Information Sheet on Ramsar Wetlands (RIS) — 2009-2012 version


Notes for compilers:
1. The RIS should be completed in accordance with the attached Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands. Compilers are strongly advised to read this guidance before filling in the RIS.


3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:
   Elena Cenusa
   Calimani National Park Administration
   Street 22 Decembrie, no.5
   725700- Vatra Dornei
   Suceava
   Romania
   Phone/fax 0040 230 371 104
   office@calimani.ro

2. Date this sheet was completed/updated:
   October 18, 2011

3. Country:
   Romania

4. Name of the Ramsar site:
   Poiana Stampei Peat Bog (Tinovul Poiana Stampei)

5. Designation of new Ramsar site or update of existing site:
   This RIS is for (tick one box only):
   a) Designation of a new Ramsar site ☒; or
   b) Updated information on an existing Ramsar site ☐

6. For RIS updates only, changes to the site since its designation or earlier update:
   a) Site boundary and area
      The Ramsar site boundary and site area are unchanged: ☐

   or
If the site boundary has changed:
  i) the boundary has been delineated more accurately ☑; or
  ii) the boundary has been extended ☑; or
  iii) the boundary has been restricted** ☑

and/or

If the site area has changed:
  i) the area has been measured more accurately ☑; or
  ii) the area has been extended ☑; or
  iii) the area has been reduced** ☑

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site:
Refer to Annex III of the Explanatory Note and Guidelines, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:
   i) a hard copy (required for inclusion of site in the Ramsar List): ☑;
   ii) an electronic format (e.g. a JPEG or ArcView image) ☑;
   iii) a GIS file providing geo-referenced site boundary vectors and attribute tables ☑.

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundary of the Ramsar site is exactly the same as the Natura 2000 site ROSCI0247 Tinovul Mare Poiana Stampei and the Scientific Reserve Poiana Stampei.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):
Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.
47°17'27,78''N; 25°5'56,31''E;

9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.
The peat bog is situated in Suceava County, north Romania, between the villages of Poiana Stampei and Dornişoara, 2 km from the national road DN17 Vatra Dornei – Bistriţa Năsăud. The nearest town – Vatra Dornei – is 20 km east of the peat bog.

10. Elevation: (in metres: average and/or maximum & minimum)
The altitude is 900-1020m above sea level.

11. Area: (in hectares)
640,20 ha

12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The peat bog is included in the Romanian protected areas network, was established as scientific reserve in 1955, and is considered the largest oligotrophic peat bog in Romania. The bog lays on 400 ha and is surrounded by a Norway spruce forest, as a buffer zone. It shelters rare plant species important for Romanian biodiversity, and the bog represents the geographic limit in southeast Europe for a number of these species. It also includes algae communities, zooplankton and insects of scientific and ecological value. The water supply is assured only by rain and water flow.

13. Ramsar Criteria:
Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the Explanatory Notes and Guidelines for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1 •  2 •  3 •  4 •  5 •  6 •  7   8 •   9

14. Justification for the application of each Criterion listed in 13 above:
Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

**Criterion 1:** The site is a rare wetland of subarctic tundra character in Romania. There are 1351 hectares of active raised bogs with *Sphagnum magellanicum* identified at national level, from which 400 hectares are included in Poiana Stampei Reserve. It is the largest peat bog in Romania and consists of a raised bog, forested with *Pinus silvestris f. turfosa*, surrounded by a *Picea abies* (Norway spruce) forest. *Pinus sylvestris f. turfosa* Woel. is an endangered ecotype whose range is restricted to peat bogs, where it is a prominent component of *Sphagnetum magellanici* (Malcuit 1929) Kästner et Flösner 1933 communities. It is also important for preventing floods during spring when snow is melting or rainy periods during summer when the water level of rivers Dorna and Dornișoara increase, as it retains large amounts of water and promote the gradual return of it to the landscape. It is a biofilter that purifies water and the peat mosses absorb carbon dioxide as they grow. In this way, carbon is locked into the body of the mosses as it turns to peat.

