

Pelagic underyearling communities in a canyon-shaped reservoir in late summer

Tomáš JÚZA^{1,2)*}, Mojmír VAŠEK¹⁾, Jan KUBEČKA^{1,2)}, Jaromír SEĎA¹⁾, Josef MATĚNA^{1,2)}, Marie PRCHALOVÁ¹⁾, Jiří PETERKA¹⁾, Milan ŘÍHA^{1,2)}, Oldřich JAROLÍM^{1,2)}, Michal TUŠER^{1,2)}, Michal KRATOCHVÍL^{1,2)}, Martin ČECH¹⁾, Vladislav DRAŠTÍK¹⁾, Jaroslava FROUZOVÁ¹⁾, Eva HOHAUSOVÁ¹⁾ and Jiří ŽALOUĐÍK¹⁾

¹⁾Biology Centre of the Academy of Sciences of the Czech Republic, Institute of Hydrobiology, Na Sádkách 7, 370 05 České Budějovice, Czech Republic

²⁾Faculty of Science, University of South Bohemia, Branišovská 31, 370 05 České Budějovice, Czech Republic

*e-mail corresponding author: e-mail: tomas.juza@seznam.cz

ABSTRACT

The community of pelagic fish fry present during late summer was studied in the canyon-shaped and eutrophic Římov Reservoir, Czech Republic, using nighttime trawling over seven years. Cyprinid fish dominated in the open water area throughout the period investigated. The highest mean density of fry in the surface water layer was observed in 1999 (15 ind 100 m⁻³), the lowest in 2000 (0.1 ind 100 m⁻³). A pronounced spatial gradient in the distribution of fry was observed in the reservoir in all years, with the highest densities in the upstream area and the lowest densities near the dam. Occurrence of cyprinids was highest in the upper area, while percid fry were distributed more regularly throughout the horizontal gradient from the lower to upper areas of the reservoir. Vertically, the cyprinids were confined almost entirely to the near-surface water layer, whereas the percids dominated in the deeper strata (3-6 m depth) in all years investigated. Catches in the deepest layer sampled (between 6 and 9 meters) were only sporadic. No significant correlations between fry density and biotic or abiotic factors were observed during the seven years investigated, neither for the dominant fish species pooled together nor for separate fish species. The observed spatial gradients of fry density, both horizontal and vertical, are similar to spatial gradients of older fish. The longitudinal gradient of fry density seems to be a result of reservoir morphology (a gradient of the relative volume of the littoral) rather than other limiting biotic or abiotic factors.

Key words: fry community, spatial distribution, fry trawling, environmental factors, reservoir morphology
