Integrated Environmental Monitoring during Geological Exploration and Deep-Sea Mining of Ferromanganese Nodes in the Clarion-Clipperton Province of the Pacific Ocean

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Abstract: The importance of sustainable use of ocean resources is considered, taking into account the harmful impact of geological exploration and deep-sea mining of solid minerals on the marine ecosystem in the Clarion-Clipperton Province of the Pacific Ocean. Initiatives of international companies that advocate for a moratorium on the extraction of solid minerals from the ocean floor, as well as the development of effective measures to protect the environment are discussed. Attention is paid to automated water quality control systems, which are an important tool for monitoring pollution and assessing the state of ecosystems, especially in vulnerable areas of the Clarion-Clipperton Province in the Pacific Ocean. The use of autonomous deep-sea stations for monitoring the natural environment at significant depths is considered. The need to create an automated information system for environmental monitoring in the Clarion-Clipperton Province of the Pacific Ocean is established for effective monitoring of the state of the natural environment and the development of optimal strategies for protecting the marine ecosystem from anthropogenic impact.