Habitat types of the EU Habitats Directive Annex I include:
- 7110* Active raised bogs
- 7140 Transitional mires and quacking bogs
- 9410 Acidophilous Picea forests of the montane to alpine levels (Vaccinio- Piceetea)

**Criterion 2:**
Threatened fungi species: *Gomphus clavatus* (Pers.) Gray (R), *Galerina sphagnorum* (Pers.) Kühner (R), *Suillus flavidus* (Fr. Fr.) Presl. (VU), *Tephrocybe palustris* (Peck) Donk.(VU) (. (VU=Vulnerable, R=Rare)

Protected plant species: *Campanula abietina* Griseb., *Typha shuttleworthii* Koch&Sonder (Bern Convention, Appendix I- strictly protected species) and *Ligularia sibirica* L. (Habitats Directive, Appendix II)


Rare species in Romania: fungi- *Cortinarius pholideus* (Fr.) Fr., bryophyte- *Sphagnum wulfianum* Girc, *Sphagnum palustre* L., plants- *Carex lolaica* L.


**Criterion 3:** Species important for maintaining the biological diversity of the region and of the country: endemic algae for Poiana Stampei peat bog (*Batrachospermum dornense* Tarnavschi & Radulescu), new
species, forms and varieties of algae new for the science described from this bog (Calothrix gypsophila (Kutz.) Thur. f. turfosa Tarnavschi et Mitroiu, Anabaena verrucosa var. polygona Tarnavschi & Mitroiu, Anabaena augustmalis var. longispora Tarnavschi & Mitroiu, Anabaena sphagnicola Tarnavschi & Mitroiu, Closterium libellula var. erasum Tarnavschi et Radulescu, Closterium kuetzingii var. brevisetaceum Tarnavschi & Radulescu, Cosmarium subreinschii var. obtusatum Tarnavschi & Radulescu), relict algae (Eunotia septentrionalis Østrup, Eunotia parallela Ehrenberg, Achnanthes kryophila J.B.Petersen, Achnanthes linearis (W. Smith) Grunow, Gomphocymbella ancyli (Cleve) Hustedt, Frustulia rhomboides (Ehrenberg) De Toni, Pinnularia petsamoensis K. Mölder, Pinnularia streptophorae P. Cleve, Pinnularia stomatophora Grunow, Cymbella heteropleura (Ehrenberg) Kützing).

The vascular plants specific for the boreal climate cover small areas in Romania (about 1400 hectares): Pinus silvestris f. turfosa, Betula pubescens, Betula waristorfii, Betula humilis, Salix aurita, Salix repens, Vaccinium oxycocus, Empetrum nigrum, Andromeda polifolia, Drosera rotundifolia, Eriophorum vaginatum, Dianthus superbus, Comarum palustre, and also the bryophites: Sphagnum wulfianum, S. rubellum, S. fuscum, S. plumosum, Calypogeia sphagnicola (Arnell & J. Perss.) Warnst. & Loeske, Odontoschisma sphagni (Dicks.) Dumort.

Some plants are relicts in Romania: Sphagnum wulfianum, Dryopteris cristata, Betula pubescens, Empetrum nigrum, Drosera rotundifolia, Ligularia sibirica.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):
Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:
The peat bog is located in the alpine region of Central Europe- in accordance with the European Topic Centre on Nature Protection and Biodiversity, 2005. Five biogeographic regions exist in Romania, making it the country with the highest number in Europe. The alpine region includes the Carpathian Mountains and adjacent valleys.

b) biogeographic regionalisation scheme (include reference citation):
Donita, N., et al. (2005) Habitatele din Romania, Bucuresti

16. Physical features of the site:
Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

The site is located in the Dorna Depression, surrounded to the south and east by the Calimani Mountains and to the west by the Bargau Mountains. The Dorna and Dornisoara Rivers border the reservation to the east and west. The substrate consists of sediment deposits on crystalline and Eocene grit stone bedrock. The peat bog is of natural origin, and the peat accumulation process started in the post-glacial period, on an existing eutrophic fen. The peat bog appeared by miring a spruce forest, a fact proved by the existent trunks horizon. The peat thickness exceeds 1 m and is still active. The water level shows seasonal fluctuations and the water is acidic, with a pH of 3.6 -5. Thermic annual water levels vary from -1° to 14°C. Water transparency has low values, depending mainly on precipitation levels and the amount of peat particles released from the substrate. Annual precipitation input ranges from 600 to 800 mm. The colour is tawny (brown), due to humic compounds and peat particles in suspension. The soil type is luvic brown.

