Interreg CENTRAL EUROPE
Centralparks
European Union
European Regional Development Fund

D.T2.1.5
HABITAT MAPPING GUIDELINES

Final Version

Description of the habitat mapping methods and results

03 2021

Content

Introduction to habitat mapping

The methodology for habitat mapping exfoliated in the Hungarian vegetation botanical and nature conservation practice in the 1990s, based on the vegetation mapping. The overgrown numbers of vegetation categories did not enable the practical use for nature conservation purposes, were not able to serve as a base for proper treatment planning. The first General Hungarian Habitat Categorization System (Általános Nemzeti Élőhelyosztályozási Rendszer – Á-NÉR) was published in 1997. There were several updates so far, the actual category system was prepared in 2011, which includes every single habitat type occurring in Hungary. The Danube-Ipoly National Park Directorate prepared 90 habitat maps since its establishment in 1997 in its administration area.

The goal of the habitat mapping is to picture the vegetation patterns of the determined area (on the average scale of 1:5.000 – 1:10.000 m). The applied category system must be appropriately rough to describe a manageable patch size and be not too fragmented, as well as it needs to be appropriately fine structured to enable the detach the different management claimed patches. This allows the surveyor to map daily 2-300 ha area. The quality isolation of the patches is only partly achievable based on the habitat categories. The other very important base of the analysis is the adaptation of the naturalness-degradation scale, which allows the description of the different status of the patches under the same habitat categories. E.g., the comparison between a well-structured, more layered, mixed beech forest and a same-aged, unmixed young beech forest is only possible with the survey of the additional data.

Further important supplementary information was surveyed during the implementation:

- the presence of protected and rare plant species;
- the potential habitat type;
- the threats and risks;
- any treatment/management proposal.

The potential vegetation could determine the end goal of nature conservation management.

The collected data allows the National Park Directorates to fulfill their obligations to display Natura 2000 marker habitats during the forest management planning. These data also simplifies the nature conservation management planning itself: we will see how many areas are available from the exact habitat types, the distribution of the high nature conservation value habitats, and pictures the general threat of the area.

The technical methodology for habitat mapping

The prepared map should include the digital delineation of the vegetation units on the map. The delineation should be prepared that the described patches are comparable to the General National Habitat Categorization System (Á-NÉR 2011) categories and to reflect the boundaries of the habitat boundaries experienced on the field. The minimal patch size is 5.000 m2 for the habitat patches significantly distinct from their environment and for habitat patches require different nature conservation management (rock towers, rockslides, clear cuts, natural clearings) is 2.000 m2.

The prepared map should include the digital delineation of the vegetation units on the map. The delineation should be prepared that the described patches are comparable to the General National Habitat Categorization System (Á-NÉR 2011) categories and to reflect the boundaries of the habitat boundaries experienced on the field. The minimal patch size is 5.000 m2 for the habitat patches significantly distinct from their environment and for habitat patches require different nature conservation management (rock towers, rockslides, clear cuts, and natural clearings) is 2.000 m^2.

In the dense small-clear patched canopies (typically occurs around Királyrét Forestry), the clear patches should not be mapped individually, but their intensity or rate should be monitored.

The use of hybrid categories must be avoided if possible, except in the cases of separated, well-bordered, transitional habitat patches, as well as alien coniferous or non-coniferous stands are mixed with native non-coniferous second-growth forest stands.

In the habitats where Natura 2000 species and habitat occurs, the Á-NÉR 2011 categories must be validated for the Natura 2000 habitat classification system based on Haraszthy (2014), and Nature 2000 habitat code must be noted.

The rate of naturalness must be determined from a scale of 1-5 (1: very bad; 5: in a very good naturalness state) according to Németh-Seregélyes-scale.

The patches determined as the same Á-NÉR category with a different naturalness value must be described separately when other parameters differ too.

The following attributes must be described for every differently mapped patch:

- ÁNÉR-code;
- The code if the Natura 2000 habitat;
- Name of the forest habitat;
- Value of the naturalness;
- Name of the surveyor;
- Date of the field survey: year and month;
- Short (maximum 500 characters) description;
- Description of threats;
- Suggestion for the nature conservation management (maximum 500 characters).

The surveyor must note the typical, rare, protected, or invasive, and alien species on the survey routes during the mapping and mark them as point data on the map. The other invasive species must be noted within the short description.

