Ecological and genetic characterization of Italian hare population living sympatrically with brown hare

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n the Cilento and Vallo di Diano National Park, in South of Italy, the rare and endemic Italian hare (Lepus considerance) is present with the highest density population along the (Trocchi et al. 1998, de Filippo et al. 1999, Pierpaoli et al. 1999).

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In genanagement policy and since the presence of autoctonous species was unknown, in several past ages, alloctonous brown hares (Lepus europaeus) had been in the same areas regardless of the risk for integrity of L. varsinanus population.

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In a first study carried in the 1998 (de Filippo et al. 1999), we located where hares occur in the National Park. In these areas we have repeatedly monitored the presence of hares by means of transect method. The occurrence of hares was checked during the night, using the standard spotlight – count method (Parkes 2001), along all the routes through the distribution areas. Each hare detection was georeferenced and recorded in a spatial database. Species identification was made by means of morphological patterns at distance, only when it was possible by distance and environmental conditions. All the unidentified detections were not considered.

Repeated detections in different census sessions (different months and years) show the presence of stable individual territories (Parkes 2001).

figure shows the stable territories of Italian and Brown hares in the CVD National Park.



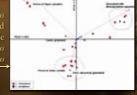
Lepus europaeus

2004). Legend was reclassified in a considered the 5° level of Corine ic way: a first classification was: rocks,

lasses selected: 1-100, 100-200.

anquet (1964) method. W

Principal Component Analysis using Lepu territories as obgect (in black or red) and habitat sctructure as variable (see corine code vegetations). Note like the presence of Fagus sylvatica forest appear in allopatric L. corsicanus



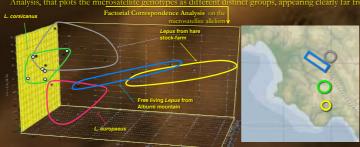
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TVI any questions, about the genetic structure of the populations, rises in presence of such narrow ecological competition and spatial simpatry.

The first and principal genetic recognition was conducted from Randi and co-worker since to the 1999. They analyzing the control region and cytochrome b found that L. corsicanus is a phylogenetically distinct species. In the present project we wont increase specimens examined with same mtDNA markers searching possible new haplotypes. Moreover we won't make ready characterization at population's level through nuclear hypervariable markers (microsatellite) helpful in the analysis of variability and gene flow more than evaluations on the individual fitness. The level of genetic variation in microsatellite loci was higher in Lepus considerants than in Lepus curopaeus, showing an average difference of 4 alleles per locus and an expected heterozygosity of 0.62 in the first and 0.34 in the latter.

The gene flow across the two species is low if we consider an European population of L. curopaeus, but it is significantly higher, taking in consideration sympatric population of the two species (Fist from 0.371 to 0.202, Weir & Cockerham, 1984).

Analysis, that plots the microsatel



indicated high differentiation among populations of the two species, even if at this stage of analysis had been eliving samples and from local hare stock-farm. These results appear also by means of Factorial Correspondence net groups, appearing clearly far from each other.

The mtDNA analysis is still in progress. We have identified new haplotypes of L. coricanus useful to screen hare stock-farms and free living hares. Besides would seem that some morphological characteristics have a low discriminating value in the identification of the two species. This could also depend on the presence of hybrids with intermediary phenotype.

29 41 152 182 183

152 182 183 L-CORS2 ACAG-TTACTTCGTCAACTTCCTAG-TTTCCACGCCCAC

A lot of conservation actions can be carrying out, but we think that in this circumstances, and in this precise locality, is priority to fight the illegal hunting/ reintroduction and to start a serious program of captive breeding with pure Lepus cornicanus that will subsequently be freed. Captive population using local hare stock