FISH PEE: THE EFFECTS OF HANDLING STRESS AND FASTING ON EXCRETION RATES

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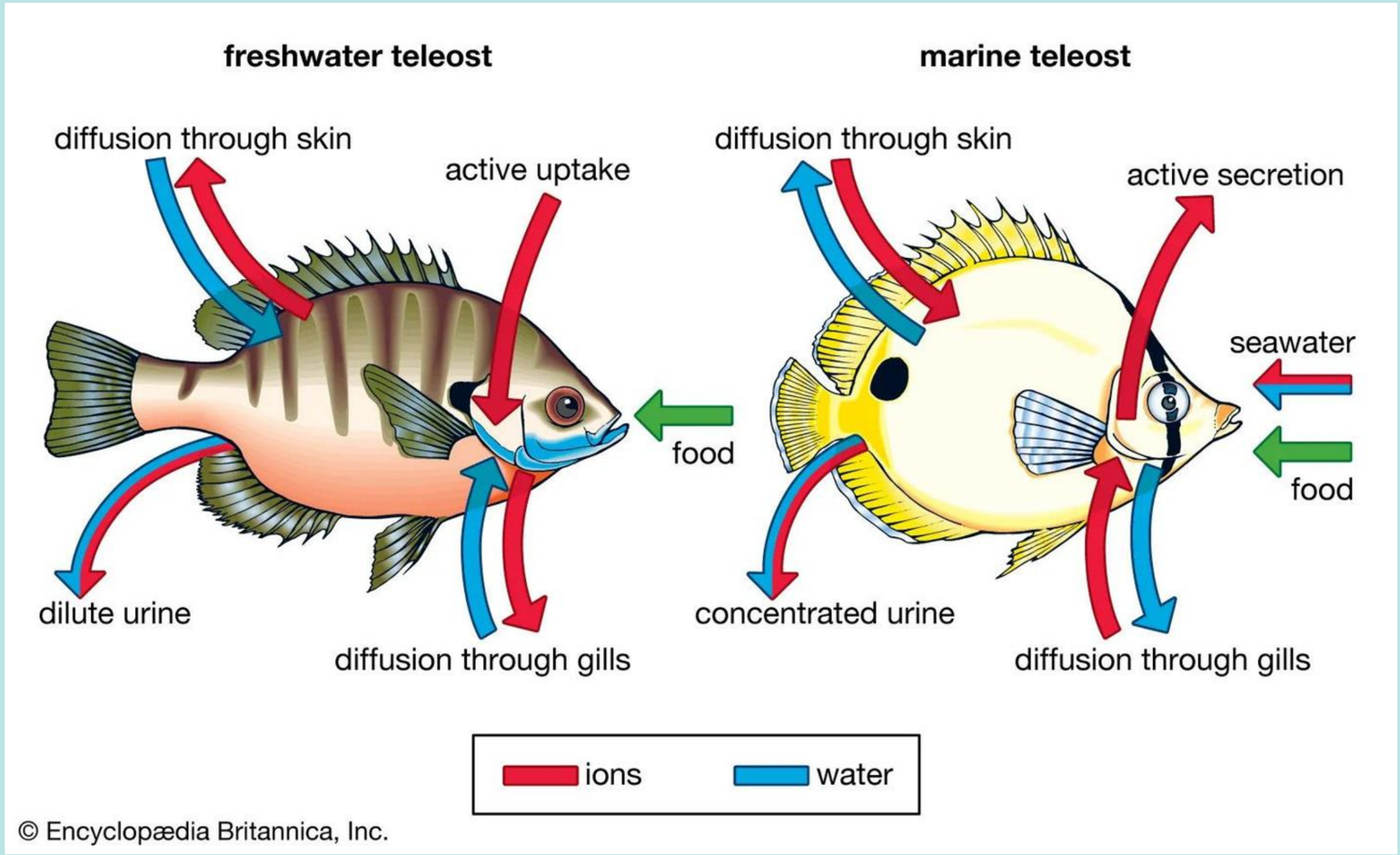
FISH EXCRETION (PEE)

Nutrients like nitrogen and phosphorus are excreted through the gills and kidneys.



