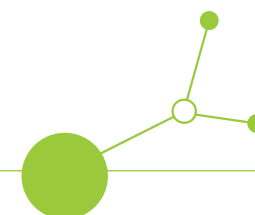


Transnational atlas on national level along the CE EGB and for six ReCo pilot regions

(D.1.2.3)



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

Deliverable: D.1.2.3



Authors:

Stefan Fuchs, Manuela Londoño Jiménez, Thomas Wrbka, Hana Skokanová, Jakub Skorupski, Jörg Hacker, Ondřej Volf, Michala Mariňáková, Mateja Korošec, Bojana Lipej, Tomáš Dvořák, Julian Haider.

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Landcover Change
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Euclidean Distance
Potential of Restoration based on BHT
Historical Target Habitat
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Introduction





























Central European landscapes have undergone significant transformations over the centuries, driven by agricultural intensification and expansion, urbanization and industrial activities, but also abandonment of traditional forms of agricultural management. These changes have resulted in habitat fragmentation, loss of biodiversity, and degradation of ecosystem services. Recognizing the urgency of these challenges and the need to take actions in crucial areas to reconnect and revitalize natural habitats and thus strengthen the ecological network, this Working Paper was developed.

This Atlas presents the collection of maps resulting from Deliverable *D.1.2.1 Transnational and regional GIS surveys* - and *D.1.2.2 Transnational and regional proposals for targeted restoration actions along EGB CE*. The Atlas is divided in 5 parts, one containing the map collection of each Pilot Region where joint pilot restoration actions are being developed. Each sections includes the overview of the region, habitat maps, main ecosystem services maps, target ecosystems for restoration, historical landcover maps, connectivity analysis of the target habitats. The Atlas also includes all the derived analysis for identifying suitable areas for future restoration measures to restore ecological integrity, enhance biodiversity, and promote sustainable land use practices.

The maps for each region were developed following the conversations with Project partners regarding the restoration goals for the regions. The dialog gave the guidelines for the selection of habitats to be the focus of the analysis. The aim of the resulting collection of maps is for it to offer a basis for future planning and stakeholder alignment for restoration along the CE EGB.



Broader Habitat Type

-  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
-  FA - Hedgerows
-  FB - Shrub plantations
-  G1 - Broadleaved deciduous woodland
-  G1.D - Fruit and nut tree orchards
-  G3 - Coniferous woodland
-  G5 - Lines of trees, small anthropogenic woodlands, recently felled woodland, early-stage woodland and coppice
-  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
-  J3 - Extractive industrial sites
-  J4 - Transport networks and other constructed hard-surfaced areas
-  J6 - Waste deposits
-  Ja - Constructed, industrial and other artificial habitats - with significant green spaces
-  Jb - Constructed, industrial and other artificial habitats - high imperviousness

Pilot Region 1: Fichtelgebirge and Smrčiny Mountains



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PR1: Fichtelgebirge And Smrčiny Mountains

Erlenbächlein Area, Rehauer Forest in the Fichtelgebirge Mountains and Smrčiny Mountains. The pilot action for this region is located in the catchment area of the Lužní Brook, which forms the state border between the Czech Republic and Bavaria, and Erlenbächlein, which drains into the Höllbach (Pekelský potok), also a border stream. The entirety of the catchment area is evenly divided between Bavaria and the Czech Republic. This locale represents a typical Green Belt area, once situated beyond the Iron Curtain.

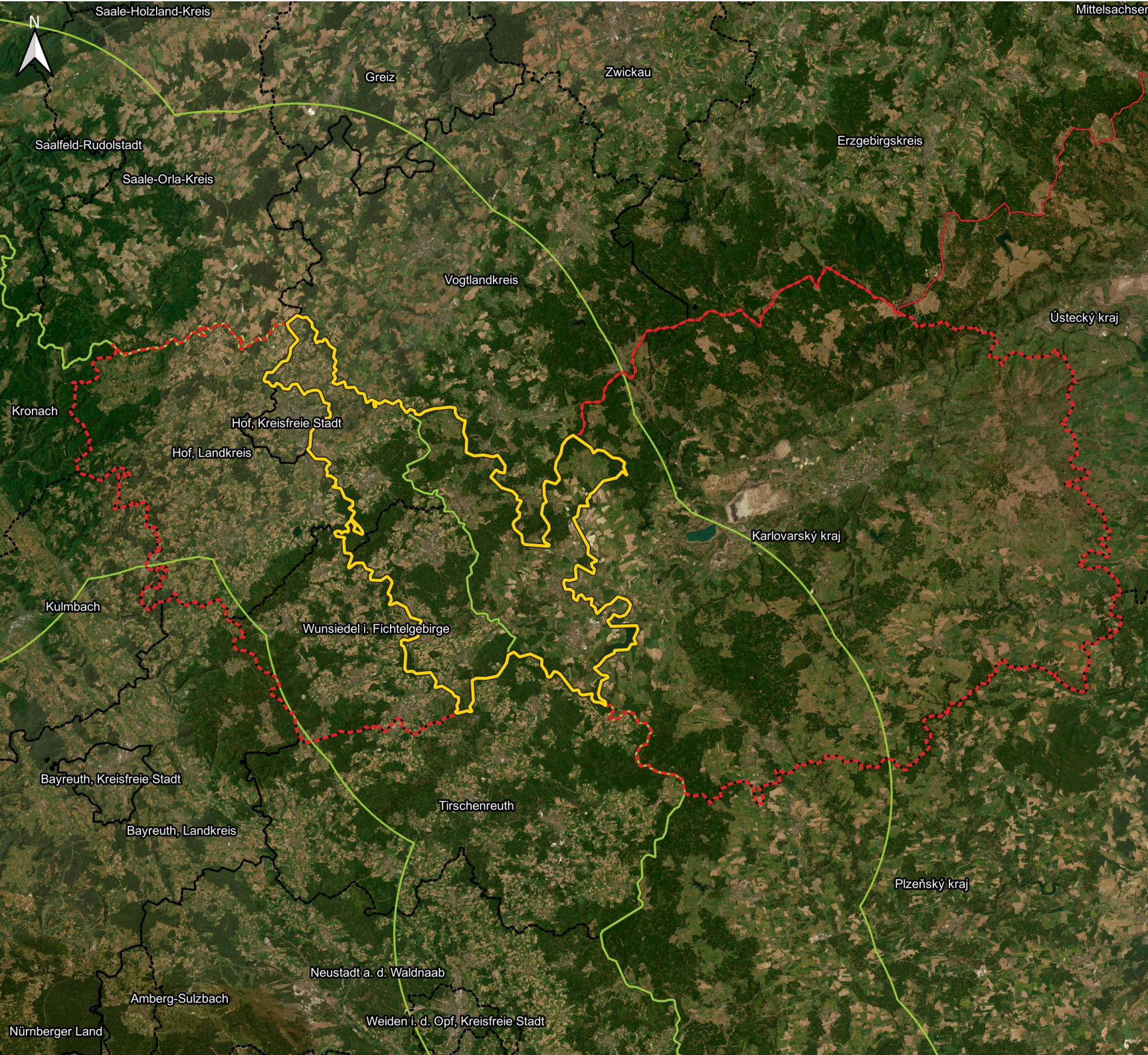
The Erlenbächlein area in the Rehauer Forest embodies a unique mosaic of diverse biotopes, encompassing flat moors, spring moors, meadows, and sedge or rush-rich wet meadows. Nevertheless, these pristine biotopes face fragmentation due to drained, degraded, and afforested areas, significantly compromising the ecological integrity and connectivity of the region. The pilot action efforts are committed to restoring this fragmented landscape into a connected and resilient ecosystem through targeted actions.

The Smrčiny Mountains hold their main value in the preservation of watercourses and their catchment areas. A concentration of biodiversity, particularly notable for hosting rare species such as the freshwater pearl mussel *Margaritifera margaritifera*, the brook lamprey *Lampetra planeri*, the bullhead *Cottus gobio*, and the common minnow *Phoxinus phoxinus*, defines the area. Various measures are underway to restore and preserve the natural form of the catchment. The catchment areas of Lužní potok and Bystřina are pivotal sites for the pearl mussel action plan, involving the release and nurturing of juveniles into adulthood.

Efforts are being made to restore natural channels of small tributaries and vernal pools, although these initiatives are still in progress. Given the extensive size of the entire area, continued restoration of small tributaries and the maintenance of facilities are imperative to provide a conducive environment for the juvenile stages of pearl mussels.

The maps for this region focus on water habitats and grasslands. Connectivity between patches is analysed and potential of restoration between the target ecosystems is assessed. The analyses possess as a base for the identification of areas with potential of restoration and high connectivity impact, following the necessity of the pilot actions to work on the restoration of small tributaries as a measurement for ensuring the continuous supply of sufficient water to the juvenile pearl mussel nursery.

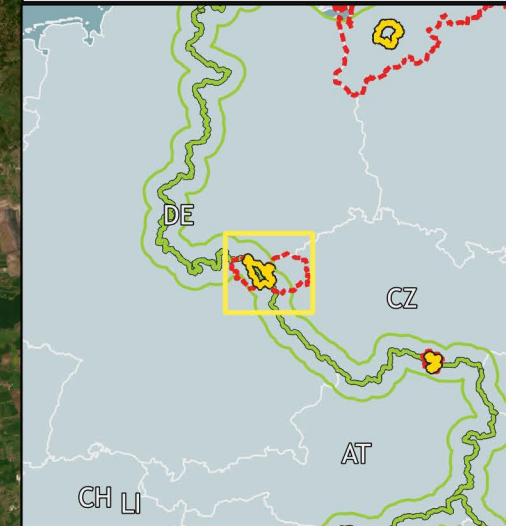






Pilot Region 1:

Fichtelgebirge / Smrčiny

Germany / Czech Republic



Pilot Region

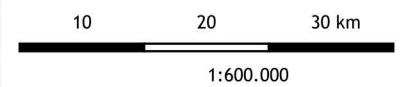
-  Core Areas
-  Extended Pilot Regions

Green Belt

-  European Green Belt
-  GB Buffer (25km)

Administrative Borders

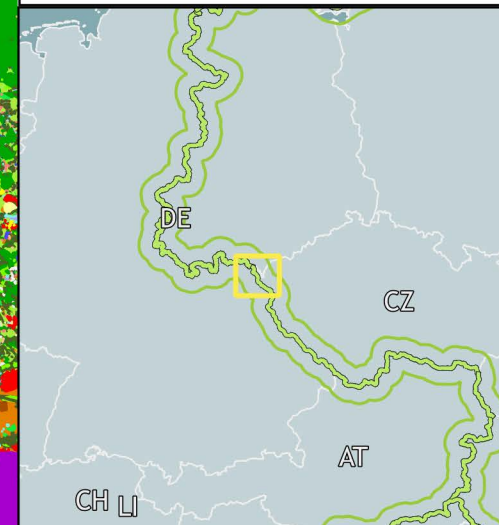
-  NUTS Regions (Level 3)
-  European Countries



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

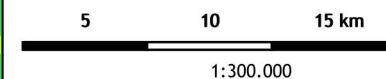
Broader Habitat Types

Germany / Czech Republic



Broader habitat type EUNIS

C1	E5	H
C2	F3/4	I1a
C3	F9	I2
D	FB	J3
E1	G1	J4
E2a	G1.D	J6
E2b	G3	Ja
E3	G5	Jb



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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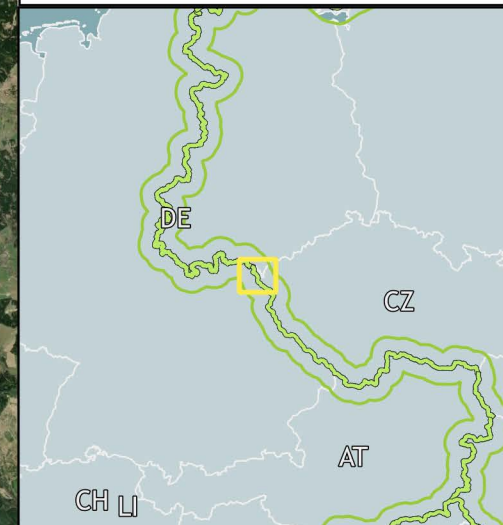


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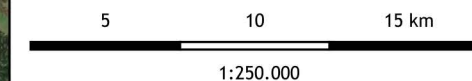
Historical Landcover

Germany / Czech Republic



Historical Landcover

- | | |
|----------------------|---------------|
| arable land | peatbog |
| forest | river |
| grassland with trees | settlement |
| meadow | water body |
| orchard | wet grassland |
| pasture | wetland |



Sources: Arcanum, Esri

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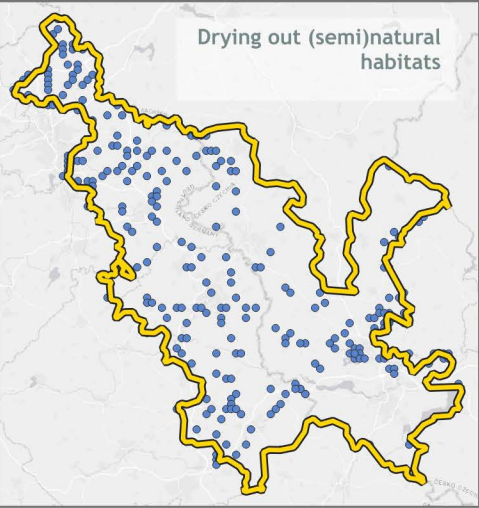
PR 1 Fichtelgebirge / Smrčiny Mountains

Historical Landcover

The historical land cover of PR1 showed a more or less equal share of arable land and forest, with regional differences: while more fertile and flat areas were occupied predominantly by arable land, central, more mountainous parts were occupied by forest. Grassland habitats in the form of meadows and pastures could be found in the river valleys, settlements were scattered throughout the pilot region. The habitats targeted for restoration, i.e. wetlands, wet grassland, peatbogs and literal zones of water bodies were more common than nowadays.

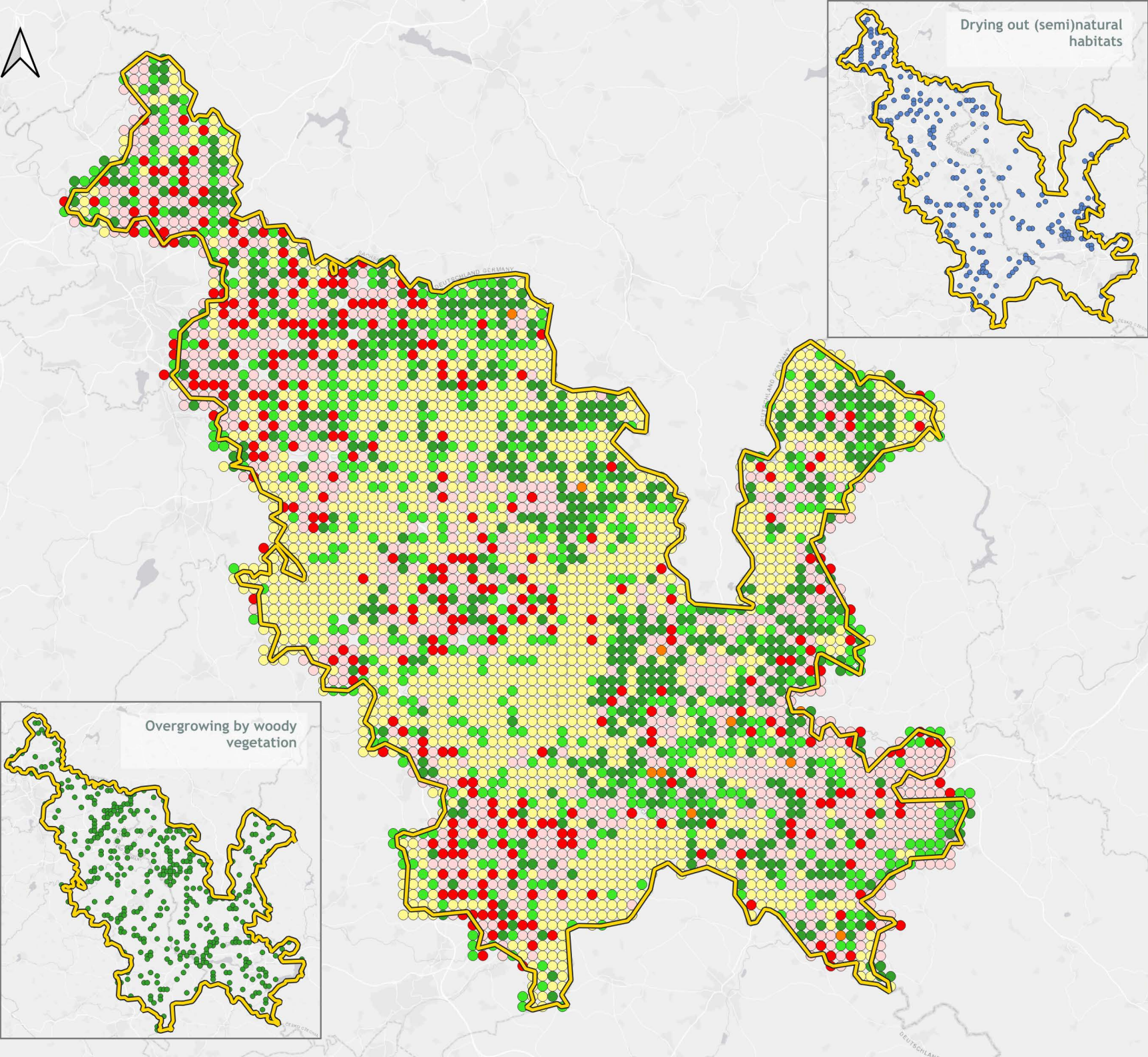
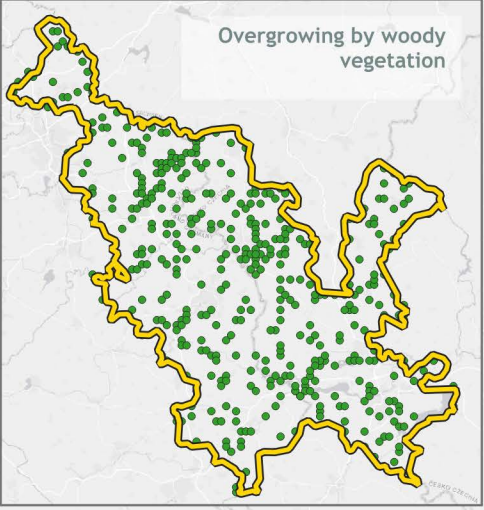
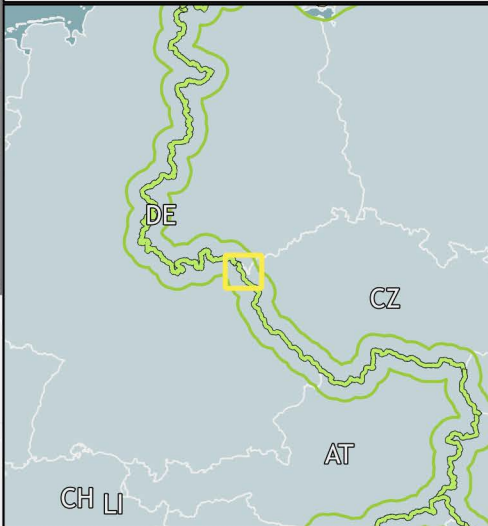
Regarding changes between historical land cover and present broader habitat types, analyses showed that more than half of the region did not change - this concerned mainly semi(natural) habitats. If changes indeed did occur, they were mostly captured as changes to (semi)natural habitats, and the major processes were overgrowing by woody vegetation. However, also quite extensively the processes showed loss of targeted habitats, both of water affected habitats and meadows.





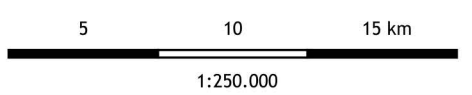
Landcover Change

Germany / Czech Republic



Change in Landscape

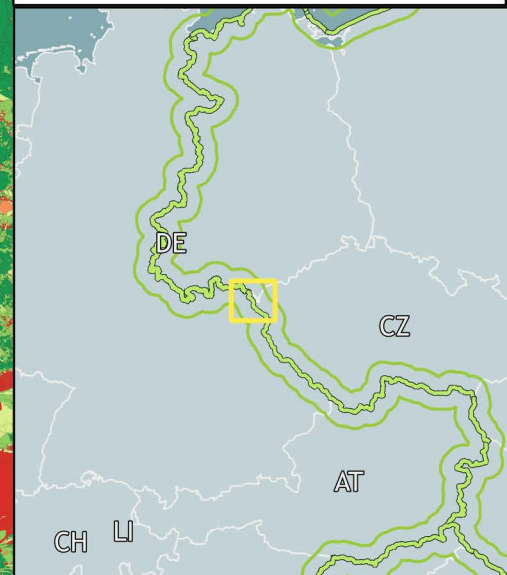
- between (semi)natural
- to (semi)natural
- to anthropogenic
- to permanent crops
- unchanged - (semi)natural
- unchanged - anthropogenic



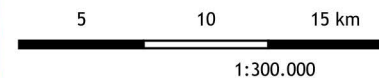
Sources: Arcanum, Esri, Corine Land Cover+ Backbone, Consolidated layer of Ecosystems.

Regulation Functions

Germany / Czech Republic



Ecosystem Services - Regulation



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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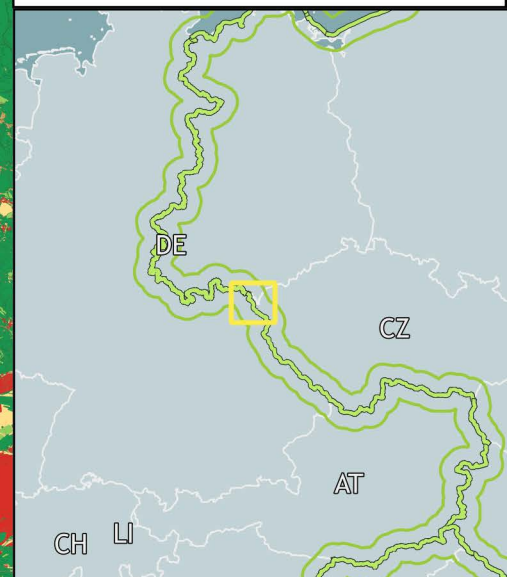


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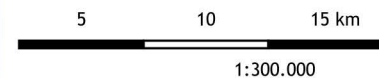
ReCo

Habitat Functions

Germany / Czech Republic



Ecosystem Services - Habitat



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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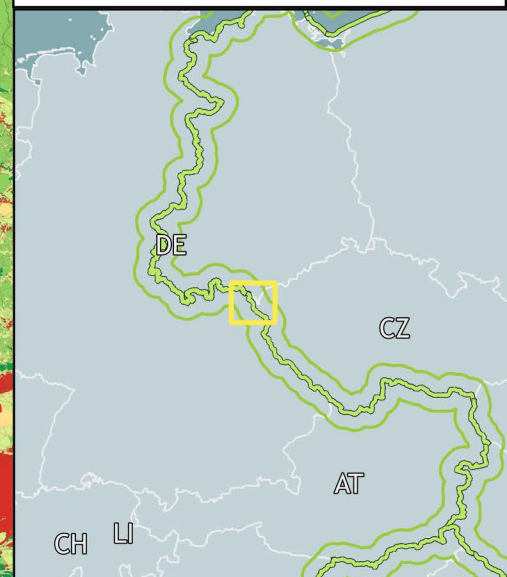


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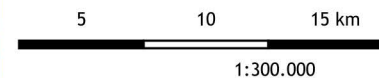
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Production Functions

Germany / Czech Republic



Ecosystem Services - Production



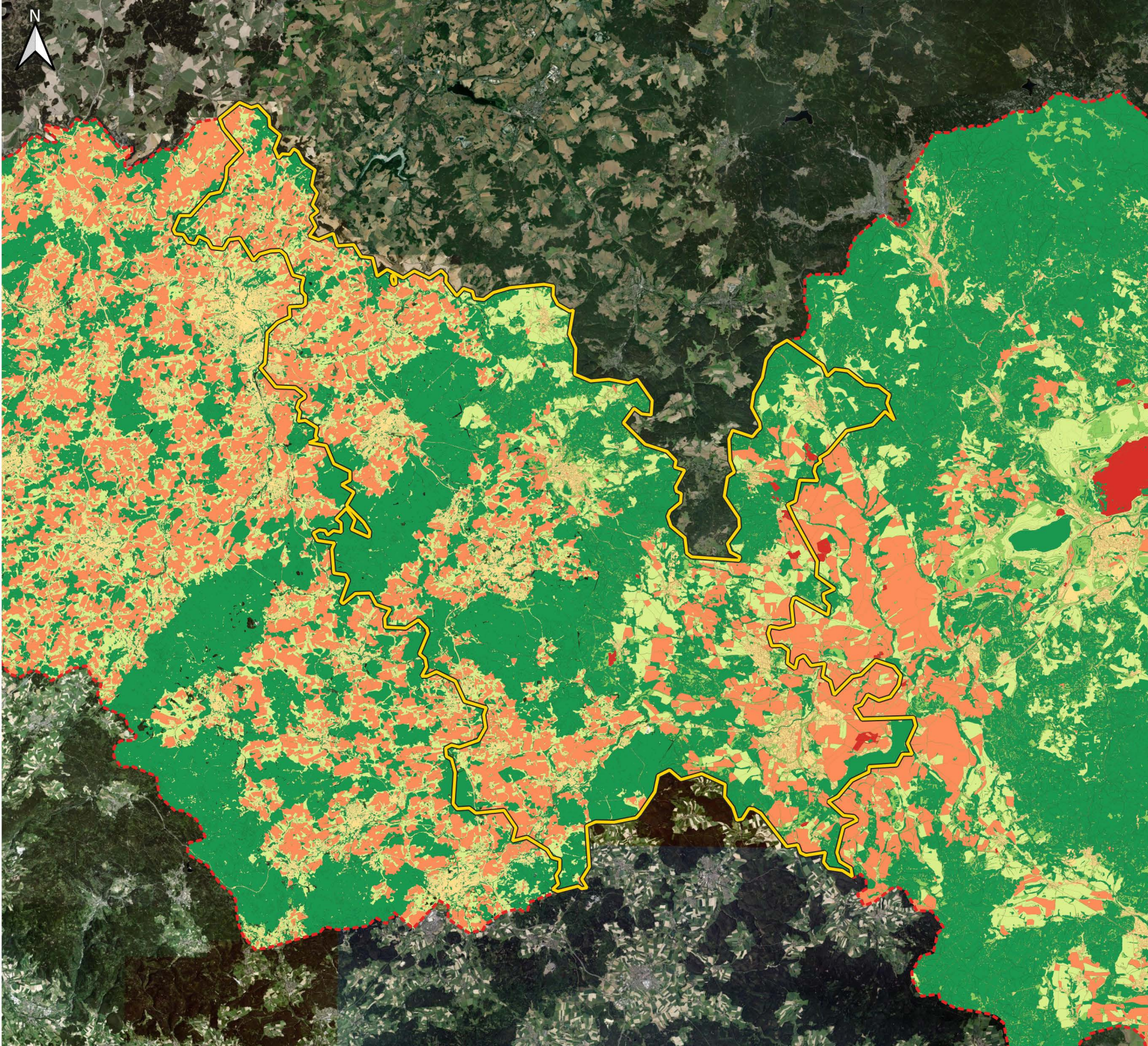
Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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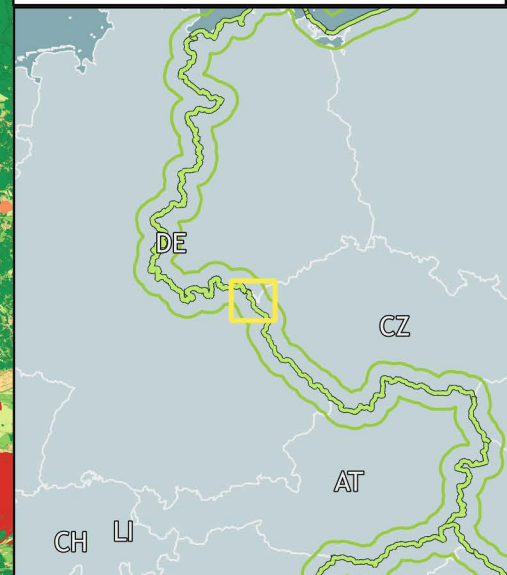
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Information Functions

