



## III International Rupicapra Symposium



**Book of abstracts**  
16-18 June 2021 | Croatia





## Abstracts

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- ↳ Physiology & Disease
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ISBN 978-953-8276-21-7

Organizers and sponsors:



## A multi-omics approach to the conservation and management of the Alpine chamois

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**Keywords:** ancient DNA, DNA metabarcoding, metataxonomics, species interaction, management

The Alpine chamois is a charismatic species of alpine pastures above the treeline, an increasingly fragmented habitat as a result of climate warming. It has been suggested that mountain agricultural practices further degrade chamois habitat, influencing, together with translocations, restocking and overharvesting, its distribution, population demography and genetic structure. There is also increasing resource overlap with red deer and domestic animals, reducing the quantity and quality of available pasture, or forcing chamois displacement to suboptimal areas. These behavioral changes could also influence microbiota diversity and composition affecting an individual's ability to adapt to these environmental changes and impacting health, survival, and fitness.

To interpret the relative importance of demographic and evolutionary processes, patterns of variation in mtDNA and selected nuclear genes (Y-chromosome and nuclear introns) of 60 museum specimens are being analyzed using a 'target enrichment' method. Analysis of mtDNA markers of 70 modern samples (on the basis of 54 haplotypes previously identified) will be completed, and comparison of historical and modern data will be used to ascertain how past events may have impacted the current genetic structure of the species.

Finally, 520 fresh fecal pellets were collected for chamois, red deer and domestic sheep from multiple areas characterized by different levels of species interaction: no geographical overlap of chamois with red deer or sheep; overlap with red deer; overlap with red deer and sheep. DNA metabarcoding will be used to understand if and how overlap can induce changes in chamois diet; metataxonomics will be applied to the same fecal pellets to study changes in gut microbiota composition and investigating future ability of the animals to adapt to changing environment. Our results will contribute to a better understanding of historical and modern impacts of natural and human-mediated processes on Alpine chamois populations with the prospect of developing new management guidelines.