

Cooleman Ridge Park Care Group Inc



Regeneration Report November 2010 Kathner Street Fenced Regeneration Area

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The report would not have been possible without the meticulous record keeping and careful checking of botanical material by long-term member, Pauline Lyngå.

Finally, we acknowledge Pat Ryan for patient computer software assistance in achieving the final appearance of the document, and Karina Pelling, our Web Mistress, for posting it on our website.

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Coolleman Ridge Park Care Group Regeneration Report – Kathner Street Fenced Regeneration Area

Introduction

Coolleman Ridge Nature Reserve forms part of Canberra Nature Park. A Prescribed Fire (“the burn-off”) took place in the Reserve at Kathner Street on 25 November 2009. This area had not been burnt since 2003.

The Park Care Group decided to monitor the effects. This particular area of former grazing land had been a focus for regeneration work by the Group for close on 20 years. Since being fenced, it has not been grazed except by kangaroos, hares and rabbits. Prior to the burn-off, no wheeled traffic had been noted in the area since the post-fire clean-up in 2003.

We therefore used our existing records of vascular plants in the fenced regeneration area as the basis of our inquiry, supplemented by Group knowledge.

Our intention was to keep detailed records for a full year. This proved beyond our resources, in part due to absence of key personnel but also because of the exceptionally vigorous rate of regrowth. We had to start weeding again!

Members visited the site at least weekly between December 2009 and March 2010, and took notes at most visits during that time. The weekly visits continued thereafter, but we took fewer notes at less frequent intervals until the end of the 12-month period in November 2010.

A series of photographs, taken from the same points, was taken at intervals during the observation period. (See “The Story in Pictures”.)

Site rainfall records from Percy Crescent were made available to us also.

Progress report summaries were published in the Group’s newsletter in February, March, April, and June 2010.

At the end of the 12-month period, over October and November 2010, we conducted a general survey of the site. This enabled us to check for the presence of vascular plants previously known here, but for which no data had been recorded since the burn-off. This check augmented the list of plants noted as having regenerated or having re-emerged since the burn-off.

Although this little study by amateurs has perhaps not been conducted with scientific rigour, we trust that the Group’s familiarity with the burn-off area and our frequent visits give some credence to our observations.

Arminel Ryan

President

January 2011

What was the area like when the burn-off took place?

The ACT was in drought. The Kathner Street dam, situated outside the fenced area and lying next to the equestrian trail at the bottom of the slope, was dry.

Minor erosion was noticeable along the upper wall of the dam. There was also a small active gully in the drainage line leading into the dam. Weeds and fallen branches had been placed in and above these two problem areas to mitigate the effects of any sudden run-off.

In the fenced regeneration area, the predominant cover was grass. A few rabbits were present.

The predominant grass was Spear Grass *Austrostipa scabra ssp falcata*, green and bearing a magnificent amount of unripe seed, with some of the taller and later-flowering *A. scabra ssp. scabra* intermixed.

There were also noticeable tussocks of Red-leg *Bothriochloa macra* and Kangaroo Grass *Themeda triandra* in places.

In the drainage line, Tussock Grass *Poa labillardieri* clumps planted for erosion control were establishing satisfactorily behind the windrows of previously removed weeds. Higher up the drainage line, Weeping Grass *Microlaena stipoides* was spreading. In the drier areas, several Wallaby Grass tussocks, *Austrodanthonia spp.*, were in evidence. Amongst the rocks on one slope, there were also one or two Wire Grass *Aristida ramosa* tussocks.

At the time of the burn-off, there was a scattering of the introduced pasture grass, Bearded Oats *Avena barbata*. Its seedheads, dried off and empty, stood out above the shorter native grasses. However, nowhere was it dense. Some patches of dry Great Brome *Bromus diandrus*, and isolated tussocks of Phalaris *Phalaris aquatica* were present, especially in the upper reaches of the drainage line. (*P. aquatica* had been growing very tall and dense in the drainage line until recent years. Most of the clumps were physically removed over the winters of 2007 and 2008.) Patches of Couch Grass *Cynodon dactylon* also grew in the drainage line. (When the area was grazed as part of the former lease, improved pasture had been introduced and superphosphate applied in this area.)

