PACIFIC LAMPREY LARVAE AND THEIR RESPONSE TO CHRONIC STRESS

Patrick Carilli

Overview

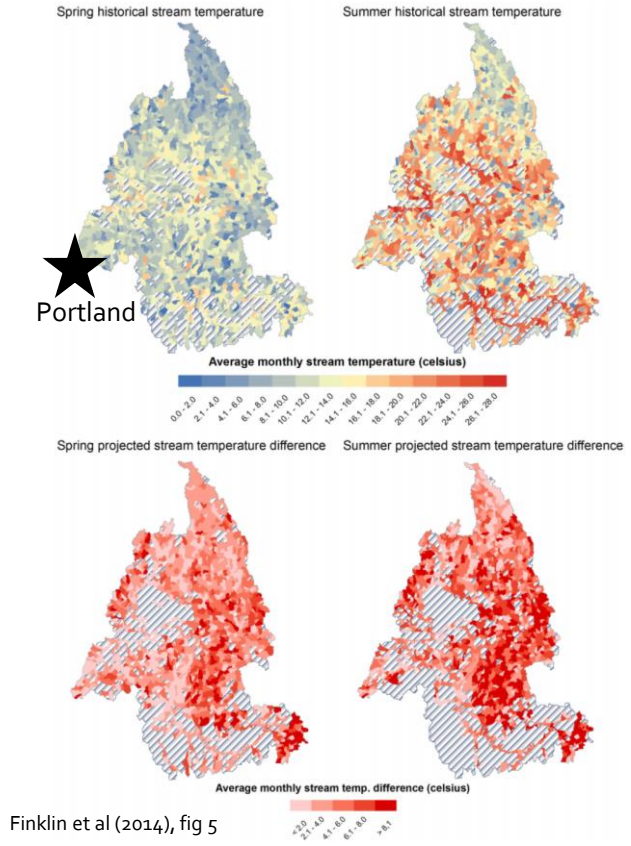
Goal: See how larval Pacific lamprey respond to 3 mo. of heat stress (aka summer)

1. Growth
2. Metabolism
3. RNA (Coming Soon!)

Why: Climate change & Freshwater systems

Hypothesis:

