

Origin and impact of chromosomal inversions on the evolution and physiology of common quails

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PI: Carles Vilà
Estación Biológica de Doñana (EBD-CSIC)
carles.vila@evd.csic.es



Our research group has found a chromosomal inversion that affects more than 10% of the genome of common quails, more than 1200 genes. This inversion is found with high frequency in the south of the Iberian Peninsula, north of Morocco, and Macaronesian islands. The inversion is associated with phenotypic effects and quails with the inversion are larger, darker, and have reduced migratory movements. However, the origin of this inversion is still unknown and the impact of the coexistence of the two chromosomal variants in the same populations not fully understood.

We are looking for candidates for a 4 year PhD contract that could:

- participate in field efforts to sample quails with and without the inversion, mainly in southern Spain,
- participate in laboratory work to prepare genomic libraries and hormone and stable isotope analyses,
- carry out phylogenomic and population genomic analyses including quails sampled in Spain and other parts of the world.

Publications related to this research project:

Ravagni et al. (2023) Evolutionary history of an island endemic, the Azorean common quail. *Molecular Ecology* 00, 1- 15. <https://doi.org/10.1111/mec.16997>

Sanchez-Donoso et al. (2022) Massive genome inversion drives coexistence of divergent morphs in common quails. *Current Biology* 32, 462-469. <https://doi.org/10.1016/j.cub.2021.11.019>

Sanchez et al. (2022) La sorprendente estructura poblacional de la codorniz. *Quercus* 439, 12-17.

The PhD student will be part of the Conservation and Evolutionary Genetics group at the Estación Biológica de Doñana (<http://www.consevol.org/>) in Seville. The members of this group use genomic tools and field ecology methods to study the origin and evolution of vertebrate biodiversity at intra- and inter-specific levels, studying species in Europe, Africa, America, and Asia. The group has an international spirit. A Masters degree or equivalent is required. Bioinformatics experience and animal handling certification will be appreciated.

Candidates are encouraged to contact us by email before submitting applications.