Perth Urban Bushland Fungi

Brownman Swamp Bushland Fungi Report 2006

Written and produced by
Neale L. Bougher, Roz Hart and Sarah de Bueger
Department of Environment and Conservation – Perth Urban Bushland Fungi Project

The walking survey team

The 4WD survey team

Back at the WA Herbarium for further work.

Processing and vouchering the fungi collected

PUBF Website : **www.fungiperth.org.au**

Urban Bushland Council WA Inc

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Government of Western Australia Department of Environment and Conservation

Western Australian Naturalists Club

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Advice about the identity of the fungi was provided by Dr Neale Bougher, Mycologist, organisational support was provided by Roz Hart and Sarah de Bueger.

Photos and field assistance by PUBF participants

PUBF Website : **www.fungiperth.org.au**

Perth Urban Bushland Fungi Project Mycologist Neale Bougher and Community Education Officer Roz Hart conducted a biological survey for fungi in Brownman Swamp Bushland, part of Beeliar Regional Park on 19 July 2006. Fungi Leaders and volunteers from the Perth Urban Bushland Fungi (PUBF) Project, the Friends of North Lake Bushland and Beeliar Regional Park Operations Officer Phil Spencer assisted with the fungi survey.

This fungi survey was conducted as part of a **Department of Environment and Conservation (DEC) Regional Parks** Community Grant awarded to the Perth Urban Bushland Fungi Project to survey three sites in nominated DEC Regional Parks. Brownman Swamp Bushland is part of Beeliar Regional Park. The survey party divided into two groups, with both starting from the same point on the eastern side of the park. One group went with Operations Officer Phil Spencer in his 4WD vehicle and the other party walked as shown on the aerial photo on page 8.

Brownman Swamp Bushland Fungi

Unusually low rainfall in the period prior to this survey affected the abundance and diversity of fungi observed in the survey. However, 35 species of fungi were recorded at Brownman Swamp Bushland. These include decomposer fungi such as *Hygrocybe conica*, beneficial mycorrhizal fungi such as *Cortinarius* and many truffle species, see discussion below. No pathogenic (disease) fungi were observed during this survey. Some of the fungi from this survey remain unidentified pending further collections or more detailed comparative analyses. Many of the fungi could only be identified to genus level. This is because detailed taxonomic examinations are yet to be completed, or perhaps some are undescribed species.

One putatively invasive fungus was observed in the survey: *Coprinus* cf. *stanglianus* (recently re-named *Coprinopsis* cf. *stangliana*). This fungus seems to have been recently introduced into and increasing in the Perth region particularly in Tuart/Banksia woodlands (Bougher, N.L. 2006. *Coprinopsis stangliana* – a recently introduced fungus expanding in urban bushlands of the Perth region. *Nuytsia 16:1-8*). Its presence in Brownman Swamp Bushland may indicate that at least some areas within the Bushland may be highly disturbed. As it spreads into new areas this decomposer fungus will compete for resources with other fungi, but the overall ecological consequences of this are not known.

A significant feature of the fungi in this survey was the high taxonomic diversity of truffle fungi associated with thriving, regenerating stands of young (5-10 years old?) Tuart (*Eucalyptus gomphocephala*). Truffle fungi have special ecological significance linking Flora Fauna and Fungi. Truffle fungi occur below the litter and soil. They form mycorrhizal associations with plants such as eucalypts. They also emit odours to attract native mammals which dig them up and use them as a food resource. The animals in turn disperse the truffle spores. At Brownman Swamp Bushland, truffle fungi representing 8 genera were observed during the survey (about 1 hour was expended at the regenerating Tuart stand location) within a patch of approximately 15 x 15 metres: *Austrogautieria*, *Chondrogaster*, *Cortinarius*, *Cystangium*, *Hydnoplicata*, *Pogisperma* (genus in ed.), *Scleroderma*, and an undetermined genus. This represents the highest diversity of truffle fungi within a relatively small area observed by the PUBF team in typically similar short survey periods (or N. Bougher over a longer period) in the Perth urban region. The significance of the role of these fungi as beneficial mycorrhizal partners contributing towards the outwardly healthy appearance of the regenerating young Tuart at Brownman Swamp Bushland can be speculated. There are likely to be many hundreds of species of mycorrhizal fungi occurring in the Swan Coastal Plain. Individual plants such as those of *Eucalyptus gomphocephala* may have multiple and changing species of mycorrhizal fungi associated with them during their lifetime. In terms of benefits to the plants, it is not fully understood why the diversity of mycorrhizal fungi is so high. However in principal any major reduction in abundance and diversity of mycorrhizal fungi may be an indicator of a declining ecosystem. The role of truffle and other mycorrhizal fungi in maintaining the health of Tuart and possible correlations between reductions in their abundance and diversity and Tuart Decline is currently being investigated by the Tuart Health Research Group.

