Carpathian Convention COP7

Addressing the triple planetary crisis: scientific inputs by the Science of the Carpathians

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Chair of the Science for the Carpathians (S4C)

Carpathian Convention COP7
11-13 October 2023, Belgrade, Serbia

Republic of Serbia
MINISTRY OF
ENVIRONMENTAL PROTECTION

У сусрет природи !

CARPATHIAN CONVENTION

UN environment programme

eurac research

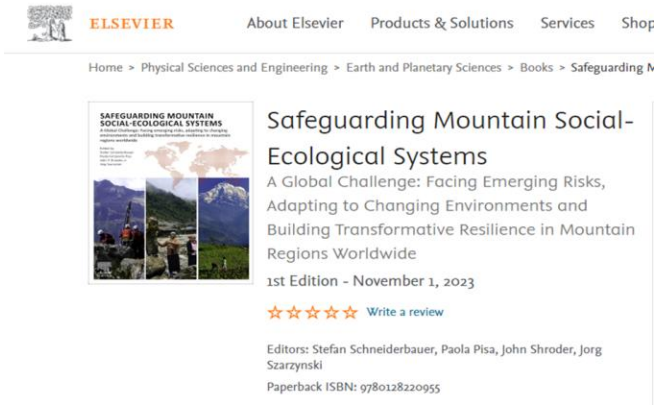
Science for the Carpathians

- Interdisciplinary network of scientists working in the Carpathians
- Links and collaboration with the Alpine and the Caucasus scientific networks

