

730,000 hectares of grasslands are included in the Emerald Network of Ukraine

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Abstract

The Emerald Network of Europe is analogous to the Natura 2000 network and is being developed in non-EU countries. As a result of three years work by the Ukrainian Nature Conservation Group, 106 new Emerald sites were added to the Emerald Network of Ukraine in December 2019, which affords adequate protection for 730,000 hectares of grasslands. This has addressed a significant shortcoming of the previous version of the network, which predominantly comprised existing nature conservation areas - reserves and national parks and in which forest and water habitats prevailed. Of the recently designated sites, 86 include different types of grassland habitats covering 12 types from Resolution 4 of the Bern Convention: 11 from group E (E1.11, E1.13, E1.2, E1.7 1, E1.9, E2.2, E2.3, E3.4, E3.5 E5.4, E6.2) and a complex type (X36) dominated by herbaceous vegetation. The most common type among them is E1.2 - Perennial calcareous grassland and basic steppes, which is represented in 63 (73.3%) of the newly designated sites. The most valuable sites are those created to protect habitat types included in Resolution 4 by proposals from Ukraine, namely E1.13 - Continental dry rocky steppic grasslands and dwarf scrub on chalk outcrops, and X36 - Depressions (pody) of the Steppe zone.

Keywords: Berne Convention; chalk outcrop; conservation; Emerald Network; grassland; habitat; "pody"; steppe.

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Introduction

The Emerald Network is a network of nature conservation areas important for the protection of species and habitats in need of conservation throughout Europe. The network is analogous to the Natura 2000 network of the European Union. During a meeting of the Standing Committee of the Berne Convention, held in Strasbourg on 3-6 December, 2019, Ukraine's proposal to include 106 new sites (including 730,000 hectares of grasslands, see Table 1) into the Emerald Network was accepted (Council of Europe 2019a). Upon Ukraine's accession to the EU, these territories would be automatically included in the Natura 2000 network.

The decision to include these new areas (a total of 1,600,000 hectares) was taken at the request of Ukraine and was the result of work by experts of the NGO Ukrainian Nature Conservation Group. The Group was formally established in early 2018 to bring together biodiversity experts, develop a network of conservation areas, and implement best environmental law practices in Ukraine. Thus, the development of new Emerald Network sites became a major focus of collaboration for members of the organisation.

Outcomes

For about three years, 20 members of the Group and 40 other biologists who wished to join this initiative prepared justifications for the designation of new Emerald sites. Thanks to the support of the Ministry of Ecology and Natural Resources, in 2018 one of the members of the organisation, Olexiy Marushchak, was trained to work with the Emerald Network database and to prepare reports together with the Ministry's representative Anastasia Drapaluk. The training was provided by the Standing Committee of the Berne Convention. This enabled us to directly prepare standard data forms (SDFs) for the proposed Emerald sites. Following approval in principle and review, the proposals we prepared for 106 new Emerald sites were submitted by the Ministry for consideration by the Convention. All of the sites were incorporated into the Emerald Network on 4 December, 2019. In 2017-2018, thanks to the support of our Polish colleagues, the Natural Heritage Foundation, we were able to organise a series of training courses (covering 400 scientists and 400 students in 12 cities) and webinars. In addition, we published a series of Emerald Network devel-

opment guides: http://uncg.org.ua/tag/emerald_book/. However, the actual work on the development of new Emerald sites had no special funding and was carried out by experts on a voluntary basis.

The preliminary list of Emerald sites for Ukraine was adopted in 2016 (Council of Europe 2018) and at that time it mainly comprised all existing nature reserves and national nature parks. The total area of the network then was 5.8 million hectares (9% of the land area of Ukraine), but this did not produce significant additional conservation benefits, as 3.6 million hectares (5.7% of the land area of Ukraine, or 57% of the total area of Emerald sites in Ukraine) were territories that were already protected. Another 1% of the area of Ukraine (or 10% of the network area) consisted of the reservoirs of the Dnieper cascade, which play an important role as a migratory route for migratory birds. However, the open water surface of the reservoirs is little used by birds, so their inclusion in the Emerald Network hardly had a significant effect. Therefore, only 33% of the Emerald Network in Ukraine (2.5% of Ukraine's area) in 2016 became territories for which inclusion in the network marked a real change by obtaining conservation status.

Moreover, almost all Emerald sites, until recently, were chiefly represented by forest habitat types. Thus, the network was rather unrepresentative. On the other hand, almost all forests in Ukraine which are part of national parks or reserves are among the best preserved forests, since Ukrainian legislation restricts or prohibits felling in protected areas. Thus, the first version of the Emerald Network included most of Ukraine's truly valuable forests.

