Perth Urban Bushland Fungi

Paganoni 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

Surveying team ready to set out

Examining some Armillaria mushrooms

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 at Paganoni Bushland (Bush Forever Site 395) on 27 June 2006. They were assisted by ten volunteers from both PUBF and the Friends of Paganoni and accompanied by Rockingham Lakes Regional Park operations officer Renee Miles.

The Survey was carried out as part of a **DEC 2006 Regional Parks** Community Grant awarded to the Perth Urban Bushland Fungi Project to survey three sites in nominated DEC Regional Parks. Paganoni Bushland is part of Rockingham Lakes Regional Park. The survey party divided into two groups. Both started from the same point on the northern side of the park and searched for fungi following different routes as shown on the aerial photo on page 8.

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 volunteers

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

In 2005, the Perth Urban Bushland Fungi Project conducted a fungi walk in Paganoni Bushland at the invitation of the Friends of Paganoni bushcare group. A report on the fungi found on that day is available for downloading from the PUBF website at www.fungiperth.org.au. Hard copies are held by the Friends of Paganoni, the Urban Bushland Council, the Western Australian Naturalists' Club and the Department of Environment and Conservation, in the Bush Forever Reference Sites Files. The 2005 fungi event showed that this bushland contains a diversity of vegetation and associated fungi and allowed us to produce the **first ever inventory of fungi for Paganoni Bushland.** This represented a very small portion of the fungi which are likely to be present in this bushland.

Due to the nature of fungi, which fruit irregularly and intermittently, it is necessary to conduct many such surveys over different days in the fungi season as well as in successive years to produce an accurate inventory of the fungi present in this valuable bushland. By conducting such surveys with community assistance, PUBF aims to assist Bushcare groups to conduct their own regular fungi surveys in the fungi season and over successive years, depending on the resources available to them. There is now a Perth Urban Fungi Field book, also on the PUBF website for downloading, to assist with identification of some of the fungi.

Paganoni Bushland Fungi

Unusually low rainfall in the period prior to this survey affected the abundance and diversity of fungi observed in the survey. However, 48 species of fungi were recorded. These include decomposer fungi such as *Gymnopilus* species, beneficial mycorrhizal fungi such as *Amanita* species, and pathogenic (disease) fungi such as *Armillaria luteobubalina*.

In the Perth region, as is the case in Paganoni Bushland, Tuart (*Eucalyptus gomphocephala*) seems to be particularly susceptible to *Armillaria luteobubalina*. Other trees and shrubs are also affected by this fungus. The obvious consequences of *Armillaria* infestation include the death of trees and shrubs, but the overall effect on bushland ecology and the capacity of bushlands to recover is not known. *Armillaria luteobublalina* is considered to be a native fungus in the Perth region, so presumably has long been part of bushland ecology in the region, probably including Paganoni Bushland and other areas in Rockingham Lakes Regional Park.

The occurrence of high biodiversity of all types of fungi in bushlands and therefore the various contributions of those fungi to the overall health of bushlands may be one factor determining the frequency and severity of infestations of *Armillaria* (and other disease fungi). Management strategies that aim to nurture fungi biodiversity in parks such as Rockingham Lakes Regional Park therefore may be desirable from a disease management perspective as well as from a more general biodiversity perspective.

Management Recommendations for Fungi Biodiversity at Paganoni Bushland

Is the ecology and biodiversity of Paganoni Bushland in Rockingham Lakes Regional Park in balance for long-term health? To help answer that question, management strategies for the biodiversity of the bushland 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 Paganoni is required as a basis to managing the fungi, and in turn for managing the Flora and Fauna.

1. **Armillaria:** Direct management to contain particular *Armillaria* infestations is complex, and an analysis of the various intervention options is beyond the scope of this report. Management options for *Armillaria* that are often applied in gardens such as trenching or changes to soil pH are impracticable for natural bushlands. Quarantine options such as those applied for *Phytophthora* dieback are not as appropriate for *Armillaria*, due to the difference in how these vastly different organisms spread. In most cases, at least in the Perth Region, *Armillaria* infestations have been periodic, often flaring up and diminishing after a period of time. The underlying causes of such fluxes are not fully understood. For Paganoni Bushland, it is recommended that georeferenced surveys of *Armillaria* be undertaken to create a spatial map of the distribution of this fungus. This data can be overlain onto vegetation, soil and fire-age maps so as to potentially recognize associations between infestations and plants or vegetation and landscape types. A georeferencing survey kit developed by John Weaver for PUBF is available for loan from the WA Herbarium. It would be desirable to undertake the surveys successively over time to be able to monitor the spread, intensity and duration of *Armillaria* infections in Paganoni Bushland.

2. **Undertake biological surveys to build up an inventory of fungi:** Far more fungi are likely to occur in Paganoni Bushland than those recorded in the limited surveys so far. 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 Paganoni 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.
3. **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 the Perth Urban Bushland Fungi Project.
4. **Georeference the surveys:** It would be desirable to georeference the surveys at Paganoni Bushland: to build up a spatial map of distribution of individual fungi species. As for *Armillaria* (see 1 above), such data can be overlain onto vegetation, soil and fire-age maps so as to potentially recognise associations between particular fungi and plants or vegetation and landscape types. A georeferencing survey kit developed by John Weaver for PUBF is available for loan from the WA Herbarium.
5. **Involve community:** It is recommended that further fungi surveys involving members of the local community be undertaken at Paganoni Bushland. 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 local community.
6. **Determine the mycorrhizal plant partners of fungi:** To understand the mycorrhizal relationships between fungi and plants at Paganoni Bushland, the list of known plants 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 Paganoni Bushland.
7. **Determine the animal interactions with fungi:** Determine what truffle fungi are present at Paganoni Bushland, 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 Paganoni Bushland, or to understand why there may have been declines in mammal populations.
8. **Support a strategy to preserve representative landscapes:** By default, this strategy may foster fungi biodiversity at Paganoni Bushland. 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.

