

Topics (T)

Climate Change Impacts and Challenges (Biodiversity, Forests and Land, Ocean/Marine Ecosystems, the Arctic and beyond) [2] (2B)

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THE ROLE OF SPACE-BASED EARTH OBSERVATION FOR ASSESSMENT OF POLLUTION IN
THE CASPIAN SEA UNDER CLIMATE CHANGE EFFECTS

Abstract

In the modern world environmental issues of water resources such as pollution is one of the global challenges. The Caspian Sea is a strategically important water body of the Caspian region. It is well known that climate change has an impact on natural resources, including the Caspian Sea, which has faced a certain number of environmental problems. Methodology of this research consist in using geoinformation technologies for study the environmental problems of the Caspian Sea associated with increased anthropogenic impact, namely, an assessment of the eutrophication of the water surface in recent years, study of saltwater intrusion happened in 2021, and the results of international cooperation to address the problem of marine pollution, 80% of which is plastic. Given the fact that plastic is practically indestructible and its concentration in water is not standardized, the issue of regulating the reducing of plastic and their release into the environment is relevant. At the same time, plastic waste not only pollutes the planet, but also contributes to global warming, as large amounts of greenhouse gases. The main goal of the study is to provide details on the use of space technology for monitoring the relationship between two of the world's huge problems, plastic waste and climate change in the Caspian Sea. Taking into account the importance of this water body for the region, urgent action is needed at the international level. Various projects are being carried out in order to prevent the negative impact on the environment of the Caspian Sea and improve its current condition. The results obtained in this research demonstrate the application of satellite images as Azersky and drone surveys to study pollution of the marine and coastal ecosystems of the Caspian Sea under the current climate change, the outcomes of which can be a valuable source of information in increasing regional monitoring efficiency.