

RED LIST OF ROMANIAN MACROFUNGI SPECIES

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Introduction

Fungi are one of the largest groups of organisms, forming a major component of the biodiversity of Romania. The large numbers of species, the taxonomic problems they raise, the very considerable gaps in knowledge of their distribution and ecology and the difficulties in monitoring these organisms, that produce generally ephemeral fruitbodies, have all contributed to the vision that nothing can realistically be done about their conservation. In present that view is out of date and can no longer be sustained.

The Red List of Romanian macrofungi species in an essential document for rational management of the natural ecosystems. It provides critical information necessary for taking political decisions about priorities in nature management and biodiversity conservation in Romania. It evaluates extinction risks for organisms according to the specifically defined and globally accepted criteria of the International Union for Nature Conservation (IUCN).

In recent years, as a result of global biodiversity initiatives, there has been an increased interest in assessing the relative importance of Romanian natural habitats for fungi. In Romania are registered 8727 species of fungi (Bontea, 1985, 1986). In 1999, Pop *et al.*, proposed 114 species candidates for the Red List of Romanian Macrofungi species.

Priority macrofungi species

The macrofungi diversity conservation is not a particular objective in Romania; it takes part of the general frame of the natural habitats protections.

Since 1991, European mycologists have been preparing a list of fungi for possible inclusion in the Bern Convention through the European Council for Conservation of Fungi. The list is based on our present knowledge of the

conservation status, ecology and distribution of macrofungi species.

The list contains 33 species included in the Convention Appendix (2004), between which 11 species are found in Romania: *Bovista paludosa* Lév., *Gomphus clavatus* (Pers. : Fr.) Gray, *Hapalopilus croceus* (Pers. : Fr.) Donk, *Hericium erinaceum* (Bull. : Fr.) Pers., *Hygrocybe calyptriformis* (Berk. & Broome) Fayod, *Hygrophorus purpurascens* (Alb. & Schwein. : Fr.) Fr., *Laricifomes officinalis* (Vill. : Fr.) Kotl. & Pouzar, *Leucopaxillus compactus* (Fr.) Neuhoff., *Myriostoma coliforme* (With. : Pers.) Corda, *Phylloporus pelletieri* (Lév.) Quéf and *Sarcosphaera coronaria* (Jacq.) Boud.

The species *Suillus flavidus* (Fr.:Fr) Presl. considered as very rare and are considered as priority species, proposed in the first category of Habitats European Directive (1991). Among the species that are considered as rare proposed in the second category, but not included in the Habitats Directive we mention: *Galerina sphagnorum* (Pers. : Fr.) Kühn., *Hebeloma helodes* Favre and *Tephrocybe palustris* (Peck) Donk.

Conventional marks

In the Red Lists of Romanian macrofungi species are mentioned 179 taxa according to the current version of the Categories & Criteria recommended by the IUCN in 2001. The nomenclature of macrofungi species is presented in alphabetical order follows Berteau *et al.* (1989) and the names of the authors are abbreviated after recommendations of Hawksworth (1980).

Red List Category:

Critically Endangered – **CR**

Endangered – **EN**

Vulnerable – **VU**

Near Threatened – **NT**

Data Deficient – **DD**

Other abbreviations:

Macrofungi species including Convention Appendix – **bold text**

Priority species proposed in the first category of Habitats European Directive (1991) – underline text

