



Strasbourg, 25 July 2018  
[pa07e\_2018.doc]

**T-PVS/PA (2018) 7**

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE  
AND NATURAL HABITATS

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**Group of Experts on Protected Areas and Ecological  
Networks**  
9th meeting  
4-5 October 2018

**UKRAINIAN PROPOSAL FOR 4 ADDITIONAL  
HABITATS TO RESOLUTION No. 4 (1996)**

*Document prepared by Douglas Evans  
(European Topic Centre on Biological Diversity)*

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## SUMMARY

There are 4 proposals from Ukraine for habitats to be added to Resolution No. 4 (1996)

- Depressions (pody) of the Steppe zone
- Pine forests on chalk
- *Pistacia mutica* woodland
- Mud volcanoes

‘Pody’ are habitat complexes where many of the component habitats are already listed but not the combination and it is recommended that this is added to Resolution No. 4 (1996). The unit will also need to be added to the EUNIS classification.

Pine forests on chalk is very similar to, or possibly part of, the existing habitat ‘G3.4E - Ponto-Caucasian *Pinus sylvestris* forests’ and it is recommended that the description of that unit is revised to make it clear that it includes the proposed habitat.

*Pistacia mutica* woodland is part of the existing Resolution No. 4 (1996) habitat ‘G1.7 Thermophilous deciduous woodland’ and Mud volcanoes are part of ‘H6 Recent volcanic features’. In both cases the descriptions in the manual could be revised to make this clearer.

## 1. INTRODUCTION

Annex I of Resolution No. 4 (1996) to the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) lists habitats for which protected areas (Emerald Network sites) should be designated. The Resolution was adopted by the Standing Committee on 6 December 1996 with an annex based on a selection of habitat types drawn from the Palaeartic Classification (Devilliers & Devilliers-Terschuren 1996). The current Annex I was adopted on 5 December 2014 and is based on the EUNIS habitats classification (Davies et al 2004).

Resolution No. 4 (1996) “*Resolves to update periodically Annex I to this resolution*” and there have been frequent reminders, especially at meetings of the Group of Experts on Protected areas and Ecological Networks, of the need to ensure that the list of habitats, initially produced for Western & Central Europe, is also relevant elsewhere.

Four proposals from Switzerland and Ukraine were accepted in 2014, including ‘E1.13 Continental dry rocky steppic grasslands and dwarf scrub on chalk outcrops’ proposed by Ukraine.

## 2. THE PROPOSALS

In June 2018 the Ukrainian authorities submitted 4 proposals to the Bern Convention Secretariat using the form previously agreed for proposing additional habitats and species.

- Depressions (pody) of the Steppe zone
- Pine forests on chalk
- *Pistacia mutica* woodland
- Mud volcanoes

The four proposals are included in full as Annex I below.

The proposals were compared against the existing Resolution No. 4 (1996) habitats, in particular against the information given in the [Interpretation Manual](#) which is based on the EUNIS descriptions but with additional information where available. Other important sources were *Vegetation of Europe* (Mucina et al 2016) which gives a comprehensive, hierarchical, syntaxonomic system of alliances, orders and classes of Braun-Blanquet syntaxonomy for vascular plant, bryophyte and lichen, and algal communities of Europe and the EuroVegChecklist browser, a tool based on the crosswalks presented in Schaminée et al (2012), which links the syntaxa to the EUNIS habitats classification using an updated version of the crosswalk first published in Rodwell et al (2002). Schaminée et al (2012) and the browser were based on a draft of the synsystem presented in Mucina et al (2016) and there are some differences between the two.

## 2.1 Depressions (pody) of the Steppe zone

This is a habitat complex (section X in the EUNIS classification) for which some of the component elements are already listed on Resolution No. 4 (1996). The proposal mentions four alliances which together form part the habitat:

### *Myosuro-Beckmannion eruciformis*

Described as “Pioneer ephemeral grass-rich vegetation in periodically flooded nutrient-rich habitats in the steppe zone of Eastern Europe” in Mucina et al (2016).

This is not noted in EuroVeg browser or Shaminée et al (2012) but is clearly part of ‘C3.5 Pioneer and ephemeral vegetation of periodically inundated shores’ but as it is nutrient rich it is not part of the Resolution No. 4 (1996) habitat ‘C3.51 Euro-Siberian dwarf annual amphibious swards (but excluding C3.5131 Toad-rush swards)’

### *Eleocharition soloniensis*

Described as “Pioneer ephemeral rush-rich vegetation in temporarily flooded mesotrophic habitats of Central and Western Europe” in Mucina et al (2016).

This alliance is noted in the manual as part of the Resolution No. 4 (1996) habitat ‘C3.51 Euro-Siberian dwarf annual amphibious swards (but excluding C3.5131 Toad-rush swards)’

### *Lythro virgati-Elytrigion pseudocaesia*

This is considered a synonym of *Agrostion vinealis* Sipailova et al. 1985 In Mucina et al (2016) and described as “Steppic meadows on intermittently wet floodplains of the Dnieper River basin”. The EuroVeg Checklist browser includes this in ‘E2.5 - Meadows of the steppe zone’ (Lowland and montane mesotrophic pastures and hay meadows of the steppe zone of Eastern Europe and Anatolia). This is not Resolution No. 4 (1996) but is an eastern counterpart to existing mesic grasslands which are included.

### *Festucion valesiaca*

The syntaxonomy of this alliance is not agreed (see discussion in Mucina et al 2016) but in the EuroVegChecklist browser it is treated as a synonym of *Festucion sulcatae* Soó 1930 (Subcontinental fescue steppic grasslands of Central Europe, Dobrogea and Ukraine) and linked to ‘E1.2 - Perennial calcareous grassland and basic steppes’ which is listed on Resolution No. 4 (1996) (manual only notes orders for this habitat)

The habitat has a restricted distribution and is considered to be ‘Endangered’ so qualifies for Resolution No. 4 (1996).

## Recommendation

Accept. If agreed a new habitat complex will need to be added to the EUNIS habitats classification but this can be done during the review of this section planned for 2019.

## 2.2 Pine forests on chalk

This habitat is described as forests with *Pinus sylvestris* var. *cretacea* of the alliance *Libanotido intermediae-Pinion sylvestris* on the chalk outcrops of the Middle Russian Upland. Schaminée et al (2012) note this as part of the EUNIS level 3 unit ‘G3.4 - *Pinus sylvestris* woodland south of the taiga’. This level 3 habitat includes 8 Resolution No. 4 (1996) habitats at levels 4 to 6.

G3.4 includes the following subtypes at level 4

Code	Name	Res. No. 4 (1996)
G3.41	Caledonian forest	Yes
G3.42	Middle European <i>Pinus sylvestris</i> forests	Partially
G3.43	Inner-Alpine <i>Ononis</i> steppe forests	Yes
G3.44	Spring heath <i>Pinus sylvestris</i> forests	Yes

G3.45	Inner Alpine <i>Minuartia laricifolia</i> steppe forests	
G3.46	Pyrenean mesophile <i>Pinus sylvestris</i> forests	
G3.47	Central Massif <i>Pinus sylvestris</i> forests	
G3.48	Southwestern Alpine mesophile <i>Pinus sylvestris</i> forests	
G3.49	Supra-Mediterranean <i>Pinus sylvestris</i> forests	
G3.4A	Iberian calcareous <i>Pinus sylvestris</i> woods	
G3.4B	Iberian silicicolous <i>Pinus sylvestris</i> forests	
G3.4C	Southeastern European <i>Pinus sylvestris</i> forests	Yes
G3.4D	Po terrace <i>Pinus sylvestris</i> forests	
G3.4E	Ponto-Caucasian <i>Pinus sylvestris</i> forests	Yes
G3.4F	European <i>Pinus sylvestris</i> reforestation	

These are mostly West and Central European with only ‘G3.4E Ponto-Caucasian *Pinus sylvestris* forests’ occurring in eastern Europe.

The EuroVegChecklist browser describes *Libanotido intermediae-Pinion sylvestris* as “Relict pine forests on Cretaceous marls on steep slopes of river valleys of southeastern Ukraine” and also links it to G3.4 - *Pinus sylvestris* woodland south of the taiga. The description of this habitat is

“Forests composed of pines of the *Pinus sylvestris* group, mostly included in *Pinus sylvestris* ssp. *hamata* or its intermediates with *Pinus sylvestris* ssp. *sylvestris*, sometimes in species *Pinus kochiana*, *Pinus hamata* or *Pinus armena*, of the Pontic Range, its satellites and inner Anatolian outposts, of the mountains of the Crimea and of the Caucasus.”

This does not mention the ‘Middle Russian Upland’ but does include areas nearby. The manual only notes one alliance, the *Pinion kochianae*, this is treated as *Carici humilis-Pinion kochianae* Didukh 2001 in Schaminée et al (2012) and *Pinion pallasianae* Korzhenevsky 1998 in Mucina et al (2016).

