

Black Mountain Symposium Background Paper No. 4

Non-vascular flora of Black Mountain: macrofungi, lichens, hornworts, liverworts and mosses

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Abstract. A list of non-vascular species recorded from Black Mountain was compiled largely from specimens held in the Australian National Herbarium. Since the first collections in the 1950s, at least 313 species have been recorded comprising 40% macrofungi, 36% lichens, 8% hornworts/liverworts and 16% mosses. The majority of species were located in habitats associated with the dry sclerophyll vegetation that covers most of the study area, and grew predominantly on soil or rock substrates. The number of species currently present in the area is not known, and the data do not allow changes in floristic diversity over the last 60 years to be assessed. While the area's total number of non-vascular species is much lower than the vascular species count, the numbers of native non-vascular and vascular species recorded are comparable. However, it appears that the native species recorded do not represent a comprehensive list of the area's non-vascular flora for the five groups. Black Mountain's native non-vascular species are an unappreciated component of the area's flora. Raising knowledge about them to a level comparable with vascular plants would enable Black Mountain to become a benchmark for assessing future changes in the area's total floristic diversity.

1. Introduction

Macrofungi¹, lichens, hornworts, liverworts and mosses are cryptogams, i.e. plants that lack flowers or seeds. Although the first flowering plant was collected from Black Mountain in 1927 (Purdie 2018a), the first of these cryptogams was not collected until 1952. Since then around 740 specimens have been collected and lodged in the Australian National Herbarium in Canberra (Purdie 2018a) and underpin current knowledge of the diversity of these plants in the Black Mountain area.

2. Methods

All macrofungi, lichen, hornwort, liverwort and moss records with a collecting locality of "Black Mountain", ACT were extracted from the Australian National Herbarium Specimen Information Register database (ANHSIR, <http://www.anbg.gov.au/cgi-bin/anhsir>). Specimens located outside the Black Mountain area (as defined in Purdie 2018b and hereafter called the study area) were then removed from the list. Photographic records of these organisms in Canberra Nature Map (<http://canberra.naturemapr.org/>) that were taken in the study area were also examined and the list of species extracted. Additional information on macrofungi was provided by Lepp (2018).

The family and scientific names of all taxa were checked and updated as necessary to reflect current taxonomy and nomenclature, by searching the sources shown in Table 1. Where discrepancies arose, advice was sought from Chris Cargill, Curator, Cryptogam Herbarium, Australian National Herbarium (liverworts and mosses); Jack Elix (via Chris Cargill), Associate, Australian National Herbarium (lichens); Heino Lepp, Associate, Australian National Herbarium (macrofungi); and Tom May, Senior Research Scientist (Mycology), Royal Botanic Gardens Melbourne (macrofungi).

Habitat and substrate data were summarised for each species, based on herbarium specimen information and by deducing them from Canberra Nature Map photo records (by checking the photo for substrate and checking the location in Google Maps in satellite view for habitat). Additional information for some

¹ Macrofungi are fungi that produce easily visible fruiting bodies.

fungus species was sourced from Lepp (2018).

Table 1. Sources of information for cryptogam taxonomy and nomenclature

Type	Sources of information
Macrofungi	Atlas of Living Australia (http://www.ala.org.au/) Interactive Catalogue of Australian Fungi (ICAF) (http://data.rbg.vic.gov.au/cat/fungicatalogue) Species Fungorum (http://www.speciesfungorum.org/names/Fundic.asp)
Lichens	Checklist of the Lichens of Australia and its Island Territories (http://www.anbg.gov.au/abrs/lichenlist/lichenchecklist_p_r.html)
Hornworts & liverworts	Checklist of Australian Liverworts and Hornworts, version 6 April 2006 (http://www.anbg.gov.au/abrs/liverwortlist/liverworts_a_z.html),
Mosses	AusMoss (http://data.rbg.vic.gov.au/cat/mosscatalogue) Australian Mosses Online (http://www.anbg.gov.au/abrs/Mosses_online/00_AMO_all%20GENERA.html) Flora of Australia Volume 51: Mosses 1, Australian Biological Resources Study

The total number of species present in the study area for each group were extracted from the final species' lists. Totals exclude taxa that had only been identified to genus level where specimens from the same genus had been identified to a species, because it was not known whether the specimens identified just to genus level were the same or different species from those already identified. In practice this meant, for example, that *Amanita effusa*, *A. muscari*, *A. ochrophylla* and *Amanita* spp. in the fungal list were counted as three (not four) species, while *Flavoparmelia haysomii* and *Flavoparmelia* sp. were counted as one (not two) species in the lichen list. Where several specimens had only been identified to genus level, and that genus was the only representative in the species list (e.g. *Lepiota* spp., *Russula* spp. and *Schizopora* spp. in the fungal list), it was counted as a single species because it was not known how many taxa the specimens represent. For these reasons, the totals represent the minimum number of species recorded from the study area.

3. Results

3.1 All species recorded

At least 313 non-vascular species have been recorded in the study area to the end of December 2017, comprising 40% macrofungi, 36% lichens, 8% hornworts and liverworts and 16% mosses. The species in each group are listed in appendices 1–4 (respectively) and discussed below. All species are native except seven macrofungi (*Amanita muscaria*, *Astraeus hygrometricus*, *Lactarius deliciosus*, *Rhizopogon luteolus*, two *Suillus* spp. and *Tricholoma* 'virgatum group').

3.1.1 Macrofungi

The first macrofungus specimen from Black Mountain was collected in 1959. Since then, around 125 species have been recorded (Appendix 1), including eight only from photographs in Canberra Nature Map and 34 only by Lepp (2018). The total number present is probably closer to 150 or more species². Of the taxa in the Australian National Herbarium, 92% are represented by only one or two specimens and all except one species by 1–4 specimens (Table 2). The agaric *Cortinarius globuliformis* is represented by 10 herbarium specimens.

Habitat data were available for 117 taxa (Appendix 1)—70% were located in dry sclerophyll forest and/or *Eucalyptus* woodland, 9% in grassy areas and 20% in a variety of habitats. The 121 species for which data were available (Appendix 1) were recorded on four main substrate types (Table 3)—around 12% grew on live plant material, 57% on dead plant material, and 65% on soils. Some species were

² Includes estimated additional species in the genera *Amanita* (+10 spp.), *Cortinarius* (+10 spp.), *Mycena* (+5 spp.), and *Anthracobia*, *Lactarius* and *Schizopora* (+1 species each); Lepp (2018).

recorded from more than one type of substrate.

Table 2. Number of macrofungi specimens per species in the herbarium; n = 84 species

Number of specimens/spp. in ANHSIR	Number of Species	% of species	Number of specimens/spp. in ANHSIR	Number of Species	% of species
1	67	80	4	3	4
2	10	12	10	1	1
3	3	4			

Table 3. Substrate on which macrofungi were growing; n = 121 species

Substrate type	Substrate	No. and (%) of species recorded on substrate
Dead plants	Burnt eucalypts, burnt logs, charred wood	7 (6)
	Dead grass tussocks, twig and leaf litter, woody debris	4 (3)
	Dead wood, dead tree stump, decaying bark	42 (35)
	Long-dead wood, rotted wood, rotting branch	15 (12)
	<i>Pinus radiata</i> log	1 (<1)
Live plants	Bark, live wood, tree base, root	12 (10)
	Bryophytes (mosses)	1 (<1)
	Grassroots and shafts	1 (<1)
Ground	Burnt soil	4 (3)
	Rocks	1 (<1)
	Soil	73 (60)
Other	Dung	2 (2)



Fig. 1. Macrofungi from Black Mountain: *Laetiporus portentosus* on a Red Stringybark (*Eucalyptus macrorhyncha*) trunk (left), *Mycena* sp. in litter (right). Photos: R Purdie.

3.1.2 Lichens

The first lichen specimen was collected in 1952. At least 114 species have been recorded since then (Appendix 2), all based on herbarium specimens except two taxa recorded only from Canberra Nature Map photos; the latter are not included in the species count. Seventy per cent of species are represented

by only one or two herbarium specimens and 85% by 1–4 specimens (Table 4). Only five species are represented by >10 herbarium specimens: *Cladia aggregata*, *Cladonia capitellata* var. *squamatica* and *Usnea scabrida* subsp. *elegans* each by 11 specimens, and *Cladonia merochlorophaea* and *Hypogymnia billardierei* by 14 specimens each.

Table 4. Number of lichen specimens per species in the herbarium; n = 114 species

Number of specimens/spp. in ANHSIR	Number of Species	% of species	Number of specimens/spp. in ANHSIR	Number of Species	% of species
1	52	46	6	3	3
2	27	24	7	0	-
3	9	8	8	5	4
4	8	7	11	3	3
5	5	4	14	2	2

Of the 97 taxa whose habitat was recorded (Appendix 2), 92% were located in dry sclerophyll forest, 8% in *Eucalyptus* woodland and 3% in gullies. Substrate data were available for 111 taxa (Appendix 2). These lichens were recorded on four main types of substrate (Table 5), 33% growing on dead plant material, 28% on live plants, 56% on rocks, and 25% on soil. Of the 61 taxa with two or more specimens or photographic records, 24 (39%) were recorded growing on more than one substrate type.

