PLENARY TALK: New tools and methods

Genetic insights for advanced conservation and management of large carnivores

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Effective management of large carnivores in the Romanian Carpathians hinges on a robust understanding of their genetic structure, diversity, connectivity, and human-wildlife conflict. The Carpathians host some of Europe's most significant populations of these apex predators, making it essential to balance conservation priorities with strategies to mitigate human-wildlife conflicts at unprecedented levels. Genetic insights, including the broad uptake and use of genetic diversity for species assessments, are crucial in guiding management efforts. These insights, supported by scientific knowledge that underpins biodiversity protection, help monitor population size, gene flow, and genetic health, identify distinct subpopulations, and assess the impacts of habitat fragmentation. Digitalization in conservation enhances these efforts by enabling efficient data management, accurate analysis, streamlined research, and actionable reporting to support biodiversity protection under international agreements. This presentation reflects on the application of genetic research in the Carpathians and its implications for vertebrate management, focusing on advancing species conservation, promoting population connectivity, and fostering sustainable coexistence with local communities. By addressing ecological and socio-economic challenges, these efforts aim to secure the long-term survival of iconic carnivore species.