IGB
Leibniz-Institut für Gewässerökologie
und Binnenfischerei

FRESHWATER RESEARCH AND ENVIRONMENTAL DATABASE

Lake Tegel (Berlin)

TEG Measuring Chain

FRED Package 834

In recent years, numerous lakes throughout Germany have been included in a climate impact measurement programme. Long-term climate monitoring that provides continuous series of measurements with high temporal resolution over many years is an essential basis for better understanding the interrelationships in lakes, carrying out trend analyses and developing adaptation strategies from them. In addition to measuring changes, they provide a basis for model-based management scenarios.

Measuring Chain

The measuring chain consists of a rope that is kept in tension by a weight on the bottom and a pressure-resistant buoy located 1-1.5 m below the water surface. The loggers are attached to the rope at fixed intervals.

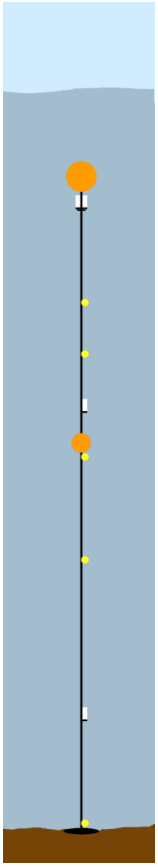


Abb. Scheme of a measurement chain with autonomous loggers

Information about the depth values of the loggers

The depths given indicate the depth below the water surface. However, these can be inaccurate. Due to the anchoring on the bottom, the distances of the loggers from the bottom are always the same, but not when viewed from the surface. In the case of large water level fluctuations this leads to problems as the distance of the loggers to the water surface changes as a result. Since April 2021, a temperature logger is located on a separate surface buoy at a distance of exactly 1m below the water surface.

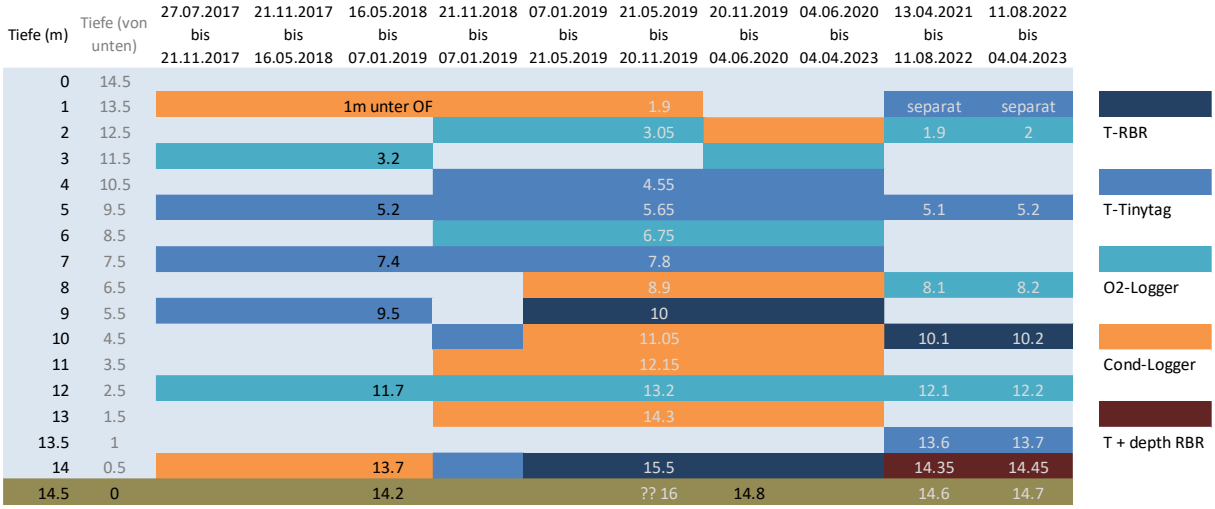
The number and depth of loggers in Lake Tegel have changed several times over the years. Two times measuring chains have been lost and found again years later.

