

Could favourable habitat conditions and hybridization between subspecies represent an important factor in chamois horn development?

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Introduction

Rupicapra rupicapra **rupicapra** Alpine chamois

Dinaric region - 2 subspecies od Northern chamois

Rupicapra rupicapra balcanica Balkan chamois

Croatia

- 2016/2017 1500 individuals
- 2011/2012 1148 individuals
- 2006/2007 990 individuals



POSITIVE POPULATION GROWTH



- > 4 main populations
 - Gorski kotar ~300
 - Velebit ~ 800
 - Dinara ~ 60
 - Biokovo ~ 450

- Recent reintroduction on northern Velebit -HYBRIDIZATION (Šprem and Bužan, 2016)
 - 10 Balkan chamois from Prenj mountain
 - 5 Alpine chamois from Kamnik Alps

Featured Article

The Genetic Impact of Chamois Management in the Dinarides

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mtDNA confirmed the occurrence of hybrids (Šprem & Buzan 2016)

- scarcely dimorphic mountain ungulates
- 60 70 % of horn growth takes place in the first 1.5 year of life
- males slightly longer, thickher and more curved horns
 - ~ 10 30 % heavier in body mass



The role of the horns?



Materials and methods



- 77 Alpine
- 44 Hybrid
- 99 Balkan



> High habitat heterogeneity



Horn analysis

- L2 segment (first two years of life)
- L2 circumference



Predictors

• Ecological factors

substrate (% of limestone soil) terrain data (aspect, elevation, slope) land use (open areas, forest)

• Genetic parameters

inbreeding coefficient

heterozygosity

individual admixture proportion

Rstudio - Random Forest - linear models



- 1. there is a difference in length of horn segments, circumferences and asymmetry between populations/subspecies
- 2. environmental and genetic factors affected segment length, circumference and asymmetry

Results





Influence on L2 segment length

Positive effect

- Increase of south facing areas
- Higher percentage of open areas
- Higher percentage of limestone soil

Influence on circumference

Positive effect

• Increase of south - facing areas

Negative effect

- Higher elevation
- Increased inbreeding coefficient

Negative effect

- Higher elevation
- Steeper slopes
- increased inbreeding coefficient
- Predominance of Balkan genotypes

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