17. Physical features of the catchment area:
Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

The site is located at the foot of the Calimani Mountains, source of the Dorna and Dornisoara Rivers, which flow to the east and west of the peat bog. The highest peaks in the neighbourhood are Tamau
Geologically, the Calimani Mountains comprise the main volcanic zone of the Eastern Carpathians, and are composed of pyroxenic andesites and amphiboles. The Bargau Mountains are composed of sedimentary rocks. The climate is temperate continental with excessive nuances specific for Eastern Europe. The local influences are those of cold boreal air masses which flow from the north through the Dorna Depression. Thermic inversions are characteristic here, especially in fall and winter. The annual average temperature is 4.2 °C and the number of freezing days is 179. Multi annual average precipitation value is 742.3 mm, with the highest values in the warm season. Foehn processes are active mainly in spring and summer. The main soil type in the area is acid brown. The lands are used primarily for grazing, and a small percent for agriculture.

18. Hydrological values:
Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The peat bog is influenced very little hydrologically by the water network of the region. But the convex shape of the site may influence the waters in its neighbourhood. The peat bog is supplied mainly by rainwater but also by the water table. The hydrological and hydrochemical properties of the bog are highly differentiated from the surrounding surface water network. The waters in the bog vary from eutrophic to mezotrophic and then to oligotrophic. Where the peat layer is the thickest, chemical compounds (oxygen, sulphates, phosphates, nitrates) are at their lowest levels; their concentration increases where the peat layer is thin. Carbon dioxide and organic substances increase in lagg waters.

19. Wetland Types

a) presence:
Circle or underline the applicable codes for the wetland types of the Ramsar “Classification System for Wetland Type” present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the Explanatory Notes & Guidelines.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)
Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)
Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:
List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

Xp

20. General ecological features:
Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The convex surface of the site is covered with pine trees (*Pinus silvestris f. turfosa*). At the borders, the pine gives way to Norway spruce, which is characteristic for high lands in the area. The ground vegetation of the peat bog consists primarily of a *Sphagnetum* plant community, which is comprised mainly of *Sphagnum* spp., *Eriophorum* spp. and *Vaccinium* species. The acidity of the water allows only stenohydric species for acidic waters and euryhydric species to develop. The macrophytes community is a very important biotic factor, not only representing an element of the ecosystem, but also participating in peat accumulation and having a high impact on water properties. Floristically, the site includes wetland and ground plant species. Both are highly dependent on precipitation. The plants are scarcely used by phytophages, so the trophic chain is short. The surplus of the vegetal mass is accumulating, and by partially decomposing, takes part in peat formation. Other substances which participate in peat accumulation process are difficult to utilize...
by the producers (lignin, humic compounds and cellulose). Together, these factors protect the bog ecosystem from invading organisms, due to the difficult conditions and the high degree of specialisation required for survival in the bog.

21. Noteworthy flora:
Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

The site is important for the sub boreal plant communities that grow here: white birch, shrubby birch, eared willow, creeping willow, cranberries and cowberries, bog rose mary, black crowberry, round leaf sundew, fringed pink, siberian ligularia and Sphagnum species. These species are not well represented in Romania due to different climatic conditions. The Scots pine forma turfosa has a very slow growth due to poor nutrient conditions. 100 year old pine trees have a diameter of just 15 cm in the core bog, while those at the spruce forest border are much more developed. The sibirian ligularia (Ligularia sibirica) is a plant species protected at the European level and listed in annex II of the European Habitat Directive. The main plant communities are: Vaccinio Piceetea and Alnio glutinosae- incanae in the buffer area, while in the bog there are Vaccinio- Pinetum sylvestris, Caricetum nigrae Braun, Cirsietum rivularis Nowinski, Sphagno – Piceetum Knach and Sphagnetum magellanici Kastner et Flossner.

