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ReCo

Regional Restoration Plans on Habitats

Transnational Focus Workshops

21th February 2025

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Area of Study

European Green Belt - Central Europe

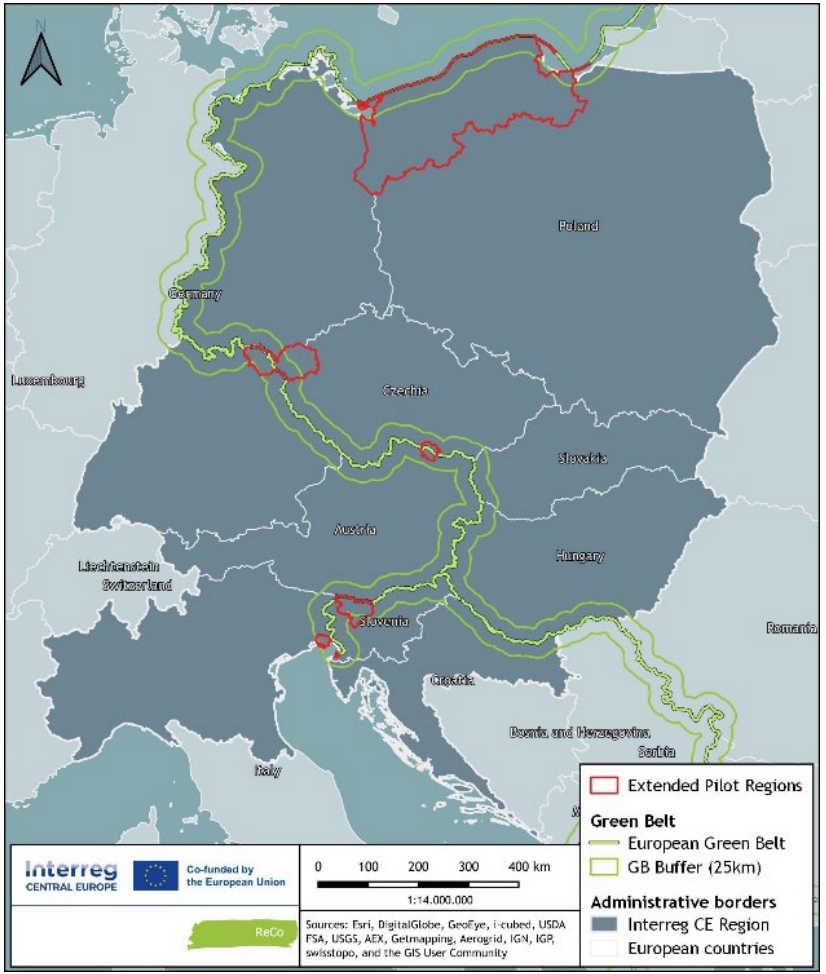
6 Pilot Regions

Habitats:

- Fichtelgebirge - Smrčiny Mountains (DE/CZ)
- Miramare Marine Protected Area (IT)
- Škocjanski zatok Nature Reserve (SL)
- Gorenjska Region (SL)

Species:

- Ińsko Lakeland (PL)
- National parks Thayatal & Podyjí (AT/CZ)



Pilot Regions of the ReCo project – an overview (Author: Stefan Fuchs)

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Jointly developed Regional Restoration plans on Habitats

Objective

- Enhance ecological interconnectivity & biodiversity of ecologically valuable habitats

Targeted Habitats

- Fichtelgebirge - Smrčiny Mountains (DE/CZ)
  - Wet meadows & moors, mountain streams and meadows
- Miramare Marine Protected Area (IT)
  - Dry grasslands
- Škocjanski zatok Nature Reserve (SL)
  - Marine and freshwater habitats
- Gorenjska Region (SL)
  - Mountain hay meadows

Škocjanski zatok Nature Reserve (SL) (© Jörg Schmiedel)

Jeseníky Mountains (CZ) (© Martin Kuba)