Paganoni Bushland Fungi List: 27 June 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
Agaricus austrovinaceus		mushroom	litter/ground	S		2146
***Aleurodiscus* sp.**	**Orange Aleurodiscus**	resupinate	dead wood	S	R-3	2156, 2194
Amanita* cf. *robusta		mushroom	litter/ground	M		2196
***Amanita* sp.**		mushroom	litter/ground	M		2189
Amanita xanthocephala	**Yellow Headed Amanita**	mushroom	litter/ground	M		2198
Armillaria luteobubalina	**Australian Honey Fungus**	mushroom	dead/living trees & roots	P	J-2	2127, 2128, 2157, 2173,
***Boletus* sp.**		mushroom	litter/ground	M		2197
Calocera guepinioides	**Scotsman's Beard**	jelly fungus	dead wood	S	Q-1	2153, 2193
***Clavulina* sp.**		coral	litter/ground	M		2145, 2180
Coltricia cinnamomea	**Tough Cinnamon Fungus**	mushroom	litter/ground	S	N-1	2195
***Conocybe* sp.**		mushroom	litter/ground	S		2133
***Cortinarius* sp.**		mushroom	litter/ground	M		2188
***Exidia* sp.**		jelly fungus	dead wood	S		2165
***Galerina* sp.**		mushroom	litter/ground	S		2164, 2170, 2181
Gymnopilus allantopus	**Golden Wood Fungus**	mushroom	dead wood	S	J-15	2126, 2148, 2151, 2176
Gymnopilus* aff. *pampeanus		mushroom	dead wood	S		2171
Gymnopilus* cf. *purpuratus		mushroom	dead wood	S		2131, 2161
Harknessia uromycoides	**Tuart Nut Fungus**	pustules	dead wood	S	C-1	2187
Henningsomyces candidus	**Miniature Chimney Pots**	tubular	dead wood	S	R-1	2177
Hexagonia vesparia	**Wasp Nest Polypore**	bracket	dead wood	S	N-3	2159
***Hyphodontia* sp.**		resupinate	dead wood	S		2138

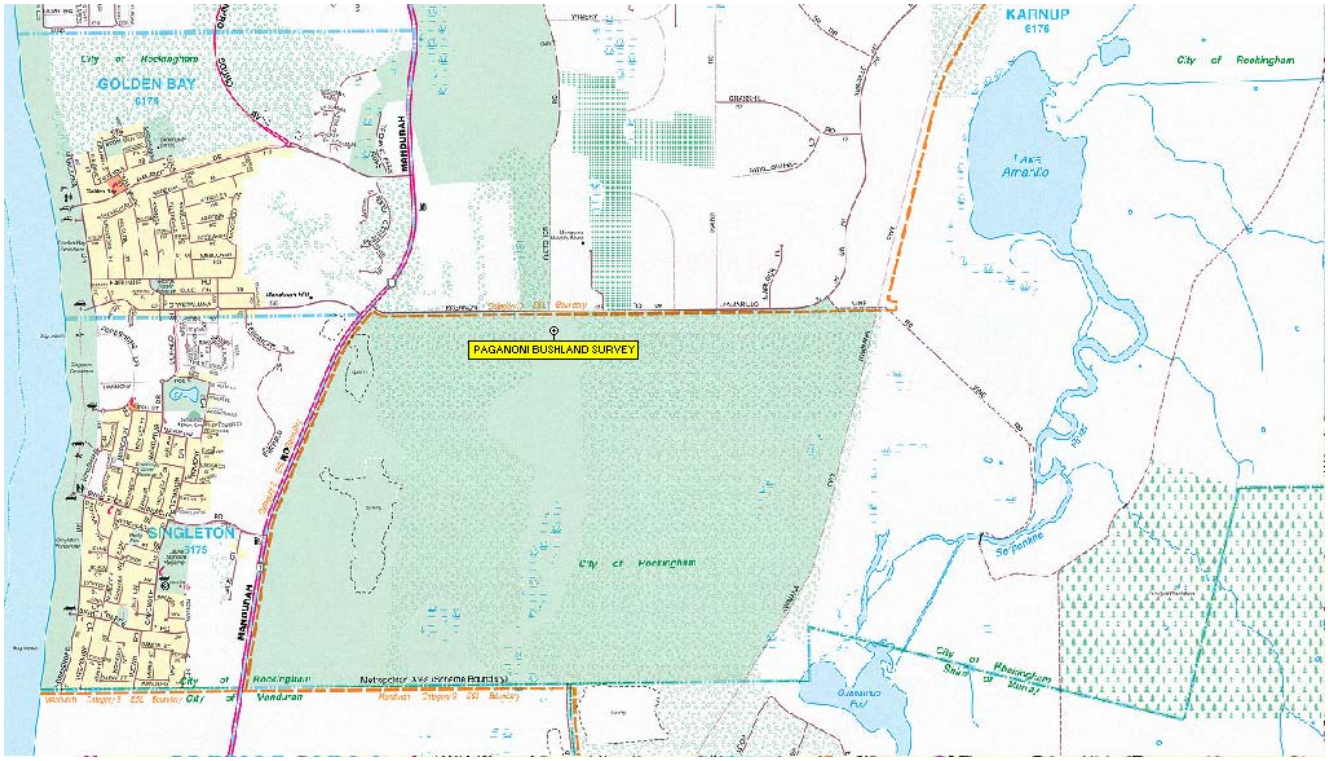
Hypholoma australe		mushroom	dead wood/litter/ ground	S		2191
***Hypocrea* sp.**		pustules	dead wood	S		2167
***Ionotus* sp.**		bracket	dead wood	S		2721
***Lepiota* sp.**		mushroom	litter/ground	S		2136, 2152
Macrolepiota clelandii		mushroom	litter/ground	S		2140, 2147, 2179
***Mycena* sp.**		mushroom	litter/ground	S		2144, 2155, 2168, 2178, 2183, 2186
Mycena clarkeana	**Clarke's Pixie Cap**	mushroom	bark, tree	S		2137, 2162, 2172
Omphalotus nidiformis	**Ghost Fungus**	mushroom	dead wood	S/P	J-21	2129
***Phaeomarasmius* sp.**		shell	dead wood	S		2154
***Phellinus* sp.**		bracket	dead wood	S		2169
***Phellodon* sp.**		mushroom	litter/ground	S		2182
***Pisolithus* sp.**	**Dog Poo Fungus**	puffball	litter/ground	M	L-3	2199
Pluteus lutescens		mushroom	dead wood	S		2132
Polyporus badius		mushroom	dead wood	S		2160
***Psathyrella* sp.**		mushroom	litter/ground	S		2149
Pycnoporus coccineus	**Scarlet Bracket Fungus**	bracket	dead wood	S	N-8	2163
Ramaria gracilis	**Slender Coral Fungus**	coral	litter/ground	M	M-1	2143
***Resupinatus* sp.**		shell	dead wood	S		2166
Resupinatus cinerascens		shell	dead wood	S		2192
***Rhodocollybia* sp.**		mushroom	litter/ground	S		2184
Rickenella fibula	**Orange Mosscap**	mushroom	litter/ground	S	J-27	2130, 2185
***Schizopora* sp.**		resupinate	dead wood	S		2190
Scleroderma cepa		puffball	litter/ground	M		2174
Sphaerobolus stellatus	**Cannonball Fungus**	birdsnest	dead wood	S	L-5	2141
Stereum hirsutum	**Hairy Curtain Fungus**	bracket	dead wood	S		2158
***Tubaria* sp.**		mushroom	litter/ground	S		2139, 2150
Undetermined Agaric		mushroom	litter/ground	-		2134
Undetermined Ascomycete		-	-	-	-	2142
Undetermined Bolete		mushroom	litter/ground	M		2175

