Analysis of Mechanisms Controlling the Population Dynamics in the Bank Vole (*Clethrionomys glareolus*) in the Northern Part of Its Range

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Abstract—Studies were carried out on the northeastern shore of Lake Ladoga (Karelia) in 1966–1998. Mechanisms controlling the structure and the bank vole population were studied using multivariate analysis. The hierarchy of contributions of exogenous and endogenous factors to the population dynamics has been determined. The intensity of vole reproduction in spring and early summer, as well as their survival in autumn-winter, and total abundance were found to be mainly related to wintering conditions and demographic situation in the population in the autumn of a preceding year. During the breeding period, vole reproduction and abundance are mainly determined by intrapopulation factors. At any other time the population is controlled by external effects, with exogenous factors determining the upper limit of the population density optimal under given conditions and endogenous mechanisms putting animal abundance in accordance with these conditions.