
Talent knows no age: testing male age effect on nest survival in an alpine bird population

Camille Mermillon^{*1,2}, Glenn Yannic², Martha Maria Sander³, Domenico Rosselli⁴, and Dan Chamberlain¹

¹Department of Life Sciences and Systems Biology, University of Turin – Italie

²Laboratoire d'Ecologie Alpine – Université Savoie Mont Blanc, Centre National de la Recherche Scientifique – France

³Alfred Wegener Institute for Polar and Marine Research – Allemagne

⁴Ente di Gestione delle Aree Protette delle Alpi Cozie – Italie

Résumé

Mountains are threatened both by climate and land use changes, that could be equally responsible for landscape transformation in the Alps. Climate change is also leading to an advancement of spring conditions, with an earlier snowmelt and green-up. In high elevation birds, individual characteristics may explain differences in the capacity to adapt to these changes. Along with environmental parameters, body condition, age and experience can affect phenology and breeding parameters. In birds, breeding success increases often with age. i.e., older individuals usually arrive earlier on breeding ground, which is a reproductive advantage, and they benefit from an enhancement of the foraging capacity and breeding competences. Yet, this phenomenon is not well documented in highly changing alpine habitats.

The Northern Wheatear (*Oenanthe oenanthe*) is a migratory passerine typical of alpine grasslands. Since 2019, we are monitoring a wild population of wheatear in the Western Italian Alps, getting data on breeding success, phenology, survival and habitat selection. We aimed at investigating whether the age of males (yearling or adult) influenced the phenology and the breeding success using indicators of reproductive performance such as the nest survival probability and the daily nest failure.

We did not find any effect of male age either on the breeding phenology (laying date) or on the nest survival or the daily nest failure (as a proxy of breeding success). Alpine grasslands are subject to a very high interannual variability, and arriving earlier might not be an advantage since conditions may not be suitable and territories not accessible yet because of the snow. Moreover, nest failure was mainly due to predation which suggests that food is not a limiting factor during the breeding season. Hence, differences between yearlings and adults that could be linked to foraging capacities are concealed.

In conclusion, our results do not support the hypothesis in which age of males is driving breeding phenology and breeding success unlike previous studies conducted in low elevation habitats. Other differences between low and high elevation populations had already been noted for the wheatear, and our research corroborates this trend.

Mots-Clés: alpine bird, nest survival, breeding success, phenology, northern wheatear, male age

*Intervenant