

README

Name of Dataset: Salinization and the toxic alga *Prymnesium parvum* parvum suppress freshwater rotifers across experimental scales

Description

This data package contains data and code supporting the work:
Salinization and the toxic alga *Prymnesium parvum* parvum suppress freshwater rotifers across experimental scales

The dataset investigates the effects of salinization on two rotifer species, *Keratella cochlearis* and *Lepadella patella*, during a mesocosm experiment. Experiments were performed to determine the tolerance of rotifers to salinization as well as the impact of the combined stressors of salinity and toxic *P. parvum* addition.

Creators or Authors

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Dataset Context

The dataset was collected for the purpose of investigating the effects of salinization and toxic *P. parvum* on rotifers in a natural plankton community. Land-based mesocosms were used to treat a natural lake plankton community to 4 levels of salinity and 2 productivity levels. The abundance of the 2 most prevalent rotifer species was monitored in the mesocosms over 34 days. Additionally, dialysis bags were incubated as microcosms inside the mesocosms with the addition of *P. parvum* to determine the effect of the combined stressors of salinity and the toxin producing alga *P. parvum*. Lastly, a short-term well-plate assay was used at the end of the microcosm incubation to assess more specifically the toxicity of *P. parvum* after incubation with the plankton community. Water from each microcosm was incubated in a well plate with *Keratella cochlearis* and survival of the rotifers were determined after 24 hours.

We hypothesized that (1) increasing salinity would reduce rotifer abundance; (2) nutrient enrichment would alter rotifer dynamics by boosting primary consumers; and (3) exposure of rotifers to *P. parvum* would add to the negative salinity effects on rotifer survival. For full methodological details and interpretation of results, please see the publications Glenn et al., in prep and Ptacnik et al., in prep.

File Format and Data Structure

Raw data is stored in xlsx files as follows.

'meso_rotifers.xlsx' - abundance data of rotifers in the mesocosms over 34 days

'prymnesin_detection.xlsx' - detection of prymnesin in samples from the dialysis bags after 2 weeks incubation

'rotifers_invasion.xlsx' - abundance of rotifers in the dialysis bags after 2-weeks incubation with or without the addition of *P. parvum*

'well_plate.xlsx' - survival of *K. cochlearis* in a well plate after 24 h exposure to water from the dialysis bags after 2-weeks incubation.

Variables are described in detail in the accompanying data dictionaries. R code for the statistical analysis of the data is stored in one R script named 'script_aquacoscsm' which includes comments to describe each step performed.

Usage Rights

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