

European Conservation Genetics Meeting



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Edinburgh

Technologies

Date: Tuesday 30 August

Time: 16:55/ 17:45

Room: Pentlands (East/West)
Prestonfield

Abstract 138

Speed talk & poster

Exploring human-amphibian cohabitation with conservation genetics and landscape planning tools

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Land use changes in combination with increasingly frequent droughts associated with climate change are impacting amphibian populations worldwide, causing dramatic declines even within highly protected areas. In the Mediterranean basin, artificial sites have been shown to be critical for the resilience of species that rely on ephemeral ponds for reproduction. With the aim of defining specific guidelines for habitat creation and restoration, we have developed innovative protocols for environmental DNA-based monitoring of species and genetic diversity of alpine amphibian communities. The protocols have been applied to 40 wetland sites in the Province of Trento (Italy), 20 natural areas (e.g., national and local reserves, Natura 2000 Network sites) and 20 of artificial origin or otherwise co-opted for human use (e.g., water basins and agricultural ditches, alpine pasture pools, sports fishing ponds). Species richness and mtDNA sequence data collected with the eDNA protocols will be used to verify the presence and haplotype diversity of these species in both protected and human-impacted water bodies. Architectural parameters and indices of habitat heterogeneity linked to amphibian presence are being measured at each site using remote sensing data and drone photography. In addition, landscape features will be reconstructed using GIS software to identify architectural and landscape characteristics preferred by amphibians in the sampled wetlands.