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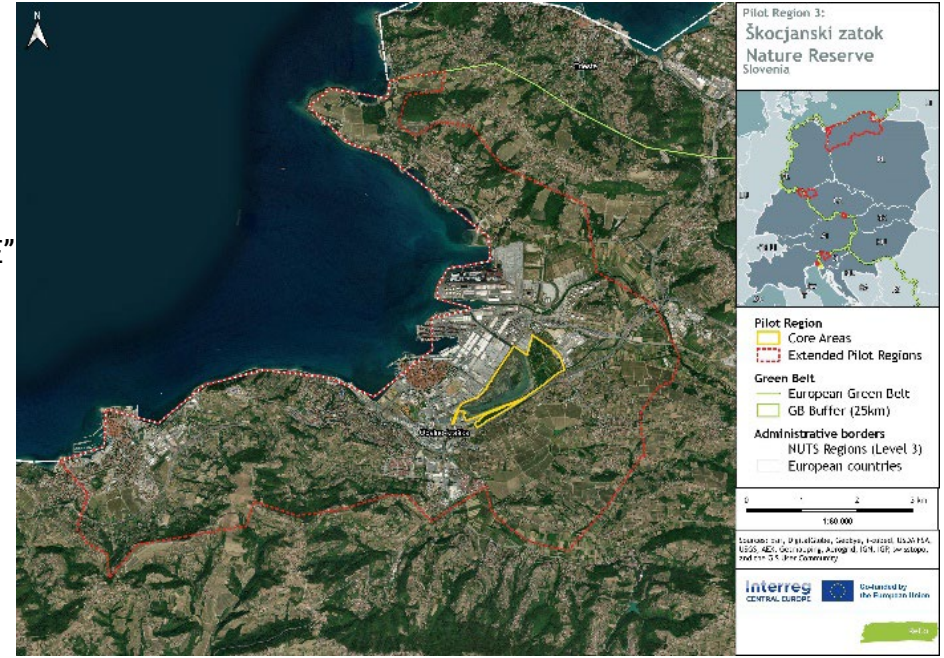
Approach

Integration of the results and findings of previous outputs:

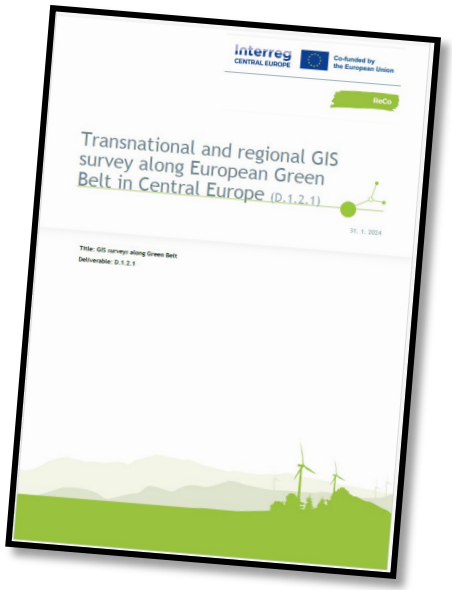
- GIS surveys along EGB in Central Europe
- Working Paper
  “Proposals for targeted restoration actions along EGB CE”
- Transnational Atlas along the CE EGB
- Handbook on good practices of ecological restoration
- Work paper "Learning from peer reviews“

➔ **Regional Restoration plans on Habitats**



Transnational and regional GIS surveys along European Green Belt in Central Europe

- Data collection and integration.
- Geoinformation and data processing systems.
- Historical Analysis.
- Broader Habitat Type categorization.
- Landscape Change Analysis.



