

**MICROSATELLITES AS A VALUABLE TOOL FOR DINARIC LYNX
(*Lynx lynx*) POPULATION MONITORING**

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Microsatellites are used as neutral genetic markers in numerous studies to infer the levels and patterns of genetic diversity. Also, microsatellite genotyping is used to differentiate individuals, for instance in forensics, population census studies and wildlife monitoring using the capture re-capture method. The Eurasian lynx (*Lynx lynx*) is an elusive, large carnivore, difficult to monitor and research using invasive techniques such as direct observation or capturing live animals. The goal of our research was to establish a monitoring method for the Dinaric lynx population based on a panel of microsatellite loci that can be used to track individual animals. We optimized a protocol for genotyping a total of 20 microsatellite loci, previously designed for domestic cats (*Felis catus*), Sumatran tigers (*Panthera tigris sumatrae*) and Canadian lynx (*Lynx canadensis*). The probability of identity (P_{ID}) was calculated using the program GIMLET v.1.3.1. P_{ID} -Sib was also calculated, as it is a conservative upper boundary of the number of loci necessary to resolve all individuals in a population, including siblings. Both P_{ID} and P_{ID} -Sib values were calculated for each locus and multiplied across the loci to obtain overall probability. A set of six loci (Fca742, Fca201, Fca247, Fca123, HDZ700 and Lc106) was identified with 100% certainty of identity probability. A total of 204 invasive and non-invasive samples of the Dinaric lynx population from Slovenia (101), Croatia (100) and Bosnia and Herzegovina (3) were analyzed in this study. We identified five re-captured individuals. Among them there was a male lynx Dinko, captured for radio-tracking studies in NP Risnjak, Croatia in 2008, while a sample of his hair and scat were collected on Snežnik, Slovenia in 2007. We confirm that genotyping is a valuable method for monitoring the endangered Dinaric lynx population.

