

Flora and Vegetation Survey of proposed “Fregon” gravel pit on Devils Creek Rd.

24-25/2/2011

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INTRODUCTION AND METHODS

The proposed “Fregon” gravel pit on Devils Creek Rd west of Fitzgerald River National Park, was surveyed for conservation species and vegetation type on 24-25th of February 2011. The survey area was bounded by the coordinates 6215200S/711235E, 6215415S/711470E, 6214730S/712070E, 6214460/711785E (UTM/Datum WGS 1984). The area was traversed on transects 50m apart, running in an east-west direction. Vegetation was described according to the structural classification of Keighery (1994) (Appendix 1). Nomenclature follows current WA Herbarium usage (DEC 2011a).

RESULTS

Flora

147 species were recorded during the survey (Appendix 2). Three species could not be identified to species level due either to the lack of flowering material or the genus (*Lepidosperma*) undergoing current revision. It is likely a number of annuals and geophytes (eg orchids) occurring within the survey area were not present at the time of the survey. A few agricultural weeds and grasses (not identified) were observed along the north western boundary occurring within a few metres of the firebreak and adjacent paddock. No weeds or introduced species were observed elsewhere within the survey area.

Declared Rare Flora

No Declared Rare Flora (DRF) species were located during the survey and it is unlikely any are present. Only one DRF species, *Boronia clavata* is known to occur within 5km (DEC 2011b, DEC Albany Priority lists), (Appendix 3). This species occurs on alluvial river/creek flats, a habitat not found within the survey area. A further 3 DRF species – *Adenanthos ellipticus*, *Verticordia crebra* and *Anigozanthos bicolor* subsp. *minor* have been found within 20 km of the survey area with the first two species restricted to habitats not found within the survey area.

Priority species

Two plants of *Stylidium clavatum* P3, were located in the survey area (-34.18413, 119.29504, UTM Zone 50 6215047.37, 711504.47, Datum WGS 1984). See Appendix 4 for completed Threatened/Priority Report Form.

Nine other priority species have been recorded within a 5km radius of the survey area, with a further 22 priority species occurring within 20 km radius (see Appendix 3). Many of these species occur in habitats not found within the survey area. Due to the time of survey it is likely that several these species would not be detected or would not be identifiable due either to their annual nature or absence of flowering material. These species include *Comesperma lanceolatum* P2, previously recorded within 5km radius of the survey area and *Hopkinsia adscendens* P3, *Stylidium pseudohirsutum* P3, *Pterostylis* sp. Ongerup (K.R. Newbey 4874) P4 and *Thysanotus parviflorus* P4, all previously recorded between a 5km and 20 km radius of the survey area.

Vegetation

The survey area is dominated by a *Eucalyptus buprestium*/*E. pleurocapra* Very Open Tree Mallee over *Lambertia inermis* Tall Open Shrubland, Mixed Open Heath, Mixed Open Low Heath and Mixed Very Open Sedgeland. *Hakea pandanycarpa* and *Hakea ferruginea* were occasionally subdominant in the upper shrub stratum with a few very small patches on deeper sands dominated by *Banksia baxteri*. Common species in the heath strata include *Banksia plumosa* subsp. *plumosa*, *Banksia baueri*, *Banksia heliantha*, *Adenanthos cuneatus*, *Taxandria spathulata*, *Jacksonia grevilleoides*, *Isopogon trilobus*, *Lysinema pentapetalum*, *Melaleuca striata*, *Daviesia teretifolia*, *Dillwinia divaricata*, *Calothamnus gracilis*, *Calothamnus villosus*, *Hibbertia gracilipes*, *Allocasuarina humilis*, *Calytrix asperula*, *Xanthorrhoea preissii*, *Melaleuca tuberculata*, *Banksia gardneri*, *Banksia repens* and *Isopogon prostrata*. Common sedges include *Tricostularia neesii* var *elator*, *Anarthria prolifera*, *Anarthria scabra*, *Anarthria gracilis*, *Chordifex crispatus*, *Chordifex sphacelatus*, *Hypolaena humilis*, *Harperia confertospicatus*, *Cyathochaeta avenacea* and *Mesomelaena stygia* subsp. *stygia*. Common grasses and herbs included *Amphipogon turbinatus* and *Patersonia lanata*. This vegetation is common in the adjacent Fitzgerald River National Park.