Amongst the grasses, on the open slopes and in the drainage lines, was a wide variety of other ground covers, creepers, sedges, lilies, ferns, forbs etc. Notably, in flower beside the gully, were numerous Nodding Chocolate Lilies *Arthropodium fimbriatum*. According to Tim Low – Wild food plants of Australia ([Rev. ed.] Angus & Robertson Australian

Nature Field Guide Series 2001 ISBN 0 207 16930 6) – these were traditional bush tucker plants. This colony is the only known occurrence of these perfumed lilies on Coolman Ridge. So, to protect them, Parkcarers removed weeds from this area by hand and cordoned off the plants prior to the burn-off. The fire crew also raked a break around them.

In the rocky outcrops on Fence Post Hill, bushes and shrubs predominated. Blackthorn *Bursaria spinosa* was abundant there, with Peach Heath *Lissanthe strigosa* also common.

Several large eucalyptus trees were present on the site. Of these, one mature Scribbly Gum *Eucalyptus rossii*, damaged in 2003, had died in the ensuing drought. In our records, it is Tree 34, Area 1. Its high, bare limbs provided perches for birds. (See illustrations below.) The Group's Tree Survey data for the area, which had been updated shortly before the site was burnt, also listed specimens of Blakely's Red Gum *E. blakelyi*, Red Stringybark *E. macrorhyncha*, Yellow Box *E. melliodora*, Bundy *E. nortonii*, and Red Box *E. polyanthemus*. As well as these, there were some wattles (two introduced *Acacias*; one local), a few small Kurrajongs *Brachychiton populneus* and young Cherry Ballarts *Exocarpus cupressiformis*.

Over the previous months, Parkcarers had placed weeds into piles as they removed them. Just before the burn-off, the fire crew raked away the weeds heaped along the fence above Fence Post Hill, and scattered them beside the road.



Photo G. Lyngå 2005 June 24



Photo G. Lyngå 2009 Feb 28

SCRIBBLY GUM *EUCALYPTUS ROSSII* (TREE 34) IN 2005 AND 2009,
PRIOR TO PRESCRIBED BURN

The burn-off on 25 November 2009.

Parkcarers were not present for the exercise, although our local resident fire ecologist, Dr Malcolm Gill, was able to observe much of the action from nearby. Full details are no doubt to be found in the official records kept by Parks.

Group members inspected the site on Sunday 13 December 2009. This informative visit was led by Dr Gill, and reported in the Group newsletter in January 2010.

What is the area like now (November 2010)?

The ACT is no longer in drought. Good soaking rains since February this year have refilled the dam. There are springs, seeps and bogs. Water is running in the drainage lines. The Bureau of Meteorology season summary for winter 2010 states:-

- Wettest winter since 2005
- Warm days - 18th consecutive winter with above average day-time temperatures
- Cool nights - coldest night-time temperatures since 2006

The same web-page notes “The warmest daytime temperature in winter was recorded at Tuggeranong on the 4th June, where it reached 16.8 °C.”

Despite the wet conditions, the existing minor erosion along the upper wall of the dam has not worsened. We note that the dam’s immediate surrounds are outside the burn-off zone.

By contrast, the erosion in the small active gully has visibly increased. It has eaten about a metre further up-slope and more of the rocks at the base are now exposed. All of the weeds and fallen branches we had placed in it were burnt. There has also been minor scouring of the drainage line further up the hill from the gully. The new erosion occurred with the first heavy rain after the burn-off.

Two exotic plants not recorded on the Ridge before the burn-off have appeared in the gully – Cudweed *Gamochaeta calviceps* and French Catchfly *Silene gallica var. gallica*. We have also found one native plant of which we have no previous record anywhere on Cooleman Ridge: Native Storksbill *Pelargonium australe*. (See illustration p. 7.)

The *A. fimbriatum* near the gully were unscathed by the burn-off. The nearby erosion has not yet claimed the soil in which they are growing.

This season, *A. barbata* dominate the grasses, as they do in much of the Reserve and indeed much of the ACT. They have grown as tall and

appear almost as thick as in the mid 90s. The seed-heads have begun to dry off.

In the drainage line particularly, Clovers *Trifolium spp.* have emerged and are forming dense mats.

There are some patches where *Austrostipa spp.* still predominate. Here, isolated *A. barbata* rise above the lower growing native tussocks. The tussocks are carrying seed, particularly those plants that have emerged from the seed-bank since the burn-off. However, the burnt tussocks have struggled to recover. Most of them are growing only from the edges, if at all. They will not produce seed in the quantities we saw in 2007 and 2008. We note that their tenacious roots still hold the soil, even when the burnt clumps seem to have died.