Management Recommendations for Fungi Biodiversity at Brownman Swamp Bushland

Is the ecology and biodiversity of Brownman Swamp Bushland in balance for long-term health? To help answer that question, management strategies for the biodiversity at Brownman Swamp need to consider the Flora, Fauna and Fungi together. The Fungi have crucial ecological roles for maintaining bushland health, including linkages between the 3 F's. An increased level of knowledge about the fungi at Brownman Swamp is required as a basis to managing the fungi, and in turn for managing the Flora and Fauna.

1. **Undertake biological surveys to build up an inventory of fungi:** Far more fungi are likely to occur in Brownman Swamp Bushland than those recorded in the inaugural survey. Because of the unpredictable nature of fungi fruiting, surveys need to be conducted over many years in order to capture the biodiversity of fungi present in any given area. Such inventory data can be used as a baseline to monitor changes in biodiversity at Brownman Swamp Bushland, such as any trend towards reduction in the diversity of significant ecological groups of fungi such as mycorrhizal species, and the effects of major disturbances such as fire or disease incursions.
2. **Record comprehensive data on surveys:** (i) the identity of the fungi (ii) the main features of the fungi (including close-up photographs), (iii) habitat (in litter, on dead wood etc…), (iv) plant species associated with each of the fungi. Standard recording sheets for fungi biodiversity surveys are available on request from PUBF.
3. **Georeference the surveys:** It would be desirable to georeference the surveys at Brownman Swamp Bushland: to build up a spatial map of distribution of individual fungi species. Such data can be overlain onto vegetation, soil and fire-age maps so as to potentially recognize associations between particular fungi and plants or vegetation and landscape types. A georeferencing survey kit developed by John Weaver for PUBF is available on loan from the WA Herbarium.
4. **Involve community:** It is recommended that further fungi surveys involving members of the local community be undertaken at Brownman Swamp. Involving community members can enable a greater sampling effort, a general increase in awareness about fungi and their roles and linkages in bushlands, and a greater appreciation of the need to preserve bushland. Fungi surveys are well suited to annual involvement of Friends Groups and volunteers from the local community.
5. **Determine the mycorrhizal plant partners of fungi.** To understand the mycorrhizal relationships between fungi and plants at Brownman Swamp, the list of known plants at Brownman Swamp should be annotated with the likely mycorrhizal status of each plant, e.g. categories such as - ectomycorrhizal, arbuscular, epacrid, orchid, not mycorrhizal. This will help understand how the pattern of occurrence of various species of fungi relates to the distribution of vegetation types at Brownman Swamp.
6. **Determine the animal interactions with fungi:** Determine what truffle fungi are present at Brownman Swamp, and if they are being used as a food resource by local native mammals. This information is significant knowledge to apply if mammals are being encouraged or relocated into the area, or to understand why there may have been declines in mammal populations at Brownman Swamp.

7. **Support a strategy to preserve representative landscapes:** Support a management plan that aims to preserve a variety of natural vegetation types and the diversity of plant species within the types. Also preserve a diversity of fire ages, including at least some long unburnt patches if possible. This strategy will help retain a variety of microhabitats for fungi – e.g. specific components of wood (logs, cones, twigs etc…), litter, moss beds, and specific mycorrhizal partner plants. By default, this strategy may foster fungi biodiversity at Brownman Swamp.

Brownman Swamp Bushland Fungi: 19 July 2006

Life Mode Key: M = Mycorrhizal, S = Saprotropic (Decomposer), S/P = Saprotrophic and Parasitic **Life Mode** is probable only as many fungi have not been tested.

