Ecological effect of evolution in pitcher plant rotifers as a response to temperature stress

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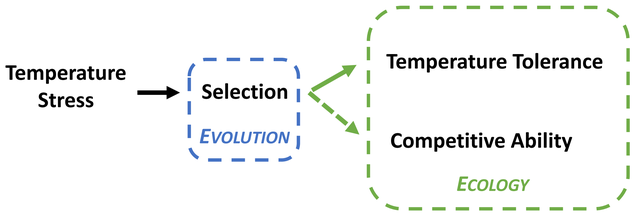
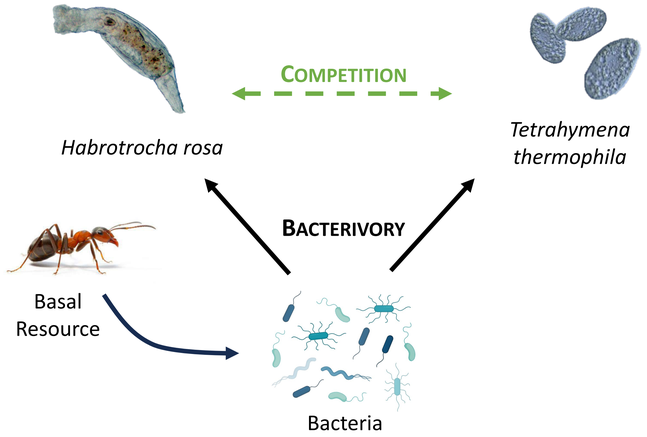
Background

Evolution over short time periods can have an important impact on ecology. Changes in traits that are important for interspecies interactions might lead to fundamental changes in those interactions.



I will use the community of organisms that live inside the water-filled leaves of the purple pitcher plant, *Sarracenia purpurea*.



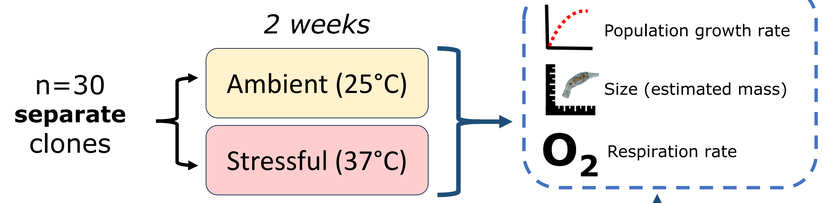
Aim

How does rotifer evolution in response to temperature alter how rotifers interact with other species?

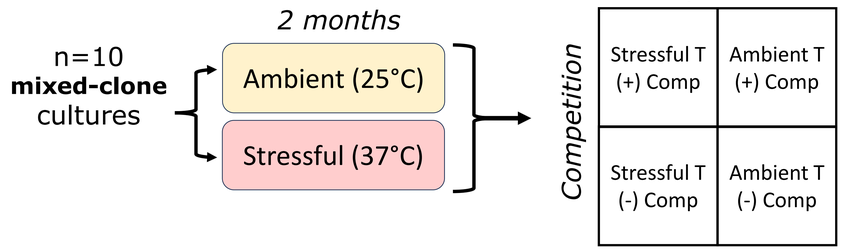
Methods

Rotifers collected from the Apalachicola National Forest in northern Florida will be isolated into clonal families for use in two experiments:

(1) Potential for microevolution



(2) Evolutionary history and competition



Expected Outcomes

Potential for microevolution

H_1: Clones will respond differently to increased temperature, indicating potential for selection.

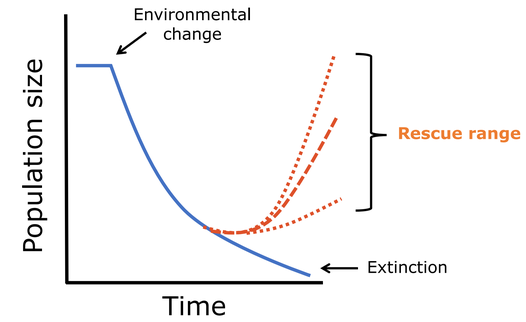
Evolutionary history and competition

$H_{2.1}$: Selection will occur as certain clones are more successful at stressful temperature.

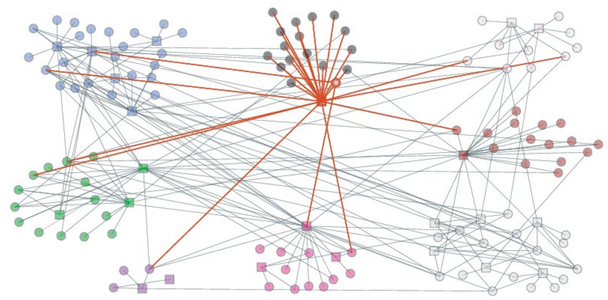
$H_{2.2}$: Evolutionary history of temperature will cause a change in competitive ability.

Significance

The efficacy of **evolutionary rescue** is likely influenced by ecologically relevant traits.



If interactions matters at one level above pairwise, it's likely that multi-leveled complexity can have broader impacts.



Guimãraes et al., 2011