Results

The Danube-Ipoly National Park Directorate will carry out the habitat mapping for 30.000 ha within the framework of the Centralparks Interreg CE1359 project. For the 24.880,4ha area, an external expert was contracted, Currently, the field survey for 20.120,9 ha was carried out (80,9% preparedness).

Based on the data received so far, we drew the following conclusions (Chart 1 and 2). For the clear visibility of the results, we only name habitat groups within the 1st chart.

Group	Area (ha)	Rate (%)	E
Springs, transition mires and raised bogs	0,1	0,00	1
Marshes	5,2	0,03	2
Euhydrophyte vegetation	0,2	0,00	3
Rich fens, wet grasslands and tall herb vegetation	14,9	0,07	4
Mesic hay meadows, pastures and dry heaths	115,6	0,57	5
Dry and semi-dry closed grasslands	236,2	1,17	6
Open dry grasslands	4,4	0,02	7
Scrub	52,0	0,26	7
Other tree-dominated habitats	3391,1	16,85	8
Riverine and swamp woodlands	217,1	1,08	9
Mesic deciduous woodlands	8708,9	43,28	10
Dry deciduous woodlands	4986,2	24,78	11
Rocky forests	524,8	2,61	12
Other habitats	165,8	0,82	13
Other treeless vegetation	277,9	1,38	14
Forests and plantations dominated by non-native tree species	1126,7	5,60	15
Agricultural habitats	278,8	1,39	16
Water bodies	15,1	0,07	17

Chart 1: Distribution of the habitat categories

Naturalness value	Area (ha)	Rate
1	1384,141	6,88
2	3798,953	18,88
3	4126,415	20,51
4	7121,14	35,39
5	3696,007	18,37

Chart 2: Distribution of the naturalness-state scale (1: very bad; 5: in a very good naturalness state)

As seen above, with the highest rate the fresh non-coniferous forests (mainly beech forests and mixed hornbeam-sessile oak stands), as well as dryer non-coniferous forests (mainly turkey oak-dominated stands with sessile oak), were presented. Particularly significant the presence of the "degraded" or "second-growth forests" category (heavily "modified" other forests dominated by native species, mainly with field maple or hornbeam, with a possibility of the presence of the black locust), which can not be categorized into a naturalness state scale and the forest manager will have many task and challenges to reconstruct the forest into a more semi-natural state.

Natura 2000 habitat code	Area (ha)	Rate (%)
40A0	0,2	0,00
6190	3,3	0,02
6210	5,0	0,02
6240	231,7	1,15
6410	8,2	0,04
6430	6,3	0,03
6440	0,4	0,00
6510	49,6	0,25
6520	68,7	0,34
8150	1,1	0,01
8220	0,2	0,00
9110	1,0	0,01
9130	3198,4	15,90
9150	102,3	0,51
9180	425,0	2,11
91E0	217,4	1,08
91G0	5510,9	27,39
91H0	370,3	1,84
91M0	4626,0	22,99
91M0, 91G0	11,7	0,06
9260	3,7	0,02

