BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP -Lower Foothills **SITE NUMER** SERPØ1

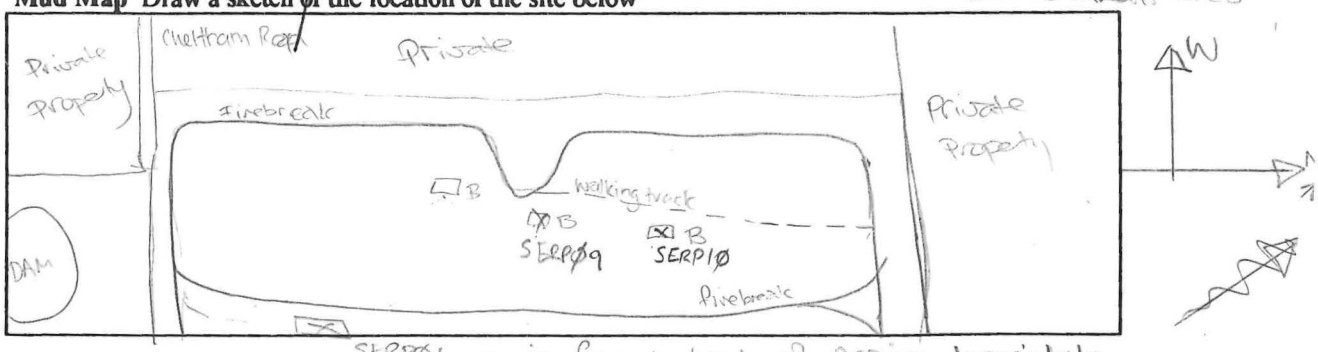
DATE TRIP 23/10/96 **RECORDERS** AM ~~KKM~~ DL

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below



SERPØ1 - in flagged stand of Acacia horridula

Road Location

Geographic Location **Latitude** 32 ~~22~~ 39·2 **S** **Longitude** 115 59 55·3 **E** **Altitude** — 70m
wrong lat!
GPS ✓ **Accuracy**
Map Sheet Jarrahdale PDGP 2·7

Photograph **Name** **Number** #35 - Roll #3?

Topographic Position (Circle the correct response)

Upland	*Lower slope*
Upper slope	*Valley*
Midslope	*Washline*

1 - lower slope!

Ridge Hill
Shelf
colluvium
shale/
laterite
(from geology map)

2. SITE DATA Circle the correct response

Slope **flat** **gentle** **steep** 25 ***Aspect*** **N** **NE** **E** **SE** **S** **SW** **W** **NW** 7

Surface Soil clayey, loamy grit - granite derived sands! ***Depth to Rock*** 0->1m ***Colour*** Grey → Dk Brown

Exposed Rock type granite **% surface cover** 2 size range 0·5 - 10cm

Litter 60 ~~30~~ **% surface cover** **Depth (cm)** 2-5cm

Bare Ground | **% surface cover)**

Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

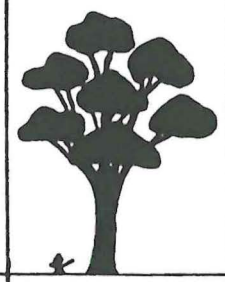
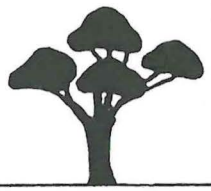
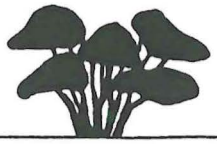
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

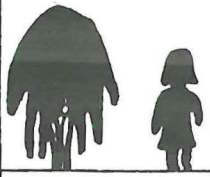
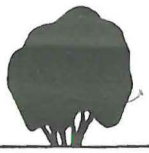
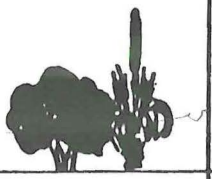
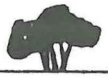
3. VEGETATION STRUCTURE AND COVER

Nth Quartzite!

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					 30m 10m
COVER CLASS (%)		10-30%			
DOMINANT SPECIES		E. lane-poolii			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					Dry. up.  2m 1m
COVER CLASS (%)		2-10%		10-30%	30-70
DOMINANT SPECIES		K. australis		X. acanthostachys	Melaleuca scabra
				H. ~~tofuki~~ tissorophila	Calothamnus tomulosis
				Dry. aurata	Hibb. hypericoides

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				 1m
COVER CLASS (%)	Not really a 2-10% layer	annual		-
DOMINANT SPECIES	N. alve pec.	~~Mixed~~ Mixed.		-
				-

4. VEGETATION CONDITION

Comments Open E. lane-poolii woodland with emergent Kingia australis & X acanthostachya a low heath u/storey DRF Acacia horridula. Lower slope of scarp face. 5/5! Excellent condition

Rich sclerophyllous (proteaceous & myrtaceous) heath.

10

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE — Label each plant with plants number, site code, date and plant's name or working name if required

SITE No SERP81
Date 23.10.96
13.12.96 (R)

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Euc. lane-poolei	✓		
Petrophile striata	✓		R
Melaleuca aff. scabra	✓		R
Acacia obovata	✓		R
Hibbertia hypericoides	✓		R
Gompholobium polymorphum	✓		✓
Bossiaea eriocarpa	✓		R
Gompholobium knightianum	✓		R
Leucopogon pulchellus	✓	✓	R
Hibbertia sp. acerosa	✓		○
Darwinia thymoides	✓		R
Xanthorrhoea gracilis	✓	✓	○
Acacia horridula	✓	✓	R
Acacia nervosa	✓	✓	R
Eriostemon spicatus	✓	✓	R
Hibbertia commutata	✓	→	R
Grevillea pululifera	✓	—	R
NE Acacia teretifolia		✓	○
NE Labichea punctata		✓	○
Lechenaultia biloba	✓		R
Gompholobium sp.	✓		
Acacia lateriticola	✓		R
Dryandra bipinnatifida	✓		R
Pimelea suaveolens	✓		✓
Baeckea camphorosmae	✓		R
Hakea trifurcata	✓		R
Hakea stenocarpa	✓		R
Dryandra armata	✓		R
Calothamnus torulosus	✓		R
Olearia paucidentata	✓		✓
Hakea undulata	✓		R