Our work was primarily focused on identification of valuable natural areas that were characterised either by the uniqueness of species and habitats, or had a large number of species and habitats listed in the Berne Convention resolutions. Particular attention was paid to grassland habitats, as they were very poorly represented in the network because in Ukraine, apart from a few steppe reserves in the east of the country, grassland habitats were barely covered by protected areas. Developing new grassland sites was particularly pleasing for many of us, as several authors of the new Emerald sites are members of the EDGG.

1.6 million hectares of new territory have now been added to the Emerald Network (Fig. 1). Emerald sites that were officially recognised in December are exclusively natural territories and took the numbering from UA0000271 to UA0000377. In most cases, they are river valleys, steppe valleys and valuable forest areas in different regions of Ukraine. The great majority of these sites were not previously protected, and all of them are important for rare species and natural habitats in Europe. It is very important that many types of steppe habitats are protected in Ukraine because very few countries that are parties to the Berne Convention have true steppes. Furthermore, habitat types E1.13 Continental dry rocky steppic grasslands and dwarf scrub on chalk outcrops; G3.4G *Pinus sylvestris* forest on chalk in the steppe zone; and X36 Depressions (pody) of the steppe zone were included in Resolution 4 at the request of Ukraine (Council of Europe 2019b), as these habitat types are absent in other European countries, except for the Russian Federa-

tion. It is important to note that seven sites were created specifically to conserve X36 habitats. In total, almost half of the areas included in the Ukrainian part of the Emerald Network in 2019 are represented by grassland habitat types.

The largest of the newly designated sites are important for the implementation of recent Convention decisions. For example, the Aidar river valley site (UA0000313, 117,237 ha) includes Ukraine's most extensive areas of habitat types E1.13 and G3.4G. Similarly, the Kerch peninsula site (UA0000377, 231,364 ha) is almost completely covered by E1.2 and includes autochthonous mud volcanoes that are included in H6 - Recent volcanic features - from the 2018 revision of the scope and definition of this habitat type that was also suggested by Ukraine.

Outlook

Importantly, the designation of these 106 Emerald sites is only the start of expanding the Emerald network in Ukraine. Work is currently underway to prepare the next proposal, covering another 2 million hectares, of which the grasslands occupy at least half of the area. Among them, the most notable is the complex of sites in the Luhansk region (eastern Ukraine), covering a total of 400,000 ha of rocky steppes along the Donetsk Ridge.

Author contributions

A.K. and O.V. jointly developed the publication structure and drafted the manuscript. O.M. prepared data on the presence of different grassland habitat types in the newly adopted Emerald sites, while G.K. calculated the total area of grassland habitats in the newly adopted Emerald sites. All authors critically revised the manuscript.

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Table 1. Grassland habitats in the new Emerald sites of Ukraine.

