

Introduction

FLOW is a project for the ecological monitoring of flowing waters. The aim of the monitoring is to investigate and evaluate the ecological condition of water bodies together with citizens.

Together with the BUND group, the Oschenbach and the Lobbach were examined in May and July 2022

Methodology



Landscape-Team



Chemical-Team



Makrozoobenthos-Team



Oschenbach in Schatthausen
Date: 10.05.2022, 13.07.2022
GPS- Coordinate:
49°19'19.34"N, 8°44'50.6"E



Lobbach in Haag
Date: 24.05.2022, 14.07.2022
GPS-Coordinate:
49°23'22.49"N 08°55'09.17"E

Landscape elements

In Oschenbach, the stream flow was 0.28 m³/s in May, but increased to 0.315 m³/s in July. While the flow of Lobbach decreased from 0.315 m³/s to 0.2969 m³/s. The results are based on the index WFD, 2000. According to the index, Oschenbach had 3.00 quality class in May, but 2 quality classes in July. On the other hand, Lobbach received 2.00 Gütekalsse in both May and July, representing slightly different values. Details can be seen in the qr-code.

Chemical-physical

From the bar chart we can see in both Oschenbach and Lobbach that all parameters are more or less in the same range for a given date. Temperature, pH and chloride were very good (Not loaded), DO, nitrite and conductivity were good (Little loaded), the nitrate value was neutral (Moderately loaded). Overall, the parameters look good. Details of the chemical-physical can be found in the qr-code.

Reference

The SPEAR index is a trait-based biological indicator "SPEciesAtRisk" for analyzing pesticide exposure at a sampling site via macrozoobenthos community composition, see Knillmann et al., 2018; Liess & Von Der Ohe, 2005. See also: <https://www.ufz.de/index.php?de=38122>

Knillmann, S., Orlinskiy, P., Kaske, O., Foit, K., & Liess, M. (2018). Indication of pesticide effects and recolonization in streams. Science of The Total Environment, 630, 1619–1627. <https://doi.org/10.1016/j.scitotenv.2018.02.056>

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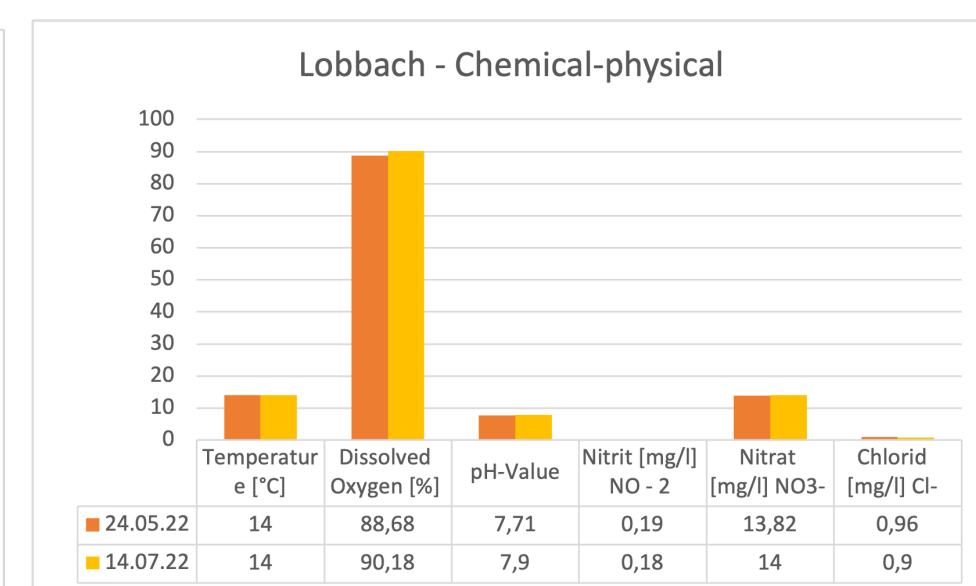
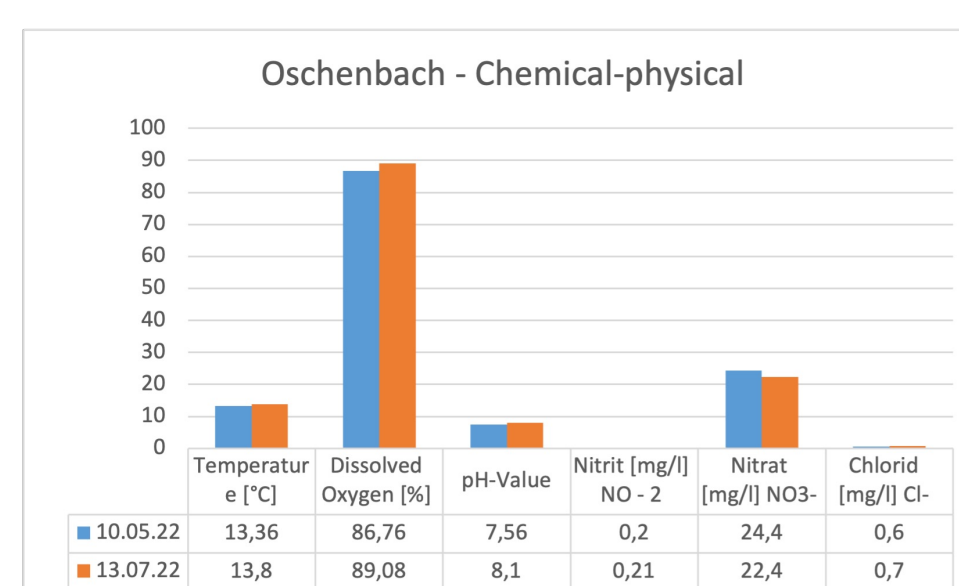
Similarly, all the substrate mapping found in Oschenbach and Lobbach is shown in the bar chart. Algae, wood and dead wood, living parts of terrestrial plants, sand, clay und clay, stone, etc. were found. Looking at the spear, Oschenbach also received a poor score on pesticides of 0.24 and a TU of –0,52, while Lobbach received a good score on pesticides of 0.67 and a TU of –3,79. Details of the macrozoobenthos can be found in the qr-code.

Oschenbach

SPEAR pesticides	EQ pesticides	TU estimated
0.24	IV: Poor	-0.52

Lobbach

SPEAR pesticides	EQ pesticides	TU estimated
0.67	II: Good	-3.79



Makrozoobenthos

Discussion

- The SPEAR index for Ochsenbach was quality class 4 (poor), Lobbach was quality class 2 (good).
- The condition of the water body in Oschenbach was quality class 3 (moderate) in May and quality class 2 (good) in July. The condition of the Lobbach water body was quality class 2 (good) in both May and July.
- The Oschenbach is located near an agricultural environment. This could be the trigger for the elevated nutrient levels and pesticide contamination.
- Several macrozoobenthos species were found, some with high numbers of individuals. Apart from the pollutant and nutrient inputs, the Lobbach appears to be in good condition compared to the Oschenbach.

qr-code



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