

# Programme and Abstracts

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# **Modelling mountain bird distributions - Model consistency and transferability across different Alpine regions**

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Conservation actions are often based on studies carried out in fairly restricted areas, yet these actions may be applied to much wider areas beyond the location of research. The extent to which birds respond to habitat in a consistent way across different regions may limit the efficacy of any conservation initiative that is intended to be applied over broad geographical areas. We address this issue in an Alpine context, considering (i) existing evidence of differences in environmental requirements (habitat, climate, topography) in different areas of the Alps and (ii) formally analysing consistency of climate and habitat associations and trends in altitudinal occurrence rates for Alpine species using data from bird surveys of altitudinal transects carried out in two separate Alpine regions, Piedmont and Trentino. Forest and grassland species showed a reasonable level of consistency in previously published models, although model outcomes were less consistent for forest-shrub ecotone species. Distributions of the majority of species along altitudinal gradients were consistent across regions. Furthermore, the environmental drivers were similar across regions for a given species. However, the magnitude of the effects of individual drivers varied. Cross-validation found good model performance for forest species, suggesting high model transferability, but poor model performance for grassland and especially forest-shrub ecotone species. These findings suggest that broad-scale models can be used to predict montane forest species occurrence across Alpine regions, but that a greater understanding of environmental requirements of higher altitude species is needed in order to develop more widely applicable predictive models.