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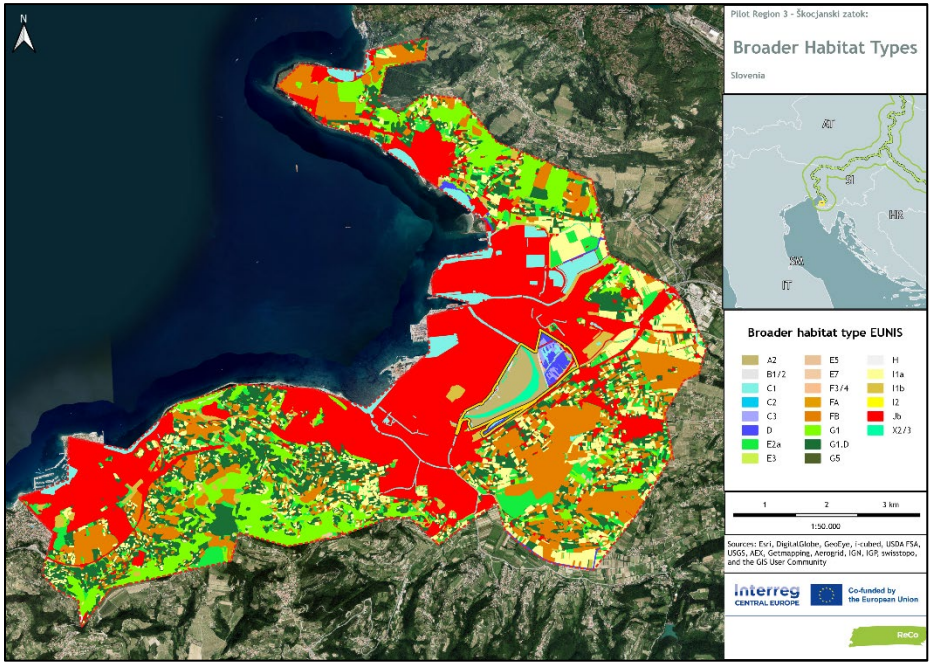
Data Sources integrated

Pilot region / Data source	PR1 - Fichtelgebirge -Karlovarský kraj (DE/CZ)	PR2 - Miramare MPA (IT)	PR3 - Škocjanski zatok Nature Reserve (SI)	PR4 - Gorenjska region (SI)	PR5 - Ińsko Lakeland (PL)	PR6 - National Park Thayatal & Podyjí (AT/CZ)
CLC+ Backbone	•	•		•	•	•
Copernicus HRL					•	
Sentinel-2 data	•					•
Regional mapping data	•	•	•	•		•

Methods

- Machine Learning classification via Automap (Sassik, 2020)
- Translation to Broader Habitat Type (BHT) EUNIS Level 2 (BUNCE et al. 2008, 2011)
- Datasets Merging

Broader Habitat Types



- A - Marine habitats
- A2 - Littoral sediment
- B1/2 - Coastal dunes and shingle
- C1 - Inland surface waters - standing
- C2 - Inland surface waters - watercourses
- C3 - Lithoral zone of inland waterbodies
- D - Mires, bogs and fens
- E1 - Dry grasslands
- E2a - Mesic grasslands, intensively managed
- E2b - Mesic grasslands, medium intensive
- E3 - Seasonally wet and wet grasslands
- E5 - Woodland fringes and clearings, tall forb stands
- F3/4 - Temperate and mediterranean-montane scrubs and heathland
- F9 - Riverine and fen scrubs
- G1 - Broadleaved deciduous woodland
- G1.D - Fruit and nut tree orchards
- G3 - Coniferous woodland
- G5 - Lines of trees, small anthropogenic woodlands, recently felled woodland, e
- H - Inland unvegetated or sparsely vegetated habitats
- I1a - Arable land and market gardens - intensive
- I1b - Arable land and market gardens - low intensity
- I2 - Cultivated areas of gardens and parks
- J4 - Transport networks and other constructed hard-surfaced areas
- Ja - Constructed, industrial and other artificial habitats - with significant green
- Jb - Constructed, industrial and other artificial habitats - high imperviousness

