

DETERMINATION OF THE LAND-BASED SOURCES OF HEAVY METAL POLLUTION IN THE WESTERN BLACK SEA COAST

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The present report comprehends the data and results obtained on the temporal and spatial levels of some heavy metals (Hg, Cu and Pb) in total suspended sediment, sediment, mussels and in macroalgae which were studied within the framework of the project "Determination of the Landbased Sources of Heavy Metal in the Western Black Sea Coast"

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During the project, the land-based sources of mercury, copper and lead were tried to be defined in the western Black Sea and in addition the seasonal and spatial changes in metal concentrations of the samples were also studied. To do this, total suspended sediment, sediment, mussel and macroalgae samples were taken from 9 source and 4 reference stations in January, April, September and December.

When the stations were taken into account, the highest mercury concentrations in total suspended sediment were measured at Sts. 2 and 8, in sediment at Sts. 7 and 9, in mussels at Sts. 7, 8 and 9 are the most polluted by mercury and they are followed by Sts. 2 and 5.

The copper concentrations were always at highest levels in all samples taken from İnebolu (St. 2). These results show the extent of copper pollution in this region.

Similar to mercury, lead concentrations were found at different levels depending on the samples at various stations. The highest lead

concentrations in total suspended sediment were measured at Sts. 2 and 5, in sediment at Sts. 2 and 8, in mussels at Sts. 3 and 5 and in macroalgae at Sts. 3 and 5. From these results it can be deduced that, lead pollution is serious in urban areas, such as Zonguldak and Bartın and it comes especially from atmosphere. It is suggested that certain quantity of lead, together with copper, reaches also Black Sea.

When the seasonal variation of the metal concentrations were taken into consideration, the highest mercury levels found in January in total suspended sediment and in April in the other samples (sediment, mussel and macroalgae)

The copper concentrations were found highest in total suspended sediment, mussels, sediment and macroalgae in January, April and in December respectively.

The highest lead levels were measured in total suspended sediment and in the sediment, in September and in mussels and macroalgae in April.

If the mussels are taken into consideration as indicator organisms, mercury, copper and lead pollution increases in April since they contained these three metals in highest amounts in April. The mercury concentration in sediment was also at highest level in the same month. Therefore, there is a relation between the mercury concentration in mussels and that in sediment while no relation was observed for other two metals.

