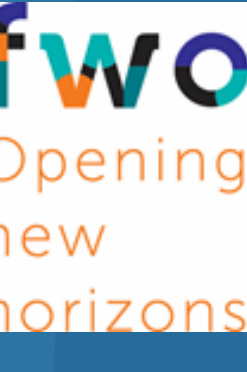




Rodent-borne pathogens in forest and urban green spaces from Belgium: preliminary results

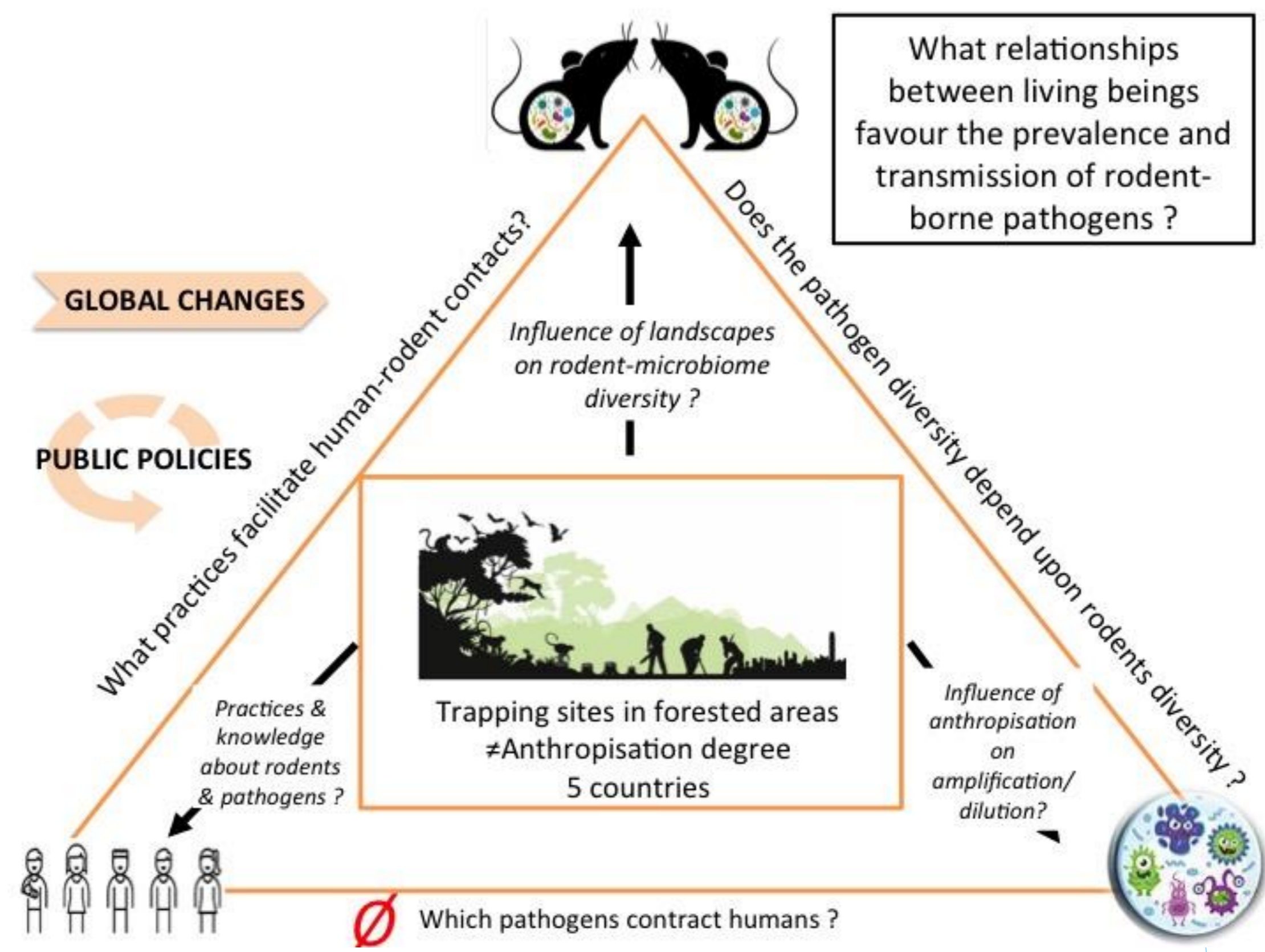
V.C. Colombo^{1,2}, V. Sluydts¹, N. Van Houtte¹, S. Philtjens¹, H. Alburkat³, A. Bordes⁴, V. Bourret^{3,5}, L. Dutra³, M. Galan⁴, H. Goris¹, M. Grzybek⁶, M. Hubert¹, J. Nowicka⁶, T. Sironen³, N. Charbonnel⁴ and H. Leirs¹