SHRUBS (cont.)	No	Fl	ID
Hakea lissocarpha	✓	—	R
Xanth. acanthostachya	✓	—	R
Kingia australis	✓	—	R
Hypocalymma angustifolium	✓	—	R
Isopogon asper	✓	—	R
Gompholobium marginatum seedling	✓	—	✓
Dryandra lindleyi lindleyi	✓	—	R
Astroloma pallidum	✓	—	✓
GRASSES			
Stipa pycnostachya	✓		✓
Briza minor	✓		✓
Amphipogon strictus	✓	✓	
Neurachne alopecuroidea	✓	✓	R
SERP11			
HERBS			
Conostylis setosa ?) setigera	✓	✓	R
Comesperma virgatum	✓	✓	○
Patersonia occidentalis	✓	✓	✓
Isotoma hypocrateriformis	✓	✓	R
Opercularia apiciflora	✓	✓	R
Lomandra hermaphrodita	✓	✓	R
Wahlenbergia preissii	✓	✓	R
Levenhookia pusilla	✓	✓	✓
Thelymitra vinita	✓	✓	○
Laxmannia squarrosa	✓	✓	✓
Xanthosia huegelii	✓	✓	R
Trachymene pilosa	✓	✓	✓

HERBS (cont.)	No	Fl	ID
Hydrocotyle callicarpa	✓	✓	R
Drosera menziesii	✓	✓	✓
Romulea rosea	✓	✓	✓
Dampiera alata	✓	✓	R
Stylidium hispidum	✓	✓	✓
Styl. brunonianum	✓	✓	✓
Goodenia caerulea	✓	✓	R
Styl. pycnostachya (leaves)	✓	✓	○
Drosera stolonifera	✓	✓	✓
Lomandra sericea	✓	✓	R
Cassytha pomiformis	✓	✓	✓
Conostylis setosa	✓	✓	✓
Patersonia umbrosa v. xanthina	✓	✓	R
Haemodorum laxum	✓	✓	R
Cassyma glabella	✓	✓	✓
NE Drosera paleifolia	—	—	✓
Hypocharis glabra	✓	—	R
Tricoryne elatior	✓	—	✓
Sonchus oleraceus	✓	—	R
Arthropodium capillipes	✓	—	✓
Stylidium bulbiferum	✓	—	✓
Thysanotus tenuellus	—	—	✓
SEDGES			
Tetrarria capillaris	✓	✓	R
Schoenus grammatophyllus	✓	✓	R
Lepidosperma angustatum (lax)	✓	—	
NE Schoenus sp. SERP81	✓		
Lorocarya fasciculata	✓	✓	R
Tetrarria octandra	✓	✓	R
Mesomelaena tetragona	✓	✓	R
Caladenia flava	✓	—	✓
Stylidium cornosum	✓	—	✓

see Herb sheet typ

Styl pycnostachya - enter ✓ OK

Ca_HCO3	CEC	exCa	exNa	exK	exMg	Alt	Lat
63	63	63	63	63	63	63	63

SERP01

PC 1.

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP01
Date	23.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
6. lane-poolei	✓		✓
SHRUBS			
Hakea lissocarpha	✓		
Xan. acanthostachya	✓		
Kingia ~~MALLEES~~ australis	✓		
Calothamnus torulosus	✓		//
Melaleuca ? scabra	✓		//
Hypocalymma angustifolium	✓		//
~~SHRUBS~~			
Petrophile striata			//
Eriostemon spicatum	✓		/
* Hibbertia commutata	✓		/
Lepogon asper (dead)			/
Acacia hourdula	✓		//
Darwinia thymoides	✓		/
A. pennata. Acacia sp. broad phyllode			✓
A. drummondii. Acacia sp. - crinkled broadleaf			✓
Hakea trifurcata	✓		//
Dampiera alata	✓		//
Bossea eriocarpa ?			//
· Acacia drummondii			//
· Bakea camphorosma	✓		//
Lechanaultea biloba (nf). ??	✓		//
Small foliose seedling - ?			
Compholobium knightianum	✓		/
* Hibbertia hypericoides	✓		//
Isopogon seedling - ??	✓		///
· Hypocalymma bispidula			
· Grevillea ~~hylaiptera~~ seedling	✓		

SHRUBS (cont.)	No	Fl	ID
Dryandra nivea	✓		
Dryandra armata	✓		//
Dryandra bipinnatifida	✓		//
Xanthosia huegelii			
Astrolomma pallidum			
Thomasia sp.			
Hakea stenocarpa	✓		
GRASSES			
Neurachne alopecuroides	✓		
Lomandra Baemraphodia?			
Hypocarus glabra			
Trichoryne ? elatior (NF)			
Lomandria - Single grey leaf ? → as col before			✓
Lomandria ~~sediflorum~~ caespitosum			
Anthropogon ? Anthropodium			
Ivalanbergium ? Wahlenbergia			///
HERBS			
Drosera stolonifera			✓
Stylidium piluliferum	✓		///
Stylidium brunonianum	✓		///
Patersonia ? occidentalis	✓		//
Stylidium bulbiferum			
Conostylis setosa	✓		///
Drosera pulida			//
Drosera menzeiesii			//
Patersonia ? (Conostylis setosa)	✓		//
Small climbing drosera			///
Romulea rosea			///
· Spatsmania squarosa (Lax mania)			

HERBS (cont.)	No	Fl	ID
Haemodorum sp (strap leaf) broad	✓		//
Cassytha racemosa	✓		//
Hakea undulata	✓		
Leucopogon sp.	✓		///
Hydrocotyle			///
Thysanotus (Basal rosette)			///
Trachymene pilosa			
Sonchus oleraceus	✓		
Stipa sp. ?			
Briza minor			
Hypochaeris glabra			
SEDGES			
Loxocarya: fasiculata	✓		///
? Tetcerea octandra	✓		//
Very fine sedge ?			
Xenos - black base	✓		///
Tetraria capillaris	✓		///
Lepidosperma teretc rough	✓		
Mesomelaena tenagona			
Lepidosperma angustifolium — or gracil	✓		
Caladenia flava			
Stylidium carnosum	✓		
Small annual xanthosia			//
Stylidium bulbiferum			//
Cranphalobium trinervum (— Polygala)			//
Olearia paucidentata			//
Hibb. commutata (seedling)			//
Levenhookia pusilla			
Pimelia suaveolens			

✓ Compholobium piluliferum marginata (seedling) ✓

· Hydracotyle ✓

Opercularia

PAGE 2.

