

## Anthropogenic Contamination in Marine Ecosystems at Northern Bulgarian Black Sea Sector

Alexander STREZOV and Tzvetana NONOVA\*

*Institute for Nuclear Research and Nuclear Energy – BAS, 72 Tzarigradsko shosse Blvd, 1784 Sofia, Bulgaria*

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**Abstract** The ecological status in marine ecosystems along the Northern Bulgarian Black Sea coast was studied by determining radionuclide ( $^{137}\text{Cs}$ ,  $^{226}\text{Ra}$ ,  $^{210}\text{Pb}$ ) and heavy metal (Cu, Pb, Cd) content in sediments and three macroalgae species - *Ulva rigida*, *Cystoseira barbata* and *Ceramium rubrum*. The measurements were made by low level gamma spectroscopy and AAS. Samples were collected during the period 1996 - 2004 at three sites of the Bulgarian Black Sea coastal zone – Shabla, Kaliakra and Tuzlata.

The obtained data indicate that investigated algae species demonstrate various degrees of radionuclide and metal accumulation. Radionuclide content in sediments depends on mineral type and slime sediments accumulate the highest content of  $^{137}\text{Cs}$  and natural nuclides from U and Th series.

The intercomparison of nuclide and HM content in sediments and algae from one and the same sampling site give the trend of potential hazard of anthropogenic impact on marine ecosystems during the studied period.

*Keywords:* Black Sea, sediments, macrophytes, radionuclides, heavy metals, contamination.

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