The list of threatened macrofungi species in Romania

Agaricus comtulus Fr. – **VU**
Agaricus cupreobrunneus (Møll.) Pilat – **VU**
Albatrellus cristatus (Pers. : Fr.) Kotl. & Pouz. – **CR**
Albatrellus pes-caprae (Pers. : Fr.) Pouz. – **NT**
Amanita caesarea (Scop. : Fr.) Pers. – **VU**
Amanita ceciliae (Berk. & Broome) Bas – **NT**
Amanita regalis (Fr.) Michael – **NT**
Amanita strobiliformis (Vitt.) Bertill. – **NT**
Amanita vittadinii (Mor.) Vittad. – **NT**
Anthurus archeri (Berk.) Fischer – **NT**
Battarea phalloides (Dicks. : Pers.) Pers. – **EN**
Boletus appendiculatus Sch. – **NT**
Boletus queletii Schulz. – **VU**
Boletus radicans Pers. : Fr. – **VU**
Boletus satanas Lenz – **VU**
Bovista paludosa Lév. – **EN**
Calyprella campanula (Ness : Pers.) Cooke – **VU**
Cantharellus friesii Quéf. – **VU**
Cantharellus lutescens (Pers. : Fr.) Fr.
Catathelasma imperiale (Quéf.) Sing. – **VU**
Choiromyces venosus (Fr.) Th. M. Fr.
Clathrus ruber Pers. : Pers. – **VU**
Clavariadelphus ligula (Sch. : Fr.) Donk – **VU**
Clitocybe odora (Bull. : Fr.) Kumm. – **NT**
Clitocybe subalutacea (Batsch : Fr.) Kumm. – **NT**
Clitocybe vermicularis (Fr.) Quéf. – **NT**
Collybia alkalivirens Sing. – **NT**
Collybia distorta (Fr.) Quéf. – **NT**
Collybia nivalis (Luthi & Plomb.) Moser – **NT**
Collybia racemosa (Pers. : Fr.) Quéf. – **NT**
Coprinus alopecia Lasch – **NT**
Coprinus picaceus (Bull. : Fr.) S. F. Gray – **NT**
Cordyceps capitata (Holmsk. : Fr.) Link. – **NT**
Cordyceps entomorrhiza (Dicks. : Fr.) Link. – **NT**
Cordyceps militaris (L. : Fr.) Link. – **NT**
Cordyceps ophioglossoides (Ehrlh. : Fr.) Link. – **NT**
Cortinarius bulliardii (Pers. : Fr.) Fr. – **VU**
Cortinarius cinnabarinus (Fr.) Fr. – **NT**

Cortinarius cotoneus Fr. – **NT**
Cortinarius dibaphus Fr. – **NT**
Cortinarius napus Fr. – **NT**
Cortinarius orellanus Fr. – **VU**
Cortinarius percomis Fr. – **NT**
Cortinarius praestans (Cordier) Gill. – **NT**
Craterellus cinereus Pers. : Fr. – **NT**
Cudonia circinans (Pers. : Fr.) Fr. – **NT**
Discina melaleuca Bres. – **VU**
Elaphomyces asperulus Vittad. – **CR**
Elaphomyces echinatus Vittad. – **EN**
Elaphomyces reticulatus Vittad. – **VU**
Elaphomyces variegatus Vittad. – **VU**
Faerberia carbonaria (Alb. & Schwein.) Pouzar – **EN**
Floccularia straminea (Kumm.) Pouz. – **NT**
Galerina sphagnorum (Pers. : Fr.) Kühn. – **NT**
Gautieria graveolens Vittad. – **EN**
Gautieria morchellaeformis Vittad. – **EN**
Geastrum quadrifidum Pers. : Pers. – **NT**
Geastrum rufescens Pers. : Pers. – **NT**
Geastrum pectinatum Pers. : Pers. – **NT**
Geoglossum glutinosum (Pers. : Fr.) Durand – **EN**
Geoglossum ophioglossoides (L.) Sacc. – **EN**
Gomphidius roseus (Fr.) Fr. – **NT**
Gomphus clavatus (Pers. : Fr.) Gray – **NT**
Grifola frondosa (Dicks. : Fr.) Gray – **NT**
Gymnopilus bellulus (Peck.) Murr. – **VU**
Gyromitra ancilis (Pers. : Fr.) Kreisel – **VU**
Gyromitra fastigiata (Krombh.) Rehm – **EN**
Gyromitra gigas (Krombh.) Cooke – **EN**
Gyromitra infula (Schaeff. : Fr.) Quéf. – **NT**
Gyrodon lividus (Bull. : Fr.) Sacc. – **VU**
Gyroporus castaneus (Bull. : Fr.) Quéf. – **NT**
Hapalopilus croceus (Pers. : Fr.) Donk – **EN**
Hebeloma helodes Favre – **NT**
Helvella acetabulum (L.) Quéf. – **NT**
Helvella atra Holmskj. : Fr. – **VU**
Helvella barlae (Boud.) P. Karst. – **VU**
Helvella ephippium (Lév.) Boud. – **VU**
Helvella latispora Boud. – **VU**
Helvella leucomelaena (Pers.) Nannf. – **EN**
Helvella pezizoides (Afzel. : Fr.) Boud. – **EN**
Hericium clathroides (Pal.) Pers. – **VU**
Hericium erinaceum (Bull. : Fr.) Pers. – **VU**
Hohenbuchelia geogenia (DC. : Fr.) Sing. – **NT**
Hydnellum suaveolens (Scop. : Fr.) Karst. – **NT**
Hygrocybe calyptriformis (Berk. & Broome) Fayod – **VU**
Hygrocybe coccinea (Schff. : Fr.) Kumm. – **NT**
Hygrocybe laeta (Pers. : Fr.) Kumm. – **VU**
Hygrocybe punicea (Fr. : Fr.) Kumm. – **NT**
Hygrocybe reae (Maire) Lange – **NT**