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERPØ1
Date	~~23.10.96~~ 13.12.96

SERPØ1

Rescore

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

~~TREES~~ Shrubs	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Acacia nervosa	II		
								Druandra bipinnifida	II	III	
								White Lobelia sp		II	
								Conostylis setigera/ setosa	II		
								Lavandula hermaphrodita	I		
~~MALLEES~~								→ broad, blue-grey leaf	I		
								Grevillea pilulifera	I		
				GRASSES				Leucopogon pulcherrimus	II		
				Thysanotus (Basal rosette).				Goodenia raemulea	II		
				Trachymene ~~pilosa~~ pilosa				Isopogon asper			
SHRUBS				Conicus allocreassus							
· Gompholobium trinervium				Stipa sp?							
ollarosis bracidentala				Briza minor				SEDGES			
Hibbertia cunulata seedling								Tetrarea capillaris			
Levenhookea crispela								Lepidosperma teretic ~~TAMAAL~~	rough		
pimelea scaveolum								Thesomelaena tetragona.			
Hypochbrus glabra								Lepidosperma angustatum			
				HERBS							
				Caledenia flava				Trifolizte compholdium.	III		
				Stylidium cymosum							
				Small annual xamthosea				Patersonia - (not orthrosanthus)		II	
				Stylidium bulbiferum				Orthrosanthus? (chewed)		III	
								Not obs. flowering			
								Mesomelaena tetragona!	III		
								Check herb material!			

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine N.P. **SITE NUMER** SERP02

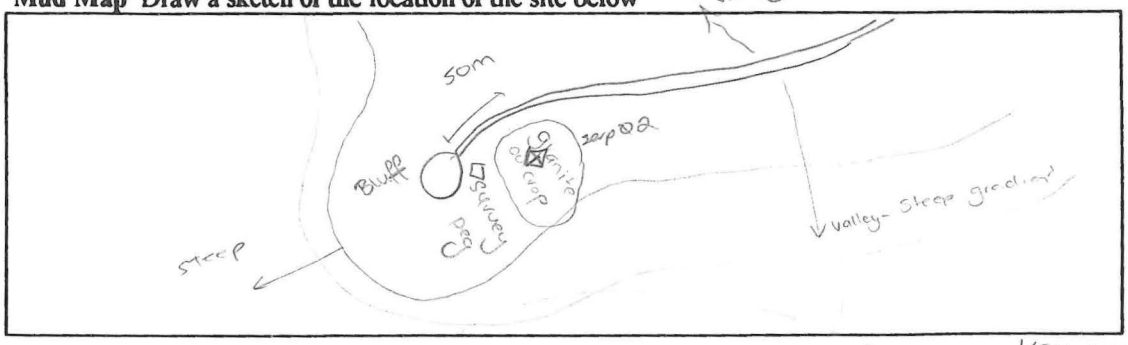
DATE TRIP 23.10.96 **RECORDERS** AM DL

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below



KEY access only

Road Location	4WD Survey track on westernmost ridge-line

Geographic Location	**Latitude** 32 22 27.1 S	**Longitude** 116 00 08.8	**E Altitude** 180m
	GPS	**Accuracy**	7 SAT
	Map Sheet	PDOP 2.8	

Photograph	**Name**	**Number** # 36+37 Roll 3

Topographic Position (Circle the correct response)

Upland Ridge	***Lower slope***
Upper slope —	***Valley***
Midslope 4	***Washline***

2. SITE DATA Circle the correct response

172° 5 – 90 11 135 180

Slope	**flat**	**gentle**	**steep** 25	***Aspect***	**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**

Surface Soil	gritty loam.	***Depth to Rock***	0-10cm	***Colour***	grey → Dk Brown

Exposed Rock	type granite	% surface cover	65-70%	size range	20 - 50cm Broken-granite

Litter	10	% surface cover	Depth (cm) 2cm

Bare Ground	1%	% surface cover)

with rocks ~~70%~~ 66% 70%.

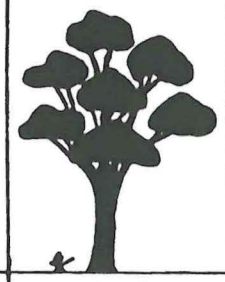
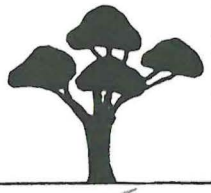
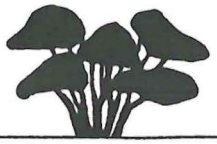
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

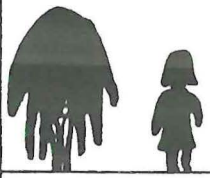
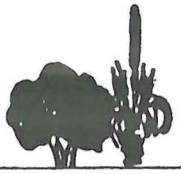
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)		1% - 2% ADJ	5		
DOMINANT SPECIES		E. calophylla			
		(in plot)			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					2m  1m
COVER CLASS (%)				30 - 70%	~~30-70%~~ 2-10%
DOMINANT SPECIES				Callistemon aculeata	Hibb? commutata/Montar
				Grev. bipinnatifida	

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)	10-30%	30-70%		–
DOMINANT SPECIES	Briza maxima	Styl. bulbiferum		–
	Avena sp.	Chei. labiches acute		-
		Hypochaeris glabra		

4. VEGETATION CONDITION

3 - 3½

Comments X weedy from adj. farmland = 3½ ~~4½~~ /5 (v. weedy!) 3

Recent drought - death of Allocas humilis

on ridge. V. weedy Open & subject to intense

heat/exposure. ADJ. Allocas. Huegelia

Labichea punctata

SERP 02
pg 1

* Check Orthosanchus for sheathing leaf bases!

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP02
Date	23.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