Germany / Czech Republic



Ecosystem Services - Information

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High

5 10 15 km
1:300.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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CENTRAL EUROPE

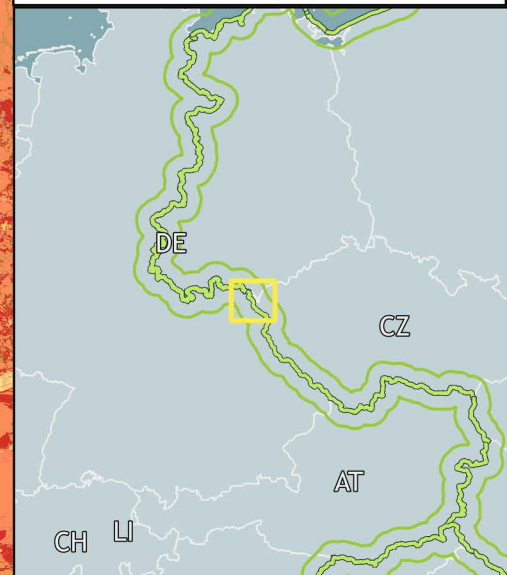


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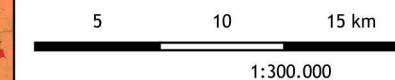
Carrier Functions

Germany / Czech Republic



Ecosystem Services - Carrier

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High



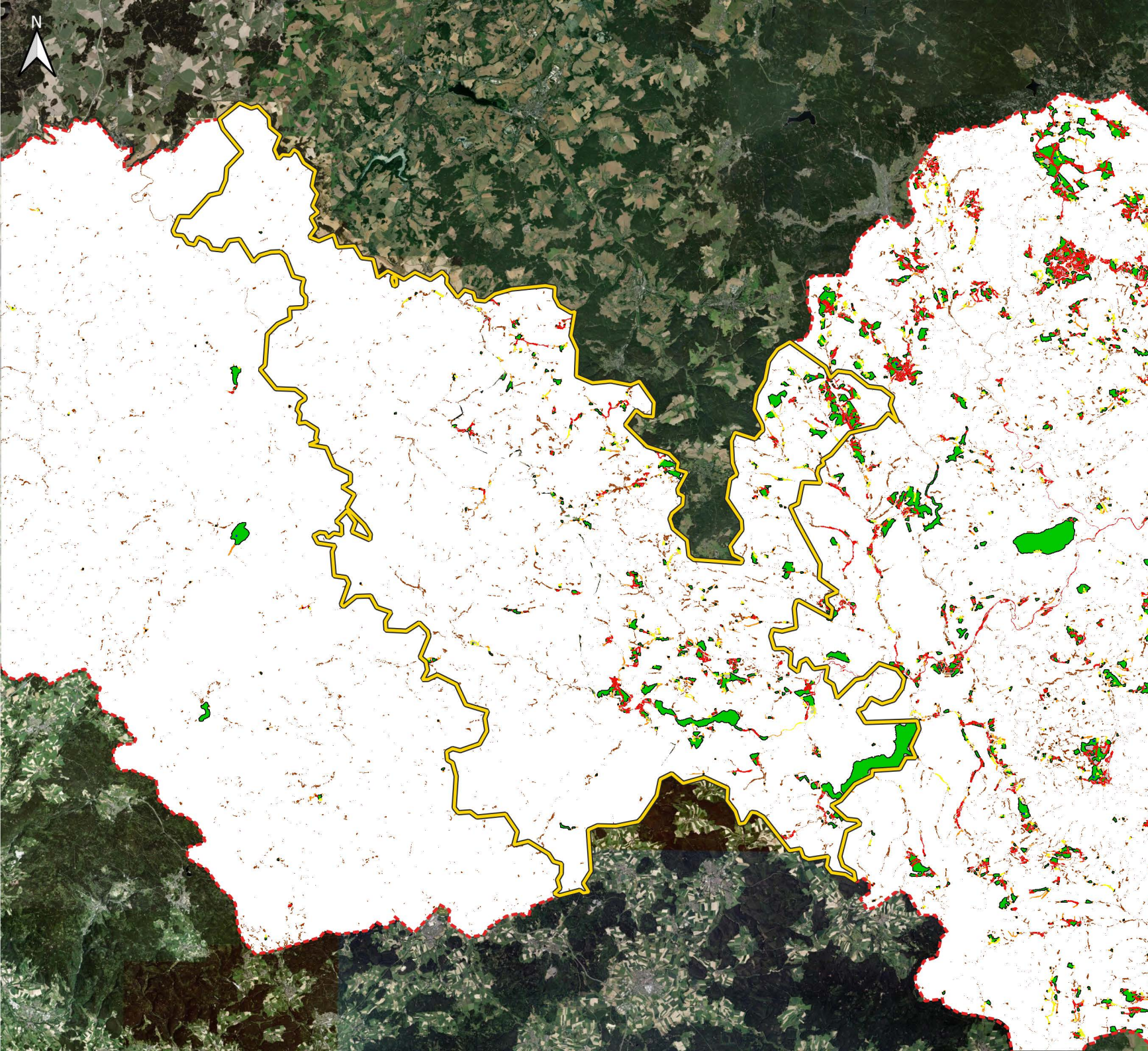
Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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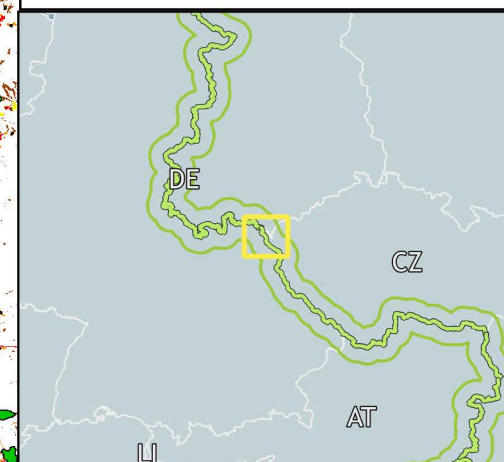
ReCo



Pilot Region 1 - Fichtelgebirge - Smržčiny:

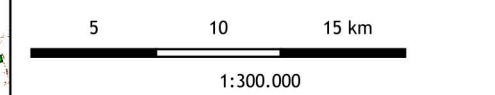
Morphological Spatial Pattern Analysis (MSPA)

- Inland surface waters - standing
 - Inland surface waters - watercourses
 - Lithoral zone of inland waterbodies
 - Mires, bogs and fens
 - Seasonally wet and wet grasslands
 - Mesic grasslands, medium intensive
- Germany / Czech Republic



Connectivity Analysis - MSPA

- | | |
|-------------|----------------|
| Core | Loop |
| Islet | Bridge |
| Perforation | Branch |
| Edge | Border-Opening |



Sources: Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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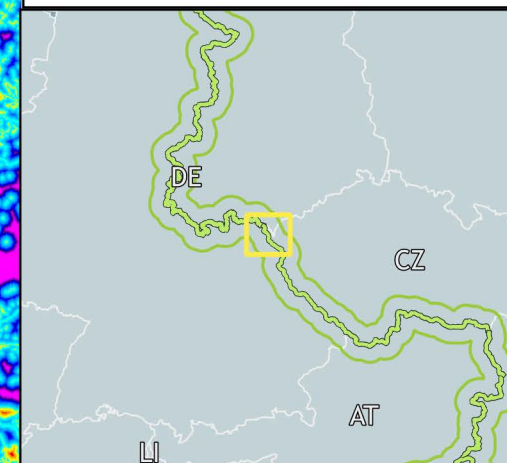
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ReCo

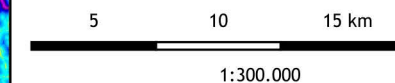
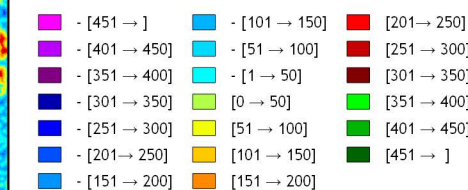
Euclidean Distance

Inland surface waters - standing
Inland surface waters - watercourses
Lithoral zone of inland waterbodies
Mires, bogs and fens
Seasonally wet and wet grasslands
Mesic grasslands, medium intensive

Germany / Czech Republic



Euclidean Distance (m)



Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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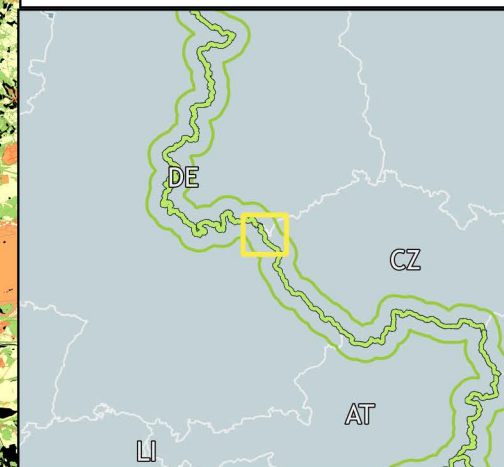


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Potential of restoration based on BHT

Inland surface waters - standing
Inland surface waters - watercourses
Lithoral zone of inland waterbodies
Mires, bogs and fens
Seasonally wet and wet grasslands
Mesic grasslands, medium intensive
Germany / Czech Republic



Potential of restoration to Target Habitats

- Low potential
- Medium Potential
- High Potential
- Very High Potential
- Target Habitats

5 10 15 km
1:300.000

Sources: Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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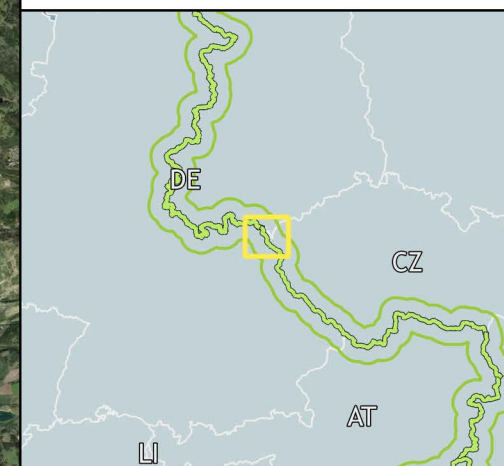


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Historical Target Habitat

Inland surface waters - standing
Inland surface waters - watercourses
Lithoral zone of inland waterbodies
Mires, bogs and fens
Seasonally wet and wet grasslands
Mesic grasslands, medium intensive
Germany / Czech Republic



Target habitat in historical data

 Target Habitats

5 10 15 km
1:300.000

Sources: Arcanum, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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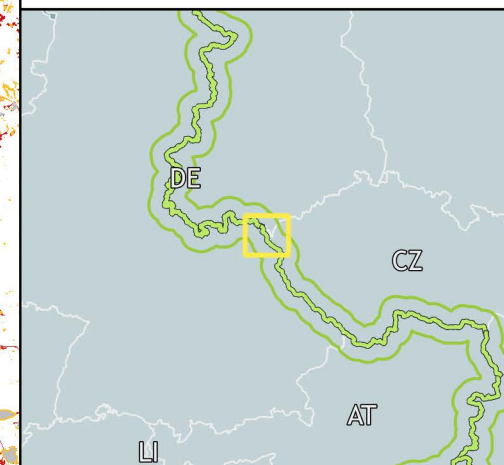


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ReCo

Reclassified (MSPA)

Inland surface waters - standing
Inland surface waters - watercourses
Lithoral zone of inland waterbodies
Mires, bogs and fens
Seasonally wet and wet grasslands
Mesic grasslands, medium intensive
Germany / Czech Republic



Relevance for connectivity

-  1 - Core areas and Loops
-  2 - Edges and Islets
-  3 - Bridges and Branches

5 10 15 km

1:300.000

Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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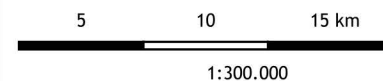
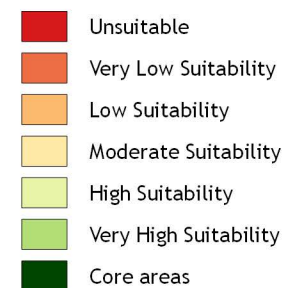
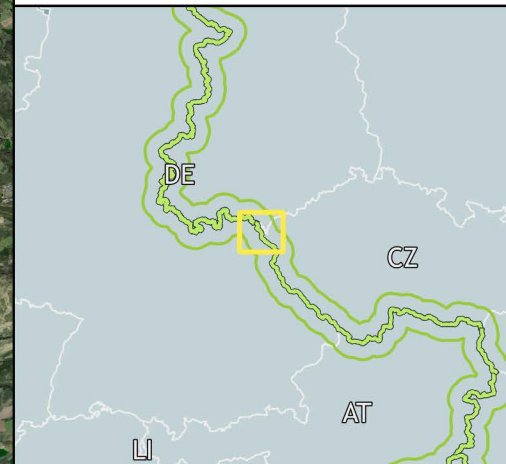


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ReCo

Restoration Suitability Index

Inland surface waters - standing
Inland surface waters - watercourses
Lithoral zone of inland waterbodies
Mires, bogs and fens
Seasonally wet and wet grasslands
Mesic grasslands, medium intensive
Germany / Czech Republic



Sources: Arcanum, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Interreg
CENTRAL EUROPE

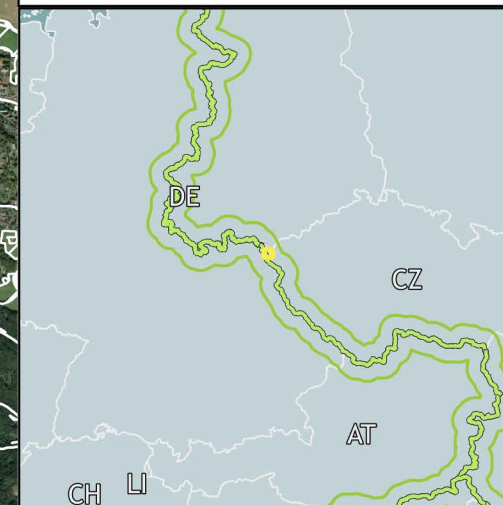


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Target Habitat

Meadows and streams near
Karlovarský kraj

Germany / Czech Republic



Target Habitat - Meadows

 Target habitat

1 2 3 km
1:60.000

Sources: Arcanum, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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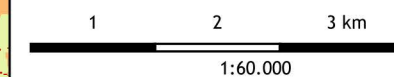
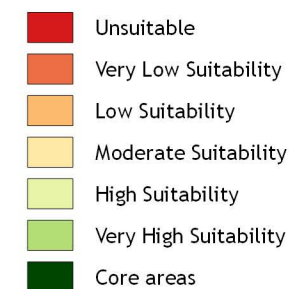
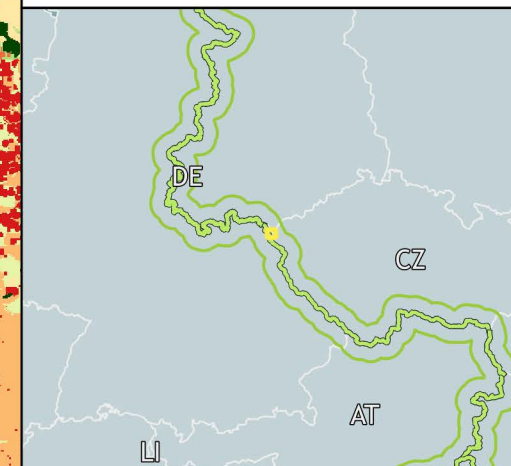
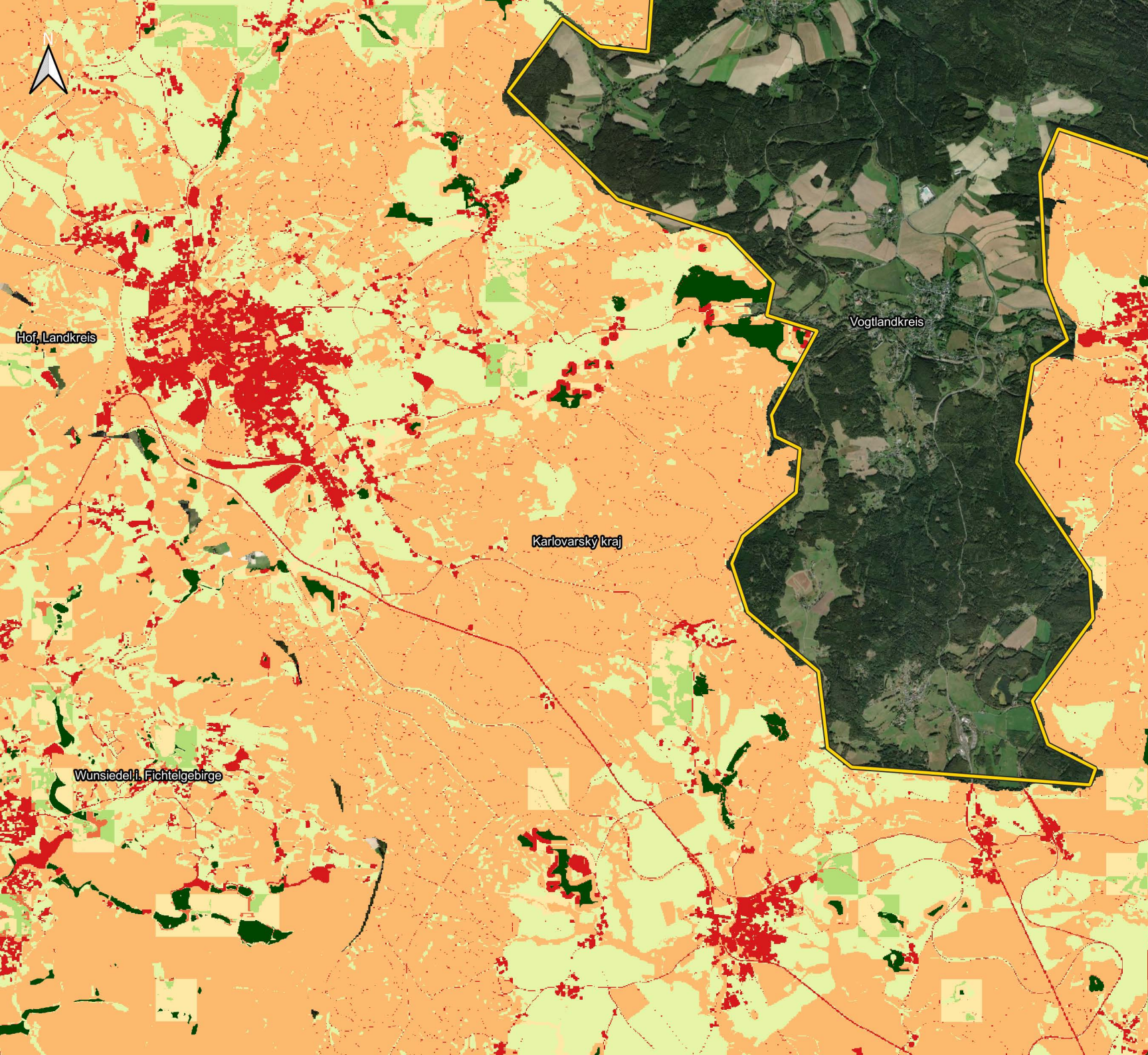


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Restoration Suitability Index

Inland surface waters - standing
Inland surface waters - watercourses
Lithoral zone of inland waterbodies
Mires, bogs and fens
Seasonally wet and wet grasslands
Mesic grasslands, medium intensive
Germany / Czech Republic



Sources: Arcanum, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

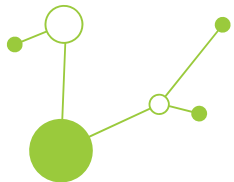
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Pilot Region 3: Škocjanski zatok Nature Reserve



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PR 3 Škocjanski zatok Nature Reserve

The Škocjanski zatok Nature Reserve stands as a distinctive ecosystem in Slovenia, distinguished by its proximity to the sea, Mediterranean climate, sub-Mediterranean vegetation, and anthropogenic origin. Boasting a diverse array of habitats, including Page 47 freshwater wetlands, ponds, reedbeds, shallows, salt marshes, mudflats, islets, and deepwater areas, this reserve serves as a haven for a rich variety of fauna and flora, some of which are rare and endangered. Notably, 41% of all Slovenian amphibian species, 41% of reptile species, over 66% of bird species observed in Slovenia, and 36% of Slovenia's mammals find refuge in this area.

A noteworthy accomplishment in meeting conservation objectives is the establishment of a freshwater marsh, coupled with extensive efforts to restore and regenerate the habitat in the brackish lagoon, conducted between 2006 and 2007. This success exemplifies best practices in natural habitat creation, marked by collaboration between botanical, ecological, and hydrological experts alongside technical specialists. The restoration and creation of various habitats, rare and endangered at both Slovenian and European levels, have fostered conditions conducive to the proliferation of bird species, especially those of national and international importance. The introduction of mudflats and marginal habitats in the brackish water lagoon has provided new nesting sites for significant Natura 2000 species, including the *Sterna hirundo* (common tern), *Sternula albifrons* (little tern), *Himantopus himantopus* (black-winged stilt), *Tringa totanus* (common redshank), and *Charadrius alexandrinus* (kentish plover).

Coastal wetlands, including the Škocjanski zatok Nature Reserve, represent ecosystems subject to bi-directional flooding occurring twice daily in most regions. A crucial physiological aspect of these ecosystems lies in their periodic and predictable flooding, significantly shaping successional development, species composition, stability, and productivity. Recognized for years, coastal wetlands' importance for diverse flora and fauna stems from the intricate interplay between marine and terrestrial habitats. Dominated by halophytes, these areas serve as vital feeding, resting, and nesting sites for numerous bird species.

Research indicates that climate change-induced sea-level rise will profoundly impact coastal wetlands, with projections suggesting a faster increase in the 21st century. This phenomenon poses a substantial threat globally, particularly in low-lying sedimentary coastal regions where more frequent flooding or vertical habitat retreat is anticipated. The Mediterranean and Baltic Sea regions, in particular, may witness the complete disappearance of coastal wetlands by 2080 due to relative sea-level rise. This poses a formidable challenge for developing cost-effective biodiversity conservation plans, considering the considerable expense involved in restoring or reconstructing lost habitats.

The maps presented for this region consider the habitats that are present in the reserve that serve as habitat for several species. A connectivity analysis is presented, and suitability for restoration in the extended area. Although, the core region is particularly characterized by its built up and intensively managed surroundings. Therefore, the target habitats serve particularly as a stepping stone of different habitats in the bigger scale.

