

POSSIBLE CAUSES OF THE ECOLOGICAL DISASTER ON THE Odra RIVER, POLAND

Justyna Rybak¹
Piotr Jadczyk¹
Magdalena Wróbel¹

*¹⁾ Faculty of Environmental Engineering, Wrocław University of Science and
Technology,
Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland*

Abstract

This year, 2022, mass deaths of fish on the Odra River were observed at many points, the cause of this phenomenon have not yet been officially defined.

Our research is aimed to study the following events and examine the cause-and-effect influence that could have led to the biggest ecological disaster in Poland. The research was focused on algae biodiversity and its influence on further ecological events. Toxicological and physico-chemical studies have been performed and showed that the concentrations of the studied parameters in the studied samples do not differ from levels characteristic of environmental contamination typical in many rivers in Poland.

The intense bloom of golden algae in the waters of the Odra was recognized as the main cause of the disaster. We think that this cause is due to many factors interacting with each other. In July and August, favorable conditions occurred in the waters for the development of *Prymnesium parvum* and therefore toxicity of water is connected mainly with predominance of this species. Although, other factors such as significantly increased conductivity, high chloride and sulphates content, increased water temperature, significant fluctuations water parameters over time contributed highly to the intense bloom of golden algae. The hydromorphology of the Odra's waters is also important: the presence of many water bodies, as well as slowdowns flow in front of weirs, canals, and therefore there are favorable places for blooms. We also think that massive blooms of golden algae in the waters of the Odra and other rivers and reservoirs can repeat in subsequent years and we have to counteract it not only systemically but also in thoughtful way, taking into account the sequence of cause and effect events.

Keywords: Odra, algae, pollution, impact