Hygrophorus erubescens (Fr.) Fr. – NT
Hygrophorus hypotejus (Fr.) Fr. – NT
Hygrophorus marzuolus (Fr.) Bres. – NT
Hygrophorus penarius Fr. – NT
Hygrophorus purpurascens (Alb. & Schwein. : Fr.) Fr. – VU
Hygrophorus russula (Schaeff. : Fr.) Quél. – NT
Hymenochaete cruenta (Pers. : Fr.) Donk. – NT
Hypholoma elongatum (Pers. : Fr.) Ricken – VU
Laricifomes officinalis (Vill. : Fr.) Kotl. & Pouzar – EN
Lactarius aspideus (Fr. : Fr.) Fr. – NT
Lactarius citriolens Pouzar – NT
Lactarius mairei Malençon – NT
Lactarius picinus Fr. – NT
Lactarius salmonicolor Heim & Lecl. – NT
Lactarius uvidus (Fr. : Fr.) Fr. – NT
Leccinum oxydabile Sing. – VU
Leotia lubrica (Scop.) Pers. – VU
Lepiota badhamii Bk. & Br. – VU
Leucoagaricus macrorrhizus Locq. – NT
Leucopaxillus compactus (Fr.) Neuhoff. – VU
Leucopaxillus tricolor (Peck) Kühner – NT
Limacella stepicola Zerova & Wasser – NT
Lycoperdon echinatum Pers. : Pers. – NT
Lyophyllum infumatum (Bres.) Kuhn. – NT
Lyophyllum transforme (Britz.) Sing. – NT
Marasmius collinus (Scop. : Fr.) Sing. – NT
Melanogaster ambiguus (Vittad.) Tul. – NT
Melanogaster odoratissimus (Vittad.) Tul. – VU
Melanogaster variegatus (Vittad.) Tul. – VU
Melanophyllum haematospermum (Bull. : Fr.) Kreisel – NT
Micromphale brassicolens (Romagn.) Antonín & Noordel. – NT
Micromphale foetidum (Sowerby : Fr.) Antonín & Noordel. – NT
Montagnea radiosa (Pallas) Sebek – VU
Morchella conica Pers. – NT
Mutinus caninus (Huds. : Pers.) Fr. – NT
Mycena crocata (Schrad. : Fr.) Kumm. – NT
Myriostoma coliforme (With. : Pers.) Corda – VU
Neotiella rutilans (Fr.) Dennis – VU
Neotiella vivida (Nyl.) Dennis – VU
Nyctalis asterophora Fr. – NT
Nyctalis parasitica (Bull. : Fr.) Fr. – NT
Onygena equina (Willdenow) Pers. : Fr. – NT
Otidea cochleata (L. : Fr.) Fuckel – NT
Otidea onotica (Pers. : Fr.) Fuckel – NT
Paneolus fimiputris (Bull. : Fr.) Quél. – NT
Peziza limnaea Maas Geesteranus – NT
Peziza saniosa Schrader – NT
Phaeocollybia lugubris (Fr.) Heim. – NT
Phallus hadriani Vent. : Pers. – VU
Pholiota conissans (Bull.) Moser – NT
Phylloporus pelletieri (Lév.) Quél. – VU