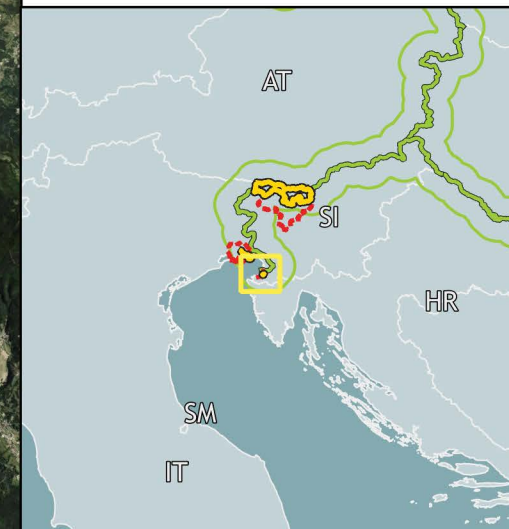






Pilot Region 3:

Škocjanski zatok

Slovenia



Pilot Region

-  Core Areas
-  Extended Pilot Regions

Green Belt

-  European Green Belt
-  GB Buffer(25km)

Administrative Borders

-  NUTS Regions (Level 3)
-  European Countries

4 8 12 km

1:200.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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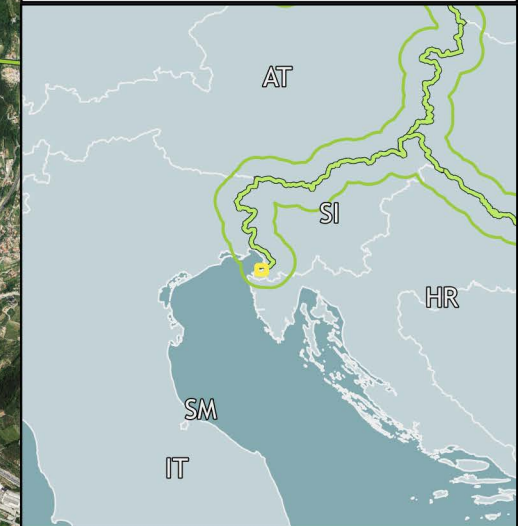
ReCo





Pilot Region 3:

Škocjanski zatok

Slovenia



Pilot Region

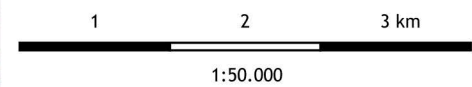
-  Core Areas
-  Extended Pilot Regions

Green Belt

-  European Green Belt
-  GB Buffer (25km)

Administrative Borders

-  NUTS Regions (Level 3)
-  European Countries



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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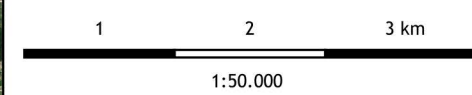
Broader Habitat Types

Slovenia



Broader habitat type EUNIS

A2	E5	H
B1/2	E7	I1a
C1	F3/4	I1b
C2	FA	I2
C3	FB	Jb
D	G1	X2/3
E2a	G1.D	
E3	G5	



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

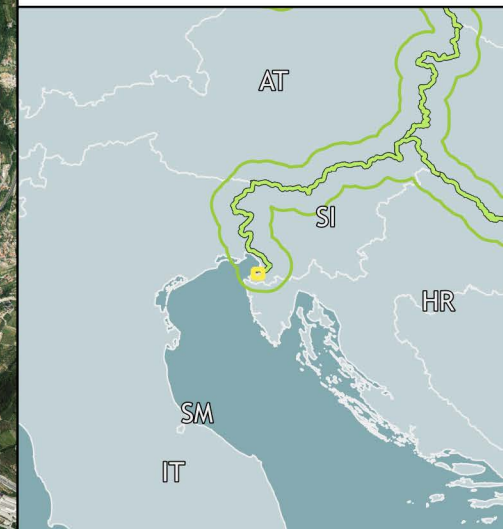


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Historical Landcover

Slovenia



Historical Landcover

- | | |
|------------------------|-----------------------------|
| ● forest | ● peatbog |
| ● wet forest | ● salt marsh |
| ● grassland with trees | ● sea |
| ● pasture | ● bare surface - gravel bar |
| ● meadow | ● bare surface - rock |
| ● wet grassland | ● agricultural land |
| ● wetland | ● settlement |
| ● water body | ● orchard |
| ● river | ● vineyard |

1 2 3 km

1:50.000

Sources: Arcanum, Esri

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PR 3 Škocjanski zatok Nature Reserve

Historical Landcover

Historical landscape of the extended area of PR3 was mainly used for wine growing with scattered forests and meadows, in the higher parts also by pastures. The region around the core area was largely part of the sea and salt marshes.

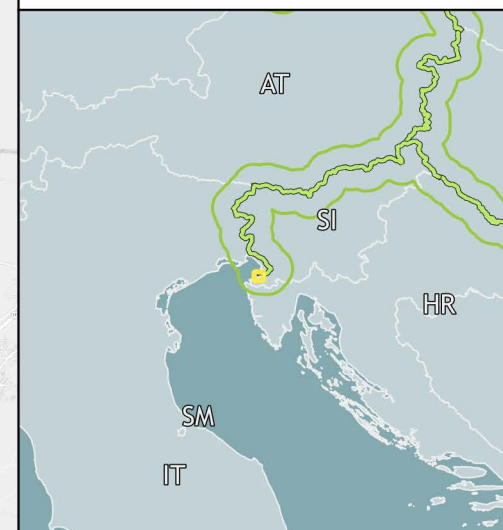
The pilot region experienced massive anthropogenic changes with the spread of the town of Koper and other settlements. This concerned not only marine and coastal habitats but also agricultural land. About twenty percent of water affected habitats were dried out and about five percent of anthropogenic habitats were changed to (semi)natural habitats, either grasslands or forests.



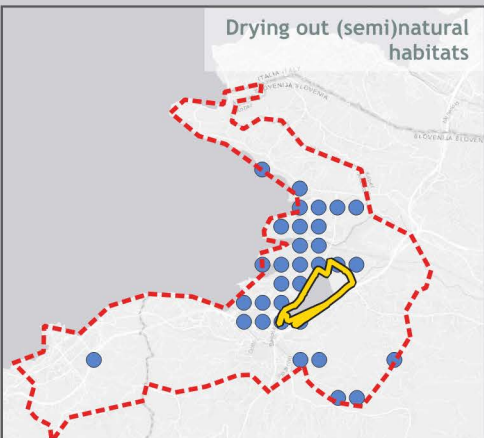


Landcover Change

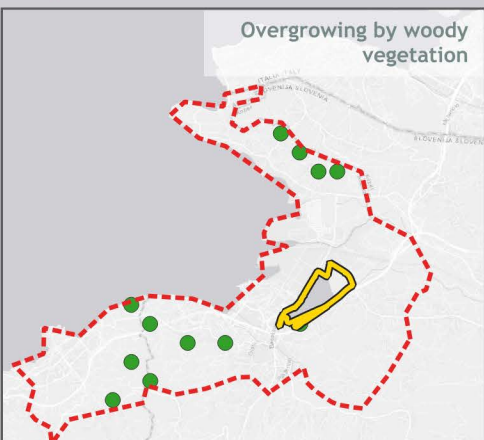
Slovenia



Drying out (semi)natural habitats



Overgrowing by woody vegetation



Change in Landscape

- between (semi)natural
- to (semi)natural
- to anthropogenic
- to permanent crops
- unchanged - (semi)natural
- unchanged - anthropogenic

1 2 3 km

1:50.000

Sources: Österreichisches Staatsarchiv, Esri, Habitat maps, Corine Land Cover+ Backbone.

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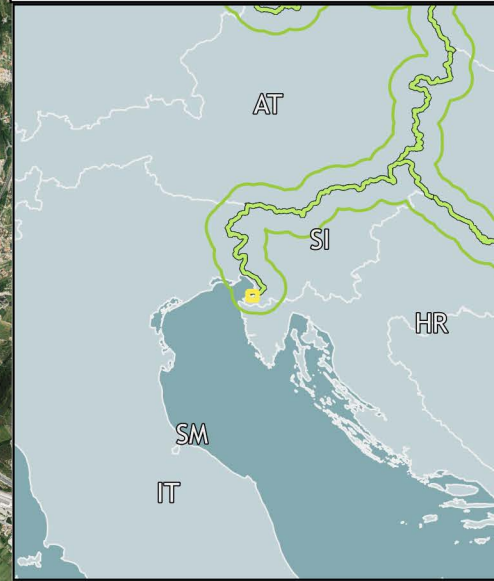
Co-funded by
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ReCo



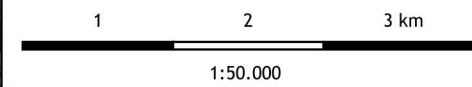
Regulation Functions

Slovenia



Ecosystem Services - Regulation

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



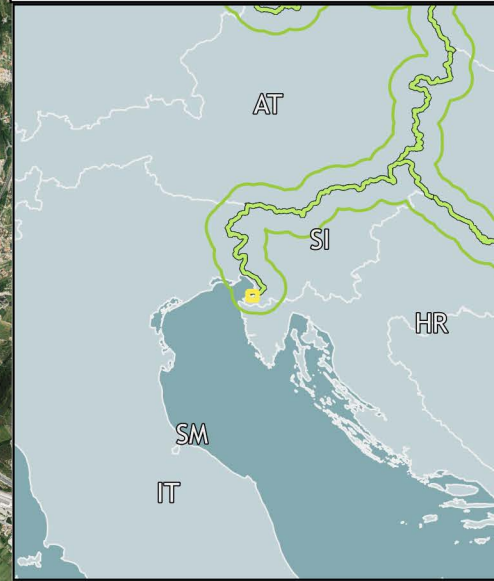
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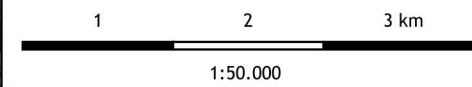
Habitat Functions

Slovenia



Ecosystem Services - Habitat

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



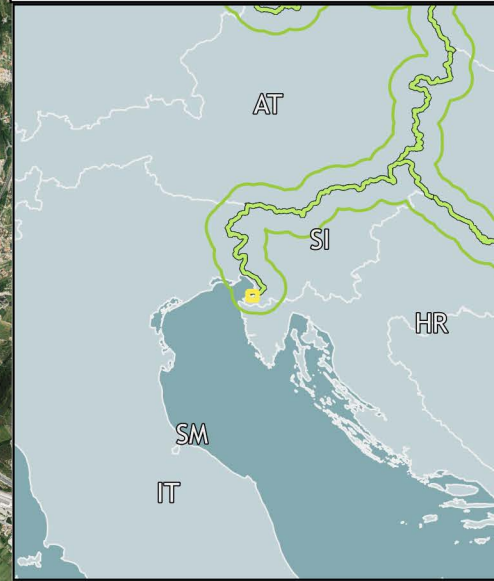
Co-funded by the European Union





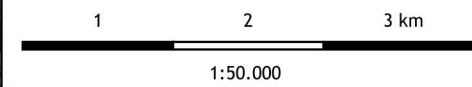
Production Functions

Slovenia



Ecosystem Services - Production

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



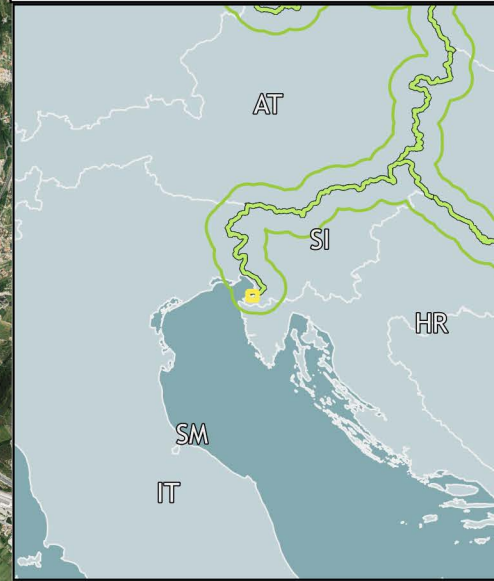
Co-funded by the European Union





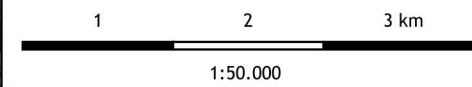
Information Functions

Slovenia



Ecosystem Services - Information

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



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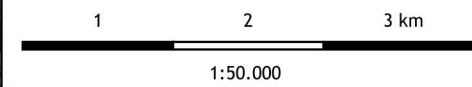
Carrier Functions

Slovenia



Ecosystem Services - Carrier

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High



Sources: Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



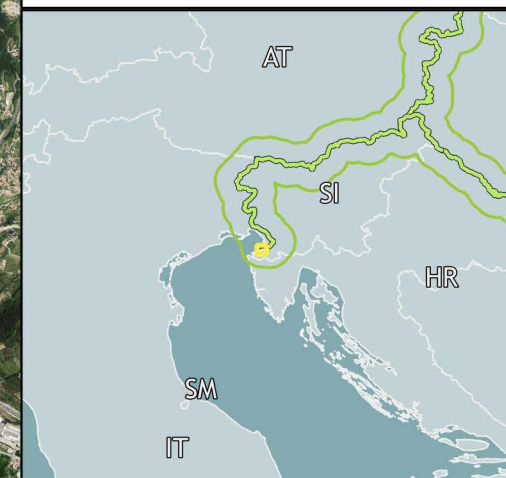
Co-funded by the European Union



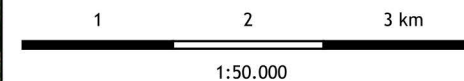
Morphological Spatial Pattern Analysis (MSPA)

Mires, bogs and fens

Slovenia



Connectivity Analysis - MSPA



Sources: Esri, DigitalGlobe, GeoEye,GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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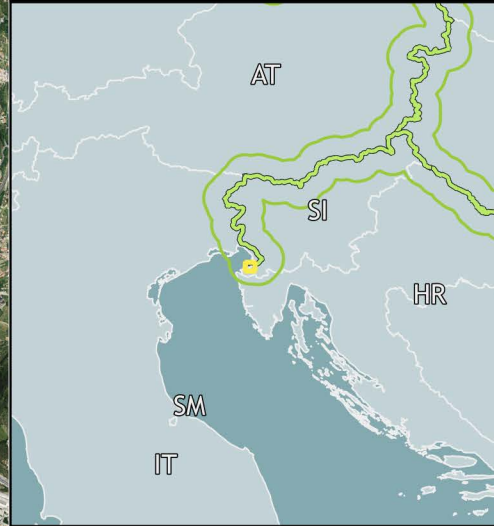
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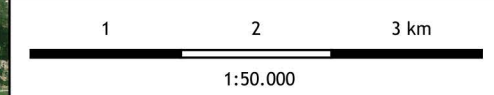
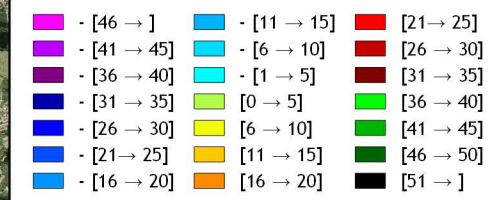


Euclidean Distance

Slovenia



Euclidean Distance (m)



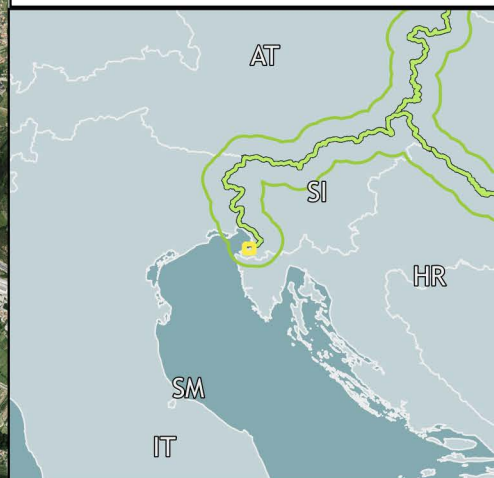
Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Pilot Region 3 - Škocjanski zatok:

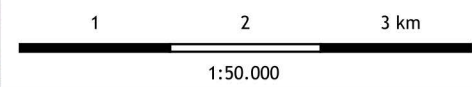
Potential of restoration based on BHT

- Litoral seddiments
 - Inland surface waters
 - Lithoral zone of inland waterbodies
 - Coastal dunes and shingle
 - Mires, bogs and fens,
 - Saline coastal lagoons
- Slovenia



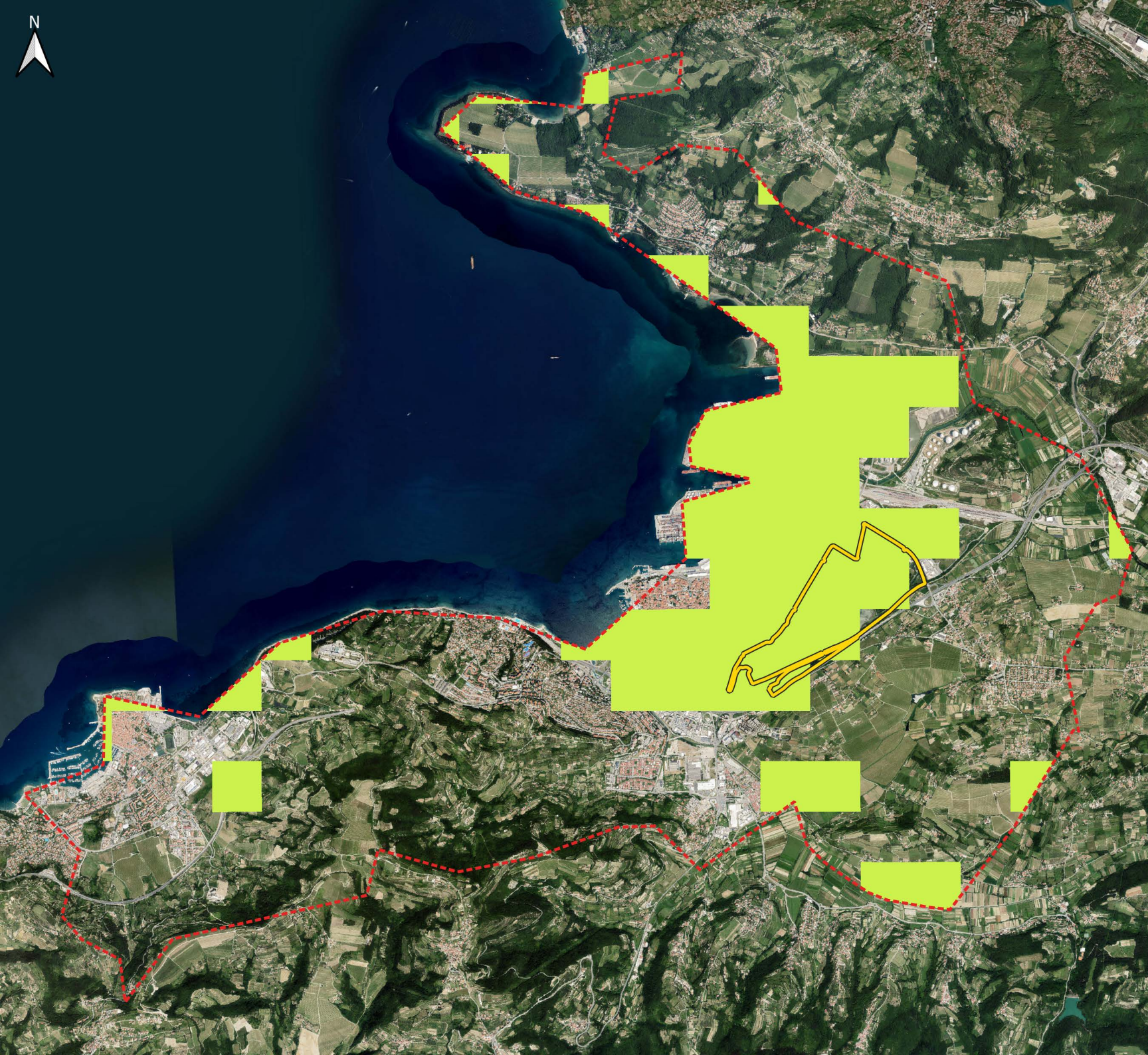
Potential of restoration to Target Habitats

- Unsuitable
- Low potential
- Medium Potential
- High Potential
- Target Habitats



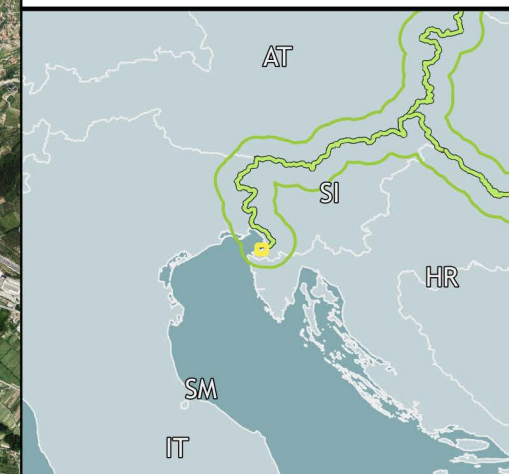
Sources: Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





Historical Target Habitat

Litoral sediments
Inland surface waters
Lithoral zone of inland waterbodies
Coastal dunes and shingle
Mires, bogs and fens,
Saline coastal lagoons
Slovenia



Target habitat in historical data

 Target Habitats

1 2 3 km

1:50.000

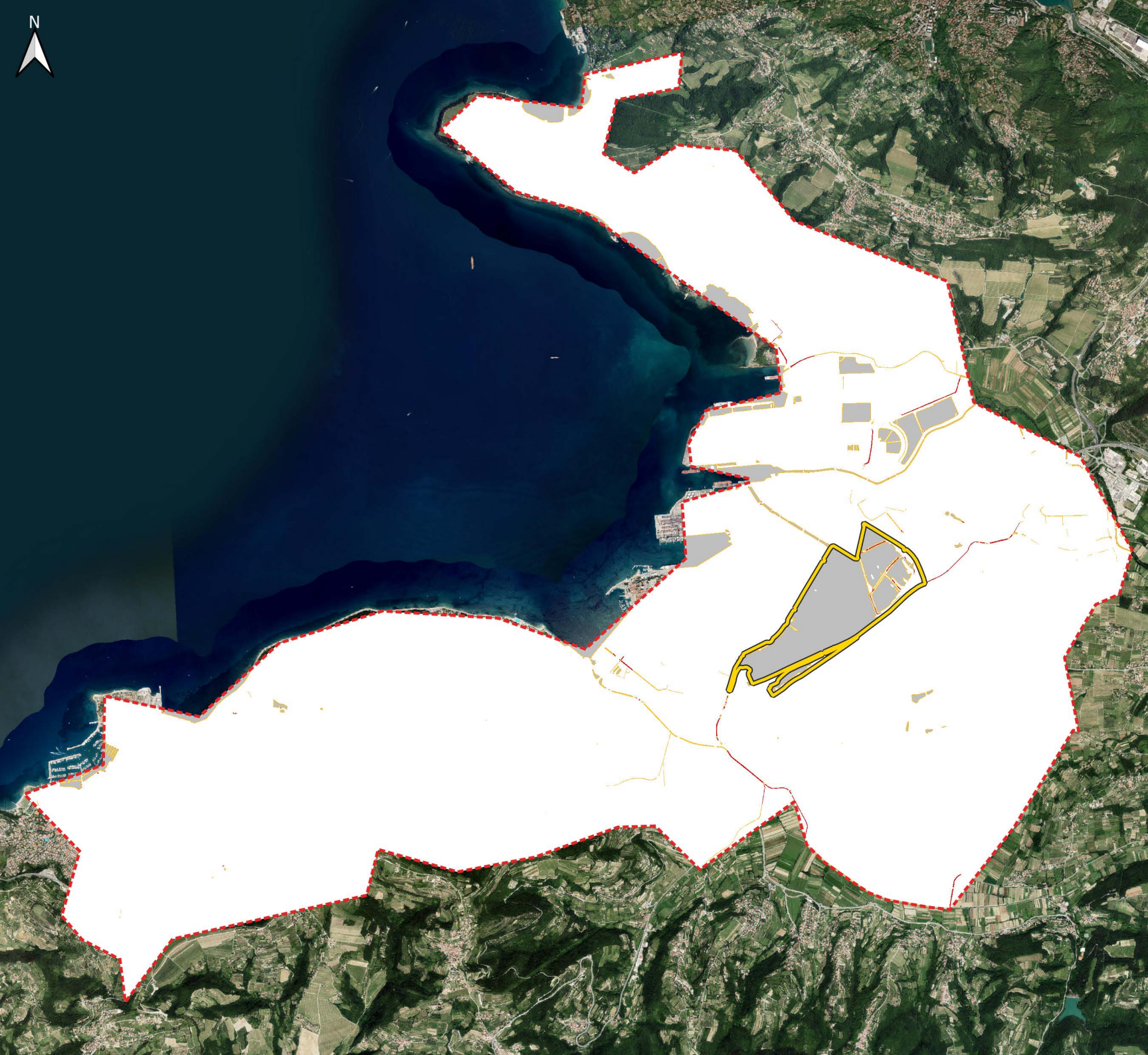
Sources: Österreichisches Staatsarchiv, Arcanum, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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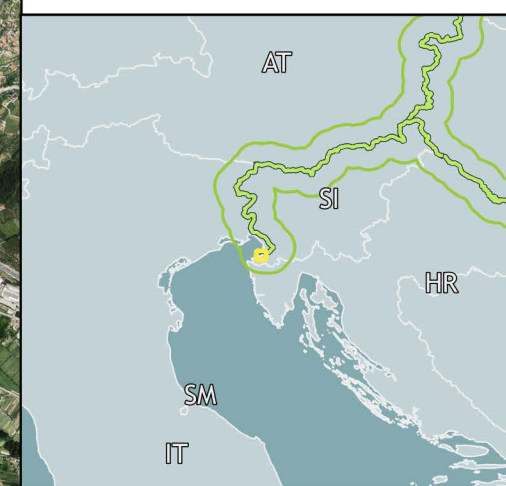
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Pilot Region 3 - Škocjanski zatok:

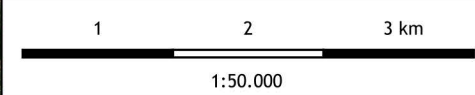
Reclassified (MSPA)

Litoral seddiments
Inland surface waters
Lithoral zone of inland waterbodies
Coastal dunes and shingle
Mires, bogs and fens,
Saline coastal lagoons
Slovenia



Relevance for connectivity

- 1 - Core areas and Loops
- 2 - Edges and Islets
- 3 - Bridges and Branches



Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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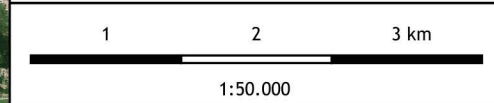
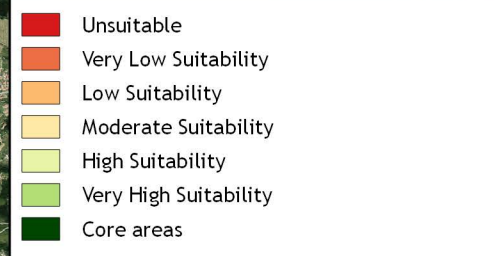
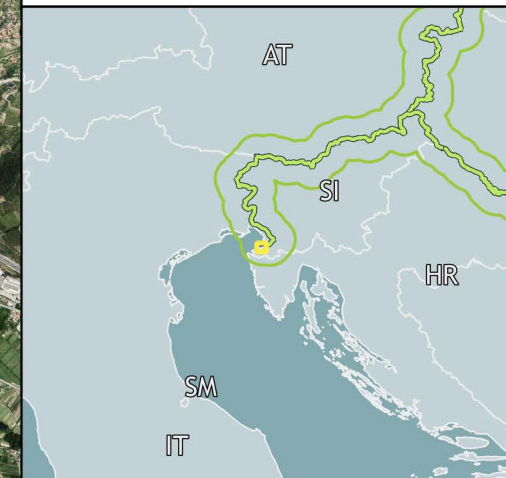
 ReCo



Pilot Region 3 - Škocjanski zatok:

Restoration Suitability Index

Litoral seddiments
Inland surface waters
Lithoral zone of inland waterbodies
Coastal dunes and shingle
Mires, bogs and fens,
Saline coastal lagoons
Slovenia



Sources: Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Pilot Region 4: Gorenjska region



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PR 4 Gorenjska region

The target geographical area of the Joint Pilot Action of the region is situated in the Western Karavanke Mountains, specifically encompassing the Karavanke region within the municipal boundaries of Jesenice. In Jesenice, the mountain daffodil is found in the Karavanke segment of the municipality, initially appearing in the lower part of the Karavanke foothills at an altitude of approximately 700 m.a.s.l. The daffodil habitats include meadows and pastures in the broader vicinity of Plavški Rovt, Planina pod Golico, Prihodi, and Javorniški Rovt. They also extend to overgrown hay meadows above Hrušica, reaching up to the summit ridges of the Karavanke Mountains, notably on Golica (1,835 m.a.s.l.). In the eastern part, the daffodil's distribution is confined to the Javorniški Rovt area, encompassing Jezerec and Mavra. In the western part, its range extends into the municipality of Kranjska Gora, covering the areas of Raven and Dovška Rožca.

