

THE INFLUENCE OF STRYMON RIVER ON DISSOLVED OXYGEN AND NUTRIENT DISTRIBUTION IN STRYMONIKOS GULF, NORTH AEGEAN SEA, GREECE.

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ABSTRACT

In the present work, the influence of the fresh water of the Strymon River upon the dissolved oxygen (DO) and nutrient distributions is examined. Three hydrographic cruises were conducted in Strymonikos Gulf, during 1997 – 1999, over a grid of 20 stations covering the area of Strymonikos Gulf.

Studies on the chemical parameters indicated distinct spatial and temporal variations.

Nutrient (nitrate, nitrite, silicate, phosphate and ammonium) levels near the river outflow indicated a rather eutrophic environment. High nutrient concentrations were also observed near Stavros. The chemical signal of the riverine water (nutrient-rich water) was detected during the three hydrographic cruises.

The horizontal nutrient distribution showed that the riverine water moved mainly towards the south-west of Strymon outfall, following an anti-clock wise movement, towards Stavros area.

Nutrient data sets showed that the riverine waters were restricted at the first five meters of the water column.

A change in the $\Sigma N/P$ ratio was observed during the sampling periods. During March 1999, $\Sigma N/P$ ratio was higher than the theoretical value of 16:1, at all the sampling stations, whereas during December 1997 and May 1998, the $\Sigma N:P$ ratio was calculated less than the theoretical value, at most of the sampling stations (~63% of the sampling stations).