Condition

The vegetation is in excellent condition, however numerous very small patches of vegetation were observed in the central western and south western areas of the survey area that included multiple plant deaths. (Appendix 5). These areas varied from approximately 2m² to 8m² and most of the dead species were Proteaceous species (Figure 1). Some areas exhibited two ages of deaths. The dead species included *Banksia heliantha*, *Banksia nutans*, *Banksia gardneri*, *Banksia bauera*, *Banksia falcata*, *Banksia baxteri*, *Banksia repens*, *Banksia coccinea*, *B. brunnea*, *Hakea victoria*, *Isopogon polcephalus*, *Lambertia inermis*, *Jacksonia grevilleoides*, *Allocasuarina thuyoides* and *Beaufortia micrantha*. Appendix 5 provides the coordinates of the observed deaths and species involved. Due to the small size of the patches it is likely there are more areas within the survey area exhibiting similar deaths but occurring in areas not traversed.

Whilst the symptoms are consistent with *Phytophthora* dieback, the deaths may be due to another cause and it is recommended the cause of these deaths be investigated by a disease expert.



Figure1 Example of multiple plant deaths observed, in the proposed “Fregon Gravel Pit”.
Dead species = *Banksia nutans*, *Banksia baueri* and *Banksia heliantha*.

REFERENCES

DEC (2011a) FloraBase, Western Australian Herbarium. The Western Australian Flora. Department of Environment and Conservation, <http://florabase.dec.wa.gov.au>

DEC (2011b) NatureMap <http://naturemap.ded.wa.gov.au> Department of Environment and Conservation

Keighery (1994), Bushland Plant Survey. A guide to Plant Community Survey for the Community. .

APPENDIX 1 Vegetation Structural Classification (Keighery 1994)

Life form/height class	Canopy cover			
	100-70%	70-30%	30-10%	10-2%
Trees over 30	Tall Closed Forest	Open Forest	Tall woodland	Tall Open Woodland
Trees 10-30m	Closed Forest	Open Forest	Woodland	Open Woodland
Trees under 10 m	Low Closed Forest	Low Open forest	Low Woodland	Low Open Woodland
Tree Mallee	Closed Tree Mallee	Tree mallee	Open Tree Mallee	Very Open Tree Mallee
Shrub Mallee	Closed Shrub Mallee	Shrub Mallee	Open Shrub Mallee	Very Open Shrub Mallee
Shrubs over 2m	Closed Tall Scrub	Tall Open Scrub	Tall Shrubland	Tall Open Shrubland
Shrubs 1-2m	Closed Heath	Open Heath	Shrubland	Open Shrubland
Shrubs under 1m	Closed Low Heath	Open Low Heath	Low Shrubland	Low Open Shrubland
Grasses	Closed Grassland	Grassland	Open Grassland	Very Open Grassland
Herbs	Closed Herbland	Herbland	Open Herbland	Very Open Herbland
Sedges	Closed Sedgeland	Sedgeland	Open Sedgeland	Very Open Sedgeland

APPENDIX 2 Species list, proposed “Fregon” gravel pit, Devils Creek Rd, 24-25/2/2011

Anarthriaceae

Anarthria gracilis
Anarthria laevis
Anarthria prolifera
Anarthria scabra
Lyginia imberbis

Apiaceae

Platysace effusa
Xanthosia singuliflora

Asparagaceae

Laxmannia brachyphylla
Lomandra hastilis

Campanulaceae

Lobelia rarifolia

Casuarinaceae

Allocasuarina humilis
Allocasuarina microstachya
Allocasuarina thuyoides

Chenopodiaceae

Encyalaena tomentosa

Cyperaceae

Caustis dioica
Cyathochaeta avenacea
Lepidosperma aff. *densiflora*
Lepidosperma carphoides
Lepidosperma striatum
Lepidosperma sp.1
Lepidosperma sp.2
Mesomelaena stygia subsp. *stygia*
Mesomelaena tetragona
Schoenus caespititius
Schoenus curvifolius
Schoenus obtusifolius
Schoenus subbarbatus
Schoenus sublateralis
Tricostularia neesii var. *elatior*

Dasygongonaceae

Dasygongon bromeliifolius

Dilleniaceae

Hibbertia acerosa
Hibbertia gracilipes
Hibbertia mucronata

Ericaceae

Astroloma baxteri
Astroloma prostratum
Astroloma tectum
Leucopogon corynocarpus
Leucopogon gibbosus
Lysinema pentapetalum
Oligarrhena micrantha

Fabaceae

Acacia chrysellia
Acacia chrysocephala
Acacia cyclops
Acacia moirii subsp. *moirii*
Acacia varia var. *parviflora*

Fabaceae cont.

