

Probability-of-molting plots using Kaplan-Meier survival estimator

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Juvenile Experiment: 2018-2019



Photo by Paul McElhany

Light Traps at
Mukilteo



Megalope

Juveniles

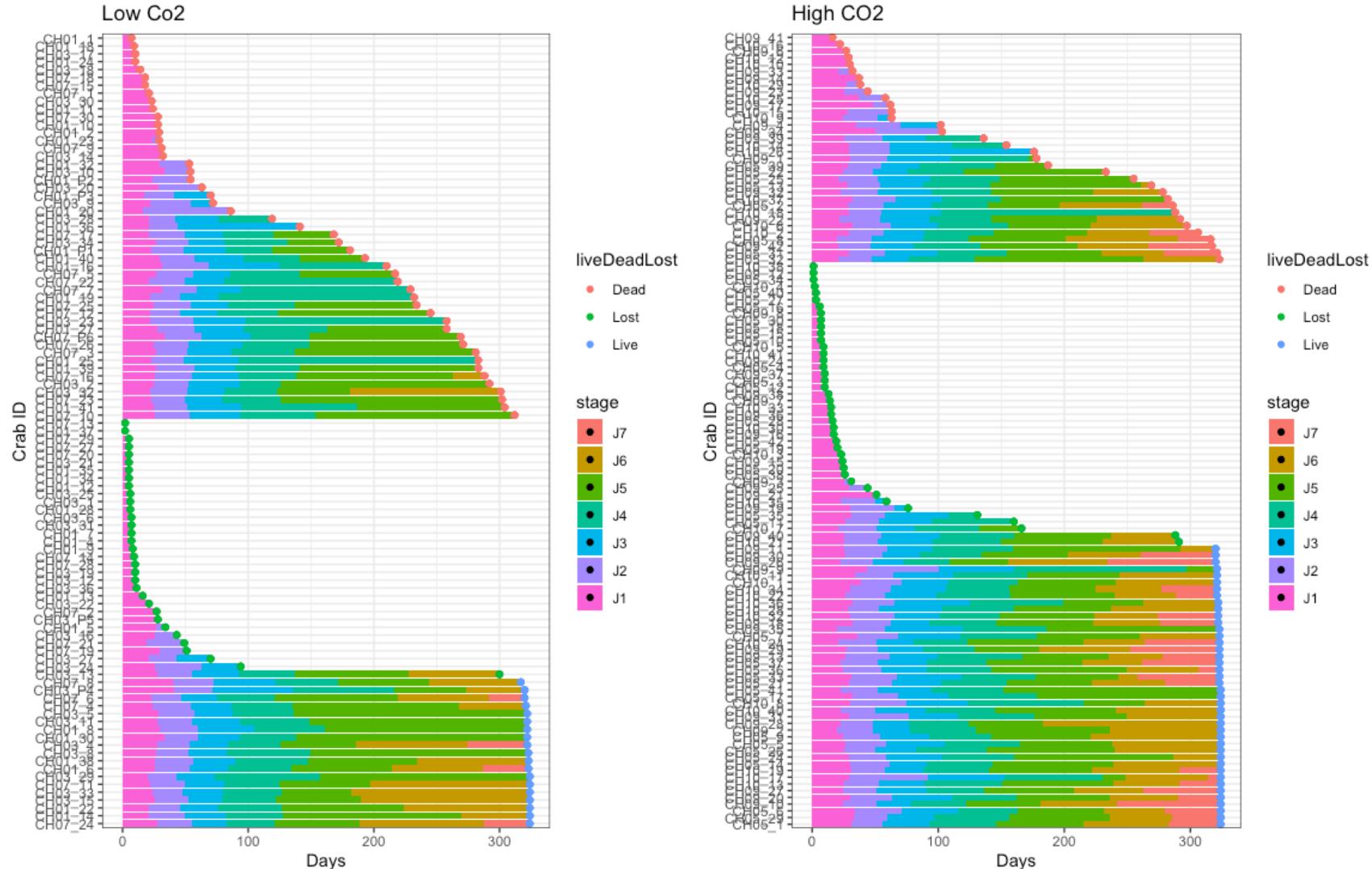


Treatment Tanks with
high and low pH



Juvenile molt and survival data

- Stacked bar of molt stage: `geom_bar(stat = "identity")`
- Live/dead/lost: `geom_point()`