We draw attention to the effect of the burn-off along the roadside above Fence Post Hill. Where the weed piles had been scattered, *Echium plantagineum* Paterson's Curse germinated en masse. It appears that insufficient heat was generated to sterilise the weed seeds. By contrast, where the weeds had been piled up within the fenced area, and the heat generated was presumably greater, few weeds emerged. Some of these patches remain largely bare.

With regard to the trees, we have noted a number of changes. The fire "chimneyed" and felled the dead *Eucalyptus rossii*. It adversely affected one of the Bundy *E. nortonii* specimens. It seems to have killed an introduced Wallowa *Acacia calamifolia* and all the *E. cupressiformis*. However, there has been a significant emergence of eucalypt seedlings.



Photo G. Lyngå Dec 2010

NATIVE STORKSBILL *PELARGONIUM AUSTRALE*

The Story in Pictures

Dr Gösta Lyngå took digital photographs monthly from 5 locations from December 2009 to April 2010, and again in October and November 2010. The series shown here to illustrate the recovery is a selection from one of these locations only, Point 3.

Dr Malcolm Gill provided rainfall data from Percy Crescent, Chapman, next to the Kathner Street fenced regeneration area. The day given is the day on which the gauge was read at approximately 9am.

Rainfall and photographs since burn-off 25 November 2009

1. Vehicle tracks from fire crew movements are evident. No regrowth is yet obvious.

Rainfall 9th Dec 2.5 mm. (*Total 2.5 mm.*)



Dec 13 2009

2. Tracks fade as grasses and forbs germinate.

Rainfall 18th Dec 3.5 mm; 25th Dec 17 mm; 26th Dec 36 mm; 27th Dec 1mm; 28th Dec 18 mm; 1st Jan 0.5 mm; 17th Jan 0.5 mm. (*Total 75.5 mm.*)



Jan 17 2010

3. *Microlaena stipoides* flourishes in the drainage line. *Bothriochloa macra* dominates the higher, drier ground.

Rainfall 5th Feb 6 mm; 6th Feb 15 mm; 11th Feb 3.5 mm; 13th Feb 42 mm; 14th Feb 55 mm; 15th Feb 42 mm; 16th Feb 7.5 mm. (Total 171 mm.)



Feb 19 2010

4. *Bothriochloa macra* begins to seed.

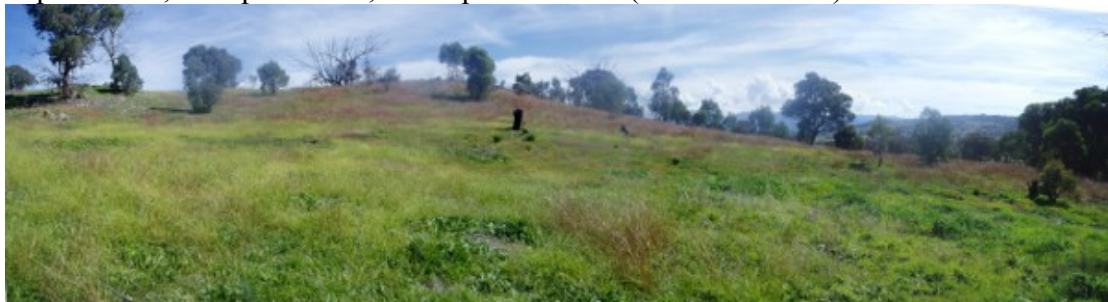
Rainfall 1st Mar 0.5 mm; 6th Mar 27 mm; 7th Mar 3 mm; 8th Mar 54 mm; 9th Mar 1.5 mm; 11th Mar 1 mm. (Total 87 mm)



Mar 19 2010

5. *B. macra* continues to seed.

Rainfall 29th Mar 4.5 mm; 30th Mar 4 mm; 31st Mar 13 mm; 4th April 0.5 mm; 7th April 4 mm; 8th April 2 mm; 11th April 1.5 mm. (Total 29.5 mm.)



Apr 18 2010

6. *Avena barbata* engulf the native grasses.

Rainfall 19th Apr - 29th Oct 481.5 mm.



Oct 29 2010

7. *A. barbata* begin to dry off.

Rainfall 29th Oct – 12th Nov 74 mm.



Nov 12 2010

Total rainfall since burn-off

Between the last of these photos and the anniversary of the burn, a further 43 mm fell. This is included in the twelve-month figure below.

