

RARE FUNGI OF KOSOVO

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Skopje, 2018

Introduction

Only recently, larger fungi (Ascomycota and Basidiomycota) in Kosovo had not been studied systematically and only scarce official data had been obtainable. There had also been unpublished data for over a hundred species spotted mainly in the area of Germia Mountain. Yet, high fungal diversity was anticipated given the variety of climate, vegetation types and substrates. The country lacks both a fungal checklist and a red list along with fungi protection legislation notwithstanding the export of enormous mushroom quantities.

Our study was conducted during the 2017-2018 period in over 50 different localities in Kosovo. A practical conservation output of this work has been compilation of a Checklist of Kosovo Fungi, based on collection of fungi species in diverse habitats and their identification. A range of habitats (Macedonian and Bosnian pines, Norway spruce, silver fir, Italian oak, etc.) have been visited, along with national parks, pristine forests and other protected areas in the country (Shar Mountains National Park, Bjeshket e Nemuna National Park, Germia Mountain and Rugova Mountain). In view of the fungi database available and hitherto project research, information has been obtained on a total of 769 pieces of data on fungi about more than 380 different species. High fungal diversity has been established and a number of rare and sensitive species recorded. Some of the registered species are rare and interesting, and they will be used as candidates to prepare a Red List of Fungi from Kosovo.

Macrofungi collection trips...



Rare Macrofungi in Kosovo - Red List Candidates



<i>Amanita dryophila</i>	very rare
<i>Amanita eliae</i>	rare
<i>Amanita franchetii</i>	rare
<i>Amanita lividopallescens</i>	very rare
<i>Amanita subnudipes</i>	very rare
<i>Anthrobia ramentacea</i>	very rare
<i>Anthrobia xantha</i>	rare
<i>Basidioidendron caesiocinereum</i>	very rare
<i>Botryobasidium vagum</i>	rare
<i>Butyriboletus pseudoregius</i>	rare
<i>Butyriboletus regius</i>	rare
<i>Caloscypha fulgens</i>	rare
<i>Cyanoboletus pulverulentus</i>	rare
<i>Diplomitoporus flavescens</i>	rare
<i>Discina ancilis</i>	rare
<i>Eutypella alniifraga</i>	rare
<i>Helvella atra</i>	rare
<i>Heterosphaeria patella</i>	very rare
<i>Hortibodletus bubalinus</i>	very rare
<i>Imperator rhodopurpureus</i>	rare
<i>Kneiffiella abditia</i>	very rare
<i>Lactarius azonites</i>	rare
<i>Lactarius subdulcis</i>	very rare
<i>Microstoma protractum</i>	very rare
<i>Mycena arcangeliana</i>	very rare
<i>Neoboletus xanthopus</i>	rare
<i>Peziza succosa</i>	very rare
<i>Phloeomana hiemalis</i>	very rare
<i>Pholiota alnicola</i>	rare
<i>Resupinatus striatulus</i>	very rare
<i>Rubroboletus legaliae</i>	rare
<i>Russula zvarae</i>	very rare
<i>Suillellus mendax</i>	rare
<i>Suillellus rhodoxanthus</i>	rare
<i>Tuber aestivum</i>	rare
<i>Tuber borchii</i>	very rare
<i>Typhula fistulosa</i>	rare
<i>Typhula sclerotioides</i>	rare
<i>Zeus olympius</i>	extremely rare



FUNGI

from oak forests
in Kosovo





Amanita dryophila

- a very rare species
- Kacanik area
- on soil in oak forest





Peziza succosa

- Kacanik area
 - ass. Querco – Carpinetum orientalis
 - very rare species
-



Butyriboletus pseudoregius

- Ferizaj district
 - mycorrhizal with oak
 - *Quercus cerris* forest
 - rare species
-



Tuber borchii

- Ferizaj district
- Quercus cerris forest
- mycorrhizal with oak
- very rare species





Tuber aestivum

- Ferizaj district
- Quercus cerris forest
- mycorrhizal with oak
- rare species





Lactarius azonites

- mycorrhizal species from oak forests
- very rare species





Amanita franchetii

- Ferizaj district
 - *Quercus cerris* forest
 - Mycorrhizal with oak
 - Rare species
-



Amanita lividopalescens

- Ferizaj district
 - Quercus cerris forest
 - Mycorrhizal with oak
 - Very rare species
-



Russula zvarae

- mycorrhizal with oak
 - ass. Quercetum frainetto – cerris
 - very rare species
-



Photo: Matthias Theiss

Butyriboletus regius

- Ferizaj district
 - *Quercus cerris* forest
 - mycorrhizal with oak
 - rare species
-



Butyriboletus pseudoregius

- Ferizaj district
 - *Quercus cerris* forest
 - mycorrhizal with oak
 - rare species
-



Photo: Tome Jovanovski

Cyanoboletus pulverulentus

- Kacanik area
 - Quercetum frainetto-cerris cerris forest
 - mycorrhizal with oak
 - rare species
-



Suilellus rhodoxanthus

- Kacanik area
 - Quercetum frainetto-cerris cerris forest
 - mycorrhizal with oak
 - rare species
-



Rubroboletus legaliae

- Kacanik area
 - Quercetum frainetto-cerris
 - mycorrhizal with oak
 - rare species
-



FUNGI

in *Pinus heldreichii* forest,
Prevalla -1600-1700 m.a.





