



14<sup>th</sup> Meeting of the Carpathian Convention WG on Biodiversity  
22-24 May, 2023, Vsetín, Czechia

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# Carpathian Research Network:

presentation of the consortium & the 3<sup>rd</sup> interdisciplinary

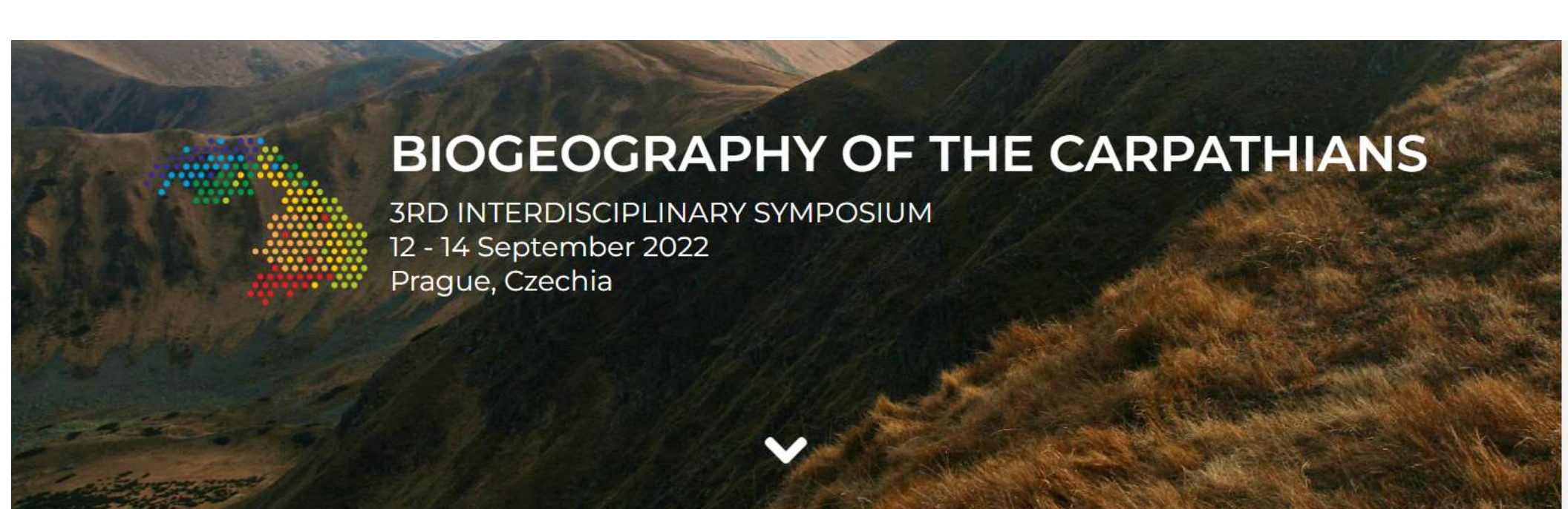
Symposium Biogeography of the Carpathians