Xylaria hypoxylon	**Candle Snuff Fungus**	other	litter/ground	S		2135

Permanent Voucher Collections

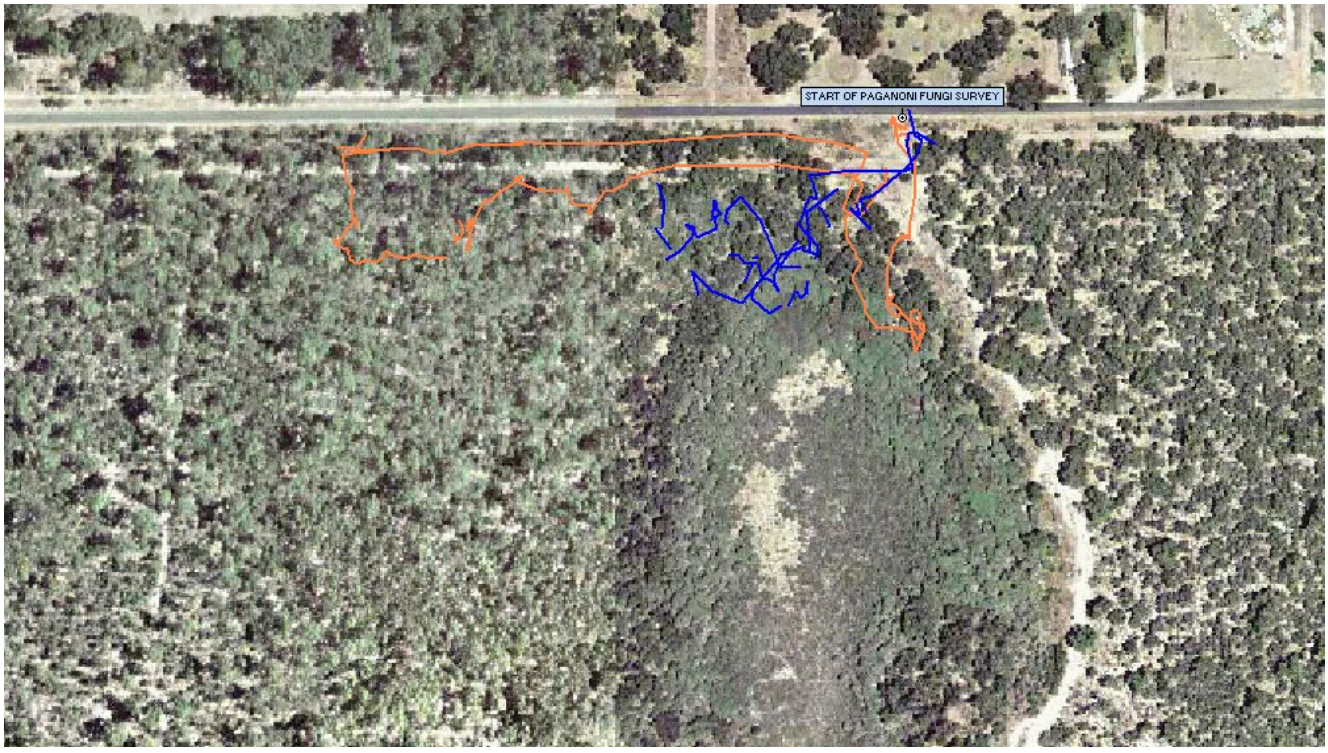
Ten of the fungi collected during this event were deposited in the WA Herbarium fungi collection with the following details:

