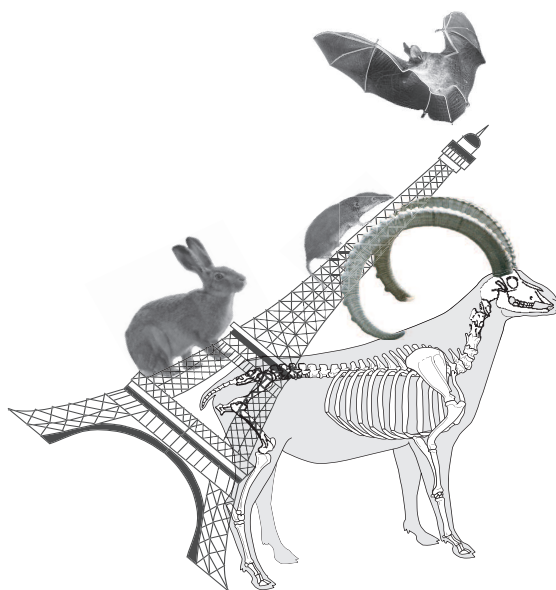




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and the planned human habitat management such as land-use regulation and mowing, the specially protected root vole recolonized on this marshland area. The multi-season occupancy models showed that the detection probabilities of the two protected vole species was significantly different. The regeneration of habitat quality (2004-2005) was indicated firstly by the field vole. The root vole's estimated probability of occupation of the 4th period (2007-2009: 42%) did not reach the original value (1999-2000: 98%) observed in the homogeneous sedgy habitat.

Abundance and diversity of small mammals under industrial pollution

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We studied abundance and diversity of small mammals – rodents and shrews near copper/nickel smelters in Russia (Revda, Karabash, Monchegorsk) and in Finland (Harjavalta). Ten sampling plots were established along 1-30 km distance from each smelter, consisting of 3 lines with 25 snap-traps per line and exposed during three nights each. In total 879 small mammals were caught. As the distance from the pollution source increased we observed a significant increase (min-max) in: density (0.7-1.3 to 4.6-10.0 ind./100 trap-nights), biomass (11-35 to 76-211 g/100 trap-nights) and species richness of small mammal populations (0.2–1.7 to 3.2–3.4 species/plot). Distinct trophic/taxonomic groups demonstrated a different response on industrial pollution. The most vulnerable to heavy metal pollution and/or habitat disturbance were insectivorous mammals.

Recent extinction of two european mammals – the probable extinction of two mole-rat taxa

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Large scale species extinctions are mainly associated with the biodiversity rich Third World, particularly so with the tropics. Contrary to this, the temperate regions commonly face local and regional extirpations while global extinctions are exceptional. The majority of mammalian extinctions were of smaller-bodied species and more than half of all mammals that went extinct over the last 500 years were rodents. Also the majority of mammals which are supposed to die out in the next few decades, are of small size. Poor taxonomic knowledge hampers the conservation status of many rodents, the situation however is nowhere so hopeless as the one related to the Eurasian mole-rats (subfamily Spalacinae). Frequently claimed that while morphological species of mole rats are possibly not yet threatened within their wide geographical ranges, some of the chromosomal forms are raising conservation concern as being distinct evolutionary significant units which are worth to maintain. We report subsequently on a probable extinction of two among latter described units. The first is taxonomically clumped in the European lesser blind mole-rat *Nannospalax leucodon* from the very margin of the Carpathian basin. It was originally described as a subspecies *syrmienensis*, but defined subsequently by its unique karyotype with diploid number 2n=54, and number of fundamental arms NF=90. The second was known as a subspecies of the Balkan mole-rat *Spalax graecus*, namely the *isticus* from Romania. During the peak activity of mole-rats the authors visited all the known localities described in

the literature of both taxa. But were unable to certify the presence of mole-rats in any of them.

Species and sex identification of otter (*Lutra lutra*) spraints using real-time polymerase chain reaction assays.

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Monitoring and conserving biodiversity is increasingly being recognized as critical for sustainable development. Developing strategies to maintain biodiversity requires baseline information on the current status of each individual species. DNA identification of non-invasively collected samples is an important tool in surveying mammal species. This study demonstrates two assays which utilize real-time polymerase chain reaction technology in the species and sex identification of otter (*Lutra lutra*) spraints. These species-specific assays are based on primers and fluorogenic probes designed to amplify fragments of either the mitochondrial control region (species identification) or zinc finger gene sequences on the X (ZFX) and Y (ZFY) chromosomes (sex identification). The assays are currently being implemented in non-invasive genetic monitoring of otter populations in Ireland and the U.K, and are shown to work efficiently with tissue and spraint DNA. When used together with genotyping assays to identify individuals, the aim is to obtain a more comprehensive estimation of size and structure in otter populations.

Effect of tourist pressure and reproductive period on physiological stress responses in wildcats

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The effects of human activities can have a significant impact on animal populations. The analysis of faecal glucocorticoid levels is a non-invasive method of measuring physiological stress responses of wildlife to human disturbances. The aim of this study was to examine the effects of tourist pressure and reproduction on physiological stress responses in wildcats. The study was conducted from May 2005 to June 2009 at Montes do Invernadeiro Natural Park (NW Spain). Natural Park is divided into three areas depending on the level of protection: restricted public-use, restricted area and integral reservation. To locate fresh scats of wildcats, transects were surveyed on foot along forest roads in the three areas of the park. The number of visitors per day was recorded. Sex steroid hormone and cortisol concentrations were determined from faecal extracts by an enzyme immunoassay. A total of 110 fresh faecal samples were collected. The results indicated that park area and progesterone concentration were the factors that explained the observed variation in the faecal glucocorticoid levels. Cortisol levels were higher in restricted public-use area, where tourism pressure was more intense. Faecal cortisol levels were also higher when progesterone concentrations were high (spring) and during the females gestation and the dispersion of the young (autumn). The results demonstrate negative effects of tourism on wildcats at the physiological level. Therefore, we recommend that some areas be maintained free of visitor impact and that visitor number be controlled during the animals' sensitive periods (gestation and young dispersion).