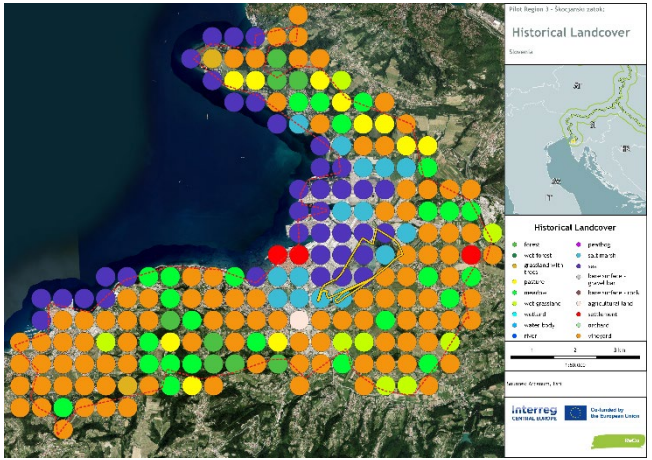
Historical Analysis

Arcanum maps & Österreichisches Staatsarchiv

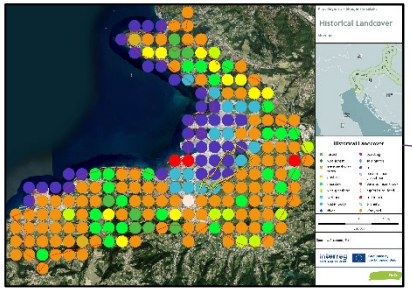
wmts or digitized raster map sheets

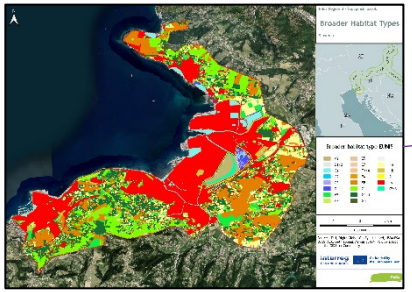
3rd Austrian military survey

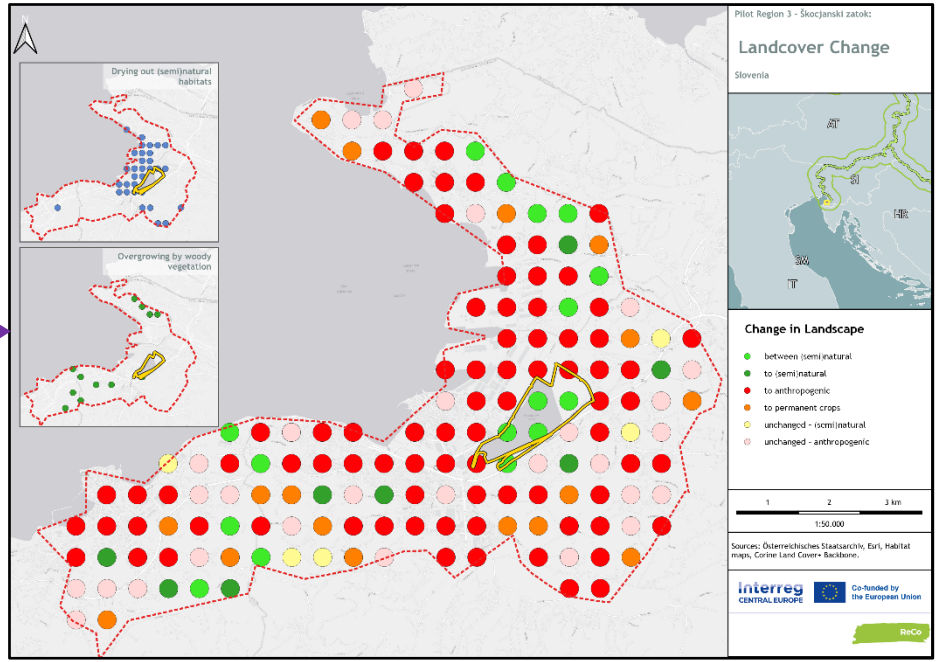
- 3rd Austrian military survey
- Königreich Bayern survey
- Prussian military survey