964 mm 25 November 2009 – 24 November 2010

Plant List

There are now over 170 species recorded in our plant list for the fenced regeneration area at Kathner Street. Nearly half are exotic to the ACT (see Census of the Vascular Plants, Hornworts and Liverworts of the ACT). Of these, 6 species are exotics not recalled from before the burn-off (Shivery Grass *Briza minor*, Stinkwort *Dittrichia graveolens*, Stinkgrass *Eragrostis cilianensis*, Cudweed *Gamochaeta calviceps*, French Catchfly *Silene gallica var. gallica*, and Caltrop *Tribulus terrestris*). A further 4 native species are likewise not recalled from before the burn-off (Sweet Hound's Tooth *Cynoglossum suaveolens*, Cotton Panic Grass *Digitaria brownii*, Native Storksbill *Pelargonium australe* and Weeping Lovegrass *Eragrostis parviflora*). *G. calviceps*, *S. gallica var. gallica* and *P. australe* have not previously been recorded on Cooleman Ridge.

The list also includes 22 entries that are species of plant previously recorded here. Some of these have been killed ("no recovery" or "no recovery from 2003 fire"), have not yet reappeared but are likely still to be present ("no data"), or had only appeared as isolated weeds in the past and have not been noticed since the burn-off ("none observed").

Names

The list is presented in alphabetical order by genus. The species names for each representative of that genus present in the fenced regeneration area, follow on in alphabetical order.

Where species could not be determined at the time of observation, or was not recorded, this is indicated as *sp.* (Because these are not likely to be new species of the genus, they are not included in the totals given above.)

The family name is also provided, as is the common name. The common names are taken from the Flora of NSW. Only the first name is listed if more than one common name is given.

An asterisk * indicates a plant exotic to the ACT.

Observations

The observations are provided in date order, where more than one record was made. Dates are in YYMMDD format.

<i>Family</i>	<i>Genus</i>	<i>Species</i>	<i>Common name</i>	<i>Observation</i>
MIMOSACEAE	Acacia*	boormanii	Snowy River Wattle	100528 - shooting from base
MIMOSACEAE	Acacia*	calamifolia	Wallowa	No recovery
MIMOSACEAE	Acacia	dealbata	Silver Wattle	100910 - suckering, flowering
MIMOSACEAE	Acacia	sp		101105 - seedling
ROSACEAE	Acaena	ovina	Sheep's Burr	100115 - shooting from base 101029 - flowering
POLYGONACEAE	Acetosella*	vulgaris	Sorrel	091211 - seen 101029 - flowering
AMARANTHACEAE	Alternanthera	nana	Hairy Joyweed	091211 - greening
AMARANTHACEAE	Amaranthus*	albus	Tumbleweed	100305 - growing/pulled
AMARANTHACEAE	Amaranthus*	retroflexus	Red Root	100312 - flowering
AMARANTHACEAE	Amaranthus*	sp		100115 - emerging? 100205 - flowering
LORANTHACEAE	Amyema	miquelii	Box Mistletoe	No recovery from 2003 fire
ASTERACEAE	Arctotheca*	calendula	Capeweed	100924 - flowering/removed
POACEAE	Aristida	ramosa	Purple Wire Grass	091204 - Emerging 100108 - flowering
ANTHERICACEAE	Arthropodium	fimbriatum	Nodding Chocolate Lily	091127 - flowering, wilted but not burnt 101029 - buds
RUBIACEAE	Asperula	confereta	Common Woodruff	101029 - flowering
POACEAE	Austrodanthonia	setacea	Smallflower Wallaby Grass	101029 - flowering
POACEAE	Austrodanthonia	sp	Wallaby Grass	100226 - flowering
POACEAE	Austrostipa	scabra	Spear Grass	101105 - flowering
POACEAE	Austrostipa	scabra subsp. falcata	Spear Grass	091211 - perennial tussocks shooting 091225 - shooting 101029 - flowering
POACEAE	Austrostipa	sp		100205 - still very little growth on burned tussocks
POACEAE	Avena*	barbata	Bearded Oats	100422 - flowering
POACEAE	Bothriochloa	macra	Red-leg	091211 - perennial tussocks shooting 091225 - shooting 100109 - budding/flowering
STERCULIACEAE	Brachychiton	populneus	Kurrajong	091212 - green terminal shoots visible on main stem 091227 - growing vigorously
POACEAE	Briza*	minor	Shivery Grass	Not recalled from before burn-off 101029 - flowering