The municipality of Jesenice, nestled in the Karavanke region, is home to expansive and widely recognized daffodil habitats, notably on the slopes of the Golica Mountains and the meticulously cultivated meadows encircling the villages of Plavški Rovt, Planina pod Golico, Prihodi, and Javorniški Rovt. Local narratives from older generations vividly describe the Golica Mountains' slopes adorned in white with daffodil flowers, making it the largest and most frequented daffodil site in Slovenia. Despite the recognition of daffodil habitats in other regions of the country, Golica and its surrounding villages remain unparalleled in both size and popularity among tourists. In nurturing these natural environments for daffodils, proper agricultural management of the meadows is indispensable. However, the evolving landscape in these hill regions, adapting to modern agricultural trends and techniques, exerts pressures on daffodil sites. Challenges include:

- overgrowth of farmland,
- shift in agricultural use towards extensive farming, negatively impacting daffodil growth (such as the abandonment of mowing meadows solely for grazing),
- transition to intensive farming with adverse effects (including early spring grazing, premature mowing, ensiling, and baling instead of traditional drying on the ground).

The Joint Pilot Action area comprises a mosaic of diverse ecosystems, including forests, cultivated grasslands, and mountain pastures. Conservation efforts primarily target the steeper, extensively cultivated meadows, often encircled by forests. Preserving these meadows is vital for safeguarding the specific flora and fauna intricately connected to the mosaic structure of the habitats in the area. This interconnection creates unique environments and essential connections crucial for the area's flora and fauna, such as meadows serving as grazing areas for game, the distinctive species structure of grasslandforest edges featuring light-loving fruiting tree species, and extensive hay meadows providing a habitat for grassland butterflies. Establishing an ecologically coherent landscape with diverse grassland and woodland habitats, showcasing rich biodiversity, will enhance the region's resilience to potential climate change pressures.

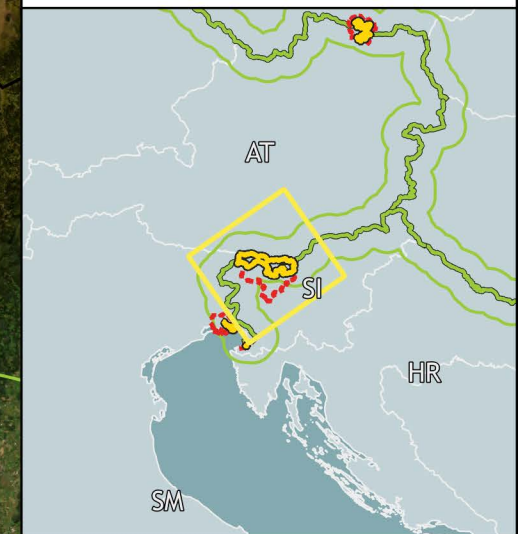




Pilot Region 4:

Karavanke - Gorenjska

Slovenia



Pilot Region

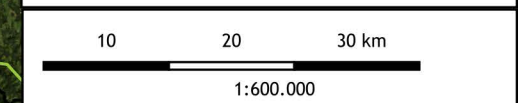
- Core Areas
- Extended Pilot Regions

Green Belt

- European Green Belt
- GB Buffer (25km)

Administrative Borders

- NUTS Regions (Level 3)
- European Countries



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



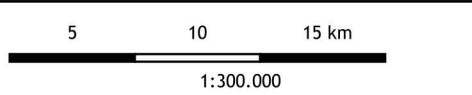
Pilot Region 4:

Karavanke - Gorenjska

Slovenia



- Pilot Region**
- Core Areas
 - Extended Pilot Regions
- Green Belt**
- European Green Belt
 - GB Buffer (25km)
- Administrative Borders**
- NUTS Regions (Level 3)
 - European Countries

















Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

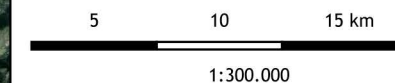
Broader Habitat Types

Slovenia



Broader habitat type EUNIS

 C1	 F3/4	 H
 C2	 FB	 I1a
 D	 G1	 I1b
 E2a	 G1.D	 Jb
 E7	 G3	



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Interreg
CENTRAL EUROPE

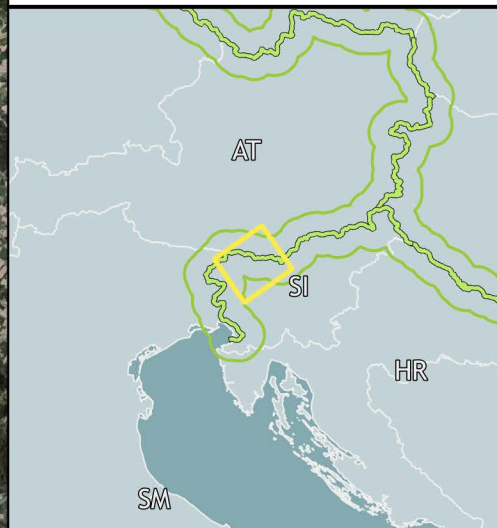


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ReCo

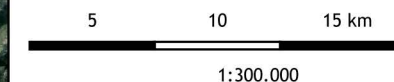
Historical Landcover

Slovenia



Historical Landcover

- | | |
|------------------------|-----------------------------|
| ● forest | ● river |
| ● wet forest | ● peatbog |
| ● grassland with trees | ● salt marsh |
| ● pasture | ● sea |
| ● meadow | ● bare surface - gravel bar |
| ● wet grassland | ● bare surface - rock |
| ● wetland | ● agricultural land |
| ● water body | ● settlement |



Sources: Österreichisches Staatsarchiv, Esri

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PR 4 Gorenjska region

Historical Landcover

In the PR4, in the past as well as now, the mountainous landscape was dominantly forested. The mountain peaks were either bare or covered by meadows or pastures, sometimes with scattered trees. Wet grasslands could be found in the valleys around rivers, together with patches of arable land and settlements.

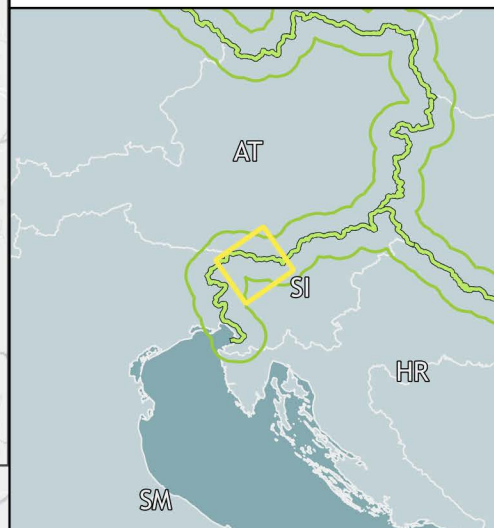
When comparing historical land cover with current situation, analyses showed that more than half of the pilot region remained unchanged, especially due to forested mountains. However, about one third of the (semi)natural habitats interchanged - mostly by overgrowing bare surfaces and meadows and pastures by woody vegetation. As such, many target habitats were forever lost. This is true especially in cases where meadows and pastures were turned into forest. In some cases, these habitats were overgrown only by scrubs and heath or by scattered trees, making the potential restoration of meadows more feasible

.



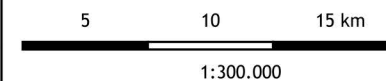
Landcover Change

Slovenia



Change in Landscape

- between (semi)natural
- to (semi)natural
- to anthropogenic
- to permanent crops
- unchanged - (semi)natural
- unchanged - anthropogenic



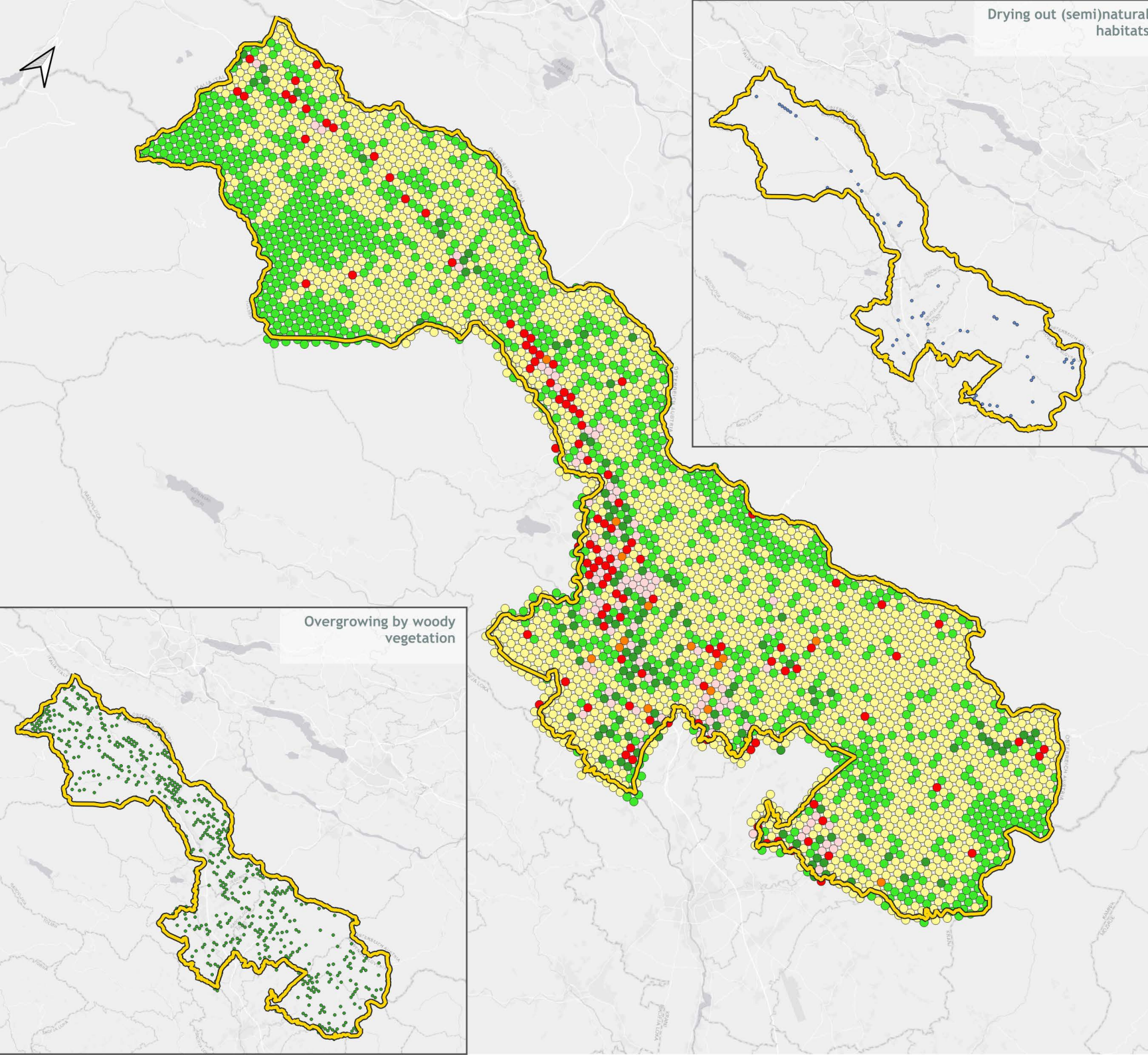
Sources: Österreichisches Staatsarchiv, Esri, Habitat map, Corine Land Cover+ Backbone.

Interreg
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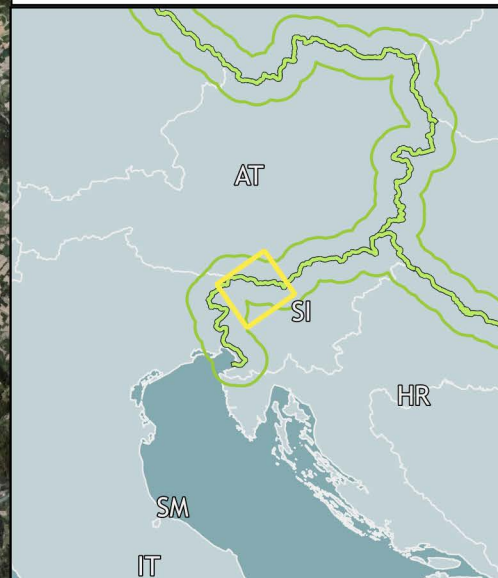
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the European Union

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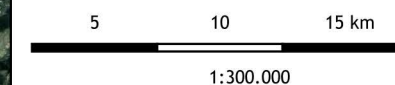


Regulation Functions

Slovenia



Ecosystem Services - Regulation



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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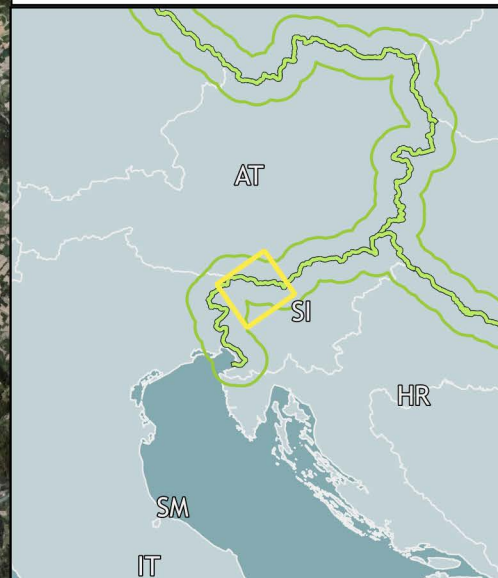


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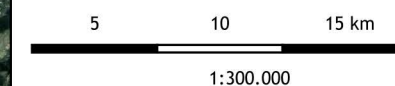
ReCo

Habitat Functions

Slovenia



Ecosystem Services - Habitat



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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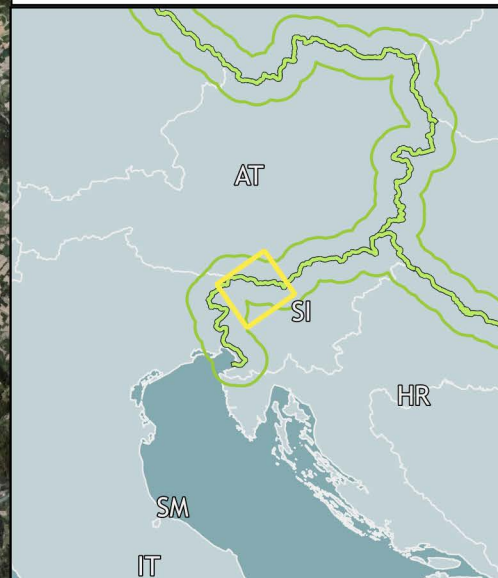


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the European Union

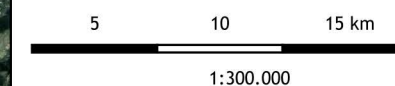
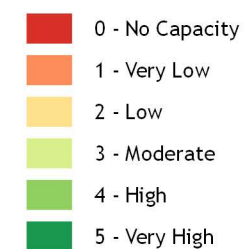
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Production Functions

Slovenia



Ecosystem Services - Production



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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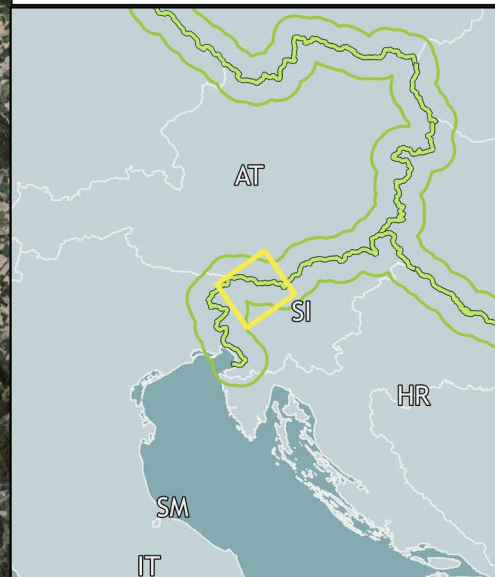


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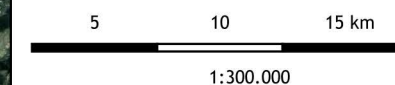
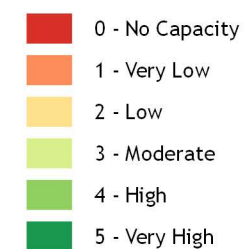
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Information Functions

Slovenia



Ecosystem Services - Information



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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CENTRAL EUROPE

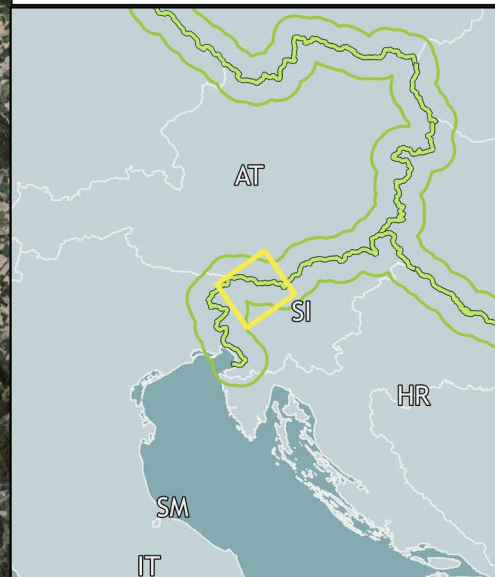


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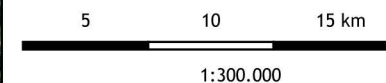
ReCo

Carrier Functions

Slovenia



Ecosystem Services - Carrier



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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CENTRAL EUROPE



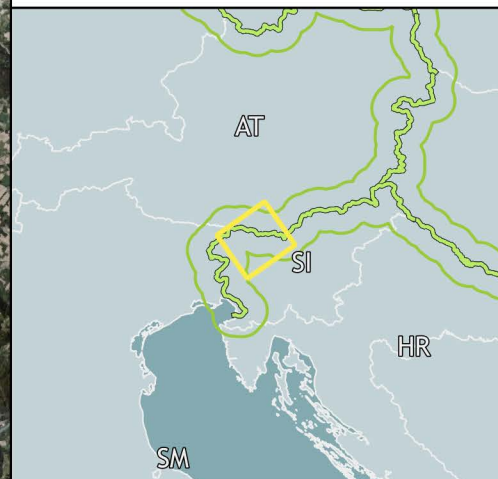
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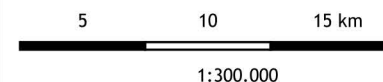
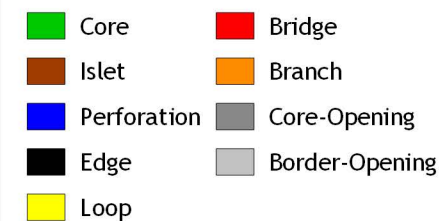
Morphological Spatial Pattern Analysis (MSPA)

Meadows

Slovenia



Connectivity Analysis - MSPA



Sources: Esri, DigitalGlobe, GeoEye,GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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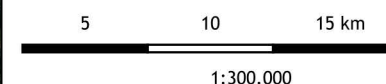
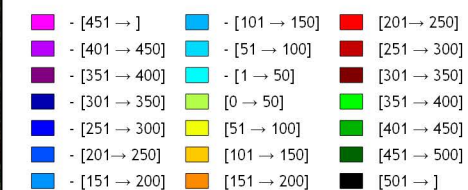
Euclidean Distance

Meadows

Slovenia



Euclidean Distance (m)



Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Potential of restoration based on BHT

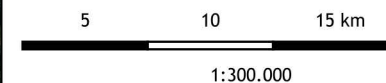
Meadows

Slovenia



Potential of restoration to Target Habitats

- Unsuitable
- Low potential
- Medium Potential
- High Potential
- Target Habitats



Sources: Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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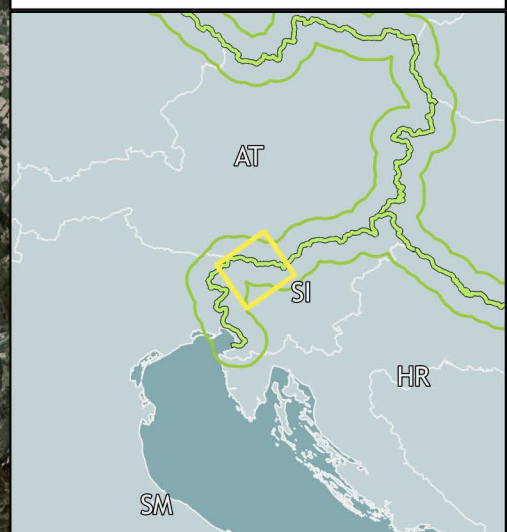
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Historical Target Habitat

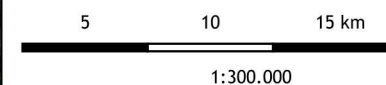
Meadows

Slovenia



Target habitat in historical data

Target Habitats



Sources: Österreichisches Staatsarchiv, Arcanum, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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


Reclassified (MSPA)

Meadows

Slovenia



Relevance for connectivity

-  1 - Core areas and Loops
-  2 - Edges and Islets
-  3 - Bridges and Branches

5 10 15 km

1:300.000

Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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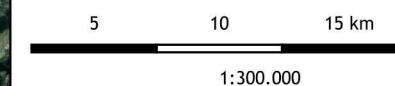
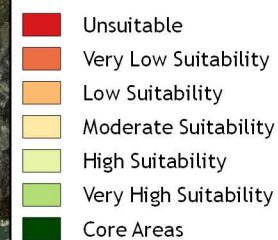
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Restoration Suitability Index

Meadows

Slovenia



Sources: GuidosToolbox, Österreichisches Staatsarchiv, Arcanum, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Target Habitat

Meadows near Jesenice

Slovenia



Target Habitat - Meadows

 Target habitat

0.5 1 1.5 2 km

1:35.000

Sources: GuidosToolbox, Österreichisches Staatsarchiv, Arcanum, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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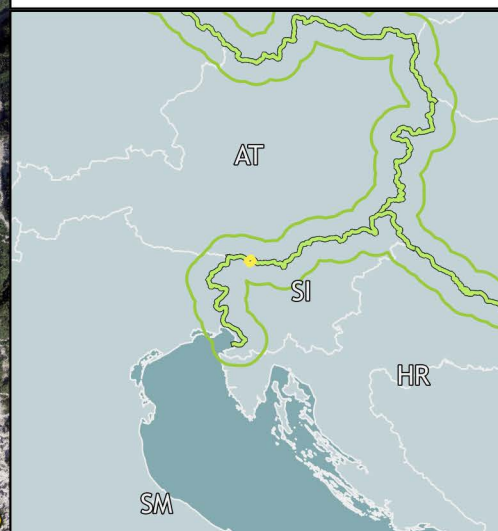
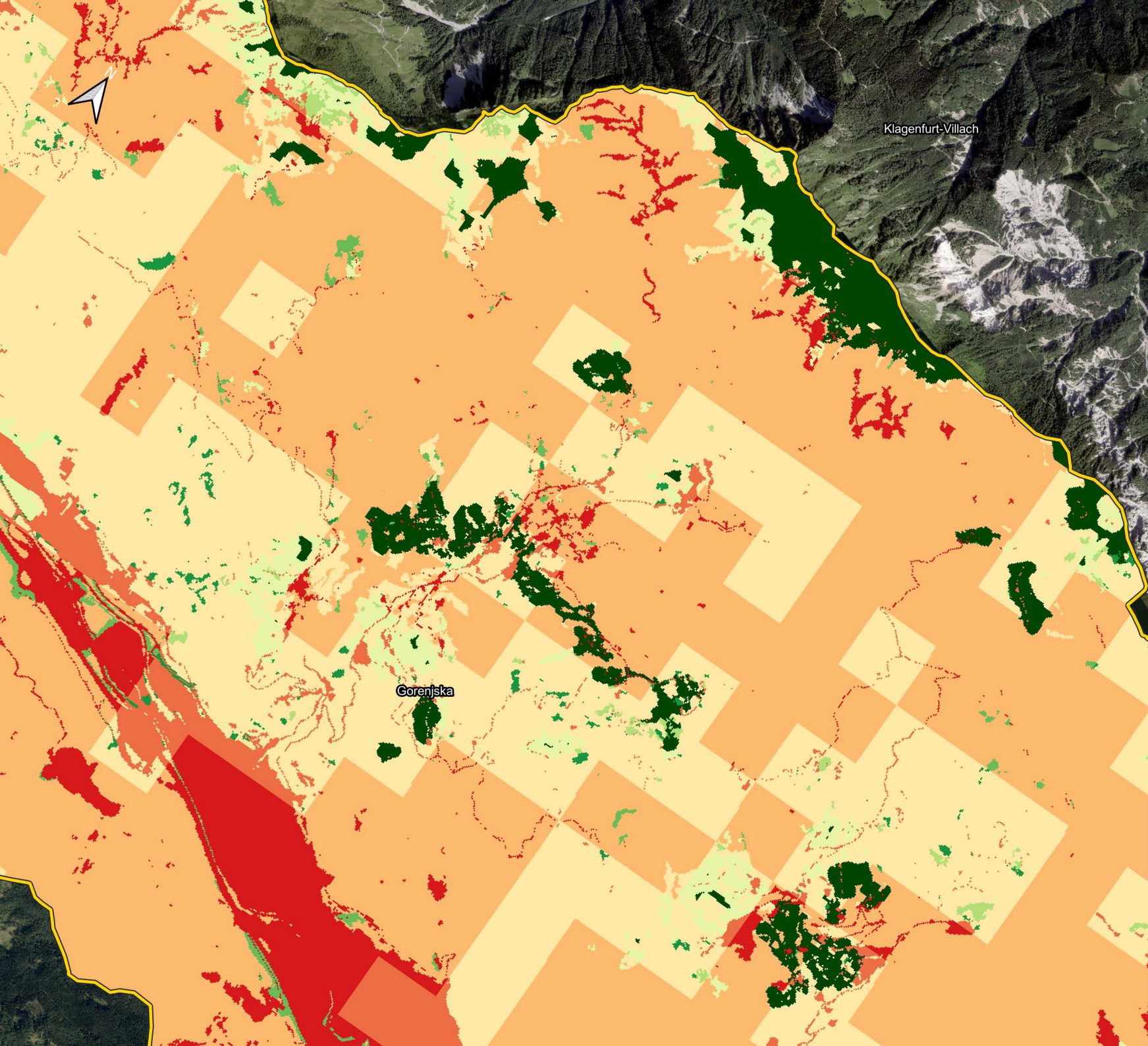
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Restoration Suitability Index

Meadows near Jesenice

Slovenia



- Unsuitable
- Very Low Suitability
- Low Suitability
- Moderate Suitability
- High Suitability
- Very High Suitability
- Core Areas



1:35.000

Sources: GuidosToolbox, Österreichisches Staatsarchiv, Arcanum, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 5: Ińsko Lakeland



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PR 5 Ińsko Lakeland

The Ińsko Lakeland, encompassing the core area, spans a total of 880 km² in Northwestern Poland, while the extended Pilot Region extends over an area of 40,200 km². The region is characterized by its primary land use in agriculture and forestry, boasting a rich system of watercourses, water bodies, and wetlands. With a developing road and railway network, the area is relatively sparsely urbanized, emphasizing a focus on wildlife and nature-oriented tourism. Notable protected areas within the Ińsko Lakeland include the Ińsko Landscape Park, designated as Natura 2000 site with the code PLB320008 Ińsko Refugium, and PLH320067 Ińsko Lakeland.

