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 eye. 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	greateasternranges.org.au	
Murray Local Land Services	murray.lls.nsw.gov.au	1300 795 299
Fungimap	fungimap.org.au	03 9252 5374
Holbrook Landcare Network	holbrooklandcare.org.au	02 6036 3181
NSW Poisons Information Centre	poisonsinfo.nsw.gov.au	131126
Australian National Botanic Gardens	anbg.gov.au/fungi	
Atlas of Living Australia	ala.org.au	

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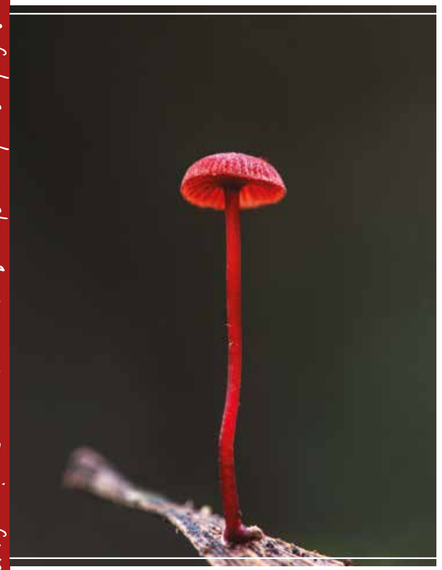
Cover Image: Growing in leaf litter, the Ruby Mycena (*Cruentomycena viscidocruenta*) is a saprobic fungus, recycling organic matter and returning nutrients to the soil.