Mycena clarkeana	Voucher ID: E8335	Specimen ID: 2172
***Mycena* sp.**	Voucher ID: E8336	Specimen ID: 2178
Armillaria luteobubalina	Voucher ID: E8337	Specimen ID: 2173
***Aleurodiscus* sp.**	Voucher ID: E8338	Specimen ID: 2194
***Boletus* sp.**	Voucher ID: E8339	Specimen ID: 2197
Xylaria hypoxolon	Voucher ID: E8340	Specimen ID: 2135
***Phaeomarasmius* sp.**	Voucher ID: E8341	Specimen ID: 2154
***Phellodon* sp.**	Voucher ID: E8342	Specimen ID: 2182
Macrolepiota clelandii	Voucher ID: E8343	Specimen ID: 2147
Omphalotus nidiformis	Voucher ID: E8344	Specimen ID 2129



StreetExpress Map showing the location of Paganoni Bushland in Karnup.

Paganoni Bushland is Bush Forever Site 395, part of Rockingham Lakes Regional Park and a Department of Environment and Conservation Reference Site.

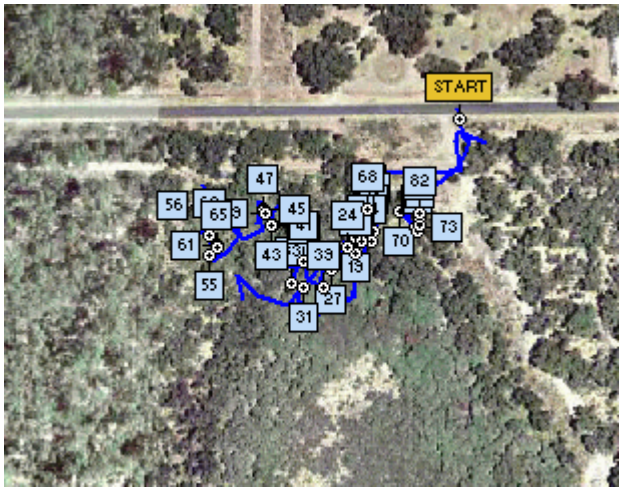


Aerial photo showing the colour coded tracks taken by the two groups, 27 June 2006.

Georeferenced Track and Photos

Date: 27 June 2006

Group: Joe Froudist and Jolanda Keeble led the group of Leonie Stubbs, Cedric Bakewell, Anne Maughan and Diana Hitchin from the Friends of Paganoni Bushland.



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.

	**08 *Gymnopilus allantopus*** **Golden Wood Fungus** Photographer Jolanda Keeble Specimen ID: 2126 Growing on dead banksia wood in banksia woodland. Latitude: -32° 26' 3.21" Longitude: 115° 47' 3.39" Easting:385709 Northing: 6410781 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK08
	**09 *Armillaria luteobubalina*** **Australian Honey Fungus** Photographer Jolanda Keeble Specimen ID: 2127 Growing on dead banksia root in *Banksia littoralis* woodland. Latitude: -32° 26' 3.38" Longitude: 115° 47' 3.50" Easting:385712 Northing: 6410776 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK09

12 *Armillaria luteobubalina* Australian Honey Fungus
Photographer Jolanda Keeble Specimen ID: 2128

Growing on dead wood in litter in tuart, *B. littoralis* woodland.
Latitude: -32° 26' 3.59" Longitude: 115° 47' 3.50"
Easting:385712 Northing: 6410769 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK12

14 *Omphalotus nidiformis* Ghost Fungus
Photographer Jolanda Keeble Specimen ID: 2129

Growing on dead tuart wood in tuart, banksia woodland.
Latitude: -32° 26' 3.78" Longitude: 115° 47' 3.43"
Easting:385710 Northing: 6410764 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK14
Vouchered into WA Herbarium #E8344

17 *Rickenella fibula* Orange Mosscap
Photographer Jolanda Keeble Specimen ID: 2130

Growing on old, dead log in *Melaleuca raphiophylla* woodland.
Latitude: -32° 26' 3.79" Longitude: 115° 47' 3.19"
Easting:385704 Northing: 6410763 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK17

19 *Gymnopilus* cf. *purpuratus*
Photographer Jolanda Keeble Specimen ID: 2131

Growing on dead wood in *Melaleuca raphiophylla* woodland.
Latitude: -32° 26' 3.70" Longitude: 115° 47' 3.06"
Easting:385700 Northing: 6410766 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK19

20 *Pluteus lutescens*
Photographer Jolanda Keeble Specimen ID: 2132

Growing in litter in *Melaleuca raphiophylla* woodland.
Latitude: -32° 26' 4.04" Longitude: 115° 47' 3.07"
Easting:385701 Northing: 6410756 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK20