<i>Family</i>	<i>Genus</i>	<i>Species</i>	<i>Common name</i>	<i>Observation</i>
POACEAE	Bromus*	diandrus	Great Brome	101029 - flowering
POACEAE	Bromus*	hordeaceus	Soft Brome	101029 - flowering
POACEAE	Bromus*	rubens	Red Brome	101029 - flowering
POACEAE	Bromus*	sp		100205 - flowering
PITTOSPORACEAE	Bursaria	spinosa ssp lasiophylla	Blackthorn	091231 - most show no sign of life 100101 - flowers on their greenest branches only 100115 - shooting from base
BRASSICACEAE	Capsella*	bursa-pastoris	Shepherd's Purse	100409 - flowering
CYPERACEAE	Carex	sp		100108 - flowering
CYPERACEAE	Carex	appressa	Tall Sedge	101029 - flowering
CYPERACEAE	Carex	inversa	Knob Sedge	101029 - flowering
ASTERACEAE	Carthamus*	lanatus	Saffron Thistle	No data
ASTERACEAE	Cassinia	longifolia		101029 f- lowering
ASTERACEAE	Cassinia	quinquefaria	Dogwood	101005 - shooting from base
EUPHORBIACEAE	Chamaesyce	drummondii	Caustic Weed	No data
SINOPTERIDACEAE	Cheilanthes	austrotenuifolia	Rock Fern	100101 - new growth
	Cheilanthes	austrotenuifolia	Rock Fern	101029 - spores
SINOPTERIDACEAE	Cheilanthes	distans	Bristly Cloak Fern	101105 - spores
SINOPTERIDACEAE	Cheilanthes	sieberi	Resurrection Fern	101029 - seen
	Cheilanthes	sp		091218 - greening 100109 - shooting from roots/base
CHENOPODIACEAE	Chenopodium	pumilio	Small Crumbweed	091231 - very wide spread
POACEAE	Chloris	truncata	Windmill Grass	100109 - budding/flowering
ASTERACEAE	Chondrilla*	juncea	Skeleton Weed	091204 - emerging 091218 - shooting from base, new rosettes and stems 100115 - flowering
ASTERACEAE	Chrysocephalum	apiculatum	Yellow Buttons	100115 - emerging from roots 100226 - flowering
ASTERACEAE	Chrysocephalum	semipapposum	Clustered Everlasting	091218 - flowers lying on ground 100115 - shooting from base 100306 - flowering
ASTERACEAE	Cirsium*	vulgare	Spear Thistle	No data
CONVOLVULACEAE	Convolvulus	angustissimus	Native Bindweed	100109 - shooting from roots/base; seedlings 100508 - seedlings +++ 101029 - flowering
ASTERACEAE	Conyza*	albida	Tall Fleabane	100101 - Growing 101029 - buds

<i>Family</i>	<i>Genus</i>	<i>Species</i>	<i>Common name</i>	<i>Observation</i>
ASTERACEAE	Cotula	australis	Common Cotula	101029 - flowers
CRASSULACEAE	Crassula	sieberiana	Australian Stonecrop	101029 - flowers
ASTERACEAE	Cymbonotus	lawsonianus	Bear's Ear	100716 - rosette 101029 - flowers
POACEAE	Cymbopogon	refractus	Barbed Wire Grass	100219 - flowering
POACEAE	Cynodon *	dactylon	Couch Grass	091218 - shooting 100115 - patches spreading
BORAGINACEAE	Cynoglossum	suaveolens	Sweet Hound's Tooth	Not recalled from before burn-off 100327 - flowering 101029 - flowering, 3 plants
CYPERACEAE	Cyperus*	eragrostis	Umbrella Sedge	101029 - flowering
	Cyperus*	sp		100115 - seen
CYPERACEAE	Cyperus*	tenellus		101029 - flowering
POACEAE	Dactylis*	glomerata	Cocksfoot	No data
FABACEAE	Desmodium	varians	Slender Tick-trefoil	091220 - new growth 100109 - budding/flowering
CONVOLVULACEAE	Dichondra	repens	Kidney Weed	091204 - seen 101029 - flowering
POACEAE	Digitaria	brownii	Cotton Panic Grass	Not recalled from before burn-off 100205 - flowering
ASTERACEAE	Dittrichia*	graveolens	Stinkwort	Not recalled from before burn-off 100306 - seen
BORAGINACEAE	Echium*	plantagineum	Paterson's Curse	091218 - rosettes 100115 - flowering
POACEAE	Ehrherta*	erecta	Panic Veldtgrass	No data
CHENOPODIACEAE	Einadia	nutans subsp. nutans	Climbing Saltbush	091211 - seen 091231 - prolific
CYPERACEAE	Eleocharis	acuta		101029 - flowering
POACEAE	Eleusine*	tristachya	Goose Grass	101112 - observed
POACEAE	Elymus	scaber	Wheat Grass	101029 - flowering
ONAGRACEAE	Epilobium	billardierianum	Hairy Willowherb	100115 - flowering
ONAGRACEAE	Epilobium	hirtigerum	Downy Willowherb	101105 - flowering
POACEAE	Eragrostis*	cilianensis	Stinkgrass	Not recalled from before burn-off 100115 - flowering
POACEAE	Eragrostis*	curvula	African Lovegrass	100205 - flowering
POACEAE	Eragrostis	parviflora	Weeping Lovegrass	Not recalled from before burn-off 100319 - flowering