Field Book Page number refers to the Perth Urban Bushland Fungi Field Book which is available for downloading from the project website at www.fungiperth.org.au

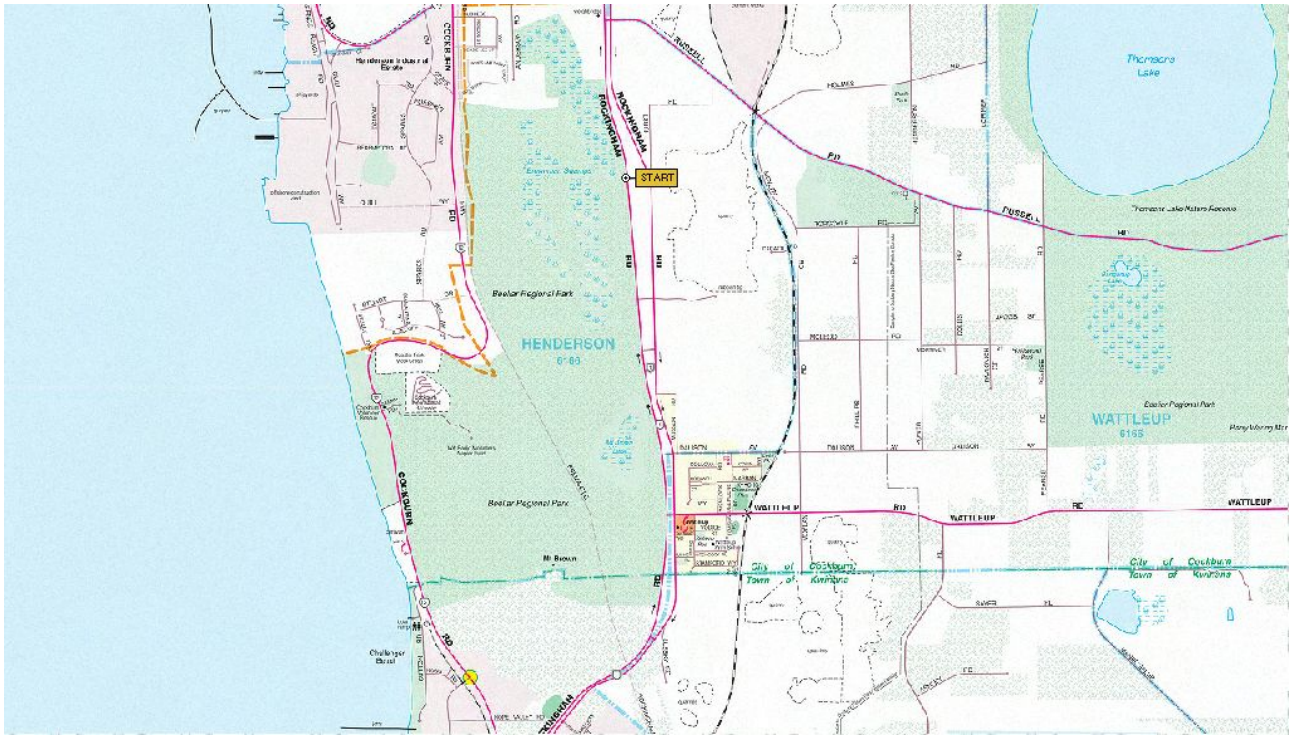
Scientific Name	Common Name	Form	Habitat	Life Mode	Field Book Page No.	Specimen ID
Austrogautieria manjimupana		truffle	underground/under litter	M		2572
***Chrondrogaster* sp.**		truffle	underground/under litter	M		2582
***Clitocybe* sp.**		mushroom	litter/ground	S		2548
Coprinus* cf. *stanglianus	**WA Magpie Fungus**	mushroom	litter/ground	S	J-5	2542, 2577
***Cortinarius* sp. (hypogeous)**		truffle	underground/under litter	M		2568
Cortinarius ochraceofulvus	**Golden Tuart Cortinarius**	mushroom	litter/ground	M	J-11	2556, 2559
***Crepidotus* sp.**		shell	dead wood	S		2538, 2546
***Cystangium* sp.**		truffle	underground/under litter	M		2579
***Galerina* sp.**		mushroom	litter/ground	S		2545, 2550
***Geastrum* sp.**		earthstar	litter/ground	S		2552
Gymnopilus* cf. *purpuratus		mushroom	dead wood	S		2535, 2536
Harknessia uromycoides	**Tuart Nut Fungus**	pustules	dead wood	S	C-1	2563
Hydnoplicata convoluta		truffle	underground/under litter	M		2578
Hygrocybe conica	**Conical Wax Cap**	mushroom	litter/ground	S		2544
Hypomyces rosellus		resupinate	dead wood	M		2565