In Mucina et al (2016) these two alliances are placed together as the order *Pinetalia pallasianae-kochianae* as follows

ERI-02 *Pinetalia pallasianae-kochianae* Korzhenevsky 1998  
Relict *Pinus sylvestris* forests on calcareous substrates of south-eastern Ukraine and Crimea  
• *Teucrio-Pinetalia* Didukh 2003 (syntax.syn.)

ERI-02A *Pinion pallasianae* Korzhenevsky 1998  
Relict *Pinus sylvestris* forests on Jurassic limestones of Southern Crimea  
• *Pinion pallasianae* Golubiev et Korzhenevskii 1984 (1)  
• *Pinion kochianae* Korzhenevsky 1986 (5)  
• *Carici humilis-Pinion kochianae* Didukh 2001 (phantom)  
• *Brachypodio rupestris-Pinion pallasianae* Didukh 2003 (syntax.syn.)  
• *Carici humilis-Pinion kochianae* Didukh 2003 (syntax.syn.)

ERI-02B *Libanotido intermediae-Pinion sylvestris* Didukh 2003  
Relict *Pinus sylvestris* forests on Cretaceous marls in steep river valleys of south eastern Ukraine

## Recommendation

It appears that the proposal is very similar to ‘G3.4E - Ponto-Caucasian *Pinus sylvestris* forests’, it is recommended to revise the description of G3.4E such that it clearly covers the vegetation described in the proposal, possibly by making the EUNIS habitat equal to the order *Pinetalia pallasianae-kochianae* and including both alliances.

## 2.3 *Pistacia mutica* woodland

This is described as “*Pistacia mutica*- dominated forests with participation of *Quercus pubescens*, *Carpinus orientalis*, *Juniperus excelsa*, *Paliurus spina-christi*” and noted as occurring in the Crimean

peninsular and the Krasnodar region (Russian Federation). The proposal suggests this is a sub unit of G1.7 Thermophilous deciduous woodland which is already Resolution No. 4 (1996). The following alliances are mentioned in the proposal:

*Elytrigio nodosae-Quercion pubescentis* Didukh 1996

*Eryngio campestris-Paliurion spinae-christi* (Jovanovic 1985) Matevski et al. 2008

The EuroVeg checklist browser lists 16 alliances for G1.7 including *Elytrigio nodosae-Quercion pubescentis* Didukh 1996 which is described as “Crimean thermophilous oak forests on deep dry soils on south-facing slopes over limestone”.

According to the EuroVeg checklist browser *Eryngio campestris-Paliurion spinae-christi* is ‘F5.3 – Pseudomaquis’ which the description notes as “resulting from the degradation of thermophilous deciduous woodland G1.7”. F5.5 is not listed on Resolution No. 4 (1996).

*Pistacia mutica* is a synonym for *Pistacia atlantica* which is the current valid name (<http://www.theplantlist.org/tpl1.1/record/kew-2408140>)

### Recommendation

Appears to be already covered by ‘G1.7 Thermophilous deciduous woodland’ but the Interpretation Manual could be revised to better cover the many subtypes.

## 2.4 Mud volcanoes

EUNIS has a level 2 unit ‘H6 Recent volcanic features’ and this is included on Resolution No. 4 (1996). This habitat has two sub-types:

- H6.1 - Active volcanic features  
Orifices in volcanic areas emitting hot or cold gases and vapours. Their very extreme environment is colonized by highly distinct communities with few species. Included are steam vents (fumaroles), vapour and hot sulphurous gas vents (solfatares), paint pots, porridge pots and mud volcanoes, as well as cold carbon dioxide, methane and nitrogen vents (mofettes), that emit directly into the open atmosphere. Excludes marine (A6.9) and subterranean (H1.4) vents.
- H6.2 - Inactive recent volcanic features  
Features of active volcanoes where emissions of hot or cold gases are absent. Includes barren lava flows, fields of volcanic ash and summits of dormant volcanoes.

H6.1 Active volcanic features clearly includes mud volcanoes (see highlighted text).

### Recommendation

Mud volcanoes are part of H6.1 so are already included in Resolution No. 4 (1996) but this could be made more explicit by revising the Interpretation Manual to include the above text.

## 3. LITERATURE

Davies, C. E., Moss, D., Hill, M. O. (2004). EUNIS habitat classification revised 2004. *Report to: European Environment Agency-European Topic Centre on Nature Protection and Biodiversity*, 127-143. <http://www.eea.europa.eu/themes/biodiversity/eunis/eunis-habitat-classification/>

Mucina, Ladislav, et al. "Vegetation of Europe: hierarchical floristic classification system of vascular plant, bryophyte, lichen, and algal communities." *Applied Vegetation Science* 19 (2016): 3-264.

CoE (2014) *Revised Annex I of Resolution 4 (1996) of the Bern Convention on endangered natural habitats types using the EUNIS habitat classification (year of revision 2014)*.  
<https://rm.coe.int/16807469e7>

CoE (2015) *Interpretation manual of the habitats listed in Resolution No. 4 (1996) listing endangered natural habitats requiring specific conservation measures, third draft version 2015*.  
<https://rm.coe.int/16807469e7>

Rodwell, J.S., Schaminée, J.H.J., Mucina, L., Pignatti, S., Dring, J. & Moss, D. 2002. The Diversity of European Vegetation: an overview of phytosociological alliances and their relationships to EUNIS habitats. National Reference Centre for Agriculture, Nature and Fisheries, Wageningen, NL.

Schaminée J.H.J., Chytrý M., Hennekens S.M., Mucina L., Rodwell J.S. & Tichý L. (2012): Development of vegetation syntaxa crosswalks to EUNIS habitat classification and related data sets. Final report EEA/NSV/12/001. European Environment Agency, Copenhagen

**ANNEX 1: THE PROPOSALS**

Below are the 4 proposals received from Ukraine using the agreed format, the proposals have been lightly edited to remove comments, etc intended to help experts complete the forms.

**INFORMATION FORM  
FOR SPECIES OR HABITATS**

**DATE: 29.06.2018**

**Proposed by: Ukraine**

Information Form for species or habitats to be included in:

- Appendix I:** Strictly protected flora species
  - Appendix II:** Strictly protected fauna species
  - Appendix III:** Protected fauna species
- and
- Resolution (1998) 6:** Species requiring specific habitat conservation measures
  - or
  - Resolution (1996) 4:** Endangered natural habitats requiring conservation measures

<b>Habitat proposal</b>
EUNIS Habitat code: X.?
Habitat title: <b>Depressions (pody) of the Steppe zone</b>
Habitat Definition: (only if a new subdivision in the EUNIS classification is suggested):  <b>Closed undrained depressions, relics of the ancient hydrological network, periodically flooded with melt water and characterized by a wide range of vegetation from aquatic to meadow-steppe.</b>

**Proposal for amending Res. 6 or Res. 4: additional information needed**

**Name of Biogeographical Region(s) in which the species or habitat occurs**

- Alpine**
- Anatolian**
- Arctic**
- Atlantic**
- Black Sea**
- Boreal**
- Continental**
- Macaronesia**
- Mediterranean**
- Pannonic**
- Steppic**

**Marine region: (if a marine region map is adopted by the SC):**

**Is the Species or Habitat present in EUR 27:**  Yes  No

**Other International Conventions, Instruments and Agreements:**

Convention on Migratory Species (Bonn Convention): Annex I   
Annex II

Convention on International Trade in Endangered Species of wild fauna and flora (CITES):

Annex 1   
 Annex 2

Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)

Ref. 2008-6 part 1   
 Ref. 2008-6 part 2

Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

Annex I   
 Annex II

Annex IV   
Annex V

Directive 2009/147/EC (79/409/EEC amended) on the conservation of wild birds

Annex I   
Annex II   
Annex III

Other: (Barcelona Convention, IUCN red data books, etc .....)

### Short Description / Distinguishing Characteristics:

Pody represent a heterogeneous group of closed depressions, some of them are relics of the ancient hollows of the former Dnipro valley, others are formed as a result of subsidence processes or deflationary phenomena. Characterized by specific soils - Gleysol (gleysolod') with iron-manganese nodules, which are formed as a result of prolonged flooding. Characterized by a wide spectrum of vegetation - free-floating, coastal, ephemeral, meadow, meadow-steppe.

