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Physical, biogeochemical, and biological data for Lake Tanganyika (2017–2018) for the lake-wide cruises in September/October 2017 and April/May 2018

Dataset

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Metadata tables¹ for the data set 'Physical, biogeochemical, and biological data for Lake Tanganyika'

Table 1. Description of the discrete sample data set from the lake-wide cruise at Lake Tanganyika in September/October 2017.

Title of dataset	Nutrient, photo-pigment, and phytoplankton community data of Lake
	Tanganyika during the end of the cool dry season 2017
Keywords	Cyanobacterial blooms, diatom-diazotroph association, oligotrophic,
	stratification, phycocyanin, phycoerythrin, Lake Tanganyika, phytoplankton
Lead author for the dataset	Benedikt Ehrenfels
Title and position of lead	Doctoral researcher
author	
Organization and address of	Eawag, Seestrasse 79, 6047 Kastanienbaum, Switzerland
lead author	
Email address of lead author	<u>benedikt.ehrenfels@eawag.ch</u>
Additional authors or	Bernhard Wehrli, Athanasio S. Mbonde
contributors to the dataset	
Organization associated with	Swiss Federal Institute of Aquatic Science and Technology (Eawag), ETH
the data	Zürich, Tanzania Fisheries Research Institute (TAFIRI)
Funding	Bernhard Wehrli, From biogeochemistry to the ecological genomics of
	pelagic fish stocks - a study across 4 trophic levels , SNSF, 166589
License	CC BY 4.0
Geographic location – verbal	Lake Tanganyika (Tanzania, regions Kigoma, Katavi, Rukwa)
description	
Geographic coverage	-4.50 °N, 29.47 °E to -8.52 °N, 31 °E
bounding coordinates	
Time frame - Begin date	28. September 2017
Time frame - End date	8. October 2017
General study design	Lake-wide cruise aiming at sampling the pelagic of Lake Tanganyika during
	the end of the dry season. We collected vertical CTD profiles in combination
	with discrete water sampling at 9 stations from the North to the South of
	the lake.
Methods description	For each station, the sampling of all parameters was usually carried out
	within one day, whereas we spent two days at stations 2 and 7 to sample
	for additional analyses. The discrete water samples were collected with 20
	or 30 L Niskin bottles (General Oceanics and Ocean Test Equipment). We
	estimated the depth of the discrete samples by equipping the lowest sample
	of each cast with a pressure sensor (RBR XR-420-CTD) and interpolated
	linearly to the water surface. Nutrient and photo-pigment analyses were
	carried out on-board, while the phytoplankton samples were fixed with
	Lugol solution, stored dark, and analysed at land-based laboratory facilities.
	Seston N and P content was determined at land-based facilities.

¹ This document liberally borrows from a template provided by the Environmental Data Initiative and L&O letters

