

## Abstract

This thesis deals with the influence of population density on the growth of brown trout *Salmo trutta*. The research was carried out in the Šumava National Park in the river basins of two oligotrophic streams, the Vydra and the Křemelná. Data has been collected between years 2005 and 2010, every spring and autumn. Fish were caught via electrofishing and the length and weight of each individual were measured. Every individual caught was marked in a unique way. A few samples of scales were taken from some of them. The scales were fixed into laboratory slides, scanned and measured by graphic software. According to the differences between annual lamellas density, the age and the annual growth of individual's body length were estimated. Thanks to these results a negative relationship between the individuals' of age 1+ growth rate and the population density was confirmed. The importance of this thesis is mainly in comparing the influence of different spatial and time definitions of population on this relationship. The influence of the population density in spring (the initial time of the growth period) was proved to be essential for the growth rate. This fact suggests the importance of compensation growth intensity after the long period of winter for individual's general growth under conditions provided by oligotrophic mountain streams.

Key words: growth, density, metapopulation, scale analysis, oligotrophic mountain streams