Analysis of land cover change







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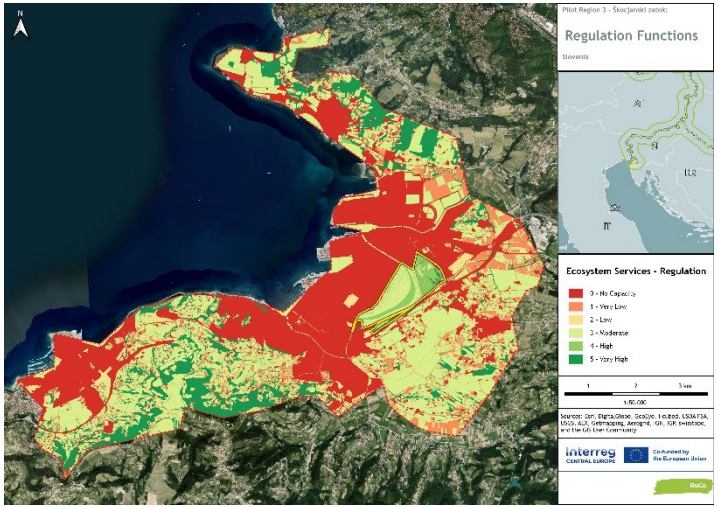
Ecosystem Services (ESS)

Value to each referenced land cover type depending on ESS

5 main Services – 30 single ESS

Ranked from No capacity (0) to Very high (5) capacity for provision

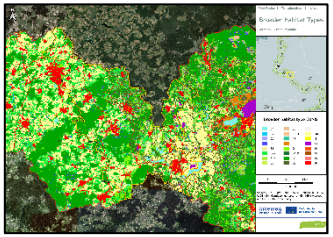
- Regulation functions
- Habitat functions
- Production functions
- Information functions
- Carrier functions

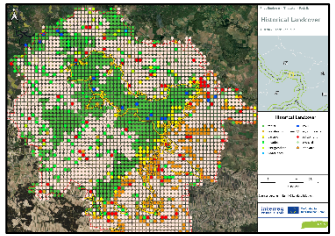


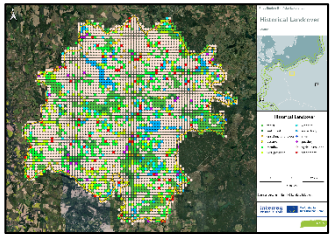
Burkhard et al. (2009), Campagne et al. (2017), Stoll et al. (2015), de Groot et al. (2002, 2006 and 2010), Danzinger et al. (2020)

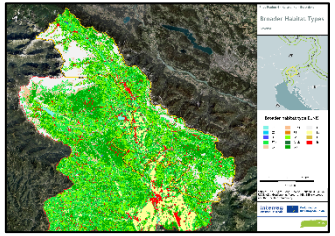
Transnational and regional GIS surveys along European Green Belt in Central Europe