***Inocybe* sp.**		mushroom	litter/ground	M		2551, 2562, 2566, 2570
Laetiporus portentosus	**White Punk**	bracket	dead wood/live trees	S	N-4	2571
***Lepiota* sp.**		mushroom	litter/ground	S		2554
***Lycoperdon* sp.**		puffball	litter/ground	S		2558
***Mycena* sp.**		mushroom	litter/ground	S		2547, 2549
***Phellinus* sp.**		bracket	dead wood	S		2537
***Pisolithus* sp.**	**Dog Poo Fungus**	puffball	litter/ground	M	L-3	2555
***Pogisperma* sp.**		truffle	underground/under litter	M		2574
***Scleroderma* sp.**		puffball	litter/ground	M	L-4	2564
Scleroderma cepa		puffball	litter/ground	M		2557
***Steccherinum* sp.**		resupinate	dead wood	S		2541
***Tremella mesenterica* group**	**Yellow Brain Fungus**	jelly fungus	dead wood	S	Q-2	2567
***Tricholoma* sp.**		mushroom	litter/ground	S		2573, 2580
Undetermined Agaric		mushroom	litter/ground	-		2543, 2575
Undetermined Bolete		mushroom	litter/ground	M		2576
Undetermined Hyphomycete		mould	litter/ground	S		2560, 2581
Undetermined Resupinate		resupinate	dead wood	M		2561
Undetermined Slime Mould		slime mould	dead wood	S		2539, 2540
Undetermined Truffle		truffle	litter/ground	M		2569
***Xerula* sp.**		mushroom	litter/ground	S		2553

Permanent Voucher Collections

Seventeen of the fungi collected during this event were deposited in the WA Herbarium fungi collection with the following details:

Scleroderma cepa	Voucher ID: E8364	Specimen ID: 2557
Undetermined Hyphomycete	Voucher ID: E8365	Specimen ID: 2560
Cortinarius ochraceofulvus	Voucher ID: E8366	Specimen ID: 2559
Coprinus* cf. *stanglianus	Voucher ID: E8367	Specimen ID: 2577
Coprinus* cf. *stanglianus	Voucher ID: E8368	Specimen ID: 2542
***Inocybe* sp.**	Voucher ID: E8369	Specimen ID: 2551
Gymnopilus* cf. *purpuratus	Voucher ID: E8370	Specimen ID: 2536
Undetermined Slime Mould	Voucher ID: E8371	Specimen ID: 2540
***Steccherinum* sp.**	Voucher ID: E8372	Specimen ID: 2541
Harknessia uromycoides	Voucher ID: E8373	Specimen ID: 2563
Hypomyces rosellus	Voucher ID: E8374	Specimen ID: 2565
Hydnoplicata convoluta	Voucher ID: E8375	Specimen ID: 2578
***Cortinarius* sp. (hypogeous)**	Voucher ID: E8376	Specimen ID: 2568
Austrogautieria majimupana	Voucher ID: E8377	Specimen ID: 2572
***Chrondrogaster* sp.**	Voucher ID: E8378	Specimen ID: 2582
***Pogisperma* sp.**	Voucher ID: E8379	Specimen ID: 2574
***Scleroderma* sp. (hypogeous)**	Voucher ID: E8380	Specimen ID: 2564



StreetExpress Map showing the location of Brownman Swamp Bushland in Henderson.

Brownman Swamp Bushland is part of Beeliar Regional Park. It is Bush Forever Site 346, which is a Department of Environment and Conservation Reference Site.

Aerial photo showing the routes followed by the two groups on 19 July 2006.
The green group travelled in a 4WD vehicle, the blue group walked.

Georeferenced Track and Photos

Date : 19 July 2006

Group: Joe Froudist, Neil Goldsborough, Viharo Wood and Operations Officer Phil Spencer.

The numbers on the coloured dots in the fungi photos correspond to the collecting number and usually **do not** match the photo number. It is the **photo number** preceding the fungus name which correlates with the site on the map above.