Laboratory, field, or other analytical methods	Standard methods of nutrient analysis (Grasshoff et al., 1999, Methods of seawater analysis; Holmes et al., 2011, Can. J. Fish. Aquat. Sci. 56: 1801–
	1808. doi:10.1139/f99-128; Schnetger & Lehners, 2014, Mar. Chem. 160: 91–98. doi:10.1016/j.marchem.2014.01.010), pigment analysis (Wasmund et al., 2006, Oceanologia, 48: 125–144), and phytoplankton community analysis.
	A more detailed description can be found in the associated open-access publications:
	Ehrenfels et al. (2020): Thermocline depth and euphotic zone thickness regulate the abundance of diazotrophic cyanobacteria in Lake Tanganyika, Biogeosciences Discuss., doi:10.5194/bg-2020-214, 2020.
	Callbeck, Ehrenfels, et al. (2021): Anoxic chlorophyll maximum enhances local organic matter remineralization and nitrogen loss in Lake Tanganyika, Nat. Commun., 12(830), doi:10.1038/s41467-021-21115-5.
	Ehrenfels et al. (2021): Diazotrophic cyanobacteria are associated with a low nitrate resupply to surface waters in Lake Tanganyika, Front. Environ. Sci., 9, 277, doi:10.3389/fenvs.2021.716765.
	Ehrenfels et al. (2023): Isotopic signatures induced by upwelling reveal regional fish stocks in Lake Tanganyika, PLoS One, doi:10.1371/journal.pone.0281828.
Taxonomic species or groups	Phytoplankton taxa including the classes chlorophyceae, dinophyceae, euglenophyceae, bacillariophyceae, and cyanophyceae
Quality control	Standard calibration, replicate measurements, determination of detection limits
Additional information	<i>If concentration measurements were below detection limit, the value was set to 0.</i>
	Nutrient concentration values well below the typical detection limits (0.22, 0.34, 0.20, and 0.03 µmol/L on average for phosphate, ammonium, nitrate, and nitrite, respectively) should be used with care, especially for quantitative analyses. We chose to include concentration values well below the calculated detection limit, if they were distinctly different from the blank values and associated to major water column features (surface, chlorophyll maximum, nutrient concentration gradients) and thus, might provide a qualitative insight into processes related to those features.
	Note that abundances of colony-forming cyanobacteria (Anabaenopsis, Dolichospermum, and Microcystis) are provided as both, numbers of colonies as well as number of cells (calculated based on mean number of cells in colonies).

Table 2. Metadata of variables contained in the discrete sample data set from the lake-wide cruise at Lake Tanganyika in September/October 2017 explained in Table 1.

Dataset filename: *samples_sep-oct_2017.csv*

Dataset description: Concentrations of nutrients and photo-pigments as well as phytoplankton abundance data from the lake-wide cruise at Lake Tanganyika in September/October 2017 as explained in Table 1.

Column name	Description	Units	Missing data code
date	Sampling date	DD.MM.YY YY	
station	Station name	none	
latitude	Station latitude	° North	
longitude	Station longitude	° East	
depth	Sampling depth (estimated via pressure sensor)	m	
PO4	Measured phosphate concentration	µmol L ⁻¹	blank
NH4	Measured ammonium concentration	µmol L ⁻¹	blank
NO3	Measured nitrate concentration	µmol L ⁻¹	blank
NO2	Measured nitrite concentration	µmol L ⁻¹	blank
NP	Molar dissolved inorganic nitrogen versus phosphate ratio	molar ratio	blank
N_def	Nitrogen deficit calculated as 16 * PO4 – (NH4 + NO3 + NO2)	µmol L ⁻¹	blank
seston_NP	Molar nitrogen versus phosphate ratio of seston	molar ratio	blank
DOC	Measured dissolved organic carbon concentration	mg C L ⁻¹	blank
d15N-POM	δ^{15} N of particulate organic matter	‰	blank
d13C-POM	δ^{13} C of particulate organic matter	‰	blank
Chl	Measured extracted chlorophyll a concentration	µg L⁻¹	blank
PE	Measured extracted phycoerythrin concentration	µg L⁻¹	blank
PC	Measured extracted phycocyanin concentration	µg L⁻¹	blank
Botrococcus_braunii	Measured abundance of <i>Botrococcus braunii</i> (class Chlorophyceae)	cell mL ⁻¹	blank
Dictyosphaerium_pulch ellum	Measured abundance of Dictyosphaerium pulchellum (class Chlorophyceae)	cell mL ⁻¹	blank
Dictyosphaerium_sp	Measured abundance of Dictyosphaerium sp (class Chlorophyceae)	cell mL ⁻¹	blank
Gloeocystis_gigas	Measured abundance of <i>Gleocystis</i> gigas (class Chlorophyceae)	cell mL ⁻¹	blank
Gloeocystis_sp	Measured abundance of <i>Gleocystis sp</i> (class Chlorophyceae)	cell mL ⁻¹	Blank

