

ForestConnect

Towards a Climate-smart Forest Connectivity for
Large Carnivores in the Balkan-**Carpathian**-Dinaric
Region



02.12.2025

CCIC Meeting

Belgrade

Tanya Georgieva-Schnell, WWF BG
Elisabeth Wiegele, CUAS; UNESCO CHAIR

Project Overview

- 3 regions: Balkans, Dinaric and Carpathians
- 7 countries
- 9 pilot territories
- 23 intervention sites
- 13 partners + 10 associated

Funded by Interreg Danube Region Programme

- Total budget: 2.764.000 euro
- Duration: 01.2024 - 06.2026

<https://interreg-danube.eu/projects/forestconnect>



Past projects and outputs for large carnivores and ecological connectivity actions in the Carpathians

PROJECT: ConnectGREEN Restoring and managing ecological corridors in mountains as the green infrastructure in the Danube basin

2018-2021

KEY DOCUMENTS:

Guidelines on How to Use Spatial Planning Tools in Integrative Management of Ecological Corridors

Methodology for Identification of Ecological Corridors in the Carpathian Countries by Using Large Carnivores as Umbrella Species

International Action Plan on Conservation of Large Carnivores and Ensuring Ecological Connectivity in the Carpathians



PROJECT: SAVEGREEN – Safeguarding the functionality of transnationally important ecological corridors in the Danube basin

2020-2022

KEY DOCUMENTS:

Methodology for Standardised Monitoring of Ecological Connectivity Guidelines for the Analysis of Structural and Functional Connectivity

Local Cross-Sectoral Operation Plans for select areas in Romania, Austria, Czech Republic-Slovakia, Bulgaria, Alpine-Carpathian Corridor, Hungary, and Ukraine



PROJECT: FORESTCONNECT: Towards a Climate-smart Forest Connectivity for Large Carnivores in the Balkan-Carpathian-Dinaric Region

2024-2025

KEY DOCUMENTS:

Methodology for the identification of climate-smart ecological networks for large carnivores

Guidelines on management of transnational mosaic habitats along forest corridors and on preserving ecosystems and related services in eco-connectivity areas for the benefit of LCs and local people

Strategic Action Plan for Climate Change Adaptation and Resilience-Enhancing Forest Management in



