IGB
Leibniz-Institut für Gewässerökologie
und Binnenfischerei

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.

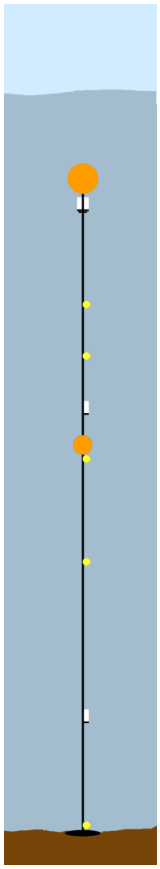


Abb. Scheme of a measurement chain with autonomous loggers

Information about the depth values of the loggers

The depths given indicate the depth below the water surface. However, these 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.

Autonomous datalogger

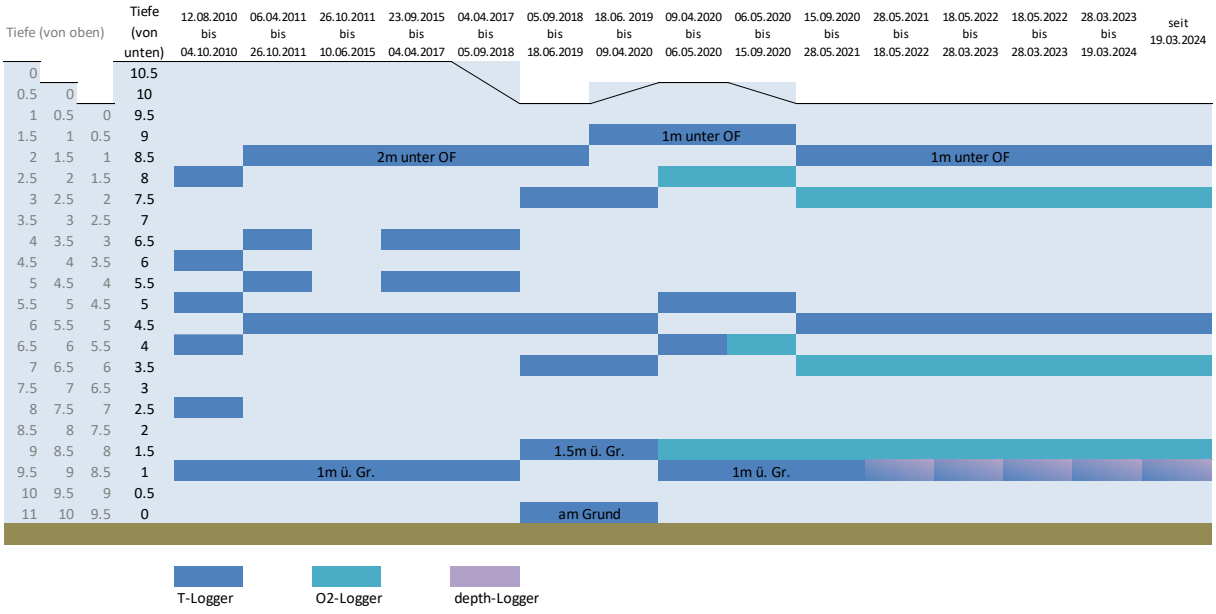
Tinytag Aquatic 2 TG-4100 underwater data loggers from Gemini Data Loggers, UK, are used for the temperature measurements.

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	resoltution	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 2025



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	**20220518_GGS_data**						
Datei	**Logger**	**Parameter**	**Logger-Nr.**	**Tiefe (m)**	**Messintervall**	**Messzeitraum**	**Bemerkungen**
Tinytag_891341_GGS_1m	Tinytag	T	891341	1	30	28.05.2021 - 16.03.2022	am 16.03. nur 1m-Logger gewechselt
	miniDot USB	O2 + T	686750	2		keine Daten	
Tinytag656707_GGS_5m.txt	Tinytag	T	656707	5	30	28.05.2021 - 18.05.2022	
miniDot663430_GGS_6m.TXT	miniDot USB	O2 + T	663430	6	30	28.05.2021 - 18.05.2022	
miniDot726790_GGS_8m.TXT	miniDot USB	O2 + T	726790	8	30	28.05.2021 - 18.05.2022	
Tinytag656711_GGS_8-5m.txt	Tinytag	T	656711	8.5	30	28.05.2021 - 18.05.2022	
Hobo_20936110_GGS_8-5m.txt	Hobo	p + T	20936110	8.5	60	28.05.2021 - 18.05.2022	
Ordner	**20230328_GGS_data**						
Datei	**Logger**	**Parameter**	**Logger-Nr.**	**Tiefe (m)**	**Messintervall**	**Messzeitraum**	**Bemerkungen**
Tinytag891333_GGS2022_1m.txt	Tinytag	T	891333	1	30	18.05.2022 - 30.12.2022	nicht bis zum Ende
miniDot542280_GGS2022_2m.TXT	miniDot USB	O2 + T	7450-542280	2 (1.8)	30	18.05.2022 - 28.03.2023	
Tinytag656707_GGS2022_5m.txt	Tinytag	T	656707	5 (4.9)	30	18.05.2022 - 28.03.2023	
miniDot572641_GGS2022_6m.TXT	miniDot USB	O2 + T	7450-572641	6 (5.95)	30	18.05.2022 - 28.03.2023	
miniDot582476_GGS2022_8m.TXT	miniDot USB	O2 + T	7450-582476	8	30	18.05.2022 - 28.03.2023	
Tinytag656711_GGS_8-5m.txt	Tinytag	T	656276	8.5	30	18.05.2022 - 24.02.2023	nicht bis zum Ende
Hobo20936109_GGS2022-8.5m.csv	Hobo	p + T	20936110	8.5	60	18.05.2022 - 28.03.2023	
Ordner	**20240319_GGS_data**						
Datei	**Logger**	**Parameter**	**Logger-Nr.**	**Tiefe (m)**	**Messintervall**	**Messzeitraum**	**Bemerkungen**
Tinytag953588_GGS2023_1m.txt	Tinytag	T	953588	1	30	28.03.2023 - 06.02.2024	nicht ganz bis zum Ende
miniDot663430_GGS2023_2m.TXT	miniDot USB	O2 + T	7392-663430	2	30	28.03.2023 - 19.03.2024	mit Wischer
Tinytag972624_GGS2023_5m.txt	Tinytag	T	972624	5	30	28.03.2023 - 19.03.2024	
miniDot687537_GGS2023_6m.TXT	miniDot USB	O2 + T	7450-687537	6	30	28.03.2023 - 19.03.2024	
miniDot149593_GGS2023_8m.txt	miniDot USB	O2 + T	7450-149593	8	30	28.03.2023 - 19.03.2024	
Tinytag976917_GGS2023_8-5m.txt	Tinytag	T	976917	8.5	30	28.03.2023 - 19.03.2024	
Hobo20936109_GGS2023_8.5m.csv	Hobo	p + T	20936109	8.5	60	28.03.2023 - 19.03.2024	

Contact

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