GENETIC DISTINCTION AND ASSESSMENT OF INTERSPECIFIC HYBRIDISATION AMONG THREE SPECIES OF HARES (*LEPUS*) IN ITALY

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The distribution and population dynamics of three species of hares (*Lepus*) in the Italian peninsula (*L. corsicanus*, *L. europeaus* and *L. timidus*) have been strongly affected during the last few decades by deep habitat changes, hunting and massive restocking of some over-hunted populations. In particular, the distribution range and global population size of the recently rediscovered endemic Italian hare (*L. corsicanus*) has shrunk in central and southern Italy and Sicily due to over-hunting and restocking with non-indigenous brown hares. Presence of released brown hares in central and southern Italy and in Sicily thus raised risks of hybridisation and introgression of the scanty surviving populations of Italian hares. It is well known that populations of *L. timidus*, widely distributed in alpine areas, hybridised naturally with brown hares in the past. This study was planned to describe species distinction among *Lepus* in Italy, and assess events of interspecific hybridisation, using a panel of DNA markers. We collected about 200 samples of *L. corsicanus*, *L. europeaus* and *L. timidus* from Northern, Central and Southern Italy, which were analysed using 10 microsatellite loci, three nuclear genes and mitochondrial DNA sequences. All these markers showed sharp differences among the three species, and allowed to: 1) describe their phylogenetic relationships; 2) infer their recent evolutionary history and phylogeographic structure; 3) estimate both inter-population divergence and intra-population genetic diversity; and 4) identify cases of inter-specific hybridisation in Italy.