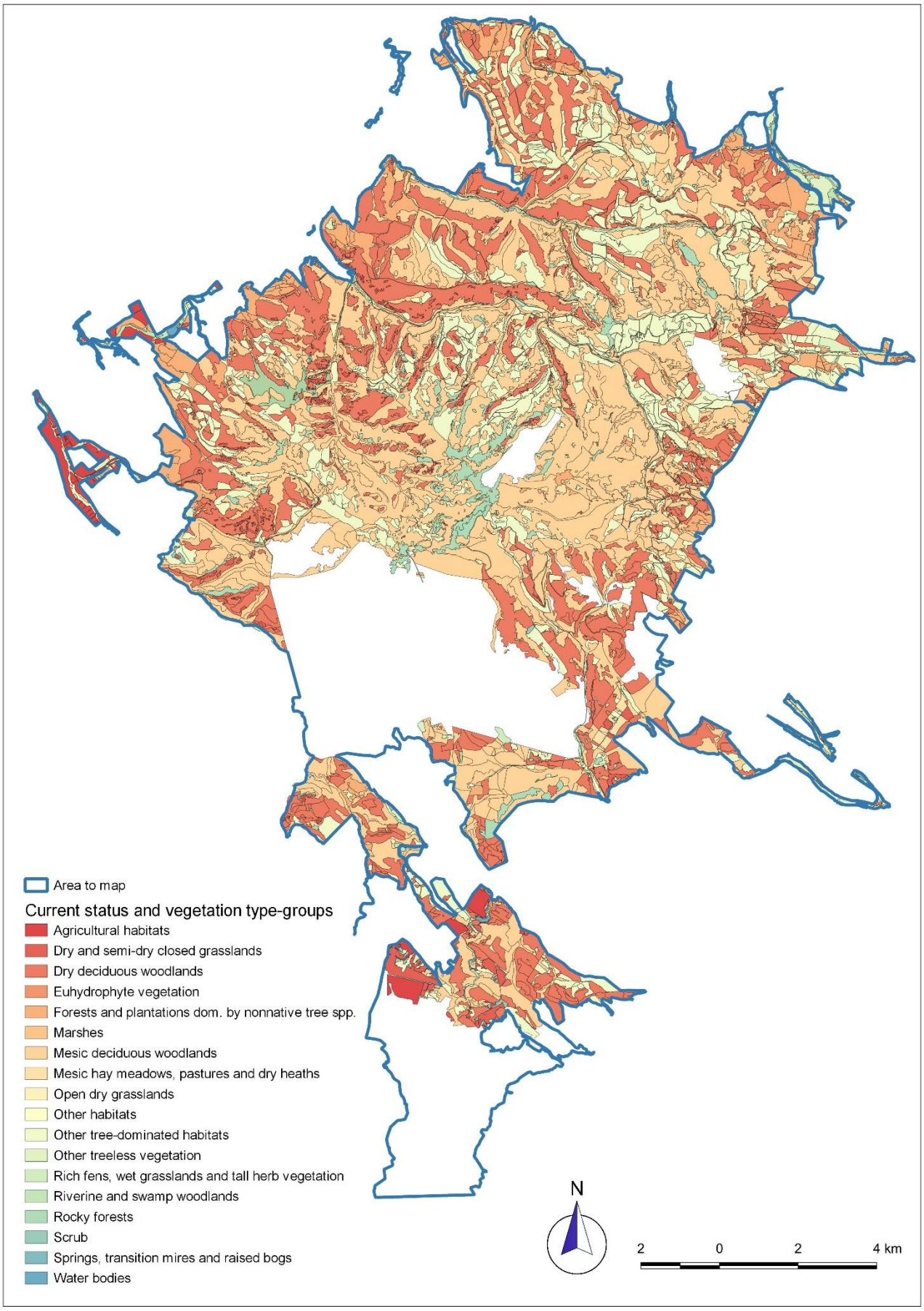
Chart 3: Distribution of Natura 2000 habitat categories

