

Phytoplankton community and controlling factors of primary production in the Gulf of Riga (Baltic Sea)

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The annual dynamics of phytoplankton community in the Gulf of Riga, located in the northeastern part of the Baltic Sea, is fairly well investigated while levels of primary production have been estimated just episodically. Value of annual gross primary production as separate measurements has been from 200 to 350 gCm⁻² while the relation of these results to phytoplankton functional groups is not mostly known. With a help of two year long regular measurements we have tried to get more precise values of primary production, necessary also for characterization of eutrophication status in the Gulf of Riga. Our attempt has been also to find linkage of primary production to phytoplankton groups in the light of gradually changing environmental factors and their regimes – warmer winters, missing floods and colder springs. Therefore we hypothesize that a large share of primary production in the Gulf of Riga is generated by other parties than autotrophic phytoplankton and an attention has been paid to heterotrophic ciliate *Myrionecta rubrum*. Ciliate has been dominating in the spring production according to our results and we are discussing the importance of various factors like concentrations of organic matter and turbidity.

Keywords: Baltic Sea, Gulf of Riga, environmental changes, phytoplankton, primary production, *Myrionecta rubrum*

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