<i>Family</i>	<i>Genus</i>	<i>Species</i>	<i>Common name</i>	<i>Observation</i>
GERANIACEAE	Erodium*	botrys	Long Storksbill	100508 - rosettes
GERANIACEAE	Erodium*	cicutarium	Common Crowfoot	100115 - emerging 100508 - flowering
APIACEAE	Eryngium	ovinum	Blue Devil	100115 - emerging 101029 - buds
MYRTACEAE	Eucalyptus	blakelyi	Blakely's Red Gum	101105 - vigorous, new tips
MYRTACEAE	Eucalyptus	macrorhyncha	Red Stringybark	101105 - vigorous saplings
MYRTACEAE	Eucalyptus	melliodora	Yellow Box	101112 - no significant change
MYRTACEAE	Eucalyptus	nortonii	Bundy	100116 - basal shoots, epicormic growth 101105 - vigorous, buds
MYRTACEAE	Eucalyptus	polyanthemos	Red Box	100101 - shooting 100508 - seedlings+++ 101029 - buds
MYRTACEAE	Eucalyptus	rossii	Scribbly Gum	091125 - 1 fell in control burn, others vigorous 101105 - epicormics and saplings vigorous
MYRTACEAE	Eucalyptus	sp		100226 - seedlings
ASTERACEAE	Euchiton	sphaericus	Cudweed	101029 - seen 101105 - flowering
SANTALACEAE	Exocarpos	cupressiformis	Cherry Ballard	091213 - green terminal shoots visible on main stem 100226 - some basal growth 100430 - all lifeless ? 100508 - some basal growth on the lowest tree 101119 - all lifeless
RUBIACEAE	Galium	gaudichaudii	Rough Bedstraw	No data
ASTERACEAE	Gamochaeta *	calviceps	Cudweed	Not recalled from before burn-off 101112 - flowering
GERANIACEAE	Geranium	solanderi	Native Geranium	091220 - new growth 100109 - shooting from roots/base 100124 - flowering
FABACEAE/Faboideae	Glycine	clandestina	Twining Glycine	100210 - reshooting 101029 - flowering
FABACEAE/Faboideae	Glycine	tabacina	Variable Glycine	091220 - emerging 100109 - budding/flowering 100115 - seed pods
HALORAGACEAE	Gonocarpus	tetragynus	Common Raspwort	101112 - flowering
GOODENIACEAE	Goodenia	hederacea	Forest Goodenia	100115 - shooting from roots 101029 - flowering

