



FRESHWATER RESEARCH AND ENVIRONMENTAL DATABASE

Groß Glienicker See

GGs temperature chain (with oxygen)

FRED Package 585

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

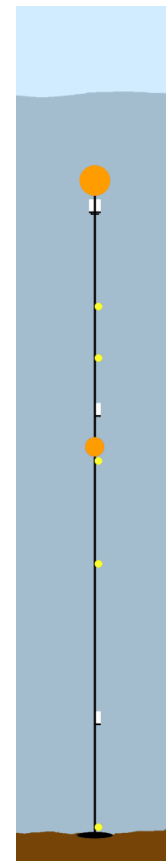
The measuring chain consists of a rope that is kept in tension by a weight on the bottom and a pressure-resistant buoy located 1-1.5 m below the water surface. The loggers are attached to the rope at fixed intervals.

Information about the depth values of the loggers

The depths given indicate the depth below the water surface. However, these are inaccurate, especially in the last few years, because these were very hot years with very little precipitation. 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 due to lack of precipitation and hot summers, this leads to problems, as the distance of the loggers to the water surface changes as a result. The depths of the loggers in Groß Glienicker See have changed several times over the years, not least because the water level has dropped by more than one metre.

Since April 2020, a temperature logger is located on a separate surface buoy at a distance of exactly 1m below the water surface.

Abb. Scheme of a measurement chain with autonomous loggers





Autonomous datalogger

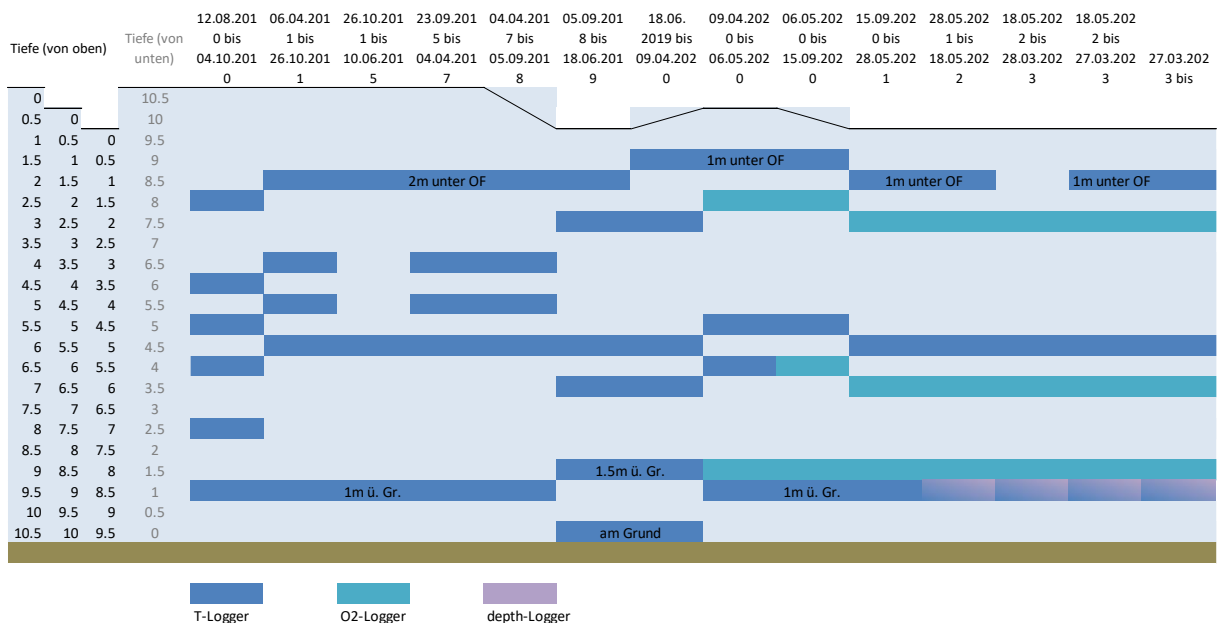
Tinytag Aquatic 2 TG-4100 underwater data loggers from Gemini Data Loggers, UK, are used for the temperature measurements.

MiniDOT data loggers from PME (Precision Measurement Engineering, Inc.) are used for the oxygen measurements. To prevent mussel settlement, the 2m O2 logger is covered with copper tape and equipped with a miniWIPER, an autonomous antifouling system.

Logger specifications

Parameter	name	accuracy	resolution	max. operating depth	
temperature	Tinytag Aquatic 2 TG-4100 Gemini Data Loggers	± 0.5°C (according to manufacturer) ± 0.1°C (own experience)	0.01 °C	500 m	
Sauerstoff with temperature	miniDOT Precision Measurement Engineering (PME)	according to manufacturer ± 5% ± 0.3 mg/l ± 0.1°C	0.01 mg/L 0.01 °C	100 m	
Depth (with temperature)	Hobo U20L-01	0.1%			

Logger depth distribution 2010 bis 2023



Data

Time span 12.08.2010 ongoing (gap in winter 2010/2011)

Intervall 30 min. (sometimes 60 min.)