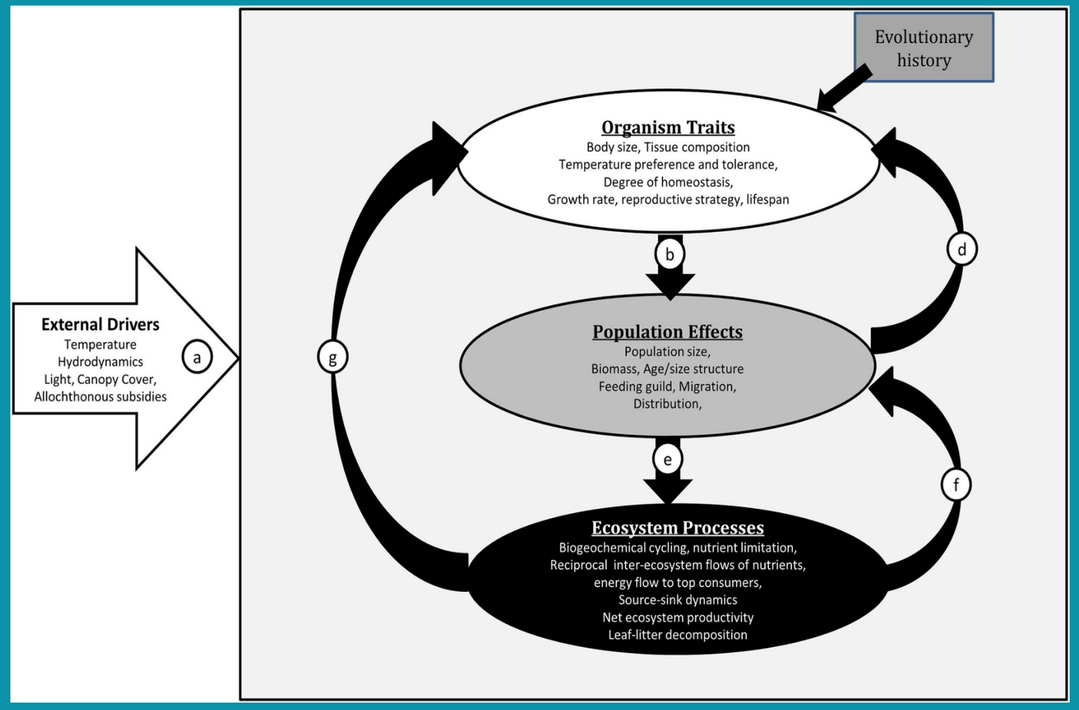
WHY IS FISH PEE IMPORTANT?

Consumer-Driven Nutrient Dynamics

Excretion Rates

Ecosystem processes

Bottom-up pathways



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PREVIOUS STUDIES HAVE:

Studied excretion rates in freshwater temperate species

Determined the effects of handling stress and fasting

Identified a 30min incubation period

OBJECTIVES

- Quantify nitrogen excretion on three species of the snapper; *Lutjanidae* family.

- Determine the effects of handling stress and fasting on excretion rates.