(1) Evolutionary Ecology Group, Department of Biology, University of Antwerp, Wilrijk, Belgium (2) Servicio de Neurovirosis, INEI-ANLIS Dr. Carlos G. Malbrán (3) University of Helsinki, Helsinki, Finland (4) CBGP, INRAE, CIRAD, IRD, Institut Agro, University of Montpellier, France (5) INRAE - Université de Toulouse, France (6) Institute of Maritime and Tropical Medicine, Medical University of Gdansk, Poland
Valeria.colombo@uantwerpen.be



Aims

The BiodivERSA project Managing biodiversity in forests and urban green spaces: dilution and amplification effects on rodent microbiomes and rodent-borne diseases (BioRodDis), aims to elucidate the interlinkages between rodent biodiversity, their microbiome and rodent-borne pathogens in scenarios with different anthropogenic pressure at local and European scales (Belgium, France, Germany, Ireland and Poland). Here we present the preliminary results of the potentially pathogenic/zoonotic organisms found in Belgium.



Methods

Rodents were trapped with live traps from October 2020 to October 2021 for 4 nights every autumn and spring in 6 sites classified as forest, urban park or zoo in the province of Antwerp, Belgium.

Immunofluorescence (IFA)
 Serum
 Orthohantavirus
 Mammarenavirus
 Orthopoxvirus
 SARS-CoV-2