Table 5. Substrate on which lichens were growing; n = 111 species

Substrate type	Substrate	No. and (%) of species recorded on substrate
Dead plant material	Dead eucalypts (stem, trunk, stump), dead wood, logs/fallen logs	16 (14)
	Rotting log, rotting wood	7 (6)
	Charred stump, burnt bark	2 (2)
	Dead sticks on ground	1 (1)
	Dead shrubs, dead shrub branches	5 (5)
	Debris, debris in gully	3 (3)
	Moist decaying vegetation	2 (2)
Live plants	Tree: <i>Eucalyptus macrorhyncha</i> (bark & trunk)	9 (8)
	Tree: <i>Exocarpos cupressiformis</i> (bark, branches)	11 (10)
	Shrub: <i>Brachyloma daphnoides</i>	3 (3)
	Shrub: <i>Grevillea alpina</i>	1 (1)
	Shrub: <i>Acacia</i> trunk	1 (1)
	Shrub: <i>Leptospermum</i> branches	2 (2)
	Shrubs (twigs)	2 (2)
	Damp bark	1 (1)
Rocks	Boulders	9 (8)
	Rocks, stones & pebbles	51 (46)
	Mossy rock	2 (2)
Soil	Rocky ground, ground, soil	27 (24)
	Decaying termite mound	1 (1)



Fig. 2. Lichens from Black Mountain: *Parmotrema reticulatum* (left) and *Parmeliaceae* (right). Photos: R Purdie.

3.1.3 Hornworts and liverworts

The first hornwort/liverwort specimen was collected in 1961, and since then at least 24 species have been recorded, comprising two hornworts and 22 liverworts (Appendix 3). All records are based on herbarium specimens; 71% of species are represented by only one or two specimens and 83% by 1–4 specimens (Table 6). Only one species is represented by >10 herbarium specimens, viz. the liverwort *Asterella drummondii* (16 specimens).

Table 6. Number of hornwort and liverwort specimens per species in the herbarium; n = 24 species

Number of specimens/spp. in ANHSIR	Number of Species	% of species	Number of specimens/spp. in ANHSIR	Number of Species	% of species
1	11	46	6	0	-
2	6	25	7	0	-
3	2	8	8	2	8
4	1	4	16	1	4
5	1	4			

Of the 21 taxa whose habitat was recorded (Appendix 3) 20 were located in dry sclerophyll forest, with three species also recorded in grassy woodland. The 24 species were recorded on four main types of substrate (Appendix 3), 21% growing on dead plant material, 8% on live plants, 29% on rocks and 67% on soil (Table 7). Four of the 13 taxa with two or more specimens or photographic records were recorded growing on more than one substrate type.

Table 7. Substrate on which hornworts and liverworts were growing; n = 24 species

Substrate type	Substrate	No. and (%) of species recorded on substrate
Dead plant material	Dead wood, rotting wood, burnt log/wood, leaf litter	5 (21)
Live plants	<i>Exocarpos cupressiformis</i> trunk, tree trunk	2 (8)
Rocks	Humus-covered rocks, rocks	7 (29)
Soil	Soil, stony ground	16 (67)



Fig. 3. Liverwort *Riccia duplex* var. *megaspora* (left) and mosses (bright green) growing on rock with lichens (right) on Black Mountain. Photos: R Purdie.

3.1.4 Mosses

The first moss specimen was collected in 1955. Since then at least 50 species have been recorded (Appendix 4), all based on herbarium records except two taxa recorded only from Canberra Nature Map photos; the latter are not included in the species count. Seventy-two per cent of species are represented by only one or two herbarium specimens and 86% by 1–4 specimens (Table 8). Only one species is represented by >10 herbarium specimens, viz. *Dawsonia longiseta* (11 specimens).

Table 8. Number of moss specimens per species in the herbarium; n = 50 species

Number of specimens/spp. in ANHSIR	Number of Species	% of species	Number of specimens/spp. in ANHSIR	Number of Species	% of species
1	27	54	6	0	-
2	9	18	7	1	2
3	6	12	8	1	2
4	1	2	9	1	2
5	3	6	11	1	2

Of the 38 taxa whose habitat was recorded (Appendix 4) 92% were located in dry sclerophyll forest, and 13% also recorded in *Eucalyptus* woodland, some growing in both habitats. The 45 species whose substrate was recorded (Appendix 4) grew on four main types (Table 9), 7% on dead wood, 4% on bark, 22% on rocks, and 84% on soil. Seven of the 23 taxa with two or more specimens or photographic records were recorded growing on more than one type of substrate.

Table 9. Substrate on which mosses were growing; n = 45 species

Substrate type	Substrate	No. and (%) of species recorded on substrate
Dead wood	Rotting log/wood, burnt log	3 (7)
Bark	Bark, tree trunk	2 (4)
Rocks	Rocks	10 (22)
Soil	Soil, mud	38 (84)

3.2 Species records over time

Of the 313 taxa from the study area with herbarium or Canberra Nature Map records, only four macrofungi, eight lichen, seven liverwort and one moss species have a record from the period 2007 to April 2017. Based on the most recent collection date of taxa with herbarium specimens, 84% of macrofungi and 63% of liverworts species have been recorded in the last 30 years but only 30% of lichens and 40% of mosses (Table 10). Twenty per cent of lichen and 32% of moss species have not been recorded for 40 or more years. Around 77% of the 272 taxa in the herbarium are represented by only one or two specimens each (tables 2, 4, 6, 8), and an average of three macrofungi, three lichen, one hornwort/liverwort and two moss specimens have been collected each year since the first collections. These data are insufficient to track changes in species diversity over time.

Table 10. Total number of species and % last recorded

	Macro-fungi	Lichens	Hornworts/ liverworts	Mosses
Total number of species	83 ^a	114	24	50
Time interval (number of years ago)	% last recorded			
• 2017–1988 (<30)	84	30	63	40
• 1987–1978 (30–39)	13	50	25	28
• 1977–1964 (40–53)	3	20%	-	-
• 1977–1962 (40–55)	-	-	12	-
• 1977–1955 (40–62)	-	-	-	32

^a Includes only species with herbarium specimens and known collecting dates.

4. Discussion

Macrofungi, lichens, hornworts, liverworts and mosses are an important part of the floristic diversity of Black Mountain, with at least 313 of these non-vascular species recorded, of which 98% are native. The majority of species were located in habitats associated with the dry sclerophyll vegetation (open forest and woodland) that covers most of the study area. Hornworts and liverworts had the most restricted distribution, most species occurring only in seepage/drainage areas or creek lines. Species grew on a variety of substrates (tables 3, 5, 7, 9). Sixty-five per cent of macrofungi, 67% of hornwort/liverwort and 84% of moss species were recorded on soil, with 46% of lichen, 22% of moss and 29% of hornwort/liverwort species growing on rocks. Around eight species (seven macrofungi; one moss) were only recorded from burnt soil or burnt/charred wood; while such species often may be more obvious after fire, they are not restricted to these substrates (Cargill 2018; Lepp 2018).

4.1 Comparison of non-vascular and vascular flora

Based on the number of specimens not determined to species level (appendices 1–4) and estimates of additional macrofungi that are probably present (Lepp 2018), the total number of species for the non-vascular groups examined in this study could be as high as 400. This is much lower than the 705 vascular species present in the study area (Purdie 2018b), but probably reflects the much larger number of exotic taxa that are part of the ACT's vascular flora (Lepschi et al. 2017) and possibly the lower search effort on Black Mountain for non-vascular plants. The Australian National Herbarium holds around 725 non-vascular specimens from the study area compared with 3300 vascular specimens. These figures reflect the activity of seven people who have specialised in collecting macrofungi, lichens, hornworts, liverworts and mosses compared with over 200 people making vascular plant collections (Purdie 2018a).

The number of native non-vascular taxa (from 306 known species to a potential 400 species) is comparable with the 392 native vascular species recorded in the study area (Purdie 2018b). Although

the latter are considered to reflect the vascular flora comprehensively (because of high search effort), the comprehensiveness of the non-vascular lists (appendices 1–4) is not known. Of the seven collectors specialising in cryptogams, Lepp (2018) targeted particular groups of macrofungi, while the hornwort/liverwort collecting of Cargill (2018) and lichen collecting of Elix (2018) has been opportunistic. Elix (2018) estimates that less than half the lichen species on Black Mountain have been collected. It thus seems highly likely that the total number of species recorded for all five non-vascular groups is far from comprehensive.

4.2 Species richness

It is difficult to compare the floristic richness of Black Mountain’s macrofungi, lichens, hornworts, liverworts and mosses with similar areas elsewhere. The nearby Mt Ainslie – Mt Majura area has similar vegetation and shares 88% of its native vascular species with Black Mountain (Purdie 2018b). Of the 47 herbarium specimens of non-vascular taxa from Ainslie–Majura identified to species level, 66% have also been recorded on Black Mountain; the comparable figure for Canberra Nature Map records is 85% (Table 11). While the total number of species and number of species per hectare on Ainslie–Majura are substantially lower than on Black Mountain (Table 11), this most likely reflects lower collecting effort, with 724 herbarium specimens from Black Mountain (Purdie 2018a) compared with only 73 specimens from Ainslie–Majura (ANHSIR records January 2018). Photographic records from Canberra Nature Map provide a more detailed record of macrofungi on Ainslie–Majura than herbarium specimens (Table 11) but are still likely to reflect much lower search effort there compared with Black Mountain.

Table 11. Comparison of species richness on Black Mountain and Mt Ainslie – Mt Majura

	Black Mtn (this study)	Mt Ainslie – Mt Majura			
		Herbarium records^a		CNM records^b	
	All species	All taxa	^cSpecies level taxa: no. on BM/total no.	All taxa	^dSpecies level taxa: no. on BM/total no.
Macrofungi	125	5	0/2	23	6/8
Lichens	114	32	19/30	14	4/4
Hornworts–Liverworts	24	5	3/4	0	-
Mosses	50	15	9/11	2	1/1
Total no. of species	313	57	31/47	39	11/13
Species/ha^e	0.626	0.051		0.035	

^a Data from ANHSIR records, 23 January 2018.