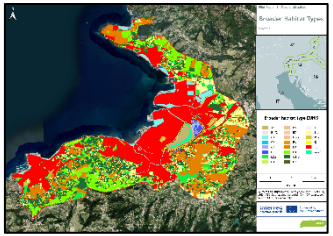
8 maps for each PR

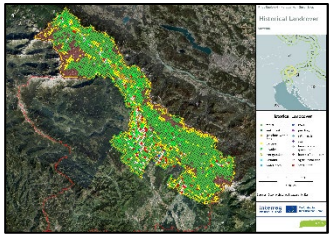


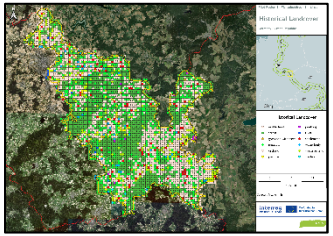


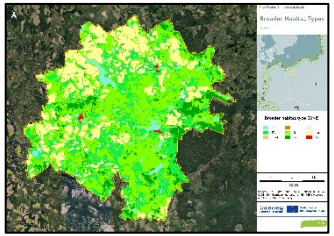












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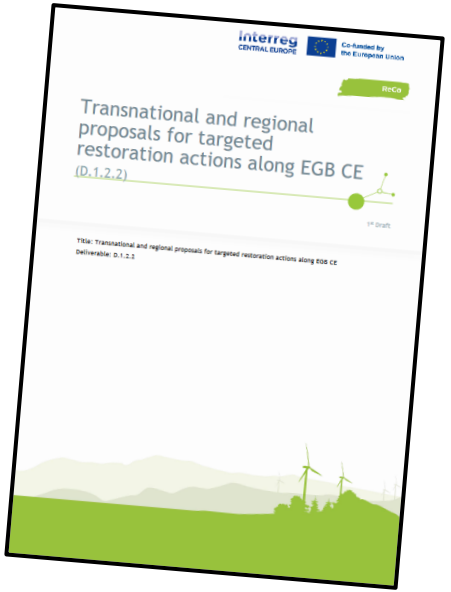
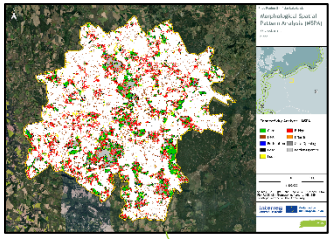
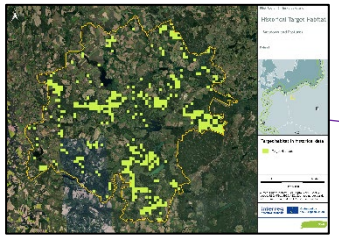
Working Paper
“Transnational and regional proposals for targeted restoration actions along EGB CE”

- Spatial Data Analysis
- Connectivity Analysis MSPA (Guidos Toolbox)
- Analysis Integration (BHT, Historical, Connectivity)
- Restoration Suitability Map