**Syntaxonomy.** *Isoëto-Nanojuncetea* Br.-Bl. et Tx. in Br.-Bl. et al. 1952, *Nanocyperetalia* Klika 1935, *Myosuro-Beckmannion eruciformis* Shapoval 2006, *Eleocharition soloniensis* Philippi 1968; *Molinio-Arrhenatheretea* R. Tx. 1937, *Molinietales* W. Koch 1926, *Lythro virgati-Elytrigion pseudocaesia* Shapoval 2006, *Festuco-Brometea* Br.-Bl. Et R. Tx. In Br.-Bl. 1949, *Festucetalia valesiaca* Br.-Bl. Et R. Tx. 1943, *Festucion valesiaca* Klika 1931

**Characteristic species.** *Plomis scythica*, *Ferula euxina*, *Phalacrachena inuloides*, *Allium regelianum*, *Elatine alsinastrum*, *E. hungarica*, *Damasonium alisma*, *Elytrigia repens* subsp. *pseudocaesia*, *Lythrum borysthenticum*, *L. microphyllum* *L. virgatum*, *Gratiola officinalis*, *Juncus sphaerocarpus*, *Carex melanostachya*, *C. praecox*, *Poa angustifolia*, *Inula britannica*, *Myosurus minimus*, *Beckmannia eruciformis*, *Lotus angustissimus*.

### European Interest:

**Unique formations distributed predominantly on the left bank of the Lower Dnipro with a specific hydrological regime (periodic flooding), peculiar soil cover and original vegetation with a well-defined endemic core and a complex of species of different protection levels.**

**Please mark with "X" for which of the following criteria the species or habitat is proposed (as interpreted from the guideline 1 in the Bern Convention's Recommendation 56 (1997), and also indicated in subparagraphs of Article 1 g of the Habitats Directive)**

- Endangered*, except those species whose natural range is marginal in that territory and which are not endangered or vulnerable in the Western Palaearctic Region
- Vulnerable*, i.e. believed likely to move into the endangered category in the near future if the causal factors continue operating
- Rare*, with small populations that are not at present endangered or vulnerable but at risk. The species is located within restricted geographical areas or are thinly scattered over a more extensive range
- Endemic* and requiring attention by reason of the specific nature of its habitat or the potential impact of its exploitation on its habitat or the potential impact of its conservation status

### Remarks:

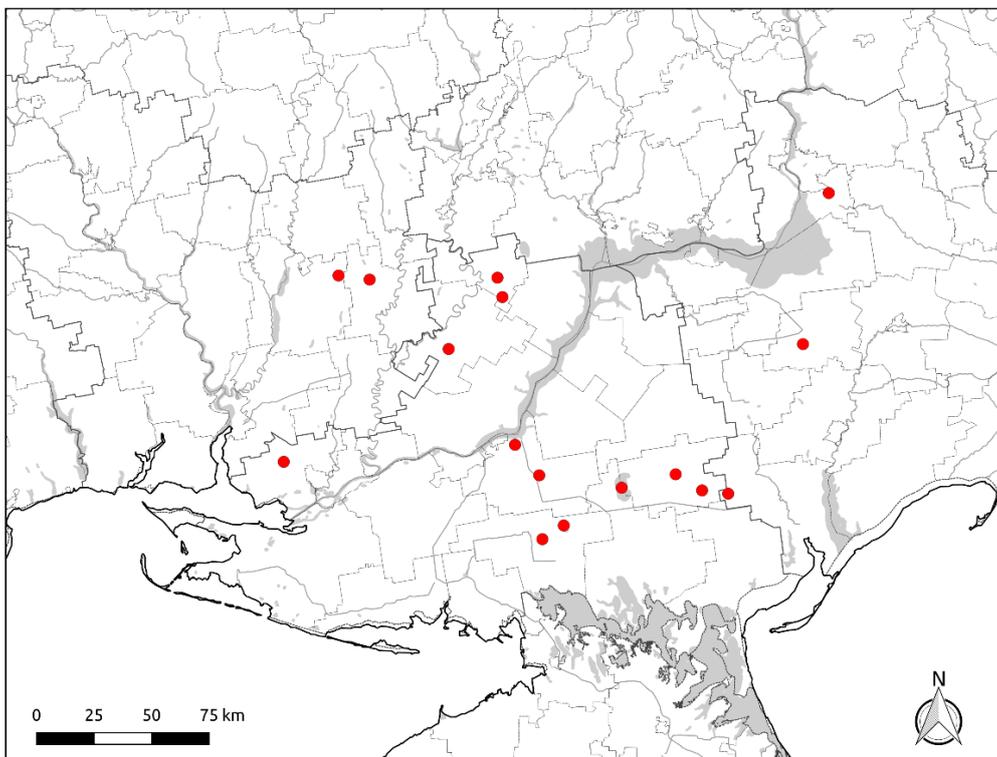
**For species only: ecological role (as described in Recommendation 56 (1997):**

### Geographical distribution:

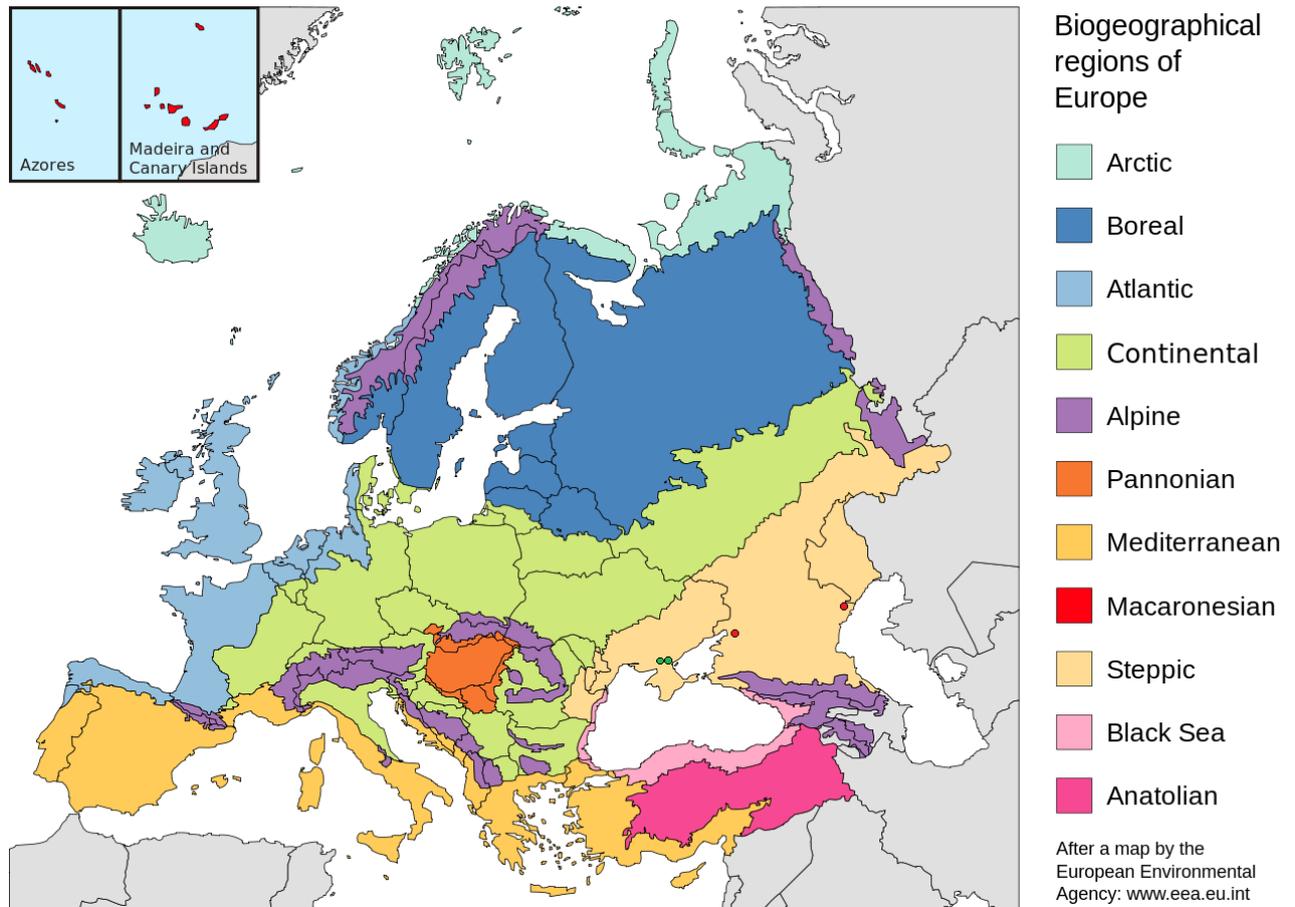
Poorly drained watersheds of the Steppe Zone. In Ukraine – the left bank of the Lower Dnipro, some smaller sizes depression are distributed on the right-bank part (Kherson, Mykolaiv, Zaporizhzhia regions). In Russian Federation – Lower Volga and Lower Don regions.

