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Grace Kotnik, Lisa Morales, Bastiaan Willem Ibelings, Mridul Thomas, Alena Gsell, Dedmer van de Waal

Please see below for the poster.

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Sinking Stars: Experimental Design for Sinking Rates of Chytrid Infected Diatom *Asterionella formosa*

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INTRODUCTION

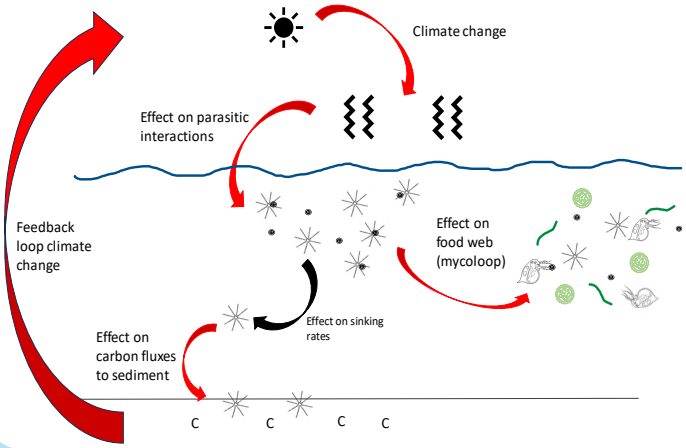
Asterionella formosa

- Cell size range 40-60µm length and 3.5µm width
- Refuge (< 2-5 °C) from infection

Chytrid Fungi

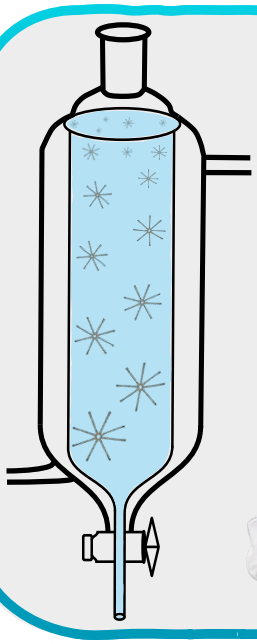
- Parasites causing recurring epidemics
- >90% prevalence

Warmer winters enable Chytrids to grow throughout winter, preventing *Asterionella* blooms and altering sinking rates



Climate change impacts on host-parasite and ecological interactions

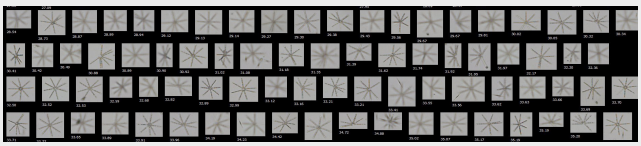
SINKING EXPERIMENT METHOD



Material:

- 500mL Jacketed graduated addition funnel
- Filtering Unit (0.22 µm)
- Phytoplankton net sample (50ml)
- Small Falcon tubes
- Filtered lake water
- Pump system
- Water bath
- Tape measure

Aim: Track changes in sinking rates across season and fungal epidemics in a natural population



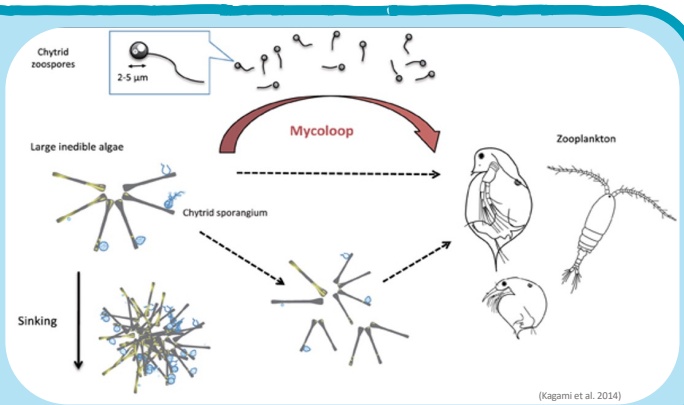
Protocol:

- Set up water circulation through jacket
- Add 475 mL of filtered lake water in the column and wait for it to be isothermal
- Carefully add 25ml of phytoplankton net sample on the top of the column
- Take 50ml from the tap in 20 min intervals until empty and note height

ANTICIPATED OUTCOMES

H1: When infection prevalence is high, sinking rates will increase, given that dead cells have increased sinking velocities and that aggregates can form.

H2: When infection prevalence is high, colonies will fragment, and cells will become available for consumption by zooplankton, decreasing the abundance of sinking colonies.



Role of Chytrids and *Asterionella* within the Mycoloop

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