check that grev. pilulifera in other plot was NOT Trymalium arguot

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
E. calophylla	✓			Drosera pallida??			✓	Melotia? - Asteraceae	✓		
				3 cauline bases				unid Scrophs. (1)	✓		
SHRUBS				in wheel				Anagallis arvensis	✓		✓
Tryma lium ledifolium	✓		✓					Drosera menziesii			✓
Calytrix ~~aculeata~~? / acutifolia	✓		✓	Wahlenbergia sp.			✓	Ursinia anthemoides	✓		✓
Pryandra quercifolia ?	✓		✓					Daucus glochidiatus	✓		✓
~~MALLEES~~								Unid scrophs (2)	✓		✓
Hibbertia "commutata" montana				Medicago / Trifolium	✓		✓	Praesophyllum (leaf orchid)		✓	✓
Hemigenia incana	✓		✓	GRASSES				Drosera glodulifera			✓
Grevillea bipinnatifida	✓			Briza maxima	✓		✓	Levenhookia sp.			✓
Macrozamia veitchii	✓			Avena sp. ? fatua	✓		✓	Trachymene pilosa			✓
SHRUBS				Romulea rosea	✓		✓	Isolepis sp.			✓
Dodonea sp. curatoravpa	✓		✓	~~Medicago~~ Gaudes (chick weed)			✓	Calenthe ~~clemenda~~ ?			
Thysanotus patersonii	✓		✓	Homa Homa			✓	SEDGES			
Didopeltis ? sp	✓		✓	Aira caliophylla			✓	Loxocarya: flexuos ?	✓		✓
Xanthosia candida	✓		✓	Unid small grass (Volpia)			✓	Lepidosperma sward leaf.	✓		
Heniandra pungens				Podosonia ? Sheathing leaf base (?)		?	✓				
Acacia pulchella	✓		✓	Briza minor	✓		✓	Pleurachne (AOJ) ?			
Hakea lissocarpa	✓			HERBS				Lobaechia (AOJ)			
Boronia sp ?	✓		✓	Cheilanthes austrotenuifolia	✓		✓				
Allocasuarina humilis ?	✓		✓	Dioscorea hastifolia	✓		✓				
Hakea undulata	✓			Rhodanthe ? sp			✓				
Xanthorrhoea preissii	✓			Stylidium bulbiferum	✓		✓				
Burchardia congesta	✓		✓	Caesia micrantha	✓		✓				
				Drosera stoloniferd			✓				
				Hypochaeris glabrd			✓				
				Unid Tallose herb with 3 corolle / carpels			✓	→ Baeria. Didopeltis	✓		
				Arthropodium capillipes	✓		✓				
✓ off Hovea pungens?? check id.			✓	Drosera - Small							
				~~Trachymene pilosa~~							
				Ranunculus ? Ranunculus?							
				Tridentate leaf. Hibiscus	✓						

Actinotus Pleurachne?

Thelymitra crinita !!

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP02
Date	13.12.96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Yellow Fw. Lineum			✓
								Actinotus sp			✓
								White everlasting- Asteraceae			✓
								(Senecio?)			
								White Scroph			✓
								Romulea rosea			✓
MALLEES								Sonchus oleraceus			
								Medicago			✓
				GRASSES				Hovea pungens			✓
								~~Lomandra purpurinus~~			
								Borya sphaerocephala			✓
SHRUBS											
								~~Ast~~			
								SEDGES			
								Large Hibbertia!			✓
								Linata??			
								Gomph marginatum			✓
								Opp-leaved pink flw herb			✓
				HERBS							
								check Allocas. huegliana??			
								reprout			
								yes.			
								Allocas humilis ie			✓
								also check			
								reprout			
								Prob. A. huegliana			

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE — Label each plant with plants number, site code, date and plant's name or working name if required

SITE No SERP082
Date 23.10.96
13.12.96 (R)

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Allocasuarina huegeliana	✓	✓	✓
Euc. calophylla (seedling ?)	✓	—	✓/R
↓ 1st sampling!			
Xanthorrhoea preissii	✓	—	✓/R
Hakea undulata	✓	—	✓/R
Macropiria riedlii	✓	—	✓/R
Grevillea bipinnatifida	✓	—	✓/R
NE ~~Hibbertia commutata?~~		—	✓
Allocasuarina humilis	✓	✓	✓/R
Acacia pulchella	✓	✓	
Boronia ~~vacciniosa~~	✓	✓	✓/R
Hemigenia incana	✓	✓	✓/R
Dipodopeltis huegelii var huegelii	✓	✓	✓/R
Calytrix ~~acutifolia~~ acutifolia	✓	✓	✓/R
Trymalium ledifolium varios	✓	✓	✓/R
ADJ: Labichia lanceolata	✓	✓	
~~Dryandra quercifolia~~	✓	✓	✓/R
Dodonaea ceratocarpa	✓	✓	✓/R
Hibbertia mylnei	✓	✓	✓/R
Hovea pungens	✓	✓	✓/R
Acacia pulchella	✓	—	✓/R
Hakea lissocarpha	✓	—	✓/R
Dryandra praemorsa (D. quercifolia is southern sandplains !!)			

SHRUBS (cont.)	No	Fl	ID
NE ~~Praesophyllum sp. leaf only~~	—	—	✓
Drosera glanduligera sp. ?	✓	—	✓
Gonocalyx marginatus	✓	—	✓

GRASSES	No	Fl	ID
Briza minor	✓		✓
Aira caryophyllea	✓		✓
Vulpia myuroides	✓	✓	✓/R
Briza maxima	✓	✓	✓/R
Avena barbata	✓	✓	✓/R

HERBS	No	Fl	ID
ADJ: Trachymene coerulea	✓		✓
Dioscorea hastifolia	✓		✓/R
Linum trigynum	✓	✓	✓/R
NE ~~Xanthosia huegelii~~	✓		
~~Trachymene ornata~~ ??	✓		
Wahlenbergia preissii	✓		✓
Levenhookia pusilla	✓		✓
ADJ: Pleurosorus rutifolius	✓		✓
Anagallis arvensis	✓	✓	✓/R
Romulea rosea	✓	✓	✓/R
Drosera macrantha	✓		✓
Burchardia congesta	✓		✓/R
Rhodanthe manglesii	✓		✓

confused w. Acrotriche leucopogonoides

HERBS (cont.)	No	Fl	ID
Thysanotus manglesianus	✓		✓
Hypochaeris glabra	✓	✓	✓/R
Caesia micrantha	✓	✓	✓/R
Trifolium campestre	✓	✓	✓/R
Thelymitra crinita	✓		✓
Drosera menziesii	✓		✓
Drosera stolonifera	✓		✓
Cheilanthes austrofarinifolia	—		✓/R
Rhodanthe corymbosa	✓	✓	✓/R
Paraentucelia latifolia	✓	✓	✓/R
Bartsia trixago	✓	✓	✓/R
Ursinia anthemoides	✓	✓	✓/R
Sonchus oleraceus	✓	—	R
Borya sphaerocephala	✓	—	R
Xanthosia candida	✓	✓	✓/R
Stylidium bulbiferum	✓		✓/R id=✓
Actinotus leucocephalus	✓	✓	✓/R
Centaurium erythraea	✓	✓	R
Daucus glochidiatus	✓	✓	✓/R
Trachymene pilosa	✓	✓	✓/R
Homalosciadium homalocarpum	✓	✓	✓/R
Galium divaricatum	✓	✓	✓/R
Ro. Arthropodium capillipes	✓	—	✓/R
SEDGES			
Desmocladus asperus	✓		✓/R
Isolepis marginatum	✓	✓	✓/R