Common challenge

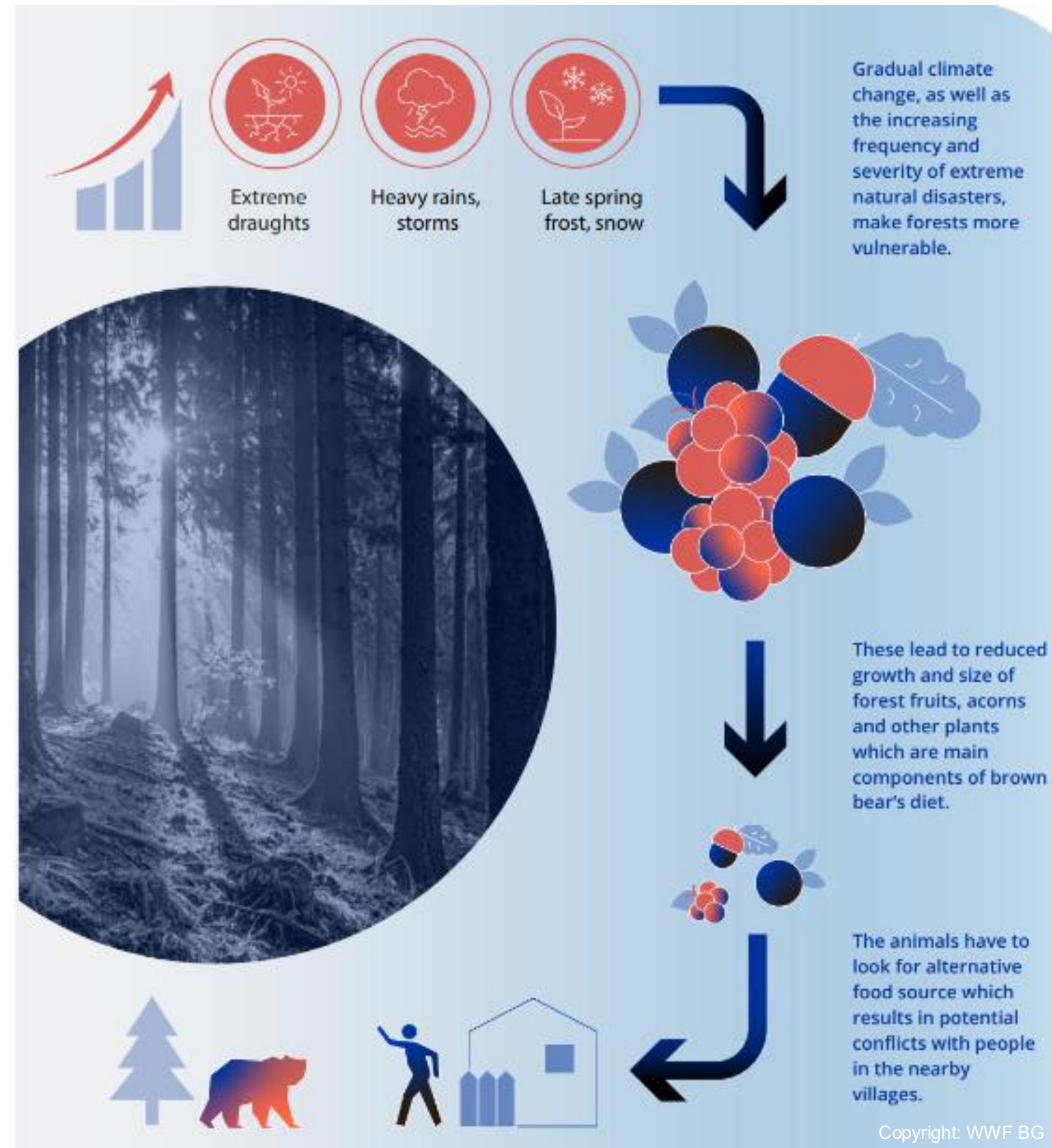
Impact of climate change on large carnivores

Summer temperatures:
+2°C to +5°C expected increase by 2085.

Winter temperatures: +2°C to +5°C expected increase.

Summer precipitation:
Droughts in Southern Europe.

Storms and wildfires:
Expected to increase in frequency and intensity.



ForestConnect Objectives

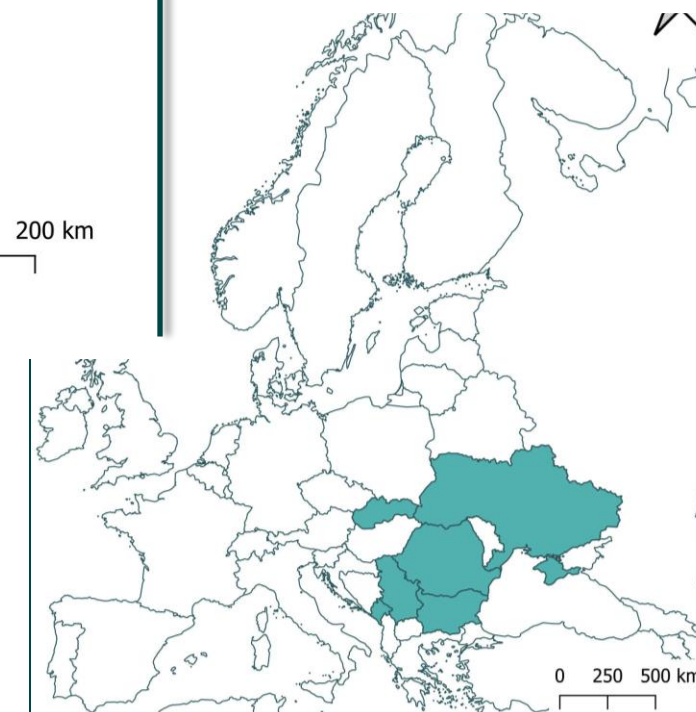


Pilot area and Intervention sites



Cross-border cooperation in 23 Intervention sites in 9 pilot areas – transnational ecocorridors with low anthropogenic disturbance