^b Data from Canberra Nature Map, 23 January 2018.

^c Of the specimens identified to species level, number of species shared with Black Mountain/total number of species identified.

^d Of the photographs identified to species level, number of species shared with Black Mountain/total number of species identified.

^e Based on Black Mountain study area = 500 ha and Mt Ainslie – Mt Majura = 1121 ha (Purdie 2018b).

4.3 Managing over the next 50 years

Non-vascular plants are usually a very much under-valued part of an area’s total floristic diversity, and management practices based on vascular species are assumed to be appropriate for the non-vascular flora (if the latter are thought about at all). The fact that the total number of native macrofungi, lichen, hornwort, liverwort and moss species currently recorded in the study area is comparable with (and may well be higher than) the total number of recorded native vascular species, suggests that the non-vascular groups warrant more attention.

It is not known how many of the 313 non-vascular species recorded on Black Mountain can be counted as part of the area's current flora (i.e. collected or observed in the last decade; Purdie 2018b). There is neither a benchmark (e.g. comparable to that of Gray and McKee (1969) for vascular plants) nor sufficient records of species' presence to assess how long the species have been in the area or how many (and which) species are still present. Given the value of Black Mountain for tracking changes in vascular species diversity from 1969 to the present and as a benchmark for assessing changes in the future (Purdie 2018b), perhaps it is time to raise knowledge of the area's non-vascular flora to a comparable level.

5. Acknowledgements

My thanks to Patrick McCarthy for initial advice on the most appropriate data sources for lichen, liverwort and moss names; to Tom May, Royal Botanic Gardens Melbourne and Heino Lepp, Australian National Herbarium, for advice on fungal nomenclature; and Chris Cargill, Australian National Herbarium, for advice on hornwort/liverwort and moss names. Thanks also to Heino, Chris and Brendan Lepschi for useful comments on a draft of the paper.

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Macrofungi recorded in the Black Mountain study area

Compiled by RW Purdie and H Lepp

Family name

Family names are from the *Census of Plants of the Australian Capital Territory* (Lepp 2017) except those marked with * that are from Species Fungorum (<http://www.speciesfungorum.org/>).

Scientific name

Nomenclature follows the ACT Census (Lepp 2017) except for names marked with ^ that are not yet included in it and sourced from Species Fungorum (as above). For a genus where there is more than one record of an undetermined species, it is listed as *Genus* spp. (rather than *Genus* sp.) as the specimens may represent more than one species. An (E) after the name indicates the species has been introduced to Australia by humans (i.e. it is exotic).

Growth form

Agaric	Fleshy, cap (usually atop a stem) with gills on its underside.	Leathery shelf	Leathery shelf-like outgrowth from wood, smooth on the underside.
Birds nest	Small, cone-like cup, inside which sit tiny 'eggs'.	Polypore	Leathery to woody, with pores on the underside of a cap (that sits atop a stem) or on the underside of a shelf-like outgrowth from wood; in a few species, the pores may be elongated or broken and so appear maze-like.
Black lips	Pair of parallel black lines (1-5 mm long and the pairs usually in large numbers).	Puffball	Roughly spherical bag of powdery spores with a persistent, well-defined apical opening through which the spores can puff out.
Bolete	Fleshy, cap atop a stem, spongy pored layer on the underside of the cap.	Puffball kin	Variously-shaped, powdery-spored (like a puffball, but without a persistent apical opening).
Club fungus	Fleshy to corky, either only a simple stem or with slight apical branching, apices blunt or pointed.	Stinkhorn	Variously shaped, with a smelly, khaki-brown spore slime on its surface.
Cobblestone crust	Black, brittle, bumpy sheet (a bit like cobblestone paving).	Toothed fungus	Fleshy, cap atop a stem, teeth or spines on the underside of the cap.
Coral fungus	Fleshy and much- branched.	Truffle	Roughly spherical, usually more-or-less buried in the soil (but occasionally atop a short stem).
Corticoid	Flat, skin-like covering (usually on wood), smooth or rough but not brittle.		
Cup	Fleshy to rubbery, saucer to cup-shaped.		
Disk-like	Flat, circular disk.		
Earthstar	Roughly spherical bag of spores that sits on a star-like base.		
Jelly fungus	Gelatinous, lobed or with brain-like folds.		

No. of records ANHSIR/CNM

A single number shows the number of specimens present in the Australian National Herbarium Specimen Information Register (ANHSIR) at the end of December 2017. Entries with a forward slash (/) show the number of specimens in ANSHIR on the left and the number of photo records in Canberra Nature Map (CNM) on the right. Entries lacking a number are from Lepp (2018).

Last recorded ANHSIR/CNM

A single date shows the year of the most recent specimen in the Australian National Herbarium Specimen Information Register (ANHSIR). Entries with a forward slash (/) show the year of the most recent specimen in ANHSIR on the left and the year of the most recent photograph in Canberra Nature Map (CNM) on the right. A hyphen (-) indicates no specimen held is in ANHSIR. Entries lacking a date are from Lepp (2018).

Habitat

This column indicates the habitat recorded on specimen labels in ANHSIR and/or deduced from a photo record in CNM and/or from Lepp (2018). Dry sclerophyll forest includes habitat recorded on herbarium labels as forest or woodland dominated by one or more of *Eucalyptus macrorhyncha*, *E. rossii* and/or *E. mannifera*, forest, open forest, dry sclerophyll woodland and dry *Eucalyptus* woodland.

Substrate

This column indicates the substrate on which the macrofungus was growing as recorded on specimen labels in ANHSIR and/or deduced from photo records in CNM and/or from Lepp (2018).

Family	Scientific name	Growth form	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Agaricaceae	<i>Arachnion drummondii</i>	Puffball kin	1	1999	Grassland?	Soil
Agaricaceae	<i>Agaricus</i> sp.	Agaric	1	1992	?	Soil
Agaricaceae	<i>Bovista pulyuggeodes</i>	Puffball	1	1988	Dry sclerophyll forest	Soil
Agaricaceae	<i>Calvatia cyathiformis</i> [^]	Puffball kin	1	1992	Grassland with scattered shrubs and trees	Soil
Agaricaceae	<i>Disciseda australis</i> [^]	Puffball	1	2005	Grassland with scattered shrubs	Soil
Agaricaceae	<i>Lepiota</i> spp.	Agaric	1/1	2004/2016	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Soil
Agaricaceae	<i>Macrolepiota dolichaula</i>	Agaric	1	2000	Grassland?	Soil
Agaricaceae	<i>Nidula emodensis</i>	Birds nest	1	1987	<i>Eucalyptus</i> woodland	Soil?
Agaricaceae	<i>Nidula niveotomentosa</i>	Birds nest	1	1999	Dry sclerophyll forest	Decaying bark on dead tree
Agaricaceae	<i>Tulostoma</i> [^] sp.	Stalked puffball				

Family	Scientific name	Growth form	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Amanitaceae	<i>Amanita effusa</i>	Agaric	2	?	Dry sclerophyll forest	Soil
Amanitaceae	<i>Amanita muscaria</i> (E)	Agaric			With <i>Pinus radiata</i>	Soil
Amanitaceae	<i>Amanita ochrophylla</i>	Agaric	1	1995	Dry sclerophyll forest	Soil
Amanitaceae	<i>Amanita</i> spp.	Agaric	3	2000	Dry sclerophyll forest; grassland?	Soil
Amanitaceae	<i>Amanita umbrinella</i>	Agaric	2	1995	Dry sclerophyll forest	Soil
Amanitaceae	<i>Amanita xanthocephala</i>	Agaric	1	2000	Dry sclerophyll forest	Soil
Atheliaceae	<i>Athelia</i> aff. <i>epiphylla</i> [^]	Corticoid	1	1991	?	Burnt log
Bolbitiaceae	<i>Bolbitius titubans</i>	Agaric			Damp, sheltered, disturbed habitats with weedy grasses	Soil
Boletaceae	<i>Boletellus</i> cf. <i>dissiliens</i> [^]	Bolete	1	1989	Dry sclerophyll forest	Soil
Boletaceae	<i>Boletus</i> [^] sp.	Bolete	1	2000	Dry sclerophyll forest	Soil
Boletaceae	<i>Phylloporus</i> [^] sp.	Agaric	1	1995	Dry sclerophyll forest	Soil
Boletinellaceae	<i>Phlebopus marginatus</i>	Bolete	1	2005	Dry sclerophyll forest	Soil
Boletinellaceae	<i>Phlebopus</i> sp.	Bolete	1	1959	Dry sclerophyll forest?	Soil
Botryobasidiaceae	<i>Botryobasidium vagum</i> [^]	Corticoid	1	1999	Dry sclerophyll forest	Dead wood
Botryobasidiaceae	<i>Haplotrichum pulchrum</i>	Corticoid	2	2000	Grassland	Charred wood, rotted wood
Calostomataceae*	<i>Calostoma fuscum</i>	Stalked puffball	1	1990	Dry sclerophyll forest	Soil
Clavariaceae	<i>Clavaria ?sulcata</i> [^]	Club (fleshy)			Mixed <i>Eucalyptus</i> woodland	Soil
Clavariaceae	<i>Clavaria amoena</i> [^]	Club (fleshy)	0/1	-/2014	Dry sclerophyll forest	?
Clavicipitaceae	<i>Cordyceps</i> sp.	Club (corky)	1	1990	Dry sclerophyll forest	Soil
Cortinariaceae	<i>Cortinarius archeri</i> sens. lat. ³	Agaric			Various habitats with eucalypts	Soil
Cortinariaceae	<i>Cortinarius australiensis</i>	Agaric			Various habitats with eucalypts	Soil

³ Name allows for the visually similar *C. microarcheri* and *C. subarcheri*.

