# Fungi of the southwest slopes & Upper Murray Region of NSW

Fungi underpin almost every terrestrial ecosystem on the planet. With their curious forms, complex life histories and short-lived fruitbodies, fungi provide a fascinating subject for naturalists and aesthetes alike. The Southwest Slopes and Upper Murray Region of NSW offer a huge diversity of habitats for fungi. The majority of fungi in the region await discovery with many still yet to be formally named.

The fungi illustrated in this guide represent just a selection of the more readily recognisable species. They can be found in substrates as diverse as leaf litter, living trees, fallen logs and woody debris, all sorts of soil and herbivore scats. Fungi also grow in marine and fresh water, although these are microfungi and not included in this guide. Lichens are also classified as fungi and grow on an even greater range of substrates including human-made compounds such as glass, metal and rubber.

#### **Identifying Fungi**

Many fungi can be identified using field characteristics - i.e. features of the fruitbody that are visible to the naked eve. The major field characteristics are illustrated in the accompanying diagram. Other species require examination of microscopic structures or DNA sequencing for accurate identification.

Be aware that it is not possible to identify fungi accurately from images alone as many species vary greatly in colour and form. The most accurate way to identify fungi to species level is with taxonomic keys that provide written descriptions of the diagnostic features. A selection of field guides and websites is listed below to assist you further with identifications.

#### Fruitbody Forms

The most familiar fungus fruitbodies are likely to be the Agarics - those that typically have an umbrella-like form and lamellae (thin plates also called gills) beneath the cap, commonly referred to as mushrooms. However, fungi appear in a great variety of other fruitbody forms such as puffballs, clubs, discs, polypores and coral fungi. The species in this guide are arranged alphabetically within these generic morpho-groups.

### **Edible & Poisonous Fungi**

Foraging for edible fungi grows ever more popular, but be aware that knowledge about edibility of native fungi is scant and deadly poisonous species exist in Australia. Many cases of poisonings including fatalities are reported each year. In the event of a poisoning or suspected poisoning contact the NSW Poisons Information Centre on 13 11 26.

#### **Websites and Contacts of Interest**

GER/S2S Murray Local Land Services Fungimap Holbrook Landcare Network NSW Poisons Information Centre Australian National Botanic Gardens Atlas of Living Australia

greateasternranges.org.au murray.lls.nsw.gov.au 1300 795 299 03 9252 5374 fungimap.org.au holbrooklandcare.org.au 02 6036 3181 131126 poisonsinfo.nsw.gov.au anbg.gov.au/fungi

#### **Selected Field Guides That Include NSW Fungi** (Available from Fungimap)

Grey, P. & Grey, E. (2005). Fungi Down Under. Fungimap, Melbourne. McCann, I.R. (2003). Australian Fungi Illustrated. Macdown Productions, Vermont. Fuhrer, B. (2005). A Field Guide to Australian Fungi. Bloomings, Melbourne. Young A. (2005). A Field Guide to the Fungi of Australia. NSWUP, Sydney.

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Cover Image: Growing in leaf litter, the Ruby Mycena (Cruentomycena viscidocruenta) is a saprobic fungus, recycling organic matter and returning nutrients to the soil.