**In addition, include maps with the distribution of the species or habitat (GIS format preferred), with reference to scale and projection.**

- in the country:



- in the Pan-European region and in other parts of the world:



- distribution in Ukraine
- distribution in other part of Europe and in Asia

**Further comments concerning the geographical distribution** :(e.g. known subtypes, regional varieties, loci typici)

**Estimated population size and trends (guideline 1 from Rec. 56 (1997):** (Indicate the situation in the country(ies) and, as far as possible, European wide and world wide) (according to EEA guidelines for indicating population data). **Ukraine's total area in up to 20 000 ha. The area in Russia Federation is not determined.**

**Reasons for decline or threats: Plowing and flow regulation of the catchment basin.**

**Conservation status: (within country, region, pan-European level, etc ...):**

Under protection in the Biosphere Reserve "Askania Nova" and Reserve Stow of local significance "Ahaimanske" (Ukraine).

The species from the Red Data Book of Ukraine (*Phlomoides scythica*, *Allium regellianum*, *A. scythicum*, *Tulipa scythica*, *Elatine hungarica*, *Damasonium alisma*, *Juncus sphaerocarpus*, *Tulipa schrenkii*, *Stipa ucrainica*, *S. lessingiana*, *S. capillata*, *Scilla autumnalis*, *Fritillaria meleagroides*) are present.

**Important references / literature / publications:**

(especially those relevant for the taxonomy, conservation status and geographical distribution)

Дрогобыч Н.Е., Шаповал В.В. Распространение редких, исчезающих и эндемичных видов флоры цветковых в заповедной степи "Аскания-Нова". 2. Эндемичное ядро // Вісті Біосферного заповідника "Асканія-Нова". – 2004. – Т. 6. – С. 6-13.

Шаповал В.В. До синтаксономії рослинності депресій Лівобережжя Нижнього Дніпра. Класи: Isoeto-Nanojuncetea Br.-Bl. et R. Tx. ex Westhoff et al. 1946, Molinio-Arrhenatheretea R. Tx. 1937 та Festuco-Brometea Br.-Bl. et R. Tx. in Br.-Bl. 1949 // Вісті Біосферного заповідника "Асканія-Нова". – 2006. – Т. 8. – С. 15-48.

Шаповал В.В. Ендемічний елемент флори депресій Лівобережного Злакового Степу // Чорноморський ботан. журн. – 2006. – Т. 2, № 1. – С. 83-101.

**Further remarks: (any additional important information not given above, relevant for evaluating the proposal)**

**Picture of species or habitat:**







**Contact Person(s) for additional questions concerning this species or habitat:  
(if multi-country proposal, please add relevant persons for each country)**

Name: **Anna Kuzemko**

Institution: **Institute of Botany NAS of Ukraine**

Postal Address: **2, Tereshchenkivska str., Kyiv, 01601**

Country: **Ukraine**

Phone No: **+038 (097) 919 39 87**

Fax No: **+38 (044) 234 40 41**

E-mail: [anymeadow.ak@gmail.com](mailto:anymeadow.ak@gmail.com)

**If not identical with Contact Person, author of this data form:**

Name: **Viktor Shapoval**

Institution: **Biosphere Reserve "Askania Nova"**

Postal Address: **Parkova str., 15, Askania-Nova, Kherson region, 75230**

Country: **Ukraine**

Phone No: **+038 (097) 143 90 50**

Fax No: **+038 (05538) 6 12 32**

E-mail: [shapoval\\_botany@ukr.net](mailto:shapoval_botany@ukr.net)



- Ref. 2008-6 part 1   
 Ref. 2008-6 part 2

Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

- Annex I   
 Annex II   
 Annex IV   
 Annex V

Directive 2009/147/EC (79/409/EEC amended) on the conservation of wild birds

- Annex I   
 Annex II   
 Annex III

Other: (Barcelona Convention, IUCN red data books, etc .....)

**Short Description / Distinguishing Characteristics:** Pine forests on the chalk outcrops of the Middle Russian Upland - rare edaphic climax habitat with many petrophytic steppe species, including endemic plant species. They occupy tops and upper parts of the steep right banks of the Siverskyi Donets, Don, Volga river basins in the form of small localities from several to 50 hectares. Soils are dry and poorly developed rendzinas that are replaced by chernozems on gentle slopes, and on steep ones, it washed off and chalk rise to the surface.

**Syntaxonomy:** *Erico-Pinetea* Horvat 1959; *Pinetalia pallasianae-kocianae* Korzhenevskyi 1998; *Libanotido intermediae-Pinion sylvestris* Didukh 2003

**Characteristic species:** *Pinus sylvestris* var. *cretacea*, *Cotinus coggygria*, *Carex humilis*, *Stipa pulcherrima*, *Festuca cretacea*, *Libanotis intermedia*, *Anthericum ramosum*, *Bupleurum falcatum*, *Convallaria majalis*, *Teucrium polium*, *Cerasus fruticosa*, *Genista tanaïtica*, *Chamaecytisus austriacus*, *Gypsophila oligosperma*, *Polygonatum odoratum*.

**European Interest:** a unique combination of pine forest with rare xerophytic-petrophytic-steppe herb layer, which contains many species that are endemic, or need protection.

**Please mark with "X" for which of the following criteria the species or habitat is proposed (as interpreted from the guideline 1 in the Bern Convention's Recommendation 56 (1997), and also indicated in subparagraphs of Article 1 g of the Habitats Directive)**

- Endangered*, except those species whose natural range is marginal in that territory and which are not endangered or vulnerable in the Western Palaearctic Region
- Vulnerable*, i.e. believed likely to move into the endangered category in the near future if the causal factors continue operating
- Rare*, with small populations that are not at present endangered or vulnerable but at risk. The species is located within restricted geographical areas or are thinly scattered over a more extensive range
- Endemic* and requiring attention by reason of the specific nature of its habitat or the potential impact of its exploitation on its habitat or the potential impact of its conservation status

**Remarks:**

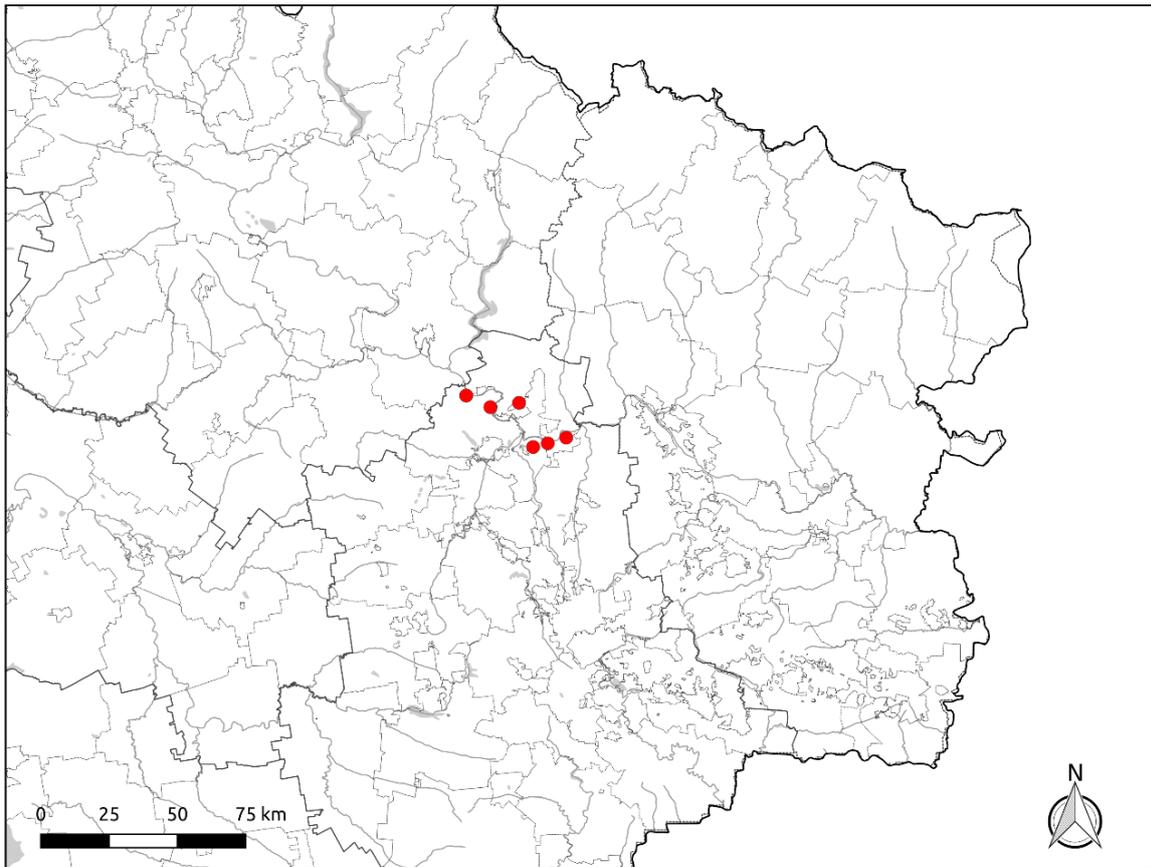
**For species only: ecological role (as described in Recommendation 56 (1997)**