Family	Scientific name	Growth form	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Cortinariaceae	<i>Cortinarius austrovenetus</i> [^]	Agaric	1/1	1990/2016	Dry sclerophyll forest	Soil
Cortinariaceae	<i>Cortinarius globuliformis</i> [^]	Agaric	10	2000	Dry sclerophyll forest	Soil
Cortinariaceae	<i>Cortinarius</i> spp.	Agaric	3/1	2000/2016	Dry sclerophyll forest	Soil
Cortinariaceae	<i>Thaxterogaster levisporus</i>	Truffle	1	1990	Dry sclerophyll forest	Soil
Dacrymycetaceae*	<i>Calocera</i> [^] sp.	Club (fleshy)	0/1	-/2016	Dry sclerophyll forest	Dead wood
Diplocystaceae	<i>Astraeus hygrometricus</i> (E)	Earthstar	1	2003	Dry sclerophyll forest	Leaf litter
Entolomataceae	<i>Entoloma</i> spp.	Agaric			Various habitats	Soil
Fomitopsidaceae	<i>Laetiporus portentosus</i>	Polypore	4/1	1987/2016	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Live eucalypts
Fomitopsidaceae	<i>Postia pelliculosa</i>	Polypore	0/1	-/2016	Dry sclerophyll forest	Dead wood
Geastraceae	<i>Geastrum</i> spp.	Earthstar	1/2	2000/2016	Dry sclerophyll forest	Soil
Geastraceae	<i>Geastrum tenuipes</i>	Earthstar			Various habitats	Soil
Gloeophyllaceae*	<i>Gloeophyllum sepiarium</i> [^]	Polypore	1	1987	<i>Eucalyptus</i> woodland	<i>Pinus radiata</i> log
Gloniaceae*	<i>Glonium circumserpens</i> [^]	Black lips	3	1999	Dry sclerophyll forest	Soil, rocks, decayed bark
Helotiaceae	<i>Chlorociboria</i> sp.	Cup fungus	0/1	-/2010	Dry sclerophyll forest	Dead wood
Helotiaceae	<i>Phaeohelotium undulatum</i>	Cup fungus			Dry sclerophyll forest	Soil
Hydnaceae	<i>Hydnum</i> sp.	Toothed fungus	1	1990	Dry sclerophyll forest	Soil
Hydnangiaceae	<i>Hydnangium carneum</i>	Truffle			Various habitats with eucalypts	Soil
Hydnangiaceae	<i>Hydnangium sublamellatum</i>	Intermediate between agaric and truffle	1	2002	Dry sclerophyll forest	Soil
Hydnangiaceae	<i>Laccaria</i> spp.	Agaric	1/4	1984/2016	Dry sclerophyll forest	Base of eucalypt, soil
Hydnodontaceae*	<i>Subulicystidium</i> [^] sp.	Corticoid	1	1997	<i>Eucalyptus</i> woodland	Dead wood
Hygrophoraceae	<i>Hygrocybe</i> spp.	Agaric			Various habitats	Soil
Hymenochaetaceae	<i>Coltricia</i> sp.	Polypore			Various habitats	Soil
Hymenochaetaceae	<i>Coltriciella</i> sp.	Polypore	1	1999	Dry sclerophyll forest	Long-dead wood

Family	Scientific name	Growth form	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Hymenochaetaceae	<i>Hymenochaete</i> spp.	Corticoid	3	1999	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Wood
Hymenochaetaceae	<i>Phellinus</i> sp.	Polypore	1	1982	?	Wood
Hymenogastraceae*	<i>Galerina</i> [^] spp.	Agaric			Various habitats	Wood, bryophytes or soil
Hymenogastraceae*	<i>Gymnopilus junonius</i>	Agaric			Various habitats	On dead wood or at the bases of live tree trunk
Hymenogastraceae*	<i>Hypholoma fasciculare</i>	Agaric			Various habitats	Dead wood
Hypoxylaceae*	<i>Hypoxylon</i> spp.	Cobble-stone crust			Various habitats	Dead wood
Hysteriaceae	<i>Hysterium angustatum</i>	Black lips	1	1997	Dry sclerophyll forest	Wood
Hysteriaceae	<i>Hysterobrevium smilacis</i> [^]	Black lips	1	1992	Open woodland	Dead stump
Hysteriaceae (Heino Lepp det)	<i>Hysterobrevium mori</i> [^]	Black lips	0/1	-/2017	Dry sclerophyll forest	Dead wood
Inocybaceae*	<i>Crepidotus</i> [^] spp.	Agaric (stemless)			Various habitats	Dead or live wood
Inocybaceae*	<i>Inocybe</i> sp.	Agaric	1	1992	?	Burnt soil
Lachnocladiaceae	<i>Vararia</i> sp.	Corticoid	1	2001	Dry sclerophyll forest	Rotted wood
Marasmiaceae	<i>Campanella</i> [^] sp.	Agaric (stemless)			Dry sclerophyll forest	On bases of dead grass tussocks
Marasmiaceae	<i>Crinipellis australis</i>	Agaric	1	1991	Dry sclerophyll forest	Grass roots and shafts
Marasmiaceae	<i>Marasmius oreades</i>	Agaric			Grassy areas	Soil
Marasmiaceae	<i>Marasmius</i> sp.	Agaric	1	1999	<i>Eucalyptus</i> woodland	Rock crevice
Meruliaceae	<i>Hyphoderma setigerum</i>	Corticoid	2	2001	Dry sclerophyll forest	Rotted wood
Meruliaceae	<i>Hyphoderma</i> sp.	Corticoid	1	2001	Dry sclerophyll forest	Rotted wood
Meruliaceae	<i>Phlebia</i> [^] sp.	Corticoid	1	2000	Dry sclerophyll forest	Rotted wood
Mesophelliaceae	<i>Nothocastoreum cretaceum</i>	Puffball kin	2	1999	Dry sclerophyll forest	Soil
Mycenaceae	<i>Mycena</i> spp.	Agaric	0/3	-/2016	Dry sclerophyll forest	Soil, litter
Omphalotaceae	<i>Omphalotus nidiformis</i>	Agaric (stemless)			Dry sclerophyll forest	Dead wood

Family	Scientific name	Growth form	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Peniophoraceae	<i>Peniophora cinerea</i> [^]	Corticioid	1	2000	Grassland?	Long-dead wood
Pezizaceae	<i>Hydnoplicata convoluta</i>	Truffle	1	2000	Dry sclerophyll forest	Soil
Pezizaceae	<i>Plicaria endocarpoides</i>	Cup fungus	1	1991	<i>Eucalyptus</i> woodland	Burnt soil
Phallaceae	<i>Clathrus archeri</i>	Stinkhorn			Various habitats	Soil
Phallaceae	<i>Ileodictyon gracile</i>	Stinkhorn	1	1988	Dry sclerophyll forest	Soil?
Phanerochaetaceae	<i>Byssomerulius corium</i>	Corticioid	1	1980	Dry sclerophyll forest	Rotting branches
Phanerochaetaceae	<i>Phanerochaete sordida</i>	Corticioid	1	2001	Dry sclerophyll forest	Rotted wood
Phanerochaetaceae	<i>Phanerochaete</i> spp.	Corticioid	2	2001	Dry sclerophyll forest with <i>Callitris</i> ; <i>Eucalyptus</i> woodland	Fallen twig
Physalacriaceae	<i>Oudemansiella gigaspora</i>	Agaric	1	1991	Dry sclerophyll forest	Soil
Pluteaceae	<i>Volvopluteus gloiocephalus</i> [^]	Agaric	1	1989	Exotic grasses in disturbed clearing	Soil
Polyporaceae	<i>Hexagonia vesparia</i> [^]	Polypore	1	1987	<i>Eucalyptus</i> woodland.	Eucalypts
Polyporaceae	<i>Laccocephalum</i> spp.	Polypore	2/1	2006/2016	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Soil
Polyporaceae	<i>Macrohyporia</i> [^] sp.	Polypore	1	1991	<i>Eucalyptus</i> woodland	Burnt eucalypt
Polyporaceae	<i>Panus fasciatus</i> [^]	Agaric (leathery)	1	1991	Dry sclerophyll forest	Dead wood
Polyporaceae	<i>Perenniporia ochroleuca</i>	Polypore	2	1984	<i>Eucalyptus</i> woodland	Dead wood
Polyporaceae	<i>Polyporus arcularius</i>	Polypore	1	1991	Dry sclerophyll forest	Dead wood
Polyporaceae	<i>Pycnoporus coccineus</i>	Polypore	4/1	1987/2016	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Live wood, dead wood
Polyporaceae	<i>Trametes versicolor</i>	Polypore			Various habitats	Dead wood
Pterulaceae	<i>Radulomyces ?confluens</i>	Corticioid			Dry sclerophyll forest	Dead wood
Pyronemataceae	<i>Aleurina ferruginea</i>	Cup fungus	1	1989	<i>Callitris</i> grove	Soil
Pyronemataceae	<i>Anthracobia</i> [^] spp.	Cup fungus	3	1991	<i>Eucalyptus</i> woodland	Burnt soil
Pyronemataceae	<i>Cheilymenia coprinaria</i>	Cup fungus	1	1990	<i>Eucalyptus</i> woodland	Dung
Pyronemataceae	<i>Pyronema domesticum</i>	Cup fungus	1	1991	?	Burnt soil
Ramariaceae*	<i>Ramaria</i> [^] sp.	Coral fungus	0/1	-/2016	<i>Eucalyptus</i> woodland	Soil?
Rhizopogonaceae	<i>Rhizopogon luteolus</i> (E)	Truffle	1	1990	Dry sclerophyll forest	Soil.
Russulaceae	<i>Arcangeliella daucina</i>	Truffle	1	1990	Dry sclerophyll forest	Soil