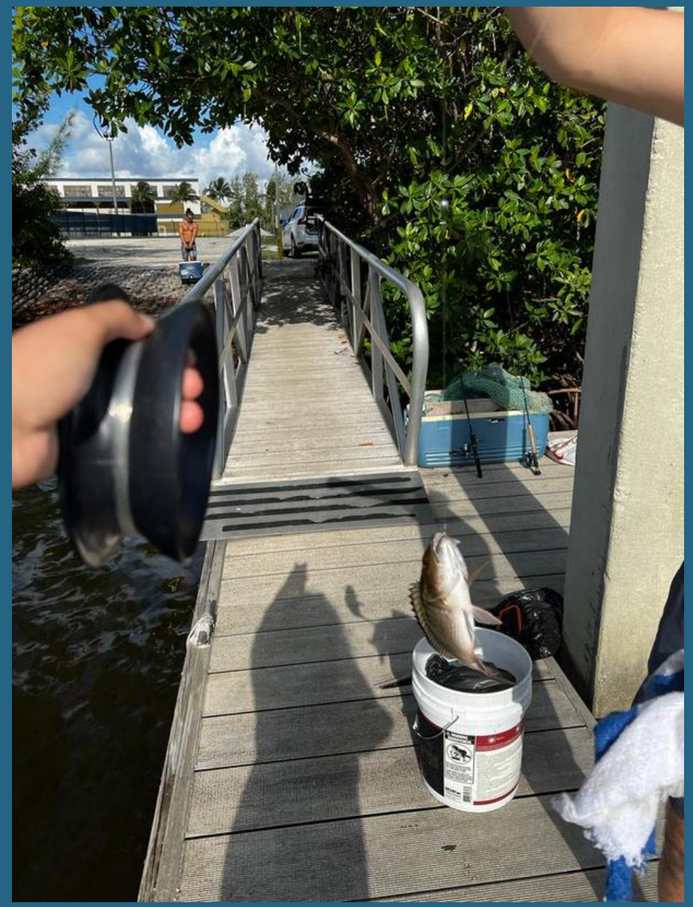
Schoolmaster snapper; *Lutjanus apodus*

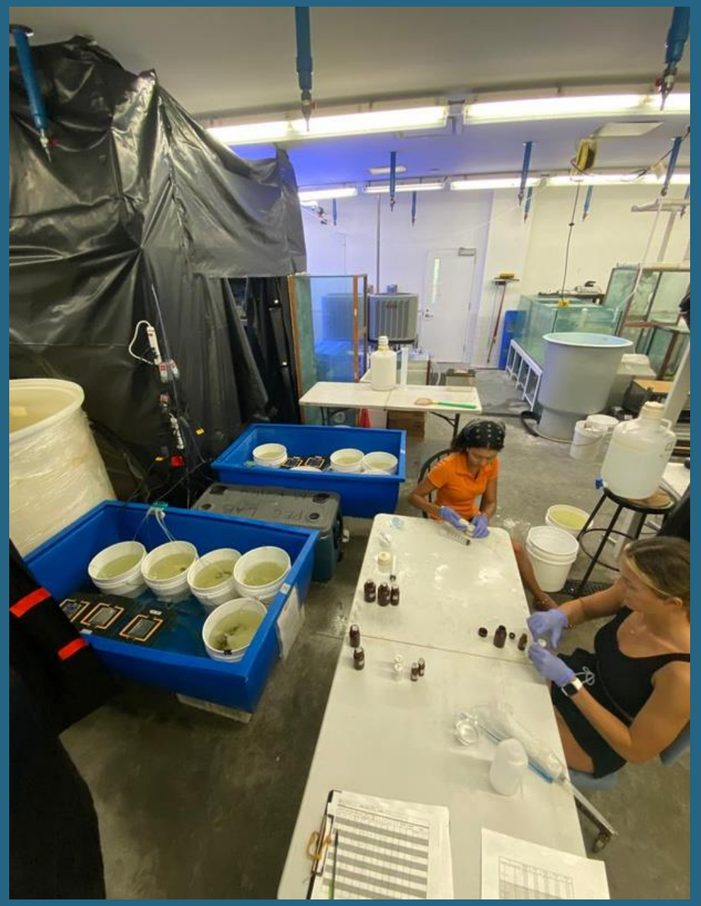
Mangrove snapper; *Lutjanus griseus*

Cubera snapper; *Lutjanus cyanopterus*

METHODS:


FL 836 Toll
Miami
Kendall
Biscayne
National
Park
Homestead
Florida City





METHODS:

RESULTS:

- No significant effect on fasting.
- Significant effect of handling stress resulting in a decrease over time.