07 *Gymnopilus* cf. *purpuratus*
Photographer Neil Goldsborough Specimen ID: 2535

Growing on dead wood in *Melaleuca raphiophylla* wetland.
Latitude: -32° 9' 17.98" Longitude: 115° 47' 4.67"
Easting:385391 Northing: 6441737 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG07

09 *Gymnopilus* cf. *purpuratus*

Photographer Neil Goldsborough Specimen ID: 2536

Growing on dead wood in *Melaleuca raphiophylla* wetland.
Latitude: -32° 9' 15.95" Longitude: 115° 47' 4.34"
Easting:385382 Northing: 6441799 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG09
Vouchered into WA Herbarium E8370

12 *Phellinus* sp.

Photographer Neil Goldsborough Specimen ID: 2537

Growing on dead wood in *Melaleuca raphiophylla* wetland.
Latitude: -32° 9' 14.87" Longitude: 115° 47' 4.08"
Easting:385375 Northing: 6441832 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG12

14 *Crepidotus* sp.

Photographer Neil Goldsborough Specimen ID: 2538

Growing on dead tuart wood in drier wetland.
Latitude: -32° 9' 15.02" Longitude: 115° 47' 4.02"
Easting:385373 Northing: 6441828 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG14

16 Undetermined Slime Mould

Photographer Neil Goldsborough Specimen ID: 2539

Growing on dead wood in *Melaleuca raphiophylla* wetland.
Latitude: -32° 9' 14.78" Longitude: 115° 47' 3.88"
Easting:385369 Northing: 6441835 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG16

21 Undetermined Slime Mould

Photographer Neil Goldsborough Specimen ID: 2540

Growing on dead *B. grandis* wood in tuart, banksia woodland.
Latitude: -32° 9' 12.74" Longitude: 115° 47' 5.71"
Easting:385417 Northing: 6441898 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG21
Vouchered into WA Herbarium E8371

22 *Steccherinum* sp.

Photographer Neil Goldsborough Specimen ID: 2541
Growing on dead *B. grandis* wood in tuart, banksia woodland.
Latitude: -32° 9' 12.74" Longitude: 115° 47' 5.70"
Easting:385416 Northing: 6441898 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG22
Vouchered into WA Herbarium E8372

27 *Coprinus* cf. *stanglianus* **WA Magpie Fungus**
Photographer Neil Goldsborough Specimen ID: 2542

Growing on dead *B. grandis* wood in tuart, banksia woodland.
Latitude: -32° 9' 12.14" Longitude: 115° 47' 3.84"
Easting:385367 Northing: 6441916 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG27
Vouchered into WA Herbarium E8368

35 *Hygrocybe conica* **Conical Wax Cap**
Photographer Neil Goldsborough Specimen ID: 2544

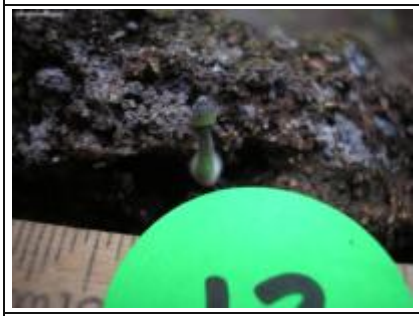
Growing next to moss in acacia, banksia, balga woodland.
Latitude: -32° 9' 11.33" Longitude: 115° 47' 3.95"
Easting:385370 Northing: 6441941 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG35

38 *Galerina* sp.
Photographer Neil Goldsborough Specimen ID: 2545

Growing in moss within litter in acacia, banksia woodland.
Latitude: -32° 9' 55.03" Longitude: 115° 46' 53.85"
Easting:385121 Northing: 6440592 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG38

41 *Crepidotus* sp.
Photographer Neil Goldsborough Specimen ID: 2546

Growing on dead wood in acacia woodland.
Latitude: -32° 9' 55.00" Longitude: 115° 46' 53.79"
Easting:385119 Northing: 6440593 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG41



44 *Mycena* sp.
Photographer Neil Goldsborough Specimen ID: 2547

Growing on dead wood in acacia woodland.
Latitude: -32° 9' 54.99" Longitude: 115° 46' 53.77"
Easting:385119 Northing: 6440594 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG44

