LENGTH COASTLINE SPECIFICATION OF THE AZOV SEA USING SENTINEL-2 SATELLITE DATA

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The values of coastline length and water body area are used in statistical calculations, planning of economic activity, in many types of scientific research. A review of the literature and reference books on these important indicators for the Azov sea revealed that the available data are contradictory and outdated. The aim of this work was to determine the current values of the coastline length and the area of the Azov sea on the basis of remote sensing data. When choosing a method for determining the coastline length this work used two methods: manual digitization and automated determination of the land-sea boundary from remote sensing data (RSD). Studies have demonstrated that Sentinel-2 satellite data are optimal for obtaining and auditing the main statistical parameters of the Azov sea basin. Apart from technological issues related to the choice of initial data and methods of their processing, the problems associated with the complexity and variability of the studied natural object-the sea of Azov and its shores are analyzed. First of all, the determination of the exact location of the coastline is complicated by its variability associated with sea level fluctuations, abrasion-accumulative processes, technogenic effects. Another problem is the attribution of a water body (Bay, lagoon, man-made water area) to the area of the sea or the inclusion of a land object (spit, Islands, artificial territories) in the length of the coastline.

The obtained total coastline length of the Azov sea was 3,430 km, the total area of 40,570 km^2. The coastline length and area excluding isolated objects (bays and bays) were 2100 km and 38 095 km^2 respectively.

Key words: Azov sea, remote sensing, Sentinel-2 data, coastline length, sea area, hydrographic information, coastline dynamics.

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