Zapadna Stara planina (BG)
Stara planina NP (SR)
Carpathian Biosphere Reserve (UA)
Apuseni NP (RO)
Strambu Baiut (RO)
Slovenski Raj NP (SK)
Biogradska gora NP (MN)
Durmitor NP (MN)
Prokletije NP (MN)



Key project achievements (preliminary)

1. Implemented **pilot adaptation actions** to reduce human–wildlife conflicts and create climate-resilient microrefugia, incl. **feasibility study identifying native forest fruit species for habitat adaptation**
2. Prepared 1st draft of **Strategic Action Plan for climate change adaptation and resilience-enhancing forest management in ecological corridors for large carnivores**.
3. Update of **CCIBIS platform**; uploading new data, maps, and digital twin connectivity models in progress
4. Developed methodology and **assessment of ecosystem services provided by large carnivores and connected habitats**; Guidelines for protection under development.
5. **Stakeholder engagement** through consultations and collaborative activities.



Pilot field actions for habitat adaptation

- 19,5 ha planted with 10 different fruit-bearing species on 21 sites in 6 countries
- 63,5 ha of improved mosaic conditions through mowing, and removal of shrubs on 23 sites in 6 countries



Pilot field actions for habitat adaptation

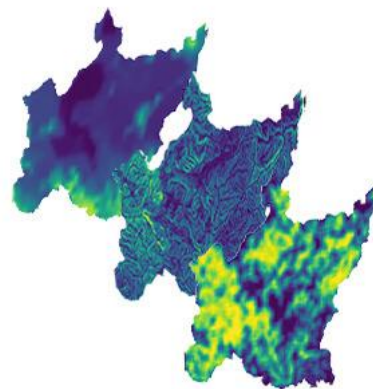


Modeling climate-smart ecological networks for large carnivores

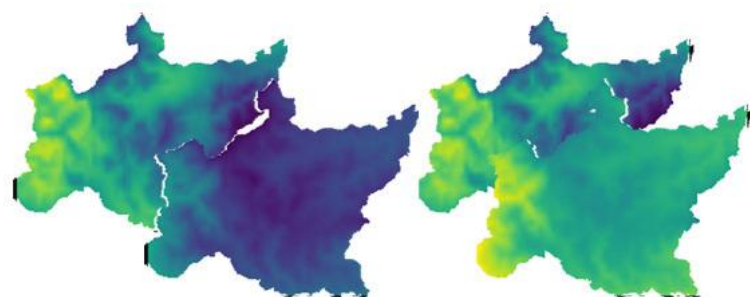
Species occurrences



Environmental predictors



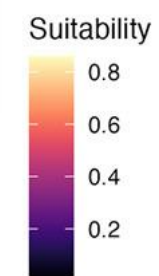
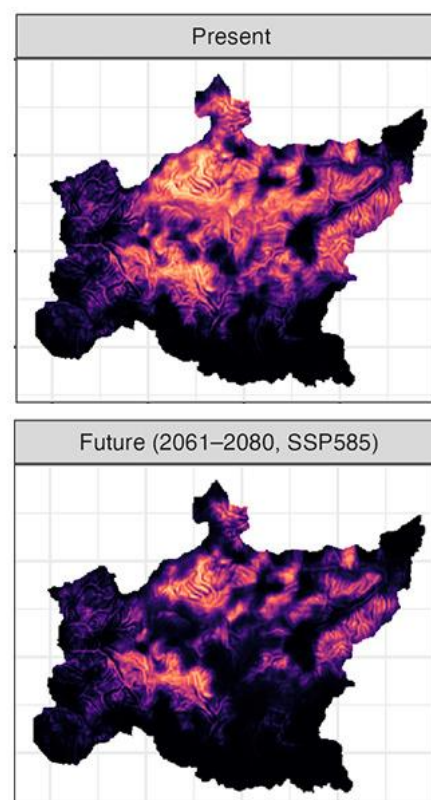
Climate predictors



