The ecological condition in the N-W part of the Black Sea

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The paper presents the main conclusions of a joint Romanian-Russian geo-ecological survey in the North-Western part of the Black Sea bassin.

The rivers debouching into the NW part of the Black Sea, especially the Danube, are the main pollutant agents in this region of the sea. The river water and sediment discharge is bringing into the sea an abnormaly high amount of microelements and nutrients as a result of drainage of a very large (ca. 817,000 sqKm) and intensively polluted continental area.

The river supply of nutrients is among the main factors contributing to the very strong eutrophication of the sea. The seasonal hypoxia is almost permanently extending on the entire Northern continental shelf of the Black Sea northward the Portita parallel (44 35'N), while anoxia and H2S contamination of the bottom water and sediments are installing in some depressions of this zone (Paleo-Dniestreean Depression, Odessa Depression a.o.), at 25-30 m water depth, where the macrozoobenthos is almost inexistent. Only southward of Portita, on the Southern Romanian continental shelf, the bottom sea water and sediments have a close on normal Oxigen content, and consequently, in this area the macrozoobenthos is almost normaly developed.

In some zones of the continental shelf there became evident an abnormal content of certain microelements as a result of various technogene pollution ; for example, in the Lebada zone Ba, Cu, Zn, Ni from drilling activities, in the Navodari-Constantza nearshore zone - phosphates, V, Cr, resulting from industrial, petrochemical and agrotechnical works, on the Budak Plateau and Odessa Depression - Cr, V, Pb from multiple industrial activities a.s.o.

The entire North-Western continental shelf of the Black Sea is characterised by very high contents of Hg, reflecting a very strong technogene pollution.

The above mentionned results represent a valuable comparison data base for the following phases of a multiannual (1992-2000) and interdisciplinary survey and geo-ecological monitoring of the studied region, which will be carried out within the framework of the "Cooperative Marine Science Programme for the Black Sea" (COMSBLACK).

REFERENCES

KOPYLOV S.A. et FESIOUNOV O.E., 1990. - Première carte écologique du NW du plateau continental de la Mer Noire. Trav. IVème workshop international sur l'écologie des mers Baltique et Noire, Leningrad, pp. 70-72.

PANIN N. and HAWS B., 1991. - Danube Delta - Science and management. Trav. Workshop sur la Mer Noire - Varna (*in press*).

ZAYTSEV I.U.N., GARKAVAYA G.N., NESTEROVA D.A. and POLYSCHUK L.N., 1989. - The Danube - main source of eutrophication of the Black Sea. *Journ. Hydrobiol. Acad. Science USSR*, 25 (4) : 21-23.