The goal of the Joint Pilot Action in the region is to increase both the size and range of the European bison *Bos bonasus* population that has been reintroduced in Northwest Poland. To achieve this overarching goal, two key objectives have been identified. Firstly, efforts will be directed towards enhancing migration routes for European bison herds, ensuring a conducive environment for their movement. Secondly, there is a focus on minimizing conflicts between humans and European bison, promoting coexistence and harmonious interactions in the region. Through these concerted efforts, the aim is to foster a sustainable and thriving European bison population in Northwest Poland.

Restoration Approaches include the enhancement of the management of European bison herds reintroduced in NW Poland. This involves identifying migration barriers and formulating recommendations for transport infrastructure investments. Additionally, efforts are directed towards optimizing the population's spatial structure by maintaining low densities (<3 individuals/1,000 ha) through the increase in the number of herds. The implementation of constant population monitoring is crucial, ensuring a swift response to potential human-bison conflicts.

The maps presented for this region present the analysis of forest and open land habitats both suitable habitats for the bison populations. The layers obtained will later be used as the base for the analysis that will combine GPS data of collared individuals. The aim of the data overlay is to understand the routes of bison and possible relations with the different habitats, the analysis will provide guidelines for conservation efforts and understanding of the behaviour of the herds in terms of their movement and possible relation with the landscape.





Pilot Region 5:

Ińsko Lakeland

Poland

DE PL CZ

Pilot Region

- Core Areas
- Extended Pilot Regions

Green Belt

- European Green Belt
- GB Buffer (25km)

Administrative Borders

- NUTS Regions (Level 3)
- European Countries

25 50 75 km

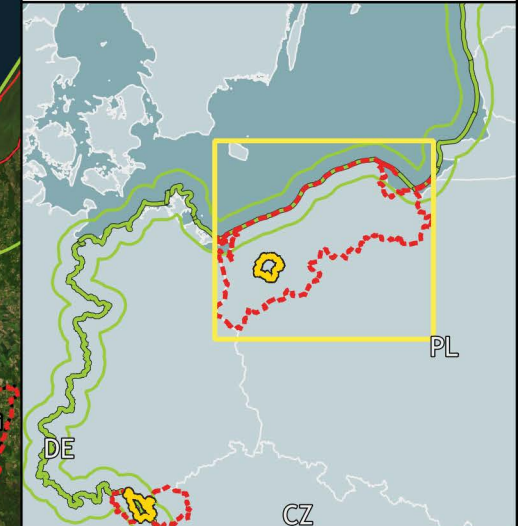
1:1.500.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region

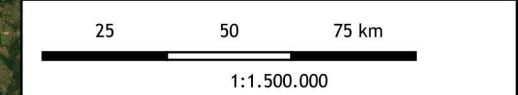
- Core Areas
- Extended Pilot Regions

Green Belt

- European Green Belt
- GB Buffer (25km)

Administrative Borders

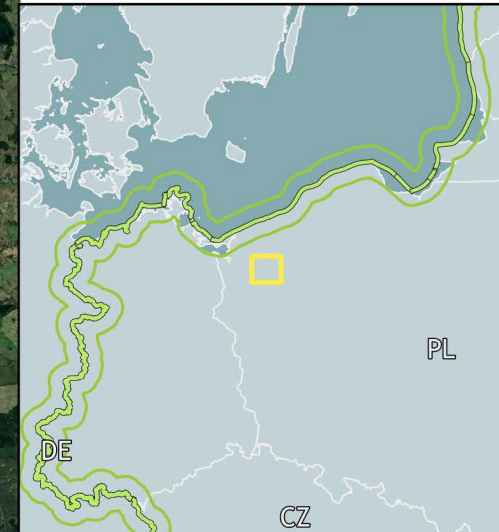
- NUTS Regions (Level 3)
- European Countries



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Broader Habitat Types

Poland



Broader habitat type EUNIS

 C1	 FB	 H
 E2a	 G1	 I1a
 F3/4	 G3	 Jb

4 8 12 km

1:200.000

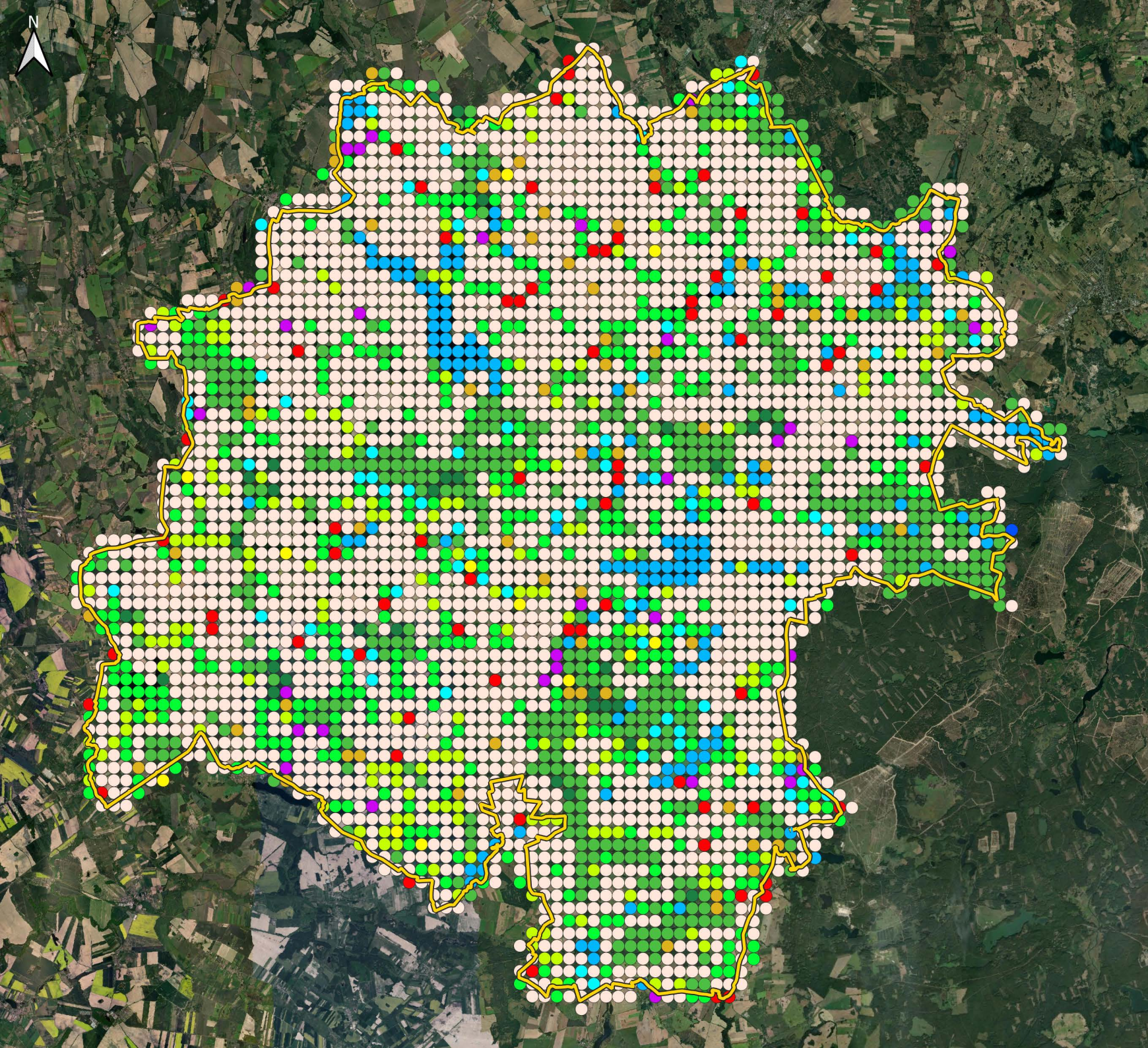
Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 5 - Ińsko Lakeland:

Historical Landcover

Poland

Historical Landcover

● forest	● wetland
● wet forest	● water body
● grassland with trees	● river
● pasture	● peatbog
● meadow	● agricultural land
● wet grassland	● settlement

4 8 12 km

1:200.000

Sources: Arcanum, Esri, NÖ Landesbibliothek

Interreg
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PR 5 Insko Lakeland

Historical Landcover

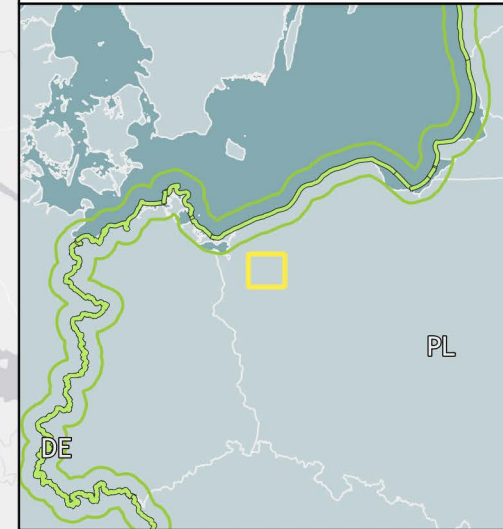
The dominant land cover in the PR 5 in the past was represented by arable land, which covered more than the half of the core area of the pilot region. The proportion of grasslands and forests was similar. The landscape was also characterized by occurrence of natural water bodies, wet grasslands, peatbogs and wetlands.

The changes that were captured in this pilot region were mostly conversion to (semi)natural habitats, predominantly forests but also to meadows. Unchanged land covered about half of the region and the unchanged anthropogenic and (semi)natural habitats were represented equally.



Landcover Change

Poland



Change in Landscape

- between (semi)natural
- to (semi)natural
- to anthropogenic
- to permanent crops
- unchanged - (semi)natural
- unchanged - anthropogenic

5 10 15 km

1:250.000

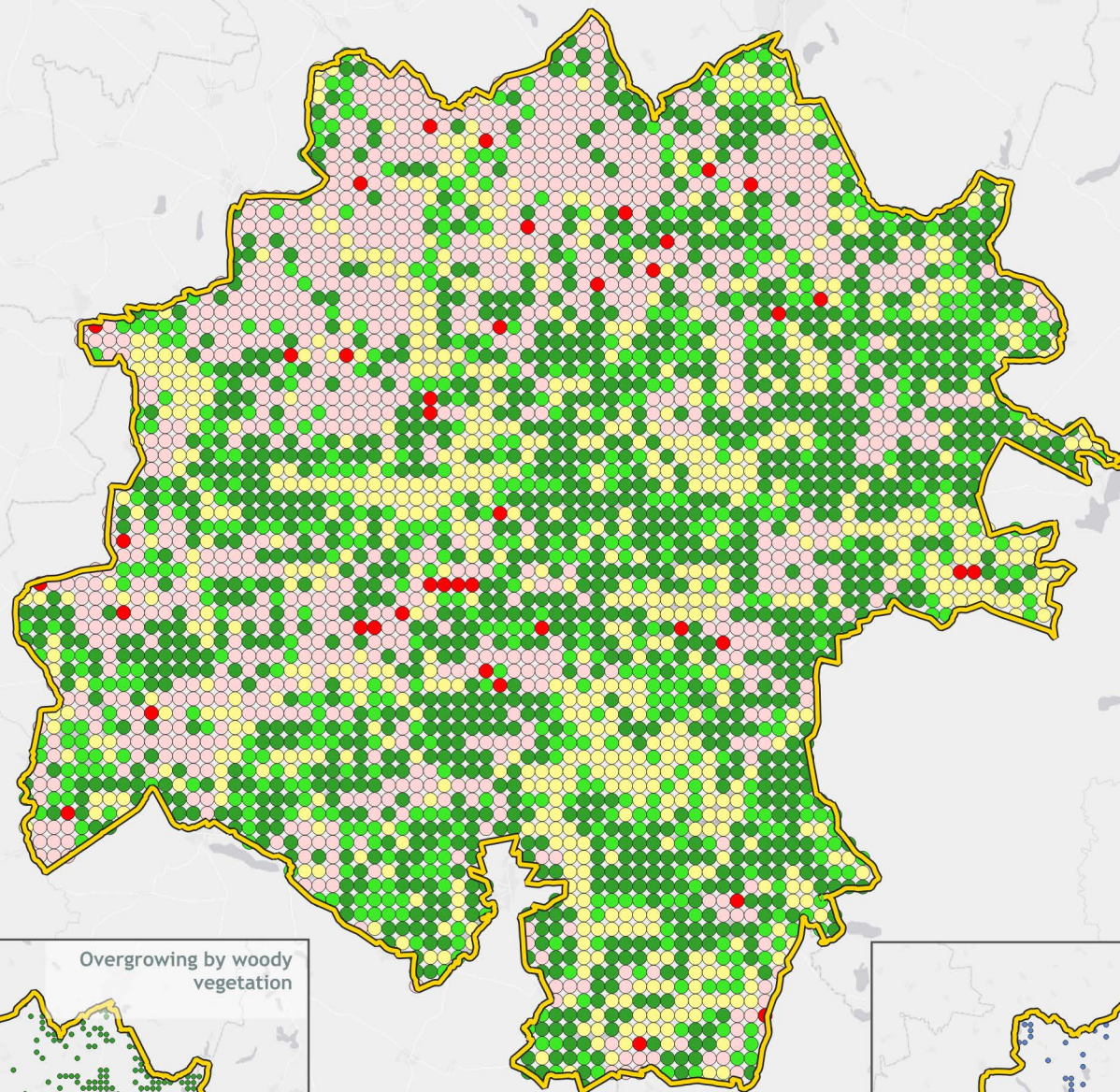
Sources: Arcanum, Esri, Corine Land Cover+ Backbone.

Interreg
CENTRAL EUROPE

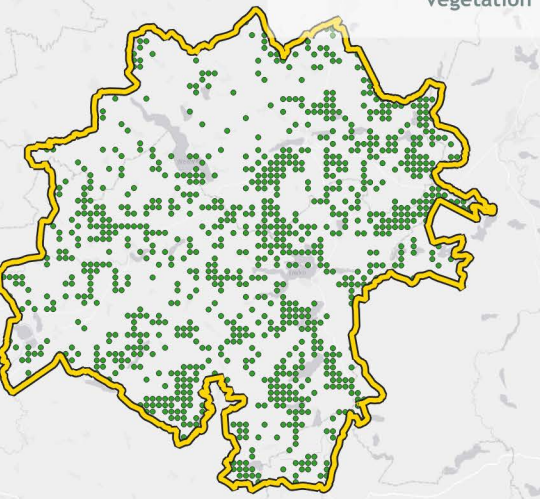


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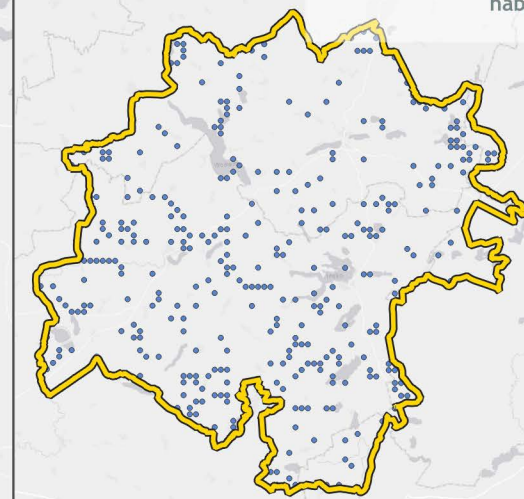
ReCo



Overgrowing by woody vegetation



Drying out (semi)natural habitats



Regulation Functions

Poland



Ecosystem Services - Regulation



4 8 12 km

1:200.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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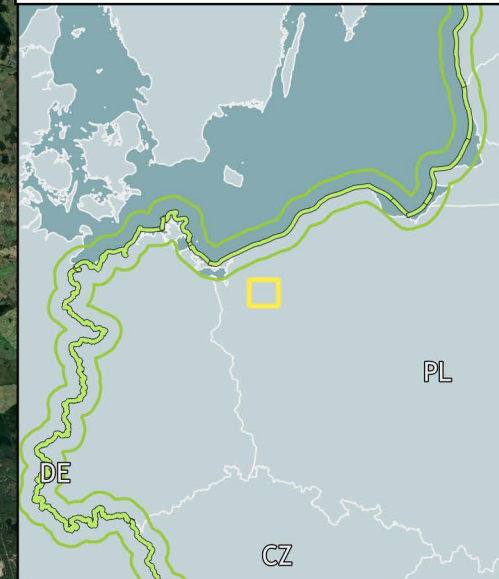


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Habitat Functions

Poland



Ecosystem Services - Habitat



4 8 12 km

1:200.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Production Functions

Poland



Ecosystem Services - Production

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High

4 8 12 km

1:200.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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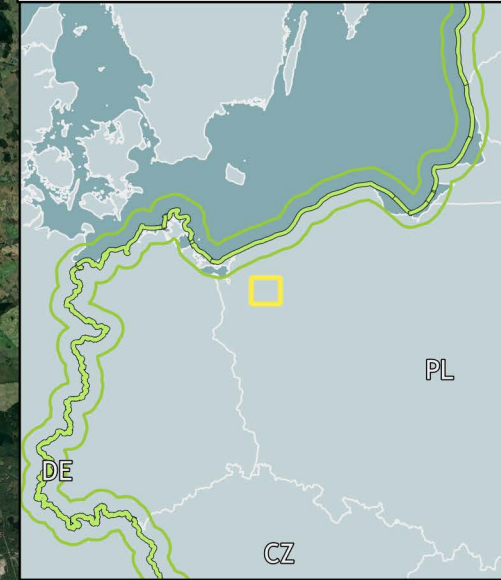


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Information Functions

Poland



Ecosystem Services - Information



4 8 12 km

1:200.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Interreg
CENTRAL EUROPE

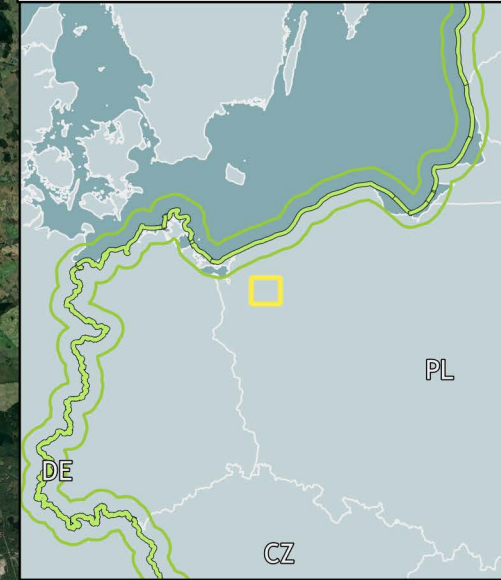


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Carrier Functions

Poland



Ecosystem Services - Carrier

- 0 - No Capacity
- 1 - Very Low
- 2 - Low
- 3 - Moderate
- 4 - High
- 5 - Very High

4 8 12 km

1:200.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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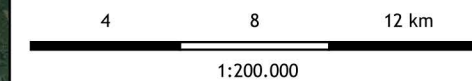
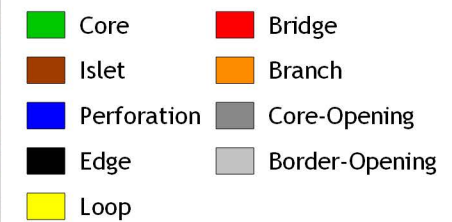
Morphological Spatial Pattern Analysis (MSPA)

Forest and Woody features

Poland



Connectivity Analysis - MSPA



Sources: Esri, DigitalGlobe, GeoEye,GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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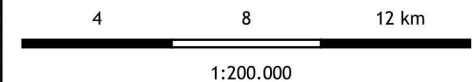
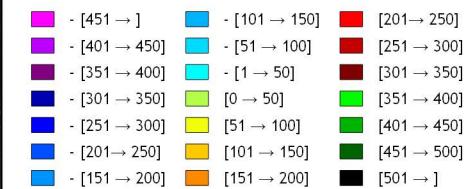
Euclidean Distance

Forest and Woody features

Poland



Euclidean Distance (m)



Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 5 - Insko Lakeland:


Potential of restoration based on BHT

Forest and Woody features

Poland



Potential of restoration to Target Habitats

-  Unsuitable
-  Low potential
-  Medium Potential
-  High Potential
-  Target Habitats

4 8 12 km

1:200,000

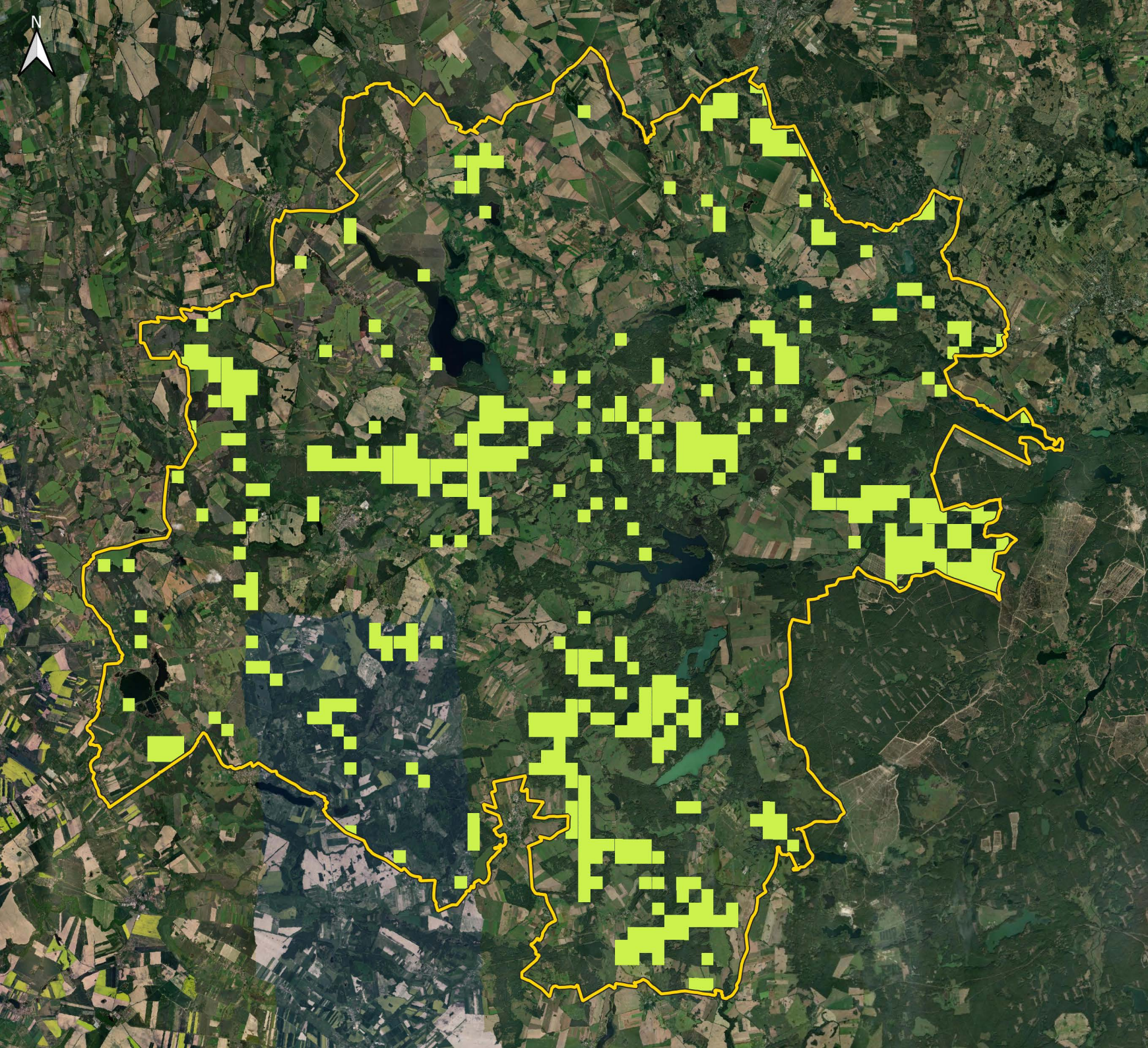
Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Historical Target Habitat