Family	Scientific name	Growth form	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Russulaceae	<i>Cystangium</i> sp.	Truffle	1	1990	Dry sclerophyll forest	Soil
Russulaceae	<i>Gymnomyces</i> sp.	Truffle	1	2000	Dry sclerophyll forest	Soil
Russulaceae	<i>Lactarius deliciosus</i> (E)	Agaric			With <i>Pinus radiata</i>	Soil
Russulaceae	<i>Lactarius</i> spp.	Agaric			Dry sclerophyll forest	Soil
Russulaceae	<i>Russula</i> ^ spp.	Agaric	2	1993	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Soil
Schizophyllaceae	<i>Schizophyllum commune</i>	Agaric (leathery, stemless)			Various habitats	Dead wood
Schizoporaceae	<i>Schizopora</i> ^ spp.	Polypore	2	1997	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Burnt log, wood
Schizoporaceae	<i>Hyphodontia ?nespori</i> ^	Corticoid	1	1998	Open area	Rotted wood
Schizoporaceae	<i>Xylodon australis</i>	Corticoid			Dry sclerophyll forest	On a fallen, long-dead eucalypt branch
Sclerodermataceae	<i>Pisolithus marmoratus</i>	Puffball kin	1/1	1982/2017	Dry sclerophyll forest	Soil
Sclerodermataceae	<i>Pisolithus microcarpus</i>	Puffball kin	1	2002	Dry sclerophyll forest	Soil
Sclerodermataceae	<i>Pisolithus</i> sp.	Puffball kin	1	1964	Dry sclerophyll forest	Soil?
Sclerodermataceae	<i>Scleroderma</i> sp.	Puffball kin	1/1	1975/2014	Dry sclerophyll forest	Rocky soil
Sclerodermataceae	<i>Scleroderma verrucosum</i>	Puffball kin	1	1983	?	Soil
Serpulaceae	<i>Austropaxillus</i> ^ 'infundibuliformis group'	Agaric			Various habitats with eucalypts	Soil
Stereaceae	<i>Stereum hirsutum</i>	Leathery shelf			<i>Eucalyptus</i> woodland	Well-rotted stump
Stereaceae	<i>Stereum illudens</i>	Leathery shelf	1	1975	<i>Eucalyptus</i> woodland	Rotting wood
Stereaceae	<i>Stereum ochraceoflavum</i> ^	Leathery shelf				
Stereaceae	<i>Stereum</i> spp.	Leathery shelf	3	2000	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Bark, trunk of burnt tree, rotted wood
Strobilomycetaceae*	<i>Austroboletus</i> cf. <i>dictyotus</i> ^	Bolete	1	2000	Dry sclerophyll forest	Soil

Family	Scientific name	Growth form	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Strophariaceae	<i>Psilocybe</i> [^] spp.	Agaric			Various habitats	Twig litter or other woody debris
Suillaceae	<i>Suillus grevillea</i> [^] and/or <i>Suillus granulatus</i> (E)	Bolete			With <i>Pinus radiata</i>	
Suillaceae	<i>Suillus luteus</i> (E)	Bolete			With <i>Pinus radiata</i>	Soil
Thelephoraceae	<i>Tomentella</i> [^] sp.	Corticoid	1	2000	Grassland?	Charred wood
Thelephoraceae	<i>Tomentellopsis echinospora</i>	Corticoid	1	1999	Dry sclerophyll forest	Charred wood
Thelephoraceae	<i>Amaurodon aquicoeruleus</i>	Corticoid	1	2000	Dry sclerophyll forest	Well-rotted wood
Tremellaceae	<i>Tremella mesenterica</i>	Jelly fungus	0/1	-/2016	Dry sclerophyll forest	Bark
Tricholomataceae	<i>Tricholoma</i> sp.	Agaric	1	2000	Dry sclerophyll forest	Soil
Tricholomataceae	<i>Tricholoma</i> 'virgatum group' (E)	Agaric			With <i>Pinus radiata</i> .	Soil
Tubulicrinaceae	<i>Tubulicrinis calothrix</i>	Corticoid	4	2000	Dry sclerophyll forest; <i>Eucalyptus</i> woodland; grassland	Charred or long-dead wood
Tulasnellaceae	<i>Tulasnella</i> sp.	Corticoid	1	2001	Dry sclerophyll forest	Long-dead wood
Xylariaceae	<i>Poronia erici</i>	Disk-like	1	2003	Dry sclerophyll forest	Dung
Xylariaceae	<i>Xylaria</i> [^] sp.	Club (corky)	2	2005	Dry sclerophyll forest	Buried ?root, buried wood

Lichens recorded in the Black Mountain study area**Family name**

Family names are from the *Checklist of the Lichens of Australia and its Island Territories* (<http://www.anbg.gov.au/abrs/lichenlist/introduction.html>, updated 12 April 2017), accessed 24 November 2017 except for those marked with an asterisk (*). The latter indicates the more recent family to which the species is assigned compared with family names in the *Census of Plants of the Australian Capital Territory* (Elix 2017) as at 26 November 2017.

Scientific name

Nomenclature follows the ACT Census (Elix 2017) except for names marked with ^ that are more recent names for the taxon from the *Checklist of the Lichens of Australia and its Island Territories* (see above). The names in brackets (synonyms) are the names shown in the ACT Census at 26 November 2017. For a genus where there is more than one record of an undetermined species, it is listed as *Genus* spp. (rather than *Genus* sp.) as the specimens may represent more than one species.

No. of records ANHSIR/CNM

A single number shows the number of specimens present in the Australian National Herbarium Specimen Information Register (ANHSIR) at the end of December 2017. Entries with a forward slash (/) show the number of specimens in ANSHIR on the left and the number of photo records in Canberra Nature Map (CNM) on the right.

Last recorded ANHSIR/CNM

A single date shows the year of the most recent specimen in Australian National Herbarium Specimen Information Register (ANHSIR). Entries with a forward slash (/) show the year of the most recent specimen in ANHSIR on the left and the year of the most recent photograph in Canberra Nature Map (CNM) on the right; a hyphen (-) indicates no specimen is held in ANHSIR.

Habitat

This column indicates the habitat recorded on specimen labels in ANHSIR and/or deduced from a photo record in CNM. Dry sclerophyll forest includes habitat recorded on herbarium labels as forest or woodland dominated by one or more of *Eucalyptus macrorhyncha*, *E. rossii* and/or *E. mannifera*, Eucalypt forest, open forest, open *Eucalyptus* forest or dry *Eucalyptus* woodland.

Substrate

This column indicates the substrate on which the lichen was growing as recorded on specimen labels in ANHSIR and/or deduced from photo records in CNM.

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Caliciaceae	<i>Calicium abietinum</i>	1	1981	Dry sclerophyll forest	Shaded side of dead <i>Eucalyptus</i>
Caliciaceae	<i>Calicium victorianum</i> subsp. <i>victorianum</i>	5	1986	Dry sclerophyll forest	Dead <i>Eucalyptus</i> stumps; felled trunk; dead <i>Eucalyptus</i> stem
Caliciaceae	<i>Cyphelium trachylioides</i>	1	1986	Dry sclerophyll forest	Dead <i>Eucalyptus</i> stem
Candelariaceae	<i>Candelariella xanthostigmoides</i>	1	1997	Dry sclerophyll forest	<i>Exocarpos</i> branches
Carbonicolaceae	<i>Carbonicola foveata</i>	2	1986	Dry sclerophyll forest	Base and lower trunk of <i>Eucalyptus macrorhyncha</i>
Chrysothricaceae	<i>Chrysothrix xanthina</i>	1	1980	Dry sclerophyll forest	Rock outcrop
Cladoniaceae*	<i>Cladia aggregata</i>	11/1	1999/2016	Dry sclerophyll forest	Rock, moist decaying vegetation, rotting wood, soil surface
Cladoniaceae*	<i>Cladia beaugleholei</i> [^] (<i>Heterodea beaugleholei</i>)	3	2009	Dry sclerophyll forest	Rocky ground, soil
Cladoniaceae*	<i>Cladia muelleri</i> [^] (<i>Heterodea muelleri</i>)	8	2009	Dry sclerophyll forest	Soil and debris
Cladoniaceae*	<i>Cladia schizopora</i>	1	1981	?	Base of Eucalypt
Cladoniaceae	<i>Cladonia capitellata</i> var. <i>squamatica</i>	11	1983	Dry sclerophyll forest	Soil
Cladoniaceae	<i>Cladonia celata</i>	2	1981	?	Soil and debris
Cladoniaceae	<i>Cladonia cervicornis</i> subsp. <i>verticillata</i>	8	1980	Dry sclerophyll forest	Soil, moist decaying vegetation and mossy rock, stony clay
Cladoniaceae	<i>Cladonia chlorophaea</i>	1	1964	Dry sclerophyll forest	Damp ground
Cladoniaceae	<i>Cladonia corniculata</i>	1	1983	Dry sclerophyll forest	Shaded soil?
Cladoniaceae	<i>Cladonia enantia</i> [^] (<i>C. tessellata</i>)	1	1981	Dry sclerophyll forest	Soil
Cladoniaceae	<i>Cladonia floerkeana</i>	5	1983	Dry sclerophyll forest	Rotting log, soil surface and mossy rock
Cladoniaceae	<i>Cladonia humilis</i>	1	1975	Dry sclerophyll forest	Rotting wood
Cladoniaceae	<i>Cladonia macilenta</i>	2	1981	Dry sclerophyll forest	Dead wood