Fungi *of the Southwest Slopes & Upper Murray Region of NSW*

Fungi

of the Southwest Slopes & Upper Murray Region of NSW



Australian Government

SLOPES TO SUMMIT

NSW Government | Local Land Services Murray

THE GREAT EASTERN RANGES
connecting people...connecting nature

Agarics

Agaricus xanthodermus*
GILL S

Amanita xanthocephala*
Vermillion Grisette
GILL M

Collybia eucalyptorum*
GILL S

Cortinarius archeri*
Emperor Cortinar
GILL M

Cortinarius sinapicolor*
GILL M

Gymnopilus junonius*
Spectacular Rustgill
GILL S

Hypholoma fasciculare
Sulphur Tuft
GILL S

Macrolepiota clelandii*
Parasol Mushroom
GILL S

Mycena austrofilopes
GILL S

Mycena subgalericulata
GILL S

Psilocybe subaeruginosa
Blue-Staining Psilocybe
GILL S

Schizophyllum commune*
Split Gill
GILL S

Amanita ananiceps group
GILL M

Armillaria hinnulea
GILL S, P

Coprinopsis nivea
Snowy Ink Cap
GILL S

Cortinarius austroalbidus*
Australian White Webcap
GILL M

Cortinarius sublargus*
GILL M

Hygrocybe astatogala*
GILL S

Lactarius deliciosus
Saffron Milk Cap
GILL M

Marasmiellus affixus*
Little Stinker
GILL S

Mycena clarkeana
GILL S

Omphalotus nidiformis*
Ghost Fungus
GILL S, P

Rickenella fibula
Little Pin
GILL S

Stropharia semiglobata
GILL S

Amanita muscaria*
Fly Agaric
GILL M

Armillaria luteobubalina*
Australian Honey Fungus
GILL S, P

Coprinus atramentarius*
GILL S

Cortinarius austrovenetus*
Green Skinhead
GILL M

Crepidotus variabilis
Variable Oysterling
GILL S

Hypholoma australe
GILL S

Lactarius eucalypti*
Eucalypt Milk Cap
GILL M

Marasmiellus alveolaris*
GILL S

Mycena epipterygia group
Yellow-Stemmed Mycena
GILL S

Oudemansiella gigaspora group*
Rooting Shank
GILL S

Russula persanguinea*
GILL M

Tricholoma aff. terreum
GILL M

Amanita punctata
GILL M

Bolbitius vitellinus*
Egg Yolk Fungus
GILL S

Coprinus comatus*
Lawyer's Wig
GILL S

Cortinarius rotundisporus*
Elegant Blue Webcap
GILL M

Cruentomycena viscidocruenta*
Ruby Mycena
GILL S

Hypholoma brunneum*
GILL S

Lepista nuda*
Blewitt
GILL P

Marasmius elegans*
Velvet Parachute
GILL S

Mycena interrupta*
Pixie's Parasol
GILL S

Pluteus cervinus group
Deer Mushroom
GILL S

Russula purpeoflava
GILL M

Volvopluteus gloiocephalus*
Common Rosegill
GILL S

Fungi with Pores

Austroboletus lacunosus group*
PORE M

Suillus luteus
Suillus luteus
PORE M

Pycnoporus coccineus
Scarlet Bracket Fungus
PORE S, P

Fistulinella mollis
Marshmallow Bolete
PORE M

Fistulina hepatica*
Beefsteak Fungus
PORE S, P

Rigidoporus lateus
PORE P

Boletus barragensis
PORE M

Laetiporus portentosus*
PORE S

Ryvardenia campyla
Weeping Polypore
PORE P

Boletellus obscurecoccineus*
Rhubarb Bolete
PORE M

Piptoporus australiensis*
Curry Punk
PORE P

Trametes versicolor
Rainbow Fungus
PORE S

Pores / Tooth Fungi / Corals / Earthstars

Podoscypha petalodes*
Rosette Fungus
PORE S

Hydnum repandum*
Hedgehog Fungus
TOOTH M

Clavaria miniata
Flame Fungus
CORAL S

Stereum hirsutum*
Hairy Curtain Crust
PORE S

Phellodon niger
Black Tooth
TOOTH S

Ramaria aff. formosa
CORAL M

Stereum ostrea*
Golden Curtain Crust
PORE S

Phlebia subceracea
Golden Splash Tooth
TOOTH S

Geastrum fornicatum*
Arched Earthstar
EARTHSTAR S

Stereum rugosum
Wrinkled Stereum
PORE S

Clavaria amoena*
CORAL S

Geastrum triplex
Collared Earthstar
EARTHSTAR S

Puffballs / Chantarelles / Jellies / Truffles / Clubs

Calostoma fuscum
Common Prettymouth
PUFFBALL S

Craterellus cornucopiodes*
Horn of Plenty
CHANTARELLE M

Tremella fuciformis*
White Brain
JELLY S

Lycoperdon pyriforme
Stump Puffball
PUFFBALL S

Podoserpula pusio*
Pagoda Fugus
CHANTARELLE S

Zelleromyces sp.
TRUFFLE S

Scleroderma cepa
Earthball
PUFFBALL M

Heterotextus pezizaformis*
Golden Jelly Bells
JELLY S

Cordyceps gunnii*
Dark Vegetable Caterpillar
CLUB P

Pisolithus sp.
PUFFBALL M

Pseudohydnum gelatinosum
Toothed Jelly
JELLY S

Cordyceps robertsii
Antlered Caterpillar
CLUB P

Cups / Discs / Lichens / Slime Moulds

Aleuria aurantia*
Orange Peel Fungus
CUP S

Chlorociboria aeruginascens*
Blue Green Stain Fungus
DISC S

Rhizocarpon geographicum
Map Lichen
LICHEN Y

Plectania campylospora*
CUP S

Discinella terrestris*
Yellow Earth Button
DISC S

Ceratiomyxa fruticolosa
Icicle Fairly Fans
MYXO S

Ascocoryne sarcoides*
DISC S

Scutellina scutellata group*
Eyelash Pixie Cup
DISC S

Fuligo septica
Dog Vomit Slime Mould
MYXO S

Bisporella citrina group
Lemon Disco
DISC S

Lichenomphalia chromacea*
Yellow Navel
LICHEN Y

Lycogala epidendrum
Wolf's Milk
MYXO S

Slopes to Summit and the Importance of Connectivity

