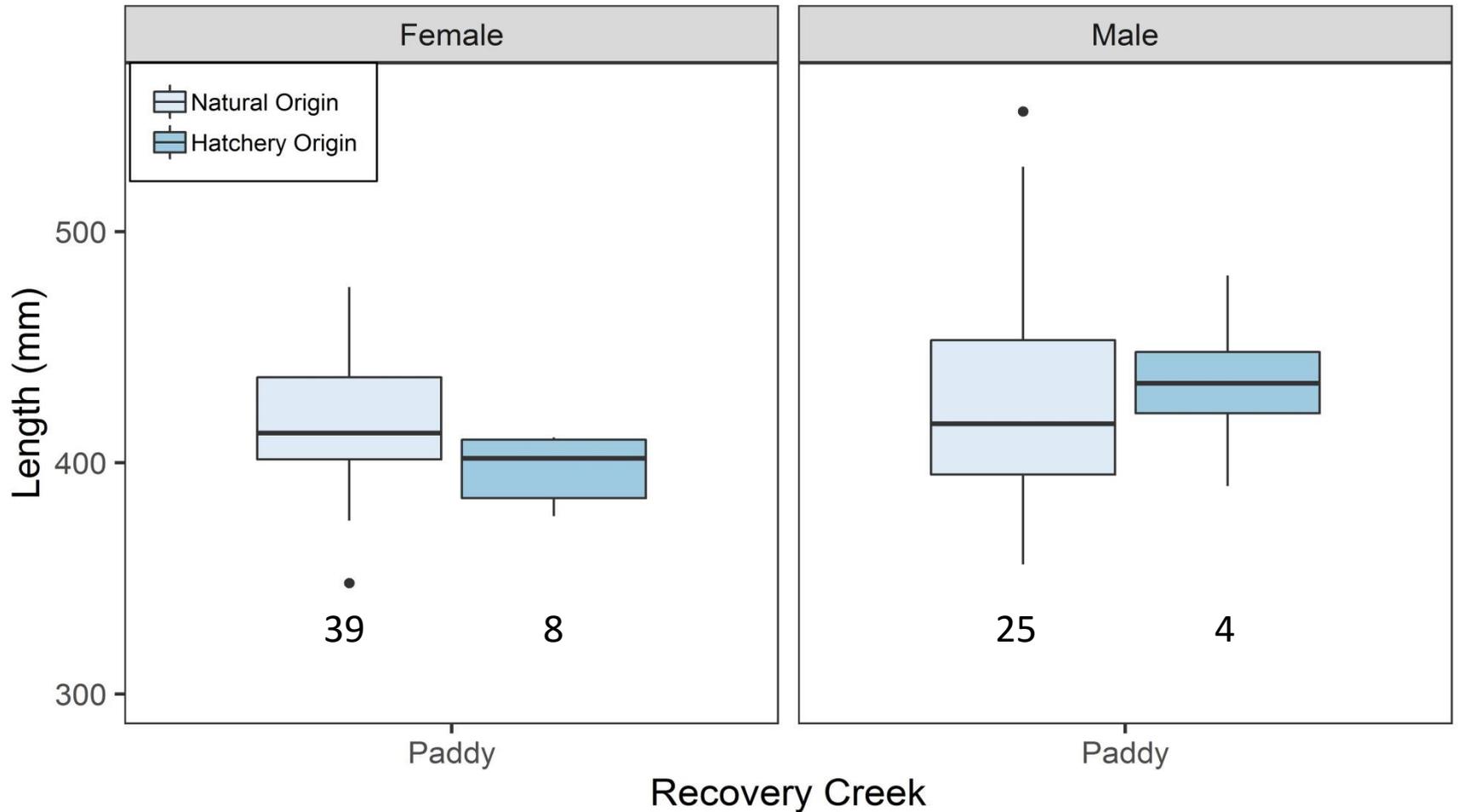
K Ruck

Female

Male

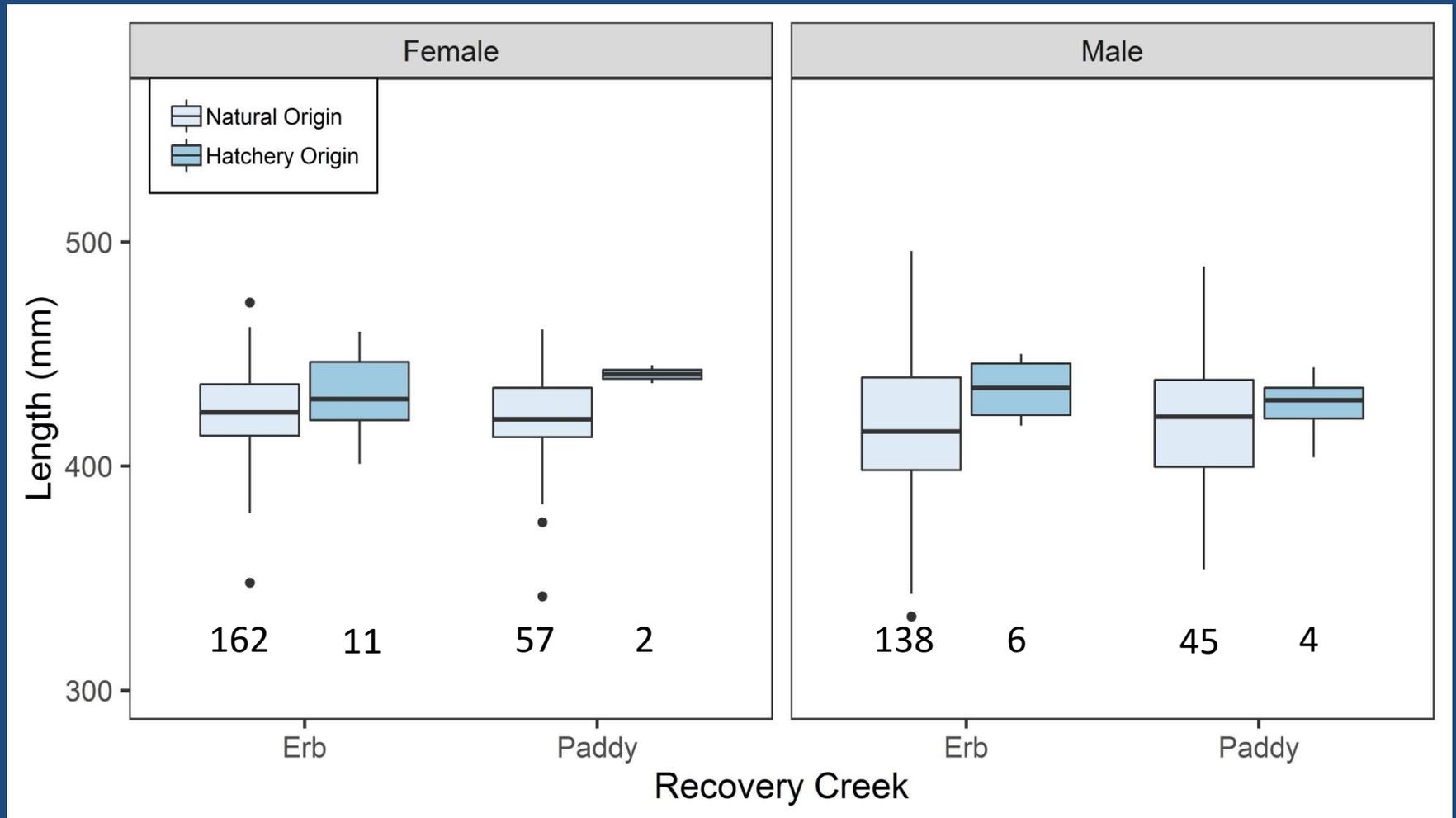


# Tag 2017: Hatchery