

Abstract

The diploma thesis is a complex limnological study dealing with the history and the present state of the oxbow lake Libišská tůň situated in the nature reserve Černínovsko near town Neratovice.

The research included different ways of investigation – genesis and evolution of the lake, morphometry, water-level fluctuation, physical parameters of water, basic chemical analysis of water, quality and quantity of phytoplankton and zooplankton, size structure of zooplankton and presence of heavy metals in sediments.

The cut backwater came into existence during the canalization of the Elbe River in the first half of the 19th century and it was shorted many times in the past. The lake has an area of 98 800 m² and is quite shallow - mean depth is 1,0 m, maximum depth is 2.60 m (the altitude of water surface was 158.99 m above sea level). The water level fluctuated between 158.47 m and 159.13 m above sea level during the year of interest 2003/04. The Secchi disk depths varied from 70 to 95 cm. The water of the lake was polluted with organic compounds ($BOD_5 = 5.4$ to 16.8 mg.l^{-1} ; $COD_{Mn} = 12.0$ to 31.4 mg.l^{-1}). Conductivity was high 139 mS.m^{-1} (asp. related to high concentration of chloride anions). Total dissolved inorganic nitrogen varied between 0.7 mg.l^{-1} and 3.1 mg.l^{-1} . The representation of major groups of phytoplankton and zooplankton changed considerably during the period of measurements. Chlorophyll *a* concentration was lower than is typical for the backwaters and oxbow lakes of the Elbe River. The absence of large species of zooplankton was related to a fishstock of planktivorous fishes. The sediments of the lake were particularly contaminated by cadmium, mercury, lead and zinc.