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Cladoniaceae	<i>Cladonia merochlorophaea</i>	14	1983	Dry sclerophyll forest	Soil, debris, rock
Cladoniaceae	<i>Cladonia neozelandica</i> var. <i>wilsonii</i> [^] (<i>C. sulcata</i> var. <i>wilsonii</i>)	1	1981	Dry sclerophyll forest	Soil
Cladoniaceae	<i>Cladonia nudicaulis</i>	1	1975	Gully	?
Cladoniaceae	<i>Cladonia ochrochlora</i>	6	1983	Dry sclerophyll forest	Soil.
Cladoniaceae	<i>Cladonia pleurota</i>	3	1975	?	Soil bank
Cladoniaceae	<i>Cladonia ramulosa</i>	3	1983	<i>Eucalyptus</i> woodland	Soil and rock
Cladoniaceae	<i>Cladonia rei</i>	1	1980	Dry sclerophyll forest	Ground
Cladoniaceae	<i>Cladonia rigida</i> var. <i>rigida</i>	1	1979	Dry sclerophyll forest	Rotting wood
Cladoniaceae	<i>Cladonia</i> spp.	10/3	2016/2016	Dry sclerophyll forest; <i>Eucalyptus</i> forest	Slate, bank of moist gully, soil
Cladoniaceae	<i>Cladonia subsquamosa</i>	1	1983	<i>Eucalyptus</i> woodland.	?
Cladoniaceae	<i>Thysanothecium scutellatum</i>	8	1999	Dry sclerophyll forest	Old decaying termite mound, soil; burnt and dead <i>Eucalyptus macrorhyncha</i> bark; dead wood
Cladoniaceae	<i>Thysanothecium</i> sp.	1	2016	Eucalypt bushland	Burnt, charcoal covered and rotting log
Graphidaceae*	<i>Diploschistes muscorum</i> subsp. <i>bartlettii</i>	2	1980	Dry sclerophyll forest	Soil
Graphidaceae*	<i>Diploschistes thunbergianus</i>	1	1975	?	Soil
Icmadophilaceae	<i>Dibaeis arcuata</i>	1	1996	Dry sclerophyll forest	Soil
Lecanoraceae	<i>Lecanora farinacea</i>	3	1980	Dry sclerophyll forest	Rocks.
Lecanoraceae	<i>Lecanora pseudogangaleoides</i>	1	1977	?	Sandstone rocks
Lecanoraceae	<i>Lecanora</i> sp.	1	1998	?	Soil
Lecanoraceae	<i>Lecidella xylogena</i>	1	2001	Dry sclerophyll forest	Well-rotted wood
Lecideaceae	<i>Lecidea fuscoatrula</i>	2	1980	Dry sclerophyll forest	Rocks
Lecideaceae	<i>Lecidea ochroleuca</i>	4	1985	Dry sclerophyll forest	Soil and rocky ground
Lecideaceae	<i>Lecidea</i> spp.	2	1984	Dry sclerophyll forest	Rocks and soil surface
Lecideaceae	<i>Lecidea terrena</i>	2	1980	Dry sclerophyll forest	Stones and rocks
Lecideaceae*	<i>Paraporpidia leptocarpa</i>	3	1980	Dry sclerophyll forest	Rock and stones

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Lecideaceae*	<i>Ramboldia laeta</i>	2	1979	Dry sclerophyll forest	Branches of <i>Exocarpos cupressiformis</i>
Lecideaceae*	<i>Ramboldia</i> sp.	1	1975	?	<i>Brachyloma daphnoides</i>
Lecideaceae*	<i>Ramboldia stuartii</i>	1	1980	Dry sclerophyll forest	Log
Lobariaceae	<i>Pseudocyphellaria neglecta</i>	1	2016	Dry sclerophyll forest	Vertical rock surfaces with mosses and other lichens
Micareaaceae	<i>Micarea</i> spp.	2	1984	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	<i>Eucalyptus</i> trunk
Mycoblastaceae*	<i>Tephromela alectoronica</i>	1	1979	Dry sclerophyll forest	Fallen log
Mycocaliciaceae	<i>Mycocalicium subtile</i>	1	1981	Dry sclerophyll forest	Dead <i>Eucalyptus</i>
Ochrolechiaceae*	<i>Ochrolechia africana</i>	2	1980	Dry sclerophyll forest	<i>Eucalyptus macrorhyncha</i> and fallen log
Ophioparmaceae*	<i>Hypocenomyce scalaris</i>	2	1984	Dry sclerophyll forest	<i>Eucalyptus macrorhyncha</i> trunk
Parmeliaceae		0/2	-/2016	Dry sclerophyll forest	Rock, wood
Parmeliaceae	<i>Austroparmelina conlabrosa</i>	2	2001	Dry sclerophyll forest	Rock and branches of <i>Exocarpos cupressiformis</i>
Parmeliaceae	<i>Austroparmelina endoleuca</i>	1	1975	?	<i>Brachyloma</i>
Parmeliaceae	<i>Austroparmelina labrosa</i>	1	1977	Sheltered gully	Rocks
Parmeliaceae	<i>Austroparmelina pseudorelicina</i>	4	1999	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Bark of <i>Exocarpos</i> ; rocks; dead branches of small shrubs
Parmeliaceae	<i>Flavoparmelia haysomii</i>	2	1975	?	Boulders.
Parmeliaceae	<i>Flavoparmelia rutidota</i>	8	1998	Dry sclerophyll forest	Branches of <i>Exocarpos cupressiformis</i> , <i>Brachyloma daphnoides</i> , <i>Grevillea alpina</i> twig, rock
Parmeliaceae	<i>Flavoparmelia</i> sp.	1	1979	Dry sclerophyll forest	Branches of <i>Exocarpos cupressiformis</i>
Parmeliaceae*	<i>Hypogymnia billardierei</i>	14	1981	Dry sclerophyll forest	Live and dead twigs of shrubs; <i>Brachyloma</i>

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
					<i>daphnoides</i> ; dead eucalypt trunk; rotting log; rock
Parmeliaceae*	<i>Hypogymnia mundata</i>	1	1964	?	Dead sticks on ground
Parmeliaceae*	<i>Hypogymnia pulverata</i>	1	1975	Dry sclerophyll forest	Dead wood
Parmeliaceae*	<i>Hypogymnia</i> sp.	1	2016	Eucalypt bushland	Top facing side of a rotten log
Parmeliaceae*	<i>Hypogymnia subphysodes</i> var. <i>austerodioides</i>	1	1975	Moist, sheltered gully	Sandstone boulders
Parmeliaceae*	<i>Hypogymnia subphysodes</i> var. <i>subphysodes</i>	2	1975	?	Bark of <i>Eucalyptus macrorhyncha</i>
Parmeliaceae*	<i>Hypogymnia tubularis</i>	4	1980	Dry sclerophyll forest	Sandstone rocks and dead shrubs
Parmeliaceae	<i>Hypotrachyna immaculata</i>	1	1977	?	Rocks
Parmeliaceae	<i>Notoparmelia erumpens</i>	2	2016	Dry sclerophyll forest	Boulders
Parmeliaceae	<i>Notoparmelia signifera</i>	4	2001	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Rock, logs and charred stumps
Parmeliaceae	<i>Notoparmelia tenuirima</i>	1	1980	Dry sclerophyll forest	<i>Acacia</i> trunk
Parmeliaceae	<i>Parmelia</i> sp.	1	1979	Dry sclerophyll forest	Branches of <i>Exocarpos cupressiformis</i>
Parmeliaceae	<i>Parmotrema perlatum</i>	1	1979	Dry sclerophyll forest	Branches of <i>Exocarpos cupressiformis</i>
Parmeliaceae	<i>Parmotrema reticulatum</i>	5	2016	Dry sclerophyll forest	Boulders and branches of <i>Exocarpos cupressiformis</i>
Parmeliaceae	<i>Parmotrema</i> spp.	2	1980	Dry sclerophyll forest	<i>Exocarpos</i> trunk, <i>Acacia</i> trunk
Parmeliaceae	<i>Punctelia pseudocoralloidea</i>	6	1980	Dry sclerophyll forest	Rock; ground below rock outcrop; dead shrub and branches of <i>Exocarpos cupressiformis</i>
Parmeliaceae	<i>Relicina subnigra</i>	1	1977	?	Rocks