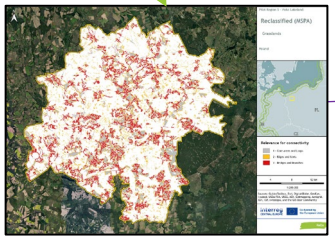


Restoration Suitability Maps

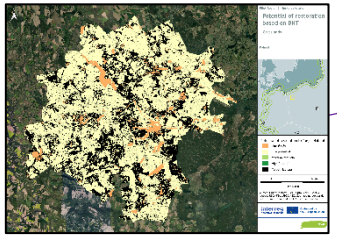




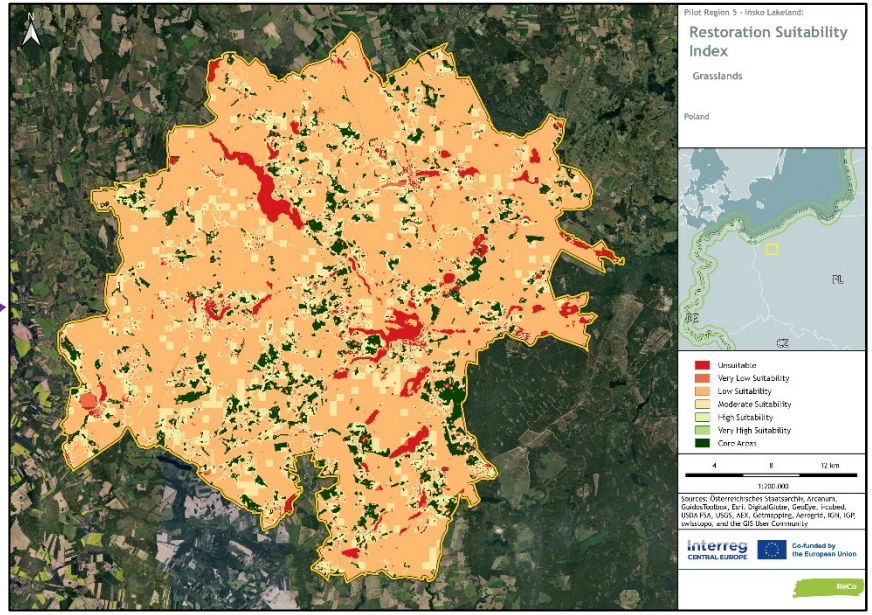
Historical Target Habitats



Reclassified MSPA

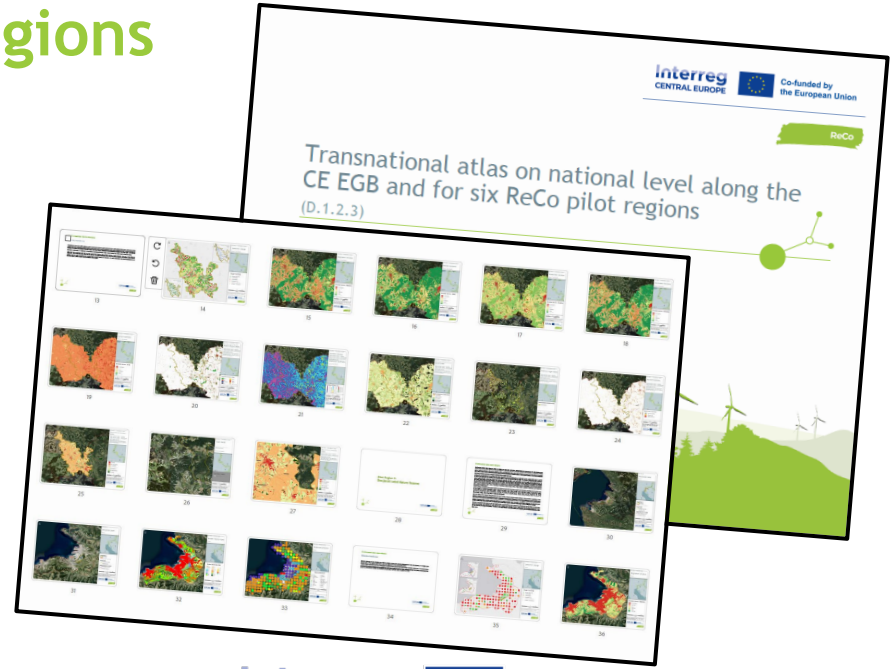


Restoration Potential based on BHT



Transnational atlas on national level along the CE EGB and for ReCo pilot regions

- Resulting maps from GIS Analysis
- At least 10 Maps / Pilot Region



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Jointly developed Regional Restoration plans on Habitats (& Species)

- Existing GIS analysis, targeted restoration sites
- Additional specific Spatial Data Analysis
- Expert's knowledge of the region
- Existent development/management plans
- Involvement of stakeholders

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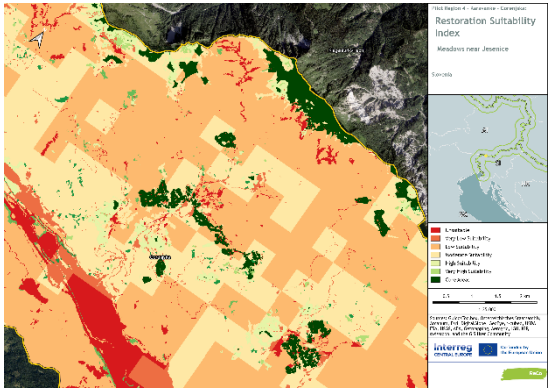
Jointly developed Regional Restoration plans on Habitats

