



**Somerset
Wildlife Trust**



Fantastic Fungi Focus

Get involved!

somersetwildlife.org/fantastic-fungi-focus

4th - 6th

November 2022

According to the first big report on the state of the world's fungi, led by the Royal Botanic Gardens, Kew, the fungal kingdom is vital to life on Earth. But despite that, more than 90% of the estimated 3.8 million fungi in the world are currently unknown to science. They provide medicines and food and play a vital role in plant health - without fungi, there is no healthy soil, and without healthy soil, there are no happy trees. Closer to animals than plants and in a kingdom all of its own, fungi are all around us, some too small to be seen; in the soil, our bodies and in the air. At the last count, there were at least 15,000 types of fungi in the UK.

Fungi play an important role within our soil ecosystems, helping to recycle nutrients from dead or decaying organic matter, and providing food and shelter for different animals. Understanding more about their distribution and abundance is really important, but possibly even more so in our woodland habitats as it tells us a lot about the health of that woodland. A healthy woodland will have a wide variety of fungi that permeate the soils below ground, interacting with tree and other plant roots (mycelium) and connecting the whole in what is known as a mycorrhizal network.

Have fun with fungi!

As part of the Great Somerset Wildlife Count, Somerset Wildlife Trust's annual citizen science programme, we need you to get out recording autumnal fungi in woodland environments (just woodlands for now!) **between the 4th and 6th November. Remember**, you can record ALL fungi you find, not just those mentioned in this pack.

If you are reading this you've taken the first step to get involved by downloading our spotter guide of the fungi you might see! If you want more information then you can check out our Great Somerset Wildlife Count pages here. You'll find detailed information too about how to sign up to iNaturalist and how to log your sightings.

We want as many people to take part as possible from individuals, families, schools, businesses and more so PLEASE spread the word far and wide and.....**find those fungi!**



Guy Edwardes/2020VISION

Fly Argaric



There can't be many who don't recognise the fly agaric (*Amanita muscaria*). With its striking red and white spotted cap, it's one of our most distinctive woodland fungi. In its immature state this species possesses not one but two protective veils. There is a partial veil which, when the cap expands, is left as a frilly ring on the stalk. Then there is an additional total veil which served to fully enclose the young sporophore but which when the cap expands breaks up into the familiar white patches and is also left in the form of warty rings at the stalk base. The various parts of this species, except for the cap, are white. The sporophores can grow quite large, up to 18cm in height and with a cap diameter of 10cm. It is found mainly associated with birches but also associated with pines. This species is pretty but also poisonous!

Sulphur tuft

For beginners learning to distinguish fungus species, a good one to start with is sulphur tuft (*Hypholoma fasciculare*). It's common during the autumn, growing in clumps on rotten wood and it's a typical saprophytic species. The way it develops is similar to most 'mushroom' types of fungi. A stalk elevates it into the open air and a cap protects the vulnerable parts, which are the gills that lie beneath the cap and bear the developing spores. The sporophores of sulphur tuft are greenish-yellow and they can grow to about 10 cm tall producing chocolate coloured spores that, when ripe, colour the gills. The species bears a little characteristic ring zone on the stalk, the remains of a partial veil that protected the immature gills and then broke away as the cap expanded. It is poisonous.



Turkey tail



Among the commonest of the 'bracket' fungi that grow in tiers on dead wood, is turkey tail (*Trametes versicolor*). It can be found throughout the year but it is at its best during the autumn months. It comes in a confusing assortment of colours ranging through ochre, green, blue, gray and black, but the cap surface is always concentrically zoned and typically has a white outer margin when fresh. The brackets can extend to about 8cm diameter and are quite thin and woody to feel. The underside is porous and white, the pores leading into tubes that serve as the counterpart of gills and bear the spores. This species provides a good illustration of the importance of looking at the bits underneath because there is a different 'bracket' fungus called *Bjerkandera adusta* that can look remarkably similar on top, but on the underside the pores are smoky grey.

Sessile earthstar

One of the endless fascinations of fungus-watching lies in the sheer diversity of colour, shape and size. They range from the familiar to the bizarre and the sessile earthstar (*Geastrum fimbriatum*) probably falls under the latter heading. The sporophore takes the form of a thin inner bag that, when ripe develops a little hole at the top through which the mass of spores is ejected. The bag is at first encased with a thick outer protective wall which, as the fungus matures, splits into arms that then reflex back and lift the whole thing slightly off the ground. The species, in common with others of similar construction, relies to no small extent on rain to do the job of spore dispersal. When a raindrop hits the bag it serves to agitate the mass of spores inside and they are then 'puffed' out, to drift away on the air currents.



Scarlet elf cup



One of the most delightful surprises among fungus species that produce their sporophores away from the autumn season is the scarlet elf cup (*Sarcoscypha austriaca*). The little shallow cups, up to 5 cm across are either found solitary or in small groups, and they emerge on bits of rotten twig in damp situations, from January to March. In a typical woodland winter landscape that has become virtually devoid of colour they can sometimes be partly hidden by leaf litter, but otherwise they stand out dramatically in their hues of brilliant scarlet. These are members of the Ascomycota group that produce their spores in microscopic finger-shaped structures called asci, which line the inner surfaces of the cups. When the spores are ripe the tips of the asci break off and under pressure the spores are exploded upwards to catch the air currents.