**Geographical distribution:**

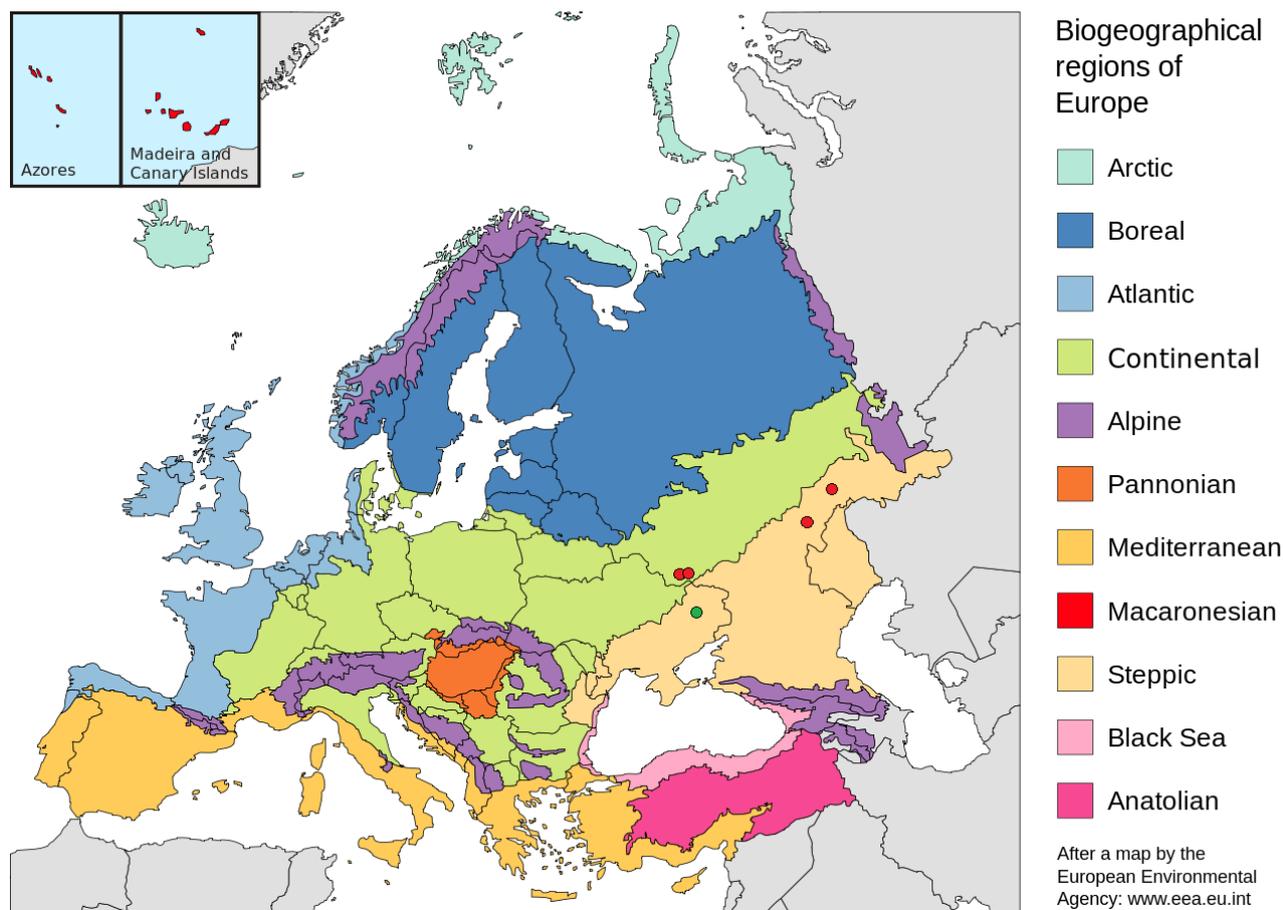
Ukraine and Russian Federation within Central Russian Upland

**In addition, include maps with the distribution of the species or habitat (GIS format preferred), with reference to scale and projection.**

- in the country: Donetsk region



- in the Pan-European region and other parts of the world: **Ukraine (Donetsk region) and Russian Federation (Belgorod, Voronezh, Samara and Saratov regions)**



- distribution in Ukraine
- distribution in other part of Europe

**Further comments concerning the geographical distribution:**

**Estimated population size and trends (guideline 1 from Rec. 56 (1997):** Total habitat area in Europe (Ukraine and Russian Federation) is about 2000 ha (in Ukraine not more than 200 ha)

**Reasons for decline or threats:** Cutting of parked (sparse) pine forests, fires, displacement by deciduous trees and shrubs.

**Conservation status: (within country, region, pan-European level, etc ...):** Under protection in the Ukrainian Steppe Natural Reserve (Kreidova Flora part) and National Nature Park “Sviati Gory” (Ukraine) and National Parks “Khvalynskiy” and “Samarskaya Luka”(Russian Federation).

**Important references / literature / publications:**

Литвинов Д.И. Геоботанические заметки о флоре Европейской России. Bull. De la societe Imperiale des Naturalistes de Moscou, 1890? 4, t. 4. P. 322-434

Котов М. І. Гірські бори як проблема історичної ботанічної географії. Укр. Бот. Журн., 1947, т.4.№ 1-2. С. 53-59

Didukh Ya. The mountain pine forests (Erico-Pinetea Horvat 1959) of Ukraine. // Рослинність хвойних лісів України, Мат. Робочої Наради (Київ, листопад, 2003)- Київ: Фітосоціоцентр, 2003.- 302 с.

Chernodubov A.I. "Cretaceous or mountain" how genetic reserves// Современные проблемы науки и образования. 2012, № 1, с. 285-

**Further remarks: (any additional important information not given above, relevant for evaluating the proposal)**

**Picture of species or habitat:**



**Contact Person(s) for additional questions concerning this species or habitat:  
(if multi-country proposal, please add relevant persons for each country)**

Name: **Yakiv Didukh**

Institution: **M. G. Kholodny Institute of Botany**

Postal Address: **01004. Kyiv, Tereschenkivska str. 2**

Country: **Ukraine**

Phone No: **+038 (044) 235-01-20**

Fax No: **+38 (044) 234 40 41**

E-mail: [ya.didukh@gmail.com](mailto:ya.didukh@gmail.com)

**If not identical with Contact Person, author of this data form:**

Name:

Institution:

Postal Address:

Country:

Phone No:

Fax No:

E-mail:

**INFORMATION FORM  
FOR SPECIES OR HABITATS**

**DATE: 29.06.2018**

**Proposed by: Ukraine (Countries)**

Information Form for species or habitats to be included in:

- Appendix I:** Strictly protected flora species
  - Appendix II:** Strictly protected fauna species
  - Appendix III:** Protected fauna species
- and
- Resolution (1998) 6:** Species requiring specific habitat conservation measures
  - or
  - Resolution (1996) 4:** Endangered natural habitats requiring conservation measures

<b>Habitat proposal</b>
EUNIS Habitat code: G1.7?
Habitat title: <i>Pistacia mutica</i> woodland
Habitat Definition: (only if a new subdivision in the EUNIS classification is suggested):
<i>[Pistacia mutica]</i> - dominated forests with participation of <i>Quercus pubescens</i> , <i>Carpinus orientalis</i> , <i>Juniperus excelsa</i> , <i>Paliurus spina-christi</i>

**Proposal for amending Res. 6 or Res. 4: additional information needed**

**Name of Biogeographical Region(s) in which the species or habitat occurs** (please mark with "x")

- Alpine**
- Anatolian**
- Artic**
- Atlantic**
- Black Sea**
- Boreal**
- Continental**
- Macaronesia**
- Mediterranean**
- Pannonic**
- Steppic**

**Marine region: (if a marine region map is adopted by the SC):**

**Is the Species or Habitat present in EUR 27:**  Yes  No

**Other International Conventions, Instruments and Agreements:**  
(Please mark with "x" if mentioned)

Convention on Migratory Species (Bonn Convention):  
Annex I   
Annex

Convention on International Trade in Endangered Species of wild fauna and flora (CITES):  
Annex 1   
Annex 2

Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)  
Ref. 2008-6 part 1   
Ref. 2008-6 part 2

Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora  
Annex I   
Annex II

Annex IV   
Annex V

Directive 2009/147/EC (79/409/EEC amended) on the conservation of wild birds

Annex I   
Annex II   
Annex III

Other: (Barcelona Convention, IUCN red data books, etc .....)