Zeus olympius - an extremely rare species

- The species is known only from Prevala (Sharr Mountains National Park) at an elevation of about 1,600 meters, in the area with undisturbed natural forest of Bosnian pine (*Pinus heldreichii*).
 - It is known only from the type locality in Greece (Mount Olympus) and Bulgaria, so this is the third locality in the world.
 - The species is a part of Global Red List Assessment and is considered "potentially Critically Endangered".
 - The known population is very small and, with the more frequent forest fires resulting from climate change constitute a very real threat.
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Resupinatus striatulus

- Prevala (Sharr Mountains National Park)
 - *Pinus heldreichii* forest
 - very rare species
-



Diplomitoporus flavescens

- Prevala (Sharr Mountains NP)
 - Pinus heldreichii forest
 - rare species
-



Botryobasidium vagum

- Prevala (Sharr Mountains NP)
 - *Pinus heldreichii* forest
 - Rare species
-



Kneiffiella abdita

- Prevala (Sharr Mountains NP)
 - *Pinus heldreichii* forest
 - very rare species
-



Caloscypha fulgens

- rare species
- grows on soil in fir forests





Antrodia xantha

- Bjeshket e Nemuna NP
 - mixed beech and spruce forest
 - on fallen trunk of Picea
 - rare species
-



Microstoma protractum

- very rare species
 - deciduous forest
-



Helvella atra

- Kacanik area
 - on soil, riparian vegetation (*Alnus*)
 - rare species, redlisted in many EU countries
-



Discina ancilis

- Bjeshket e Nemuna NP
 - riparian vegetation
 - on soil, under Alnus
 - rare species
-



Eutypella alnifraga

- Prevalla
 - riparian vegetation
 - on fallen branch of *Alnus*
 - rare species
-



Heterosphaeria patella

- Sharr Mountains NP
 - riparian vegetation
 - on herbaceous stem
 - very rare species
-



Typhula fistulosa

- Ferizaj district
 - riparian vegetation
 - on fallen branch of Alnus
 - rare species
-

New Macrofungi from Kosovo

Main part of the collected fungi are new (unpublished) species for Kosovo. The following are some of the most interesting:

Acanthohelicospora	scopula
Amanita	caesarea
Exidia	saccharina
Dendrocorticium	polygonioides
Dendrothele	acerina
Mycena	cyanorhiza
Mycoacia	uda
Porostereum	spadiceum
Russula	nigricans
Terrana	caerulea
Trametes	ochracea



Acanthohelicospora scopula

- Bjeshket e Nemuna NP
 - riparian vegetation
 - on fallen branch of *Salix*
-



Amanita caesarea

- ass. Quercetum frainetto-cerris; Quercu-Carpinetum orientalis.....
 - mycorrhizal with oak
 - common commercial species
-



Exidia saccharina

- Prevala (Sharr Mountains NP)
 - Pinus heldreichii forest
 - common on fallen branches of Pinus heldreichii
-



Dendrocorticium polygonioides

- Kacanik area
 - ass. *Querco-Carpinetum orientalis*
 - on fallen branch of oak
-



Dendrothele acerina

- Kacanik area
 - riparian vegetation
 - on bark of living *Acer campestre*
-



cyanorhiza

Mycena cyanorhiza

- Prevala (Sharr Mountains NP)
 - *Pinus heldreichii* forest
 - on stump of *Pinus heldreichii*
-



Mycoacia uda

- Kacanik area
 - riparian vegetation
 - fallen branch of Alnus
-



Russula nigricans

- Ferizaj district
 - *Quercus cerris* forest
 - mycorrhizal with oak
-



Terrana caerulea

- Kacanik area
 - ass. *Quercetum frainetto-cerris*
 - on dry branches of oak
-



Trametes ochracea

- Kacanik area
 - Riparian vegetation
 - on trunk of Alnus
-



Porostereum spadiceum

- Ferizaj district
 - Quercus cerris forest
 - On dry branch of oak
-

MAP OF IMPORTANT FUNGAL AREAS IN KOSOVO