46 *Clitocybe* sp.
Photographer Neil Goldsborough Specimen ID: 2548

Growing in sand within litter in acacia woodland.
Latitude: -32° 9' 54.98" Longitude: 115° 46' 53.75"
Easting:385118 Northing: 6440594 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG46

50 *Mycena* sp.
Photographer Neil Goldsborough Specimen ID: 2549

Growing on dead wood in acacia woodland.
Latitude: -32° 9' 54.41" Longitude: 115° 46' 53.51"
Easting:385111 Northning: 6440612 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG50

53 *Galerina* sp.
Photographer Neil Goldsborough Specimen ID: 2550

Growing in moss in litter in acacia woodland.
Latitude: -32° 9' 54.26" Longitude: 115° 46' 53.54"
Easting:385112 Northning: 6440616 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG53

54 *Inocybe* sp.
Photographer Neil Goldsborough Specimen ID: 2551

Growing amongst litter in acacia woodland.
Latitude: -32° 9' 54.31" Longitude: 115° 46' 53.49"
Easting:385111 Northning: 6440615 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG54
Vouchered into WA Herbarium E8369

57 *Geastrum* sp.
Photographer Neil Goldsborough Specimen ID: 2552

Growing next to moss in acacia, banksia woodland.
Latitude: -32° 9' 54.21" Longitude: 115° 46' 53.43"
Easting:385109 Northning: 6440618 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG57

59 *Xerula* sp.
Photographer Neil Goldsborough Specimen ID: 2553

Growing in litter next to balga in woodland.
Latitude: -32° 9' 54.0" Longitude: 115° 46' 59.8"
Easting:385109 Northning: 6440618 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG59

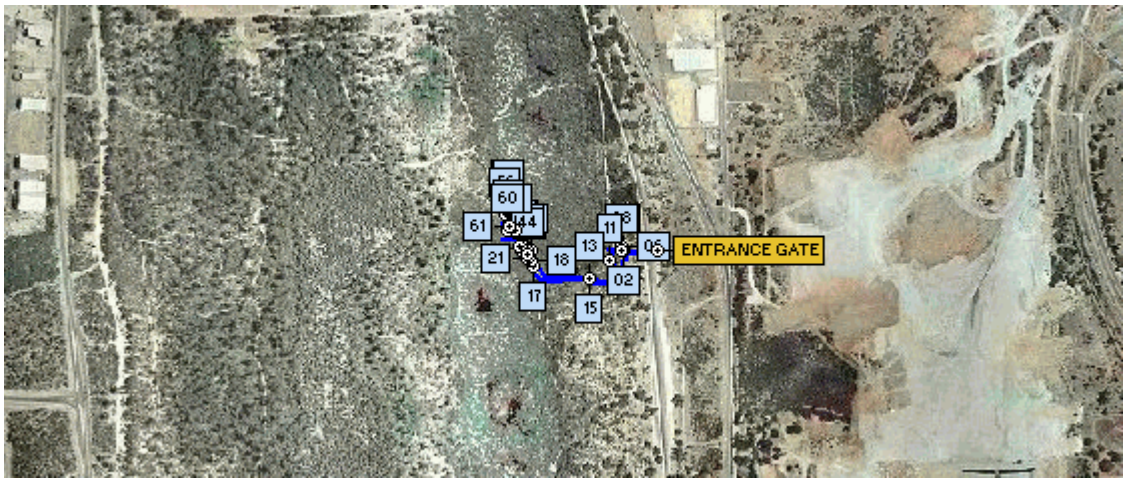
60 *Lepiota* sp.
Photographer Neil Goldsborough Specimen ID: 2554

Growing on dead acacia wood in acacia woodland.
Latitude: -32° 9' 54.0" Longitude: 115° 46' 59.8"
Easting:385109 Northning: 6440618 Zone: 50
Date: 19 Jul 2006 opt Image BS65_177NG60

Georeferenced Track and Photos

Date: 19 July 2006

Group: Neale Bougher, Roz Hart, Kev Griffiths and Alicia Dyson.



The numbers on the coloured dots in the fungi photos correspond to the collecting number and usually **do not** match the photo number. It is the **photo number** preceding the fungus name which correlates with the site on the map above.