Origin Females Tend to be Smaller



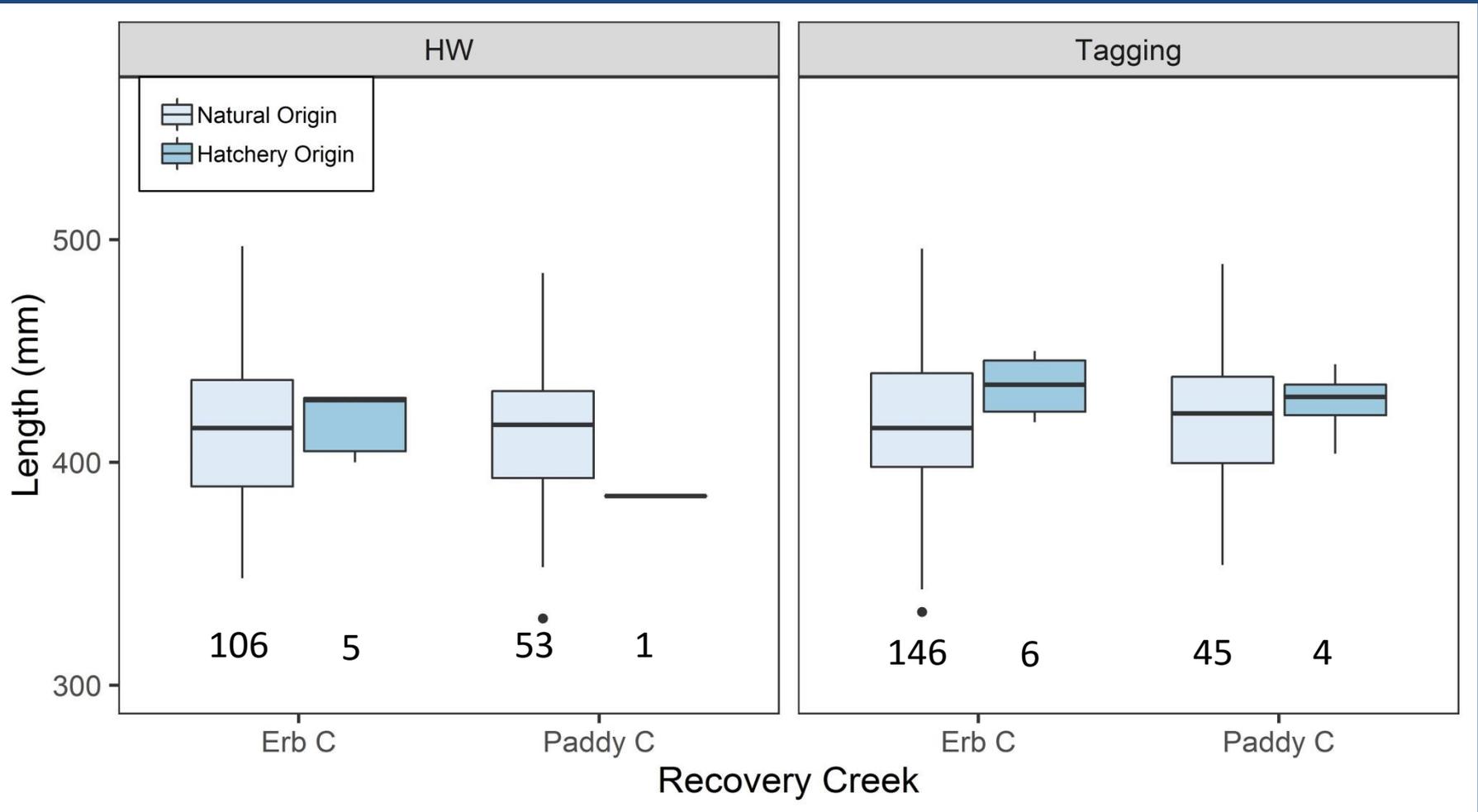
# Tag 2018: Hatchery Origin Tend to be Larger