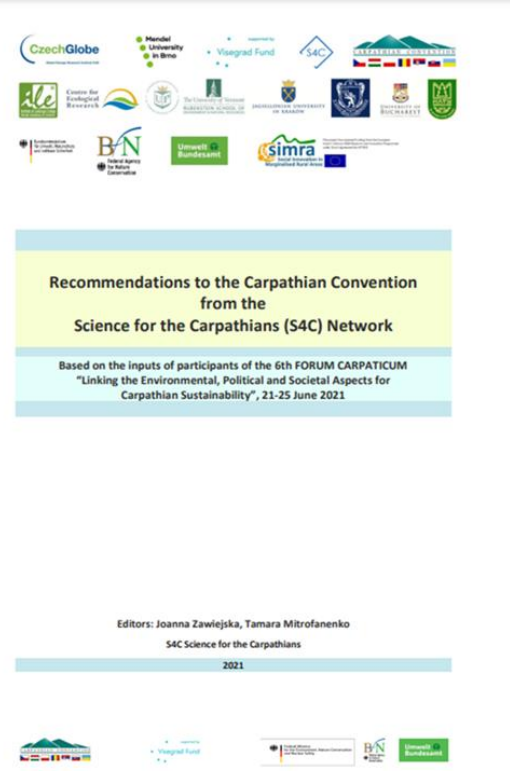
http://carpathianscience.org

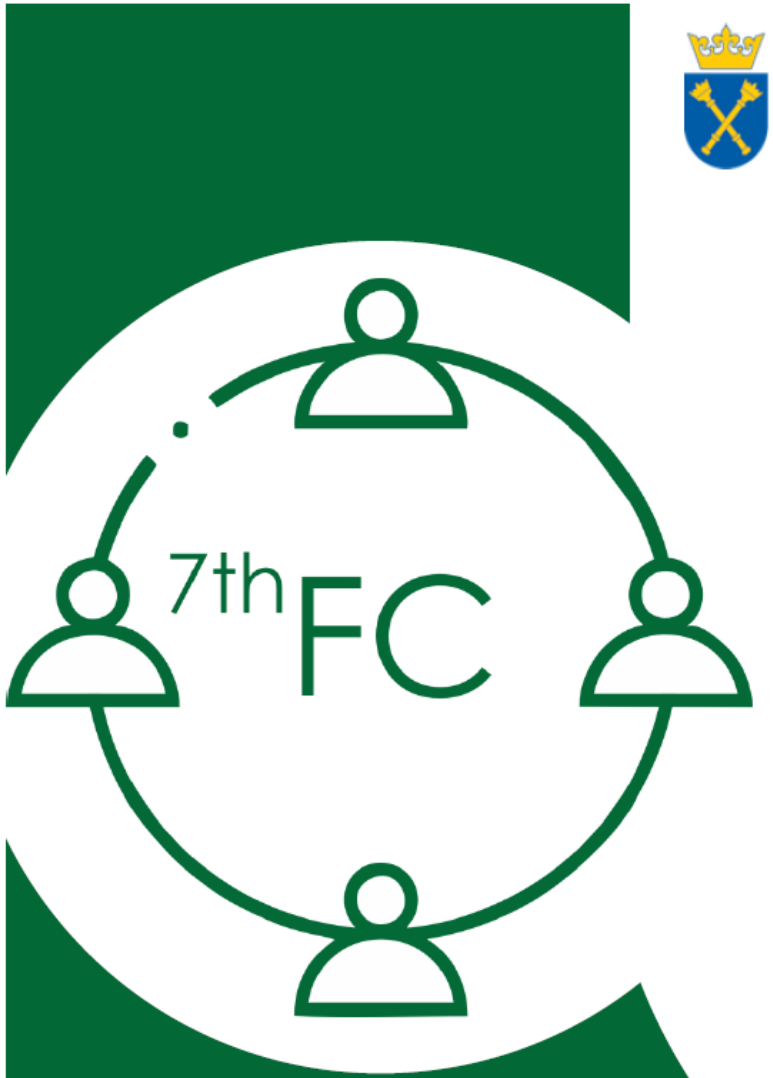
Science for the Carpathians

- Develop and implement *the Research Agenda for the Carpathians*
- Identify research needs and emerging topics
- **Foster dialogue between research, policy and practice**



Chapter: Mitrofanenko, T. et al., 2023: Science-policy-practice collaborations towards sustainable development in the Carpathian Region