Oocystis_lacustris	Measured abundance of <i>Oocystis</i>	cell mL ⁻¹	blank
Oocystis solitaria	Measured abundance of <i>Oocystis</i>	cell mI ⁻¹	blank
oooystis_sontana	solitaria (class Chlorophyceae)		bidink
Oocystis sp	Measured abundance of <i>Oocystis</i>	cell ml ⁻¹	blank
	<i>sp</i> (class Chlorophyceae)		
Scenedesmus sp	Measured abundance of	cell mL ⁻¹	blank
	Scenedesmus sp (class		
	Chlorophyceae)		
Spirogyra sp	Measured abundance of Spirogyra	cell mL ⁻¹	blank
	<i>sp</i> (class Chlorophyceae)		
Staurastrum_sp	Measured abundance of	cell mL ⁻¹	blank
	Staurastrum sp (class		
	Chlorophyceae)		
Glenodinium_sp	Measured abundance of	cell mL ⁻¹	blank
	Glenodinium sp (class		
	Dinophyceae)		
Peridium_sp	Measured abundance of Peridium	cell mL ⁻¹	blank
	sp (class Dinophyceae)		
Trachelomonas_sp	Measured abundance of	cell mL ⁻¹	blank
	Trachelomonas sp (class		
	Euglenophyceae)		
Trachelomonas_volvoci	Measured abundance of	cell mL ⁻¹	blank
na	Trachelomonas volvocina (class		
	Euglenophyceae)		
Amphora_calumeticoid	Measured abundance of Amphora	cell mL ⁻¹	blank
es	calumeticoides (class		
	Bacillariophyceae)	1	
Aulacoseira_sp	Measured abundance of	cell mL-1	blank
	Aulacoseira sp (class		
Cueletelle en	Bacillariophyceae)	a all mat -1	hlank
Cyclotella_sp	ineasured abundance of <i>Cyclotella</i>	cell mL -	DIANK
Cumballa ca	Sp (class Bacillanophyceae)	coll ml ⁻¹	blank
Cymbelia_sp	sp (class Pacillariophycoao)	Cell IIIL	DIdlik
Enithomia cn	Mossured abundance of Enithemia	coll ml ⁻¹	blank
cpitherina_sp	sp (class Pacillariophycoao)	Cell IIIL	DIdlik
Fragilaria sp	Measured abundance of Ergailaria	cell ml ⁻¹	blank
	sn (class Bacillarionhyceae)	Cell IIIL	DIdilk
Navicula sn	Measured abundance of <i>Navicula</i>	cell mI ⁻¹	blank
Nuvicula_sp	sp (class Bacillariophyceae)	Cell IIIE	biunit
Nitzschia acicularis	Measured abundance of <i>Nitzschig</i>	cell ml ⁻¹	blank
	<i>acicularis</i> (class Bacillariophyceae)		
Nitzschia asterionoides	Measured abundance of <i>Nitzschig</i>	cell mL ⁻¹	blank
	asterionoides (class		
	Bacillariophyceae)		
Rhopalodia sp	Measured abundance of	cell mL ⁻¹	blank
	Rhopalodia sp (class		
	Bacillariophyceae)		
Stephanodiscus sp	Measured abundance of	cell mL ⁻¹	blank
	Stephanodiscus sp (class		
	Bacillariophyceae)		
Surirella_sp	Measured abundance of Surirella	cell mL ⁻¹	blank
	sp (class Bacillariophyceae)		

