Abstract

This bachelor thesis is dedicated to investigate the methods applicable to research of population biology of highly mobile mammals on the example of Eurasian lynx. Eurasian lynx (*Lynx lynx*) is one of the most widespread felid species. This species is considered to be a suitable model organism due to its large range which includes various ecologic, climatic and demographic conditions. Eurasian lynx fundamentally participates in shaping the entire ecosystem as an apex predator. Its return to the areas of the past occurrence has an effect on species composition there. For the effective protection of this species, it is crucial to use appropriate monitoring methods to obtain information on the distribution area, abundance and population trends. Monitoring of this animal is quite difficult due to its low population density, mainly dusk and night activity and large home-range size. On account of this knowledge hi-tech methods (e.g. GPS telemetry, camera-traps, genetic monitoring) are used. Various methods of monitoring are utilized for various study goals. Telemetry is one of the most commonly used and probably the most effective method for obtaining detailed information about biology and ecology of the species. On the other side this method is invasive and it is possible to track only limited count of animals. Camera-traps are a suitable tool for tracking more individuals. Animals are recognized because of their unique pattern on fur. Key role in research of Eurasian lynx has also genetic monitoring, that allows us to get the information about e. g. origin and kinship of individuals and estimates of variability within population, that is crucial for estimating long-term viability of the population. Molecular-genetic markers are more reliable, but laborious and more expensive than traditional monitoring approaches. As a positive fact is considered that data are obtained without the need to manipulate with the examined individuals and thus do not significantly influence them. All of these methods are often combined to achieve the best results.

Keywords: spatial ecology, camera traps, satellite telemetry, species distribution models, landscape genetics