22. Noteworthy fauna:
Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

Biogeographically, the Dorna Depression is situated between two main paleoarctic faunistical regions: eurasiberian and ponto-central-asia. Many invertebrate species live in the peat bog, while vertebrates are few. The main invertebrate groups are: rotifers, cladocers, copepods and insects. With very specific adaptations, the animal communities are particular zooenosis, many of them relicts and boreal elements: hymenopters like Morulina gigantea and Formica fusca picea; spiders like Theridium undulatum, Aranea multipunctata, Drasides cognatus, Xysticus pin; coleopters like Thamnotettix tornellus, T.bigutatum and Coeliodes nigritarsis; butterflies: Colia palaeno, Anisalys bucorinella, Philedone goringana, Epinotia gordonia, Hedy rosemalcania, Argyroploce schaefferiana. In the surrounding forest, bird species like Anthus trivialis (tree pipit), Anthus pratensis (meadow pipit) and Dendrocopos major (great spotted woodpecker), may be found. Wolf’s (Canis lupus) traces are also common.

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

No archaeological or religious sites have been documented so far within the peat bog. For centuries the site was viewed by the local population as an evil place due to the poorness of the land and the brown waters.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

No

If Yes, tick the box □ and describe this importance under one or more of the following categories:
i) sites which provide a model of wetland wise use, demonstrating the application of traditional
knowledge and methods of management and use that maintain the ecological character of the
wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have
influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local
communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is
strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:
   a) within the Ramsar site:
      The land is government property.

   b) in the surrounding area:
      There are different kinds of land owners: pastures and crop lands belong to the local population. Most of
      the surrounding forest lands are owned by local authorities and the government, while some parcels are in
      private ownership.

25. Current land (including water) use:
   a) within the Ramsar site:
      The site is scientific reservation. The main activities allowed here are scientific research and education.

   b) in the surroundings/catchment:
      The land is used by the local population for raising cattle and for agriculture. Other activities in the area
      include logging and stone exploitation

26. Factors (past, present or potential) adversely affecting the site's ecological character,
   including changes in land (including water) use and development projects:
   a) within the Ramsar site:
      The main threats to the ecological value of the site are grazing and berries and mushroom collecting.
      Other factors include excessive traffic on the shortcut through the reservation by the local population,
      and litter left behind by them. High winds have resulted in serious damages to tree populations, especially
      to the spruce buffer ring. Wind damage is expected to lead to an increase in bark insects population.

   b) in the surrounding area:

      On east side, the peat bog is bordered by a railway and a road. Substances released from trains and heavy
dust produced by truck traffic from a stone quarry may negatively influence the vegetation and waters.
Another factor is cattle, which may cross the reservation because there is no fence to stop them.

27. Conservation measures taken:
   a) List national and/or international category and legal status of protected areas, including boundary
      relationships with the Ramsar site:
      In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of
      the site under these designations.
      The peat bog was designated a scientific reservation over fifty years ago. As a result, the rare flora and
      fauna found here has been protected. The designation has also increased interest for scientific research,
      and now the reserve is a Natura 2000 site.
b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

- Ia ☒;
- Ib ☐;
- II ☒;
- III ☐;
- IV ☐;
- V ☐;
- VI ☐

c) Does an officially approved management plan exist; and is it being implemented?:
There is an official management plan approved by the Romanian Academy which will be implemented as soon as other agreements have been obtained.

d) Describe any other current management practices:
- There is one person designated to take care of forestry matters in the reservation, including wind damage, insect attacks, and hunting.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.
- species inventories for the peat bog
- biodiversity protection and preservation programs
- public awareness campaigns regarding the status of the protected area and its natural and scientific values

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.
There are no facilities for researching in the protected area or in the neighbourhood. Even so, scientists have completed important research here, and a large body of literature on the peat bog is available. Lately, research has focused on plant species and fungi, and a number of ecological theses on these topics have recently been published. There is no established monitoring network.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There is a footbridge crossing the reservation from east to west which is used by school groups visiting the reservation and by local residents as a shortcut. The informational infrastructure is not developed: there is no visitor centre, parking, or other facilities. There are information panels at the beginning of the footbridge and a resting place.