Mean Hat = 433, Mean Nat = 421

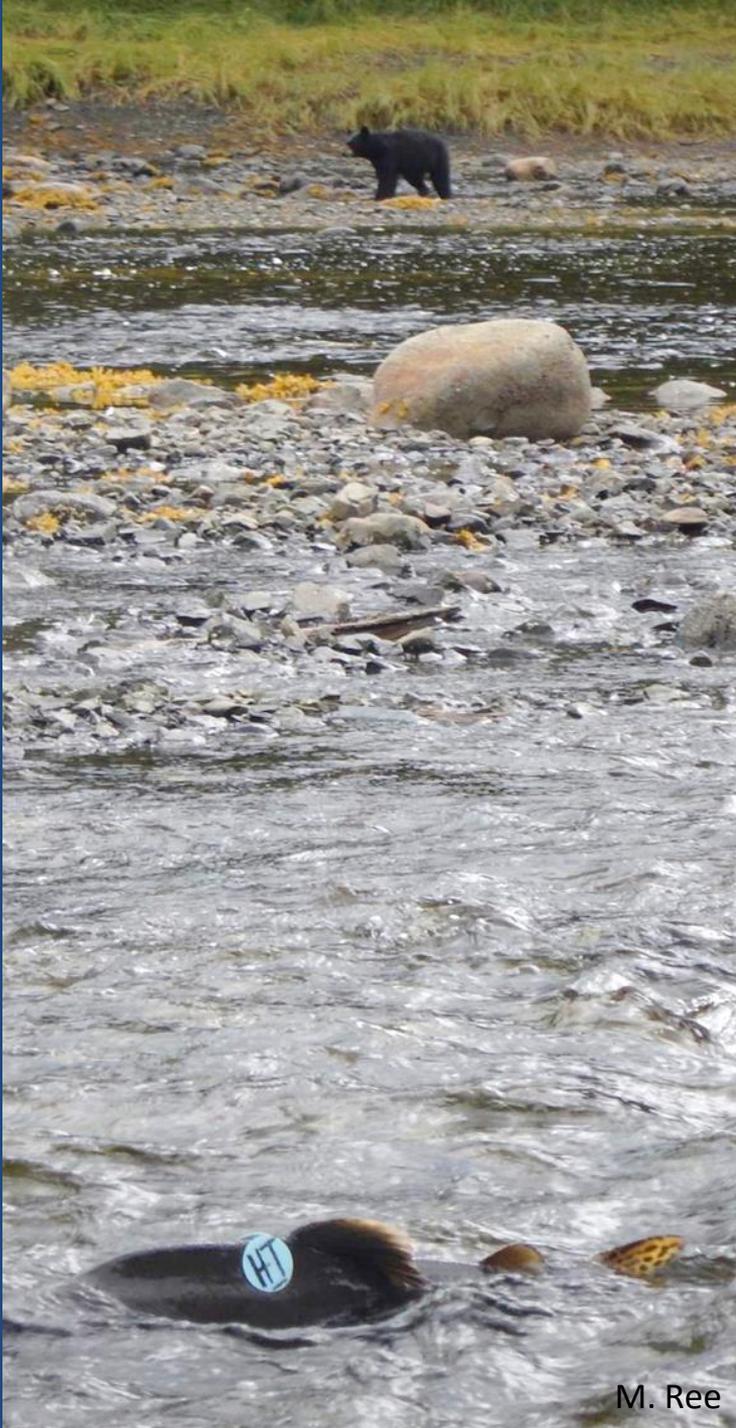


# Tag 2018 vs HW: Similar Male Lengths

Mean Tag Length = 419 mm, Mean HW = 416 mm



# In-stream Lifespan



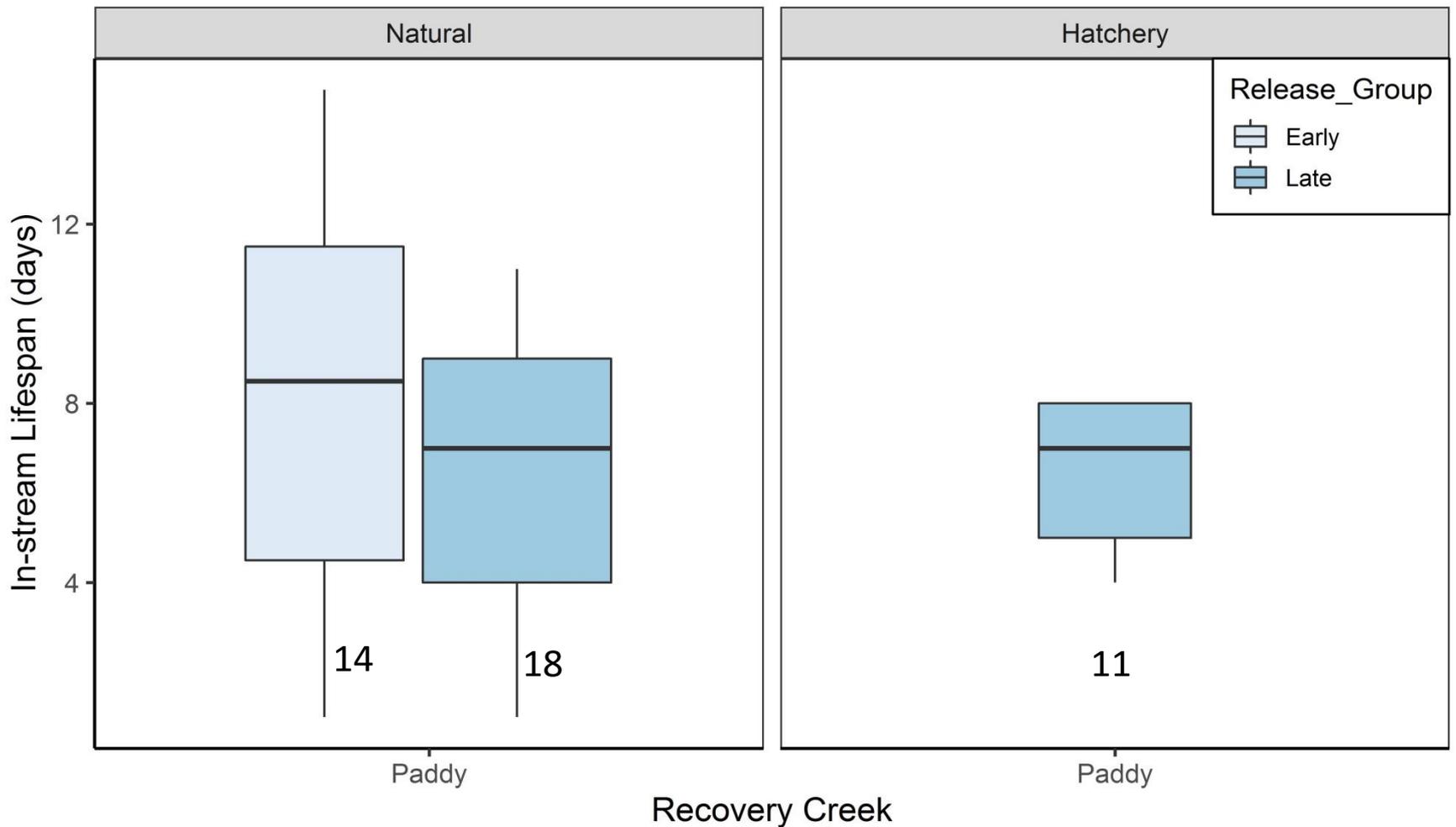
M. Ree



P. Westley

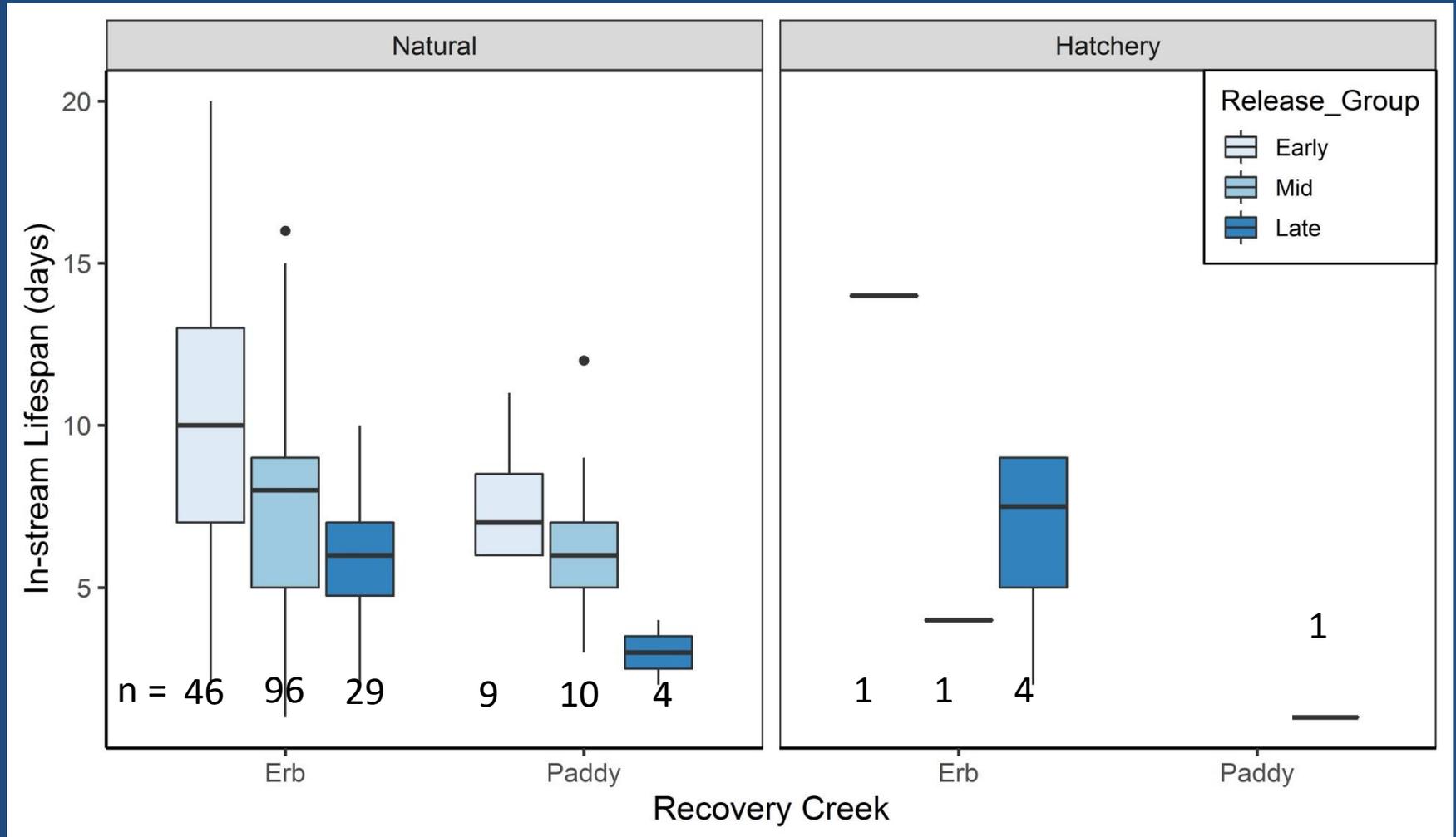
# Tag 2017: Paddy H and N Not Different

## Mean In-stream Lifespan = 7 days