24 *Conocybe* sp.
Photographer Jolanda Keeble Specimen ID: 2133

Growing on dead Melaleuca wood in *Melaleuca raphiophylla* woodland.
Latitude: -32° 26' 3.92" Longitude: 115° 47' 2.89"
Easting:385696 Northing: 6410759 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK24

27 Undetermined Agaric
Photographer Jolanda Keeble Specimen ID: 2134

Growing on dead Melaleuca wood in *Melaleuca raphiophylla* woodland.
Latitude: -32° 26' 4.34" Longitude: 115° 47' 2.50"
Easting:385686 Northing: 6410746 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK27

31 *Ionotus* sp.
Photographer Jolanda Keeble Specimen ID: 2721

Growing on dead Melaleuca wood in *Melaleuca raphiophylla* woodland.
Latitude: -32° 26' 4.68" Longitude: 115° 47' 1.86"
Easting:385669 Northing: 6410735 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK31

33 *Xylaria hypoxolon* **Candle Snuff Fungus**
Photographer Jolanda Keeble Specimen ID: 2135

Growing in litter on dead wood in tuart woodland.
Latitude: -32° 26' 4.60" Longitude: 115° 47' 1.59"
Easting:385662 Northing: 6410738 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK33
Vouchered into WA Herbarium #E8340

34 *Lepiota* sp.
Photographer Jolanda Keeble Specimen ID: 2136

Growing in litter in tuart woodland.
Latitude: -32° 26' 4.16" Longitude: 115° 47' 1.85"
Easting:385669 Northing: 6410751 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK34

	**39 *Mycena clarkeana*** **Clarke's Pixie Cap** Photographer Jolanda Keeble Specimen ID: 2137 Growing on dead Melaleuca wood in *Melaleuca raphiophylla* woodland. Latitude: -32° 26' 4.69" Longitude: 115° 47' 2.31" Easting:385681 Northing: 6410735 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK39
	**41 *Hyphodontia* sp.** Photographer Jolanda Keeble Specimen ID: 2138 Growing on dead *Banksia grandis* cone in *Hakea prostrata* woodland. Latitude: -32° 26' 3.48" Longitude: 115° 47' 1.17" Easting:385651 Northing: 6410772 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK41
	**43 *Tubaria* sp.** Photographer Jolanda Keeble Specimen ID: 2139 Growing on dead *Banksia grandis* cone in *Hakea prostrata* woodland. Latitude: -32° 26' 3.48" Longitude: 115° 47' 1.16" Easting:385650 Northing: 6410772 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK43
	**47 *Sphaerobolus stellatus*** **Cannonball Fungus** Photographer Jolanda Keeble Specimen ID: 2141 Growing in litter in *Hakea prostrata, Banksia grandis* woodland. Latitude: -32° 26' 3.20" Longitude: 115° 47' 0.96" Easting:385645 Northing: 6410781 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK47
	**49 Undetermined Ascomycete** Photographer Jolanda Keeble Specimen ID: 2142 Growing on *Banksia grandis* leaf in *Hakea prostrata, Banksia grandis* woodland. Latitude: -32° 26' 3.24" Longitude: 115° 47' 1.00" Easting:385646 Northing: 6410780 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK49
	**55 *Ramaria gracilis*** **Slender Coral Fungus** Photographer Jolanda Keeble Specimen ID: 2143 Growing in litter in *Hakea prostrata, Banksia grandis, Eucalyptus marginata* woodland. Latitude: -32° 26' 4.04" Longitude: 115° 46' 59.73" Easting:385613 Northing: 6410755 Zone: 50 Date: 27 Jun 2006 opt Image PS59_153JK55

56 *Mycena* sp.
Photographer Jolanda Keeble Specimen ID: 2144

Growing in litter in *Hakea prostrata, Banksia grandis, Eucalyptus marginata* woodland.
Latitude: -32° 26' 3.08" Longitude: 115° 46' 59.63"
Easting:385610 Northing: 6410784 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK56

60 *Clavulina* sp.
Photographer Jolanda Keeble Specimen ID: 2145

Growing in litter in *Hakea prostrata, Banksia grandis, Eucalyptus marginata* woodland.
Latitude: -32° 26' 3.63" Longitude: 115° 46' 59.73"
Easting:385613 Northing: 6410767 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK60

61 *Agaricus austrovinaceus*
Photographer Jolanda Keeble Specimen ID: 2146

Growing in litter in *Hakea prostrata, Banksia grandis* woodland.
Latitude: -32° 26' 3.83" Longitude: 115° 46' 59.88"
Easting:385617 Northing: 6410761 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK61

65 *Macrolepiota clelandii*
Photographer Jolanda Keeble Specimen ID: 2147

Growing in litter in *Hakea prostrata, Banksia grandis* woodland.
Latitude: -32° 26' 3.90" Longitude: 115° 46' 59.88"
Easting:385617 Northing: 6410759 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK65
Vouchered into WA Herbarium #E8343

68 *Gymnopilus allantopus* **Golden Wood Fungus**

Photographer Jolanda Keeble Specimen ID: 2148

Growing on dead *Banksia littoralis* in *Banksia littoralis* woodland.
Latitude: -32° 26' 3.16" Longitude: 115° 47' 3.34"
Easting:385707 Northing: 6410783 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK68

70 *Psathyrella* sp.
Photographer Jolanda Keeble Specimen ID: 2149

Growing in litter in tuart woodland.
Latitude: -32° 26' 3.22" Longitude: 115° 47' 4.09"
Easting:385727 Northing: 6410781 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK70

