

## THE DYNAMICS OF FOX (*VULPES VULPES L.*) POPULATIONS IN SELECTED HUNTING REGIONS OF THE CENTRAL-EASTERN POLAND IN RELATION TO EFFECTIVENESS OF RABIES VACCINATION

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**Abstract.** The objective of the study was to analyse changes in the red fox population abundance and hunting bag statistics from the Polish Hunting Association's (PHA) hunting regions in central-eastern Poland, and to examine data from monitoring and routine red fox studies on the effectiveness of rabies vaccination. Studies on changes in the number and level of fox population exploitation were conducted in 8 hunting regions of central-eastern Poland over 9 hunting seasons; that is from 1998–1999 to 2006–2007. The number and density of fox population as well as the numbers of foxes harvested in each region were estimated in the study. An intensive control of fox numbers in the study period (5-fold increase in the red fox harvest) was associated with an almost 3-fold increase in red fox numbers. Our study demonstrated that the program of reducing fox numbers in the examined regions of central-eastern Poland has not produced the anticipated results so far. A seasonal application of rabies vaccination can be one of possible reasons for the phenomenon observed. Prior to immunization there was observed an increase in fox numbers in the examined regions. It was not so great, however, as after the hunting season 2001–2002. Foxes developed resistance to rabies as no case of sick foxes was found in the Mazovia Province in 2007–2009. The program of fox vaccination against rabies is necessary because it effectively reduces the occurrence of the disease in domestic animals and other species living in the wild. At present it is assumed that an application of oral vaccines should be continued till rabies in terrestrial animals is eradicated from the environment.

**Keywords:** red fox, density, rabies