Anabaenopsis_tanganyi	Measured abundance of	colony mL	blank
kae_colony	Anabaenopsis tanganyikae (class	1	
	Cyanophyceae)		
Chroococcus_sp	Measured abundance of	cell mL ⁻¹	blank
	Chroococcus sp (class		
	Cyanophyceae)		
Dolichospermum_flos-	Measured abundance of Measured	colony mL ⁻	blank
aquae_colony	abundance of Dolichospermum	1	
	<i>flos-aquae</i> (class Cyanophyceae)		
Dolichospermum_spiroi	Measured abundance of	colony mL ⁻	blank
des_colony	Dolichospermum spiroides (class	1	
	Cyanophyceae)		
Dolichospermum_sp_c	Measured abundance of	colony mL ⁻	blank
olony	Dolichospermum sp (class	1	
	Cyanophyceae)		
Microcystis_sp_colony	Measured abundance of	colony mL ⁻	blank
	Microcystis sp (class	1	
	Cyanophyceae)		
Sphinctosiphon_polym	Measured abundance of	cell mL ⁻¹	blank
orphus	Sphinctosiphon polymorphus (class		
	Cyanophyceae)		
Anabaenopsis_tanganyi	Measured abundance of	cell mL ⁻¹	blank
kae_cell	Anabaenopsis tanganyikae (class		
	Cyanophyceae)		
Dolichospermum_flos-	Measured abundance of Measured	cell mL ⁻¹	blank
aquae_cell	abundance of Dolichospermum		
	flos-aquae (class Cyanophyceae)		
Dolichospermum_spiroi	Measured abundance of	cell mL ⁻¹	blank
des_cell	Dolichospermum spiroides (class		
	Cyanophyceae)		
Dolichospermum_sp_c	Measured abundance of	cell mL ⁻¹	blank
ell	Dolichospermum sp (class		
	Cyanophyceae)		
Microcystis_sp_cell	Measured abundance of	cell mL ⁻¹	blank
	Microcystis sp (class		
	Cyanophyceae)		
Shannon-Wiener	Shannon-Wiener Index based on		blank
	the cell abundance of the		
	phytoplankton community		

Table 3. Description of the CTD profile data set from the lake-wide cruise at LakeTanganyika in September/October 2017.

Title of dataset	CTD data of Lake Tanganyika during the end of cool dry season 2017
Keywords	temperature, water column stability, Lake Tanganyika
Lead author for the dataset	Benedikt Ehrenfels
Title and position of lead	Doctoral researcher
author	
Organization and address of	Eawag, Seestrasse 79, 6047 Kastanienbaum, Switzerland
lead author	

Email address of lead author	benedikt.ehrenfels@eawag.ch
Additional authors or	Bernhard Wehrli, Athanasio S. Mbonde
contributors to the dataset	
Organization associated with	Swiss Federal Institute of Aquatic Science and Technology (Eawag), ETH
the data	Zürich, Tanzania Fisheries Research Institute (TAFIRI)
Funding	Bernhard Wehrli, From biogeochemistry to the ecological genomics of
	pelagic fish stocks - a study across 4 trophic levels , SNSF, 166589
License	CC BY 4.0
Geographic location – verbal	Lake Tanganyika (Tanzania, regions Kigoma, Katavi, Rukwa)
description	
Geographic coverage	-4.50 °N, 29.47 °E to -8.52 °N, 31 °E
bounding coordinates	
Time frame - Begin date	28. September 2017
Time frame - End date	8. October 2017
General study design	Lake-wide cruise aiming at sampling the pelagic of Lake Tanganyika during
	the end of the dry season. We collected vertical CTD profiles in combination
	with discrete water sampling at 9 stations from the North to the South of
	the lake.
Methods description	For each station, the sampling of all parameters was usually carried out
	within one day, whereas we spent two days at stations 2 and 7 to sample
	for additional analyses. We used a Sea-Bird SBE 19plus CTD probe for the
	continuous sensor profiles.
Laboratory, field, or other	Raw data were bin averaged by 0.5 m to remove high frequency noise
analytical methods	caused by waves etc.; Water column stability was calculated as buoyancy
	frequency (N2) using the software SBE Data Processing.
Taxonomic species or	
groups	
Quality control	Regular factory-calibration by Sea-Bird

Table 4. Metadata of variables contained in the CTD profile data set from the lakewide cruise at Lake Tanganyika in September/October 2017 explained in Table 3.