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP. **SITE NUMER** SERPØ3

DATE TRIP 23·1Ø·96 **RECORDERS** AM DL

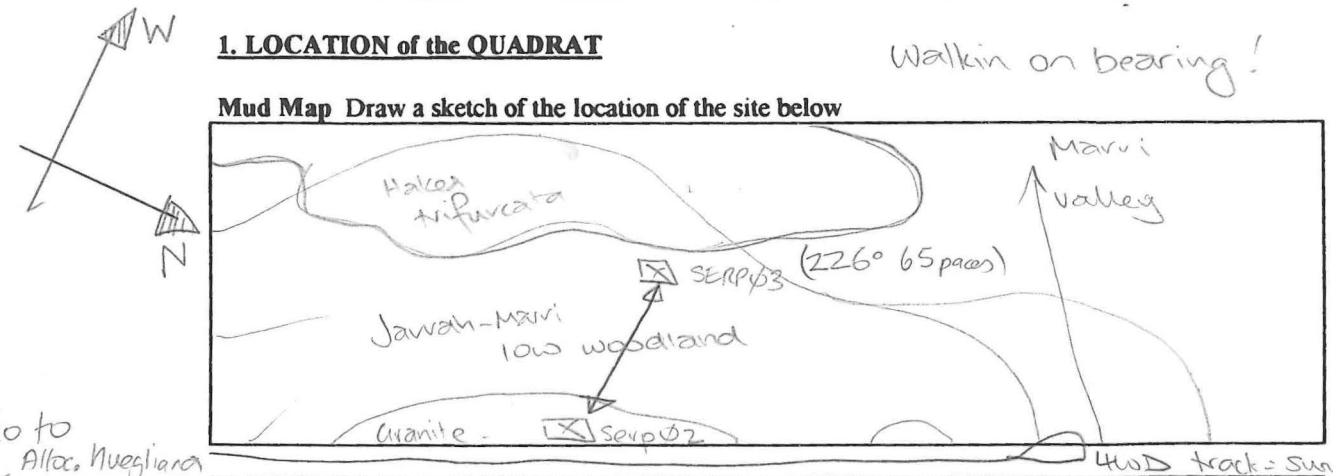
DATE TRIP **RECORDERS**

DATE TRIP **RECORDERS**

1. LOCATION of the QUADRAT

Walkin on bearing!

Mud Map Draw a sketch of the location of the site below



Go to Alloc. huegliana Tree behind SERPØ2 Take bearing 226° & walk ~65 paces into Jarrah-Marri. The top of granite is visible from NE peg of quadrat

Road Location Walk in from survey track ~200m

Geographic Location **Latitude** 32 22 28·4 **S** **Longitude** 116 00 07·2 **E** **Altitude** 210 (GPS) (6 SAT) 160m (map)
GPS ✓ **Accuracy** DDØP 3·3
Map Sheet Jarrahdale

flash - May need to rephotograph

Photograph **Name** **Number** # 37 Roll #3

Topographic Position (Circle the correct response)

Upland	*Lower slope*
Upper slope	*Valley*
Midslope	*Washline*

2. SITE DATA Circle the correct response

Slope flat gentle steep 2 **Aspect** N NE E SE S SW W NW 6.5 WSW 246°

Surface Soil clayey, gritty loam **Depth to Rock** 30 – >100 cm **Colour** Dk Brown-Grey

Exposed Rock type granite % surface cover 0·01 %! size range 0·2 - 10 cm

Litter >80 % surface cover Depth (cm) 20-30

Bare Ground 0 % surface cover)

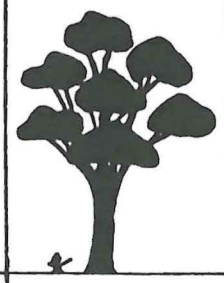
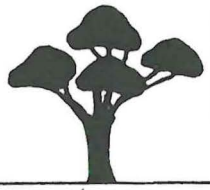
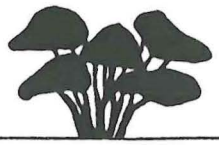
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

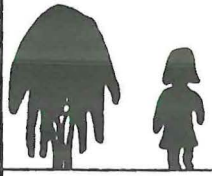
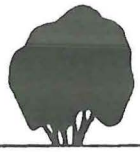
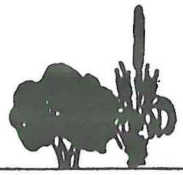
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

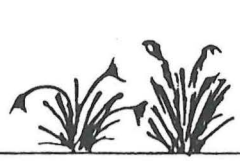
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)		10-30% (30-40%)	~~10-30~~ 30-40%		
DOMINANT SPECIES		E. calophylla	E. calophylla		
			E. marginata		

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					2m  1m
COVER CLASS (%)			10-30%	30-70%	30-70%
DOMINANT SPECIES			A. pulchella	Xan preissii	Hypo. angust.
			H. lissocarpa	Bossiaea ovata	Hibb hyperi
			Tri. tedifolium		Dry. nivea

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)		Thick u/storey		10-30%
DOMINANT SPECIES				Lo. tenuis (rough)
				T. capillaris

4. VEGETATION CONDITION

Comments low (3-8m) Jarrah Marri on edge of west-facing 1st ridge - overlooking foothills. Thick X. preissii u/storey. Roo grazing. Some fire history & some Briza from adjacent farmland. score 4/5.

Dense u/storey & good soil.

2

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP03
Date 23.10.96
13.12.96(R)