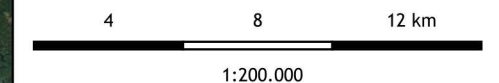
Forest

Poland



Target habitat in historical data

 Target Habitats



Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Reclassified (MSPA)

Forest and Woody features

Poland



Relevance for connectivity

-  1 - Core areas and Loops
-  2 - Edges and Islets
-  3 - Bridges and Branches

4 8 12 km

1:200,000

Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Restoration Suitability Index

Forest

Poland



- Unsuitable
- Very Low Suitability
- Low Suitability
- Moderate Suitability
- High Suitability
- Very High Suitability
- Core Areas

4 8 12 km

1:200.000

Sources: Österreichisches Staatsarchiv, Arcanum, GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 5 - Insko Lakeland:

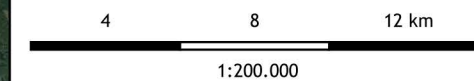
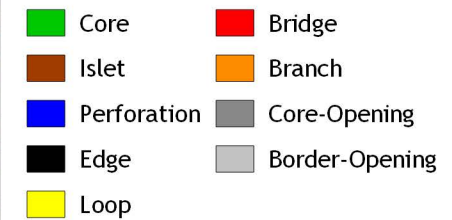
Morphological Spatial Pattern Analysis (MSPA)

Grasslands

Poland



Connectivity Analysis - MSPA



Sources: Esri, DigitalGlobe, GeoEye,GTB, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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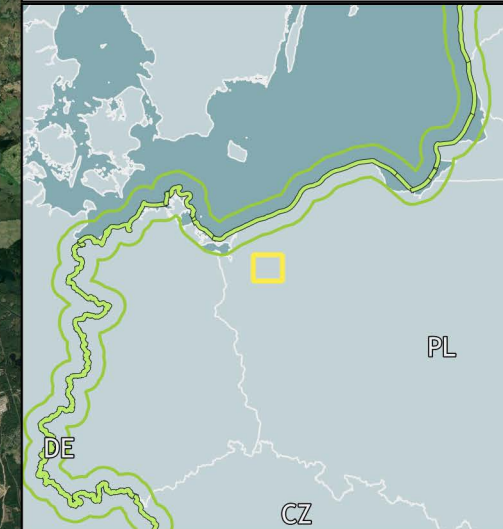
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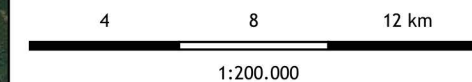
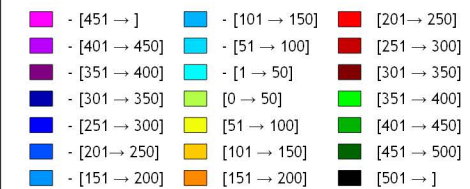
Euclidean Distance

Grasslands

Poland



Euclidean Distance (m)



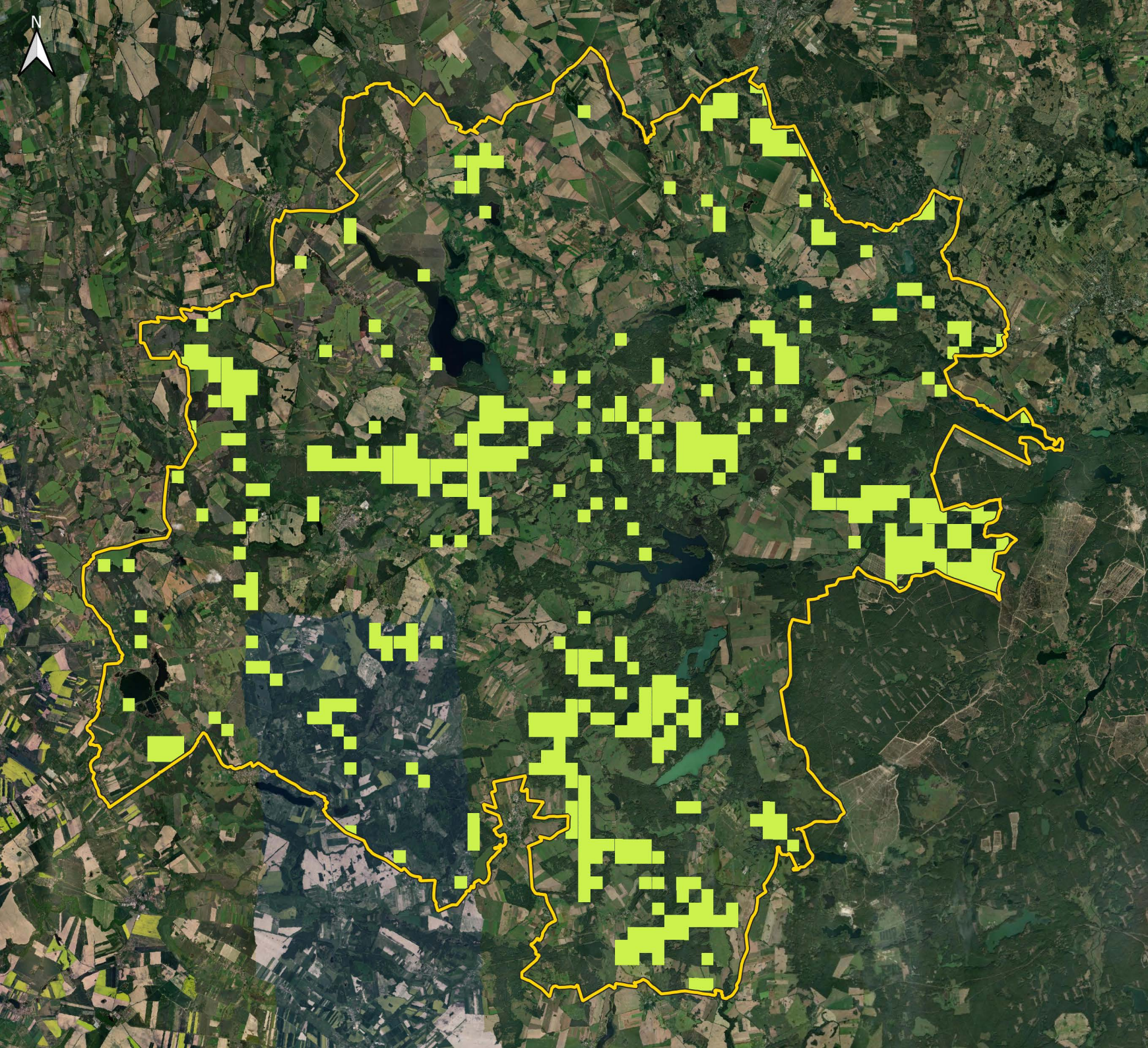
Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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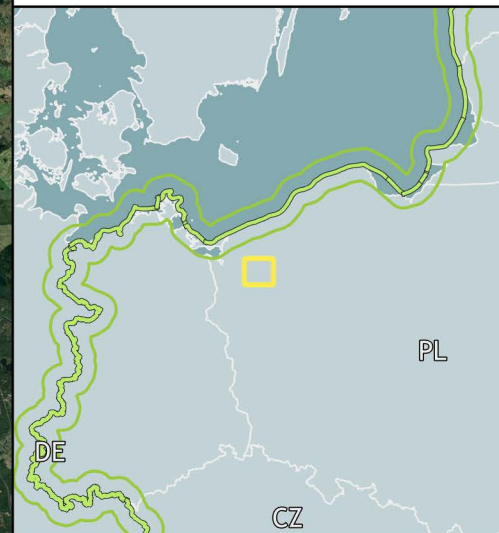


Pilot Region 5 - Insko Lakeland:

Historical Target Habitat

Meadows and Pastures

Poland



Target habitat in historical data

 Target Habitats

4 8 12 km
1:200,000

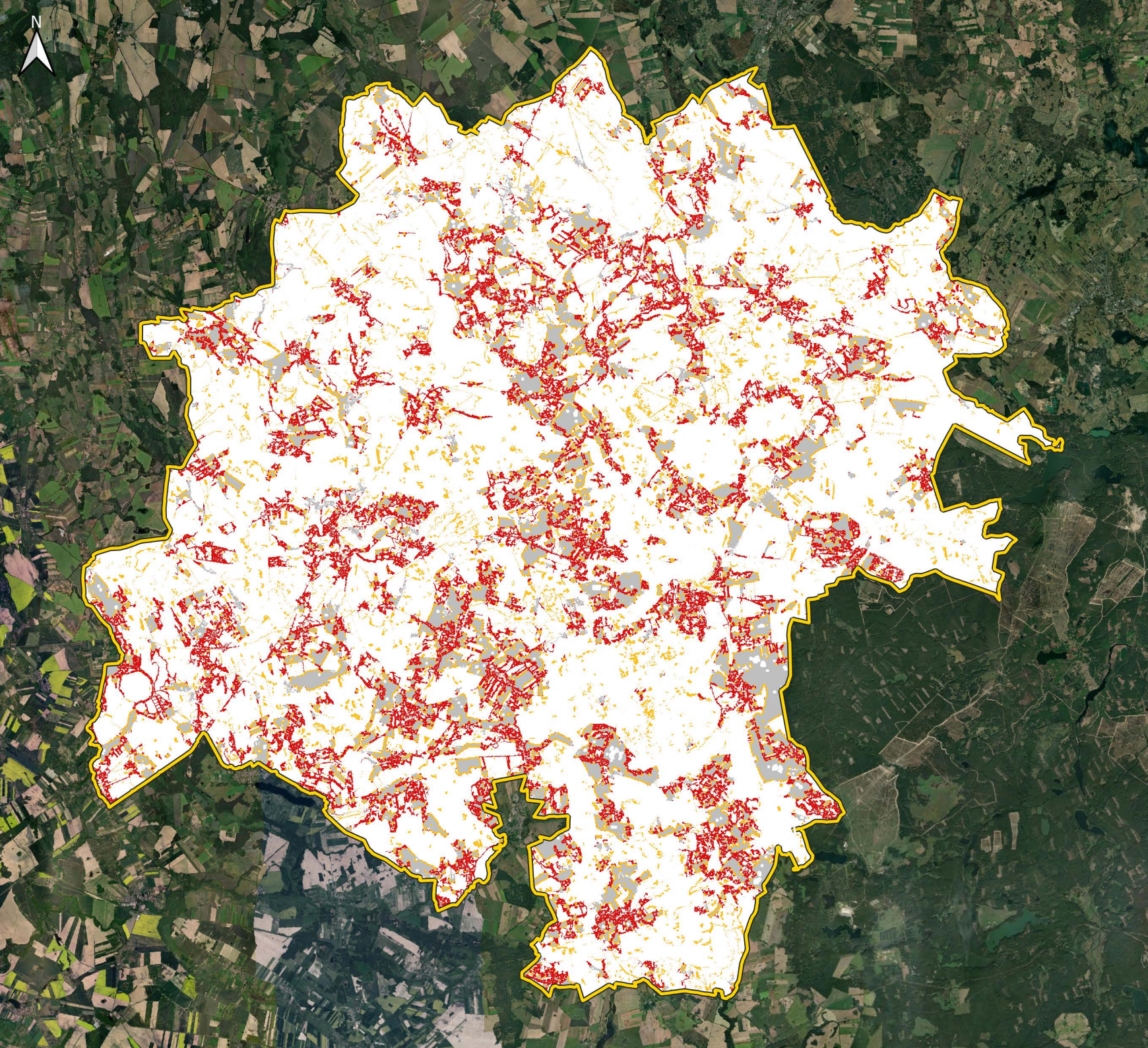
Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 5 - Insko Lakeland:

Reclassified (MSPA)

Grasslands

Poland



Relevance for connectivity

- 1 - Core areas and Loops
- 2 - Edges and Islets
- 3 - Bridges and Branches

4 8 12 km

1:200,000

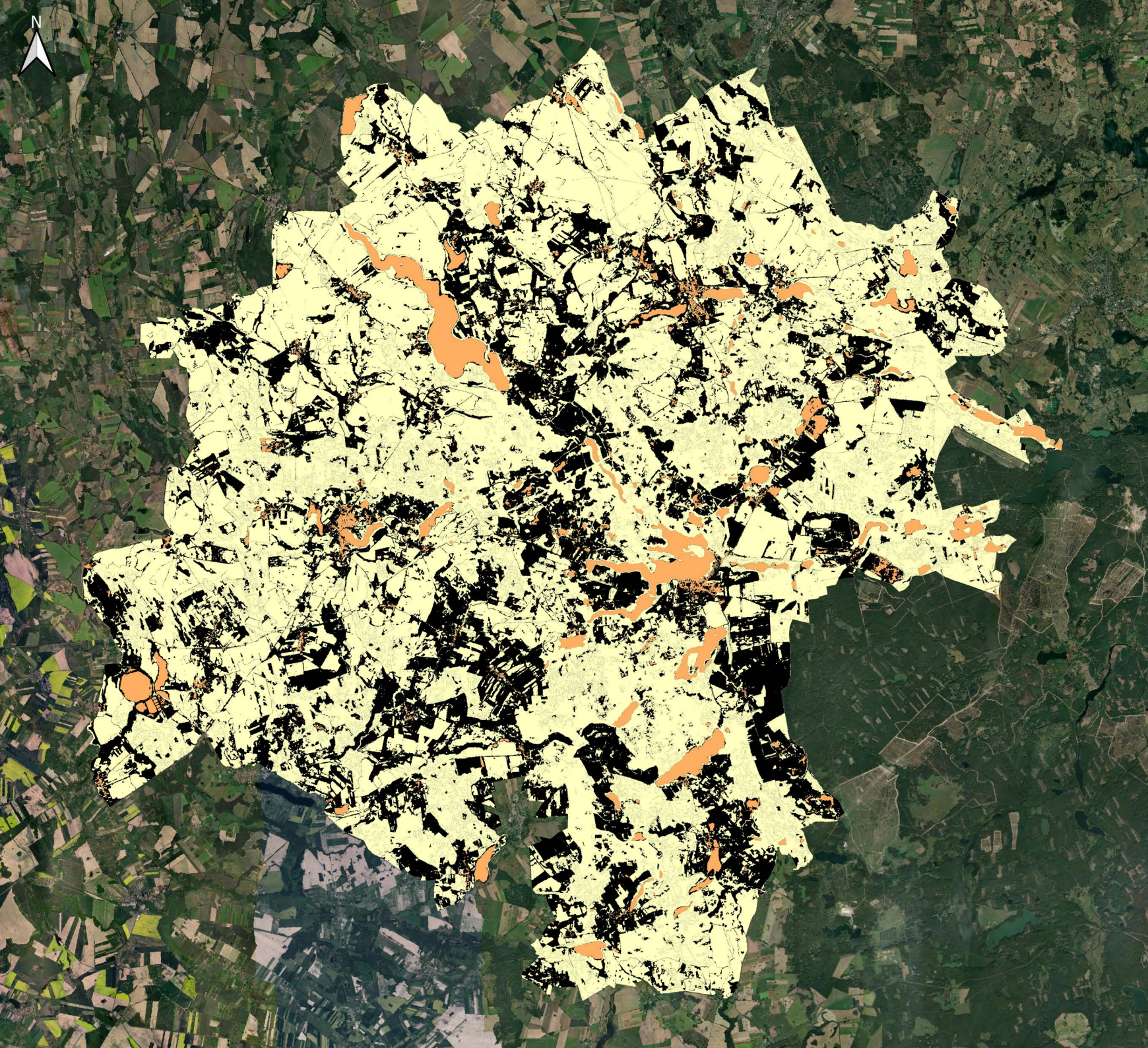
Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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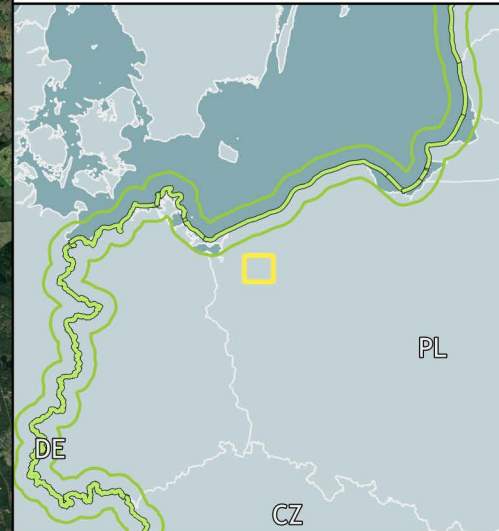


Pilot Region 5 - Insko Lakeland:

Potential of restoration based on BHT

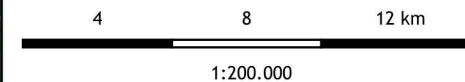
Grasslands

Poland



Potential of restoration to Target Habitats

- Unsuitable
- Low potential
- Medium Potential
- High Potential
- Target Habitats



Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Restoration Suitability Index

Grasslands

Poland



- Unsuitable
- Very Low Suitability
- Low Suitability
- Moderate Suitability
- High Suitability
- Very High Suitability
- Core Areas

4 8 12 km

1:200.000

Sources: Österreichisches Staatsarchiv, Arcanum, GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 6: National Parks Thayatal & Podyjí



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PR6 National Parks Thayatal & Podyjí

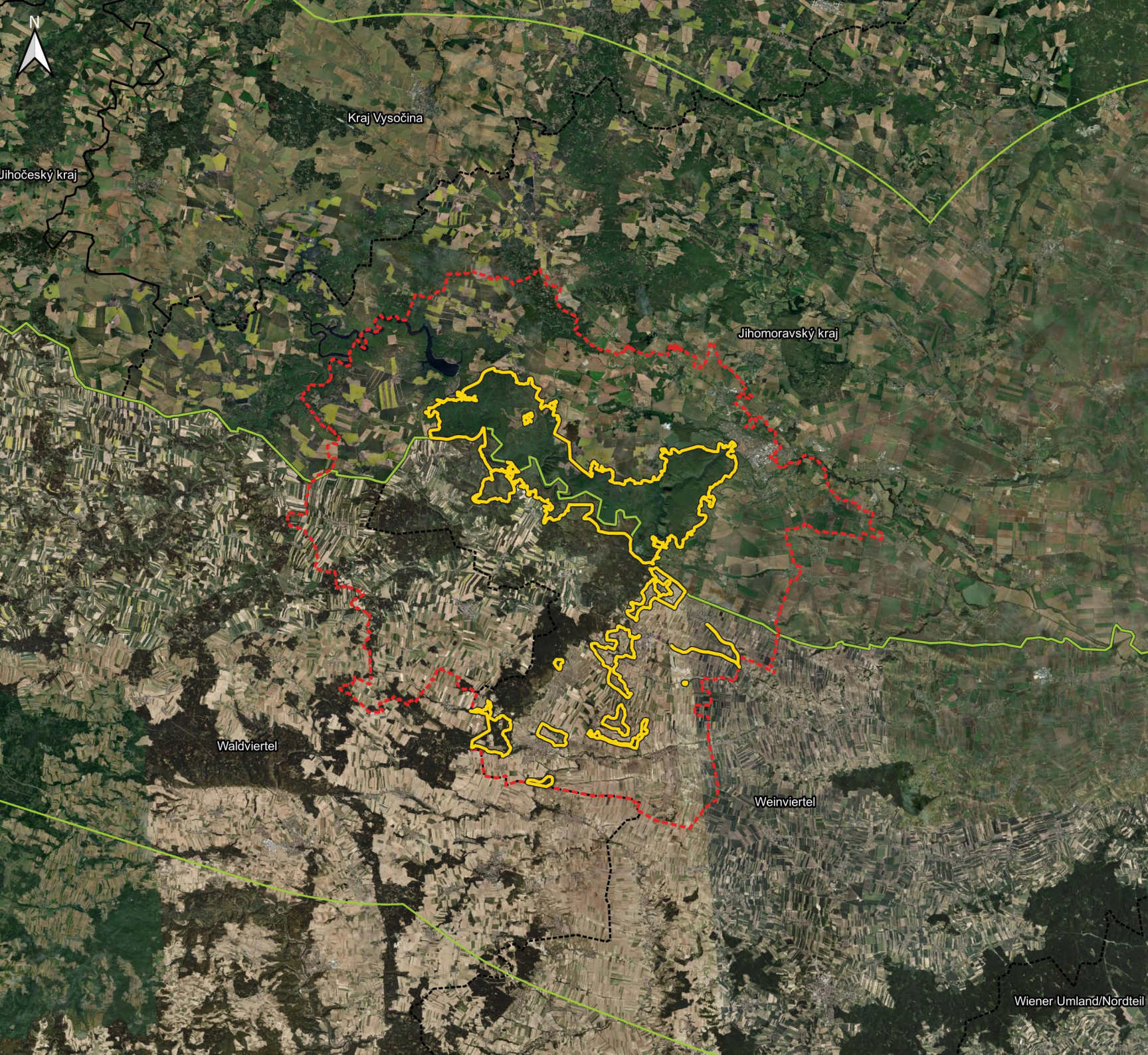
The Thayatal National Park, situated at the border of northern Lower Austria and the Czech Republic, along with its neighboring Podyjí National Park, represents some of the most biodiverse areas within Central Europe's protected regions. This steep valley, adorned with natural forests, owes its remarkable biodiversity to a combination of diverse geology, river morphology, and its location at the intersection of two climate zones. Amidst the fragmented landscapes of Waldviertel, Weinviertel, and South Moravia, this relatively small expanse of 7,660 hectares (Thayatal NP 1,360 hectares, Podyjí NP 6,300 hectares) holds significant value for wildlife in Central Europe.

Despite its size, the area serves as a crucial stepping stone for migrating wildlife, including the European Wildcat, Lynx, Wolf, and other species requiring interconnected movement corridors for migration and dispersion. Podyjí National Park, part of the Inter- National Park along with Austria's Thayatal National Park, is one of the Czech Republic's four national parks. It safeguards near-natural forests along the deep Dyje River valley, with a biome considered unique in Central Europe. Encompassing elevations from 534 to 214 meters, the park features diverse habitats, including forest, grassland, arable land, shrubland, rocky areas, and inland wetlands. The Dyje River, flowing for 40 kilometers through the park, carves a deeply forested valley within the Českomoravská vrchovina uplands, reaching a depth of 220 meters. The park's land use is dedicated to nature conservation, research, forestry, and agriculture, offering park trails leading to historic sites such as Nový Hrádek castle ruins, Hardegg Castle, and Vranov nad Dyjí Chateau.

The European wildcat, once extinct in Austria, experienced a remarkable rediscovery in Thayatal National Park in 2007, subsequently becoming a flagship species for the park. Its presence serves as an indicator of a healthy ecosystem with functional trophic levels. The sensitivity of *Felis silvestris* to disturbance further highlights its role in signifying undisturbed ecosystems. Characterized by its high mobility, the European wildcat occupies territories ranging from 500 to 1,000 hectares. Landscape connectivity is pivotal in habitat selection and sustaining the species. While Thayatal National Park is primarily covered by undissected forests, the common landscape area encompassing Lower Austria's Eastern Quarter, Waldviertel, Weinviertel, and the counties of South Bohemia, Vysocina, and South Moravia faces increasing fragmentation due to construction, roads, and intensive use. This fragmentation disrupts wildlife migration corridors, isolating crucial protected areas and near-natural landscapes like those in the Waldviertel, South Bohemia, Thayatal, and Podyjí National Parks.

The maps presented for this region focus on the Forest habitats and analyse the connecting elements between patches as the main corridors of the European Wildcat.

