

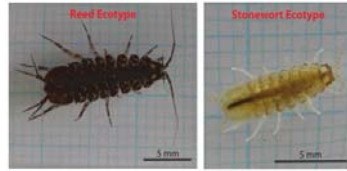
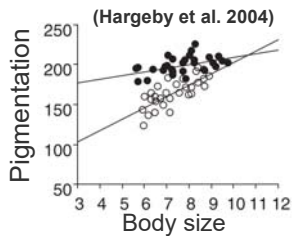
# Adaptive population divergence in *Asellus aquaticus*?

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## Background:

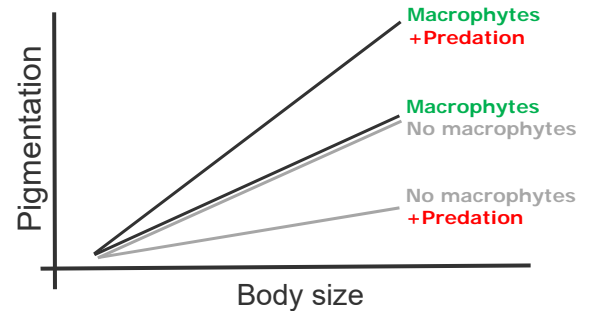
*Asellus aquaticus*, a common freshwater isopod, shows rapid phenotypic divergence in the relationship of body size and pigmentation



Reed habitat → Chara habitat

However, no explicit tests of putative selective agents exist for this system.

**Hypothesis:** Interactive effects of **predation** and **macrophytes** can induce a strong phenotypic response



## Selection experiment

What factors affect the slope of body size and pigmentation in *A. aquaticus*?



6 months

over 4000 phenotyped isopods

1000L mesocosms, Fully factorial design

Macrophytes

No Macrophytes

No fish 30 fish 60 fish

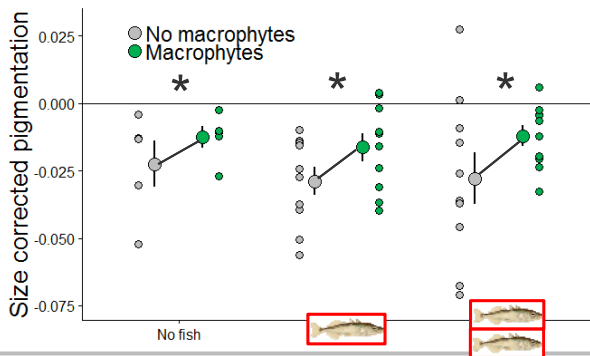
## RESULT 1:

Fish **predation** greatly reduces isopod densities, but **macrophytes** increase survival



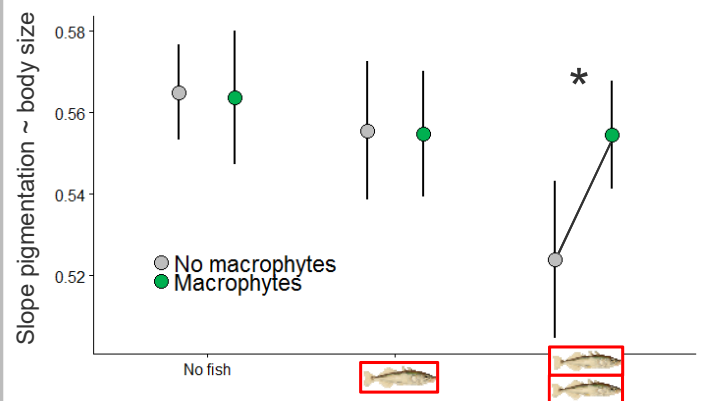
## RESULT 2:

Isopods are stronger pigmented in the presence of **macrophytes**. This difference in pigmentation increases with **predator** density



## RESULT 3:

Under high **predator** density and in the absence of **macrophytes**, the slope of the relationship between body size and pigmentation decreases.



## Summary:

**Predation** has a strong effect on isopod densities, which is mediated by **macrophytes**. As hypothesized, interactions between selective agents can induce rapid phenotypic responses in populations of *Asellus aquaticus*.



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