**Patrik Mráz**

HERBARIUM &  
DEPARTMENT OF BOTANY



CHARLES  
UNIVERSITY



# BIOGEOGRAPHY OF THE CARPATHIANS

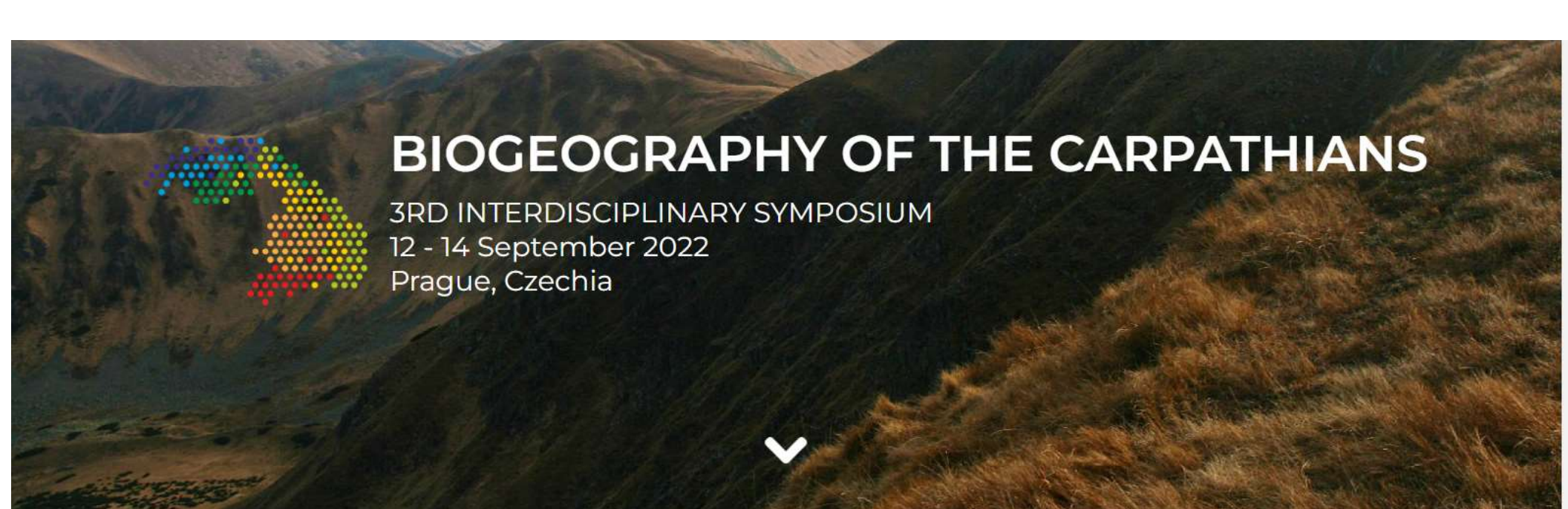
3RD INTERDISCIPLINARY SYMPOSIUM

12 - 14 September 2022

Prague, Czechia



- Evolution, spatial distribution and past climate-induced distributional shifts of the Carpathian biota from infraspecific to ecosystem level
- Carpathians in a larger biogeographical context
- Impact of climate change on ecology & future range shifts of the Carpathian biota
- Biological invasions: spatial patterns & impact on native biodiversity
- Identification, conservation & sustainability of biodiversity hot spots



# BIOGEOGRAPHY OF THE CARPATHIANS

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- **90 participants**
- **AT, CZ, FR, HU, NL, PL, RO, SK, UA**
- **26 talks**  
<https://slideslive.com/cit-prf-uk/biogeography-of-the-carpathians-2022?locale=en>
- **41 posters**

K. CHOBOT

Habitat and species monitoring in the Czech part of the Carpathians

M. GRABOWSKI

Aquatic biodiversity patterns in European mountain ranges and beyond: a molecular perspective

L. HALADA

Species and habitats of the Habitats Directive in the Carpathians: distribution and status

M. HORSÁK

Imprints of Holocene history in the modern biota of Western Carpathian spring fens

L. JUŘIČKOVÁ

Forest molluscs - the key to the Holocene diversity in Central Europe

V. KONEČNÁ

Evolutionary drivers and consequences of parallel alpine evolution

S. LAVERGNE

The evolutionary and ecological assembly of the high alpine flora

## 6 STUDENT TRAVEL GRANTS / STUDENT AWARDS:

### best talk

- Magdalena Gajdošová "Characterization of molecular diversity of spring fen macrozoobenthos from two geomorphological regions"
- &
- Tetiana Pachschwöll "In the footsteps of Jávorka: systematics and evolution of *Saussurea alpina* (Asteraceae) in the European Alpine System with a focus on the Carpathians"

### best poster

- Kristýna Vlková "An ecological network of large carnivores in the Carpathians: a key tool for protecting landscape connectivity"



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**Journal of  
Biogeography**



Ministerstvo životního prostředí  
České republiky



**NATURE  
CONSERVATION AGENCY  
OF THE CZECH REPUBLIC**

# BIOGEOGRAPHY OF THE CARPATHIANS

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- **Book of Abstracts**

[https://botany.natur.cuni.cz/  
biogeography\\_carpathians\\_2022  
/book\\_of\\_abstracts.pdf](https://botany.natur.cuni.cz/biogeography_carpathians_2022/book_of_abstracts.pdf)

- **Journal of Biogeography -  
topical section**

guest editors: Mráz P., Petrusek  
A., Ronikier M.