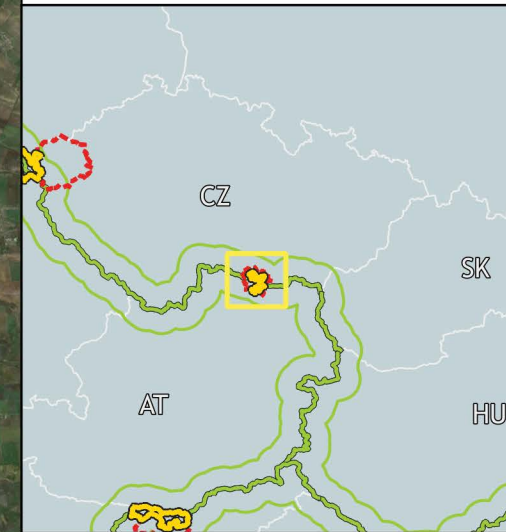






Pilot Region 6:

Thayatal - Podyjí



Austria / Czech Republic



Pilot Region

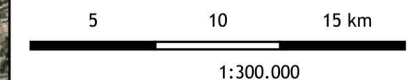
-  Core Areas
-  Extended Pilot Regions

Green Belt

-  European Green Belt
-  GB Buffer(25km)

Administrative Borders

-  NUTS Regions (Level 3)
-  European Countries



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

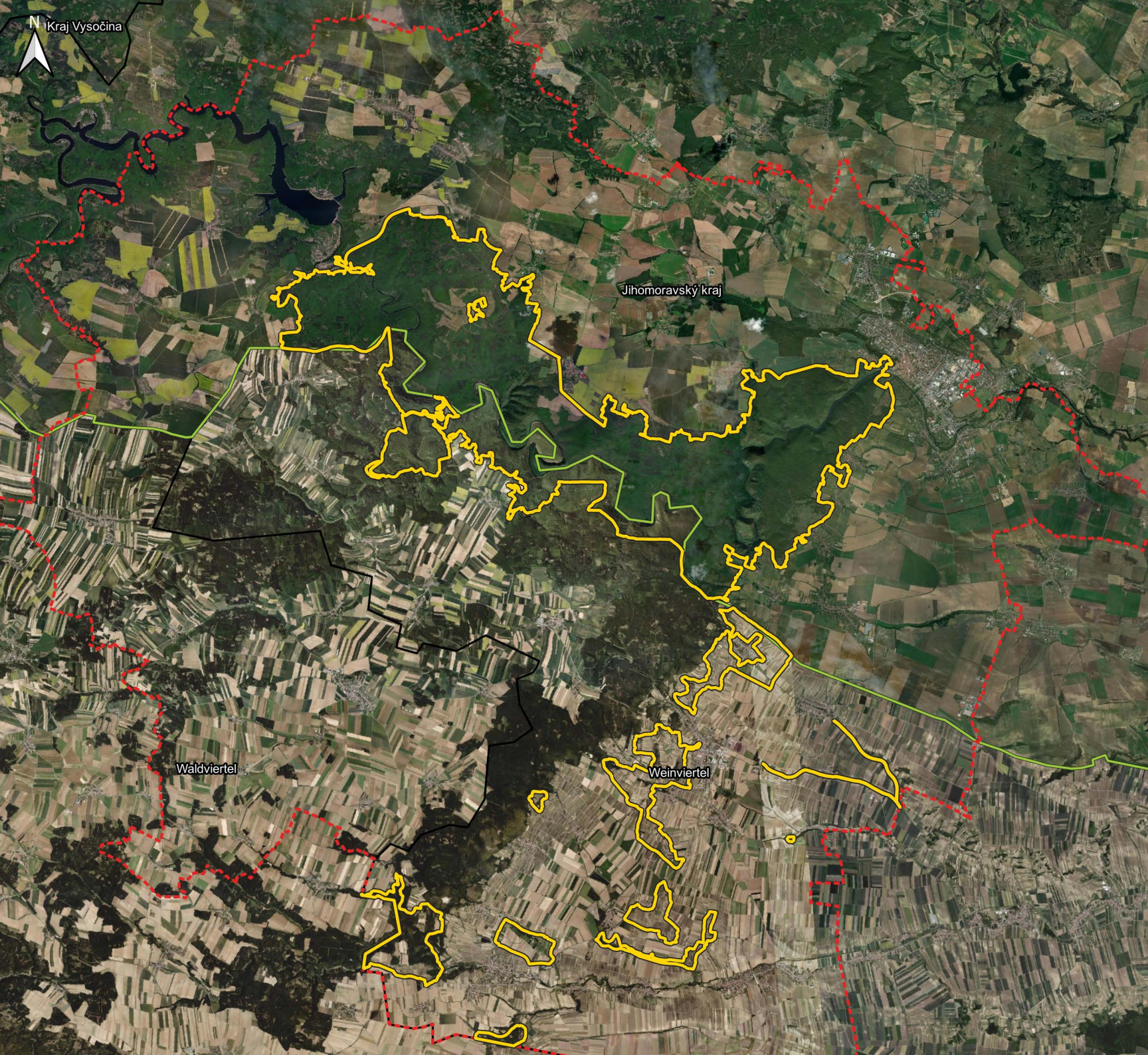
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Pilot Region 6:

Thayatal - Podyjí

Austria / Czech Republic



Pilot Region

-  Core Areas
-  Extended Pilot Regions

Green Belt

-  European Green Belt
-  GB Buffer (25km)

Administrative Borders

-  NUTS Regions (Level 3)
-  European Countries



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, Eurostat, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Broader Habitat Types

Austria / Czech Republic



Broader habitat type EUNIS

	C1		F3/4		I1b
	C2		F9		I2
	C3		FB		J3
	D		G1		J4
	E1		G1.D		J6
	E2a		G3		Ja
	E2b		G5		Jb
	E3		H		
	E5		I1a		

2 4 6 8 km

1:150.000

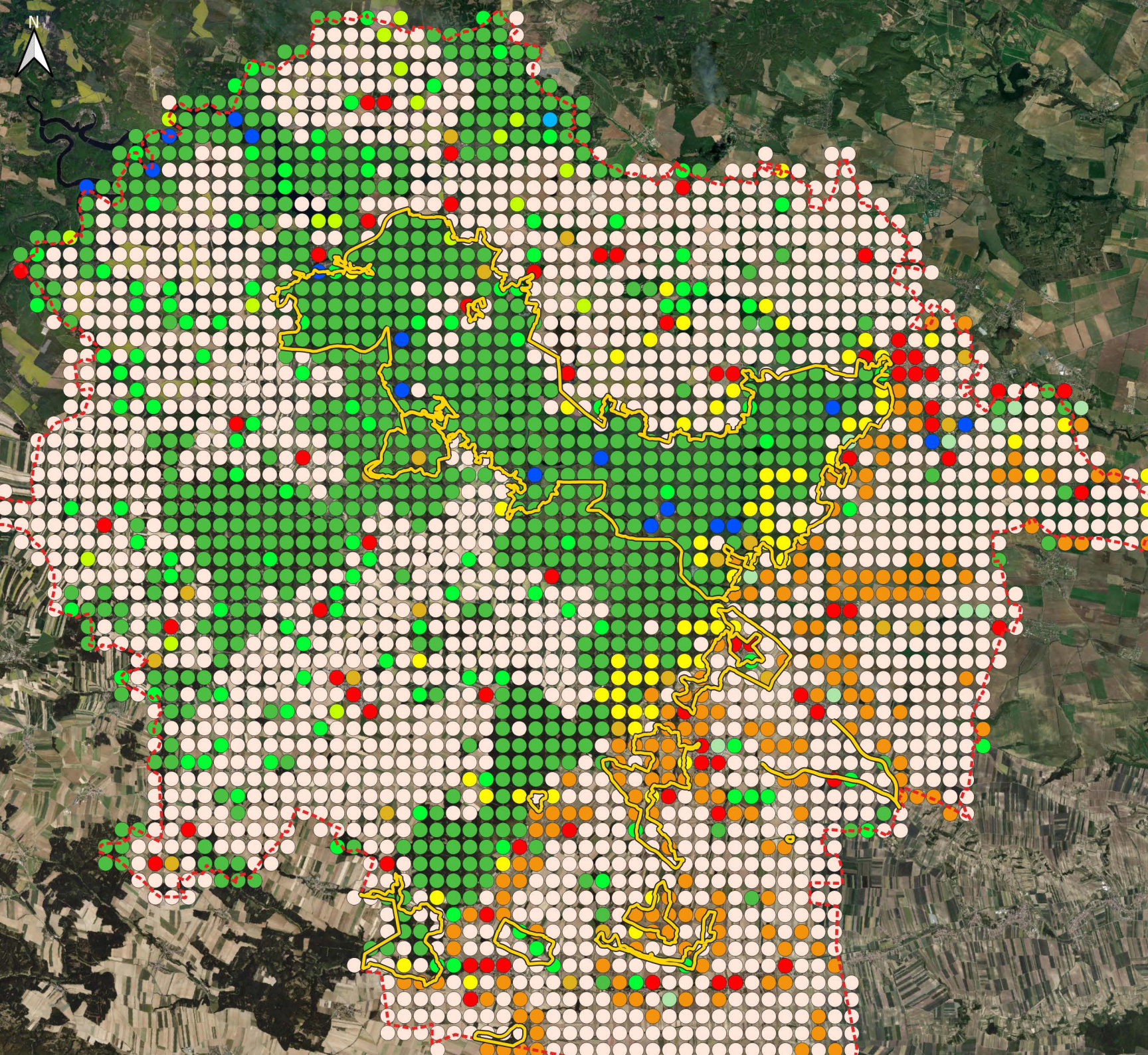
Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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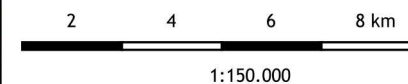
Historical Landcover

Austria / Czech Republic



Historical Landcover

- | | |
|------------------------|---------------------|
| ● forest | ● river |
| ● grassland with trees | ● agricultural land |
| ● pasture | ● settlement |
| ● meadow | ● orchard |
| ● wet grassland | ● vineyard |
| ● water body | |



Sources: Arcanum, Esri, NÖ Landesbibliothek

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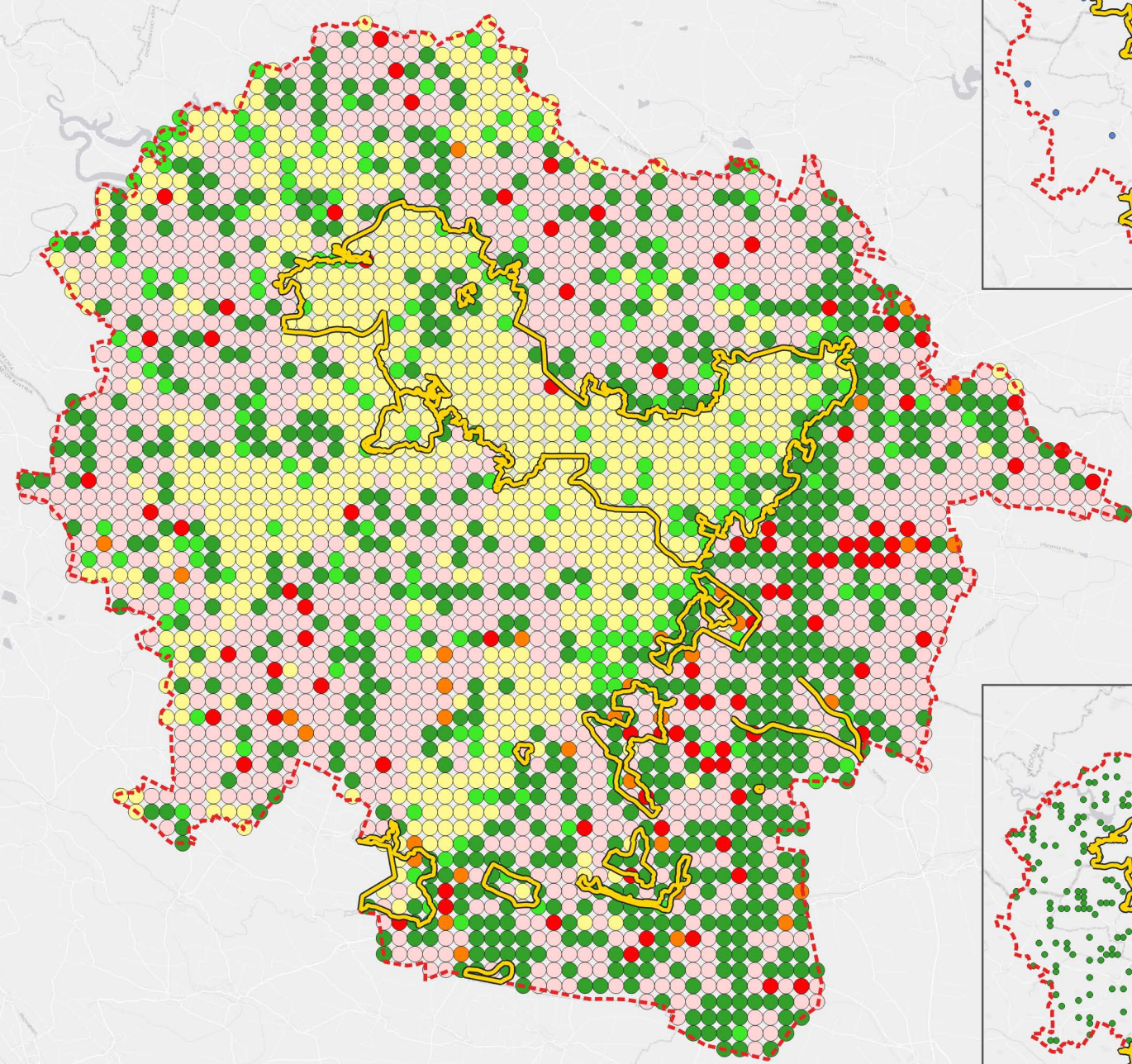
PR6 Podyjí / Thayatal National Park

Historical Landcover

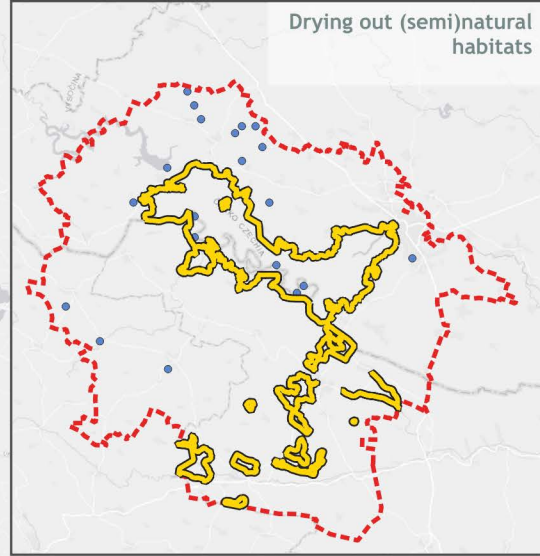
More than half of PR6 was in the past used for agricultural purposes, both in the form of arable land and viticulture. Forests covered around twenty five percent of the region. They occupied the steep slopes of the Thaya river and their surroundings (nowadays they form both national parks). Meadows and pastures were scattered throughout the region, although their higher concentrations could be found in the eastern part of the PR where they created sort of a transition between forests and agricultural land.

Regarding the land cover changes, more than sixty percent of the PR did not change. This concerned mainly localities with agricultural land but also forests. About one third of the region experienced spread of (semi)natural habitats, mainly grasslands and woodland fringes on arable land. On the other hand, many grassland habitats were at the same time overgrown by woody vegetation. Yet, at the same time, some woody elements were lost, contributing to lower connectivity of this habitat outside large forest complexes.

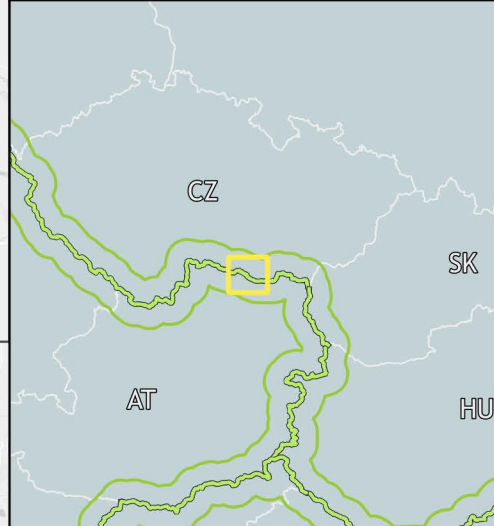
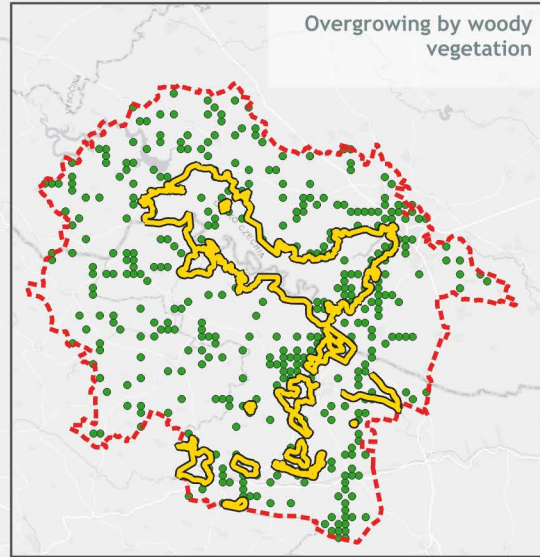




Drying out (semi)natural habitats

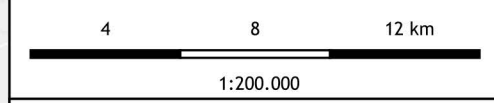


Overgrowing by woody vegetation

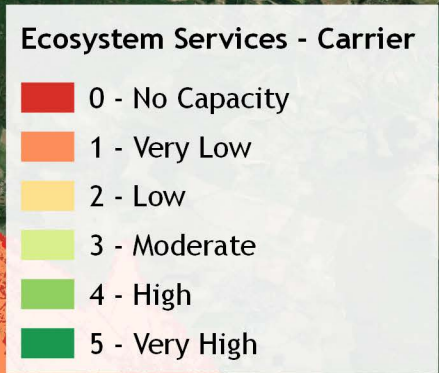
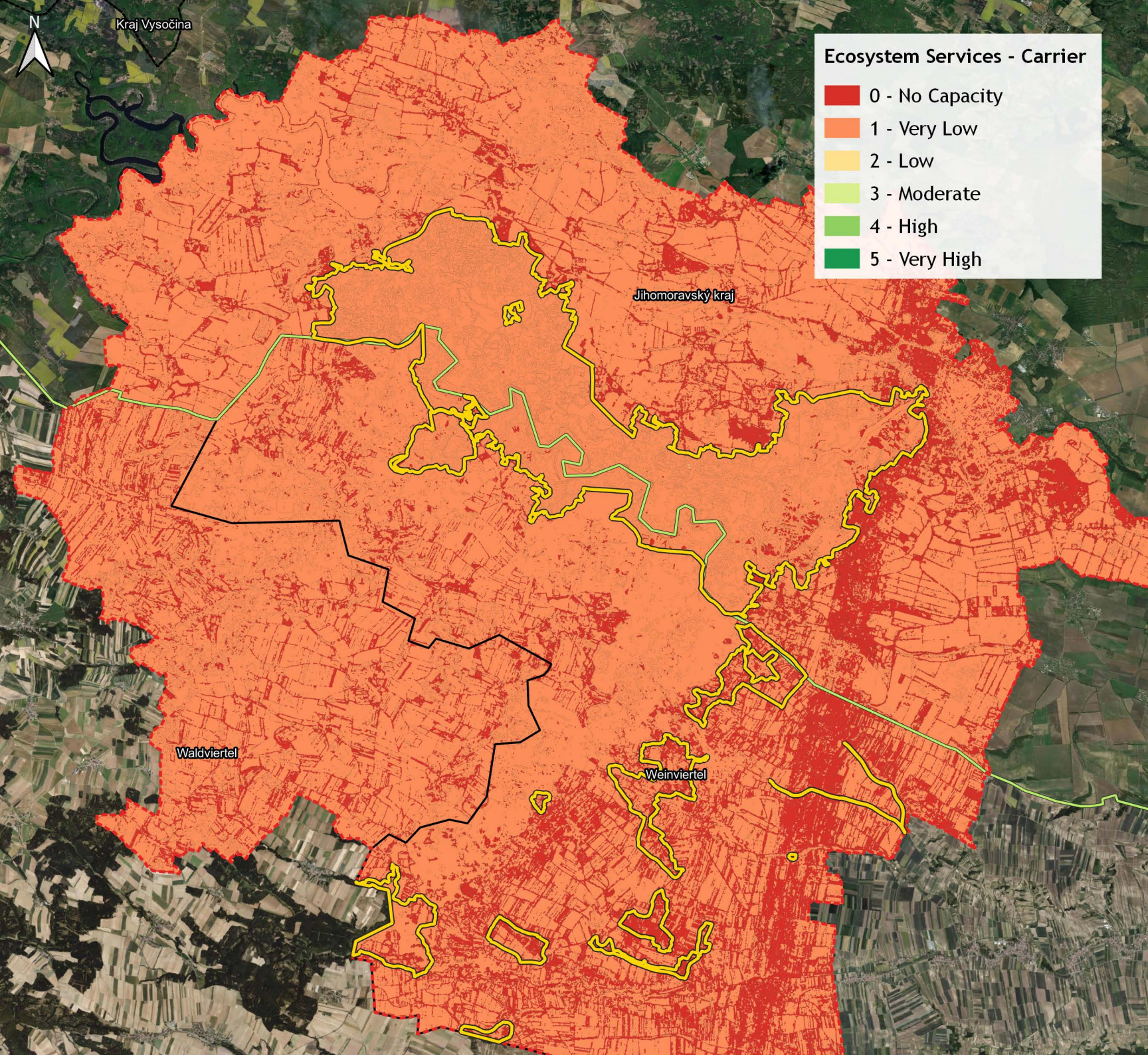


Change in Landscape

- between (semi)natural
- to (semi)natural
- to anthropogenic
- to permanent crops
- unchanged - (semi)natural
- unchanged - anthropogenic



Sources: Österreichisches Staatsarchiv, Esri, NÖ Landesbibliothek.



Pilot Region 6 - Thayatal - Podýjí:

Carrier Functions

Austria / Czech Republic



Pilot Region

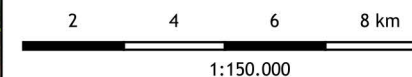
- Core Areas
- Extended Pilot Regions

Green Belt

- European Green Belt
- GB Buffer (25km)

Administrative Borders

- NUTS Regions (Level 3)
- European Countries



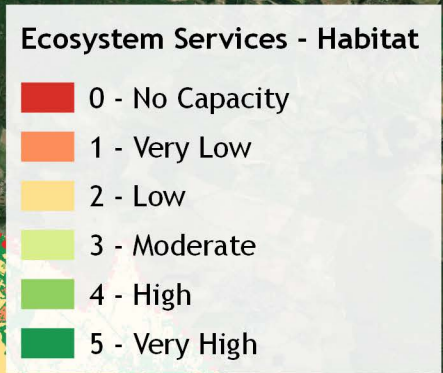
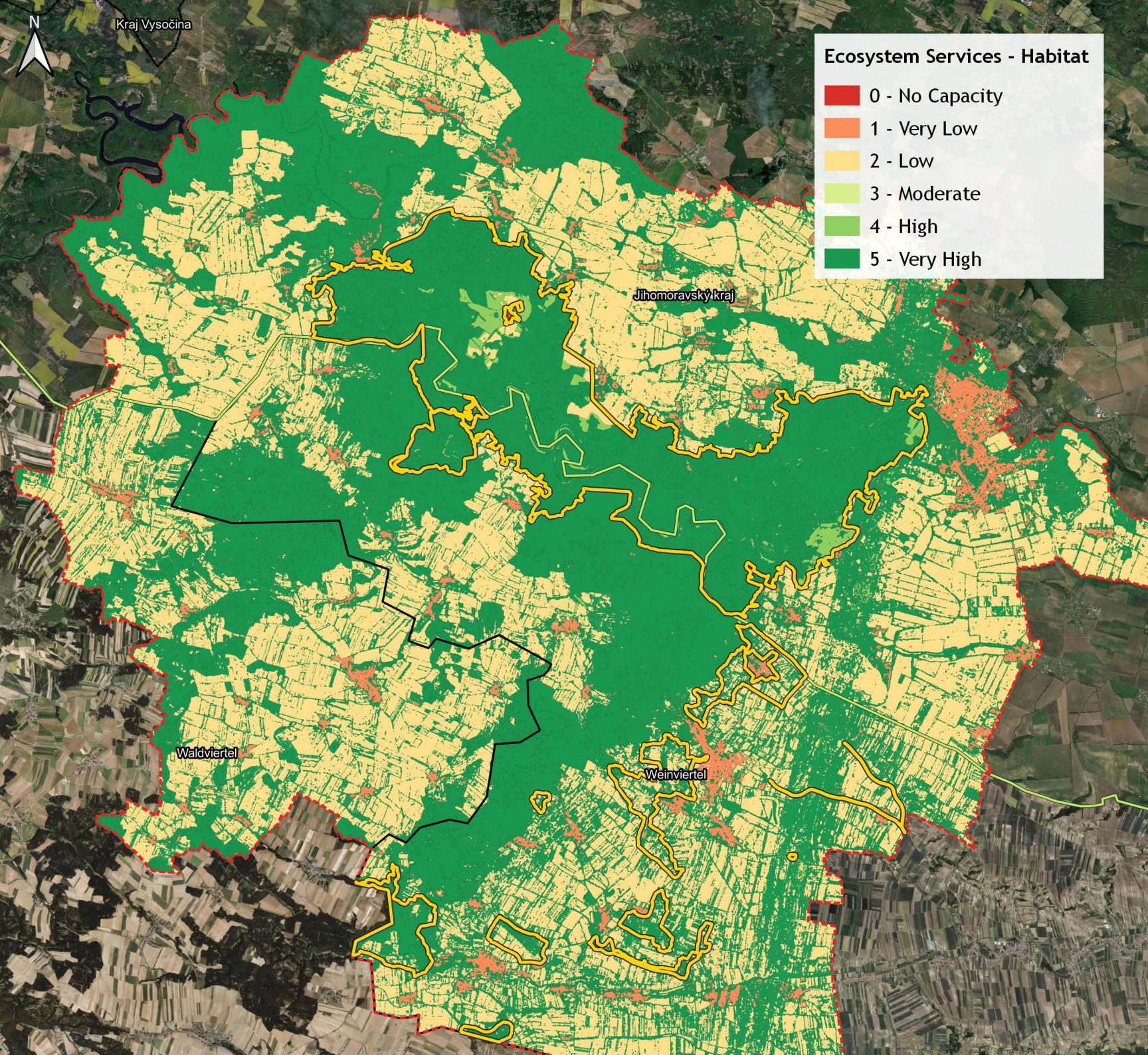
Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 6 - Thayatal - Podují:

Habitat Functions

Austria / Czech Republic

Pilot Region

- Core Areas
- Extended Pilot Regions

Green Belt

- European Green Belt
- GB Buffer (25km)