Dataset filename: *bin_avg_ctd_profiles_sep-oct_2017.csv* Dataset description: Bin averaged CTD profiles from the lake-wide cruise at Lake Tanganyika in September/October 2017 as explained in Table 3.

Column name	Description	Units
date	Sampling date	DD.MM.YYYY
time	Eastern African Time at the start of the cast	hh:mm:ss
station	Station name	none
latitude	Station latitude	° North
longitude	Station longitude	° East
depth	Sampling depth	m
temperature	Measured temperature	°C
N2	Calculated buoyancy frequency	s ⁻²

Table 5. Description of the discrete sample data set from the lake-wide cruise atLake Tanganyika in April/May 2018.

Title of dataset	Nutrient, photo-pigment, and phytoplankton community data of Lake
	Tanganyika during the end of the warm rainy season 2018
Keywords	Cyanobacterial blooms, diatom-diazotroph association, oligotrophic,
	stratification, phycocyanin, phycoerythrin, Lake Tanganyika, phytoplankton
Lead author for the dataset	Benedikt Ehrenfels
Title and position of lead	Doctoral researcher
author	
Organization and address of	Eawag, Seestrasse 79, 6047 Kastanienbaum, Switzerland
lead author	
Email address of lead author	<u>benedikt.ehrenfels@eawag.ch</u>
Additional authors or	Bernhard Wehrli, Athanasio S. Mbonde
contributors to the dataset	
Organization associated with	Swiss Federal Institute of Aquatic Science and Technology (Eawag), ETH
the data	Zürich, Tanzania Fisheries Research Institute (TAFIRI)
Funding	Bernhard Wehrli, From biogeochemistry to the ecological genomics of
	pelagic fish stocks - a study across 4 trophic levels , SNSF, 166589
License	CC BY 4.0
Geographic location – verbal	Lake Tanganyika (Tanzania, regions Kigoma, Katavi, Rukwa)
description	
Geographic coverage	-4.50 °N, 29.47 °E to -8.52 °N, 31 °E
bounding coordinates	
Time frame - Begin date	27. April 2018
Time frame - End date	7. May 2018
General study design	Lake-wide cruise aiming at sampling the pelagic of Lake Tanganyika during
	the end of the dry season. We collected vertical CTD profiles in combination
	with discrete water sampling at 9 stations from the North to the South of
	the lake.
Methods description	For each station, the sampling of all parameters was usually carried out
	within one day, whereas we spent two days at stations 2 and 7 to sample
	for additional analyses. The discrete water samples were collected with 20
	or 30 L Niskin bottles (General Oceanics and Ocean Test Equipment). We
	estimated the depth of the discrete samples from the length of the rope due
	to technical problems with the pressure sensor (RBR XR-420-CTD). We
	assume that these estimates slightly overestimate the actual depth
	compared to the method used in the data set from September/October
	2017. Nutrient and photo-pigment analyses were carried out on-board,
	while the phytoplankton samples were fixed with Lugol solution, stored
	dark, and analysed at land-based laboratory facilities. Seston N and P
	content was determined at land-based facilities.
Laboratory, field, or other	Standard methods of nutrient analysis (Grasshoff et al., 1999, Methods of
analytical methods	seawater analysis; Holmes et al., 2011, Can. J. Fish. Aquat. Sci. 56: 1801–
	1808. doi:10.1139/f99-128; Schnetger & Lehners, 2014, Mar. Chem. 160:
	91–98. doi:10.1016/j.marchem.2014.01.010), pigment analysis (Wasmund

