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 (Hargeby et al. 2004)

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*?

**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*.