

Trophic State of the Vacha and Krichim Reservoirs

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Abstract: The development in the middle section of the Vacha cascade and adequate utilization of the available hydro power potential along the river valley Vacha includes the rehabilitation of the existing reservoirs and the construction of a new one – the Tsankov Kamak Reservoir. Longitudinal differences in physical and chemical parameters lead to a trophic gradient in reservoirs. Those gradients are further increased by the close proximity of the reservoirs in the Vacha cascade. The lower reservoirs in the cascade will be strongly influenced by the construction of the Tsankov Kamak Reservoir. Marked spatial heterogeneity in abiotic parameters and trophic response in the reservoirs were related to loading and water level fluctuations due to dam operations. A gradient from eutrophic to mesotrophic state was observed between the stations in the Vacha Reservoir and a subsequent increase in the trophic state in the Krichim Reservoir, due to increased hydraulic loading. Assessment of deviations in trophic state indices allowed identification of the factors potentially influencing the algal response in the reservoirs.

Key words: trophic state, trophic indices, reservoir, eutrophication.