Pisolithus arhizus (Scop. : Pers.) S. Rauschert – VU
Pluteus petassatus (Fr.) Gill. – NT
Pluteus salicinus (Pers. : Fr.) Kumm. – NT
Polyporus rhizophilus Pat. – VU
Polyporus rhodoxanthus (Schw.) Bres. – NT
Poronia punctata (L. : Fr.) Fr. – NT
Ptychoverpa bohemica (Krombh.) Boid. – VU
Rhizopogon luteolus Fr. & Nordh. – VU
Rhodotus palmatus (Bull. : Fr.) Maire – NT
Rickenella fibula (Bull. : Fr.) Raith. – NT
Russula medullata Romagn. – NT
Russula zvarae Vel. – NT
Sarcosphaera coronaria (Jacq.) Boud. – NT
Sowerbyella unicolor (Gill.) Nannf. – VU
Sparassis crispa (Wulf. in Jacq.) Fr. – VU
Strobilomyces strobilaceus (Scop. : Fr.) Berk. – NT
Stropharia albocyanea (Fr.) Quél. – NT
Stropharia hornemannii (Fr. : Fr.) Lund. & Nannf. – NT
Suillus flavidus (Fr. : Fr.) Presl. – VU
Suillus grevillei (Klotzsch in Fr.) Sing – VU
Suillus plorans (Roll.) Sing. – VU
Suillus tridentinus (Bres.) Sing. – VU
Tephroclype palustris (Peck) Donk. – NT
Torrendia pulchella Bres. – VU
Tremiscus helvelloides (DC. : Fr.) Donk – NT
Trichoglossum hirsutum (Fr.) Boud – NT
Tricholoma focale (Fr.) Ricken – NT
Tricholoma luteovirens (Salb. & Schw. : Fr.) Ricken – NT
Tricholoma orirubens Quél. – NT
Tuber aestivum Vittad. – NT
Tuber maculatum Vittad. – NT
Tuber melanosporum Vittad. – NT
Tuber puberulum Bk. et Br. – VU
Tuber rufum Poll. : Fr. – VU
Tulostoma brumale Pers. : Pers. – NT
Verpa conica (Mull. : Fr.) Swartz – NT
Volvariella bombycina (Schff. : Fr.) Sing. – VU
Volvariella surrecta (Knapp) Sing. – VU
Volvariella murinella (Quél.) Mos. – VU
Xerocomus parassiticus (Bull. : Fr.) Quél. – NT
Xylaria carpophila (Pers.) Fr. – DD

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Photo 1 – *Amanita regalis* (Fr.) Michael – NT

Photo 2 – *Leotia lubrica* (Scop.) Pers. – VU

Photo 3 – *Hericium clathroides* (Pal.) Pers. – VU

Photo 4 – *Hygrocybe punicea* (Fr. : Fr.) Kumm. – NT

Photo 5 – *Morchella conica* Pers. – NT

Photo 6 – *Nyctalis asterophora* Fr. – NT

Photo 7 – *Phallus hadriani* Vent. : Pers. – VU

Photo 8 – *Suillus grevillei* (Klotzsch in Fr.) Sing – VU

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