**Short Description / Distinguishing Characteristics** *Pistacia mutica* woodland represent the north-eastern exclave of xerophytic communities with domination of sub-Mediterranean species, separated from the main range, which designate the sub-Mediterranean specificity of the Southern coast of Crimea. The habitat occupy dry, gentle slopes with breakstone brown clay soils formed on deluvium and proluvium of various bedrocks, often on dry rocks of the Tauride Flush, where soils are washed away but enriched with carbonates and slightly saline. It formed a connecting link between the Mediterranean juniper and deciduous *Quercus pubescens* forests, and their herb layer includes, besides the Mediterranean plant species, Pontic steppe species. Distribution is limited in general by positive winter temperatures (-0 - + 4°C), and a small amount of precipitation (350-540 mm per year), most of which fall in the cold period, which contributes brown soils formation. Total area is several hundred ha.

**Syntaxonomy.** *Quercetea pubescentis* Doing-Kraft ex Scamoni et Passarge 1959, *Quercetalia pubescenti-petraeae* Klika 1933, *Elytrigio nodosae-Quercion pubescentis* Didukh 1996: *Paliuro-Pistacietum muticae* Didukh 1996 Didukh et al. 1986 ex Didukh 1996. *Eryngio campestris-Paliurion spinae-christi* (Jovanovic 1985) Matevski et al. 2008.

**Characteristic species.** *Pistacia mutica* (*P. atlantica* subsp. *mutica*), *Paliurus spina-christi*, *Agropyron nodosum*, *Festuca callieri*, *Asparagus verticillatus*, *Stachys germanica*, *Jasminum fruticans*, *Quercus pubescens* subsp. *pubescens*, *Juniperus excelsa*.

**European Interest:** separated and isolated from the main range, habitat characterizes extreme northern and eastern conditions for the distribution of sub-Mediterranean communities.

**Please mark with "X" for which of the following criteria the species or habitat is proposed (as interpreted from the guideline 1 in the Bern Convention's Recommendation 56 (1997), and also indicated in subparagraphs of Article 1 g of the Habitats Directive)**

- Endangered*, except those species whose natural range is marginal in that territory and which are not endangered or vulnerable in the Western Palaearctic Region
- Vulnerable*, i.e. believed likely to move into the endangered category in the near future if the causal factors continue operating
- Rare*, with small populations that are not at present endangered or vulnerable but at risk. The species is located within restricted geographical areas or are thinly scattered over a more extensive range
- Endemic* and requiring attention by reason of the specific nature of its habitat or the potential impact of its exploitation on its habitat or the potential impact of its conservation status

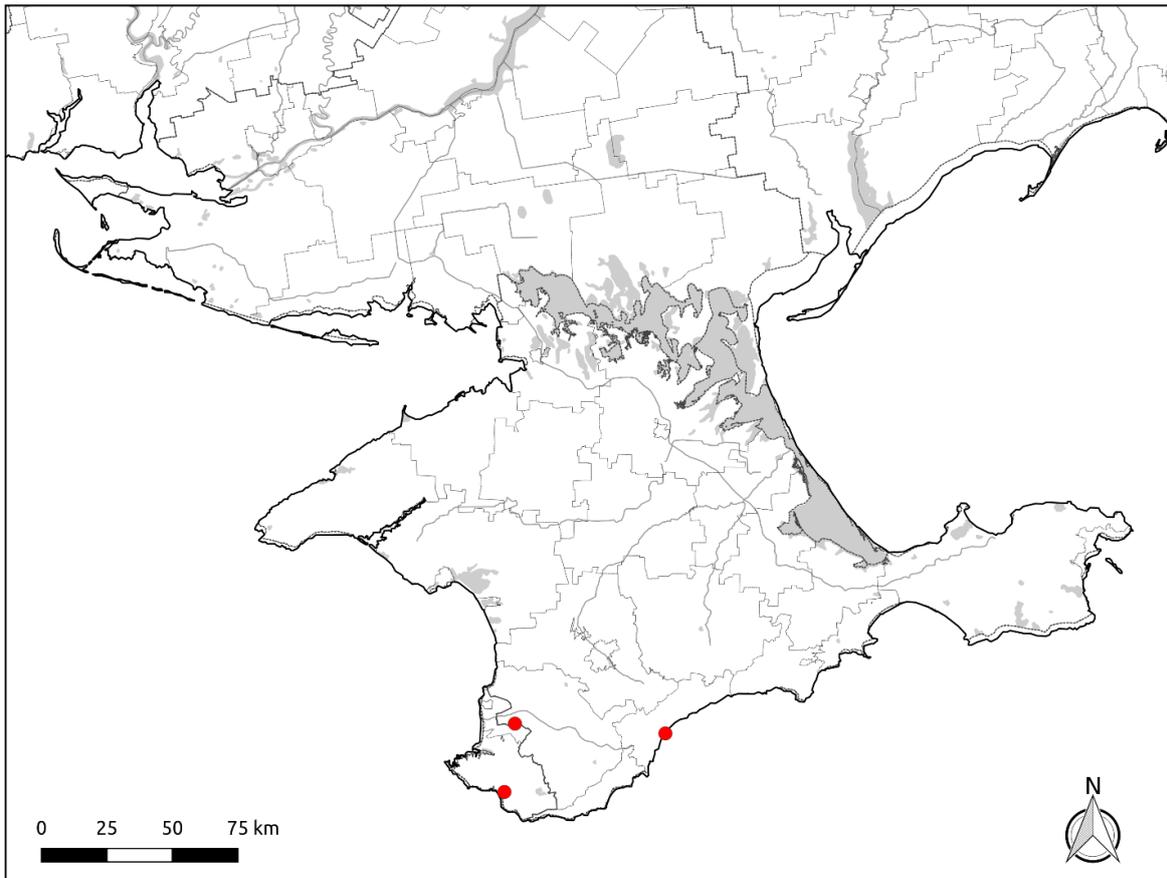
**Remarks:**

**For species only: ecological role (as described in Recommendation 56 (1997))**

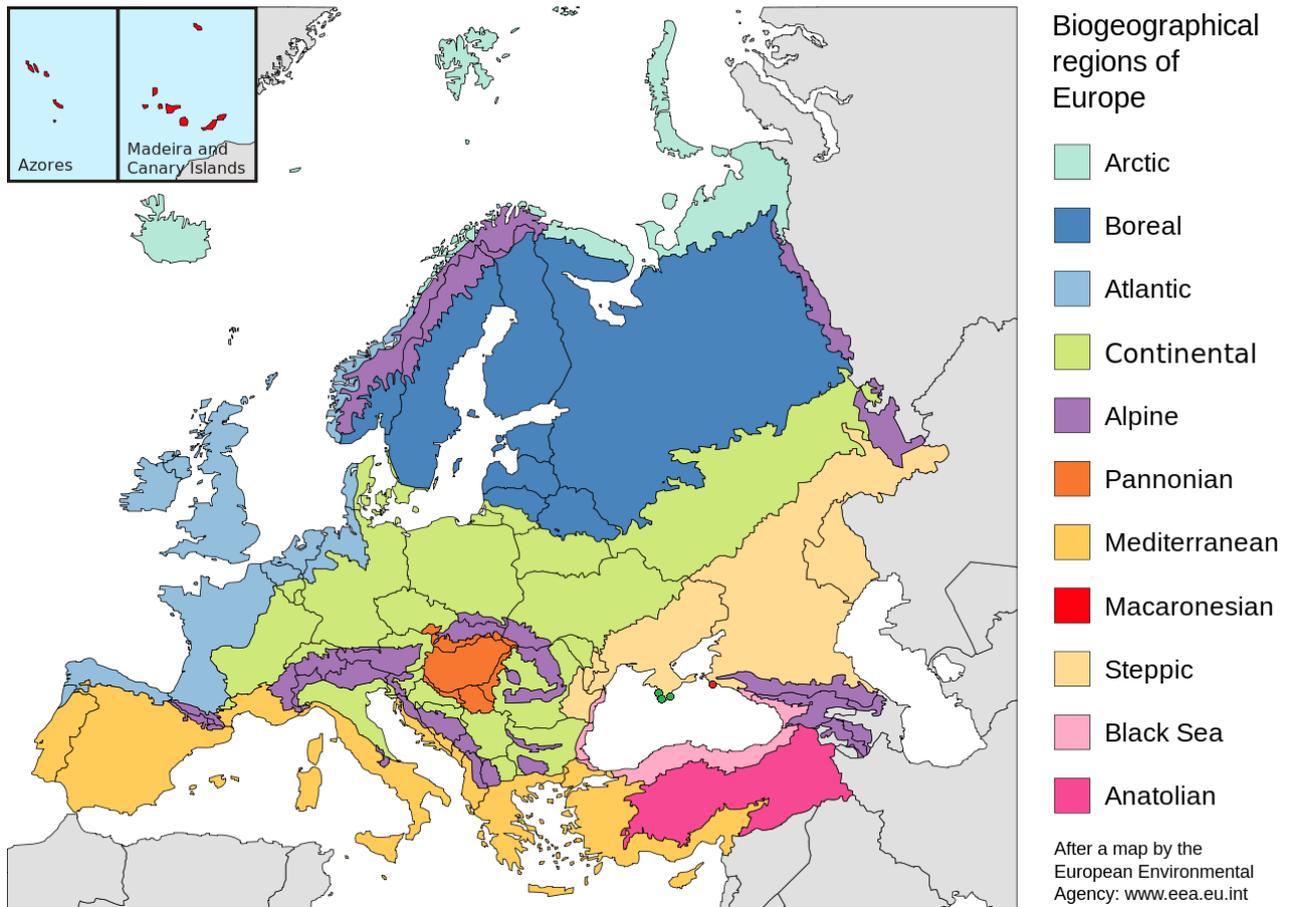
**Geographical distribution:** *Southern coast of Crimea and fragmentarily in the western part of the Northern Macroslope*