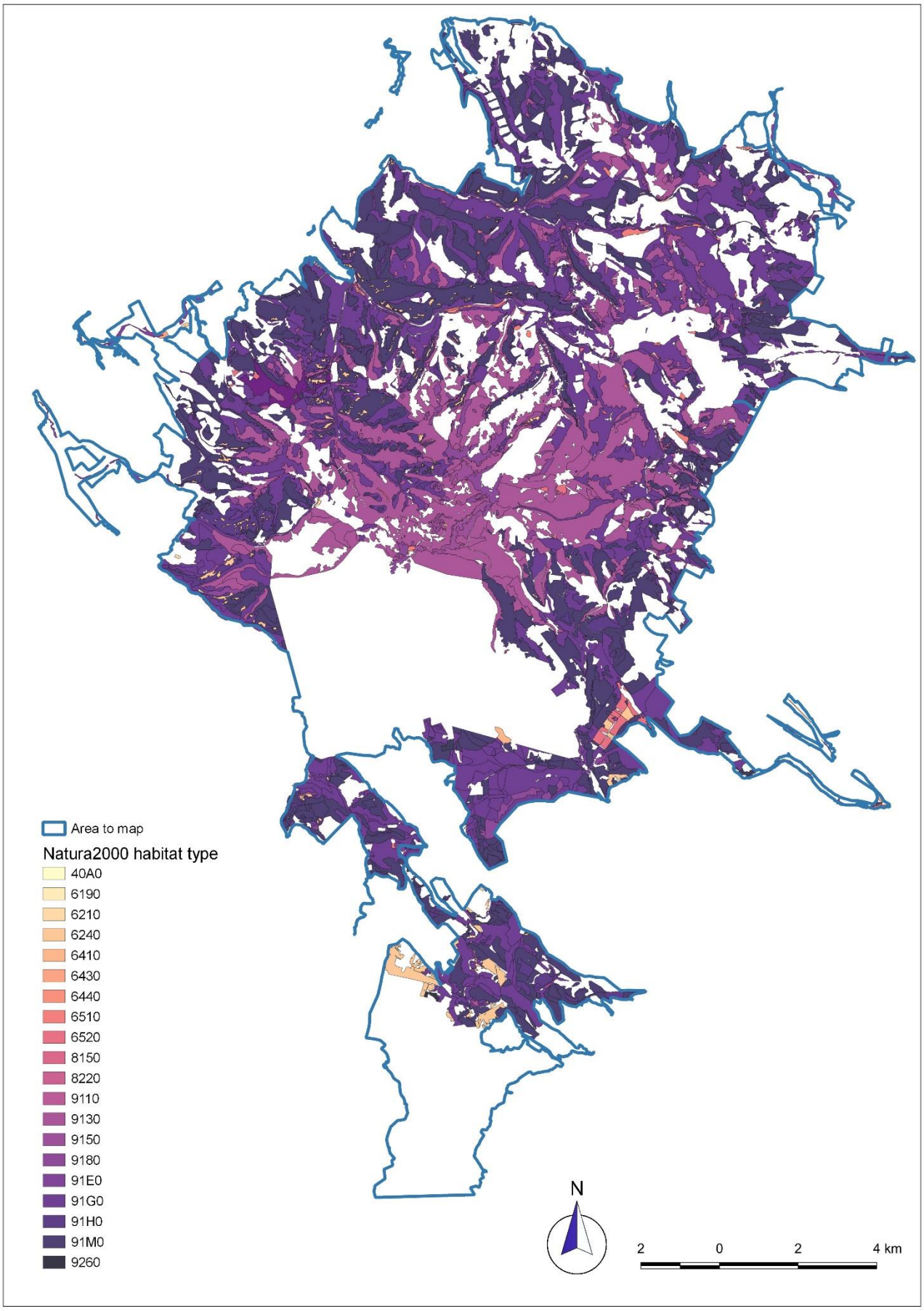
The rock-relieve forest and riverside alder forests are important habitats that host many mountain relictum species (e.g.: *Primula elatior, Astrantia major, Rosa penduline, Spiraea media*) with a small distribution area and a high nature conservation value.

