

Metadata for: High-resolution spatiotemporal measurement of diel vertical migration in zooplankton shows size-specific responses to variable natural light conditions

Authors

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Description

This dataset contains high-resolution spatiotemporal measurements of diel vertical migration (DVM) in zooplankton under varying natural light conditions. The data were collected from Lake Stechlin, Germany in 2022 and include depth-stratified concentrations of zooplankton species (Cladocera and Copepoda) categorized by size class. The dataset also includes concurrent environmental variables such as temperature, chlorophyll-*a* concentration, moon phase, and modelled underwater illumination. These data provide insight into size-specific responses of zooplankton DVM under different light conditions, contributing to our understanding of natural light-driven behaviours in aquatic ecosystems.

Included Files

- "Dickerson_et_al_ZP_ML.csv" – Dataset used for analysis

File: "Dickerson_et_al_ZP_ML.csv": Explanation of Included Variables

Column Name	Description
RecordID	Unique identifier for each row
ProfileID	Unique identifier for each measurement profile
DateStart	Start date of recordings (YYYYMMDD)
Date	Actual date of the recording (YYYYMMDD, as recordings extend past midnight)
TimePeriod	Time period classification (factor): Daylight, Civil Twilight, Nautical Twilight, Astronomical Twilight, or Night
Time	Start time of measurement (HH:MM); a full measurement took ~4 minutes
Depth	Depth at which the recording was taken (numeric, meters)
Species	Zooplankton species recorded (factor): Cladocera or Copepod
SizeClass	Size category of zooplankton (factor): 1 = small, 2 = medium, 3 = large
Concentration	Zooplankton concentration within the 10 cm sampling bin (numeric, ind*L ⁻¹)
Hr_since_sunset	Number of hours since sunset (factor)
L01_measurement_ID	Unique identifier for the environmental probe measurement linked to environmental data
ChlorA_concentration	Chlorophyll- <i>a</i> concentration (numeric, µg L ⁻¹)
Temperature	Water temperature at the corresponding depth (numeric, °C)
Oktas	Cloud cover recorded in oktas (factor; proportion of sky covered in eighths)
MoonPhase	Moon phase at time of measurement (factor: New Moon, Full Moon)
MoonAltitude	Altitude of the moon at time of measurement (numeric; data sourced from www.timeanddate.com)
Illumination_underwater	Modelled underwater illuminance at measurement depth (numeric, lx)
PC	Phycocyanin concentration at measurement depth (numeric, µg L ⁻¹)
PE	Phycoerythrin concentration at measurement depth (numeric, µg L ⁻¹)