

# Lake Constance food web general ecological patterns- Lake Constance data documentation

Updated 09/10/2019

Authors: Ursula Gaedke, Alice Boit

**Lake name:** Lake Constance

**Contact person:** Professor Dr. Ursula Gaedke (gaedke@uni-potsdam.de), Institute of Biochemistry and Biology, University of Potsdam, Maulbeerallee 2, 14469 Potsdam

## Sampling site

Lake Constance (LC) is a temperate, large (476 km<sup>2</sup>), deep (mean depth = 101 m, max. depth 252 m), and warm-monomictic lake north of the European Alps of glacial origin. It has weak pelagic-benthic coupling, and little allochthonous input into the pelagic zone. The focal measuring site is in the north-western fjord-like arm of the lake (mean depth ca. 100 m, max. depth 146 m).

## Dataset overview

**Filename:** Journal.pone.0090404.s002.xlsx

This dataset contains the biomasses of all major trophic groups in Lake Constance, averaged across the years 1987-1996. In addition, it contains other ecologically relevant datasets such as the averaged size spectrum, carbon and phosphorus flows averaged across the same period. The carbon and phosphorus flows are also available from another, separate data package in LakeBase, where they are fully time-resolved (per year and per phase).

This dataset serves to show general, overarching ecological patterns in food web dynamics of this lake. This is the same dataset as published in Boit & Gaedke (2014). For a full documentation, please see there.

**Filename:** Biomass\_22guilds\_8796.xlsx

These are the actual measurements of biomasses for 22 trophic guilds of the plankton community, ranging from bacteria to crustaceans from 1987-1996. Please see worksheet Species2Number in this Excel file for translating the group numbers into names of functional groups. This file is the basis from which the averaged biomass data in Boit & Gaedke (2014) was created from using a spline interpolation. The measurement dates were projected onto a normalized time axis spanning an average year in Lake Constance.

**PhytoplanktonGraphsLC.pptx**

These are plots of well-edible vs. less-edible algae groups in Lake Constance, shown as averages and for single years. These plots give an impression of the inter-annual variability and consistency of overarching dynamic patterns in the seasonal phytoplankton development.

## References

Boit, A. & U. Gaedke (2014) Benchmarking Successional Progress in a Quantitative Food Web. *PLoS One* 9(2): e90404