**In addition, include maps with the distribution of the species or habitat (GIS format preferred), with reference to scale and projection.**

- in the country: **Ukraine (Crimean peninsula)**



- in the Pan-European region and in other parts of the world: **Ukraine (Crimean peninsula) and Russian Federation (Krasnodar region from Anapa to Novorossiisk).**



- distribution in Ukraine
- distribution in other part of Europe

#### Further comments concerning the geographical distribution :

#### Estimated population size and trends (guideline 1 from Rec. 56 (1997):

Total habitat area in Ukraine is about 200 ha. The area in Russia Federation is not determined.

The area is decreasing, there is a danger of extinction due to intensive recreation and resort development of coastal areas.

#### Reasons for decline or threats:

#### Conservation status: (within country, region, pan-European level, etc ...)

Under protection in the Karadag Natural Reserve and Yalta Mountain-Forest Natural Reserve (Ukraine).

The species from the Red Data Book of Ukraine (*Himantoglossum caprinum*, *Anacamptis pyramidalis*, *Asphodeline taurica*, *Onosma polyphylla*) and the Resolution 6 of Bern Convention (*Himantoglossum caprinum* and *Onosma polyphylla*) are present.

#### Important references / literature / publications:

Didukh Ya. Vegetation cover of the Crimean Mountain (Structure, dynamics, evolution and protection. Kyiv: Naukova dumka, 1992. – 256 p.

Didukh Ya. The Communities of the Class Quercetea pubescenti-petraeae of the Crimean Mountains/ Ukr. phytocoen. coll., 1996.-Ser.A., №1, p. 63-77.

Kuznetsov M. E. Сучасний стан ценопопуляцій реліктового едифікатора аридних рідколісь південно-східного Криму *Pistacia mutica* Fisch. et Mey. //Вісн. Прикарпат. Нац. у-ту ім. Василя Стефаника. Сер. Біологія. – 2012.- с. 35-41.

Литвинская С. А. Растительность Черноморского побережья России (Средиземноморский анклав). Краснодар, 2004.- 118 с.

**Further remarks: (any additional important information not given above, relevant for evaluating the proposal)**

**Picture of species or habitat:**



**Contact Person(s) for additional questions concerning this species or habitat:  
(if multi-country proposal, please add relevant persons for each country)**

Name: **Yakiv Didukh**

Institution: **M. G. Kholodny Institute of Botany**

Postal Address: **01004. Kyiv, Tereschenkivska str. 2**

Country: **Ukraine**

Phone No: **+038 (044) 235-01-20**

Fax No: **+38 (044) 234 40 41**

E-mail: [ya.didukh@gmail.com](mailto:ya.didukh@gmail.com)

**If not identical with Contact Person, author of this data form:**

Name:

Institution:

Postal Address:

Country:

Phone No:

Fax No:

E-mail:



Ref. 2008-6 part 1 Ref. 2008-6 part 2 

Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

Annex I Annex II Annex IV Annex V 

Directive 2009/147/EC (79/409/EEC amended) on the conservation of wild birds

Annex I Annex II Annex III 

Other: (Barcelona Convention, IUCN red data books, etc .....)

Short Description / Distinguishing Characteristics. **Mud volcanoes can be tall and almost flat, periodic and continuously operating, cone-shaped and lake-like. In Ukraine the sizes of craters up to 20 m in diameter, the eruptions are accompanied by gas emissions. Products of the eruption of volcanoes are methane, clay breccia with debris of siderite and other rocks. Around the volcanoes a salt marshes are formed with a complex of typical halophytic species.**

**Syntaxonomy:** *Kalidietea foliati* Mirkin et al. ex Rukhlenko 2012, *Halimionetalia verruciferae* Golub et al. 2001, *Camphorosmo-Agropyrion desertorum* Korzhenevsky et Klyukin ex Golub et al. 2006.

**Characteristic species:** *Artemisia santonica*, *Camphorosma monspeliaca*, *Lepidium crassifolium*, *Petrosimonia brachiata*, *P. oppositifolia*, *Puccinellia fominii*, *Salicornia perennans*, *Suaeda confusa*.

**European Interest.** rare habitat with endemic vegetation.

**Please mark with "X" for which of the following criteria the species or habitat is proposed (as interpreted from the guideline 1 in the Bern Convention's Recommendation 56 (1997), and also indicated in subparagraphs of Article 1 g of the Habitats Directive)**

- Endangered*, except those species whose natural range is marginal in that territory and which are not endangered or vulnerable in the Western Palaearctic Region
- Vulnerable*, i.e. believed likely to move into the endangered category in the near future if the causal factors continue operating
- Rare*, with small populations that are not at present endangered or vulnerable but at risk. The species is located within restricted geographical areas or are thinly scattered over a more extensive range
- Endemic* and requiring attention by reason of the specific nature of its habitat or the potential impact of its exploitation on its habitat or the potential impact of its conservation status