	et al. 2006 Oceanologia 18: 125-111) and phytoplankton community
	analysis
	A more detailed description can be found in the associated open-access publications:
	Ehrenfels et al. (2020): Thermocline depth and euphotic zone thickness regulate the abundance of diazotrophic cyanobacteria in Lake Tanganyika, Biogeosciences Discuss., doi:10.5194/bg-2020-214, 2020.
	Callbeck, Ehrenfels, et al. (2021): Anoxic chlorophyll maximum enhances local organic matter remineralization and nitrogen loss in Lake Tanganyika, Nat. Commun., 12(830), doi:10.1038/s41467-021-21115-5.
	Ehrenfels et al. (2021): Diazotrophic cyanobacteria are associated with a low nitrate resupply to surface waters in Lake Tanganyika, Front. Environ. Sci., 9, 277, doi:10.3389/fenvs.2021.716765.
	Ehrenfels et al. (2023): Isotopic signatures induced by upwelling reveal regional fish stocks in Lake Tanganyika, PLoS One, doi:10.1371/journal.pone.0281828.
Taxonomic species or	Phytoplankton taxa including the classes chlorophyceae, dinophyceae,
groups	euglenophyceae, bacillariophyceae, and cyanophyceae
Quality control	Standard calibration, replicate measurements, determination of detection limits
Additional information	<i>If concentration measurements were below detection limit, the value was set to 0</i>
	Nutrient concentration values well below the typical detection limits (0.22, 0.34, 0.20, and 0.03 µmol/L on average for phosphate, ammonium, nitrate, and nitrite, respectively) should be used with care, especially for quantitative analyses. We chose to include concentration values well below the calculated detection limit, if they were distinctly different from the blank values and associated to major water column features (surface, chlorophyll maximum, nutrient concentration gradients) and thus, might provide a qualitative insight into processes related to those features.
	Note that abundances of colony-forming cyanobacteria (Anabaenopsis, Dolichospermum, and Microcystis) are provided as both, numbers of colonies as well as number of cells (calculated based on mean number of cells in colonies).

Table 6. Metadata of variables contained in the discrete sample data set from the lake-wide cruise at Lake Tanganyika in April/May 2018 explained in Table 5.

Dataset filename: *samples_apr-may_2018.csv*

Dataset description: Concentrations of nutrients and photo-pigments as well as phytoplankton abundance data from the lake-wide cruise at Lake Tanganyika in April/May 2018 as explained in Table 5.

Column name	Description	Units	Missing data code
date	Sampling date	DD.MM.YY	
		YY	
station	Station name	none	
latitude	Station latitude	° North	
longitude	Station longitude	° East	
depth	Sampling depth (estimated via rope length)	m	
PO4	Measured phosphate concentration	µmol L ⁻¹	blank
NH4	Measured ammonium concentration	µmol L ⁻¹	blank
NO3	Measured nitrate concentration	µmol L ⁻¹	blank
NO2	Measured nitrite concentration	µmol L ⁻¹	blank
NP	Molar dissolved inorganic nitrogen versus phosphate ratio	molar ratio	blank
N_def	Nitrogen deficit calculated as 16 * PO4 – (NH4 + NO3 + NO2)	µmol L ⁻¹	blank
seston_NP	Molar nitrogen versus phosphate ratio of seston	molar ratio	blank
DOC	Measured dissolved organic carbon concentration	mg C L ⁻¹	blank
d15N-POM	δ^{15} N of particulate organic matter	‰	blank
d13C-POM	δ^{13} C of particulate organic matter	‰	blank
DIC	Measured dissolved inorganic	mg L ⁻¹	blank
d13C-DIC	Measured δ^{13} C of dissolved inorganic carbon	‰	blank
CO2_fix	Experimentally determined CO ₂ fixation rates	nmol C L ⁻¹ d ⁻¹	blank
Chl	Measured extracted chlorophyll a concentration	µg L⁻¹	blank
PE	Measured extracted phycoerythrin concentration	µg L⁻¹	blank
PC	Measured extracted phycocyanin concentration	µg L⁻¹	blank
Dictyosphaerium_pulch ellum	Measured abundance of Dictyosphaerium pulchellum (class Chlorophyceae)	cell mL ⁻¹	blank
Dictyosphaerium_sp	Measured abundance of Dictyosphaerium sp (class Chlorophyceae)	cell mL ⁻¹	blank
Oocystis_lacustris	Measured abundance of <i>Oocystis</i> <i>lacustris</i> (class Chlorophyceae)	cell mL ⁻¹	blank
Oocystis_solitaria	Measured abundance of <i>Oocystis</i> solitaria (class Chlorophyceae)	cell mL ⁻¹	blank
Oocystis_sp	Measured abundance of <i>Oocystis</i> <i>sp</i> (class Chlorophyceae)	cell mL ⁻¹	blank
Glenodinium_sp	Measured abundance of Glenodinium sp (class Dinophyceae)	cell mL ⁻¹	blank

