

Summary

Izabela L. Kałucka

Fungi, like other living organisms, are vulnerable when exposed to the harmful effects of human activity. Their populations may be reduced and threatened at different geographical scales and, for some species, there may even be a global risk of extinction. They are particularly sensitive to disturbance and loss of their natural habitats. Air pollution, changes to soil and water, ecosystems destabilized through global warming, transformed landscapes, intensified economies, the spread of invasive species, loss of associated organisms, and unsustainable harvesting with its concomitant damage to mycelium and its immediate environment are all threats. These threats affect not only rare fungi with a limited or dispersed occurrence, but also common species. Like other groups of organisms, fungi need and deserve protection.

In 1983, twenty three species of larger fungi were accorded legal protection in Poland, making our country the first in Europe and indeed the world to extend conservation law to this biological kingdom. Since then, protection has been increased and, at the time of writing, 117 species benefit from strict or partial protection in Poland. They have been selected using criteria applicable equally to all groups of organisms, depending on the degree of threat to individual species, the pressure exerted by human activities and the effectiveness of protective measures. Furthermore, that protection complies with international law and European Union regulations. Following the Polish Act on Nature Conservation of 2004, protection of fungi aims to ensure the survival and good conservation status of species and their habitats, as well as the preservation (as in the case of plants and animals) of fungal species and their genetic diversity. All organisms are interlinked through multidimensional relationships, and that makes it important not only to preserve fungal natural habitats but also to protect their associated organisms (e.g. mycorrhizal partners, hosts of parasitic fungi) and the substrata they live on (e.g. large pieces of standing or fallen wood).

Protected Fungi of Poland. Distribution, Threats, Conservation Recommendations [Grzyby chronione Polski. Rozmieszczenie, zagrożenia, rekomendacje ochronne] is Poland's first comprehensive and extensive monograph covering all fungal species currently protected in the country. Each species is presented in a uniform layout which includes a brief description of the morphology of the sporophores (with emphasis on features facilitating identification), information about ecological requirements listing the most frequently occupied habitats and substrata, followed by trophic status (mycorrhizal symbiont, parasite, saprotroph etc.) and sporophore seasonality. For each species, the history of its protection in Poland and the Polish Red List threat category are presented. The account also identifies the most important current threats affecting the species and includes recommended conservation measures. In addition, there is more general advice about identification of species, documentation and a uniform system for reporting and recording the localities in which they occur. Other important information is provided in a *Notes* section. This includes, for example, the current taxonomic status of the species, its accepted scientific (Latin) binomial, its threat status in red lists at different levels in Europe and worldwide, and additional notes on distribution. The description of each species is illustrated with original photographs which facilitate identification. In the cases of the 90 rarer species, distribution maps using the ATMOS square system (10 km by 10 km) are provided, and sites based on historical field observations or published records (up to and including 1970) can be distinguished from those which are contemporary (after 1970).

The monograph, the result of a project under the auspices of the Polish Mycological Society and produced by a team of twenty authors, compiles as much information as possible about the 117 species of fungi which currently enjoy legal protection in Poland. It includes many years of

observation and research, thorough studies of scientific literature, on-line mycological databases, websites of amateur mycologists, data obtained from state institutions, and the personal unpublished records of the authors and their many collaborators. In several cases, information on individual species has been supported by examination of fungarium specimens and molecular analyses. Finally, the work also discusses the general principles, methods and goals for protection of fungi in Poland, reviews its history, and assesses the current situation and its most important problems, needs and perspectives.

The book addresses a wide audience of individuals and institutions involved in management and protection of Poland's natural resources. These include governmental administration, State Forests, national and landscape parks, nature NGOs and their members, teachers, educators, students, amateurs, and all who care about protection of fungi and nature in Poland and beyond. We hope it will be not only a source of reliable information and help in practical nature conservation, but also an incentive to monitor existing localities and extend our knowledge of these protected fungi through the discovery of new sites.