Autonomous datalogger

Logger specifications

Parameter	Name	Genauigkeit	Auflösung	Einsatz-tiefe
temperature	RBRsolo³ von RBR Ltd., Canada	± 0.002°C	<0.00005°C	1700m
depth (+T)	RBRduet³ von RBR Ltd., Canada	±0.05% full scale	<0.001%	
temperature	Tinytag Aquatic 2 TG-4100 von Gemini Data Loggers	± 0.5°C (lt. Hersteller) ± 0.1°C (eigene Er-fahrung)	0.01 °C	500 m
oxygen with temperature	miniDOT von Preci-sion Measurement Engineering (PME)	lt. Hersteller ± 5% ± 0.3 mg/l ± 0.1°C	0.01 mg/L 0.01 °C	100 m
Conductivity (+ T)	Hobo U24-001von On-set	3% des Messwerts	1 µS/cm	70m

Logger depth distribution 2017 bis 2023



Data

Zeitraum 2017-07-27 till 2023-04-04 (planned to be continued)

Sampling Intervall 10 oder 30 oder 60 min.

The data are stored as individual .txt and .csv files in the IGB Cloud Nimbus. A descriptive metadata file is included.

Detail of the descriptive file "TegelerSee_meta".

Ordner	**06 20.11.2019 - 04.06.2020 TEG data**						
Tiefenangaben vom November 2019. Im Juni 2020 0,15m flacher als im Nov.							
Datei	**Logger**	**Parameter**	**Logger-Nr.**	**Tiefe (m)**	**Messintervall**	**Messzeitraum**	**Bemerkungen**
Tinytag580520_4m	Tinytag	T	580520	4	10	20.11.2019 - 04.06.2020	
Tinytag580521_5m	Tinytag	T	580521	5	10	20.11.2019 - 04.06.2020	
Tinytag590716_7m	Tinytag	T	590716	7	10	20.11.2019 - 04.06.2020	
Cat7392-186076_3m	miniDot	T + O2	7392-186076	3	30	20.11.2019 - 04.06.2020	
Cat7392-214312_6m	miniDot	T + O2	7392-214312	6	30	20.11.2019 - 04.06.2020	
Cat7392-218690_12m	miniDot	T + O2	7392-218690	12	30	20.11.2019 - 04.06.2020	
Hobo20480891_3m	HOBO U24-001	T + EC	20480891	3	30	20.11.2019 - 04.06.2020	
Hobo20016165_8m	HOBO U24-001	T + EC	20016165	8	30	20.11.2019 - 04.06.2020	
Hobo20016164_10m	HOBO U24-001	T + EC	20016164	10	30	20.11.2019 - 04.06.2020	
Hobo20480890_11m.csv	HOBO U24-001	T + EC	20480890	11	30	20.11.2019 - 04.06.2020	
Hobo20480892_13m.csv	HOBO U24-001	T + EC	20480892	13	30	20.11.2019 - 04.06.2020	
RBR102271_9m	RBRsolo³	T	102271	9	10	20.11.2019 - 04.06.2020	
	RBRsolo³	T	102272	15	10		keine Daten
summary_all	alle						Zusammenfassung von Sylvia Jordan
Ordner	**07 04.06.2020 - 04.04.2023 TEG data**						
Datei	**Logger**	**Parameter**	**Logger-Nr.**	**Tiefe (m)**	**Messintervall**	**Messzeitraum**	**Bemerkungen**
	Tinytag	T		4			keine Daten
	Tinytag	T		5			keine Daten
	Tinytag	T		7			keine Daten
miniDot104785_TEG2020_3m.TXT	miniDot USB	T + O2	7450-104785	3	30	04.06.2020 - 04.04.2023	mit Wischer, die ganze Zeit
miniDot672736_TEG2020_6m.TXT	miniDot USB	T + O2	7450-672736	6	30	04.06.2020 - 04.04.2023	