	**02 *Pisolithus* sp.** **Dog Poo Fungus** Photographer Kevn Griffiths Specimen ID: 2555 Growing in sand under tuart in tuart woodland. Latitude: -32° 9' 23.83" Longitude: 115° 47' 25.69" Easting:385944 Northing: 6441563 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG02
	**06 *Scleroderma cepa*** Photographer Kevn Griffiths Specimen ID: 2557 Growing in sand under tuart in tuart woodland. Latitude: -32° 9' 23.58" Longitude: 115° 47' 25.48" Easting:385938 Northing: 6441570 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG06 **Vouchered into WA Herbarium E8364**
	**08 *Lycoperdon* sp.** Photographer Kevn Griffiths Specimen ID: 2558 Growing in sand under tuart in tuart woodland. Latitude: -32° 9' 23.79" Longitude: 115° 47' 25.43" Easting:385937 Northing: 6441564 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG08

11 *Cortinarius ochraceofulvus* Golden Tuart Cortinarius
Photographer Kevn Griffiths Specimen ID: 2559

Growing in sand under tuart and balga in tuart woodland.
Latitude: -32° 9' 24.48" Longitude: 115° 47' 24.50"
Easting:385913 Northing: 6441542 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG11
Vouchered into WA Herbarium E8366

13 Undetermined Hyphomycete
Photographer Kevn Griffiths Specimen ID: 2560

Growing on dead balga spike in tuart woodland.
Latitude: -32° 9' 25.60" Longitude: 115° 47' 22.99"
Easting:385874 Northing: 6441508 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG13
Vouchered into WA Herbarium E8365

15 Undetermined Resupinate
Photographer Kevn Griffiths Specimen ID: 2561

Growing on dead banksia in tuart woodland.
Latitude: -32° 9' 25.60" Longitude: 115° 47' 22.98"
Easting:385873 Northing: 6441508 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG15

17 *Inocybe* sp.
Photographer Kevn Griffiths Specimen ID: 2562

Growing in sand under litter in tuart woodland.
Latitude: -32° 9' 24.77" Longitude: 115° 47' 18.74"
Easting:385762 Northing: 6441532 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG17

18 *Harknessia uromycoides* Tuart Nut Fungus
Photographer Kevn Griffiths Specimen ID: 2563

Growing on tuart nuts in tuart woodland.
Latitude: -32° 9' 24.43" Longitude: 115° 47' 18.57"
Easting:385758 Northing: 6441542 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG18
Vouchered into WA Herbarium E8373

21 *Scleroderma* sp. (hypogeous)
Photographer Kevn Griffiths Specimen ID: 2564

Growing in sand in tuart woodland.
Latitude: -32° 9' 24.26" Longitude: 115° 47' 18.36"
Easting:385752 Northing: 6441547 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG21
Vouchered into WA Herbarium E8380

26 *Hypomyces rosellus*
Photographer Kevn Griffiths Specimen ID: 2565

Growing on burnt wood in tuart woodland.
Latitude: -32° 9' 24.21" Longitude: 115° 47' 18.43"
Easting:385754 Northing: 6441549 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG26
Vouchered into WA Herbarium E8374

29 *Inocybe* sp.
Photographer Kevn Griffiths Specimen ID: 2566

Growing in sand in tuart woodland.
Latitude: -32° 9' 23.81" Longitude: 115° 47' 18.60"
Easting:385758 Northing: 6441561 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG29

31 *Tremella mesenterica* group Yellow Brain Fungus
Photographer Kevn Griffiths Specimen ID: 2567

Growing on dead wood in tuart woodland.
Latitude: -32° 9' 23.53" Longitude: 115° 47' 18.02"
Easting:385743 Northing: 6441570 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG31

33 *Cortinarius* sp. (hypogeous)
Photographer Kevn Griffiths Specimen ID: 2568

Growing deep in litter in tuart woodland.
Latitude: -32° 9' 23.76" Longitude: 115° 47' 17.89"
Easting:385739 Northing: 6441562 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG33
Vouchered into WA Herbarium E8376

