proceedings

MDPI

Proceedings

Use of Camera Traps as a Biodiversity Measurement Tool in Gorce National Park, Southern Poland †

Ivan Karužić *, Sayantani M. Basak, Jan Loch, Paweł Armatys, Paweł Czarnota and Izabela A. Wierzbowska

* Correspondence: ivan.karuzic@student.uj.edu.pl

Abstract: The non-invasive methods, which do not need direct access and harassment of animals, are essential for biodiversity monitoring. For mammals, analyses of scats and hair samples, tracking and recording by remote cameras are among the most commonly used. The study aimed to verify the current status of animal populations using camera traps in Gorce National Park (GNP), located in the Polish Carpathians covered with the natural beech and spruce mountain forests. On average, 35 passive infra-red camera traps annually were deployed in GNP. The archived data from the period of December 2013 to December 2017 was processed. In total, there were 21087 recordings of animals with 23 different taxa of mammals including 17 large and medium-sized species. Shannon's diversity index was H′= 1.908. Among ungulates, the most commonly observed species were red deer (*Cervus elaphus*; n=7898), followed wild boar (*Sus scrofa*; n=526) and roe deer (*Capreolus capreolus*; n=482). Three large carnivores i.e., grey wolf (*Canis lupus*), Eurasian lynx (*Lynx lynx*) and brown bear (*Ursus arctos*) were all regularly observed, though they belong to rare species in Poland and other neighbouring countries. The use of camera traps allowed us to distinguish lynx individuals and estimate the size of its local population. The European wildcat (*Felis silvestris*) which was not observed in GNP since the 90s, was surprisingly recorded by camera traps in 2015 and 2016. Additionally, we registered raccoon (*Procyon lotor*), an invasive alien species in Poland, which can pose a potential threat to local fauna. Similarly, domestic dogs (*Canis lupus familiaris*) and cats (*Felis catus*) were free-ranging in GNP without any confinement and far from the nearest human settlements. The collected information helped to improve management and conservation measures by GNP. We showed that this non-invasive method is particularly useful for the monitoring of elusive and individually recognizable animal species.

Keywords: Shannon's index; non-invasive method; carnivora; the Carpathians mountains

Citation: Ivan Karužić *, Sayantani M. Basak, Jan Loch, Paweł Armatys, Paweł Czarnota, Izabela A. Wierzbowska. Use of camera traps as a biodiversity measurement tool in Gorce National park, southern Poland. *Proceedings* **2021**, *68*, x. https://doi.org/10.3390/xxxxx