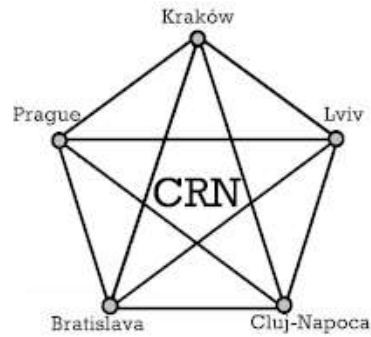


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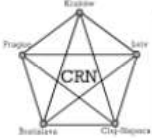
## Biogeography of the Carpathians

This special section on the "Biogeography of the Carpathians" aims to summarize the most recent advances on the evolution, distributions, and diversity of the Carpathian biota. The Carpathians are an emerging model for overlaid biogeographic studies that can yield a more integrated understanding of the region and advance biogeographic concepts and theory globally.





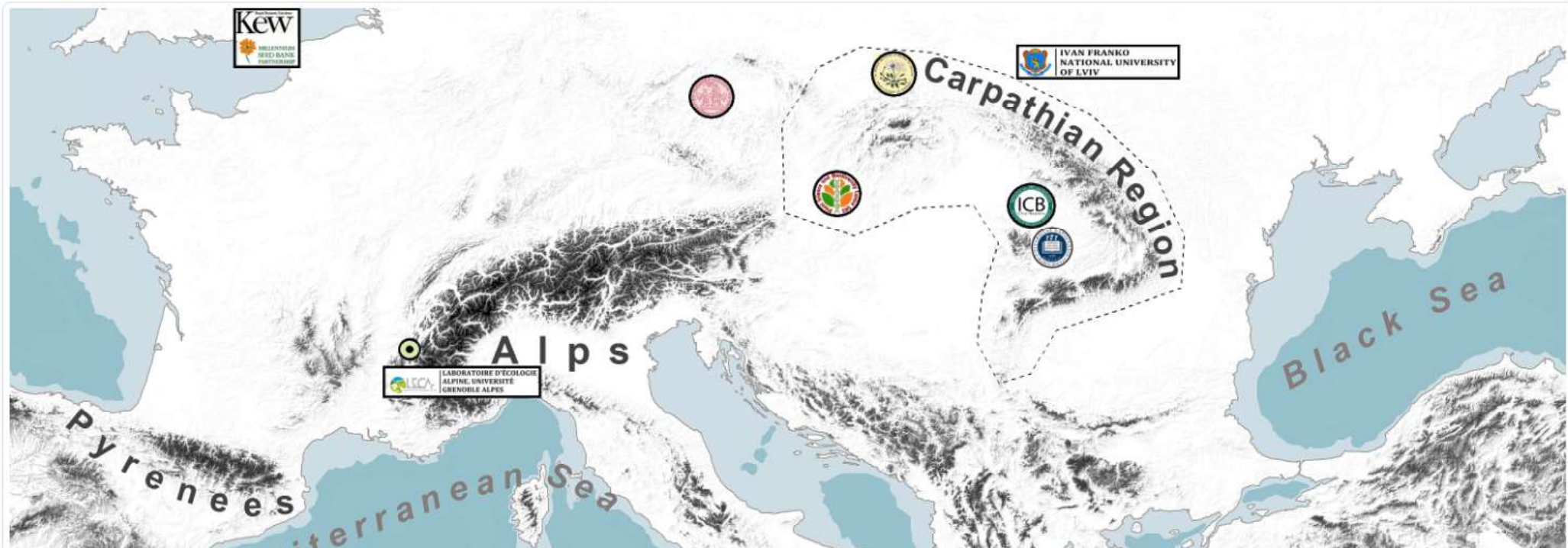
# Carpathian Research Network



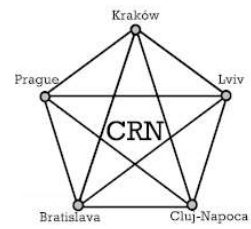
Carpathian  
Research  
Network

Home Funding The consortium Carpathian endemics Orographic units Interactive map

## - The Consortium -

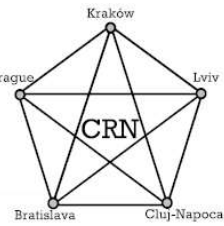


<https://www.carpathian-research-network.eu/consortium>



