SAW project

INFERRING GENETIC PATTERNS OF ON-GOING RECOLONIZATION OF CENTRAL EUROPE BY ELUSIVE, LARGE CARNIVORES USING NOVEL SNP MARKER SYSTEMS FOR NON-INVASIVE SAMPLES

Many carnivores were largely or completely extirpated from Central Europe in the 18th and 19th centuries. For example, large species such as the Eurasian lynx (*Lynx lynx*) became extinct by the end of the 19th century, while smaller carnivores such as the Eurasian otter (*Lutra lutra*) survived persecution in small relict populations in remote areas. Due to the implementation of legal protection efforts, formerly absent carnivores have started to expand their ranges back into Central Europe since the second half of the last century, often supported by active reintroduction efforts.

All natural or human-mediated reintroduction involves small founder populations, below the long-term minimum viable population size, and often with reduced genetic variability. The recolonization of Central Europe by these carnivores is thus under intensive study by conservationists, ecologists and population geneticists. Concurrently, the source populations of these species outside of Central Europe are threatened by habitat loss and fragmentation, as well as human persecution. Thus, the future viability of these species in Central European and beyond is uncertain. In order to contribute to efforts to study and protect these species, the IZW joined a scientific network led by the Senckenberg Society for Nature Research.

In particular, the research network aimed to:

- Develop SNP-based genetic marker systems for fast, safe and reproducible genotyping based on non-invasively collected samples from five endangered carnivores (lynx, otter, bear, wolf, wildcat).
- Build a database with genotypic information for all relevant populations in Central Europe, as well as potential source populations in neighbouring regions.
- Determine the genetic status of Central European populations of all chosen model species, and investigate if and to what extent gene flow occurs between these populations and populations of neighbouring regions (i.e. potential source populations).

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Publications


Stakeholder Publications

