

## Macrofungi



Fly Amanita (*Amanita muscaria*) © Rémi Hébert

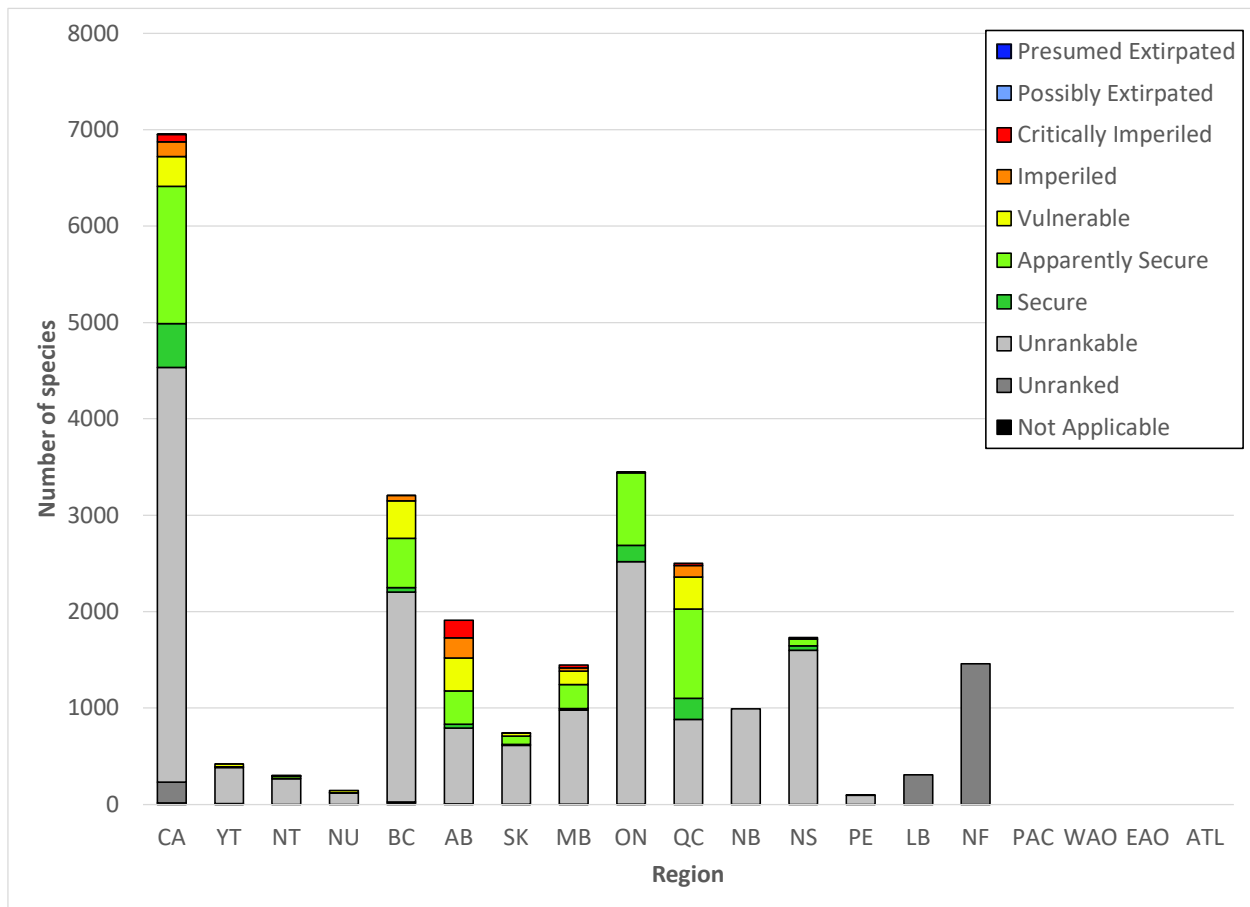
Macrofungi do not refer to a specific taxonomic division. They represent fungal species that have a large fruiting body easily visible to the naked eye. In general, fungi are more closely related to animals than they are to plants. They cannot photosynthesize, so must obtain food by either associating with plants or parasitizing other organisms. The bulk of a fungus consists of threadlike hyphae (or mycelia, when many join together) that grow in soil or organic material. Complimentary mycelia fuse and produce a fruiting body, e.g. a mushroom. These make spores, which can disperse to germinate and form new mycelia. Available data is based on the observations of the fruiting bodies since the underground parts are not visible. The ecological and social importance of fungi cannot be overstated. Mycorrhizal associations, in which fungi provide water and nutrients to plants and receive sugars in return, benefit most plants in Canada (and the world), including the majority of economically important species. Most large mushrooms seen on the forest floor are involved in mycorrhizal associations. Our environment also depends on fungal decomposition of organic matter, which releases nutrients. The Amanitas include some of the most toxic known mushrooms found worldwide. However, edible wild mushrooms are a multi-million dollar industry in Canada. Fungal research in Canada has focused on pathogens, mycorrhizae and decomposing fungi. Currently, genetic tools are being used to clarify their taxonomy and distribution. The largest threat to macrofungi is habitat destruction.

There are 6 951 known species of macrofungi in Canada (Figure 11). Results of our assessments at the national level indicated that no species are presumed extirpated, one is possibly extirpated, 76 are critically imperiled, 151 are imperiled, 310 are vulnerable, 1 424 are apparently secure, 457 are secure, 4 300 are unrankable, 217 are unranked, and 15 are not applicable. When only considering species from critically imperiled to secure, 78% are apparently secure or secure.

We identified 228 species of macrofungi that may be at risk in Canada. Of these, six species have 75% or more of their range in Canada, including two species that are thought to be endemic to Canada: *Aleurodiscus dendroideus* and *Vararia athabascensis*. Furthermore, 55 of the species have an intermediate part of their range (11% to 74%) in Canada, and 167 have only a small part of their range (10% or less) in Canada. In total, 19 species have a high priority score (between 1 and 5).

Among the known species of macrofungi, 6 937 are native to Canada and 14 are exotic. On average, each species of macrofungi occurs in 2.7 regions in Canada. No species of macrofungi are considered migratory.

Three groups of macrofungi (the genus *Amanita*, the family Nidulariaceae, and the family Phallaceae) were included in the *Wild Species 2015* report (87 species). Since then, the national rank of 101 species has changed. In total, two species were assigned an increased level of extinction risk, seven species a reduced level of extinction risk, and 35 species changed from or to the categories unrankable, unranked, or not applicable. In addition, 49 species were added to the list and eight deleted. Most of the changes (97%) are due to new information.



**Figure 11. General status of macrofungi in Canada in 2020.**