

Organization of Monitoring and Observations Results in the Eastern Gulf of Finland

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In Russia monitoring, as the observations system for anthropogenous changes of the natural environment, estimation and forecast of its state on a background of natural fluctuations, exists already more than 40 years. In particular, the water bodies monitoring tasks consist of data collection about water pollution levels in space and in time, realized in the frame of special program. As the observation system and control of water bodies state, monitoring consists of three stages: observation, state estimation and forecast of its possible changes. According to the program, the frequency and horizons of water sampling as well as the location of recording stations and ingredients list should be defined.

The vital activity of St.-Petersburg grounded about 300 years back and which is one of the largest cities on coast of the Gulf of Finland, always was intimately bound up with multifunctional usage of the Neva Bay and the eastern Gulf of Finland. The problems of waters quality, bound up mainly with the problems of a fishery, water-supply and sewerage system, construction of flood protection barrier of St.-Petersburg and recreation, promoted the studies of the Gulf started still in the 19th century. The unfavorable results of these studies, testifying downward waters quality, have spotted necessity of organization of regular observations as unit of the integrated water management in this area.

The control of hydrochemical parameters will be carried out from the 60s of the past century. There are 47 stations of the National Observations System in the Neva Bay and in the eastern Gulf of Finland now. Hydrometeorological observations and sampling of water for the subsequent chemical analysis are carried out here. The composition of defined ingredients is entered by biogenic units, organic matters, heavy metals, salinity, and so on.

The Neva Bay and the eastern Gulf of Finland being a locking part of the Neva River estuary and concerning to the one of the most pollution area of the Baltic Sea, are subject both chemical pollution and eutrophication. In this connection special role belongs to the hydrobiological analysis, which one allows to determine as aggregate effects of combined influence of pollutants as well as trophic properties of waters.

The hydrobiological monitoring of the Neva Bay was organized in 1977, in the eastern Gulf of Finland - in 1981. From now on, synchronously with hydrochemical monitoring, the regular observations for main hydrobiological groups are carried out. The accumulated data of the analysis of phytoplankton and

zooplankton, benthos macrofauna, chlorophyll contents and primary production, results of water and sediments biotesting together with the hydrochemical and hydrological monitoring data testify the considerable changes of waters quality of inspected areas and form the basis both for development new models and for verification existing ones.