Administrative Borders

- NUTS Regions (Level 3)
- European Countries

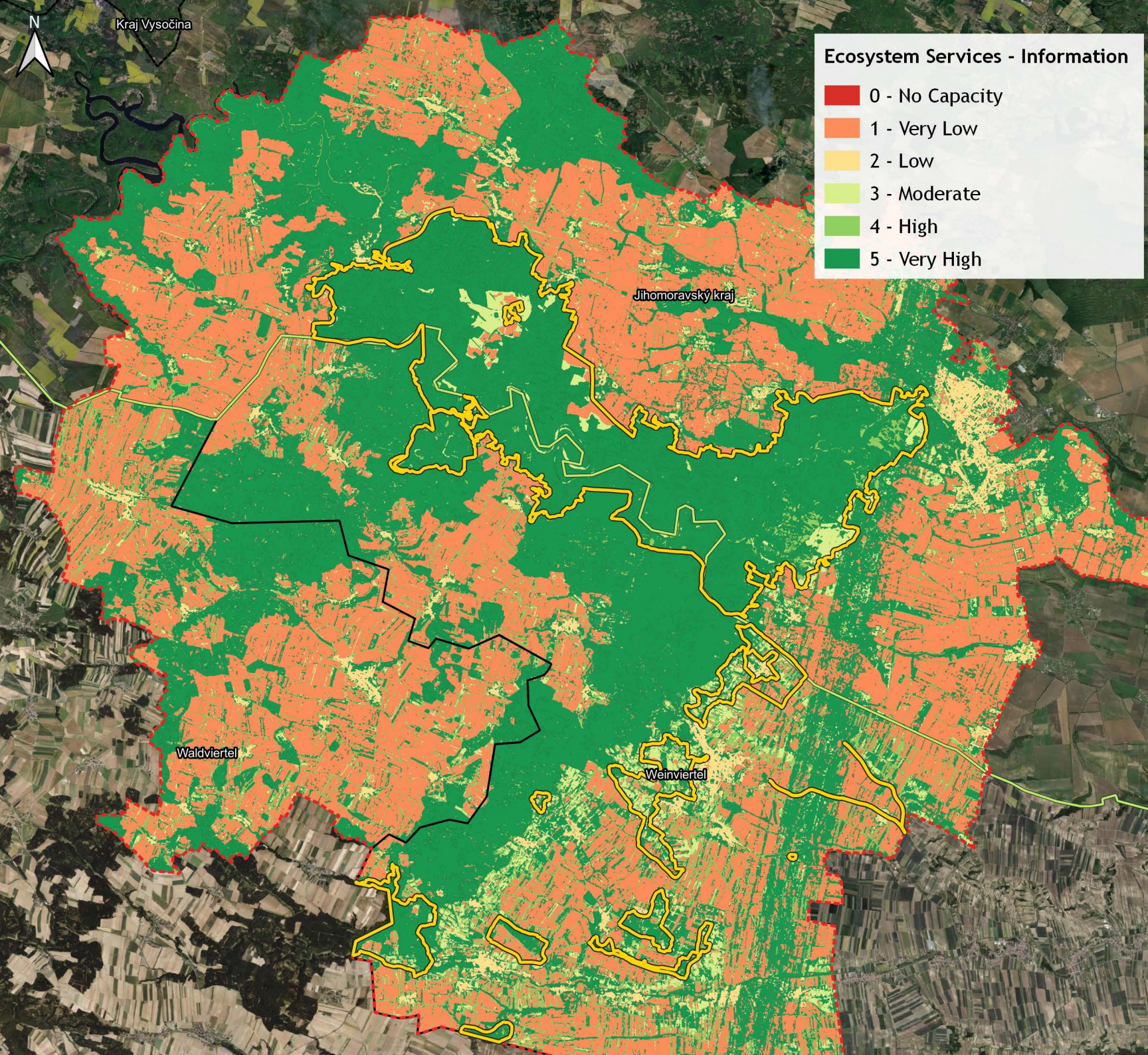
2 4 6 8 km
1:150.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 6 - Thayatal - Podyjí:

Information Functions

Austria / Czech Republic

Pilot Region

- Core Areas
- Extended Pilot Regions

Green Belt

- European Green Belt
- GB Buffer (25km)

Administrative Borders

- NUTS Regions (Level 3)
- European Countries

2 4 6 8 km

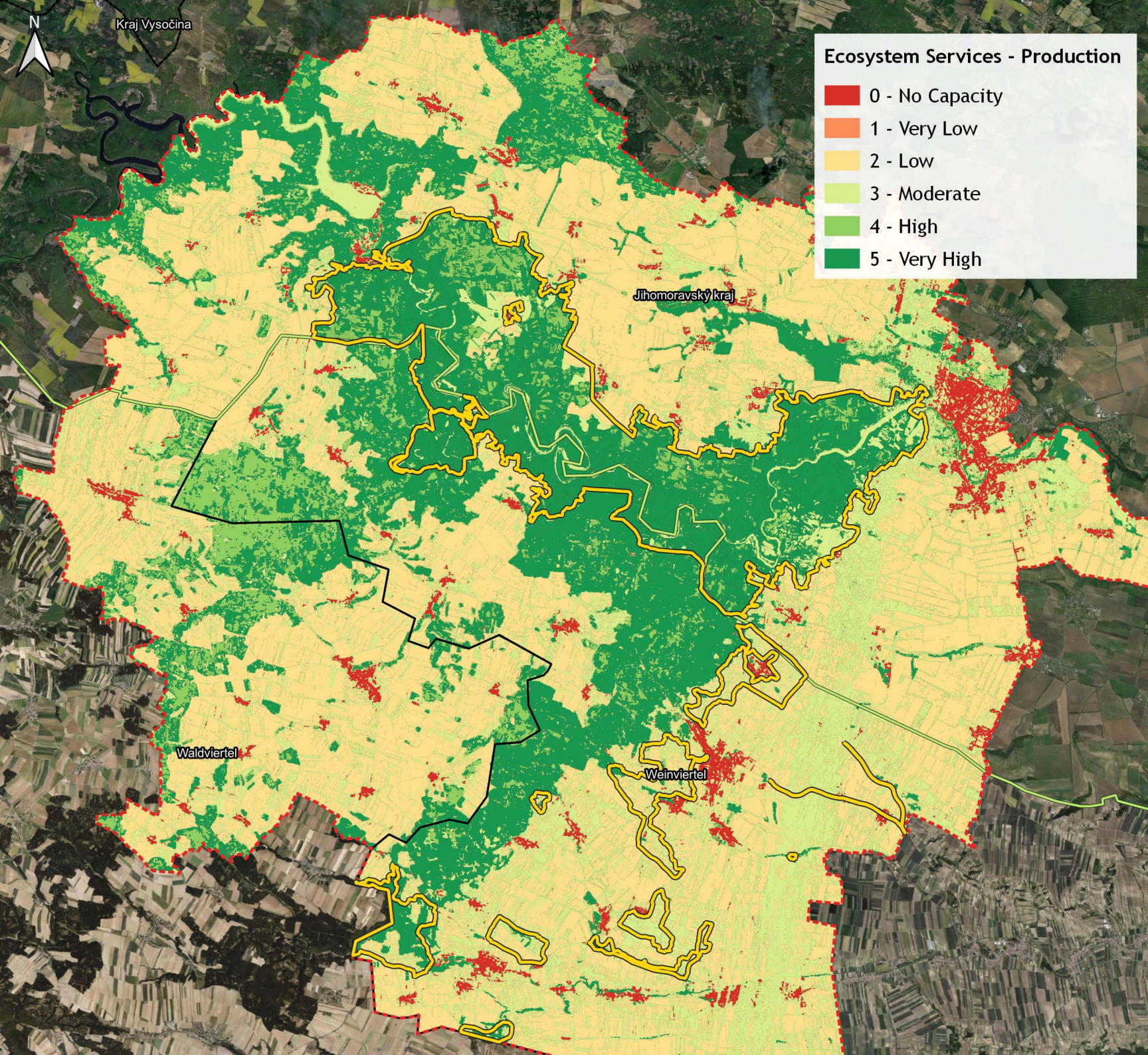
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Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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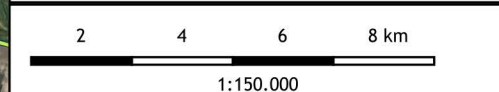


Production Functions

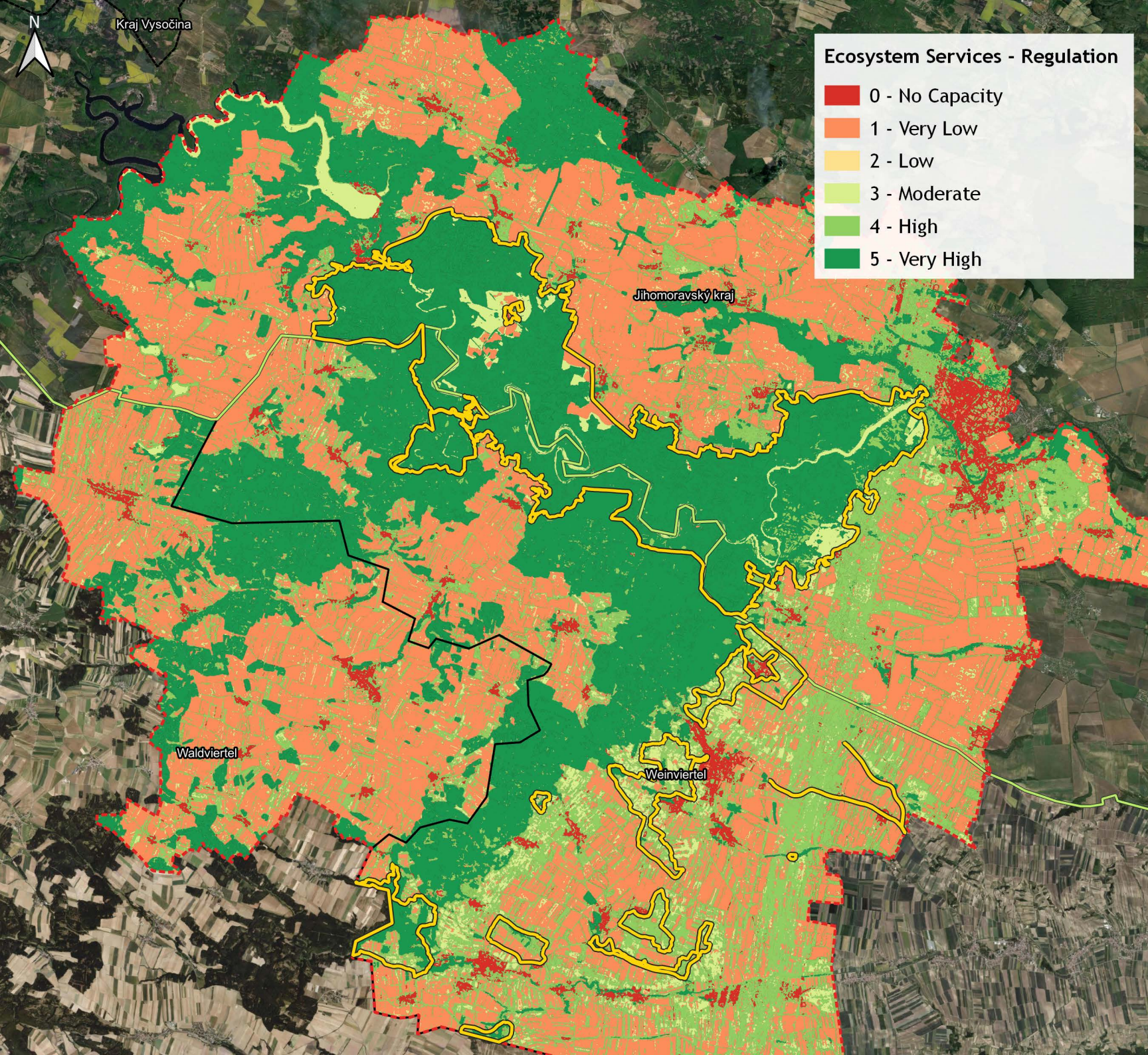
Austria / Czech Republic



- Pilot Region**
- Core Areas
 - Extended Pilot Regions
- Green Belt**
- European Green Belt
 - GB Buffer (25km)
- Administrative Borders**
- NUTS Regions (Level 3)
 - European Countries



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Pilot Region 6 - Thayatal - Podyjí:

Regulation Functions

Austria / Czech Republic

Pilot Region

- Core Areas
- Extended Pilot Regions

Green Belt

- European Green Belt
- GB Buffer (25km)

Administrative Borders

- NUTS Regions (Level 3)
- European Countries

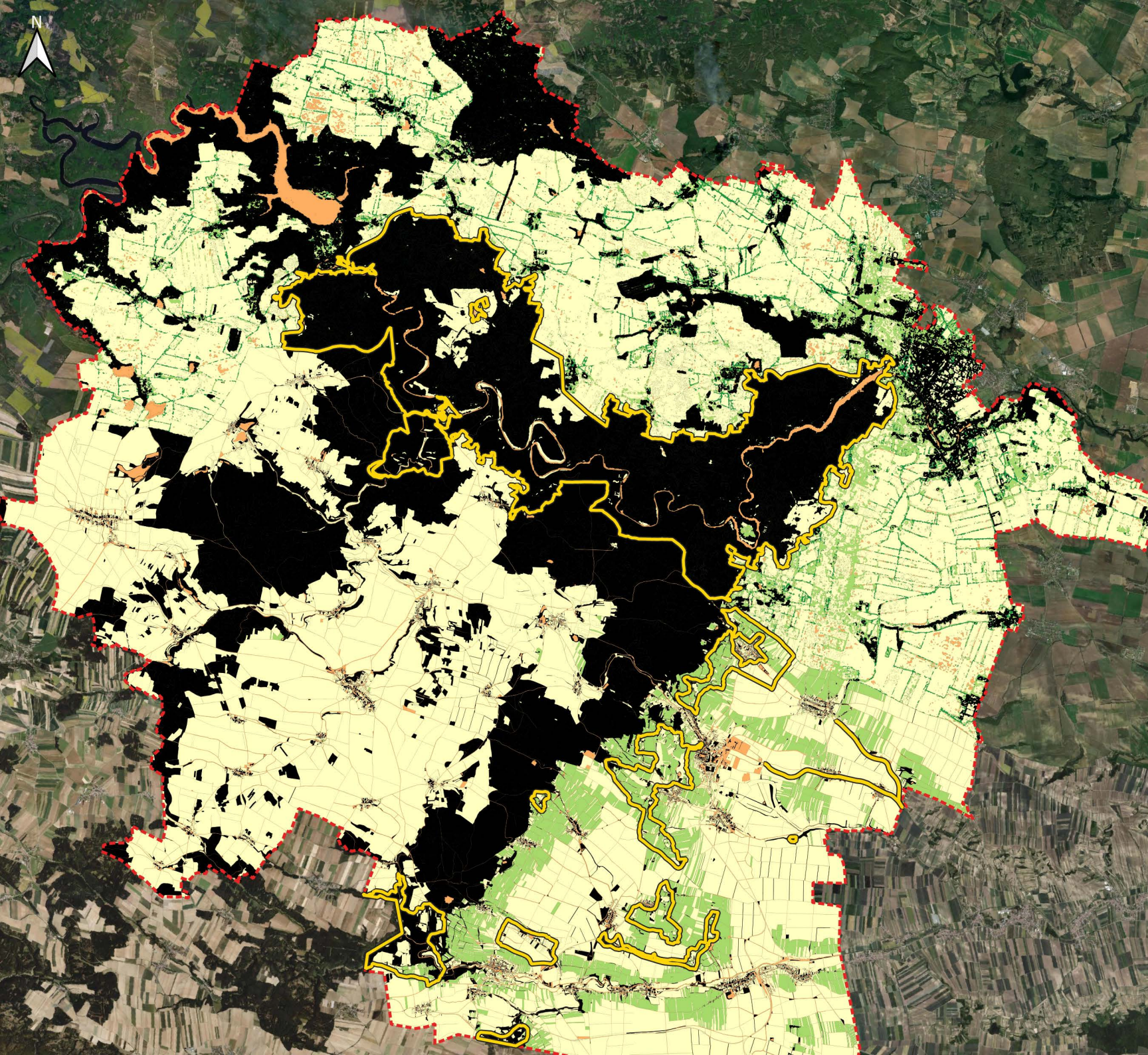
2 4 6 8 km
1:150.000

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 6 - Thayatal - Podyji:

Potential of restoration based on BHT

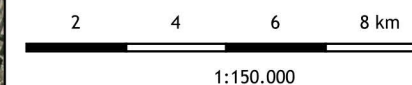
Forest and Woody features

Austria / Czech Republic



Potential of restoration to Target Habitats

- Unsuitable
- Low potential
- Medium Potential
- High Potential
- Target Habitats



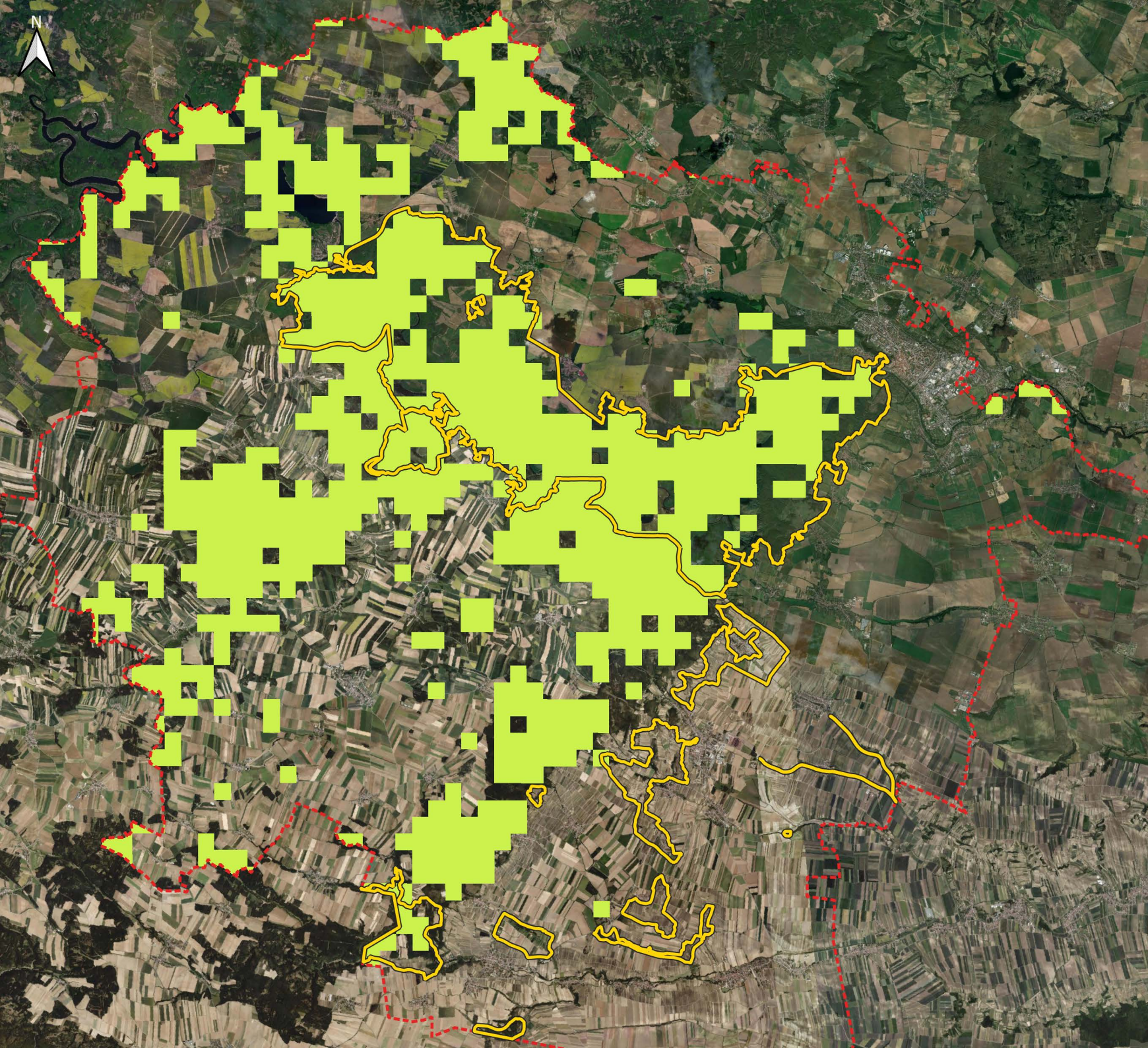
Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Pilot Region 6 - Thayatal - Podyji:

Historical Target Habitat

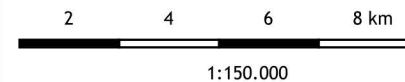
Forest and Woody features

Austria / Czech Republic



Target habitat in historical data

 Target Habitats



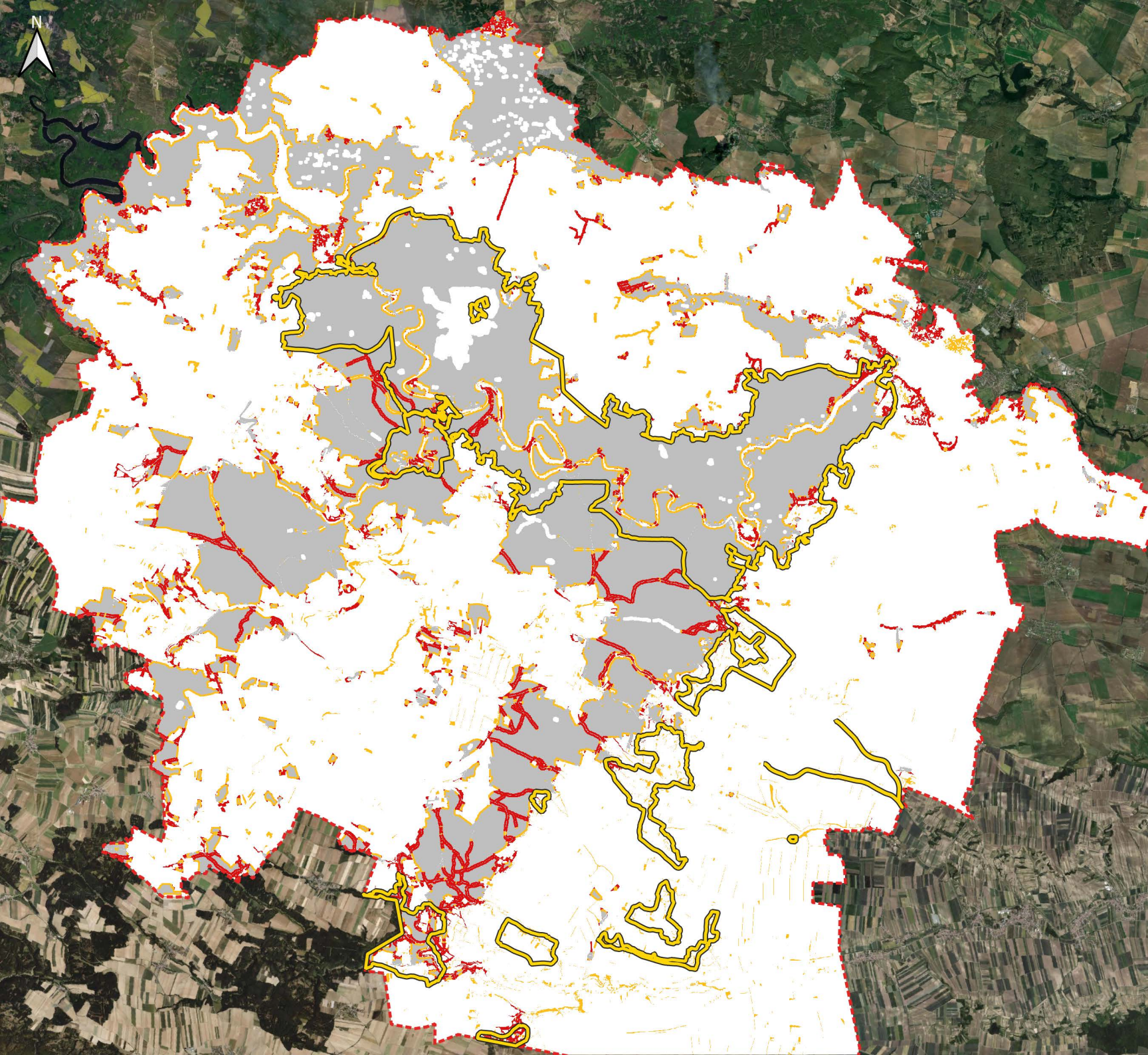
Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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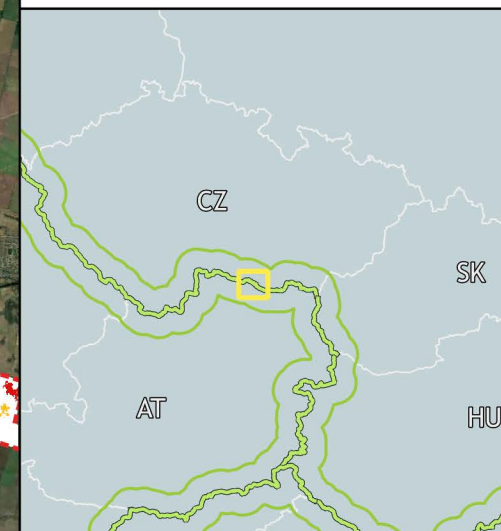


Pilot Region 6 - Thayatal - Podyji:




Reclassified (MSPA)

Forest and Woody features

Austria / Czech Republic



Relevance for connectivity

-  1 - Core areas and Loops
-  2 - Edges and Islets
-  3 - Bridges and Branches



1:150,000

Sources: GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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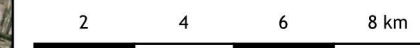
Restoration Suitability Index

Forest and Woody features

Austria / Czech Republic



- Unsuitable
- Very Low Suitability
- Low Suitability
- Moderate Suitability
- High Suitability
- Very High Suitability
- Core Areas



1:150.000

Sources: Österreichisches Staatsarchiv, Arcanum, GuidosToolbox, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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