Site Code	Site Name	Habitat types present	Site Code	Site Name	Habitat types present
UA0000272	Ros river valley	E1.11, E1.2, E1.9, E2.2, E3.4	UA0000326	Stryi river valley	E2.2, E3.4, E5.4
UA0000278	Roganka	E1.2, E2.2	UA0000328	Kolomak river valley	E2.2, E3.4, E5.4
UA0000279	Lyptsi	E1.2, E2.2	UA0000329	Zolotonoshka river valley	E1.2, E2.2, E3.4
UA0000280	Kam`yanka izyums`ka	E1.2, E2.2	UA0000331	Kropyvna river valley	E1.2, E3.4, E6.2
UA0000281	Izbytske	E1.2, E2.2	UA0000332	Dniester river valley in Lviv region	E1.71, E2.2, E3.4, E5.4
UA0000282	Dry and Wet Izyumtsi	E1.2, E2.2	UA0000333	Southern Bug and Snyvoda valleys in Vinnytsya region	E1.11, E1.2, E1.71, E1.9, E2.2, E3.4, E5.4
UA0000283	Dergachivskiy forest	E1.2, E2.2	UA0000334	Styr river valley in Volyn region	E1.71, E1.9, E2.2, E3.4, E3.5
UA0000284	Chumatskyi way and Vilshanka river valley	E1.2, E2.2	UA0000335	Sluch river valley in Zhytomyr region	E1.9, E2.2, E3.4
UA0000286	Goryla valley	E2.2	UA0000336	Loess outcrops of the Dnipro estuary	E1.2
UA0000287	Upper part of Great Babka river	E1.2, E2.2	UA0000337	Divychky	E1.9, E2.2
UA0000288	Bezruki	E1.2, E2.2	UA0000341	Nyzhniopodilskiy	E1.11, E1.2, E3.4
UA0000289	Poligon	E1.2, E2.2	UA0000342	Irpın river valley	E1.9, E2.2, E3.4, E3.5
UA0000290	Balakliyyky	E1.2, E2.2	UA0000343	Bus'ke	E2.2, E3.4, E3.5
UA0000291	Zavody	E1.2, E2.2, E1.13	UA0000344	Ikva river valley in Ternopil region	E1.11, E2.2,
UA0000292	Upper part of Uda river valley	E1.2, E2.2	UA0000346	Bober river valley	E1.9, E2.2, E3.4
UA0000293	Lyman lake system	E1.2, E2.2, E3.4	UA0000347	Sluch river valley in Rivne region	E1.9, E2.2, E3.4
UA0000294	Lozovenka and Oleksiyivski forests	E1.2, E2.2	UA0000348	Irsha river valley in Zhytomyr region	E1.9, E2.2, E3.4
UA0000295	Lower part of Uda river valley	E2.2	UA0000349	Kayalo-Berdyanskyi	E1.2
UA0000296	Lysogirka izyumska	E2.2	UA0000351	Tulyntsi – Makedony	E1.2
UA0000297	Protopopivka-Petrivs'ke	E1.2, E1.13, E2.2, E3.4	UA0000352	Kovylina	E1.2
UA0000298	Petrivski creeks	E1.2, E2.2	UA0000353	Sary-Bash	E1.2
UA0000299	Mozh river valley	E1.2, E2.2, E3.4	UA0000354	Slavne	E1.2
UA0000300	Bilokuzmynivske	E1.2, E1.13, E2.2	UA0000355	Lower Seret river valley	E1.11, E1.2
UA0000301	Barvinkivski steppes	E1.2	UA0000358	Kadubivska stinka	E1.2
UA0000302	Supiy river valley	E1.2, E2.2, E3.4	UA0000359	Podvirivka	E1.2, E2.2
UA0000303	Upper Psel river valley	E1.2, E2.2, E3.4, E5.4	UA0000359	Podvirivka	E1.2
UA0000304	Upper Inhul river valley	E1.11, E3.4	UA0000360	Pohorylivka	E1.2
UA0000305	Middle Inhul river valley	E1.11, E1.2	UA0000361	Sinozhati	E1.2
UA0000306	Khorol river valle	E1.2, E2.2, E3.4, E5.4, E6.2	UA0000362	Vyshnivka	E1.2, E2.2, E3.4
UA0000307	Gromoklia river valley	E1.2	UA0000363	Dzhohul	E1.71, E2.2, E3.4
UA0000309	Sula river valley	E1.2, E2.2, E3.4, E5.4	UA0000364	Vasylivski i Rozkopynski gullies	E1.2
UA0000310	Middle Inhulets river valley	E1.2	UA0000365	Bystrytsia of Nadvirna river valley	E2.3, E5.4
UA0000312	Lower and middle Psel river valley	E1.2, E2.2, E3.4, E5.4	UA0000366	Ahaymany depression	X36
UA0000313	Aidar river valley	E1.13, E1.2, E1.11, E1.2	UA0000367	Barnashivsky depression	E1.2, X36
UA0000314	Kalmius river valley	E1.13, E1.2, E1.11,	UA0000368	Black valley	E1.2, X36
UA0000318	Oleksandriyska part of Inhulets	E1.2, E3.4	UA0000370	Green depression	E1.2, X36
UA0000319	Kryvorizka part of Inhulets river	E1.11, E1.2	UA0000371	Sivashic depression	E1.2, X36
UA0000320	Teteriv river valley	E1.11, E2.2, E3.4	UA0000372	Small Chapelsk depression	E1.2, X36
UA0000321	Lower Inhulets river valley	E1.2, E1.9, E6.2	UA0000373	Foothill steppes of Crimea	E1.2
UA0000322	Vihor river valley	E2.2, E3.4, E5.4	UA0000374	Shopurka river valley	E2.2
UA0000323	Vyrva river valley	E2.2, E3.4, E5.4	UA0000375	Murava way	E1.2
UA0000324	Strviazh river valley	E2.2, E3.4, E5.4	UA0000376	Tarkhankut	E1.2
UA0000325	Opir river valley	E2.2, E5.4	UA0000377	Kerch peninsula	E1.2



Site UA0000300 Bilokuzmynivske. Photo: D. Balkhovitin.



Site UA0000300 Bilokuzmynivske. Photo: S. Orlyk.



Site UA0000300 Bilokuzmynivske. Photo: V. Bashkatov.



Site UA0000300 Bilokuzmynivske. Photo: V. Bashkatov.



Site UA0000314 Kalmius river valley. Photo: V. Bashkatov.



Site UA0000314 Kalmius river valley. Photo: D. Balkhovitin.



Site UA0000377 Kerch peninsula, mud volcanoes. Photo: I. Dereviagin.



Site UA0000377 Kerch peninsula, mud volcanoes. Photo: I. Dereviagin.



Site UA0000377 Kerch peninsula. Photo: D. Vitchenko.



Site UA0000321 Lower Inhulets river valley. Photo: V. Maniuk.