# Tag 2018: Erb and Paddy do Not Statistically Differ ( $P=0.56$ )

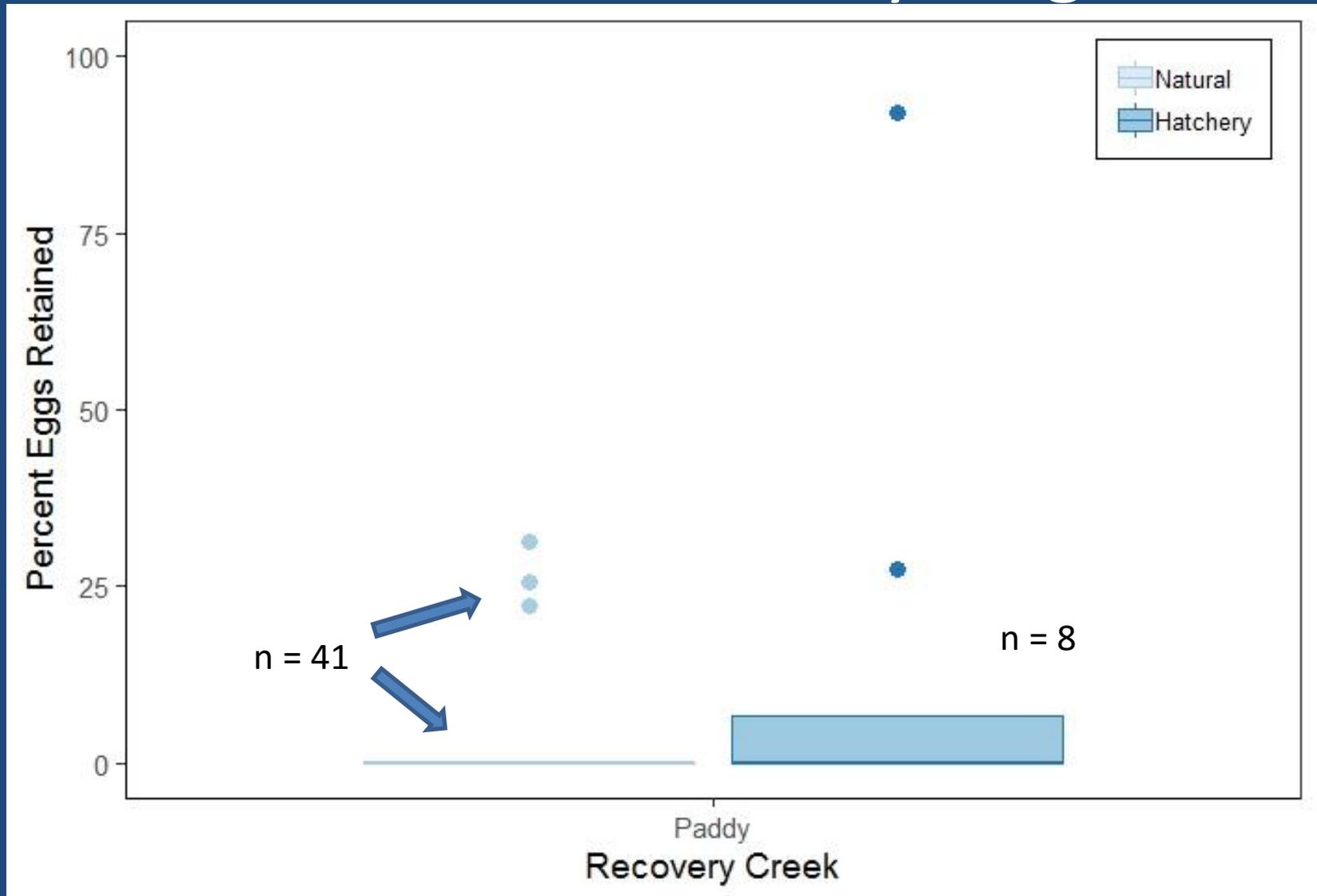
## Mean Days = 8 Erb, 6 Paddy



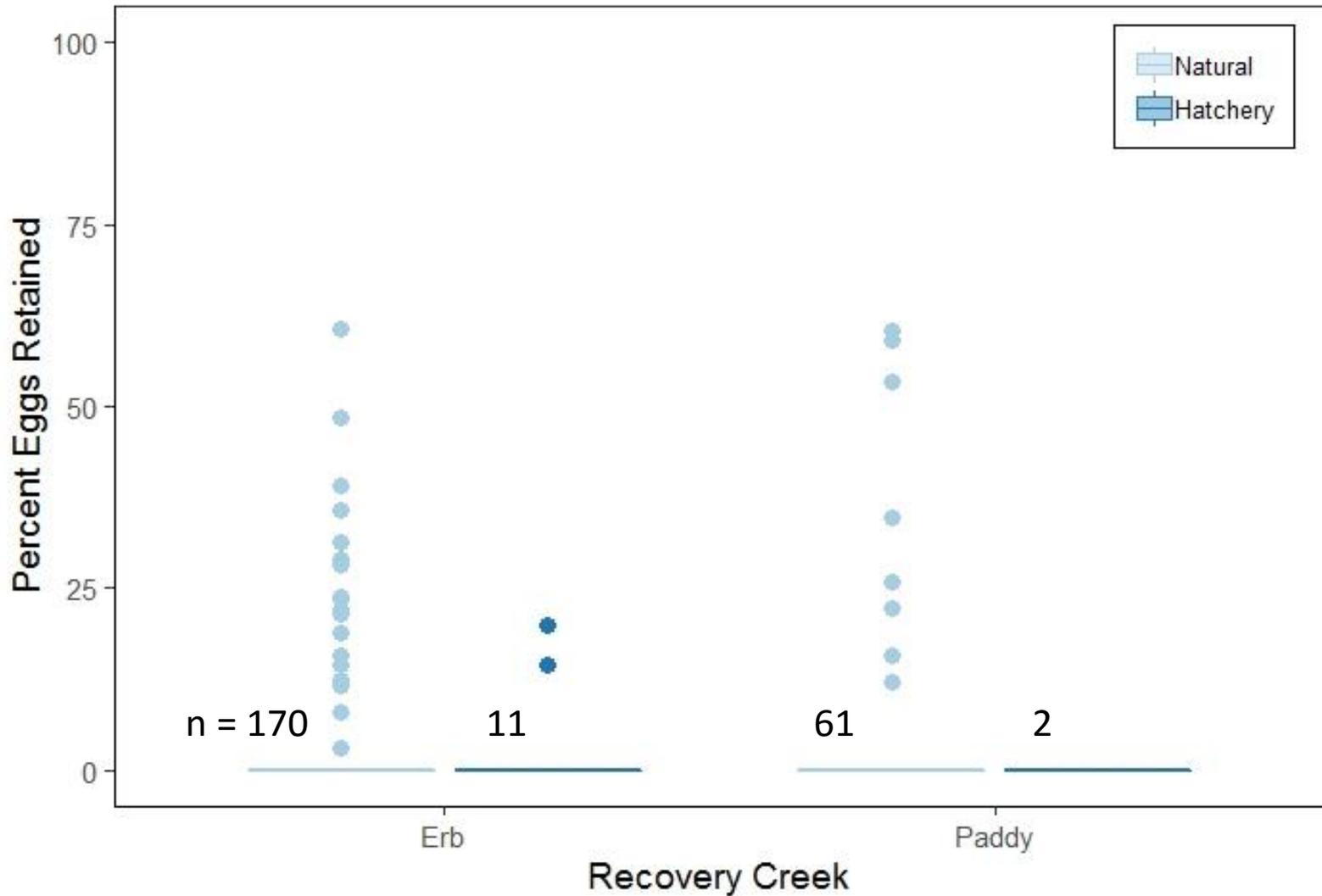
# Egg Retention



# Tag 2017: Egg Retention Low for Natural and Hatchery Origin



# Tag 2018: Egg Retention Low for Natural and Hatchery Origin



# Summary



C. Purchase



M. Ree