JAGIELLONIAN UNIVERSITY IN KRAKÓW

S4C Science for the Carpathians

HUMAN-ENVIRONMENTAL SYSTEM RESEARCH CENTRE

7th Forum Carpaticum Conference
Carpathian Futures - Critical Transitions

25-28 September 2023, Cracow, Poland

Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

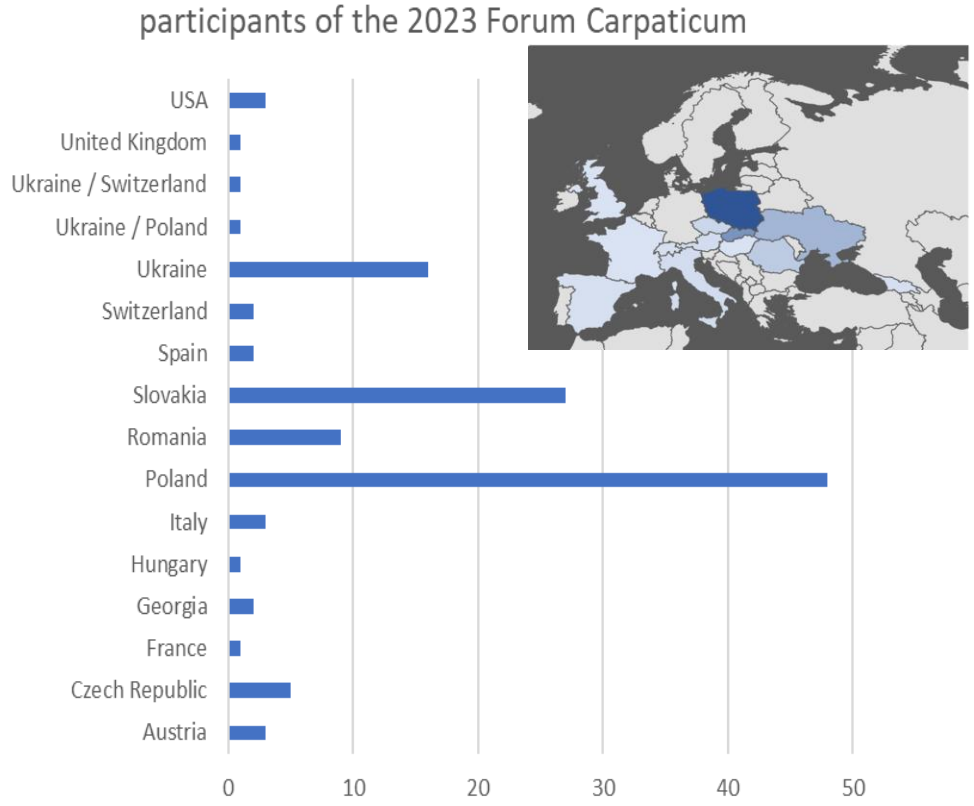
Umwelt Bundesamt

BfN Federal Agency for Nature Conservation

Kraków

7th Forum Carpaticum Conference
Carpathian Futures – Critical Transitions

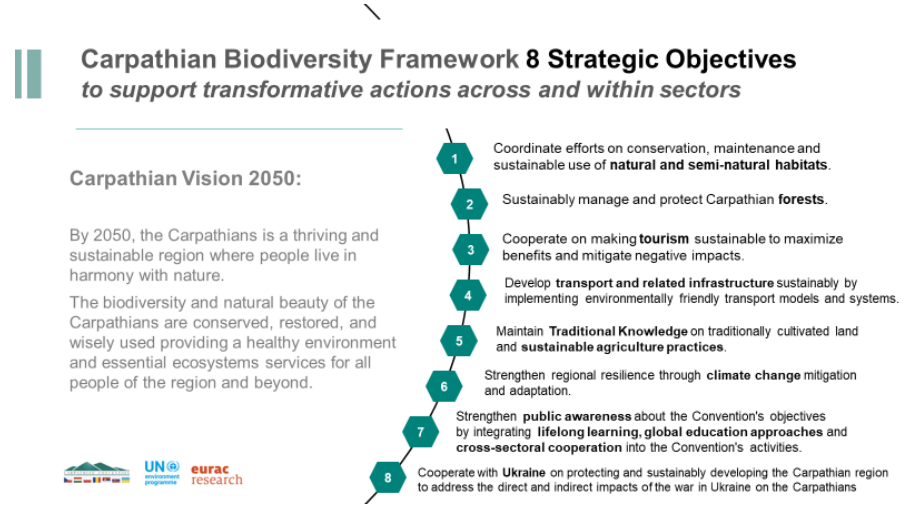
125 participants from 15 countries



- 3 keynote talks
- **special plenary hybrid session on Ukraine**
- 17 thematic sessions
- mini-symposium on Carpathian endemic species
- 4 side events and workshops

7th Forum Carpaticum Conference
Carpathian Futures - Critical Transitions

- Climate change
- Conservation and sustainable use of biodiversity
- Sustainable tourism
- Forests, their management and governance
- Human-wildlife coexistence
- Water resources and management
- Plastic in the mountains
- Land use and land cover change
- Participatory research, multi-actor dialogues and knowledge co-production
- Education on Sustainable Development
- Cultural heritage and traditional knowledge
- Natural hazards and risks
- Integrated landscape management and governance for better regional development policy



Impact of the war in Ukraine on the Carpathians

Key messages

environmental capacity of the Ukrainian Carpathian region is being stretched to its limits due to an increase of internally displaced people and the relocation of businesses from Ukraine's eastern to western regions. This has intensified environmental pressures alongside the growing impact of climate change on the region's unique landscapes

Main recommendations

- **ensure "green recovery" and "building back better"** (c.f. Lugano principles) utilizing ecosystem services and nature-based solutions approach

- **strengthen collaboration with stakeholders from the Ukrainian Carpathians** for projects on sustainable nature governance, wildfires, biodiversity protection, social & socio-ecological innovations.