Chorizema uncinatum
Daviesia abnormis
Daviesia emarginata
Daviesia incrassata subsp. *reversifolia*
Daviesia teretifolia
Dillwynia divaricata
Eutaxia major
Gastrolobium punctatum
Gompholobium knightianum
Gompholobium marginatum
Gompholobium scabrum
Gompholobium venustum
Hovea trisperma
Jacksonia grevilleoides
Jacksonia racemosa
Kennedia coccinea subsp. *esotera*

Goodeniaceae

Dampiera juncea
Goodenia coerulea
Lechenaultia tubiflora

Haemodoraceae

Anigozanthos rufus
Conostylis vaginata
Haemodorum spicatum

Iridaceae

Patersonia lanata
Patersonia limbata

Lamiaceae

Microcorys barbata

Lauraceae

Cassytha flava
Cassytha glabella
Cassytha racemosa

Malvaceae

Lasiopetalum quinquenervium

Myrtaceae

Baeckea preissiana
Beaufortia micrantha var. *micrantha*
Calothamnus gracilis
Calothamnus sanguineus
Calothamnus villosus
Calytrix asperula
Conothamnus aureus
Darwinia sp. Ravensthorpe (G.J. Keighery 8030)
Darwinia vestita
Eucalyptus buprestium
Eucalyptus decipiens
Eucalyptus pleurocarpa
Eucalyptus tetraptera
Leptospermum spinescens
Melaleuca striata
Melaleuca subtrigona
Melaleuca tuberculata
Taxandria spathulata
Verticordia densiflora var. *cespitosa*

APPENDIX 2 cont: Species list

Pittosporaceae

Billardiera sp.

Poaceae

Amphipogon turbinatus

Polygalaceae

Comesperma calymega

Comesperma virgatum

Proteaceae

Adenanthos cuneatus

Adenanthos flavidiflorus

Banksia arctotidis

Banksia baueri

Banksia baxteri

Banksia brunnea

Banksia coccinea

Banksia falcata

Banksia gardneri

Banksia heliantha

Banksia nutans

Banksia plumosa subsp. *plumosa*

Banksia repens

Conospermum caeruleum

Franklandia fucifolia

Grevillea tripartita

Hakea corymbosa

Hakea denticulata

Hakea ferruginea

Hakea obliqua subsp. *parviflora*

Hakea pandanycarpa subsp. *crassifolia*

Hakea prostrata

Hakea strumosa

Hakea trifurcata

Hakea victoria

Isopogon formosus

Isopogon polycephalus

Isopogon teretifolius

Isopogon trilobus

Lambertia inermis

Persoonia striata

Petrophile cyathiforma

Petrophile prostrata

Petrophile teretifolia

Stirlingia anethifolia

Synaphea media

Synaphea oligantha

Synaphea reticulata

Restionaceae

Chordifex crispatus

Chordifex laxis

Chordifex sphacelatus

Desmocladius fasciculatus

Desmocladius flexuosus

Harperia confertospicata

Harperia lateriflora

Hypolaena humilis

Santalaceae

Leptomeria pauciflora

Stylidiaceae

Stylidium clavatum (P3)

Thymelaeaceae

Pimelea sulphurea

Xanthorrhoeaceae

Xanthorrhoea preissii

APPENDIX 3 Conservation species previously recorded within a 20 km radius of survey area

