



Abrupt Changes in the Marmara Pelagic Ecosystem during the recent jellyfish *Liriope tetraphylla* invasion and mucilage events

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In this study, meteorological and hydrographical conditions as well as chemical and biological parameters have been examined for the period 2005-2009 to determine the impact and cause of the massive mucilage phenomenon observed in the Sea of Marmara in October 2007.

Results showed that there is a decrease pattern in chl concentration as well as both phytoplankton and zooplankton abundances from August till October in 2007 whilst the jellyfish *Liriope tetraphylla* had bloom levels. This period coincided with the maximum intensity of pelagic fishing throughout the years. Nitrogen/phosphate ratio increased prior to the mucilage formation. Invasive *Liriope tetraphylla* abundance increased exponentially in August and died in masses as a result of starvation and meteorological / oceanographic conditions. In October, following the mucilage matter production another new species for the region *Gonyaulax fragilis* was observed in high abundance through the basin.

It is worthy to note that during basin wide samplings conducted in the Sea of Marmara in both 2005 and 2006, high abundances of *Liriope tetraphylla* have been detected particularly at the northern parts where no mucilage event was observed.

We suggest that overfishing in the Sea of Marmara provided a ground for the establishment of the invasive jellyfish and accompanying mucilage event was due to by synergic combinations of several factors.