- ↓ Development
- ↑ Metabolism



Finklin et al (2014), fig 5

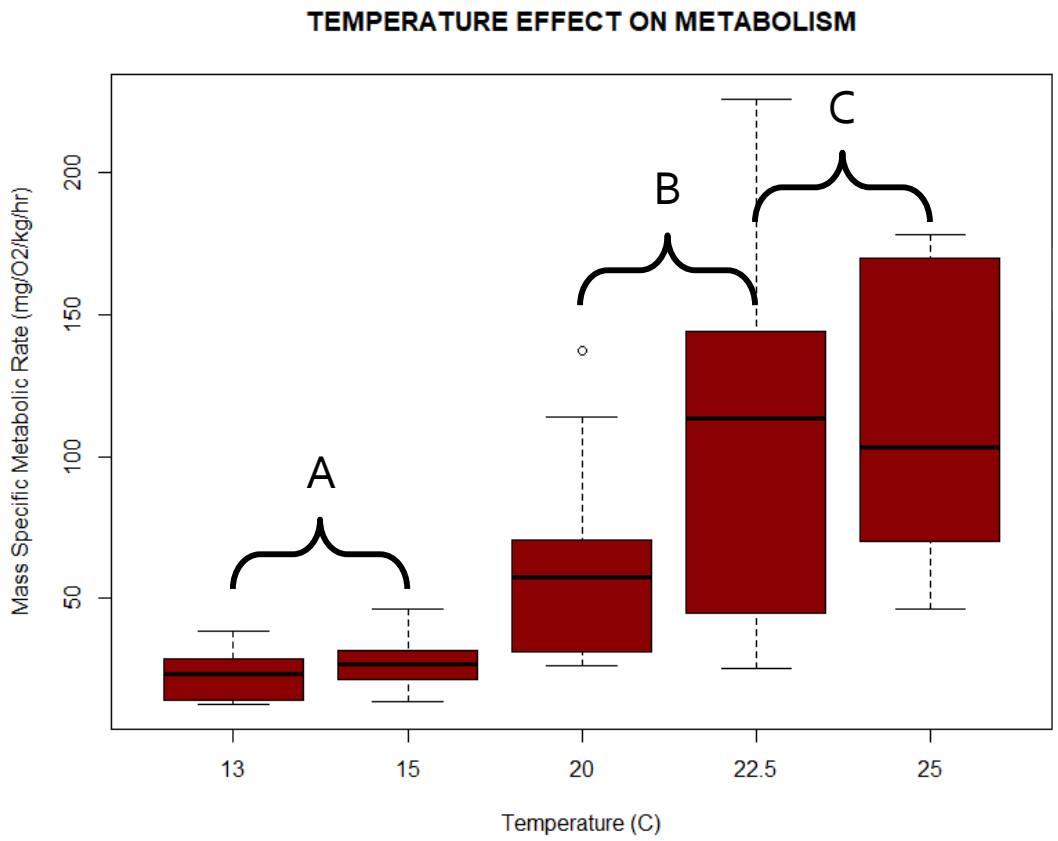
Setup

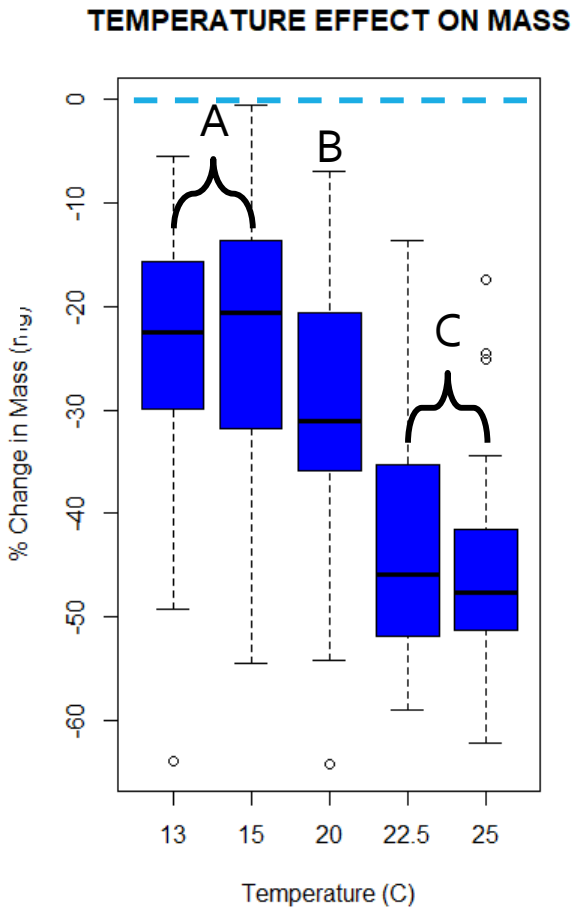
Husbandry
- Collection
- Aquarium
- Acclimation

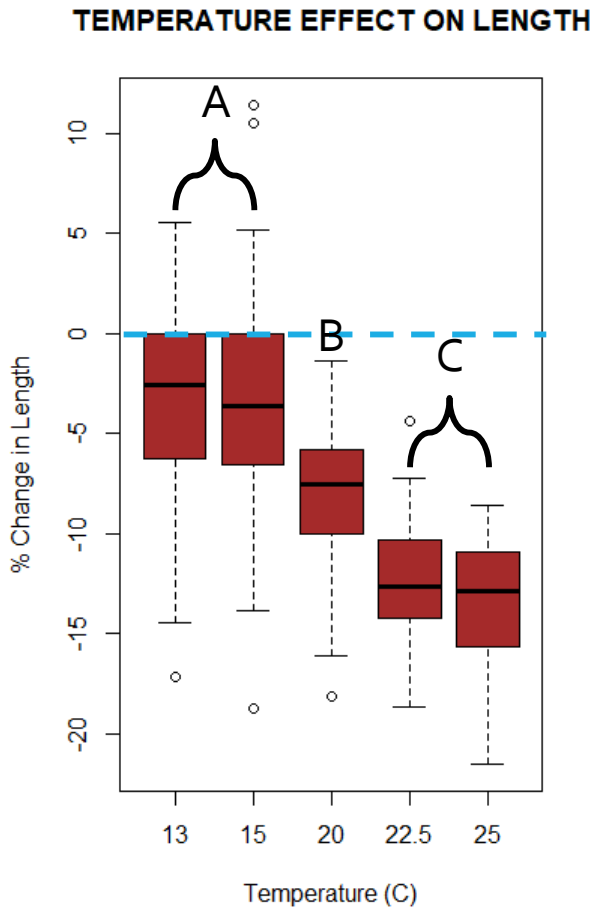
Treatment
- ↑ Temp
- Measure

Response
- Growth
- Metabolism

Results


TEMPERATURE EFFECT ON METABOLISM
Mass Specific Metabolic Rate (mg/O2/kg/hr)
50
100
150
200
A
B
C
13
15
20
22.5
25
Temperature (C)


TEMPERATURE EFFECT ON MASS
% Change in Mass
0
-10
-20
-30
-40
-50
-60
A
B
C
13
15
20
22.5
25
Temperature (C)

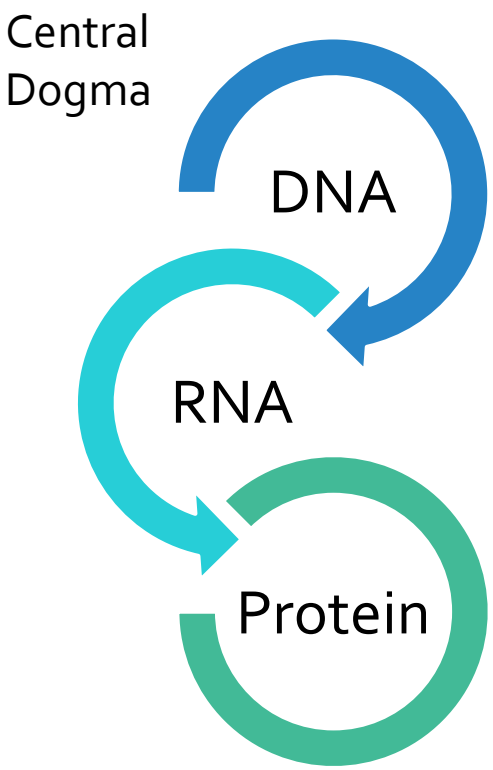

TEMPERATURE EFFECT ON LENGTH
% Change in Length
10
5
0
-5
-10
-15
-20
A
B
C
13
15
20
22.5
25
Temperature (C)

Summary

How do larval Pacific lamprey respond to chronic temperature stress?

- ↓ Development
- ↑ Metabolism

RNA Sequencing



Why: Whole Organismal Response

How: Center of Genome Research & Bio Commuting

What: Differential gene expression

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Questions

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