

## AQUATIC VASCULAR PLANTS OF THE NATIONAL PARK “BERINGIA” (EAST CHUKOTKA)

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Aquatic vascular plants of the National Park “Beringia”, the easternmost nature protected area of Russia, as well as east Chukotka as a whole, are represented by 44 taxa (40 species and 4 hybrids) from 23 genera and 18 families. A low diversity of the aquatic plants is associated with severe (low average annual temperatures, short growing season with little solar radiation, strong winds) and monotonous (predominantly small thermokarst lakes are widespread) environment. Only one third of the taxa are common and mainly represented by widespread species well adapted to the unfavorable conditions of the region. The main diversity of aquatic plants distinguishes Providenskii (32 taxa) and Mechigmenskii (30) sites of the National Park, where a wide range of aquatic habitats is represented: large river valleys with talik zones, various water bodies and thermal mineral springs. The flora of the National Park was added with 7 taxa: *Callitriche hermaphroditica*, *Myriophyllum verticillatum*, *Ranunculus codyanus*, *Ruppia occidentalis*, *Stuckenia* × *suecica*, *Utricularia macrorhiza*, *U. × ochroleuca*, among them *Ranunculus codyanus*, *Ruppia occidentalis*, *Stuckenia* × *suecica*, *Utricularia macrorhiza* were found in east Chukotka for the first time. The data on the diversity of aquatic vascular plants for each site of the National Park were supplemented, which allowed expanding the information on the distribution and clarifying the occurrence of 31 taxa. The greatest species diversity is concentrated in the most favorable lakes of river valleys with outcrops of carbonate rocks, where there is protection from winds, permafrost is mitigated by taliks, and carbonates provide the necessary balance of dissolved substances. On average, 3–5 species and hybrids grow in the studied water bodies in the National Park, the diversity of individual reservoirs does not exceed 7–8 ones, and water bodies in the valleys differ by the maximum number of taxa (up to 8 per water body), unlike tundra reservoirs and large lakes, where none or no more than 3 ones per water body occur. The systems of Gilmimlinei and Tumannye thermal mineral springs where *Bolboschoenus planiculmis*, *Ruppia maritima* and *Tillaea aquatic* included in the Red Data Book of Chukotka occur among others, as well as sections of valleys of the lower reaches of the Chegitun river with coastal species and the middle and lower reaches of the Kurupka river with a complex of boreal (thermophilic) species in a significant isolation from their main ranges are distinguished by the composition of aquatic plants. This enriches the aquatic flora of the region significantly. These areas, as microrefugia of thermophilic aquatic plants, require special attention and protection regime. Among the protected aquatic species, the status of coenopopulations of *Ruppia maritima* is the least concern, since on Gilmimlinei and Tumannye thermal mineral springs, the species is presented in good abundance and vitality. The coenopopulations of *Bolboschoenus planiculmis* are still stable, but extremely vulnerable, since

the species occur in a very small area and reproduces mainly vegetatively. *Tillaea aquatica*, with the threatened status, was not found. It is necessary to increase the conservation status of *Tillaea aquatica*, and also include in the main list 3 more rare species in Chukotka, *Ranunculus codyanus*, *Ruppia occidentalis* and *Stuckenia subretusa* in a new edition of the regional Red Data Book.

*Keywords:* biodiversity, monitoring, rare species, thermal mineral springs, water bodies

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Dedicated to the outstanding Soviet Arctic botanists – researchers of the plant world of Chukotka.