Kaplan-Meier Survival Function Estimator

$\hat{S}(t)$ = Probability that the event happens after time t

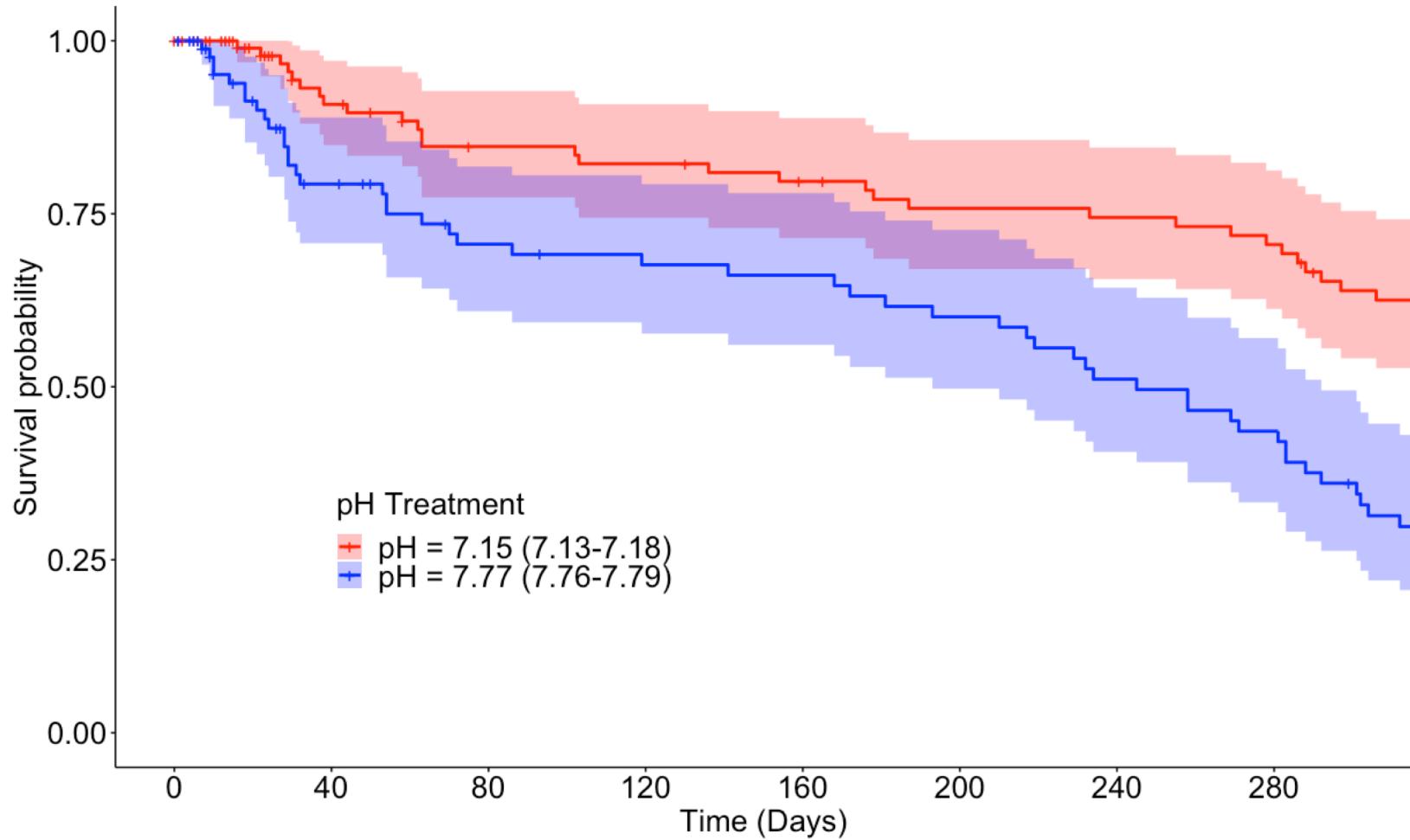
$$\hat{S}(t) = \prod_{i:t_i \leq t} \left(1 - \frac{d_i}{n_i}\right)$$

d_i = number of events at time t_i

n_i = number of individuals who have not had event up to time t_i

Right censored data occurs when individuals leave the study before the event

Survival plot with 95% confidence intervals



Days to molting event

- Mean date: `geom_point()`
- Confidence interval on the mean: `geom_errorbar()`
- Individual datapoint: `geom_jitter()`