High throughput sequencing
 16S rRNA
 Spleen
 Pathogenic bacteria

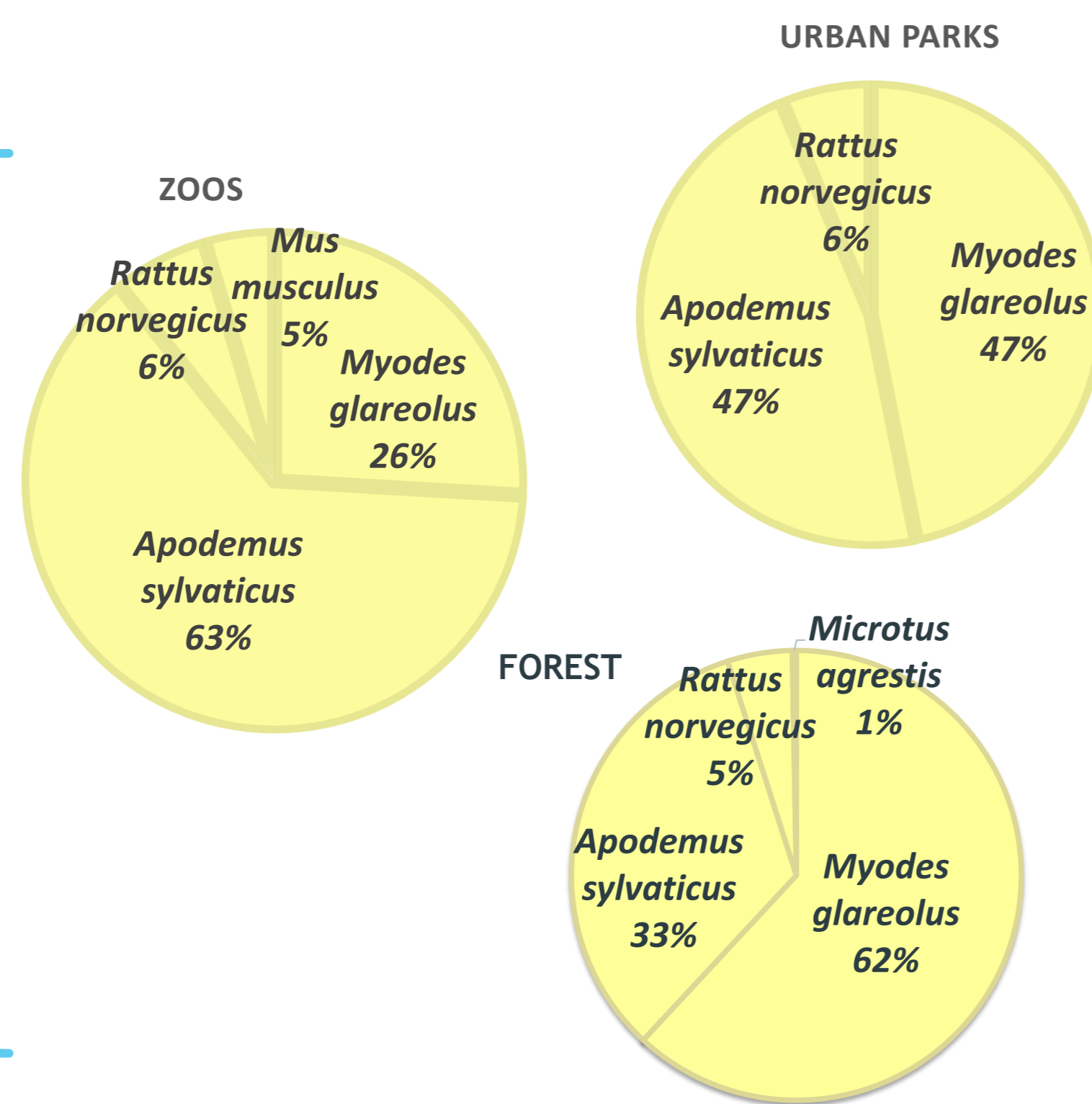
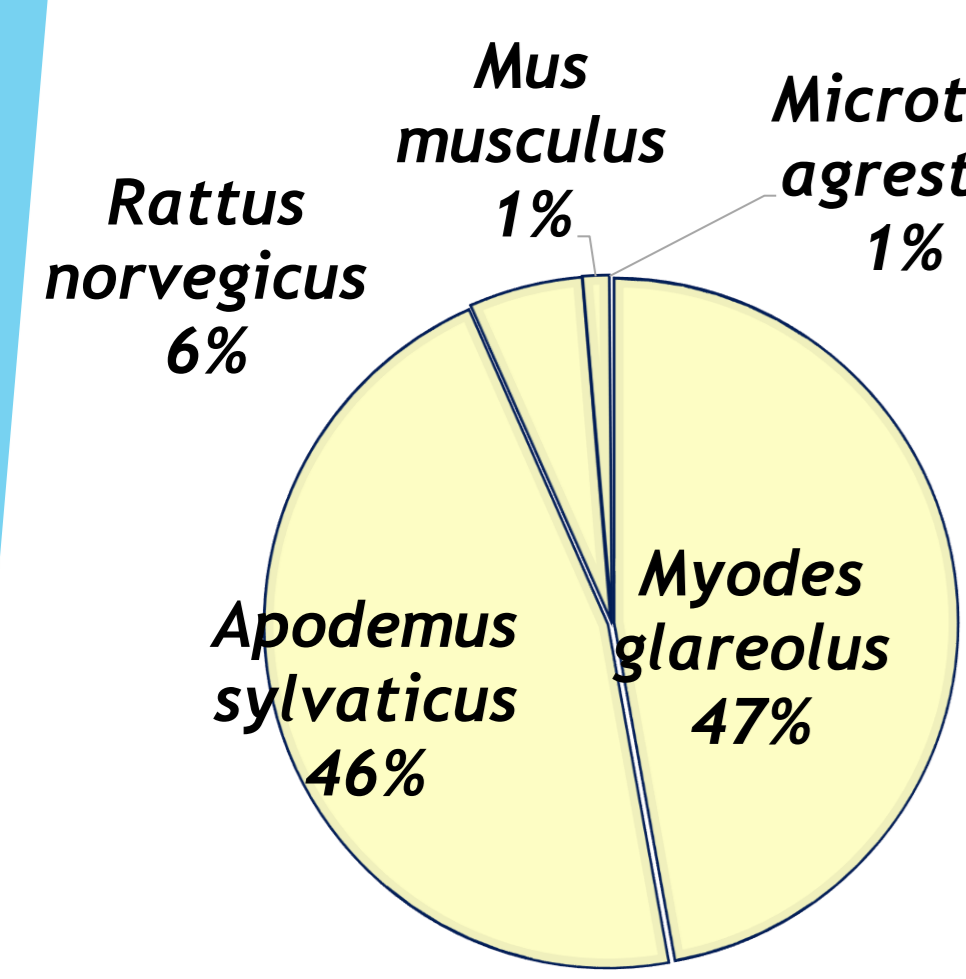
qPCR
 LipL32 gene
 Kidney
 Leptospira spp