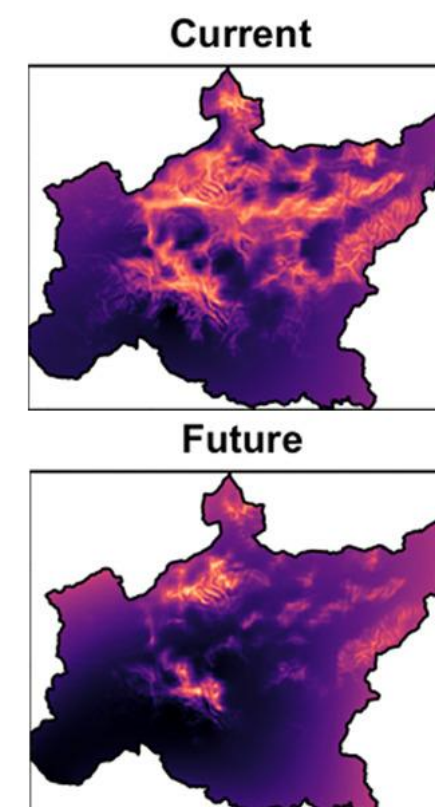
Current scenario

Future scenario

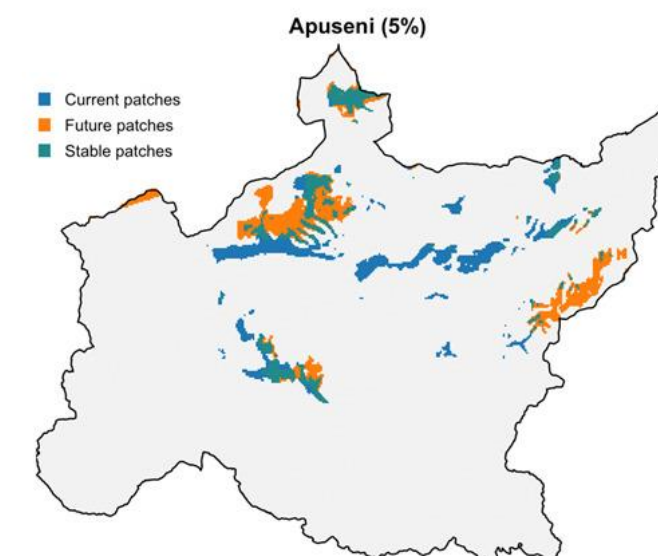
Habitat suitability



Circuit flow



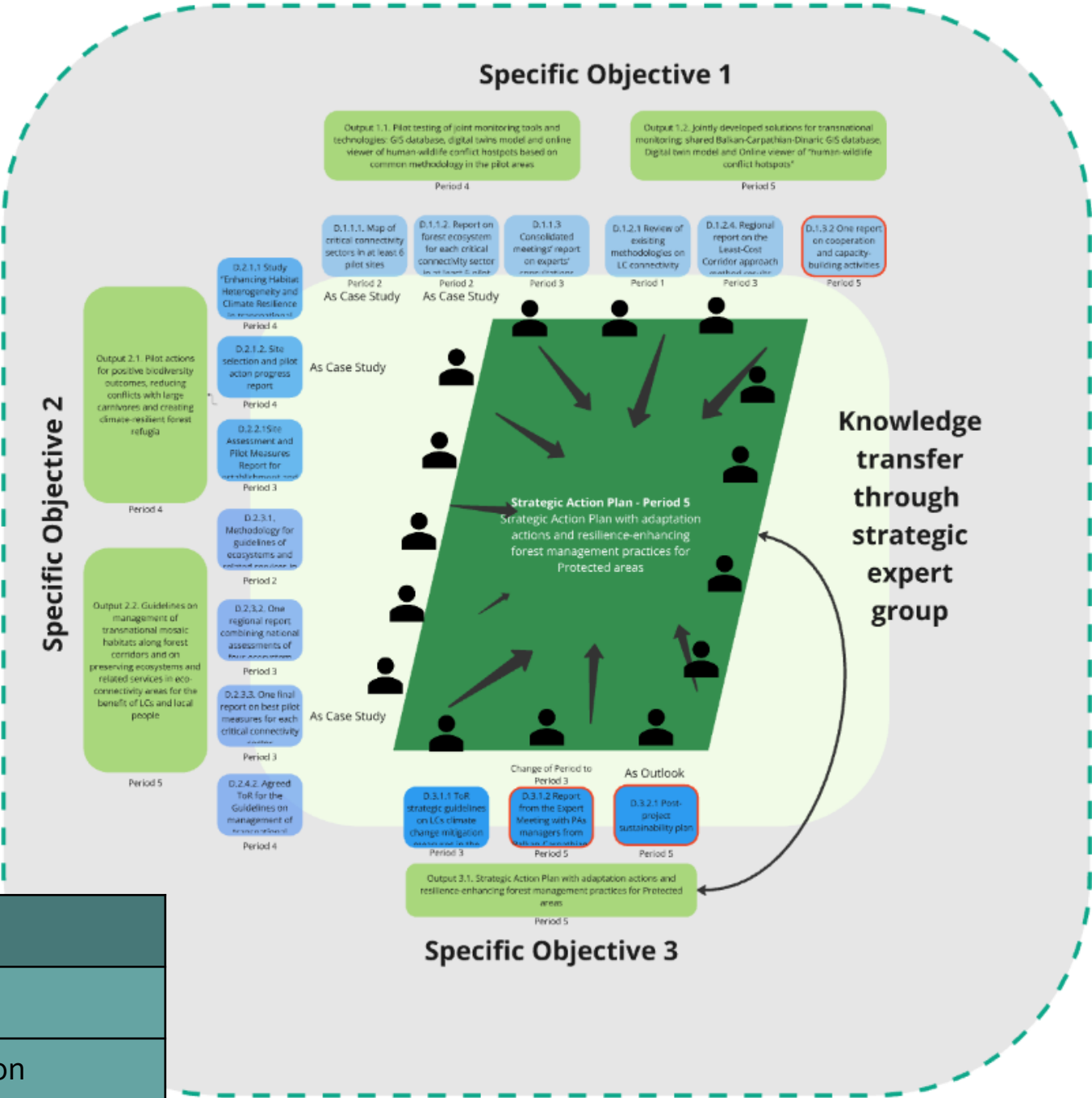
Digital twin



Strategic Action Plan for Climate Change Adaptation and Resilience-Enhancing Forest Management in Ecological Corridors for Large Carnivores

- Participative process – involvement of protected area managers from Danube region and beyond and external experts
- Strategic Expert group and 4 working groups
- First Draft published on the 20.11.2025
- Feedback phase – now open
- 16 Strategic Actions divided into four main topics

Working Group Name
Forest Management
Awareness & Communication
Human-Wildlife Conflicts
Ecological Corridors



Strategic Action Plan with Adaptation Actions and Climate Resilience-Enhancing Forest Management Practices for Protected Areas

Improving Ecological Corridors and Habitats for Migration of Large Carnivores in the Carpathian, Dinaric and Balkan Mountains

Wiegele, Dalton, Zakrajšek, et.al.

Interreg
Danube Region



Co-funded by
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ForestConnect

KÄRNTEN
UNESCO Chair on
Sustainable Management
of Conservation Areas



unesco
Chair

First Draft
published
20.11.25

Ensuring Safe Wildlife Movement for Connected Habitats

Designing, implementing, and monitoring wildlife crossing structures—such as overpasses, underpasses, and culverts—plays a critical role in mitigating the barrier effects caused by roads and railways. These structures are vital for preserving ecological connectivity, minimizing wildlife-vehicle collisions, and ensuring the long-term survival of species that require extensive territories, such as bears and wolves. Integrating wildlife crossings into infrastructure planning and development fosters coexistence between human activities and nature, while advancing biodiversity conservation efforts.