**C**arpathian  
**R**esearch  
**N**etwork

# Diversity, distribution and evolution of Carpathian vascular plants' endemics



# Carpathian Research Network



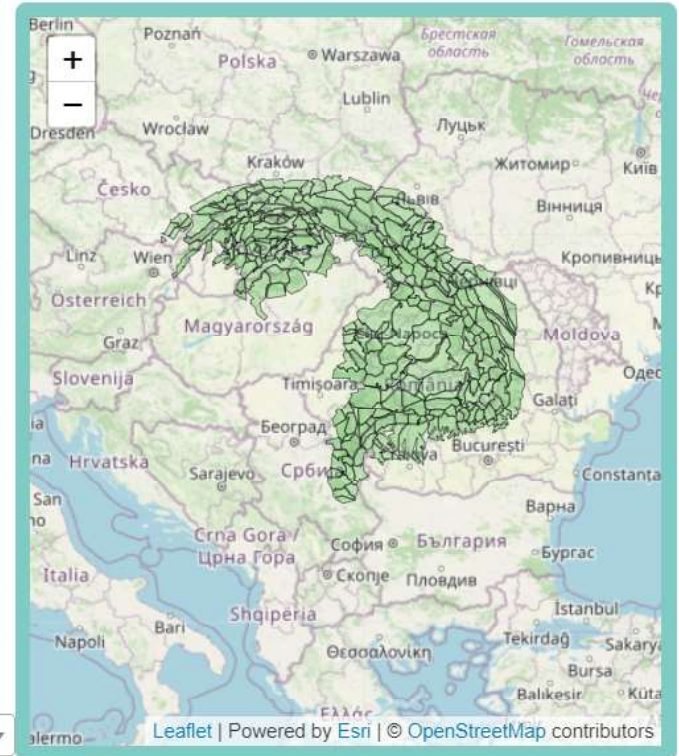
Search for a species

Achillea oxyloba subsp. schurii (Sch. Bip.) Heimerl OK

Search for an Orographic unit

Almaj Depression

OK



**Carpathian  
Research  
Network**

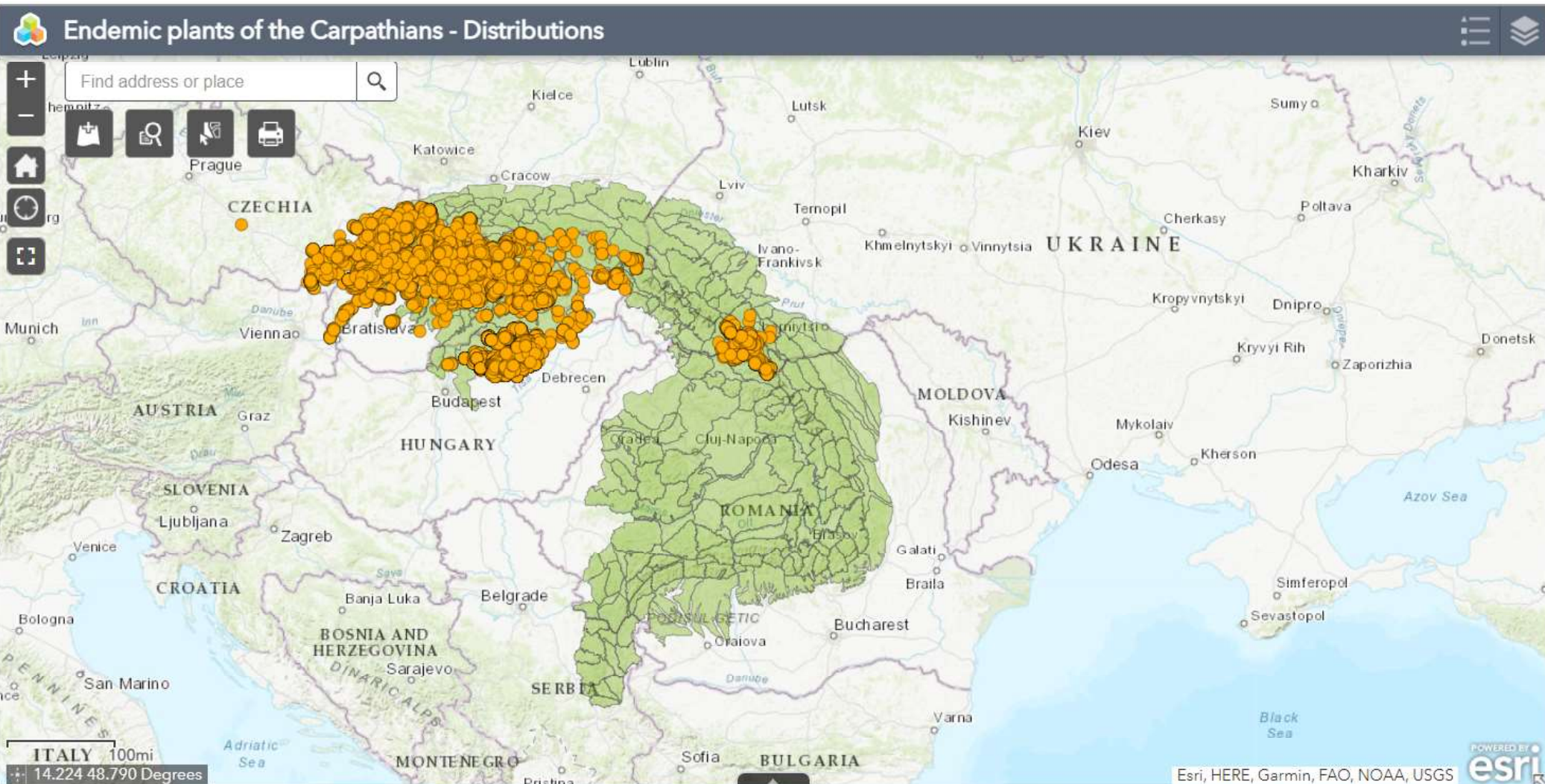
**critically revised occurrences (databases,  
literature and herbarium records)**