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Parmeliaceae*	<i>Usnea inermis</i>	4	1979	Dry sclerophyll forest	Shrub twigs; eucalypt twigs and branches; <i>Leptospermum</i> branches
Parmeliaceae*	<i>Usnea scabrida</i> subsp. <i>elegans</i>	11	1989	Dry sclerophyll forest	<i>Leptospermum</i> shrubs; <i>Exocarpos</i> bark and branches; dead shrub branches; rotting <i>Acacia</i> trunk
Parmeliaceae	<i>Xanthoparmelia atrocarnodes</i>	2	1979	Dry sclerophyll forest	Rocks and fallen logs
Parmeliaceae	<i>Xanthoparmelia australasica</i>	1	1975	?	Boulders
Parmeliaceae	<i>Xanthoparmelia barbellata</i>	1	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia cheelii</i>	3	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia congesta</i>	1	1975	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia consociata</i>	2	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia digitiformis</i>	1	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia filarszkyana</i>	1	1976	?	Rocks
Parmeliaceae	<i>Xanthoparmelia flavescentireagens</i>	3	1985	Dry sclerophyll forest	Soil and rocky ground
Parmeliaceae	<i>Xanthoparmelia furcata</i>	1	1979	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia glabrans</i>	1	1979	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia hypoprotocetrarica</i>	5	2001	Dry sclerophyll forest	Rocks and boulders
Parmeliaceae	<i>Xanthoparmelia metaclystoides</i>	2	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia mougeotina</i>	4	1999	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Rocks and pebbles
Parmeliaceae	<i>Xanthoparmelia neorimalis</i>	4	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia neotinctina</i>	2	2001	Dry sclerophyll forest	Dead wood and rocks
Parmeliaceae	<i>Xanthoparmelia norcapnodes</i>	2	1975	?	Boulders
Parmeliaceae	<i>Xanthoparmelia notata</i>	2	1998	Dry sclerophyll forest	Rock
Parmeliaceae	<i>Xanthoparmelia parviloba</i>	2	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia rimalis</i>	5	2001	Dry sclerophyll forest	Rocks

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Parmeliaceae	<i>Xanthoparmelia</i> spp. (including <i>Neofuscelia</i> spp.)	9	1999	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Rock, rocky ground and ground
Parmeliaceae	<i>Xanthoparmelia subprolixa</i>	1	2001	Dry sclerophyll forest	Rocks
Parmeliaceae	<i>Xanthoparmelia subspodochroa</i>	2	1999	<i>Eucalyptus</i> woodland	?
Parmeliaceae	<i>Xanthoparmelia substrigosa</i>	1	1985	Dry sclerophyll forest	Rocky ground
Parmeliaceae	<i>Xanthoparmelia tasmanica</i>	1	1980	Dry sclerophyll forest	Rock
Parmeliaceae	<i>Xanthoparmelia xanthomelaena</i>	1	1976	Dry sclerophyll forest	Rocks
Pertusariaceae	<i>Pertusaria subventosa</i>	1	1980	Dry sclerophyll forest	Rock
Pertusariaceae	<i>Pertusaria xanthoplaca</i>	2	1980	Dry sclerophyll forest	Rock and boulders
Physciaceae	<i>Buellia homophylia</i>	8	2009	Dry sclerophyll forest	Rocks and boulders
Physciaceae	<i>Buellia procellarum</i>	2	1981	Dry sclerophyll forest	Rock
Physciaceae	<i>Buellia</i> spp.	2	1981	Dry sclerophyll forest	Rock
Physciaceae	<i>Dimelaena australiensis</i>	1	1986	Dry sclerophyll forest	Rock
Physciaceae	<i>Physcia austrostellaris</i>	1	1974	?	Base of <i>Exocarpos cupressiformis</i>
Physciaceae	<i>Physcia tribacia</i>	3	1980	Dry sclerophyll forest	Rock
Pilocarpaceae (?)*	<i>Leiomonis erratica</i> [^] (<i>Micraria erratica</i> , in <i>Micareaceae</i>)	1	1985	Dry sclerophyll forest	Dead <i>Eucalyptus</i>
Ramalinaceae	<i>Ramalina</i> sp.	1	1979	Dry sclerophyll forest	<i>Exocarpos cupressiformis</i>
Rhizocarpaceae*	<i>Rhizocarpon adarense</i>	2	1979	Dry sclerophyll forest	Rock
Rhizocarpaceae*	<i>Rhizocarpon geographicum</i>	1	1964	?	Rock
Sphaerophoraceae*	<i>Neophyllis melacarpa</i>	1	1983	<i>Eucalyptus</i> woodland	Ground and base of <i>Eucalyptus</i>
Stereocaulaceae	<i>Hertelidea pseudobotryosa</i>	3	1980	Dry sclerophyll forest	Dead wood and lower portion of <i>Eucalyptus macrorhyncha</i>
Stereocaulaceae	<i>Lepraria finkii</i> [^] (<i>L. lobificans</i>)	1	1999	<i>Eucalyptus</i> woodland	Soil layer on rock
Stereocaulaceae	<i>Lepraria</i> spp.	5	1980	Dry sclerophyll forest	Ground, rocks, damp bark
Teloschistaceae	<i>Caloplaca aequata</i>	2	2009	<i>Eucalyptus</i> woodland	Rock
Teloschistaceae	<i>Caloplaca cinnabarina</i>	2	2008	Dry sclerophyll forest	Rock

Family	<i>Scientific name</i>	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Teloschistaceae	<i>Caloplaca</i> sp.	0/1	- /2016	Dry sclerophyll forest	Rock
Teloschistaceae	<i>Teloschistes sieberianus</i>	1	1975	?	Shrub
Trapeliaceae*	<i>Rimularia exigua</i>	1	1980	Dry sclerophyll forest	Rock
Tricholomataceae	<i>Lichenomphalia chromacea</i>	2/8	2009/2016	Dry sclerophyll forest	Soil

Hornworts and liverworts recorded in the Black Mountain study area**Family name**

Family names are from the *Census of Plants of the Australian Capital Territory* (Cargill 2017a).

Scientific name

Nomenclature follows the ACT Census (Cargill 2017a) except for names marked with ^ that are more recent names not yet added to or changed in the Census. The names in brackets (synonyms) are the names shown in the ACT Census at 19 December 2017.

No. of records ANHSIR/CNM

A single number shows the number of specimens present in the Australian National Herbarium Specimen Information Register (ANHSIR) at the end of December 2017. Entries with a forward slash (/) show the number of specimens in ANSHIR on the left and the number of photo records in Canberra Nature Map (CNM) on the right.

Last recorded ANHSIR/CNM

A single date shows the year of the most recent specimen in the Australian National Herbarium Specimen Information Register (ANHSIR). Entries with a forward slash (/) show the year of the most recent specimen in ANHSIR on the left and the year of the most recent photograph in Canberra Nature Map (CNM) on the right. A hyphen (-) indicates no specimen is held in ANHSIR.

Habitat

This column indicates the habitat recorded on specimen labels in ANHSIR and/or deduced from a photo record in CNM. Dry sclerophyll forest includes habitat recorded on herbarium labels as forest or woodland dominated by two or three of *Eucalyptus macrorhyncha*, *E. rossii*, *E. mannifera* and/or *E. polyanthemos*, forest, open forest, dry sclerophyll woodland or *Eucalyptus* woodland near the summit. Grassy woodland includes habitat recorded as woodland dominated by *Eucalyptus melliodora* and *E. polyanthemos*, woodland near the former Rani Road, or in creek lines originally associated with grassy woodland.

Substrate

This column indicates the substrate on which the hornwort or liverwort was growing as recorded on specimen labels in ANHSIR and/or deduced from photo records in CNM.

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Hornworts					
Anthocerotaceae	<i>Anthoceros punctatus</i>	1	1962	?	Damp ground
Notothyladaceae	<i>Phaeoceros carolinianus</i>	1	1964	?	Stony ground
Liverworts					
Acrobolbaceae	<i>Enigmella thallina</i>	1	2001	Dry sclerophyll forest	Soil
Acrobolbaceae	<i>Lethocolea pansa</i>	3	1999	Dry sclerophyll forest	Soil; leaf litter
Aytoniaceae	<i>Asterella drummondii</i>	16	2016	Dry sclerophyll forest; grassy woodland	Soil; stony ground; rock
Cephaloziellaceae	<i>Cephaloziella exiliflora</i>	5	2002	Dry sclerophyll forest	Dead wood; rotting wood; burnt log/wood; soil
Cephaloziellaceae	<i>Cephaloziella hirta</i>	1	1980	Dry sclerophyll forest	Rotting wood
Chaetophyllopsidaceae	<i>Chaetophyllopsis whiteleggei</i>	2	1994	Dry sclerophyll forest	Leaf litter
Fossombroniaceae	<i>Fossombronia maritima</i> [^] (some as <i>F. pusilla</i>)	4	2008	Eucalyptus woodland; grassy woodland	Soil
Fossombroniaceae	<i>Fossombronia</i> spp.	11	2008	Dry sclerophyll forest	Soil; rock
Geocalycaceae	<i>Chiloscyphus latifolius</i>	1	1980	Dry sclerophyll forest	Soil
Geocalycaceae	<i>Chiloscyphus minor</i>	2	1980	Dry sclerophyll forest	Rotting wood
Geocalycaceae	<i>Chiloscyphus semiteres</i>	8	2016	Dry sclerophyll forest	Humus-covered rock; soil
Jubulaceae	<i>Frullania pentapleura</i>	8	1980	Dry sclerophyll forest	Rock; <i>Exocarpos</i> trunk; tree trunk
Jubulaceae	<i>Frullania probosciphora</i>	1	1975	?	Soil
Lejeuneaceae	<i>Lepidozia obtusiloba</i>	1	1983	Dry sclerophyll forest	Rock
Marchantiaceae	<i>Lunularia cruciata</i>	2	1980	Dry sclerophyll forest	Soil
Marchantiaceae	<i>Marchantia berteroaana</i>	2	1993	Dry sclerophyll forest	Soil
Pseudolepicoleaceae	<i>Temnoma palmatum</i>	1	1999	Dry sclerophyll forest	Soil
Ricciaceae	<i>Riccia cartilaginosa</i> [^] (<i>R. marginata</i>)	1	2008	Dry sclerophyll forest	Rock.
Ricciaceae	<i>Riccia duplex</i> var. <i>megaspora</i> [^] (<i>R. multifida</i>)	3/1	2014/2017	Dry sclerophyll forest; grassy woodland	Soil
Ricciaceae	<i>Riccia nigrella</i>	2	2008	Dry sclerophyll forest	Soil; rock