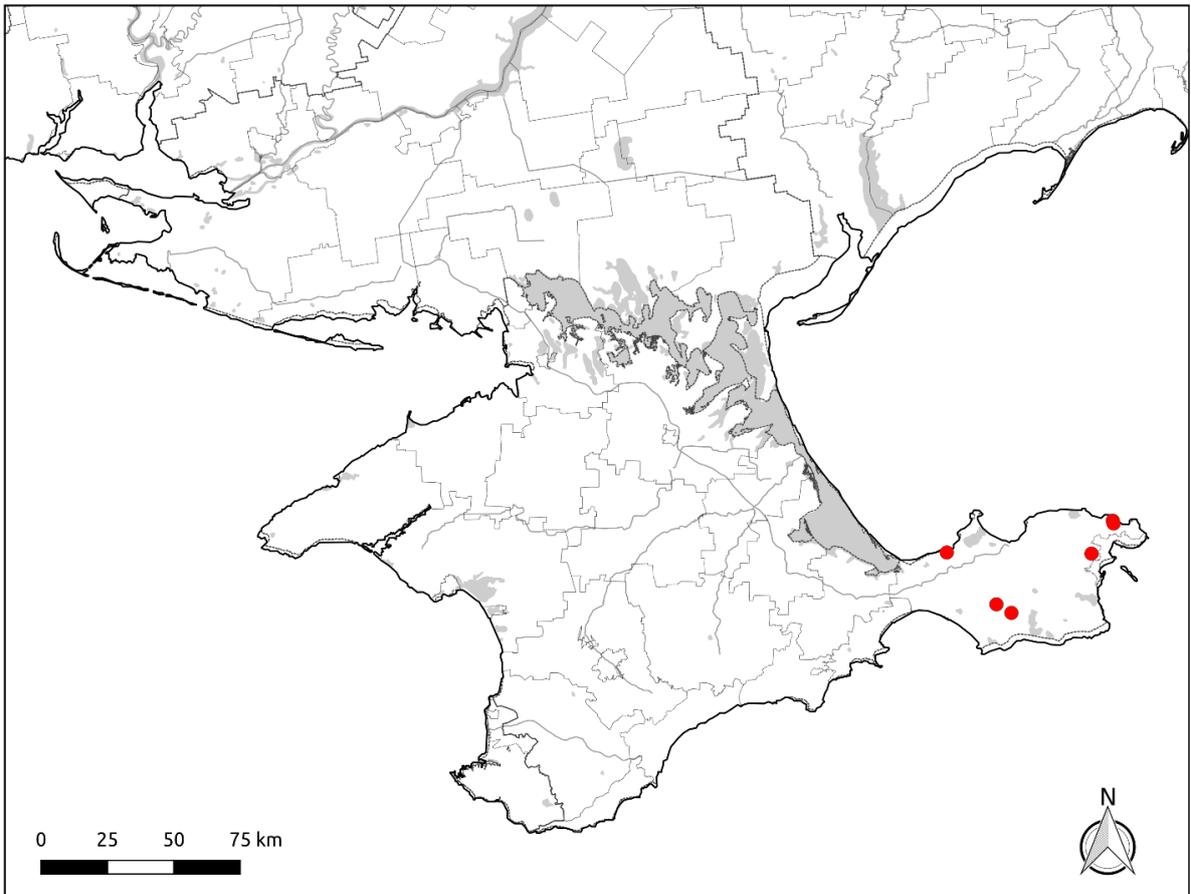
**Remarks:**

**For species only: ecological role (as described in Recommendation 56 (1997))**

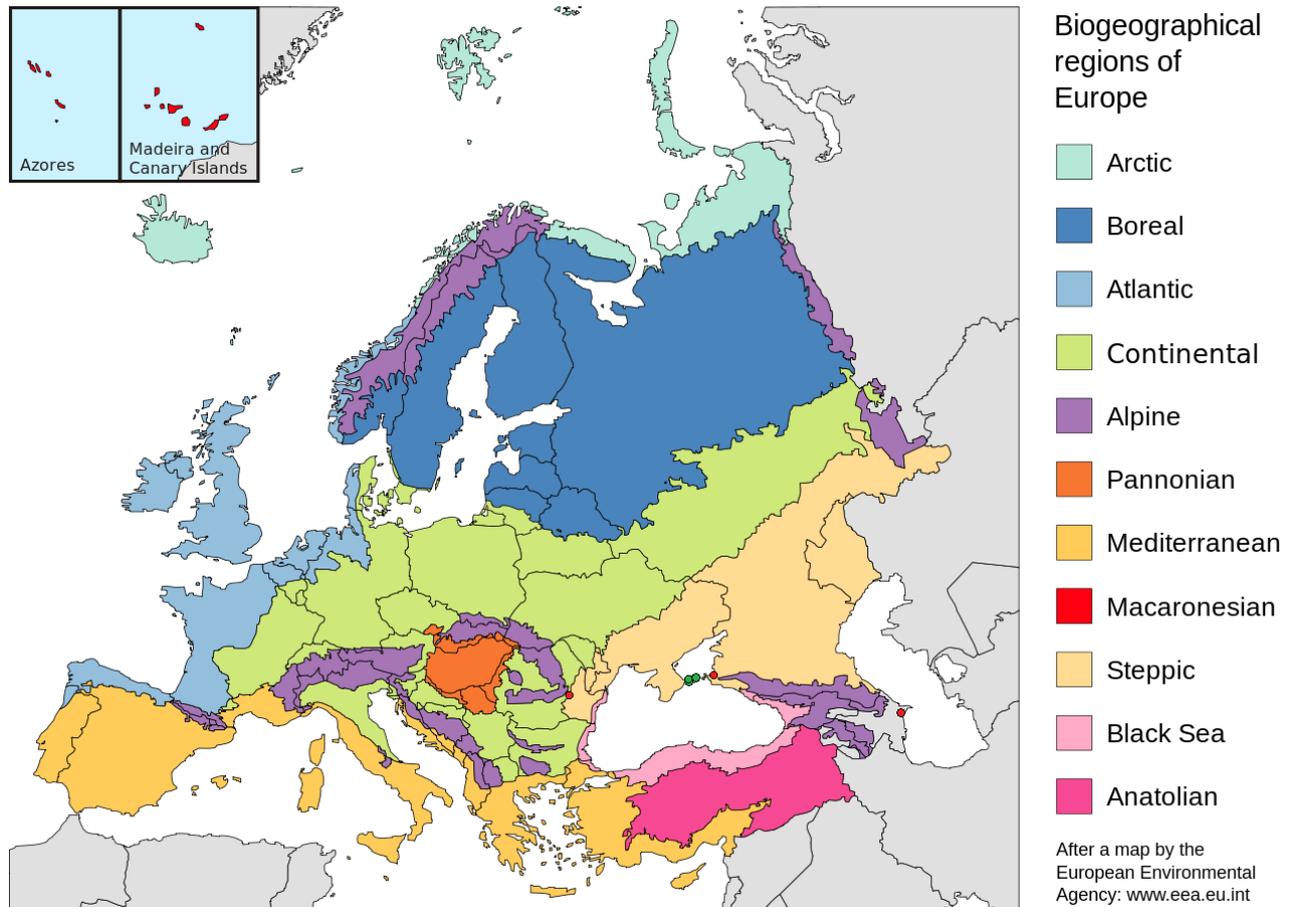
**Geographical distribution:** In steppe zones of Ukraine (Crimean peninsula, south and east of Kerch Peninsula) and in Russian Federation (on Taman Peninsula, Krasnodar Krai). Also other mud volcanoes are located in Azerbaijan (Apsheron peninsula) and Romania (close to Berca in Buzău County).

**In addition, include maps with the distribution of the species or habitat (GIS format preferred), with reference to scale and projection.**

- in the country: In Ukraine: south and east of Kerch Peninsula (to the north of Kerch there is the largest area – Bulganak Massif).



- in the Pan-European region: In Ukraine - south and east of Kerch Peninsula, in Russian Federation – on Taman Peninsula, in Azerbaijan - Apsheron peninsula, and in Romania - close to Berca in Buzău County.



- distribution in Ukraine
- distribution in other part of Europe and in Asia

- in other parts of the world:

Other mud volcanoes are located in Iceland, Greenland, Italy, Iran, Pakistan, Burma, China, and New Zealand, on Sakhalin Island, on the islands of Malaysia, Indonesia, and Japan, in Colombia, Venezuela and USA etc. Additional studies are needed to determine their similarity to the proposed habitat type.

#### **Further comments concerning the geographical distribution :**

#### **Estimated population size and trends (guideline 1 from Rec. 56 (1997):**

Total European habitat's area is not more than 200-300 ha.

**Reasons for decline or threats:** This habitat always was rare. Main modern threats: renewal of condensate recovery, excessive recreation.

**Conservation status: (within country, region, pan-European level, etc ...):** Some species from this habitat are under protection of the Red Data Book of Ukraine (*Bupleurum tenuissimum*, *Crambe grandiflora*, *C. steveniana*, *Orchis picta*, *Sternbergia colchiciflora*, *Stipa capillata*, *Tulipa biebersteiniana*).

**Protected areas:** partly included in Regional Landscape Park "Karalarskyi", National Geological Natural Monument "Sopka Dzhay-Tepe" (10.0 ha), Local Geological Natural Monuments "Hriaziova Sopka Vernadskoho" (1.0 ha), "Hriaziova Sopka Andrusova" (1.0 ha), "Hriaziova Sopka Obrucheva" (1.0 ha). Bulganak Massif is within a key botanical area - Local Landscape Reserve "Osovynskyi step" (Ukraine).

**Important references / literature / publications:**

Грязевые вулканы Керченско-Таманской области. Атлас / Шнюков Е.Ф., Соболевский Ю.В., Гнатенко Г.И. и др. / Под ред. Е.Ф. Шнюкова. – Киев: Наукова думка, 1986. – 149 с.

Корженевский В.В., Клюкин А.А. Синэкология и синморфология растительности грязевых вулканов Крыма // Труды НБС-ННЦ. – Т. 123. – 2004. – С. 152-169.

Холодов В. Грязевые вулканы: распространение и генезис // Геология и полезные ископаемые Мирового океана. – 2012. – №4. – С. 5-27.

Kolomiychuk V.P., Onyshchenko V.A. Osovynskyi Step / Important Plant Areas of Ukraine / V.A. Onyshchenko (editor) / Onyshchenko V.A., Kolomiychuk V.P., Chorney I.I. [et al.]. – Kyiv: Alterpress, 2017. – P. 227-229.

**Further remarks: (any additional important information not given above, relevant for evaluating the proposal)**

**Picture of species or habitat:**





**Contact Person(s) for additional questions concerning this species or habitat:  
(if multi-country proposal, please add relevant persons for each country)**

Name: **Vitaliy Kolomiychuk**

Institution: **O.V. Fomin Botanical Garden Taras Shevchenko National University of Kiev**

Postal Address: **01032, O.V. Fomin Botanical Garden, 1 Simon Petliury St., Kyiv, Ukraine**

Country: **Ukraine**

Phone No: **+38 044 239 31 90**

Fax No: **+38 044 239 3190**

E-mail: [vkolomiychuk@ukr.net](mailto:vkolomiychuk@ukr.net)

**If not identical with Contact Person, author of this data form:**

Name: **Kolomiychuk Vitaliy**

Institution: **O.V. Fomin Botanical Garden Taras Shevchenko National University of Kiev**

Postal Address: **01032, O.V. Fomin Botanical Garden, 1 Simon Petliury St., Kyiv, Ukraine**

Country: **Ukraine**

Phone No: **+38 044 239 31 90**

Fax No: **+38 044 239 31 90**

E-mail: [vkolomiychuk@ukr.net](mailto:vkolomiychuk@ukr.net)