RT-qPCR
 RdRp gene
 Colon
 Coronavirus

RT-qPCR
 L segment
 Lung
 Orthohantavirus
 Mammarenavirus

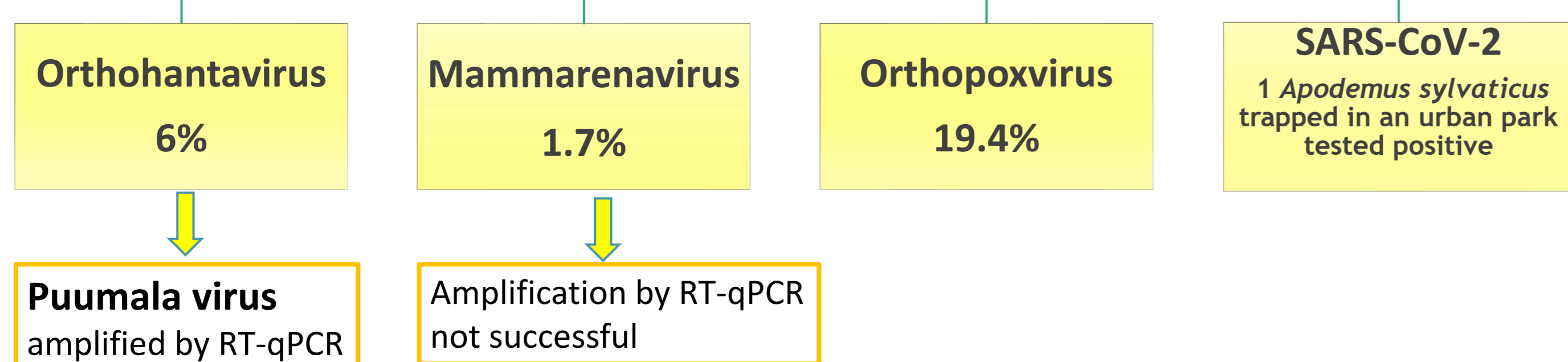
Results

RODENTS TESTED (TOTAL=846)



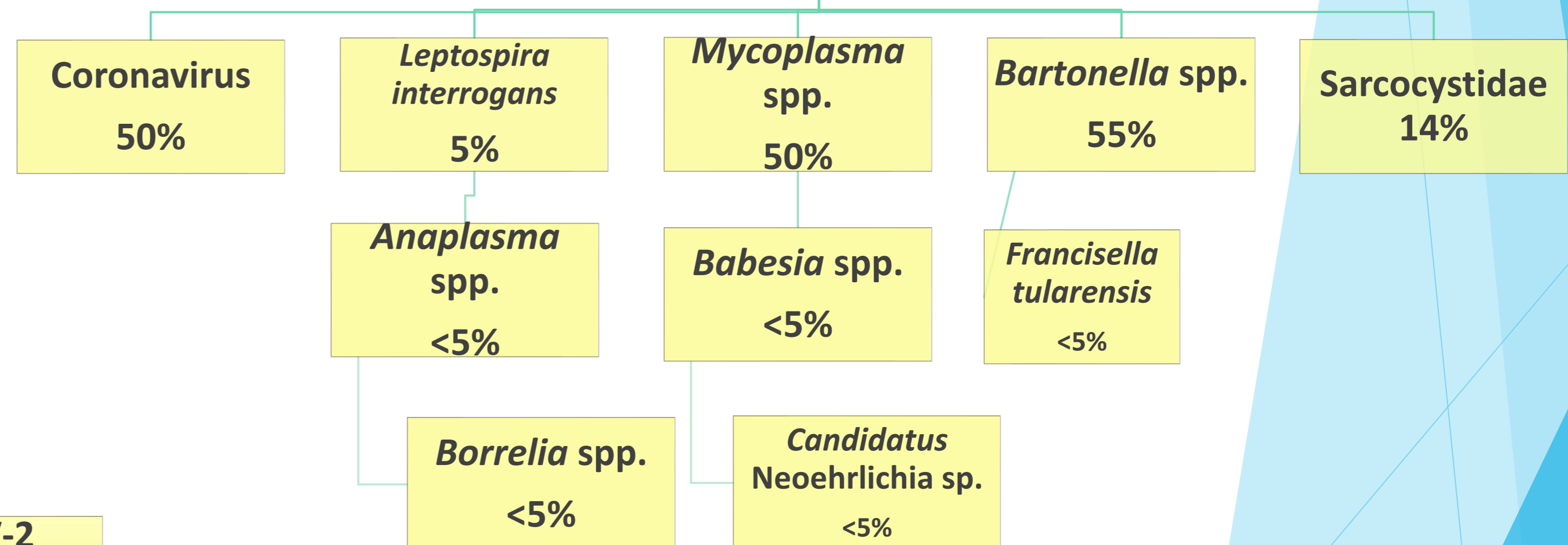
Seroprevalence

Overall prevalence values



PCR results

Overall prevalence values



Conclusion

These findings remind us of the major role of rodents as reservoirs of pathogens of public health and veterinary importance. These preliminary results suggest a differential trend in the composition of the rodent species according to the habitat. In addition, the rodent-borne organisms with zoonotic potential detected showed an apparently differential distribution according to the habitat that deserves further analyses. These data, in addition with the results to be obtained soon from the rodents trapped in spring 2022, will allow us to perform multivariate analyses to advance our understanding of the dynamics of rodent-borne diseases, the relationships between rodent diversity and habitats and zoonotic diseases dynamics and emergence.

Pathogen prevalence (overall prevalence >5%) vs Habitat