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Ricciaceae	<i>Riccia sorocarpa</i>	1	2008	Dry sclerophyll forest	Rock
Ricciaceae	<i>Riccia subbifurca</i>	2	1991	Dry sclerophyll forest	Soil
Targioniaceae	<i>Targionia lorbeeriana</i>	1/2	1980/2016	Dry sclerophyll forest	Soil

Mosses recorded in the Black Mountain study area

Family name

Family names are from the *Census of Plants of the Australian Capital Territory* (Cargill 2017b) except those marked with * that are more recently accepted names not yet include in the Census, and those marked with # that are from AusMoss (<http://data.rbg.vic.gov.au/cat/mosscatalogue>, accessed 20 December 2017).

Scientific name

Nomenclature follows the ACT Census (Cargill 2017b) except for names marked with ^ that are names not yet added to or changed in the Census, and with # that are from AusMoss (as above). For a genus where there is more than one record of an undetermined species, it is listed as *Genus* spp. (rather than *Genus* sp.) as the specimens may represent more than one species.

No. of records ANHSIR/CNM

A single number shows the number of specimens present in the Australian National Herbarium Specimen Information Register (ANHSIR) at the end of December 2017. Entries with a forward slash (/) show the number of specimens in ANSHIR on the left and the number of photo records in Canberra Nature Map (CNM) on the right.

Last recorded ANHSIR/CNM

A single date shows the year of the most recent specimen in ANHSIR. Entries with a forward slash (/) show the year of the most recent specimen in ANHSIR on the left and the year of the most recent photograph in CNM on the right. A hyphen (-) indicates no specimen is held in ANHSIR

Habitat

This column indicates the habitat recorded on specimen labels in ANHSIR and/or deduced from a photo record in CNM. Dry sclerophyll forest includes habitat recorded on herbarium labels as forest or woodland dominated by one or two of *Eucalyptus macrorhyncha*, *E. rossii* and/or *E. mannifera*, *Eucalyptus* forest and dry sclerophyll woodland.

Substrate

This column indicates the substrate on which the moss was growing as recorded on specimen labels in ANHSIR and/or deduced from photo records in CNM.

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Bartramiaceae	<i>Bartramia hampeana</i>	1	1961	?	?
Bartramiaceae	<i>Bartramia robusta</i>	3	1991	Dry sclerophyll forest, <i>Eucalyptus</i> woodland	Soil
Bartramiaceae	<i>Breutelia affinis</i>	9	1991	Dry sclerophyll forest; <i>Eucalyptus</i> woodland	Stone, soil
Bartramiaceae	<i>Breutelia pendula</i>	1	1961	Dry sclerophyll forest	Soil
Bartramiaceae	<i>Breutelia pseudophilonotis</i>	1	1999	<i>Eucalyptus</i> woodland	?
Bartramiaceae	<i>Philonotis scabrifolia</i>	3	1965	Dry sclerophyll forest	Soil
Bartramiaceae	<i>Philonotis</i> spp.	2	1991	<i>Eucalyptus</i> woodland	Soil
Brachytheciaceae	<i>Brachythecium mildeanum</i>	1	1993	Dry sclerophyll forest	Soil
Brachytheciaceae	<i>Brachythecium plumosum</i>	2	1993	Dry sclerophyll forest	Soil
Brachytheciaceae	<i>Brachythecium rivulare</i>	1	1993	Dry sclerophyll forest	Soil
Brachytheciaceae	<i>Brachythecium rutabulum</i>	5	1993	Dry sclerophyll forest	Soil
Brachytheciaceae	<i>Rhynchostegium</i> sp.	1	1992	Dry sclerophyll forest	Soil
Brachytheciaceae	<i>Rhynchostegium tenuifolium</i>	2	1993	Dry sclerophyll forest	Soil
Bryaceae	<i>Bryum</i> spp.	3	1991	Dry sclerophyll forest	Soil
Bryaceae	<i>Gemmabryum apiculatum</i> [^]	1	1980	Dry sclerophyll forest	Rock
Bryaceae	<i>Gemmabryum dichotomum</i>	3	1997	Dry sclerophyll forest	Rock, mud
Bryaceae	<i>Imbribryum clavatum</i> [^] (as <i>Gemmabryum clavatum</i>)	1	1988	Dry sclerophyll forest	Soil
Bryaceae	<i>Rosulabryum billarderi</i>	1	1979	Dry sclerophyll forest	Soil
Bryaceae	<i>Rosulabryum capillare</i>	1	1960	?	Soil
Bryaceae	<i>Rosulabryum wightii</i>	1	1964	?	Mud
Ditrichaceae	<i>Ceratodon purpureus</i>	1	1960	?	Soil
Ditrichaceae	<i>Ditrichum difficile</i>	3	1980	Dry sclerophyll forest	Soil, rock
Ditrichaceae	<i>Eccremidium</i> spp.	2	2005	Dry sclerophyll forest	Soil
Fabroniaceae	<i>Fabronia australis</i>	1	1980	Dry sclerophyll forest	Rock
Fissidentaceae [#]	<i>Fissidens asplenioides</i> [^]	4	1980	Dry sclerophyll forest	Soil
Fissidentaceae [#]	<i>Fissidens curvatus</i> var. <i>curvatus</i> [#]	1	1980	Dry sclerophyll forest	Soil
Fissidentaceae [#]	<i>Fissidens linearis</i> var. <i>linearis</i> [#]	2	1980	Dry sclerophyll forest	Soil
Fissidentaceae [#]	<i>Fissidens taylorii</i> [^]	5	1991	Dry sclerophyll forest	Soil

Family	Scientific name	No. of records ANHSIR/CNM	Last recorded ANHSIR/CNM	Habitat	Substrate
Funariaceae	<i>Entosthodon apophysatus</i>	2	2000	Dry sclerophyll forest	Soil
Funariaceae	<i>Entosthodon</i> sp.	1	2000	<i>Eucalyptus</i> woodland.	Soil
Funariaceae	<i>Entosthodon subnudus</i> var. <i>gracilis</i>	2	1964	Dry sclerophyll forest	Soil
Funariaceae	<i>Funaria hygrometrica</i>	1	1963	?	Burnt log
Grimmiaceae	<i>Grimmia pulvinata</i> var. <i>africana</i>	1	1961	?	?
Grimmiaceae	<i>Schistidium apocarpum</i>	1	1980	Dry sclerophyll forest	Rock
Hypnaceae	<i>Hypnum cupressiforme</i>	1	1980	Dry sclerophyll forest	Tree trunk
Hypopterygiaceae*	<i>Hypopterygium tamarisci</i>	1	1961	?	?
Leucobryaceae*	<i>Campylopus appressifolius</i>	1	1960	?	Rock
Leucobryaceae*	<i>Campylopus clavatus</i>	0/1	-/2016	Dry sclerophyll forest	Soil
Leucobryaceae*	<i>Campylopus introflexus</i>	5	1999	Dry sclerophyll forest	Soil, bark
Mniaceae	<i>Pohlia nutans</i>	2	1983	Dry sclerophyll forest	Soil, rock
Mniaceae*	<i>Schizymenium bryoides</i>	8	1996	Dry sclerophyll forest	Rock, soil
Polytrichaceae	<i>Dawsonia longiseta</i>	11	1996	Dry sclerophyll forest	Soil, stony soil; rotting wood
Polytrichaceae	<i>Dawsonia</i> sp.	0/1	-/2015	Dry sclerophyll forest	Soil
Polytrichaceae	Polytrichaceae	0/1	-/2017	Dry sclerophyll forest	Soil
Polytrichaceae	<i>Polytrichum commune</i>	1	1975	?	Soil
Polytrichaceae	<i>Polytrichum juniperinum</i>	7	1996	Dry sclerophyll forest	Soil; rock
Pottiaceae	<i>Acaulon integrifolium</i>	1	1983	Dry sclerophyll forest	Soil
Pottiaceae	<i>Barbula calycina</i>	3	1991	<i>Eucalyptus</i> woodland	Soil
Pottiaceae	<i>Didymodon torquatus</i>	1	1960	?	Soil
Pottiaceae	<i>Tortula atrovirens</i>	1	1955	?	?
Pottiaceae	<i>Triquetrella papillata</i>	2	1980	Dry sclerophyll forest	Soil
Pottiaceae#	<i>Weissia controversa</i> ^	1	1980	Dry sclerophyll forest	Soil
Rhacocarpaceae	<i>Rhacocarpus purpurascens</i>	1	1973	?	Rotting log
Thuidiaceae	<i>Thuidiopsis sparsa</i> var. <i>sparsa</i>	1	1961	?	?
Thuidiaceae	<i>Thuidium</i> spp.	2	1980	Dry sclerophyll forest	Soil