73 *Tubaria* sp.
Photographer Jolanda Keeble Specimen ID: 2150

Growing in litter in tuart woodland.
Latitude: -32° 26' 3.54" Longitude: 115° 47' 4.44"
Easting:385736 Northing: 6410771 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK73

74 *Gymnopilus allantopus* **Golden Wood Fungus**
Photographer Jolanda Keeble Specimen ID: 2151

Growing on dead banksia wood in tuart, banksia woodland.
Latitude: -32° 26' 3.62" Longitude: 115° 47' 4.52"
Easting:385738 Northing: 6410769 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK74

75 *Lepiota* sp.
Photographer Jolanda Keeble Specimen ID: 2152

Growing in litter in tuart woodland.
Latitude: -32° 26' 3.60" Longitude: 115° 47' 4.52"
Easting:385738 Northing: 6410769 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK75

77 *Calocera guepinioides* **Scotsman's Beard**
Photographer Jolanda Keeble Specimen ID: 2153

Growing on dead tuart wood in tuart woodland.
Latitude: -32° 26' 3.52" Longitude: 115° 47' 4.53"
Easting:385738 Northing: 6410772 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK77

79 *Phaeomarasmius* sp.
Photographer Jolanda Keeble Specimen ID: 2154

Growing on dead tuart wood in tuart woodland.
Latitude: -32° 26' 3.36" Longitude: 115° 47' 4.55"
Easting:385739 Northing: 6410777 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK79
Vouchered into WA Herbarium #E8341

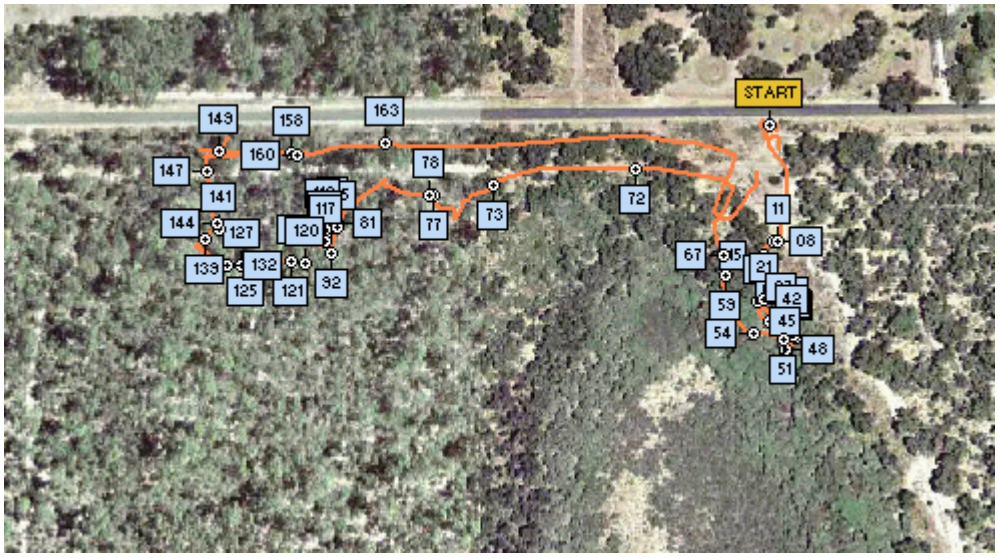
82 *Mycena* sp.
Photographer Jolanda Keeble Specimen ID: 2155

Growing on dead tuart wood in tuart woodland.
Latitude: -32° 26' 3.25" Longitude: 115° 47' 4.57"
Easting:385739 Northing: 6410780 Zone: 50
Date: 27 Jun 2006 opt Image PS59_153JK82

Georeferenced Track and Photos

Date: 27 June 2006

Group: Mycologist Neale Bougher led the group of Roz Hart, Peter Davison, Kay Rae, Renee Miles (Rockingham Lakes Regional Operations Officer), Phylis Robertson and Anne Bellman.



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.

08 *Armillaria luteobubalina* Australian Honey Fungus
Photographer Peter Davison Specimen ID: 2157

Growing on dead tuart in tuart woodland.
Latitude: -32° 26' 3.78" Longitude: 115° 47' 5.28"
Easting:385758 Northing: 6410764 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD008

11 *Stereum hirsutum* Hairy Curtain Crust
Photographer Peter Davison Specimen ID: 2158

Growing on old rotting log in tuart woodland.
Latitude: -32° 26' 3.79" Longitude: 115° 47' 5.37"
Easting:385760 Northing: 6410764 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD011

15 *Hexagonia vesparia* **Wasp Nest Polypore**
Photographer Peter Davison Specimen ID: 2159

Growing on old rotting log in tuart woodland.
Latitude: -32° 26' 4.06" Longitude: 115° 47' 5.05"
Easting:385752 Northing: 6410756 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD015

17 *Polyporus badius*
Photographer Peter Davison Specimen ID: 2160

Growing on old rotting log in tuart woodland.
Latitude: -32° 26' 4.95" Longitude: 115° 47' 4.92"
Easting:385749 Northing: 6410728 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD017

19 *Gymnopilus* cf. *purpuratus*
Photographer Peter Davison Specimen ID: 2161

Growing on dead paperbark log in tuart woodland.
Latitude: -32° 26' 5.32" Longitude: 115° 47' 5.16"
Easting:385755 Northing: 6410717 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD019

21 *Mycena clarkeana* **Clarke's Pixie Cap**
Photographer Peter Davison Specimen ID: 2162

