

## Population characteristics of the mollusks of the genus *Viviparus* (Mollusca: Gastropoda) in Ukraine

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For today due to the anthropogenic pollution of the Ukrainian rivers, the abundance of many hydrobionts diminished. That is why there is a need for careful monitoring their natural populations. Mollusks of the genus *Viviparus* are an important component of hydroecosystems. These mollusks feed on detritus, and are also capable of filter-feeding, which can play a role in the biological self-purification of water bodies.

The control of natural *Viviparus* populations is carried out by the estimation of basic population parameters of species, one of the most important being their size-age structure. It allows to assess the life span in different environmental conditions, annual recruitment of juveniles, growth rates, mortality level and survival. The purpose of the present study was to analyse the population characteristics of two species of the genus *Viviparus* - *V. viviparus* (Linnaeus, 1758) and *V. contectus* (Millet, 1813).

To determine the dynamics of the size-age structure, we used the parameter of average age. The increase of its values indicates the decline of the quantity of juvenile age classes and the «senescence» of a population, whereas its decline reveals the increase and «rejuvenation» of a population. In various Ukrainian rivers, this parameter varies from 1.4 to 3.1. Very «young» populations of *V. viviparus* were found in anthropogenically polluted river Guyva (close to Zhytomyr) and the river Dnieper (near Kherson). A «young» population of *V. contectus* was observed in a lake in the village Pershotravneve (the Uzh basin). Comparatively «old» *Viviparus* populations occurred in the western regions of Ukraine (Khmelnitsk region): *V. viviparus* in the river Khomora and *V. contectus* in the river Sluch.

The amount of individuals from particular age classes of populations was estimated from the level of juvenile recruitment and mortality of mollusks. The level of juvenile recruitment substantially varied both in space and in time.

The important parameter of the population status is the life span of mollusks. Its maximum values for *V. viviparus* (5 years) were registered in the river Kam'yanka (Zhytomyr) and for *V. contectus* (6 years) in the basin of the rivers of Uzh and Tnya (Zhytomyr region). The minimum values of life span (3–4 years) of *Viviparus* population were found in a urbanized hydroecosystem. The value of this parameter depends mainly on the level of mortality of mollusks.

The maximum values of mortality coefficients (0,49-0,60) were registered for *V. viviparus* from the river Kam'yanka (near city Zhytomyr) and the river Sluch (Rivne region). The annual survival rate of mollusks at these sites was less than 55–60%, which corresponded with the shortest life span.

In the river Tnya and few lakes on Polesye, where the hydrochemical composition of water indicates the good ecological status of these water bodies, the mortality parameter was at its minimum (survival about 80–90%), corresponding to the maximum life span at these sites. The low juvenile recruitment and high level of mortality of *Viviparus* result from the degradation of their environment. Therefore, together with the control of