Taxonomy and genetics

Status of rock partridge (*Alectoris graeca*) on the east coast of the Adriatic Sea

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The rock partridge (*Alectoris graeca*) is a mountain bird endemic to Europe. It is found in the Alps, the central and southern Apennines, Sicily in Italy, the Balkans, Albania, and Greece. In this distribution area, it mainly inhabits rocky areas and prefers dry, open habitats with sparse vegetation. Since 1950, rock partridge populations have declined across its range, with an estimated decline of almost 30% between 2011 and 2021, resulting in the species being classified as Near Threatened (NT) in both Europe and the EU28. The species was once widespread along the eastern coast of the Adriatic, but has disappeared from many of these areas due to various threats, including the abandonment of traditional farming practices in mountainous areas and habitat loss due to intensive agriculture. In addition, there is the overuse of pesticides, persistent drought, increasing predator populations, overhunting, and poaching. In some regions, such as the Alps, the Italian Apennines and Greece, these threats have led to the extinction of local populations.

To counteract this decline, captive-bred partridges, often chukars (*Alectoris chukar*) or hybrids between chukars and rock partridges, have been released on a large scale to replace native rock partridges. These releases have often occurred without a thorough assessment of hybridization risks, raising serious concerns about genetic pollution and the long-term conservation of rock partridge. Genetic admixture and introgression can disrupt local adaptations and potentially lead to population declines. Visual inspection alone cannot reliably determine the true origin or genetic differences of captive-bred partridges; therefore, genetic analysis provides a more accurate method to obtain this crucial information. Therefore, we studied the genetic makeup of rock partridges at 32 locations along the eastern Adriatic coast using 20 microsatellite markers to analyse genetic variation and population structure. This data can also serve as a basis for future genetic monitoring and conservation initiatives and help to ensure the long-term viability of the species.