

Dear V. Namachev.

Please enclosed find a summary on my talk during GEF BSEP Black Sea Pollution Assessment Week, Istanbul, 18-22 March 1996.

Regards

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"Optical Transparency, Chlorophyll and Primary Productivity in the Southern Black Sea" by Aysen YILMAZ, Colpan POLAT, Dilek EDIGER and Suleyman TUGRUL

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The data on the optical transparency, chlorophyll and primary production is lacking for the Black Sea.

Photosynthetic layer is always well oxygenated and below this layer dissolved oxygen concentration decreases rapidly and then slowly down to certain isopycnal surfaces e.g. it reaches below detection limits at 16.1 sigma-theta depth (Saydam et al 1993). The hydrogen sulphide starts to increase below this depth where the suboxic-anoxic interface is observed. Nutrient concentrations are very low in the euphotic zone showing the extend use by primary producers. The nutrient regime below the euphotic zone is regulated by hydrography and bacterial decomposition processes and all minima and maxima are observed at certain isopycnal surfaces (Tugrul et al., 1992). Particulate organic matter (POC, PON and PP) concentrations are relatively high in the lighted surface waters and show a decreasing trend with depth depending on the source and sink terms. C/N, C/P and N/P ratios range in between 10-20, 100-175 and 5-15 in productive layer respectively. Below the euphotic zone all ratios tend to increase with depth. The water column is moderately transparent in the Black Sea and the thickness of the euphotic zone is observed to range between 20-50m and downward attenuation coefficient is determined as 0.2 m⁻¹ on average. Average chlorophyll concentration in the water column ranges in between 0.1-4 mg/m³ (in case of Bosphorus exit and for the GEF special monitoring area for late spring-autumn 1995 period, it ranges between 0.1-1.1 mg/m³). Vertical profiles show a sub surface maxima (not sharp and prominent) locating in the upper parts of the euphotic zone. Vertical distribution of photosynthetic carbon production rates show similar trends with the chlorophyll profiles. Daily production rates are determined as 250-400 mgC/m²/day for the late spring-autumn 1995 period. The primary production rates measured in the present study are in good agreement with the values reported by Vedernikov and Demidow (1993), for the last 30 years indicating that the rates did not change much for the open waters of the Black Sea and eutrophication problems are mostly related to the coastal areas.

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OPTICAL TRANSPARENCY, CHLOROPHYLL AND PRIMARY PRODUCTIVITY IN THE SOUTHERN BLACK SEA

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