miniDot727203_TEG2020_12m.TXT	miniDot USB	T + O2	7450-727203	12	30	04.06.2020 - 04.04.2023	
	HOBO U24-001	T + EC					nicht auszulesen
	HOBO U24-001	T + EC	20016165	8	30	04.06.2020 - 26.06.2021	
	HOBO U24-001	T + EC					nicht auszulesen
	HOBO U24-001	T + EC					nicht auszulesen
	HOBO U24-001	T + EC					nicht auszulesen
RBR103103_20230405_9m.xlsx	RBRsolo³	T	103103	9	10	04.06.2020 - 17.06.2022	
RBR103104_20230405_14.25m.xlsx	RBRsolo³	T	103104	14.25	10	04.06.2020 - 18.11.2020	
Ordner:	**08 13.04.2021 - 11.08.2022 TEG data**						
Tiefenangaben vom August 2022							
am 09.06.2021 wurde die Kette zwischen 10:00 und 17:20 Uhr um 0,5m angehoben (Senat?), Tiefe danach 10cm flacher als zuvor.							
Von 18.06. bis 22.06.2021 wurde die Postion der Kette verändert (ca. 0,4m flacher), ab 22.06.2021 sind die Werte ok.							
Datei	**Logger**	**Parameter**	**Logger-Nr.**	**Tiefe (m)**	**Messintervall**	**Messzeitraum**	**Bemerkungen**
Tinytag658038_TEG2021_1m.txt	Tinytag	T	658038	1	10	13.04.2021 - 25.11.2021	1m unter OF
Tinytag919598_TEG2021_5m.txt	Tinytag	T	919598	4.55	10	13.04.2021 - 25.11.2021	
Tinytag658045_TEG2021_13-7m.txt	Tinytag	T	658045	13.1	10	13.04.2021 - 25.11.2021	1m ü.Gr.
miniDot7450-687537_TEG2021_2m.txt	miniDot	T + O2	7450-687537	1.5	30	13.04.2021 - 11.08.2022	extremer Muschelbewuchs beeinflusst die O2-Messu
miniDot7450-310818_TEG2021_8m.txt	miniDot	T + O2	7450-310818	7.5	30	13.04.2021 - 11.08.2022	
miniDot7450-301561_TEG2021_12m.txt	miniDot	T + O2	7450-301561	11.5	30	13.04.2021 - 11.08.2022	
RBR102271_TEG2021_10m.xlsx	RBR	T	102271	9.5	10	13.04.2021 - 11.08.2022	
RBR082510_TEG2021_14.5m.xlsx	RBR duet	T + Druck	82510	14.1	10	13.04.2021 - 11.08.2022	
2021-2022_TEGdata.xlsx							Zusammenfassung von Sylvia Jordan
Ordner:	**09 11.08.2022 - 04.04.2023 TEG data**						
	Tinytag	T		1	30		
Tinytag589398_TEG_5m.txt	Tinytag	T	589398	5	30	11.08.2022 - 04.04.2023	
Tinytag918797_TEG_13.5m.txt	Tinytag	T	918797	13.5	30	11.08.2022 - 04.04.2023	
miniDot907758_TEG_2m.TXT	miniDot	T + O2	7450-907758	2	30	11.08.2022 - 04.04.2023	
miniDot251053_TEG_8m.TXT	miniDot	T + O2	7450-251053	7.5	30	11.08.2022 - 04.04.2023	
miniDot927283_TEG_12m.TXT	miniDot	T + O2	7450-927283	11.5	30	11.08.2022 - 04.04.2023	
RBR103105_TEG_10m.xlsx	RBRsolo³	T	103105	10	30	11.08.2022 - 04.04.2023	
RBR082510_TEG_14.25m.xlsx	RBRduet	T + Druck	82510	14.25	10	11.08.2022 - 04.04.2023	

Kontakt

Contact person: Dr. Michael Hupfer

Data responsibility: Sylvia Jordan

Data collection: IGB

Version 2023-04-12