Brandenburg University of Technology Cottbus - Senftenberg

Department of Aquatic Ecology

Responsible: Michael Hupfer

Long-term trends in Lake Breiter Luzin

Photo: Research catamaran, btu Cottbus - Senftenberg, Bad Saarow

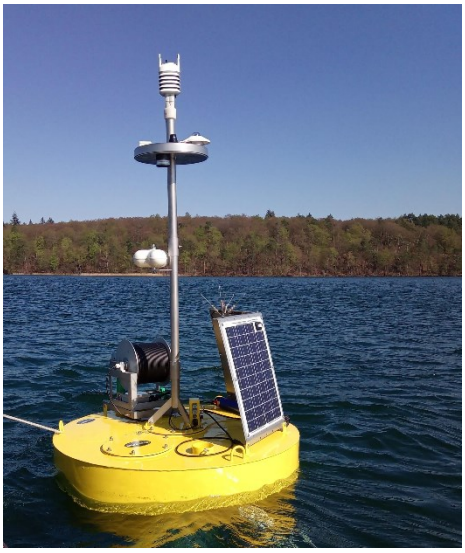

Photo: Measurement station at Lake Breiter Luzin

Master's thesis

Lake Breiter Luzin, one of the deepest lakes in the state of Mecklenburg-Vorpommern, has undergone major changes in the last decades. As in many other lakes, nutrient concentrations have risen sharply due to the intensification of agriculture. This has had a strong impact on the lake ecosystem, especially the oxygen budget in the deepwater. In parallel, surface temperatures rose in response to climate change. While nutrient loads are decreasing again since the 1990s, climate change remains a long-term problem. In this project, the long-term development of oxygen depletion rates and temperatures will be investigated using existing measurement data. In parallel, the future development of temperatures and oxygen content of the lake will be predicted using numerical models, considering various scenarios regarding future nutrient inputs and greenhouse gas emissions.

This study is integrated into a Germany-wide research study on the long-term development of lakes in response to climate change. The focus of the work is on the statistical evaluation of historical measurement data and numerical modelling. Knowledge of the basics of limnology, an interest in working with long time series and experience with Matlab or R are advantageous. The work will be carried out at IGB in Berlin, but can also be performed partially in home office.

Type:	Master's thesis, data analysis
Supervisor:	Michael Hupfer
Contact:	Michael.hupfer@igb-berlin.de, Robert.schwefel@igb-berlin.de
Start:	from November 2023
Students:	1
Prerequisites:	Interest in time series analysis and numerical modelling. Knowledge in Matlab or R

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