Peridium_sp	Measured abundance of <i>Peridium</i>	cell mL ⁻¹	blank
Trachelomonas sp	Measured abundance of	cell mI ⁻¹	blank
Traditerentinenas_op	Trachelomonas sn (class		
	Fuglenophyceae)		
Amphora calumeticoid	Measured abundance of Amphora	cell mI ⁻¹	hlank
	calumeticoides (class	CENTIL	Diatrix
63	Bacillarionbyceae)		
Aulacoseira sp	Measured abundance of	cell ml ⁻¹	blank
Adiacosella_sp			DIATIK
	Racillarionbyceae)		
Cyclotella, sp	Massured abundance of Cudetalla	coll ml ⁻¹	blank
Cyclotella_sp	sn (class Pacillarionhycoao)		DIdTIK
Curren elle en	Sp (class Bacillanophyceae)	a a II wa I -1	hlank
Cymbella_sp	measured abundance of <i>Cymbelia</i>	cell mL -	Diank
E 111 1	sp (class Bacillariophyceae)		
Epithemia_sp	Measured abundance of Epithemia	cell mL ⁻⁺	blank
	sp (class Bacillariophyceae)		
Fragilaria_sp	Measured abundance of Fragilaria	cell mL ⁻¹	blank
	sp (class Bacillariophyceae)		
Navicula_sp	Measured abundance of Navicula	cell mL ⁻¹	blank
	sp (class Bacillariophyceae)		
Nitzschia_acicularis	Measured abundance of Nitzschia	cell mL ⁻¹	blank
	acicularis (class Bacillariophyceae)		
Nitzschia_asterionoides	Measured abundance of Nitzschia	cell mL ⁻¹	blank
	asterionoides (class		
	Bacillariophyceae)		
Nitzschia_sp	Measured abundance of Nitzschia	cell mL ⁻¹	blank
	sp (class Bacillariophyceae)		
Rhopalodia_sp	Measured abundance of	cell mL ⁻¹	blank
	Rhopalodia sp (class		
	Bacillariophyceae)		
Surirella sp	Measured abundance of Surirella	cell mL ⁻¹	blank
	sp (class Bacillariophyceae)		
Synedra sp	Measured abundance of Synedra	cell mL ⁻¹	blank
,	<i>sp</i> (class Bacillariophyceae)		
Anabaenopsis tanganyi	Measured abundance of	colony l	blank
kae colony	Anabaenopsis tanaanvikae (class	, mL ⁻¹	
_ ,	Cvanophyceae)		
Chroococcus sp	Measured abundance of	cell mL ⁻¹	blank
	Chroococcus sp (class		
	Cvanophyceae)		
Dolichospermum flos-	Measured abundance of Measured	colony ml ⁻	blank
aquae colony	abundance of Dolichospermum	1	
	flos-gauge (class Cyanophyceae)		
Microcystis flos-	Measured abundance of	colony ml ⁻	blank
aquae colony	Microcystis flos-anuae Iclass	1	
	(vanonhyceae)		
Sphinctosiphon polym	Measured abundance of	cell mI ⁻¹	blank
ornhus	Sphinctosinhon nolymorphus (class		Marin
	(class (class)		
Chroococcus sp	Measured abundance of	cell ml ⁻¹	blank
sp	Chrococcus sn (class		Mank
	(vanonbyceze)		
1	Cyanophyceaej	1	

