

Rivers Drain Impact on the Black Sea Coastal Line Biocenosis within the Greater Sochi Area Assessed by Bioassay Method

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Abstract : The research is dedicated to the study of the polluted river inflow impact on the Black Sea coastal marine environment within the watercourse's plumes in the Greater Sochi area applying bioassay methods using freshwater and marine microalgae. River waters were analyzed using microalgae *Chlorella vulgaris* Beijer and sea waters were tested with marine diatoms *Phaeodactylum tricornutum* Bohlin. Experiments included algae cell abundance growth assessments in acute (24 hours), sub-acute (72 hours) and chronic (168 hours / 7 days) tests. The increase in algal cell growth rates compared to the control in the summer period was detected as a consequence of the recreational activities intensification during the tourism seasonal peak. Most of the analyzed samples demonstrated a significant effect of algae cell growth stimulation compared to the control. It is established that under the impact of contaminants carried by river drain to the sea, the capacity of the coastal marine ecosystem is partially capable of compensating for its effect on the coastal biocenosis, but the general trends of the impact processes remain constant.

Keywords : algae abundance growth, bioassay, microalgae, modeling

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