Growing on dead melaleuca in tuart, melaleuca woodland.
Latitude: -32° 26' 4.91" Longitude: 115° 47' 5.05"
Easting:385753 Northing: 6410729 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD021

26 *Pycnoporus coccineus* **Scarlet Bracket Fungus**

Photographer Peter Davison Specimen ID: 2163

Growing on dead melaleuca in tuart, melaleuca woodland.
Latitude: -32° 26' 5.39" Longitude: 115° 47' 5.66"
Easting:385769 Northing: 6410715 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD026

27 *Galerina* sp.
Photographer Peter Davison Specimen ID: 2164

Growing on dead melaleuca in tuart, melaleuca woodland.
Latitude: -32° 26' 5.29" Longitude: 115° 47' 5.46"
Easting:385763 Northing: 6410718 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD027

	**32 *Exidia* sp.** Photographer Peter Davison Specimen ID: 2165 Growing on dead melaleuca in tuart, melaleuca woodland. Latitude: -32° 26' 5.64" Longitude: 115° 47' 5.75" Easting:385771 Northing: 6410707 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD032
	**36 *Resupinatus* sp.** Photographer Peter Davison Specimen ID: 2166 Growing on dead melaleuca in tuart, melaleuca woodland. Latitude: -32° 26' 5.61" Longitude: 115° 47' 5.72" Easting:385770 Northing: 6410708 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD036
	**42 *Hypocrea* sp.** Photographer Peter Davison Specimen ID: 2167 Growing on dead melaleuca in tuart, melaleuca woodland. Latitude: -32° 26' 5.54" Longitude: 115° 47' 5.68" Easting:385769 Northing: 6410710 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD042
	**45 *Mycena* sp.** Photographer Peter Davison Specimen ID: 2168 Growing in litter in tuart, melaleuca woodland. Latitude: -32° 26' 5.98" Longitude: 115° 47' 5.52" Easting:385765 Northing: 6410697 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD045
	**48 *Phellinus* sp.** Photographer Peter Davison Specimen ID: 2169 Growing on dead wood in tuart, melaleuca woodland. Latitude: -32° 26' 5.90" Longitude: 115° 47' 5.51" Easting:385765 Northing: 6410699 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD048
	**51 *Galerina* sp.** Photographer Peter Davison Specimen ID: 2170 Growing on dead melaleuca in tuart, melaleuca woodland. Latitude: -32° 26' 5.71" Longitude: 115° 47' 5.47" Easting:385764 Northing: 6410705 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD051

54 *Gymnopilus* aff. *pampeanus*
Photographer Peter Davison Specimen ID: 2171

Growing on dead melaleuca in tuart, melaleuca woodland.
Latitude: -32° 26' 5.57" Longitude: 115° 47' 4.79"
Easting:385746 Northing: 6410709 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD054

59 *Mycena clarkeana* **Clarke's Pixie Cap**
Photographer Peter Davison Specimen ID: 2172

Growing on dead melaleuca in tuart, melaleuca woodland.
Latitude: -32° 26' 4.43" Longitude: 115° 47' 4.17"
Easting:385729 Northing: 6410744 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD059
Vouchered into WA Herbarium #E8335

67 *Armillaria luteobubalina* **Australian Honey Fungus**
Photographer Peter Davison Specimen ID: 2173

Growing on dead melaleuca in tuart, melaleuca woodland.
Latitude: -32° 26' 4.02" Longitude: 115° 47' 4.15"
Easting:385729 Northing: 6410756 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD067
Vouchered into WA Herbarium #E8337

72 *Scleroderma cepa*
Photographer Peter Davison Specimen ID: 2174

Growing in sand in tuart, banksia woodland.
Latitude: -32° 26' 2.33" Longitude: 115° 47' 2.15"
Easting:385676 Northing: 6410808 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD072

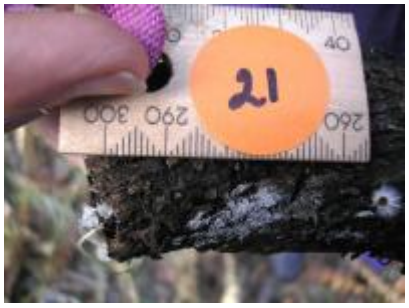
73 Undetermined Bolete (parasitised)
Photographer Peter Davison Specimen ID: 2175

Growing under leaf litter in tuart, hakea, melaleuca woodland.
Latitude: -32° 26' 2.63" Longitude: 115° 46' 58.87"
Easting:385590 Northing: 6410798 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD073

77 *Gymnopilus allantopus* **Golden Wood Fungus**

Photographer Peter Davison Specimen ID: 2176

Growing on banksia cone in *Banksia grandis* woodland.
Latitude: -32° 26' 2.80" Longitude: 115° 46' 57.47"
Easting:385554 Northing: 6410792 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD077