31. Current recreation and tourism:
State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The main tourist categories are school groups, students and researchers. The average number of visitors per year is approximately 400, all using the footbridge. Guiding services are sometimes provided by the person charged with guarding the area.

32. Jurisdiction:
Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

The reservation is situated in the village of Poiana Stampei, Suceava County, and is under the jurisdiction of the Ministry of Environment and Forests through The National Forest Administration – Romsilva. Calimani National Park Administration manages the site.

33. Management authority:
Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.
34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

1. Boișteanu, T.- 1970, Date cu privire la variația O2, CO2, și a substanțelor organice în apa mlaștinei Tinovul Mare (Poiana Stampei), Studii și Comunicări de Ocrotirea Naturii, 47-82, Suceava
5. Boișteanu, T.- 1974, Date cu privire la zooplanctonul unor mlaștini din comuna Poiana Stampei, Analele Științifice ale Univ. „Al.I.Cuza”, tom. XX, s.II., fasc.1, Iași
10. Cărăuşu S., Boiștean T.- 1970, Date cu privire la compoziția chimică a apei din tinoaveli de la Căsoi și Pilugani (comuna Poiana Stampei, județul Suceava), Analele Științifice ale Univ. „Al.I.Cuza” (serie nouă), secțiunea II (Științele Naturii), Tom XVI, Fasc. 1, Iași
14. Chiman, V., 2009- Cercetări taxononice și ecologice asupra macromicetelor din mlaștinele situate în zona montană a județului Suceava, Universitatea Al.I.Cuza, teză de doctorat
16. Danu, Mihaela- Aurelia, 2008- Diversitatea floristică și fitocenologică a ecosistemelor din bazinul superior al râului Dorna, Universitatea Al.I.Cuza din Iași, teză de doctorat
20. Lupșa, Viorica – 1979, Corologia speciei Andromeda polifolia L. În Carpații Românești, Contribuții botanice, Cluj- Napoca
21. Nimiţan, Erica, Ailisei, Octavita, Marin, Elena, Dunca, Simona - 1997, Microbiological Investigations in the Water and Sediments of the Tinovul Mare – Poiana Stampei Reservation, Analele Ştiinţifice ale Univ. „Al.I.Cuza”, tom. XLIII, s.II., Biologie Vegetală, Iaşi
22. Nimiţan, Erica, Ailisei, Octavita, Marin, Elena, Dunca, Simona, Olteanu, Zenovia - 1998, The Antimicrobial Activity of the Mud from the Poiana Stampei Peatbog (The County of Suceava), Analele Ştiinţifice ale Univ. „Al.I.Cuza”, tom. XLIV, s.II., Biologie Vegetală, Iaşi
23. Oprescu, Adrian - 2008, Lista critica a plantelor vasculare din Romania, Editura Universitatii „Al.I.Cuza” Iaşi
30. Tarnavschi, T. Ion, Mitrou, N. – 1956, Contribuții la studiul florei şi vegetației algologice turficole din bazinul Dornelor (Reg. Suceava), Buletin Ştiinţific, Secţia de Biologie şi Știinţe Agricole, Tom VIII, nr.2, Cluj Napoca
31. Tarnavschi, T. Ion, Mitrou, N. – 1957, Cyanophiceae noi descrise din flora algologică turficolă de la Poiana Stampei (Reg.Suceava), Buletin Ştiinţific, Secţia de Biologie şi Știinţe Agricole (Seria Botanică) Tomul IX, nr.1
32. Tănase, C. - 2001, Important fungus areas in the oligotrophic peat bogs of Romanian Eastern Carpathians Mountains, project: ’Anthropogenous pressure on fungi diversity from extreme environments of Romania”
34. Toma, Mihai – 1972, Macromicete din Depresiunea Dornelor (Carpaţii Orientaţi), Buletinul Grădini Botanice, tomul 18, Iaşi
35. Toma, Mihai – 1972, Macromicete din Depresiunea Dornelor (Aphyllophorales), Lucrările Staţiunii „Stejarul”, Ecologie Terestră şi genetică, 21-25, Pângăraţi

Please return to: Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland