O127. CLIMATE CHANGE: HOW DOES THIS INFLUENCE ON ECOSYSTEM HEALTH IN THE LAGOON OF THE BALTIC SEA?

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Lagoons are one of the most vulnerable ecosystems to impacts of natural environmental and anthropogenic factors. The Curonian and Vistula Lagoons are one of the largest lagoons of Europe. The Curonian Lagoon is choke mostly freshwater, while the Vistula Lagoon is restricted brackish water. Hydrological, chemical and biological researches were carried out monthly since 1991 to 2015. Reductions of nutrients loading in 1990s did not result in improvement of the ecological situation. Hydrological and chemical parameters are the main factors that influence on the algal blooms and ecosystem health in these lagoons. The Curonian Lagoon may be characterized as hypertrophic water body with "poor" water quality. Climate change in 1990s-2010s combined with other factors (freshwater, slow-flow exchange, high nutrients concentrations) creates conditions for Cyanobacteria “hyperblooms”. Harmful algal blooms result in deterioration of the water chemical parameters and death of fish. "Hyperblooms" is the most dangerous for coastal towns and tourist resorts (UNESCO National Park "Curonian Spit"). Climate change in 1990s-2000s have been also observed in Vistula Lagoons (mean annual temperature increased by 1.4°C for 40 years), but brackish water prevent harmful algal hyperblooms. After the invasion of the filter-feeding mollusk Rangia water quality was significantly improved from “poor” to “satisfactory” level in 2011-2015, but ecosystem productivity remained at a stable long-term level.