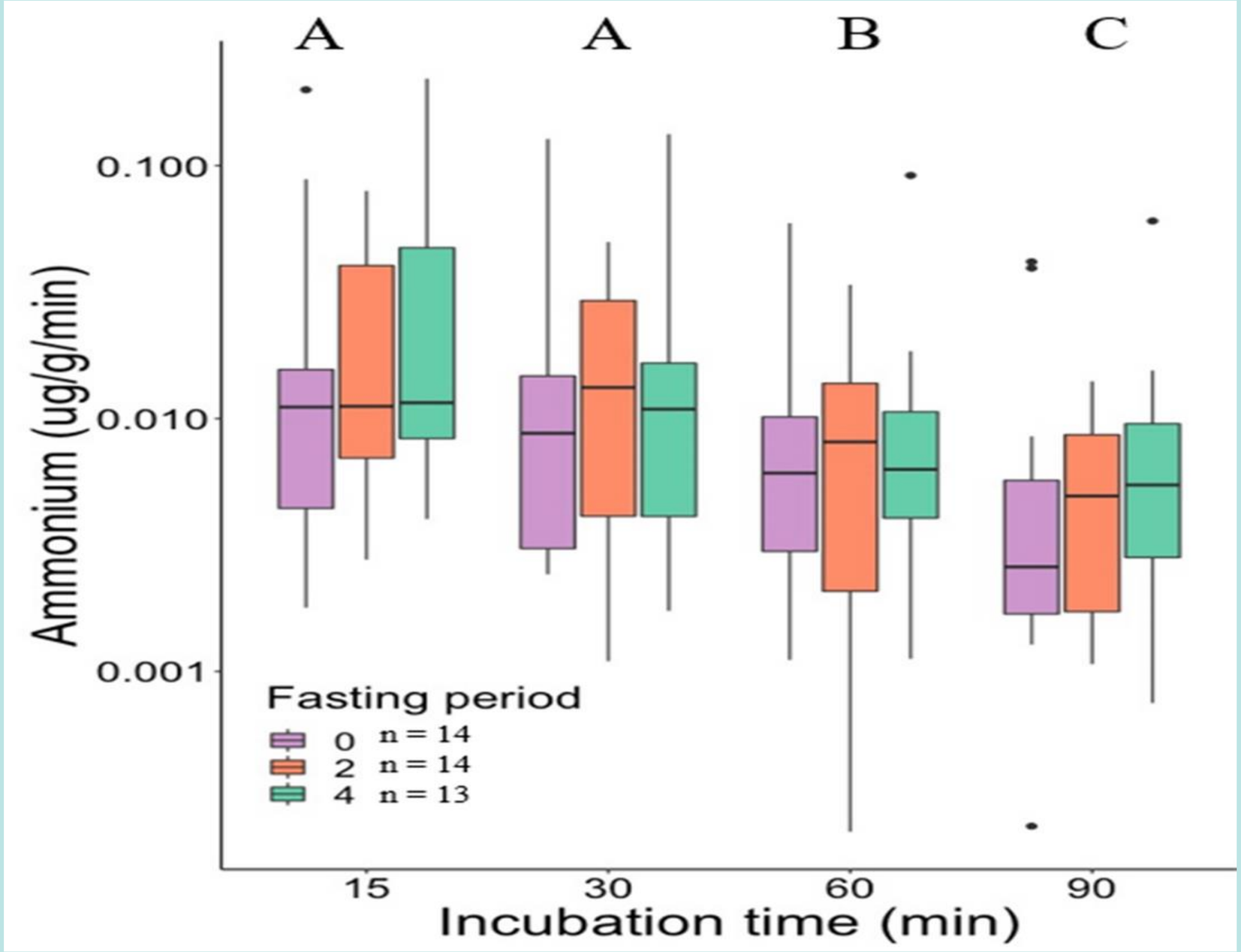


Figure 1. Fasting treatments at incubation time at 15,30,60, and 90 minutes per the ammonium absorbance in (ug/g)/min in a log scale. Groups with distinct lettering are significantly different based on ranked transformed posthoc test. Significant difference between 15 and 90 minutes (P = .00) and 30 and 90 minutes (P = .01).

HANDLING STRESS ON EXCRETION RATES

- When fish are under handling stress, their excretion rates increases.
- When they start acclimating to their environment stress levels decline and so does excretion rates.
- We suggest a 60min incubation period for these species.
- A 30min incubation period, would be overestimating the values.

FASTING ON EXCRETION RATES

- Fasting at 0,2,4 hours does not affect excretion rates.
- We predict that these fasting treatments were not long enough to affect nitrogen excretion.
- Future studies can use longer fasting treatments to determine the effects on excretion.

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