37 Undetermined Truffle
Photographer Kevn Griffiths Specimen ID: 2569

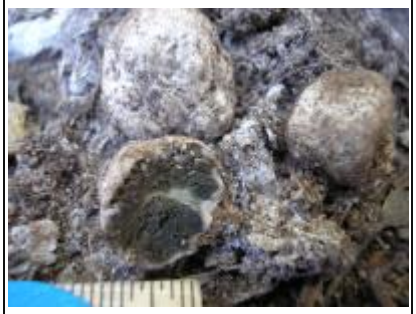
Growing deep in litter in tuart woodland.
Latitude: -32° 9' 23.51" Longitude: 115° 47' 17.77"
Easting:385736 Northing: 6441570 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG37

38 *Inocybe* sp.
Photographer Kevn Griffiths Specimen ID: 2570

Growing in sand in tuart woodland.
Latitude: -32° 9' 23.53" Longitude: 115° 47' 17.69"
Easting:385734 Northing: 6441569 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG38

40 *Laetiporus portentosus* **White Punk**
Photographer Kevn Griffiths Specimen ID: 2571

Growing on burnt stump in tuart woodland.
Latitude: -32° 9' 23.79" Longitude: 115° 47' 18.32"
Easting:385751 Northing: 6441562 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG40



44 *Austrogautieria manjimupana* & *Chrondrogaster* sp.
Truffles
Photographer Kevn Griffiths Specimen IDs: 2572 & 2582

Growing in mycelial mats in litter in tuart woodland.
Latitude: -32° 9' 24.02" Longitude: 115° 47' 18.27"
Easting:385749 Northing: 6441555 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG44
Vouchered into WA Herbarium E8377, E8378

46 *Tricholoma* sp.
Photographer Kevn Griffiths Specimen ID: 2573

Growing in sand in tuart woodland.
Latitude: -32° 9' 22.45" Longitude: 115° 47' 17.41"
Easting:385726 Northing: 6441603 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG46

47 *Pogisperma* sp.
Photographer Kevn Griffiths Specimen ID: 2574

Growing under litter in tuart woodland.
Latitude: -32° 9' 20.85" Longitude: 115° 47' 16.94"
Easting:385714 Northing: 6441652 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG47
Vouchered into WA Herbarium E8379

48 Undetermined Agaric
Photographer Kevn Griffiths Specimen ID: 2575

Growing under litter in tuart woodland.
Latitude: -32° 9' 20.88" Longitude: 115° 47' 16.82"
Easting:385710 Northing: 6441651 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG48

53 Undetermined Bolete
Photographer Kevn Griffiths Specimen ID: 2576

Growing in sand under fencing sheet in tuart woodland.
Latitude: -32° 9' 20.88" Longitude: 115° 47' 16.99"
Easting:385715 Northing: 6441651 Zone: 50
Date: 19 Jul 2006 opt Image BS65_178KG53

	**54 *Coprinus* cf. *stanglianus*** **WA Magpie Fungus** Photographer Kevn Griffiths Specimen ID: 2577 Growing in litter in tuart woodland. Latitude: -32° 9' 21.40" Longitude: 115° 47' 16.68" Easting:385707 Northing: 6441635 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG54 **Vouchered into WA Herbarium E8367**
	**56 *Hydnoplicata convoluta*** **Truffle** Photographer Kevn Griffiths Specimen ID: 2578 Growing under litter in tuart, *Acacia rostilifera* woodland. Latitude: -32° 9' 21.42" Longitude: 115° 47' 16.66" Easting:385706 Northing: 6441634 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG56 **Vouchered into WA Herbarium E8375**
	**59 *Cystangium* sp.** **Truffle** Photographer Kevn Griffiths Specimen ID: 2579 Growing in litter in tuart, acacia woodland. Latitude: -32° 9' 22.24" Longitude: 115° 47' 17.01" Easting:385716 Northing: 6441609 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG59
	**60 *Tricholoma* sp.** Photographer Kevn Griffiths Specimen ID: 2580 Growing in litter in tuart woodland. Latitude: -32° 9' 22.41" Longitude: 115° 47' 16.75" Easting:385709 Northing: 6441604 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG60
	**61 Undetermined Hyphomycete** Photographer Kevn Griffiths Specimen ID: 2581 Growing under litter in tuart woodland. Latitude: -32° 9' 22.18" Longitude: 115° 47' 17.01" Easting:385716 Northing: 6441611 Zone: 50 Date: 19 Jul 2006 opt Image BS65_178KG61