<i>Family</i>	<i>Genus</i>	<i>Species</i>	<i>Common name</i>	<i>Observation</i>
HALORAGACEAE	Haloragis	heterophylla		No data
FABACEAE/Faboideae	Hardenbergia	violacea	Purple Coral Pea	091220 - shooting 100422 - buds 101105 - flowers and pods
DILLENIAACEAE	Hibbertia	obtusifolia	Hoary Guinea-flower	100115 - shooting from base 101029 - flowering
BRASSICACEAE	Hirschfeldia*	incana	Hairy Brassica	091218 - shooting from base, new rosettes and stems 100115 - flowering
POACEAE	Holcus *	lanatus	Yorkshire Fog	101029 - flowering
POACEAE	Hordeum*	leporinum	Barley Grass	101029 - flowering
FABACEAE/Faboideae	Hovea	heterophylla	Hovea	No data
APIACEAE	Hydrocotyle	laxiflora	Stinking Pennywort	101029 - flowering
CLUSIACEAE	Hypericum	gramineum	Small St John's Wort	No data
CLUSIACEAE	Hypericum*	perforatum	St John's Wort	No data
ASTERACEAE	Hypochaeris*	glabra	Smooth Catsear	100508 - flowering
ASTERACEAE	Hypochaeris*	radicata	Flat Weed	100205 - flowering
	Hypochaeris*	sp	Flat weed	100109 - budding/flowering
JUNCACEAE	Juncus	homolocaulis		101105 - flowering
JUNCACEAE	Juncus	subsecundus		101105 - flowering
JUNCACEAE	Juncus	bufonius	Toad Rush	101105 - flowering
ASTERACEAE	Lactuca*	serriola	Prickly Lettuce	091231 - seedlings, nibbled by rabbits 100115 - flowering
BRASSICACEAE	Lepidium*	africanum	Peppercress	100115 - flowers and seeds
CYPERACEAE	Lepidosperma	laterale		101105 - flowering
SCROPHULARIACEAE	Linaria*	arvensis		100723 - flowering
SCROPHULARIACEAE	Linaria*	pelisseriana	Pelisser's Toadflax	No data
EPACRIDACEAE	Lissanthe	strigosa	Peach Heath	100101 - fruit remains on least scorched branches 100212 - shooting
POACEAE	Lolium*	rigidum	Wimmera Rye Grass	091231 - vigorous 101029 - flowering
LOMANDRACEAE	Lomandra	bracteata		100910 - flowering
LOMANDRACEAE	Lomandra	filiformis	Wattle Mat-rush	100528 - seen 101029 - flowering
LOMANDRACEAE	Lomandra	multiflora	Many-flowered Mat-rush	101029 - flowering
	Lomandra	sp		091211 - seen 100109 - shooting from roots/base

<i>Family</i>	<i>Genus</i>	<i>Species</i>	<i>Common name</i>	<i>Observation</i>
LYTHRACEAE	Lythrum	hyssopifolia	Hyssop Loosestrife	100422 - emerging 101119 - flowering
MALVACEAE	Malva *	neglecta	Dwarf Mallow	100115 - emerging
MALVACEAE	Malva*	parviflora	Small-flowered Mallow	101105 - flowering
LAMIACEAE	Marrubium*	vulgare	Horehound	091231 - seedlings 100129 - shooting from base
LAMIACEAE	Mentha	diemenica	Slender Mint	091225 - unburned 100124 - flowering
POACEAE	Microlaena	stipoides	Weeping Grass	100115 - flowering
MALVACEAE	Modiola*	caroliniana	Red-flowered Mallow	100115 - seedlings 101029 - flowering
SCROPHULARIACEAE	Orobanche*	minor	Broomrape	101029 - flowering
OXALIDACEAE	Oxalis*	corniculata	Yellow Wood Sorrel	No data
OXALIDACEAE	Oxalis	perennans	Yellow Wood Sorrel	No data
OXALIDACEAE	Oxalis	radicosa	Wood Sorrel	No data
OXALIDACEAE	Oxalis	sp	Wood Sorrel	100101 - growing 100115 - flowers and pods
OXALIDACEAE	Oxalis*	thompsoniae	Wood Sorrel	No data
POACEAE	Panicum	effusum	Hairy Panic Grass	100109 - budding/flowering
PAPAVERACEAE	Papaver*	dubium	Longhead Poppy	101029 - flowering
PAPAVERACEAE	Papaver*	somniferum	Opium Poppy	No data
CARYOPHYLLACEAE	Paronychia*	brasiliana	Chilean Whitlow	101029 - flowering
POACEAE	Paspalidium*	distans	Five Minute Grass	100306 - flowering
POACEAE	Paspalum*	dilatatum	Paspalum	100217 - flowering
GERANIACEAE	Pelargonium	australe	Native Storksbill	Not recalled from before burn-off 100521 - emerging 101126 - flowering
POLYGONACEAE	Persicaria	prostrata	Creeping Knotweed	100109 - thriving 100124 - flowering
CARYOPHYLLACEAE	Petrorhagia*	nanteuillii	Proliferous Pink	101029 - flowering
POACEAE	Phalaris*	aquatica	Phalaris	091231 - shooting 101029 - flowering
PINACEAE	Pinus*	radiata	Monterey Pine	None observed
PLANTAGINACEAE	Plantago*	lanceolata	Lamb's Tongues	091218 - shooting from base 100108 - flowering
PLANTAGINACEAE	Plantago*	varia	Variable Plantain	101029 - flowering
POACEAE	Poa	labillardieri	Tussock Grass	101029 - flowering

