Czech Mycology 76(2): 215–216, December 20, 2024 (online version, ISSN 1805-1421)

Book review

Red List of fungi (macromycetes) of the Czech Republic

Lucie Zíbarová, Monika Kolényová, Tereza Tejklová, Petr Zehnálek (eds)

Červený seznam hub (makromycetů) České republiky. Published as a monothematic issue of the journal Příroda, Praha, no. 46, 192 pp., 2024, softcover; ISBN 978-80-7620-169-9 (print), ISBN 978-80-7620-170-5 (online). In Czech with English abstracts of particular chapters and a general summary. Available online: https://www.priroda.nature.cz/index.php/priroda/article/view/70

Although it is not standard in an international journal to provide reviews of publications written in a local language, there are in some cases good reasons to make an exception. When a new edition of a national Red List is issued, it deserves to be announced in journals, because the threat to fungi is never limited by boundaries, and current data on endangered species are often also useful for foreign researchers.

A long time has passed since the publication of the previous Red List of Fungi (Macromycetes) of the Czech Republic in 2006. It was a pioneering work in Czech mycology, which resulted in a compilation of the first fungal red list of the country, based on IUCN criteria which were however applied quite loosely or in a modified form. Much has changed during these eighteen years. The taxonomy of numerous species or species complexes has been refined, distribution ranges of some fungi have shifted, knowledge of their occurrence and threat has advanced using digital tools and social media, and the evaluation methodology has become more precise (Dahlberg et Mueller in Fungal Ecology 4: 147–162, 2011), hence an update of the national Red List had become necessary.

As a result of concentrated work of a multitude of Czech mycologists, a new edition has been published this year. We must express here our utmost respect to all authors and especially to the editors for collecting the data sources, managing the evaluation process, and compiling the final result in the short time of one year, moreover with limited financial support (the Nature Conservation Agency of the Czech Republic is thanked for funding). Formally, the Red List has been compiled in the same way as the previous edition, i.e. as a monothematic issue of the Příroda journal, with a general part divided into several chapters (in the format of journal articles).

In the introductory chapter, the biology and ecology of macromycetes are briefly summarised, the major trophic and ecological groups are delimited and described, and the most significant causes of present threat to macromycetes in the Czech Republic are discussed and classified. The second chapter sums up conservation activities concerning macromycetes in the Czech Republic, especially since the previous national Red List was published.

The third chapter contains a detailed description of the methodology used in compiling the Red List, taking into account the specifics associated with assessing threats to fungi and the situation in the Czech Republic. The IUCN Red List general guidelines are briefly outlined, and their application in the national Red List in more detail. It is important to mention that the IUCN guidelines were strictly followed in this edition.

However, considering the fungal specifics, only selected criteria and subcriteria were applicable in the assessment of particular species. Although the methodology is comprehensive and based on mathematical definitions (thus seemingly simple to be applied), its application to fungi remains questionable, because it uses subjectively determined coefficients, mainly in estimating the total number of localities (considering undiscovered ones) and population size per locality. The IUCN categories were therefore inevitably assigned to the species based on a partly subjective evaluation of the criteria used [A2, A3, A4, B1ab(iii), B1b(iii)c(iii), B2ab(iii), B2b(iii)c(iii), C1, C2(i), and D1; some of them applied to only one or a few species].

The final chapter is fundamental, presenting the actual Red List. The assessment of 77,228 records (23,412 from public herbaria, 28,826 from mycological or nature conservation databases, and 24,990 from individual researchers) has resulted in a table containing 1676 macromycete taxa with assigned threat categories (32 RE, 190 CR, 330 EN, 325 VU, 238 NT, 561 DD). Also the criteria used for including taxa into the CR, EN, and VU categories as well as trophic categories are listed for all taxa in the main table. Possible causes of threat are listed for all taxa in a separate table, and taxa which are no longer red-listed (of least concern, not applicable or not evaluated for different reasons) are presented in a third table. All tables are introduced by a Czech and English legend, making them also easy to use for foreign readers.

Contrary to the previous Red List, in which brief notes on the ecology and distribution, and selected literature on the taxonomy and iconography of the species were added, this type of extra information is missing in the current list. Although this was useful and increased the value of the previous edition, we must state that such information is not mandatory part of any Red List. Moreover, in the case of the current Red List it was unrealistic to provide credible verbal assessment of all species during the short time allocated.

In the final chapter, dealing with the main results, patterns in the data are discussed and the results compared to the previous Czech Red List and global Red List, with a brief analysis of future perspectives and an English summary closing this chapter.

Although the main text is in Czech, the actual list is well understandable for all researchers. Therefore, the updated Red List is not only important for Czech mycology and nature conservation, but – complementary to red lists of neighbouring countries – it also represents a good source for further analyses and syntheses of fungal threat on national, regional, and European level.

Petr Hrouda