	**78 *Henningsomyces candidus* Miniature Chimney Pots** Photographer Peter Davison Specimen ID: 2177 Growing on dead jarrah in tuart, banksia, jarrah, sheoak woodland. Latitude: -32° 26' 2.80" Longitude: 115° 46' 57.40" Easting:385552 Northing: 6410792 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD078
	**81 *Mycena* sp.** Photographer Peter Davison Specimen ID: 2178 Growing on dead jarrah in tuart, banksia, jarrah, sheoak woodland. Latitude: -32° 26' 3.31" Longitude: 115° 46' 55.28" Easting:385497 Northing: 6410776 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD081 **Vouchered into WA Herbarium #E8336**
	**92 *Macrolepiota clelandii*** Photographer Peter Davison Specimen ID: 2179 Growing in litter in tuart, banksia, jarrah woodland. Latitude: -32° 26' 3.92" Longitude: 115° 46' 55.12" Easting:385493 Northing: 6410757 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD092
	**95 *Clavulina* sp.** Photographer Peter Davison Specimen ID: 2180 Growing in litter in tuart, banksia, jarrah woodland. Latitude: -32° 26' 3.35" Longitude: 115° 46' 55.18" Easting:385494 Northing: 6410775 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD095
	**102 *Galerina* sp.** Photographer Peter Davison Specimen ID: 2181 Growing in litter in tuart, banksia, jarrah woodland. Latitude: -32° 26' 3.40" Longitude: 115° 46' 55.16" Easting:385494 Northing: 6410773 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD102
	**105 *Phellodon* sp.** Photographer Peter Davison Specimen ID: 2182 Growing in sand in litter in tuart, banksia, jarrah woodland. Latitude: -32° 26' 3.39" Longitude: 115° 46' 55.26" Easting:385496 Northing: 6410773 Zone: 50 Date: 27 Jun 2006 opt Image PS59_154PD105 **Vouchered into WA Herbarium #E8342**

110 *Mycena* sp.
Photographer Peter Davison Specimen ID: 2183

Growing on dead twig in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 3.36" Longitude: 115° 46' 54.96"
Easting:385488 Northing: 6410774 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD110

111 *Rhodocollybia* sp.
Photographer Peter Davison Specimen ID: 2184

Growing in sand in litter in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 3.45" Longitude: 115° 46' 54.99"
Easting:385489 Northing: 6410771 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD111

113 *Rickenella fibula* **Orange Mosscap**
Photographer Peter Davison Specimen ID: 2185

Growing in moss in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 3.60" Longitude: 115° 46' 55.00"
Easting:385490 Northing: 6410767 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD113

117 *Mycena* sp.
Photographer Peter Davison Specimen ID: 2186

Growing in moss in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 3.69" Longitude: 115° 46' 54.97"
Easting:385489 Northing: 6410764 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD117

120 *Harknessia uromycoides* **Tuart Nut Fungus**
Photographer Peter Davison Specimen ID: 2187

Growing on tuart nut in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 4.09" Longitude: 115° 46' 54.54"
Easting:385478 Northing: 6410751 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD120

121 *Cortinarius* sp.
Photographer Peter Davison Specimen ID: 2188

Growing amongst dense leaf litter in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 4.07" Longitude: 115° 46' 54.20"
Easting:385469 Northing: 6410752 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD121

125 *Amanita* sp.
Photographer Peter Davison Specimen ID: 2189

Growing amongst leaf litter in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 4.05" Longitude: 115° 46' 53.14"
Easting:385441 Northing: 6410752 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD125

127 *Schizopora* sp.
Photographer Peter Davison Specimen ID: 2190

Growing on banksia cone in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 4.11" Longitude: 115° 46' 53.07"
Easting:385439 Northing: 6410750 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD127

132 *Hypholoma australe*
Photographer Peter Davison Specimen ID: 2191

Growing amongst letter in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 4.11" Longitude: 115° 46' 52.71"
Easting:385430 Northing: 6410750 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD132

139 *Resupinatus cinerascens*
Photographer Peter Davison Specimen ID: 2192

Growing inside jarrah bark in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 3.61" Longitude: 115° 46' 52.21"
Easting:385417 Northing: 6410765 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD139

141 *Calocera guepinioides* **Scotsman's Beard**
Photographer Peter Davison Specimen ID: 2193

Growing on dead banksia in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 3.44" Longitude: 115° 46' 52.54"
Easting:385425 Northing: 6410771 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD141

144 *Aleurodiscus* sp. **Orange Aleurodiscus**
Photographer Peter Davison Specimen ID: 2194

Growing on banksia cone in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 3.31" Longitude: 115° 46' 52.49"
Easting:385424 Northing: 6410775 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD144
Vouchered into WA Herbarium #E8338

147 *Coltricia cinnamomea* Tough Cinnamon Fungus
Photographer Peter Davison Specimen ID: 2195

Growing on dead banksia wood in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 2.31" Longitude: 115° 46' 52.29"
Easting:385419 Northing: 6410806 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD147

149 *Amanita preissii* cf. *robusta*
Photographer Peter Davison Specimen ID: 2196

Growing in litter in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 1.89" Longitude: 115° 46' 52.57"
Easting:385426 Northing: 6410819 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD149

158 *Boletus* sp.
Photographer Peter Davison Specimen ID: 2197

Growing in litter in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 1.97" Longitude: 115° 46' 54.22"
Easting:385469 Northing: 6410817 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD158
Vouchered into WA Herbarium #E8339

160 *Amanita xanthocephala* Yellow Headed Amanita
Photographer Peter Davison Specimen ID: 2198

Growing in sand in litter in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 2.00" Longitude: 115° 46' 54.35"
Easting:385472 Northing: 6410816 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD160

163 *Pisolithus* sp. **Dog Poo Fungus**
Photographer Peter Davison Specimen ID: 2199

Growing in sand in tuart, banksia, jarrah woodland.
Latitude: -32° 26' 1.80" Longitude: 115° 46' 56.38"
Easting:385525 Northing: 6410823 Zone: 50
Date: 27 Jun 2006 opt Image PS59_154PD163