Type: oral

## Effects of climate change and nutrient inputs on the fish mortality in rivers: Case study of the Oder River disaster in 2022 - Dana Bücher

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On 14 July 2022 deceased fish in the river Oder were observed. In the following weeks the occurrences grew in frequency and resulted in thousands of dead fish. It was crucial to find the cause of the high fish mortality to hinder further negative development and prevent future disasters. Besides the high number of dead fish, large amounts of the algae Prymnesium parvum were observed, which excretes a substance, that is toxic for fish. From 10 August till 03 September.2022 the temperature, pH, level of dissolved oxygen and the conductivity were measured daily at seven monitoring sites to determine the cause of the algae occurrence, that lead to the high rate of fish mortality.

Between 17 and 21 August a swift decrease of dissolved oxygen was observed to a minimum of 0.6 mgO2/l bringing the river water to a hypoxic state. The temperatures and conductivities measured were particularly high. Correlations between the low oxygen levels and a high temperature and the concentration of nutrients, specifically phosphorus led to the formation of the algae and hypoxia. Those factors are impacted by climate change, agriculture and point source inputs of domestic and industrial origin. The parameters measured help to detect changes early and prevent further incidents.

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