# Fungi

of the southwest slopes & Upper Murray Region of NSW













Agarics





GILL M

Australian White Webcap

GILL M



Cortinarius austroalbidus\* Cortinarius sublargus\* Hygrocybe astatogala\*

**Agarics** 



GILL S



GILL S

Lactarius deliciosus

Saffron Milk Cap

GILL M

Lactarius eucalypti\*

Eucalypt Milk Cap

GILL M



GILL S

Marasmiellus affixus\*

Little Stinker

GILL S

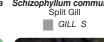








Agarics







Mycena epipterygia group

Yellow-Stemmed Mycena

GILL S

Mycena clarkeana



Ghost Fungus







Rooting Shank GILL S



GILL M

Volvopluteus gloiocephalus\* GILL S

Yellow Stainer

GILL M

Amanita muscaria\*

Fly Agaric

GILL M















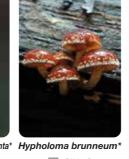






GILL S





Hypholoma australe

GILL S







Marasmielllus alveolaris\*

GILL S













Australian Honey Fungus

GILL S, P

Bolbitius vitellinus\*

Egg Yolk Fungus





Coprinus comatus\*

Lawyer's Wig







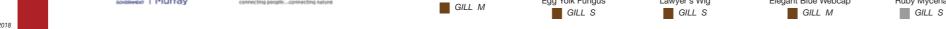
Cortinarius rotundisporus\* Cruentomycena viscidocruenta\* Hypholoma brunneum\* GILL M