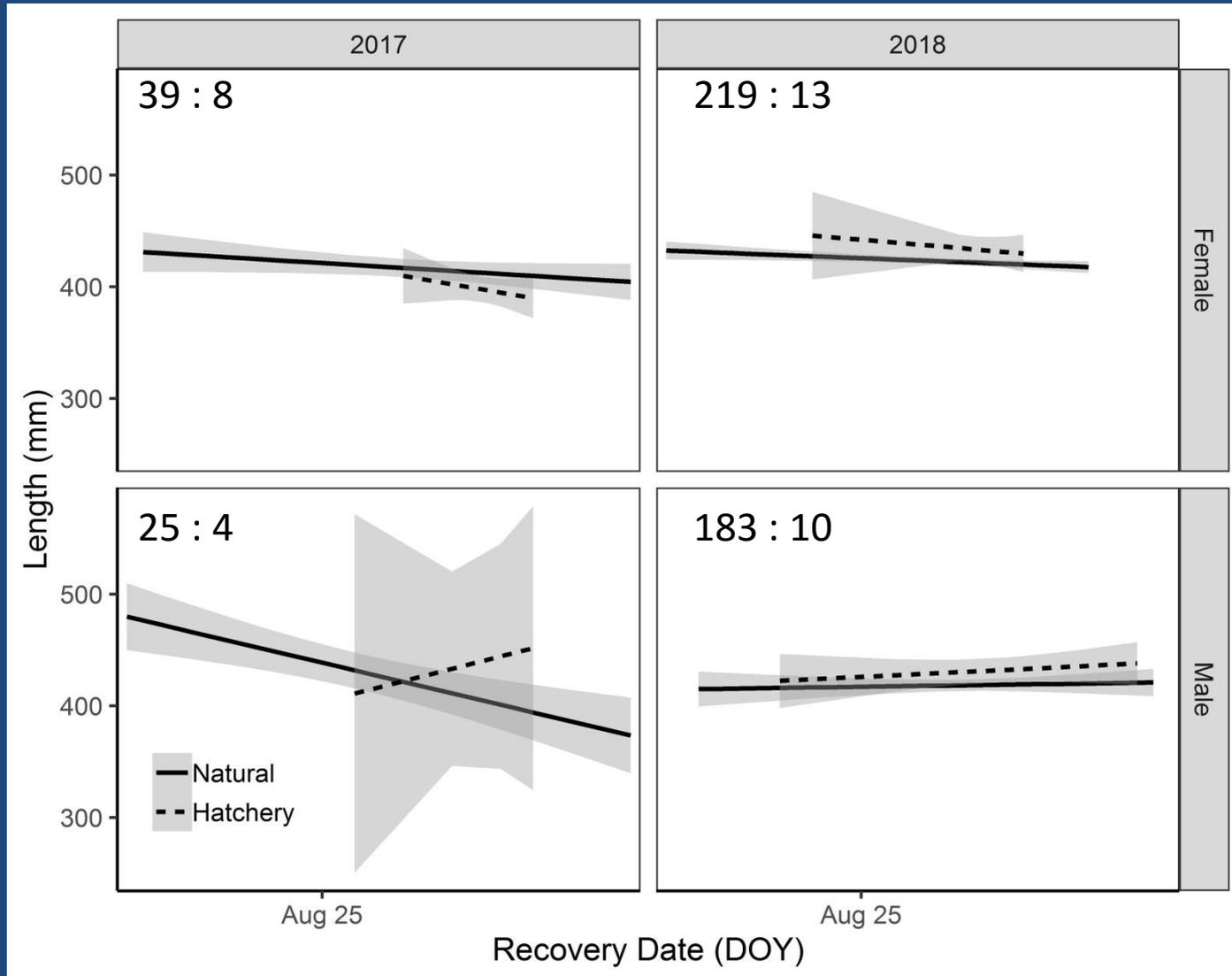


C. Purchase

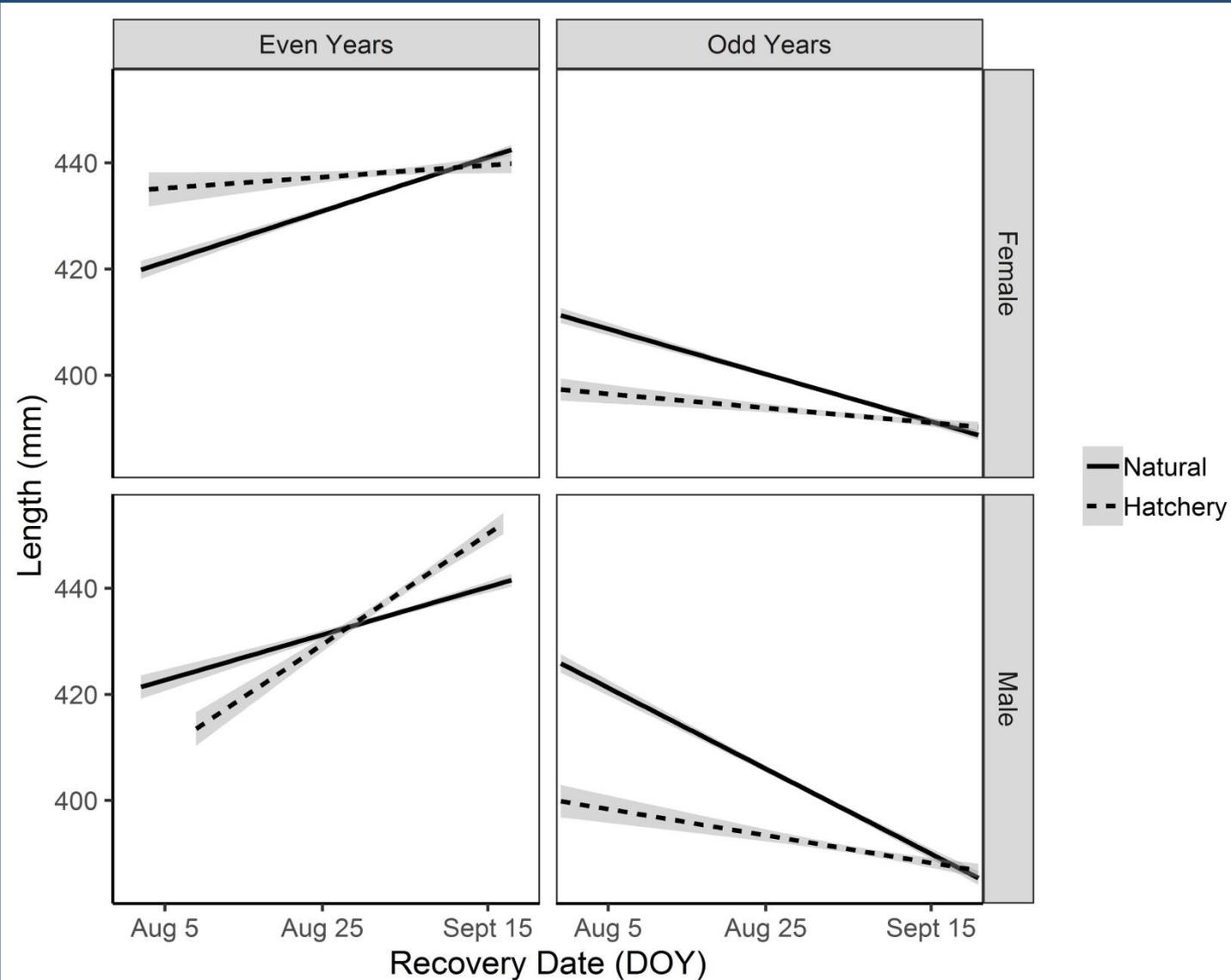
# Questions?



# Tag Data: Male Length Decreases over 2017 Season



# HW Lengths Change over Seasons



# Depredation Numbers

|                                     | <b>2017</b>    | <b>2018</b>    |              | <b>Overall</b> |
|-------------------------------------|----------------|----------------|--------------|----------------|
|                                     | Paddy<br>Creek | Paddy<br>Creek | Erb<br>Creek |                |
| Tagged Fish                         | 200            | 500            | 499          | 1199           |
| Tags recovered                      | 100            | 364            | 356          | 820            |
| Carcasses recovered                 | 90             | 211            | 346          | 647            |
| Depredated carcasses                | 50             | 183            | 161          | 394            |
| Carcasses with otoliths             | 77             | 118            | 328          | 523            |
| Hatchery Origin                     | 12             | 7              | 18           | 37             |
| Senesced with lengths<br>(Hatchery) | 37 (11)        | 24 (1)         | 171 (6)      | 250            |

# Wandering Tagged Fish?

- 2017: One Male tagged in Paddy went to Erb, two fish found in unnamed creek between Paddy and Erb.
- 2018: Two tagged fish found in same unnamed creek.
- All were natural origin