<i>Family</i>	<i>Genus</i>	<i>Species</i>	<i>Common name</i>	<i>Observation</i>
POACEAE	Poa	sieberiana	Fine-leaf Tussock Grass	101105 - flowering
POLYGONACEAE	Polygonum*	aviculare	Wire Weed	091231 - shooting
PORTULACACEAE	Portulaca	oleracea	Pigweed	100109 - seedlings
ASTERACEAE	Pseudognaphalium	luteoalbum	Jersey Cudweed	101019 - flowering
RANUNCULACEAE	Ranunculus	pumilio var. pumilio		101019 - flowers and seeds
ROSACEAE	Rosa*	rubiginosa	Sweet Briar	No data
ROSACEAE	Rubus*	fruticosus	Blackberry	100115 - shooting from roots/poisoned
POLYGONACEAE	Rumex	brownii	Swamp Dock	091211 - greening 100129 - flowering
POLYGONACEAE	Rumex*	crispus	Curled Dock	100326 - seen 101029 - flowering
LAMIACEAE	Salvia*	verbenaca	Wild Sage	091218 - shooting from base 100129 - flowering
CYPERACEAE	Schoenus	apogon	Common Bog Rush	101029 - flowering
ASTERACEAE	Senecio	bathurstianus		No data
ASTERACEAE	Senecio	hispidulus	Hill Fireweed	100217 - seen 101029 - flowering
ASTERACEAE	Senecio	quadridentatus	Cotton Fireweed	091231 - growing, nibbling by rabbits 101029 - flowering
POACEAE	Setaria*	gracilis	Slender Pigeon Grass	100409 - flowering
POACEAE	Setaria*	verticillata	Whorled Pigeon Grass	100219 - seen 100306 - flowering
CARYOPHYLLACEAE	Silene*	gallica var. gallica	French Catchfly	Not recalled from before burn-off 101029 - flowering
SOLANACEAE	Solanum	cinereum	Narrawa Burr	100109 - shooting from roots/base 100115 - flowering 100129 - new seedlings 101029 - fruit
SOLANACEAE	Solanum*	nigrum	Black-berry Nightshade	100217 - flowering 100312 - fruit
SOLANACEAE	Solanum*	triflorum	Three-flowered Nightshade	No data
ASTERACEAE	Solenogyne	dominii		No data
ASTERACEAE	Sonchus*	oleraceus	Common Sowthistle	091231 - shooting 100124 - flowering
POACEAE	Themeda	triandra	Kangaroo Grass	100109 - flowering

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ASTERACEAE	Tragopogon*	dubius	Goatsbeard	100129 - shooting from root 101029 - flowering
ZYGOPHYLLACEAE	Tribulus *	terrestris	Caltrop	Not recalled from before burn-off 100319 - flowering
ANTHERICACEAE	Tricoryne	elatior	Yellow Rush Lily	100101 - buds 100129 - flowering
FABACEAE	Trifolium*	arvense	Rabbit's Foot Clover	101029 - flowering
FABACEAE	Trifolium*	dubuim	Yellow Suckling Clover	101029 - flowering
FABACEAE	Trifolium*	campestre	Hop Clover	101029 - flowering
FABACEAE	Trifolium*	glomeratum	Clustered Clover	091213 - unburned seed heads 101029 - flowering
FABACEAE	Trifolium*	sp		100115 - emerging
FABACEAE	Trifolium*	subterraneum	Subterranean Clover	100910 - flowering
SCROPHULARIACEAE	Verbascum*	thapsus	Great Mullein	091218 - rosettes
SCROPHULARIACEAE	Verbascum*	virgatum	Twiggy Mullein	091218 - rosettes 100115 - flowering
ASTERACEAE	Vittadinia	sp		No data
POACEAE	Vulpia*	bromoides	Rat's Tail Fescue	101029 - flowering
POACEAE	Vulpia*	muralis		101029 - flowering
CAMPANULACEAE	Wahlenbergia	communis	Tufted Bluebell	091220 - new growth, in bud 100109 - budding/flowering
CAMPANULACEAE	Wahlenbergia	gracilis	Australian Bluebell	100430 - flowering
CAMPANULACEAE	Wahlenbergia	luteola		No data
CAMPANULACEAE	Wahlenbergia	stricta	Tall Bluebell	No data
COLCHICACEAE	Wurmbea	dioica	Early Nancy	100309 - flowering
ASTERACEAE	Xerochrysum	viscosum	Sticky Everlasting	091211 - flowers from burned plants lying on ground 101112 - flowering