

SEASONAL AND TEMPORAL DISTRIBUTION OF SOME POLLUTANTS IN SOUTH EASTERN BLACK SEA COAST

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SEZONSKA I VREMENSKA DISTRIBUCIJA NEKIH POLUTANATA U SEVERO-ISTOČNIM DELU CRNOG MORA

Abstract

The Black Sea coastal waters remain heavily impacted by sewage and marine activities. In this study, temporal and spatial distributions of some pollutants from marine and terrestrial activities were investigated in the water column of the southeastern Black Sea between November 2009 and October 2010.

Temperature, dissolved oxygen, pH, salinity, turbidity and alkalinity levels in surface water were 9.17-27.44°C, 7.28-10.90 mg/L, 7.79-8.51, 15.43-17.68 ppt, 14.5-20.20 NTU, and 150-185 mg/L, respectively. Maximum concentration of pollutants were found to be as 18.72 mg/L total suspended solids, 14.21 µg/L phenol, 28.80 µg/L anionic detergent, 102.90 mg/L oil and grease, <5 ppb Cd, 42 ppb Fe, 16 ppb Cu, 71 ppb Zn, and 23 ppb Pb in the water samples. Based on maximum concentration levels of contaminants observed in the present study, it can be concluded that phenol, copper, oil and grease values exceeded general marine water quality criteria, defined by general sea water quality standards in Turkish Water Contamination Regulations. The results indicated that seasonal and spatial distributions of pollutants were found to be irregular and the coastal waters of south eastern Black Sea impacted from marine and terrestrial activities.

Key words: Southeastern Black Sea, Rize Port, Marine pollution, Metal pollution