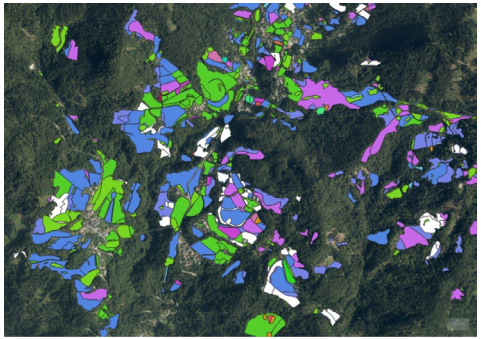
Example

PR4 - Gorenjska Region

- Identifying overused/abandoned meadows with potential for restoration (polygons of meadows in the 19th century)
- Narrow down potential sites for daffodil population (soil data)
- Foster a network of Slovenian & Austrian farmers
- Interactive awareness raising and information for the public (VR/AR experience, panels)



Restoration Suitability for Meadows



Meadows Classification

Landsat Collection

National Parks data base
National data sources

sentinel-2

USGS
science for a changing world

BISE BIODIVERSITY INFORMATION SYSTEM FOR EUROPE

opernicus
Europe's eyes on Earth

Satellite Data

WorldClim

NATURA 2000

Citizen Science

iNaturalist

Habitat

Environmental Variables

Occurrence

GBIF
Global Biodiversity Information Facility

Genetic Data

Data Sources

Scientific community
Field studies

Threats & Human Impact

Migration Patterns

Surveys & models

EURO BIRD PORTAL

MOVEBANK

European Environment Agency

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Jointly developed Regional Restoration plans on Habitats

Structure & Content

- References to relevant documents (strategies & directives on the national & EU level)
- Description of the regional target habitats/species, status & vision
- Preceding restoration efforts & lessons learned
- Areas of Interest for Restoration
- Proposed restoration measures & objectives on selected areas
- Implementation Strategy (Stakeholder engagement, Financing options, Policy integration, Timeline)
- Monitoring, Evaluation & Adaptive Management
- Communication & Outreach

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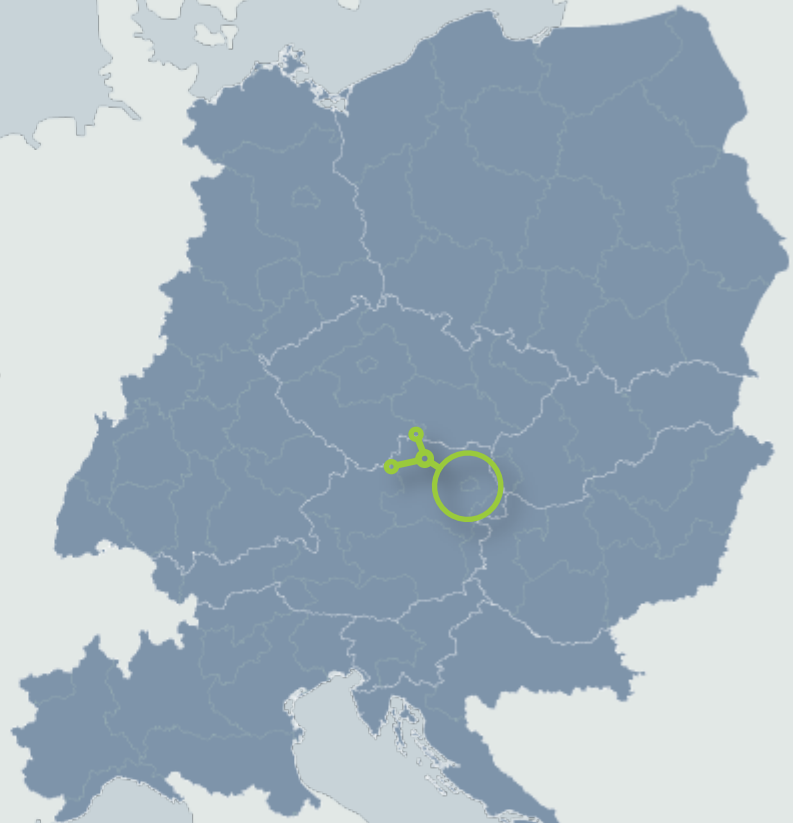
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