ANALYSIS OF CHANGES IN THE STATE OF ECOSYSTEMS ON ATLASOVA ISLAND (KURIL ISLANDS)

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The territory of the Kuril Islands is a chain of volcanic structures and is subject, to certain extent, to volcanic hazards. Atlasova Island is composed of products of the Alaid volcano, which is characterized by effusive and explosive activity. The article analyzes the changes in ecosystems on Atlasov island, which are periodically caused by the Alaid volcano eruption. Large amount of pyroclastic material are brought to the surface during explosive eruptions: blocks, bombs, tephra, lapilli and volcanic ash, which is transported in the atmosphere over very long distances. Ecosystems are affected by pyroclastic deposition over a large area of island land. The purpose of this study was to identify the nature and extent of changes in the state of ecosystems affected by volcanic eruptions from multi-zone satellite images of medium resolution. Analysis of data obtained from space systems Landsat and Sentinel for the period 1972 to 2020, in GIS environment allowed us to trace the dynamics and character of the successions to the affected areas on the calculated values of the vegetation index NDVI. Techniques developed in the process of studying this issue can further facilitate rapid assessment of impacts on ecosystems at the effusive-explosive eruptions and forecast volcanic hazard for surrounding areas.

Key words: vegetation index, volcanic eruptions, remote sensing of the Earth, Landsat, multi-zone satellite images, monitoring, spectral characteristics, Sentinel, ecosystem.

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