



Phytoplankton community structure and hydrochemical regime in the NE Black Sea

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2005-2010 north-eastern Black Sea data allowed to reveal a connection between hydrochemical regime and phytoplankton structure in the spring and early summer period. An intense bloom of coccolithophores (*Emiliana huxleyi*) was observed in 2005 and 2006 resulted in their total domination in the community structure. In 2007 and 2008 community was dominated by diatoms. *Emiliana huxleyi* returned back to the leading complex in 2009 and determined the structure of community in 2010. Experimental studies on the effect of nitrogen and phosphorus addition on the community structure allowed to reveal conditions of diatoms and coccolithophores domination. For coccolithophores these are the decreased concentrations of nitrogen and low nitrogen to phosphorus ratio (below the Redfield value, 16). Preferable conditions for diatoms are an increased concentrations of nitrogen and phosphorus with their ratio above the Redfield value. The conclusions of experimental studies are confirmed by field observations. In case of a long-term co-existence in the sea the growth of diatoms is limited by nitrogen, coccolithophores – by phosphorus.