Label each plant with plants number, site code, date and plant's name or working name if required
Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
Eucalyptus calophylla ✓	✓							Tetratheca nuda ✓	✓	✓	
Eucalyptus marginata ✓	✓							Comesperma ciliatum ✓	✓		✓/R
								Stylidium hispidum ✓	✓		✓/R
Hakea lissocarpha ✓	—	—	✓/R					Dampiera alata ✓	✓		✓/R
Grevillea pilulifera ✓		✓	R					Burchardia congesta ✓	✓		✓
Dryandra lindleyana lindleyana ✓	✓		✓/R					Stylidium bulbiferum ✓	—	—	✓/R
Bossiaea sp. Waroona (id-v) ✓	✓	✓	✓/R								
Leucopogon capitellatus ✓		✓	✓/R	Neurachne alopecuroidea ✓	—	—	✓/R	Patersonia babianoides ✓	✓		✓/R
Hypocalymma angustifolium ✓	✓	✓	✓/R	**GRASSES**				Lomandra hermaphrodita ✓	—	—	✓
Xanthorrhoea gracilis ✓	✓		✓/R	Briza maxima ✓	✓	✓	✓/R	Haemodorum sp strapleaf. ✓	—	—	✓
Acacia pulchella pulchella ✓	✓	✓	✓/R	Aira caryophyllea ✓	✓		✓				
Astroloma pallidum ✓	✓		✓/R	Tetrarrhena laevis ✓	✓		✓/R	Haemodorum sp. narrow leaf ✓	—	—	✓
Chorizema dicksonii ✓	✓		✓/R	Stipa pycnostachya ✓	✓	✓	✓/R				
Leucopogon pulchellus ✓	✓		✓/R	Danthonia setacea ✓	✓		✓/R	Lagenifera huegelii ✓	—	—	✓
Olearia paucidentata ✓	✓		✓/R	Microlaena stipoides ✓	✓	✓	✓/R				
Hibbertia hypericoides ✓	✓		✓/R	Briza minor ✓	✓		✓				
Leucopogon propinquus ✓	✓		✓/R	Dichelachne crinita ✓	✓						
Baeckea camphorosmae ✓	✓		✓/R	~~Vulpia sp.~~	—	—	✓				
Trymalium ledifolium var rosm. ✓	✓		✓/R	**HERBS**							
Bossiaea sp. ornata (id:v) ✓	✓		✓/R	Opercularia apiciflora ✓	✓	✓	✓/R				
Hibbertia commutata ✓	✓		✓/R	Stackhousia monogyna ✓	✓	✓	✓/R				
				Scaevola calliptera ✓	✓		✓				
Lechenaultia biloba seedling? ✓	✓		✓/R	Levenhookia pusilla ✓	✓		✓/R	SEDGES.			
Hovea chorizemifolia ✓	✓		✓	C. micrantha? single leaf form ✓	✓	?	?	Tetraria octandra ✓	✓		✓/R
Xanthorrhoea preissii ✓	—	—	✓/R	Caesia micrantha ✓	✓	✓	✓/R	Tetraria capillaris ✓	✓		✓/R
Macrozamia riedlei ✓	—	—	✓/R	Drosera erythrorhiza ✓	✓		✓	Loxocarya fascicularis ✓	✓		✓/R
				Arthropodium capillipes ✓	✓		✓/R				
				Dianella revoluta ✓	✓		✓/R				
				Cassytha pomiformis ✓	✓	✓	✓/R				
				Lomandra nigricans → ✓	✓		✓/R				
				Stylidium brunonianum ✓	✓		✓				
				Cassytha glabella ✓	✓		✓/R				

Arenophryne rotunda, Psedophryne guentheri & Uperoleia russelli	*PSEUDOPH*
Neobatrachus sp_B, N. sp_C & N. wilsmorei	*NEOSP_AA*
GECKOS	
Diplodactylus alboguttatusA & D. alboguttatusB	*DIPALBOG*
Diplodactylus pulcherA & D. pulcherB	*DIPPULCH*
Diplodactylus rankini, D. spinigerus & D. strophurus	*DIPLOD_1*
Diplodactylus squarrosus & Rhynchoedura ornata	*DIP_RHYN*
Gehyra punctata & G. variegata	*GEHYRA_*
PYGOPIDS	
Aprasia fusca, A. haroldi & A. smithi	*APRASIA*
Delma australisA, D. australisB, D. butleri, D. nasuta, Pygopus nigriceps & Pygopus lepidopodus	*DEL_PYGO*
DRAGONS	
Ctenophorus badius & C. maculatus	*CTENOP_1*
Ctenophorus femoralis & C. scutulatus	*CTENOP_2*
Ctenophorus inermis & C. reticulatus	*CTENOP_3*
Ctenophorus rubensA & C. rubensB	*CTENOP_4*
Tympanocryptus parviceps & T. adelaidensis	*TYMPANOC*
SKINKS	
Cryptoblepharus carnabyi & C. plagiocephalus	*CRYPTOBL*
Ctenotus alleni, C. fallens, C. lesueuri, C. mimetes, C. saxatilis & C. severus	*CTENOT_1*
Ctenotus hanloniA, C. hanloniB & C. uber	*CTENOT-2*
Cyclodomorphus celatus, C. melanops & Eremiascincus fasciolatus	*CYC_ERE_*
Egernia depressa & E. stokesii	*EGERNIA_*
Lerista connivens, L. kendrickiA, L. kendrickiB & L. varia	*LERIST_1*
Lerista decora &.L. planiventralis	*LERIST_2*
Lerista elegans, L. haroldi, L. muelleriA, L. muelleriB, L. muelleriC & L. muelleriD	*LERIST_3*
Lerista humphriesi, L. praepeditaA & L. praepeditaB	*LERIST_4*
Lerista kennedyensis & L. uniduo	*LERIST_5*
Lerista lineopunctulataA & L. macropisthopus	*LERIST_6*
Menetia amaura, M. greyiA, M. greyiB & M.greyiC	*MENET_1*
Menetia surdaA, M. surdaB & Notoscincus ornatus	*MENET_2*
Morethia lineoocellata & M. obscura	*MORETH_2*
Tiliqua multifasciata, T. occipitalis & T. rugosus	*TILIQUA_*
GOANNAS	
Varanus brevicauda, V. caudolineatus & V. eremius	*VAR_SMAL*
SNAKES	
Demansia calodera & D. psammophis	*SNAKE_S1*
Denisonia fasciata, Furina ornata, Pseudonaja modesta & V. bimaclata	*SNAKE_S2*
Psedechis australis & Pseudonaja nuchalis	*SNAKE_L1*
Ramphotyphlops australis, R. grypusA, R. grypusB, R. grypusC & R. hamatus	*SNAKE_BL*
Vermicella bertholdi, V. littoralis & V. multifasciata	*SNAKE_S3*

Classification of the 67 ecological taxa according to similarities in their co-occurrences at the same quadrats yeilded similar assemblage boundaries to those derived from the species analysis (Fig. DENT2):

- Assemblage_1: Taxa characteristically restricted to hummock grass communities on the red sandplains and dune fields of the arid zone, with ranges extending across middle and tropical latitudes.

SERP03 - Briza minor not maxima

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP03
Date	23.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
E. marginata	✓		/
E. calophylla	✓		/
SHRUBS			
Hakea lissocarpha	✓		
Xan preissii	✓		
MALLEES			
Dry. nivea	✓		//
Hibbertia hypericoides	✓		//
Leucopogon pulchellus.	✓		//
Bossiea ovata/eriocarpa			//
SHRUBS			
Hibb. commutata	✓		//
Hypocalymma angustifolium	✓		//
Comesperma virgatum	✓		//
Acacia pulchella	✓		//
Macrozamia reidlii	✓		//
Xanth. gracilis	✓		//
Dampiera alata	✓		//
Dianella revoluta	✓		//
Trymalium ledifolium	✓		//
Olearia paucidentata	✓		//
Patersonia babioides	✓		//
Astroloma pallidum.	✓		//
Scaevola sp → hirsute			//
Baeckea ~~Bikea~~ capsrostinea camphorosmae			✓
Stypbillia tenuifolia	✓		//
Stuphelia tenuifolia	✓		.