Conservation species	<5km radius	within 20km radius
DRF		
<i>Adenanthos ellipticus</i>		•
<i>Anigozanthos bicolor</i> subsp. <i>minor</i>		•
<i>Boronia clavata</i>	•	•
<i>Verticordia crebra</i>		•
Priority 2		
<i>Adenanthos cacomorphus</i>	•	
<i>Calectasia keigheryi</i>	•	•
<i>Comesperma lanceolatum</i>		•
<i>Eucalyptus</i> x <i>chrysantha</i>		•
<i>Hibbertia acrotrichion</i>		•
<i>Kunzea ericifolia</i> subsp. <i>subulata</i>		•
<i>Monotoca aristata</i> ms	•	•
<i>Philotheca cymbiformis</i>	•	•
Priority 3		
<i>Agonis undulata</i>		•
<i>Calectasia obtusa</i>		•
<i>Eucalyptus arborella</i>		•
<i>Hibbertia fitzgeraldensis</i>	•	•
<i>Hopkinsia adscendens</i>		•
<i>Lasiopetalum parviflorum</i>		•
<i>Leucopogon blepharolepis</i>	•	•
<i>Pultenaea adunca</i>		•
<i>Pultenaea calycina</i> subsp. <i>calycina</i>		•
<i>Sphaerolobium validum</i>		•
<i>Stylidium clavatum</i>	•	•
<i>Stylidium pseudohirsutum</i>		•
<i>Thomasia pygmaea</i>		•
Priority 4		
<i>Acacia empelioclada</i>	•	•
<i>Acacia simulans</i>	•	•
<i>Acrotriche parviflora</i>		•
<i>Anthocercis fasciculatus</i>		•
<i>Banksia laevigata</i> subsp. <i>laevigata</i>		•
<i>Eucalyptus praetermissa</i>		•
<i>Jacksonia compressa</i>		•
<i>Pimelea physodes</i>		•
<i>Pterostylis</i> sp. Ongerup (K.R. Newbey 4874)		•
<i>Thysanotus parviflorus</i>		•

APPENDIX 4 Threatened Priority Flora Report Form, *Stylidium clavatum* P3



**Threatened and Priority
Flora Report Form**

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Stylidium clavatum	TPFL Pop. No.: _____
OBSERVATION DATE: 24/2/2011	CONSERVATION STATUS: 3 <input type="checkbox"/> New population <input checked="" type="checkbox"/>
OBSERVER/S: E.M Sandiford	PHONE: (08) 98 44 4860
ROLE: Consultant Botanist	ORGANISATION: n/a

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): Bushland remnant west of Devils Creek Rd and approximately 2.5 km NW from Mt. Maxwell, (Fitzgerald River NP)

DEC DISTRICT: Albany	LGA: _____	Reserve No.: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input checked="" type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/>	Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: (-34.18413, 6215047.37)	No. satellites: _____	Map used: _____
WGS84 <input checked="" type="checkbox"/>	Long / Easting: 119.29504, 711504.47	Boundary polygon captured: <input type="checkbox"/>	Map scale: _____
Unknown <input type="checkbox"/>	ZONE: 50		
LAND TENURE:			
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input checked="" type="checkbox"/>	Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/> SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input checked="" type="checkbox"/>	Area observed (m²): 315000
EFFORT: Time spent surveying (minutes): 540	No. of minutes spent / 100 m²: _____
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/>	Count method: as observed
<small>(Refer to field manual for list)</small>	
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Area of pop (m²): 2
Alive	Mature: 2
Dead	Juveniles: _____
	Seedlings: _____
	Totals: _____
<small>Note: Pls record count as numbers (not percentages) for database.</small>	
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/>	Total area of quadrats (m²): _____
Summary Quad. Totals: Alive	
REPRODUCTIVE STATE: Clonal <input type="checkbox"/> Vegetative <input checked="" type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input type="checkbox"/>	
Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehisced fruit <input checked="" type="checkbox"/>	Percentage in flower: _____ %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: Observed doing transects every 50m

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
•	_____	_____	_____
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to Administrative Officer, Flora, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database

APPENDIX 4 cont.



Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; eg gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input checked="" type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input checked="" type="checkbox"/>	Brown <input type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input checked="" type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input type="checkbox"/>	Grey <input checked="" type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other: _____		Specify other: _____	Specify other: _____	
Drainage line <input type="checkbox"/>					
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>	Specific Landform Element: <u>plain</u> <small>(Refer to field manual for additional values)</small>				
CONDITION OF SOIL:	Dry <input checked="" type="checkbox"/>	Moist <input type="checkbox"/>	Waterlogged <input type="checkbox"/>	Inundated <input type="checkbox"/>	

VEGETATION CLASSIFICATION :

Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

	1. Eucalyptus pleurocarpa/E. buprestium Very Open Mallee
	2. Lamberia inermis Tall Open Shrubland
	3. Mixed Open Heath
	4. Mixed Very Open Shrubland

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

Hakea victoria, Isopogon trilobus, Banksia plumosa, Adenanthos cuneatus, Allocasuarina humilis, Daviesia teretifolia, Taxandria spathulata, Anarthria scabra, Anarthria prolifera, Mesomelaena stygia, Patersonia lanata

Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT: _____

FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Plants observed during flora survey of proposed "Fregon" Gravel Pit for Dept. Main Rads as part of FRNP Improvement program.

