

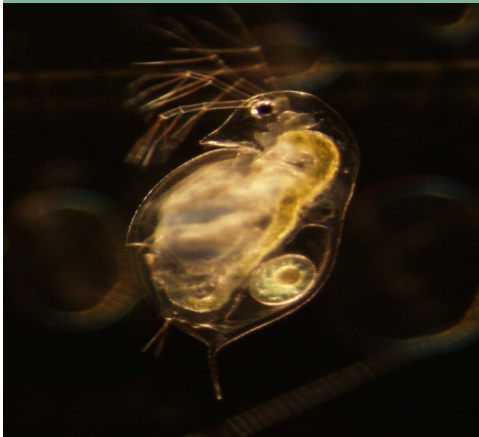
What factors affect the ability of a non-native species to invade?

Juliana Ilmain

Searle Lab

An invasive species can impact many aspects of a community, including disease dynamics and native species density. How does food availability and disease presence influence the potential for an invasive species to establish its population in a non-native environment?

Native Species:
Daphnia dentifera



Invasive Species:
Daphnia lumholtzi



An adult *D. dentifera* infected with the fungal parasite *Metschnikowia bicuspidata*



Methods

D. dentifera were given four treatments before *D. lumholtzi* were introduced:

- Low food levels, unexposed
- High food levels, unexposed
- Low food levels, exposed to parasite
- High food levels, exposed to parasite

Populations were sampled to determine which conditions allowed for a more successful establishment of the invasive species

Results

- Invasive species are most successful when the native population has reduced competitive ability due to disease presence, not when there are optimal conditions for the invasive species
- Populations with an abundance of resources and absence of disease are most resistant to invasive species
- Communities faced with negative environmental factors are more vulnerable to invasive species

Ratio of *D. lumholtzi* to *D. dentifera*

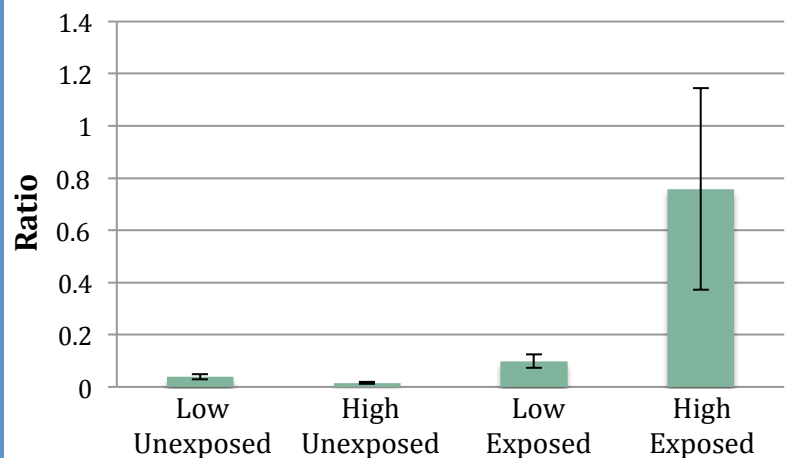


Figure 1: The ratio of invasive individuals to native individuals during the final week of sampling (\pm SE).