Anabaenopsis_tanganyi	Measured abundance of	cell mL ⁻¹	blank
kae_cell	Anabaenopsis tanganyikae (class		
	Cyanophyceae)		
Dolichospermum_flos-	Measured abundance of Measured	cell mL ⁻¹	blank
aquae_ cell	abundance of Dolichospermum		
	flos-aquae (class Cyanophyceae)		
Microcystis_flos-	Measured abundance of	cell mL ⁻¹	blank
aquae_ cell	Microcystis flos-aquae (class		
	Cyanophyceae)		
Shannon-Wiener	Shannon-Wiener Index based on		blank
	the cell abundance of the		
	phytoplankton community		

Table 7. Description of the CTD profile data set from the lake-wide cruise at LakeTanganyika in April/May 2018.

Title of dataset	CTD data of Lake Tanganyika during the end of the warm rainy season 2018	
Keywords	temperature, water column stability, irradiance, Lake Tanganyika	
Lead author for the dataset	Benedikt Ehrenfels	
Title and position of lead	Doctoral researcher	
author		
Organization and address of	Eawag, Seestrasse 79, 6047 Kastanienbaum, Switzerland	
lead author		
Email address of lead author	<u>benedikt.ehrenfels@eawag.ch</u>	
Additional authors or	Bernhard Wehrli, Athanasio S. Mbonde	
contributors to the dataset		
Organization associated with	Swiss Federal Institute of Aquatic Science and Technology (Eawag), ETH	
the data	Zürich, Tanzania Fisheries Research Institute (TAFIRI)	
Funding	Bernhard Wehrli, From biogeochemistry to the ecological genomics of	
	pelagic fish stocks - a study across 4 trophic levels , SNSF, 166589	
License	CC BY 4.0	
Geographic location – verbal	Lake Tanganyika (Tanzania, regions Kigoma, Katavi, Rukwa)	
description		
Geographic coverage	-4.50 °N, 29.47 °E to -8.52 °N, 31 °E	
bounding coordinates		
Time frame - Begin date	27. April 2018	
Time frame - End date	7. May 2018	
General study design	Lake-wide cruise aiming at sampling the pelagic of Lake Tanganyika during	
	the end of the dry season. We collected vertical CTD profiles in combination	
	with discrete water sampling at 9 stations from the North to the South of	
	the lake.	
Methods description	For each station, the sampling of all parameters was usually carried out	
	within one day, whereas we spent two days at stations 2 and 7 to sample	
	for additional analyses. We used a Sea-Bird SBE 19plus CTD probe for the	
	continuous sensor profiles.	
Laboratory, field, or other	Raw data were bin averaged by 0.5 m to remove high frequency noise	
analytical methods	caused by waves etc.; Water column stability was calculated as buoyancy	
	frequency (N2) using the software SBE Data Processing.	

Taxonomic species or	
groups	
Quality control	Regular factory-calibration by Sea-Bird

Table 8. Metadata of variables contained in the CTD profile data set from the lakewide cruise at Lake Tanganyika in April/May 2018 explained in Table 7.

Dataset filename: *bin_avg_ctd_profiles_apr-may_2018.csv*

Dataset description: Bin averaged CTD profiles from the lake-wide cruise at Lake Tanganyika in April/May 2018 as explained in Table 7.

Column name	Description	Units
date	Sampling date	DD.MM.YYYY
time	Eastern African Time at the start of the cast	hh:mm:ss
station	Station name	none
latitude	Station latitude	° North
longitude	Station longitude	° East
depth	Sampling depth	m
temperature	Measured temperature	°C
conductivity	Measured conductivity	μS cm⁻¹
рН	Measured pH	pH unit
N2	Calculated buoyancy frequency	S ⁻²
PAR	Percent of surface photosynthetically active radiation	%

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