SHRUBS (cont.)	No	Fl	ID
Hovea chorizemifolia ?(NF)			/
Lepidosperma angustatum			
Vulpia sp → small grass.			//
Stackhousia sp			//
Lepidosperma - smooth, terete			
GRASSES			
Tetrarhena laevis	✓		//
Stipa ~~elegantissima~~	✓		//
Briza maxima	✓		//
Danthonia sp.	✓		//
Lomandra preissii	✓		//
Tetraria capillaris			/
Briza minor - collected check			//
Lomandra - narrow leafed → curled →			//
Tetraria octandra	✓		//
HERBS			
Arthropodium capillipes	✓		//
Burchardia congesta	✓		//
Caesia micrantha	✓		//
Stylidium bulbiferum	✓		//
Haemodorum sp step leaf. → broad			
Drosera erythrorhiza Drosera erythrorhiza			
Stylidium brunonianum → brunonianum			//
Haemodorum - narrow leaf			
opperularia ~~fastigiata~~ Opercularia hispidula			✓ //
Lechenaultia biloba -(NF)	✓		//
Lepidosperma - terete, glabrous - shaded sites			✓ //
Nurrac la Neurachne alopecuroidea	✓		
Aira ~~caleophylla~~ caryophyllae			//

HERBS (cont.)	No	Fl	ID
Cassytha glabella	✓		//
Cassytha racemosa	✓		//
Agrostocrinum sp !			
Tet. nuda → leafless // scale buds.			
~~Nemsia capitatum (root + tern)~~			
↓ Cherizima dicksonii			///
Loxocarya fasiculata	✓		/
Stylidium piliferum	✓		//
Lomandra haemophrodita (male)	///		
Unid grass (hirsute leaves)	///	//	
Las coll. before			
Lagenifera huegelii			
Levenhookia pusilla		//	
SEDGES			
Stylidium piliferum.	✓	//	
caespitosa ! Hemap			
Hairy ligule	✓		

Loxoc fasicu

fasic

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERPØ3
Date 13·12·96
Rescore

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

check id of Tet. capillaris!

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								~~[illegible]~~			
								Hairy-leaved grass	//		
								Bossiaea ornata/	//		
								eriocarpa			
								Haemodorum sp.	//		
								(broad strap leaf			
MALLEES								Astroloma erect ciliatum?	//		- cup
								Grevillea pilulifera	//		
				GRASSES				Stackhousia sp	//		
SHRUBS											
								SEDGES			
								Tet. octavidra			
								ADS - Tetratheca nuda			
				HERBS							

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

→ Survey track on West Ridge

BUSHLAND AREA Serpentine NP. **SITE NUMER** SERP04

DATE TRIP 24.10.96 **RECORDERS** AM DL

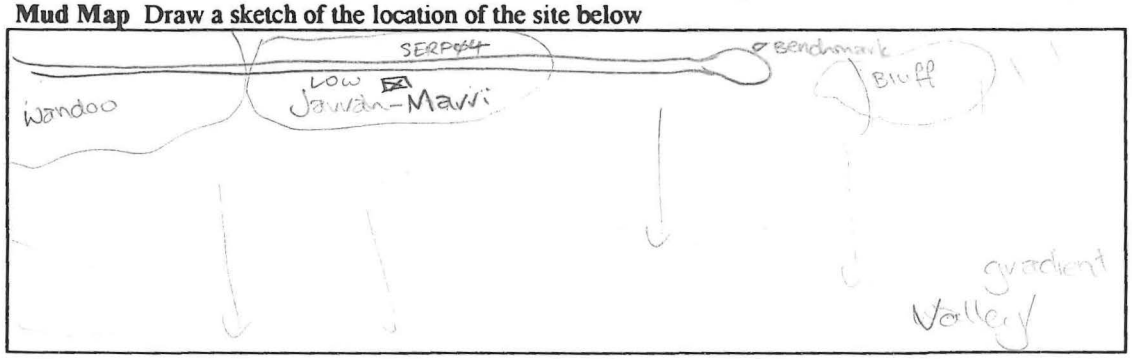
DATE TRIP **RECORDERS**

DATE TRIP **RECORDERS**

1. LOCATION of the QUADRAT

Large stand of Kingia-like X. australis gracilis
≈ 3m from road

Mud Map Draw a sketch of the location of the site below



CHECK ODOMETER

Road Location	Survey Track - S

Geographic Location	**Latitude** 32 / 22 / 30.8 S (30.3)	**Longitude** 116 / 00 / 10.2 E (10.3)	**Altitude** (120 GPS) → 170m
	GPS ✓	**Accuracy** (5 SAT)	
	Map Sheet Jarrahdale	PDOP = 3.5	

Photograph	**Name**	**Number** → off plot #2	# 3 - in plot Roll #4

Topographic Position			(Circle the correct response)
	Upland - Ridge line	***Lower slope***	
	Upper slope	***Valley***	
	Midslope	***Washline***	

4

2. SITE DATA Circle the correct response

Slope	**flat** **gentle** (1-5) **steep**	***Aspect*** **N NE E SE S SW W NW** (slight N)	
Surface Soil	gritty loam	***Depth to Rock*** 0-20 cm	***Colour*** Dk Brown
Exposed Rock	type granite	% surface cover 15	size range 5cm – 40cm
Litter	>80	% surface cover	Depth (cm) 5-10cm (2-3 layers)
Bare Ground	0	% surface cover) (15% incl. rock)	

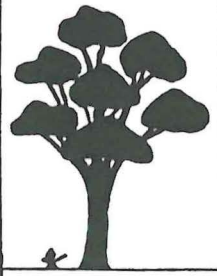
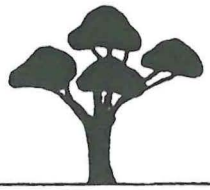
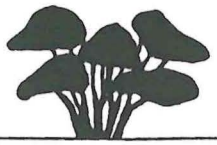
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

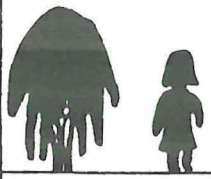
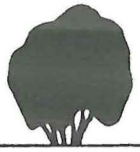
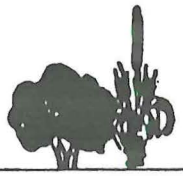
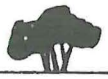
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