Until 2017, the data are available in an Excel file. After that they are stored as individual .txt and .csv files in the IGB Cloud Nimbus. A descriptive metadata file is included.

Detail of the descriptive file "GGS_meta"

Groß Glienicker See (GGS)							
Ordner:	20180905_GGS_data						
Wasserstand während der Expositionszeit 0,5m gefallen. Tiefenangaben zu Beginn des Messzeitraumes.							
Datei	Logger	Parameter	Logger-Nr.	Tiefe (m)	Messintervall	Messzeitraum	Bemerkungen
Tinytag_589398_2m	Tinytag	T	589398	2		30 05.04.2017 - 05.09.2018	
Tinytag_658034_4m	Tinytag	T	658034	4		30 05.04.2017 - 05.09.2019	
Tinytag_632356_5m	Tinytag	T	632356	5		30 05.04.2017 - 05.09.2020	
Tinytag_632354_6m	Tinytag	T	632354	6		30 05.04.2017 - 05.09.2021	
Tinytag_664482_9-5m	Tinytag	T	664482	9.5		30 05.04.2017 - 05.09.2022	1m über Grund,
Ordner:	20190618_GGS_data						
Datei	Logger	Parameter	Logger-Nr.	Tiefe (m)	Messintervall	Messzeitraum	Bemerkungen
Tinytag664469_1m.txt	Tinytag	T	664469	1		30 05.09.2018 - 18.06.2019	
Cat7450-273186.txt	miniDot USB	O2 + T	7450-273186	2		10 05.09.2018 - 18.06.2019	bisschen anderes Format als sonst
Tinytag590717_5m.txt	Tinytag	T	590717	5		30 05.09.2018 - 18.06.2019	
Tinytag664477_6m.txt	Tinytag	T	664477	6		30 05.09.2018 - 18.06.2019	
Cat7450-246451.txt	miniDot USB	O2 + T	7450-246451	8.5		10 05.09.2018 - 18.06.2019	bisschen anderes Format als sonst, 1,5m über Grund
Tinytag590716_9.5m.txt	Tinytag	T	590716	9.5		30 05.09.2018 - 18.06.2019	am Grund
Ordner:	20200409_GGS_data						
Datei	Logger	Parameter	Logger-Nr.	Tiefe (m)	Messintervall	Messzeitraum	Bemerkungen
Tinytag590528_1m.txt	Tinytag	T	590528	1.25		30 18.06.2019 - 09.04.2020	komplett mit Muscheln verwachsen
Cat7392-373091.txt	miniDot USB	O2 + T	7392-373091	2.35		30 18.06.2019 - 09.04.2020	mit Wischer, bis auf das Messfeld komplett mit Muscheln bewachsen
Tinytag664482_5m.txt	Tinytag	T	664482	5.4		30 18.06.2019 - 09.04.2020	
Tinytag632358_6m.txt	Tinytag	T	632358	6.45		30 18.06.2019 - 09.04.2020	
Cat7392-688166.txt	miniDot USB	O2 + T	7392-688166	8.5		30 18.06.2019 - 09.04.2020	1.5m über Grund
Tinytag656718_Grund.txt	Tinytag	T	656718	10		30 18.06.2019 - 09.04.2020	am Grund
Ordner	20210528_GGS_data						
Datei	Logger	Parameter	Logger-Nr.	Tiefe (m)	Messintervall	Messzeitraum	Bemerkungen
Tinytag891341_1m.txt	Tinytag	T	891341	1		30 09.04.2020 - 28.05.2021	06.05.2020 11.30 Wartungsspeak, 1m von oben
Cat1309_GGS_2m.TXT	miniDot RS232	O2 + T	1309	2	30 (ungerade Min.)	09.04.2020 - 28.05.2021	mit Wischer
Tinytag656707_GGS_5m.txt	Tinytag	T	656707	5		30 09.04.2020 - 28.05.2021	06.05.2020 11.30 Wartungsspeak
Tinytag632360_6m.txt	Tinytag	T	632360	6.25		30 09.04.2020 - 06.05.2020	Mai 2020: für einen O ₂ -Logger ausgewechselt
Cat1312_GGS_6m.TXT	miniDot RS232	O2 + T	1312	6	30 (ungerade Min.)	06.05.2020 - 28.05.2021	Mai 2020: ein O ₂ -Logger gegen einen Tinytag eingewechselt
Cat1101_GGS_8m.TXT	miniDot RS232	O2 + T	1101	8	30 (ungerade Min.)	09.04.2020 - 28.05.2021	06.05.2020 11.30 Wartungsspeak
Tinytag656711_GGS_8-5m.txt	Tinytag	T	656711	8.5		30 15.09.2020 - 28.05.2021	1m über Grund, keine Daten bis 15.09.2020

Kontakt

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Data responsibility: Sylvia Jordan

Data collection: IGB

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