Objectives

- Maintain genetic diversity by facilitating dispersal and gene flow between wildlife populations.
- Ensure safe movement of wildlife across fragmented landscapes.
- Reduce wildlife-vehicle collisions and improve road safety for both animals and humans.
- Support transboundary conservation efforts, particularly in regions with shared wildlife populations, such as the Carpathians, Dinaric Alps, and Balkans.
- Align with EU biodiversity goals, such as the Habitats Directive and the EU Green Infrastructure Strategy, which emphasize ecological corridors and species conservation.



Key Activities / Implementation Steps

1. **Identification of Key Crossing Points:** Use habitat modeling, roadkill data, and species movement studies to identify critical crossing points for wildlife. Prioritize areas with high incidence of roadkill and known migration routes for large mammals and other species.
2. **Design and Construction of Wildlife Crossings:** Plan and construct wildlife overpasses, underpasses, and culverts in newly designed infrastructure projects. Retrofit existing infrastructure with wildlife-friendly features, such as fencing to guide animals to crossing points and reduce collisions. Ensure that crossing structures are designed to accommodate the target species and local ecological conditions.
3. **Monitoring and Evaluation:** Monitor the use of crossing structures by wildlife using camera traps, track surveys, and automated counters. Evaluate the effectiveness of crossing structures in reducing roadkill and improving connectivity.
4. **Community Engagement and Awareness:** Conduct public awareness campaigns to educate drivers about the importance of wildlife crossings and safe driving practices in areas visited frequently by wildlife.
5. **Policy Integration and Advocacy:** Advocate for the inclusion of wildlife crossing structures in national and regional infrastructure planning.



Required Resources

Personnel: Engineers, wildlife ecologists, transport planners, and local communities for design, construction, and monitoring.

Materials: Construction materials for overpasses, underpasses, and fencing; monitoring equipment such as camera traps and automated counters.

Funding: EU Green Infrastructure funds, national transportation budgets, and private sector contributions.

Technical Resources: Technical design guidelines for wildlife crossings, habitat connectivity models and ecological data.

Infrastructure and Ecological Connectivity

Action 1: Improving Ecological Connectivity through Wildlife Corridors and Infrastructure Adaptation

Action 2: Measures to Reduce Wildlife Mortality on Roads and Railways

Action 3: Ensuring Safe Wildlife Movement for Connected Habitats

Action 4: Avoid Fencing in Wildlife Migration Corridors

Action 5: Wildlife Monitoring in Ecological Corridors

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Habitat Protection and Management

Action 6: Quiet Zones for Bear Conservation Through Reducing Human Disturbance

Action 7: Planting Fruit Trees and Shrubs to Secure Seasonal Food Sources for Large Carnivores

Action 8: Restoration and Regeneration of Forests Affected by Natural Disturbances

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Management Aspects for Climate Resilience

Action 9: Enhancing Forest Structural Diversity for Climate Resilience

Action 10: Adjusting Grazing Intensity to Climate and Vegetation Conditions

Action 11: Integrated Management of Bark Beetle Outbreaks in Coniferous Forest Ecosystems

Action 12: Sharing of Climate-Resilient Forest and Pasture Management Practices

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Human-Wildlife Conflict Management

Action 13: Monitoring and Early Warning of Climate-Driven Human-Wildlife Conflicts

Action 14: Fostering Local Partnerships for Sustainable Conservation

Action 15: Empowering Conservation Through Evidence-Based Awareness Raising

Action 16: Responsible Media Coverage for Climate-Resilient Human-Wildlife Coexistence



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Participative processes

Involvement of interested stakeholders, commenting on actions

- National meetings in project partner countries
- Involving other interested stakeholders

If you would like to contribute your comments, leave us your email via the form, available via QR code





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Let's stay connected



Tanya Georgieva-Schnell, WWF BG
Elisabeth Wiegele Carinthia University of Applied Sciences / UNESCO Chair on Sustainable Management of Conservation Areas

Email:
tschnell@wwf.bg, e.wiegele@cuas.at

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