Slopes to Summit (S2S) is governed by a Working Group of nine organisations including Nature Conservation Trust of NSW, Charles Sturt University, Holbrook Landcare Network, Murray Local Land Services, CSIRO, Australian National University, Parklands Albury Wodonga, Albury Conservation Company, and the NSW Office of Environment & Heritage. The group has a vested interest in the management and protection of biodiversity in the Eastern Murray region of NSW, and ensuring the protection the region's biodiversity in the face of climate change. The S2S region extends from the mountains of Kosciuszko National Park in the east to the fragmented agricultural landscapes of the southwest slopes including the Murray River and Billabong Creek catchments. The area includes box-gum woodlands, riverine forests and floodplains, and wet and dry sclerophyll forests.

S2S is one of the regional partnerships under the Great Eastern Ranges (GER) initiative that are working together to improve habitat and connectivity. Over 64 percent of NSW's listed threatened species exist within the GER area. Our local biodiversity, which includes an abundance of fungi, plants and animals, is under enormous stress resulting from widespread clearance, fragmentation of habitat and climate change. Connectivity conservation is about ensuring we enable a range of a species to move between habitats and therefore maintain healthy and resilient populations.

Fungi support ecosystems through their expansive scaffolds of mycelia (the vegetative underground part of the fungus). They bind soils and aerate them by creating spaces between particles, as well as filtering water. Along with bacteria and invertebrates, fungi are major recyclers of organic matter. Through enzyme secretion fungi dismantle large organic molecules into simpler forms, building soils in the process. Fungi cycle and govern nutrient and energy flows through ecosystems, regulating resources for subterranean and above-ground organisms.

You can help protect fungi by managing the landscape matrix:

- Protect remnant vegetation and increase diversity of mid and understorey species
- Retain organic matter such as leaf litter and fallen wood of various sizes and ages on the ground
- Maintain good ground cover in pasture areas
- Minimise soil compression through use of heavy machinery
- Minimise irrigation and chemical application
- Retain areas of native pasture
- Establish connections between patches of vegetation for movement of species
- Control pests and weeds as they compete for resources and degrade habitat
- Retain and protect paddock trees and have a succession plan for them

Slopes to Summit Region

Fungal Trophic Modes

Fungi can be divided into three groups based on how they obtain their nutrition:

1. Most fungi are **saprobic** (saprotrophic) and decompose dead organic matter. They can break down lignin, cellulose and chitin and grow in rotting logs, leaf litter and other organic material.
2. Some fungi are **parasitic** and obtain nutrition from a living host organism, with no benefit to the host. They grow in living plants and other fungi, while some specialised groups parasitise invertebrates and other animals.
3. **Mycorrhizal** fungi form symbiotic, mutually beneficial relationships with the rootlets of plants.

Another symbiosis is that of lichens which is a relationship between a mycobiont (fungus) and a photobiont (an alga or cyanobacterium). Lichens are classified as fungi.

These trophic modes assist in identification, as particular species are associated with certain habitats or plant species. Nutrition modes are indicated by the following symbols: **M** (mycorrhizal), **S** (saprophytic), **P** (parasitic) or **Y** (symbiotic).

Slime Moulds

Another unusual group is the Myxomycota or slime moulds. Slime moulds are not fungi but occupy a kingdom of their own, the Protista. Slime moulds are included in this guide because historically they have been adopted by mycologists and often attract attention due to their bright colours and bizarre forms.

Fungal Substrates

Fungi grow on a huge diversity of substrates including various types of soil, living or dead wood, leaf litter, native animal scats, moss beds, invertebrates as well as other fungi. The type of substrate where each species is usually found is indicated with a colour code:

soil, wood, dung, invertebrate or rock.

Fungimap Target Species

Fungimap serves as a hub of information and interaction among fungal experts and enthusiasts and includes the mapping of 200 easily recognisable target species. Those images in this guide that are target species are indicated by an asterisk (*). You may like to contribute your records of target species to the Fungimap project. Further information and record sheets are available on the Fungimap website.

Major Parts of a Fungus Fruitbody