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## **Looking forward and looking back: drivers of change in European alpine and upland bird populations**

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Although relatively depauperate in terms of species richness, the alpine and upland habitats of Europe support many specialised bird species which may be vulnerable to environmental change. These habitats have been the subject of significant land-use change in recent decades, from agricultural abandonment in some areas, to intensification in others, afforestation, increasing recreational use and renewable energy development. Upland species are also regarded as highly sensitive to climate change. Here we review the main threats which have been identified for alpine and upland birds in Europe and identify how their likely impact varies between species and location, collating data on recent trends in the direction and severity of these changes, which are then related to information about observed population trends. By looking back, we present a review of how human activity has affected these bird populations in recent decades. We then look forward, reviewing the results of recently published horizon scanning exercises to identify the potential for additional novel threats to impact upon birds in the European uplands, as well as considering the likely future direction of existing threats. We conclude by identifying what appear to be the most important drivers of change for upland birds, and therefore assessing the species which appear to be most at risk of future conservation threat.