
You will investigate the demographic status of the East Balkan population of brown bears (*Ursus arctos*), using DNA profiling to help form an evidence-based conservation roadmap. The study area comprises two mountain population segments, (1) Central Balkans (CB) and (2) Rilo-Rodopian (RR) on the Bulgaria/Greece border. The overall objectives are: 1) Assess the population status and genetic diversity of the East Balkan population using non-invasively collected samples, 2) Determine the viability of the populations and examine whether gene flow occurs between them.

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**Co-Supervisor:** Prof. Mike Bruford (Cardiff University, School of Biosciences)

**Project keywords:** Wildlife conservation, Biology, Mammals, Genetic monitoring, Microsatellites, DNA, Population genetics.

![A southeast European brown bear kindly delivering hair samples for genetic analysis.](https://example.com/bear-speaking.jpg) ![Study area, showing the distribution of brown bears in the Balkans and Carpathians. East Balkan population is denoted by a red circle.(Adapted from Pylidis et al. 2021)](https://example.com/balkans-map.png)

**Proposed start date:** early July 2021

**Project description:**

**Laboratory:** Extraction of DNA from hair and faecal samples. PCR amplification of mitochondrial and microsatellite markers. Agarose gel electrophoresis. DNA fragment analysis (outsourced to service provider).

**Data analysis:** microsatellite genotyping. Population genetics (diversity and differentiation, relatedness).

**Candidate requirements**

Basic familiarity with molecular genetic laboratory techniques. Preference to candidates with population genetic training.

**Background reading and references**

Frosch, C *et al.* (2014). Noninvasive genetic assessment of brown bear population structure in Bulgarian mountain regions. *Mammalian Biology*, [https://doi.org/10.1016/j.mambio.2014.04.001](https://doi.org/10.1016/j.mambio.2014.04.001)

Nowak, C *et al.* (2014). Molecular evidence for historic long-distance translocations of brown bears in the Balkan region. *Conservation Genetics*, [https://doi.org/10.1007/s10592-014-0570-7](https://doi.org/10.1007/s10592-014-0570-7)