

THE HIGHER WATER VEGETATION OF THE KUCHURGAN RESERVOIR – THE COOLING POND OF THE MOLDAVIAN POWER STATION

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In the period of 2010–2012 we have defined in the water an riparian flora of the Kuchurgan cooling pond 66 species of higher plants, belonging to 25 families, up to the present day the list was supplemented with up to 100 species (37 families). Among the water flora is represented by 14 species from 10 families: Ceratophyllaceae (*Ceratophyllum demersum* L.), Hydrocharitaceae (*Hydrocharis morsus-ranae* L., *Vallisneria spiralis* L.), Butomaceae (*Butomus umbellatus* L.), Lemnaceae (*Lemna minor* L., *Lemna trisulca* L.), Najadaceae (*Najas marina* L.), Poaceae (*Phragmites australis* (Cav.)), Potamogetonaceae (*Potamogeton crispus* L., *Potamogeton pectinatus* L., *Potamogeton perfoliatus* L.), Salviniaceae (*Salvinia natans* (L.) All.), Typhaceae (*Typha latifolia* L.), Haloragaceae (*Myriophyllum spicatum* L.).

Out of the 14 species of water macrophytes, according to the classification of V.M. Katanskaya (1981), 8 species refer to the submerged hydrophytes, 3 species to the floating hydrophytes (freely-floating and with floating leaves) and 3 species to the halophytes (with rising above the water level stems and leaves).

Among the macrophytes of the Kuchurgan reservoir considerable massive development was observed in the spring period (first and second decades of May) of the curly pondweed *P. crispus*.

The intensity of the overgrowing achieves levels that it creates a barrier not only for the normal water exchange of the pond, but also to the passing of the motorboats. The overgrowth of the curly pond weed is observed in considerable proportions on the open water areas of the lower and upper parts of the reservoir – about 80 % of the water surface. In winter period the curly pondweed dies and falls in large quantities to the bottom of the cooling pond stimulating its eutrophication.

In the spring period the shore of the pond is overgrown in-between the reeds and reedmace the dominant forms are the spiked water-milfoil *M. spicatum*, soft hornwort *C. demersum*, as well as fennel pondweed *P. pectinatus* which occupy the most parts of the water volume; and only the inflorescence of the hornwort appear above the water level. In the summer period an active part in the overgrowing of the pond is played by the soft hornwort, fennel pondweed, spiked water-milfoil and tape grass *V. spiralis*, and with a small participation the perfoliate pondweed *P. perfoliatus*.

In August in the riparian sides of the reservoir, among the thick portions of the reeds, there appear a number of “windows» which are overgrown by the floating fern *S. natans* introduced into the Red List of Pridnestrovye. At this period of the year there is an active growth of the common frogbit *Hydrocharis morsus-ranae* and lemna: *L. minor* and *L. trisulca*.

Dominating among the hard leaf surface vegetation of the Kuchurgan reservoir is the common reed *Phr. australis*. The degree of the distribution of the reed on the bank line of the reservoir is not uniform. The more dense are the upper levels of the reservoir, which is the narrowest part of the reservoir and is wholly overgrown with reeds. The width of the overgrowths achieves about 1000–1500 meters.

The lower levels of the reservoir, especially its shore line is covered with reeds in a reduced proportion than in the upper and in a higher proportion than the middle parts. The width of the overgrowth is an average of 35–40 meters. The density of the overgrowth of the shore line by the common reed in average for the whole reservoir is about 50–70 plants/m². Within the reed parts there are portions of small area of the broadleaf cattail *T. latifolia* with a surface up to 40 square meters. The cattail portions do not play a considerable role in the overgrowing of the reservoir.

According to the space photos provided by the Google Maps a map was drawn by us of the Kuchurgan reservoir with the overgrowth zones of the vegetation with hard leaves. With the help of the application program MATLAB the obtained map was processed and the surface of the overgrowth was calculated. The computer data provided that the surface of the common reed overgrowth of Kuchurgan reservoir is 498 ha, that is 19 % of the total surface of the reservoir-cooling pond.