Glutinous earth tongue

The glutinous earth tongue (*Geoglossum glutinosum*) provides more evidence of the extraordinary diversity of shapes and sizes that fungi have developed over the millions of years that they have colonised the planet. The earth tongues are members of a major group of fungi known as the Ascomycota, and this one is a typical species of grasslands. In common with others among the earth tongues, its sporophores develop as slender elongated structures that look remarkably tongue-like. They are black and they can grow to a maximum height of 5cm. As the name also suggests the surface is glutinous, and so it feels viscid or sticky especially in wet weather. This is however the only British species of earth tongue that possesses a slimy coating. It can be found from late summer to autumn but it needs sharp eyes and is actually quite a rarity.



Devil's fingers



One can be forgiven for believing, now and again, that fungi have the knack of mimicking other life forms, because the devil's fingers (*Clathrus archeri*) looks for all the world like a starfish that has landed in the middle of a field. It is actually a member of the 'stinkhorn' group of fungi, the members of which emerge from gelatinous eggs, the thin outer 'skin' of which can be seen in the photo as a small white bag. The sporophore then erupts, dramatically, into five colourful 'arms' in this species. These are covered in dark green 'goo' that contains the spores and smells like rotting flesh. The purpose is to attract flies that paddle about, thinking they have found a tasty meal, and then fly away disappointed but also carrying the spores on their feet. The fungus has thus evolved with an ingenious insect dispersal mechanism.

To pick, or not to pick

Some people will tell you that the rule in fungus hunting is 'look but don't touch'. This may seem sensible advice but it won't necessarily help you to identify fungi with any degree of certainty. Stripping a woodland area of its edible mushrooms, and picking a single fungus to look closely at its details are in different orders of magnitude. Many of the critical features that distinguish one species from another are not always obvious during a casual inspection, and you do need to be able to examine it from all angles, feel its texture, sniff it, and sometimes (this is strictly for the experts) even test it with the tip of the tongue. It's worth mentioning that you can come to no harm by handling even the most lethally poisonous fungi.



Chris Lawrence




Paul Hobson

How fungi live


Not all fungi adopt similar lifestyles. Of more than 15,000 fungus species in the UK, many are saprophytes - the biological term that describes a plant, fungus or organism that lives on dead or dying organic matter, generally of plant origin but sometimes animal too. Then there are those fungi that engage in a symbiotic relationship with living green plants. In woodlands they are, by and large, species that develop an intimate two-way relationship with trees and shrubs, each supporting the needs of the other in what is known as a mycorrhizal association. A few fungus species are true parasites, mostly attacking green plants, but sometimes infecting animals and even other fungi. The forms that develop shelves or brackets on the trunks of trees may look like parasites but most are technically saprophytes.



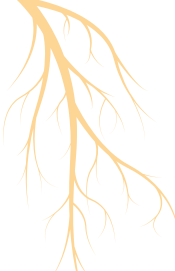
Fun fungi facts




Genetically speaking, fungi are more closely related to animals than plants. Like us, they breathe in oxygen and give out CO₂. Unlike plants, they don't need sunlight to reproduce, instead they rely on other organisms for food – just like animals.



Glomalin, a by-product from mycorrhizal fungi, can **capture and store carbon** in the soil, removing it from the atmosphere.




A fungus has been discovered capable of **breaking down plastics** in weeks rather than years.



The largest living thing on Earth is actually a fungus (not the blue whale!). Just one of the species of the genus collectively known as honey mushrooms, and discovered in 1998, there's an *Armillaria ostoyae* fungus that covers 2,384 acres – almost 10 square kilometres. It's been around for at least 2,400 years – possibly up to 8,650 years. Despite its rather sweet-sounding name, it kills trees, feeding off both live and dead wood for nutrients.




Fungi are being used to turn crop waste into **bioethanol**.



Fungi help trees talk to each other. Beneath every forest and wood lies a complex network of roots, fungi and bacteria that connects trees and plants to one another – the 'Wood Wide Web'. One specific type of fungus, the Mycorrhizal fungus forms an essential symbiotic relationship with plant roots. The fungus mycelium (the root like structure) donates water and in return, the plant roots give the fungus carbon, carbohydrates and other nutrients. It's this symbiotic relationship that allows trees to have underground conversations, such as issuing warnings about attacking insects, drought, and disease.

sciencefocus.com/nature/mycorrhizal-networks-wood-wide-web/



DNA studies show that there can be thousands of different fungi in a single sample of soil, many of which are unknown and hidden – so-called "dark taxa".

Fungi Detective



Waxcap



Chicken of the woods



Brain fungus



Dead man's fingers



Birch bolete



Earth fan



Fly agaric



Shaggy inkcap



Yellow spindle coral



Stinkhorn

#BigWildWalk

Waxcap by Philip Precey / Chicken of the woods, Brain fungus, Dead man's fingers, Birch bolete, Earth fan, Fly agaric, Shaggy inkcap, Yellow spindle coral and Stinkhorn by Les Binns. REMEMBER - never eat any fungi you find unless you're with a qualified expert.