The panel was organised by:

S4C

Bern University of Applied Sciences

CARPATHIAN CONVENTION

CAS Wiederaufbau Ukraine Rebuild Ukraine

Triple Planetary Crisis:
key messages & recommendations
from the Science of the Carpathians

Informed from the contributions to the 7th Forum Carpaticum:
Carpathian Futures – Critical Transitions

Biodiversity: key messages

- Carpathians are **a European hotspot for habitats and species**, Carpathian endemic species and large carnivores
- there is **great potential** for **better conservation** and management of Carpathian ecosystems and landscapes, incl. agricultural lands, by incorporating **ecosystem services concept, regenerative agriculture** and application of **methodologies for multi-stakeholder dialogue**.
- **awareness** of the existence **of wildland-urban interface** and its consequences for humans and environment among policy makers could help in **better spatial planning and management** of the Carpathian Ecoregion

Biodiversity: recommendations

- create a **platform** for collecting and sharing regional **data** on the **occurrence of alien species**
- develop a **unified and consistent data collection protocol on human-wildlife interactions**, to facilitate comparison between countries
- consider broader environmental context, **including soil properties**, in policy decisions on climate change adaptation and biodiversity protection

Biodiversity: recommendations

- promote **positive social perception of human-wildlife interactions**
- evaluate **impact of (eco)tourism** on the environment
- introduce comparable measures to assess tourist traffic into national action plans on biodiversity & sustainable tourism
- identify threats to biodiversity-rich grasslands in the Carpathians

Climate change: key messages

- due to changing climate conditions **extreme events as floods, drought, windstorms are becoming more intense,** with a significant role in environment change
- **weather and climate monitoring is necessary in a fine temporal and spatial scales** to show regional and even local conditions to provide precise information to decision makers
- using modern methods is crucial to express the **complexity of existing climate-environment (humans) relationships** (and to model future impact and possible climate-based changes)
- there is a substantial need to **collect and share the regional and local climate information (**translated to everyday language**)**
- in the **forest** sector, **restoration** should comprise **a key** element of **climate change adaptation**

Climate change: recommendations

- **regional and cross-boundary collaboration of national weather services** is needed to improve the accuracy of weather forecasts (warnings) and climate monitoring
- **support** interdisciplinary **research** on remote- and field-based **monitoring of environmental responses** to develop regional, standardized monitoring network or data sharing capabilities **to enable understanding of the impacts of climate change**

Climate change: recommendations

- **enhance adaptation efforts** and mitigation activities with **stronger cooperation between climate experts** and **decision makers**
- develop **vulnerability maps** and organize dedicated local awareness-raising and **training activities** to help citizens and decision-makers to address climate change impacts in mountain areas
- promote and continue to develop “climate smart” forestry practices

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Mountains of plastic: Mismanaged plastic waste along the Carpathian watercourses

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Pollution: key messages

- major waste management and research challenges are indentified across the Carpathians relating to plastic pollution
- **macroplastic pollution is a complex environmental, (waste) management and socio-economic issue** requiring complex and informed approach
- river channel type and management control the pattern of macroplastic transport and storage in mountain rivers
- macroplastic poses severe threat to fauna through ingestion and entanglement, with the highest risk in the highly biodiverse areas
- **inadequate plastic pollution management may excacerbate biodiversity loss**

highly ecologically valuable, wide river sections are also macroplastic ’traps’

Pollution: recommendations

- **research** is urgently needed on the sources, transport, deposition and persistence and fate of macroplastic in Carpathian valleys
- the nature and dynamics of these processes and macroplastic interactions with other key elements of the fluvial environment need to be recognized to develop **sound strategies for waste removal**
- **waste management policies need** to be revised and strengthened, possibly introducing stringent regulations/fines to **limit** or ideally, **prevent macroplastic pollution**
- **energy poverty** (or perception of) needs to be addressed at local scales to prevent use of macroplastic as energy source

The triple planetary crisis



- FIND OUT support research in critical areas
- INFORM develop comparable, consistent and cross-boundary monitoring and data collection and sharing systems
- INVOLVE adopt multi-stakeholder approach that includes close collaboration between experts, local communities and decision makers
- EDUCATE raise awareness about the Carpathians
- addressing the triple crisis and environmental change in the Carpathians benefits from holistic integrative approaches that connect science, education, traditional cultural practices, and economy

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Thank you for your attention