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Influence of Water Reservoir Parameters on the Climate and Coastal Areas

Authors : Lia Matchavariani

Abstract : Water reservoir construction on the rivers flowing into the sea complicates the coast protection, seashore starts to degrade causing coast erosion and disaster on the backdrop of current climate change. The instruments of the impact of a water reservoir on the climate and coastal areas are its contact surface with the atmosphere and the area irrigated with its water or humidified with infiltrated waters. The Black Sea coastline is characterized by the highest ecological vulnerability. The type and intensity of the water reservoir impact are determined by its morphometry, type of regulation, level regime, and geomorphological and geological characteristics of the adjoining area. Studies showed the impact of the water reservoir on the climate, on its comfort parameters is positive if it is located in the zone of insufficient humidity and vice versa, is negative if the water reservoir is found in the zone with abundant humidity. There are many natural and anthropogenic factors determining the peculiarities of the impact of the water reservoir on the climate, which can be assessed with maximum accuracy by the so-called “long series” method, which operates on the meteorological elements (temperature, wind, precipitations, etc.) with the long series formed with the stationary observation data. This is the time series, which consists of two periods with statistically sufficient duration. The first period covers the observations up to the formation of the water reservoir and another period covers the observations accomplished during its operation. If no such data are available, or their series is statistically short, “an analog” method is used. Such an analog water reservoir is selected based on the similarity of the environmental conditions. It must be located within the zone of the designed water reservoir, under similar environmental conditions, and besides, a sufficient number of observations accomplished in its coastal zone.

Keywords : coast-constituent sediment, eustasy, meteorological parameters, seashore degradation, water reservoirs impact
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