SPECIMEN: Collectors No: EMS1778 WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: E.M.Sandford Role: Consultant Botanist Signed: E.M. Sandford Date: 28/2/2011

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora, Species and Communities Branch.**
 Record entered by: _____ Sheet No.: _____ Record Entered in Database

APPENDIX 5 Locations of small patches of multiple plant deaths in the “Fregon” gravel pit, Devils Creek Rd and the dead species observed (Datum WGS 84)

WP	Latitude	Longitude	Northing	Easting	Date	Dead species	Notes
88	34.18496319	119.2963046	6214951.925	711619.0763	24/02/2011	<i>Banksia plumosa, B. heliantha, B. nutans, B. repens, Hakea victoria,</i>	
90	34.18500611	119.2964762	6214946.808	711634.7918	24/02/2011	<i>Lambertia inermis, B. baxteri, B. baueri, B. plumosa</i>	old deaths
95	34.18551036	119.2954087	6214893.096	711535.1348	24/02/2011	<i>B baxteri</i>	
96	34.18554255	119.2952853	6214889.781	711523.681	24/02/2011	<i>B. baueri, B. heliantha, B. falcata, H. victoria</i>	2 ages deaths
98	34.18593415	119.2956662	6214845.557	711557.8099	24/02/2011	<i>B. coccinea, B. baxteri, B. nutans, B. heliantha</i>	2 ages deaths possibly latest last season
100	34.18590196	119.2969537	6214846.453	711676.5603	24/02/2011	<i>B. baxteri, B. nutans, B. heliantha, B. plumosa, B. falcata, H. victoria, Jacksonia grevilloides</i>	
101	34.18586978	119.2975545	6214848.774	711732.0196	24/02/2011	More proteaceous deaths	
102	34.18586978	119.2976457	6214848.585	711740.4258	24/02/2011	<i>B baueri, B. nutans, B. heliantha, B. baueri, B. repens, Isopogon polycephalus, L. inermis</i>	Relatively recent deaths & older deaths
108	34.18629893	119.2983967	6214799.425	711808.5767	24/02/2011	<i>B. baueri, B. heliantha, B. falcata, B. gardneri</i>	
109	34.18629893	119.2982572	6214799.715	711795.7204	24/02/2011	not noted	
111	34.18635794	119.296369	6214797.093	711621.5249	24/02/2011	<i>B. baueri, B. nutans, B. heliantha, L. inermis</i>	
113	34.18680855	119.296149	6214747.571	711600.1263	24/02/2011	<i>B. coccinea, B. baxteri, B. baueri, B. heliantha</i> and others not noted	
115	34.18672808	119.2973614	6214753.978	711712.0731	24/02/2011	<i>B. nutans, B. baueri, B. baxteri, B. heliantha</i>	
116	34.18674954	119.2976457	6214751.006	711738.226	24/02/2011	not noted	older deaths
128	34.18757566	119.2967552	6214661.228	711654.0812	24/02/2011	<i>B. nutans</i>	1 only, recent death
132	34.18770977	119.2993623	6214640.934	711894.0478	24/02/2011	<i>B baxteri, B. repens, B. plumosa, L. inermis,</i>	
140	-34.188037	119.2981231	6214607.216	711779.0119	24/02/2011	<i>Adenathos cuenatus, B. plumosa, B. brunnea, B. gardneri</i>	
147	-34.188627	119.2983216	6214541.364	711795.8303	25/02/2011	<i>H. victorea, B. plumosa, L. inermis</i>	old deaths
149	34.18849834	119.2987776	6214554.686	711838.1802	25/02/2011	<i>B. baueri, B. repens, Allocasuarina thuyoides, Beaufortia micrantha</i>	