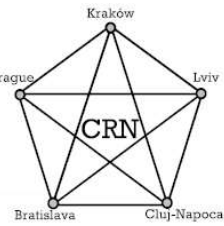
**CZ: 5,000**

**HU: 25,000**

**SK: 35,000**

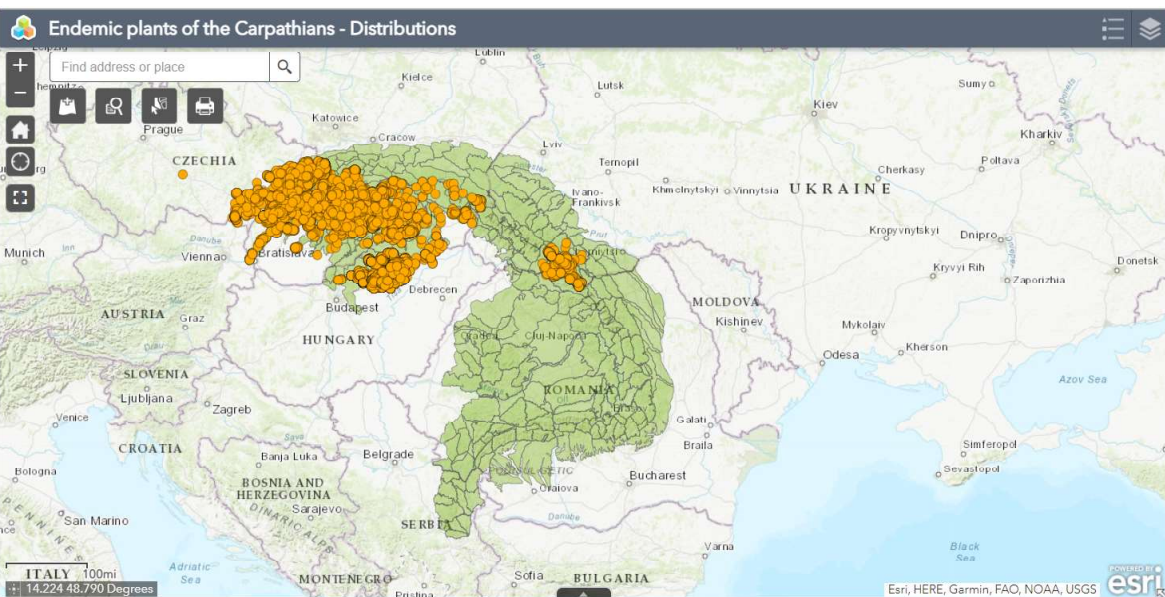
**UA: 2,500**





# Carpathian Research Network

- critical evaluation of distribution of endemic taxa
- model past & future ranges
- underlying factors of endemism
- protected areas *versus* endemics' ranges overlaps





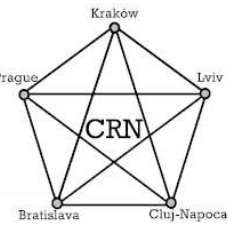
**C**arpathian  
**R**esearch  
**N**etwork

**Funding:**



**2020-2021: "Conserving the endemic flora of the Carpathian Region"**

1. Long-term seed conservation of the Carpathian flora (MSB, RBG Kew)
2. Biosystematic studies of selected groups of Carpathians endemic taxa
3. Distribution & diversity of Carpathians endemics (vascular plants)



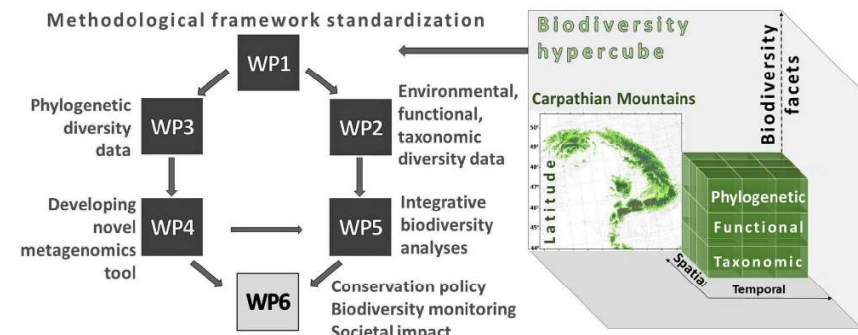
**C**arpathian  
**R**esearch  
**N**etwork



## Unsuccessful application

**2022: “Carpathian plant biodiversity: a model for transnational ecoregion-level survey and efficient monitoring using standardized and innovative tools (CarpPlant)”**

1. Development and proof-of-concept of innovative tools for plant biodiversity survey and monitoring (metagenomics)
2. Filling the gaps and building extensive knowledge on biodiversity spatial patterns and its multiple dimensionality





**C**arpathian  
**R**esearch  
**N**etwork

## **CRN as a partner of the Biodiversity WG of the Carpathian Convention?**

### **CRN - distributed & collaborative knowledge**

- **distributional & taxonomic database**
- **herbaria as a source of verifiable & reproducible science**
- **methodological know-how (taxonomic & ecological approaches, phylogenomics, cytogenetics, spatial distribution modelling)**
- **enthusiastic fellows**