

Ten years of fish community succession in post-mining lake Milada-Chabařovice

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Abstract From 1991 to 1997 mining of the brown coal in the open-cast mine Chabařovice (Northern Bohemia, Czech Republic) was gradually suppressed and finally stopped, and parallelly the mining pit was prepared for hydric reclamation. Flooding of the pit started in June 2001 and final water level was reached after 10 years in August 2010. Because recreation is the primary purpose of the reclaimed Milada-Chabařovice Lake, long-term maintenance of high water quality is therefore the main goal. As the mesotrophic lake is with the area of 248 ha and average depth of 14 m relatively small and shallow, considerable attention is paid to natural succession of the ecosystem and especially to the possible eutrophication and its negative effects. With this respect also the forming of the fish community was monitored. After rapid increase in cyprinid fish abundance and biomass between 2004 and 2005, the fish community succession was onwards monitored by complex surveys of all in lake habitats using gillnets coupled with hydroacoustics and supplemented by manipulative measures. These measures were aimed towards enhancement of fish community based upon the lake typology (lowland, shallow, oligotrophic) i.e. perch and pike dominated system. Manipulation of the fish community development was done to reach relatively low total fish biomass (around 10 kg ha⁻¹) with dominant proportion of piscivorous fish. After annual removal of cyprinid catch during complex surveys and extensive predatory fish stocking program from 2005 to 2007 unique lake ecosystem was created with stable, more than one third biomass proportion of piscivorous fishes (pike, perch, wels and pikeperch). This fish community is highly valued both from biological and

socio-economical point of view, being a guard of long-term maintenance of high water quality by decelerating the eventual negatives connected with possible eutrophication and all that by achievement of the EU water framework directive requirements.

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