GILL S

GILL P

GILL S

Pixie's Parasol GILL S



Amanita punctata

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**Fungi with Pores** Pores / Tooth Fungi / Corals / Earthstars Puffballs / Chantarelles / Jellies / Truffles / Clubs **Cups / Discs / Lichens / Slime Moulds** Slopes to Summit and the Importance of Connectivity **Fungal Trophic Modes** Slopes to Summit (S2S) is governed by a Working Group of nine organisations Fungi can be divided into three groups based on how they obtain their nutrition: including Nature Conservation Trust of NSW, Charles Sturt University, Holbrook 1. Most fungi are **saprobic** (saprotrophic) and decompose dead organic Landcare Network, Murray Local Land Services, CSIRO, Australian National matter. They can break down lignin, cellulose and chitin and grow in rotting University, Parklands Albury Wodonga, Albury Conservation Company, and the logs, leaf litter and other organic material. NSW Office of Environment & Heritage. The group has a vested interest in the 2. Some fungi are parasitic and obtain nutrition from a living host organism, management and protection of biodiversity in the Eastern Murray region of NSW, with no benefit to the host. They grow in living plants and other fungi, while and ensuring the protection the region's biodiversity in the face of climate some specialised groups parasitise invertebrates and other animals. change. The S2S region extends from the mountains of Kosciuszko National Park in the east to the fragmented agricultural landscapes of the southwest slopes 3. **Mycorrhizal** fungi form symbiotic, mutually beneficial relationships with including the Murray River and Billabong Creek catchments. The area includes the rootlets of plants. box-gum woodlands, riverine forests and floodplains, and wet and dry Another symbiosis is that of lichens which is a relationship between a Suillus luteus Podoscypha petalodes\* Hvdnum repandum\* Clavaria miniata Calostoma fuscum Craterellus cornucopiodes\* Tremella fuciformis\* Aleuria aurantia\* Chlorociboria aeruginascens\* Rhizocarpon geographicum Pycnoporus coccineus sclerophyll forests. Blue Green Stain Fungus Suillus luteus Scarlet Bracket Fungus Rosette Fungus Hedgehog Fungus Flame Fungus Common Prettymouth Horn of Plenty White Brain Orange Peel Fungus mycobiont (fungus) and a photobiont (an alga or cyanobacterium). Lichens are PORE N PORE M CORAL S PUFFBALL S DISC S S2S is one of the regional partnerships under the Great Eastern Ranges (GER) PORE S, P PORE S ТООТН М CHANTARELLE M JELLY S CUP S LICHEN Y classified as fungi. initiative that are working together to improve habitat and connectivity. Over 64 These trophic modes assist in identification, as particular species are percent of NSW's listed threatened species exist within the GER area. Our local associated with certain habitats or plant species. Nutrition modes are indicated biodiversity, which includes an abundance of fungi, plants and animals, is under by the following symbols: M (mycorrhizal), S (saprophytic), P (parasitic) or enormous stress resulting from widespread clearance, fragmentation of habitat Y (symbiotic). and climate change. Connectivity conservation is about ensuring we enable a Slime Moulds range of a species to move between habitats and therefore maintain healthy and resilient populations. Another unusual group is the Myxomycota or slime moulds. Slime moulds Fungi support ecosystems through their expansive scaffolds of mycelia (the are not fungi but occupy a kingdom of their own, the Protista. Slime moulds vegetative underground part of the fungus). They bind soils and aerate them by are included in this guide because historically they have been adopted by creating spaces between particles, as well as filtering water. Along with bacteria mycologists and often attract attention due to their bright colours and and invertebrates, fungi are major recyclers of organic matter. Through enzyme bizarre forms. secretion fungi dismantle large organic molecules into simpler forms, building **Fungal Substrates** soils in the process. Fungi cycle and govern nutrient and energy flows through ecosystems, regulating resources for subterranean and above-ground organisms. Phellodon niger Fungi grow on a huge diversity of substrates including various types of soil, Fistulinella mollis Ramaria aff. formosa Discinella terrestris\* Ceratiomyxa fruticolosa Fistulina hepatica\* Rigidoporus lateus Stereum hirsutum\* Lycoperdon pyriforme Podoserpula pusio\* Zelleromyces sp. Plectania campylospora\* Marshmallow Bolete Beefsteak Fungus Black Tooth Stump Puffball Yellow Earth Button Hairy Curtain Crust Pagoda Fugus Icicle Fairly Fans You can help protect fungi by managing the landscape matrix living or dead wood, leaf litter, native animal scats, moss beds, invertebrates as PORE P CORAL M TRUFFLE S CUP S тоотн ѕ PORE M PORE S, P PORE S PUFFBALL S CHANTARELLE S DISC S MYXO S well as other fungi. The type of substrate where each species is usually found is · Protect remnant vegetation and increase diversity of mid and understorey species indicated with a colour code: Retain organic matter such as leaf litter and fallen wood of various sizes and soil, wood, dung, invertebrate or rock. ages on the ground Maintain good ground cover in pasture areas **Fungimap Target Species**  Minimise soil compression through use of heavy machinery Fungimap serves as a hub of information and interaction among fungal experts and enthusiasts and includes the mapping of 200 easily recognisable target · Minimise irrigation and chemical application species. Those images in this guide that are target species are indicated by an · Retain areas of native pasture asterisk (\*). You may like to contribute your records of target species to the · Establish connections between patches of vegetation for movement Fungimap project. Further information and record sheets are available on the Fungimap website. Control pests and weeds as they compete for resources and degrade habitat · Retain and protect paddock trees and have a succession plan for them **Major Parts** Boletus barragensis Ryvardenia campyla Phlebia subceracea Geastrum fornicatum\* Scleroderma cepa Heterotextus pezizaformis\* Cordyceps gunnii\* Ascocoryne sarcoides\* Scutellina scutellata group\* Fuligo septica Laetiporus portentosus\* Stereum ostrea\* Golden Curtain Crust Golden Splash Tooth Arched Earthstar Earthball Dark Vegetable Caterpillar Eyelash Pixie Cup Dog Vomit Slime Mould Weeping Polypore of a Fungus PORE S PORE P PORE S TOOTH S **EARTHSTAR S** PUFFBALL M JELLY S CLUB P DISC S MYXO S Fruitbody veil fragments lamellae (gills) Albury Slopes to Summit Region mycelial threads Boletellus obscurecoccineus\* Piptoporus australiensis\* Stereum rugosum Clavaria amoena\* Geastrum triplex Pisolithus sp. Pseudohydnum gelatinosum Cordyceps robertsii Bisporella citrina group Lichenomphalia chromacea\* Lvcogala epidendrum Trametes versicolor Rhubarb Bolete Curry Punk Rainbow Fungus Wrinkled Stereum Collared Earthstar Antlered Caterpillar Lemon Disco Yellow Navel PUFFBALL M CORAL S MYXO S PORE M PORE P PORE S PORE S **EARTHSTAR S** JELLY S CLUB P DISC S LICHEN Y