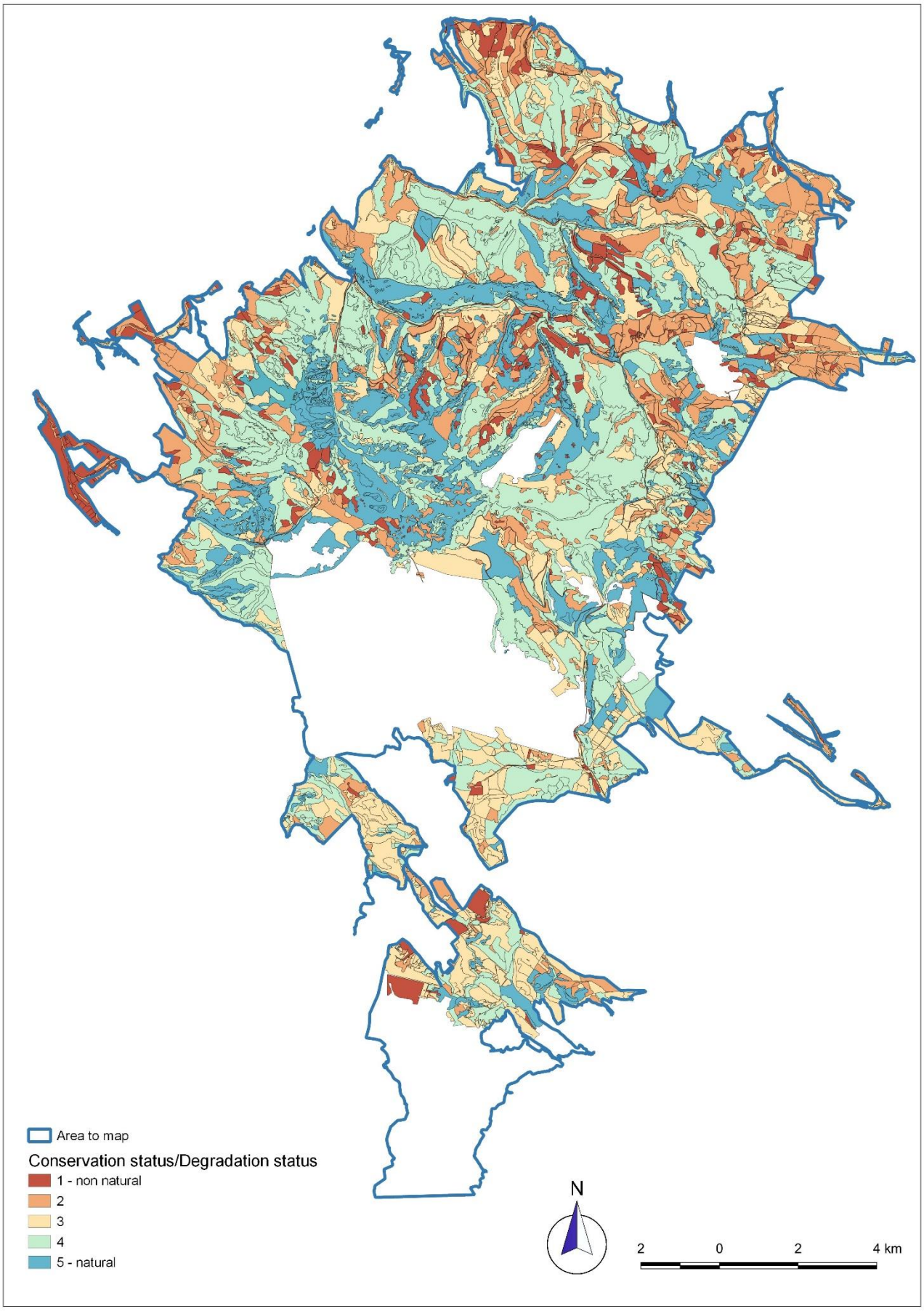
The area of the tree plantations is significant too, mainly open the semi-mountainous areas, but also counts as an important source of invasive species (black locust, tree of heaven) spread in the valleys and peaks.

The mountainous grasslands (altogether 350 ha) are presented only as a small part of the habitats but are high priority habitats, host high nature conservation value species (e.g. *Gantienella austriaca, Gentiana pneumonanthe, Iris sibirica*). That is why the description of the grasslands' state and the maintenance of the grasslands based on the surveys are extremely important and is a special focus of the project too.

On the following figures, you can see the prepared habitat maps according to vegetation groups; Natura 2000 habitat types and naturalness – degradation.


Area to map
Current status and vegetation type-groups
Agricultural habitats
Dry and semi-dry closed grasslands
Dry deciduous woodlands
Euhydrophyte vegetation
Forests and plantations dom. by nonnative tree spp.
Marshes
Mesic deciduous woodlands
Mesic hay meadows, pastures and dry heaths
Open dry grasslands
Other habitats
Other tree-dominated habitats
Other treeless vegetation
Rich fens, wet grasslands and tall herb vegetation
Riverine and swamp woodlands
Rocky forests
Scrub
Springs, transition mires and raised bogs
Water bodies
N
2 0 2 4 km


Area to map
Natura2000 habitat type
40A0
6190
6210
6240
6410
6430
6440
6510
6520
8150
8220
9110
9130
9150
9180
91E0
91G0
91H0
91M0
9260
N
2
0
2
4 km


Area to map
Conservation status/Degradation status
1 - non natural
2
3
4
5 - natural
N
2
0
2
4 km

Editors:	Borbála Szabó-Major (Danube-Ipoly National Park Directorate)
Contributors:	Soma Horváth (Danube-Ipoly National Park Directorate) Zsolt Baranyai (Danube-Ipoly National Park Directorate)
Reviewers: Quality Reviewers:	Isidoro De Bortoli (EURAC) Silvia Bisconti (EURAC)
Security Sensitivity check:	