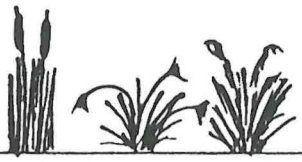
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					 30m 10m
COVER CLASS (%)			2-10%		
DOMINANT SPECIES		E. calophylla	E. calophylla E. marginata ↳ ligno. resprout		

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					↳ 1 layer 0.8-0.5m  2m 1m
COVER CLASS (%)	? enormous	>70%		3 >70%	>70%
DOMINANT SPECIES	X. acanthostachys	X. acanthostachys H. undulata !!		~~Hibb. spicata~~ Melaleuca scabra A. pulchellus	Hypo. angustifolium Hibb. spicata Dry. nivea

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				 1m
COVER CLASS (%)		Too thick leaf layer		30-70%
DOMINANT SPECIES				Tetraria capillaris Mesomelaena tetragonis

4. VEGETATION CONDITION

Comments 4-5 /5! Excellent condition. few weeds (B. minor) Long unburnt - Large stand of H. undulata indicates 5.8 4.0 hot fire which has germinated dense thicket of H. undulata on ridge.

1.5

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP04
Date	24.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
E. callophylla	✓		/
E. marginata	✓		//
SHRUBS			
Hypo. angustifolium	✓		//
Hibbertia spicata	✓		//
~~MALLEES~~			
Xanth. acanthostachya	✓		//
Hibb. commutata	✓		//
Melaleuca scabra	✓		//
Dry. nivea	✓		//
SHRUBS			
Petrophile striata	✓		//
Hakea stenocarpa	✓		//
Hakea undulata	✓		//
Allocasuarina humilis	✓		//
Macrozamia reidlii	✓		//
Leucopogon pulchellus	✓		//
Sphaerolobium medium	✓		//
Hibb. commutata	✓		//
Gomph. marginatum			//
Hakea lissocarpa	✓		
Acacia pulchella (seedlings) (+adult)	✓		//
?? Lambertia hyperacoides			.
Synaphia petiallaris	✓		//
Acacia drummondii	✓		//
Romulea rosea			//
Nerete leaf Thysanotus			
Single leaf lomandra ??			
~~Danthonia~~ Danthonia			//
Hemodorum - very narrow leaf	✓		//
Hypocharis glabra			//

Hibbertia

SHRUBS (cont.)	No	Fl	ID
unid small resprout ✓ -styl pycno.			
Rhinnocera (Trigonium)			
or G. pilulifera		//	
Dampiera decurrens (dead prob summer drought)	//		
alive!			
D. decurrens	✓		
GRASSES			
Climbing Drosera			
D. menziesii ?	//		
Drosera pallida			
Unid grass sp 1 ?	-		-
Tetratrena octandra	✓		///
Astroloma pallidum	✓		///
Homma homma			
Cassytha racemosa // -glabrous ??	//		
Briza maxima	//		
HERBS → Numerous leaf bases			
Haemodorum paniculatum	///		
Thysanotus patersonii	///		
Agrostocrinum scabrum	✓		///
Stylidium bulbiferum	✓		///
~~Stylidium~~			
Stylidium piliferum	✓	///	
Stylidium calcaratum	///		
Stylidium brunonianum	///		
Thelymitra crinita			///
Stylidium carnosum			///
Unid Small herb elongate leaves			
Scaevola sp (not flowering)	///		
Short climbing Drosera	///		

HERBS (cont.)	No	Fl	ID
Cassytha racemosa	✓	///	
Drosera menziesii		///	
Trachymene pilosa	//	///	
Hydrocotyle	///		
Xanthosia huegii	///		
Tetraria ~~octandra~~ capillaris	//		
	✓		
Caesia micrantha	///		
unid Epacrid seedling → prob L. pulchellum	///		
Isopogon aspera	✓	///	
Melaleuca sp.		///	
Caladenia flava		//	
SEDGES			
Loxocarya fasiculata		///	
Lomandra preissii		//	
Lepidosperma tenuis (tall)	✓	.	
Cassytha sp (probably racemosa)		///	
Mesomelaena tetragona	✓	///	
Styphelia sp / May be astroloma		///	
Unid epacrid			
Briza minor	///		
Burchardia congesta	//		
Lomandra/ Lepidosperm angustatum			
Tetrarena laevis	///		
~~Chaenecilla crombosa~~			
Chaenecilla corymbosa	///		
Tripterococcus sp. brunonis	✓	//	
Small Euphorb	//		
Willinbergia Wahlenbergia	//		
Neuracne elegans	✓		
Stipa sp.			

Baeckea camphorosmea ✓ //
Abalarstium ?? -? Agrostocrinum?
Acamphocarpus (dead) - Acanthocarpis

Actual size

alternating cauline leaves

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP04
Date	13-12-96
	Rescove

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Hibbertia hypericoides		//	
								Tet. octahedra		/	
								Unid Asteraceae (NF)		//	
				pilt				Caesia micrantha	//		
				pul				Hypochaeris sp	//		
MALLEES								Burchardia congesta	/		
				GRASSES				Lep - large, teet, smooth			
SHRUBS											
								SEDGES			
				HERBS							

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP01
Date 24.10.96
13.12.96 (R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Eucalyptus wandoo	✓		✓
Euc. marginata elegantella		✓	✓
Isopogon ~~scabra~~ ?? Jasper	✓		✓/R
Hakea undulata	✓		✓/R
Astroloma ciliatum	✓		✓
Acacia pulchella pulchella	✓		✓/R
Leucopogon pulchellus	✓	✓	✓/R
Hibbertia commutata	✓	✓	✓/R
Hypocalymma angustifolium	✓		✓/R
Daviesia decurrens	✓		✓/R
Petrophile striata	✓		✓/R
Thymalium ledifolium varios	✓		○
Acacia lateriticola	✓		✓/R
Hibbertia hypericoides	✓	✓	✓/R
Leucopogon capitellatus	✓	✓	✓/R
Baeckea camphorosmae	✓		✓/R
Astroloma pallidum	✓		✓/R
Melaleuca aff. scabra	✓		✓/R
Allocasuarina humilis	✓		✓/R
Synaphea gracillima	✓		✓/R
~~Synaphea sp. indet~~	✓		
Hibbertia spicata	✓	✓	✓/R
Gompholobium marginatum	✓		✓/R
Grevillea pilulifera	✓		✓/R
Sphaerolobium medium	✓		✓/R
Dryandra lindleyana lindleyana	✓		✓/R
~~Hypocalymma robustum (like)~~		✓	
~~Acacia fasiocarpa~~		✓	
Acacia pulchella		✓	

SHRUBS (cont.)	No	Fl	ID
Haemodorum discolor	✓	✓	✓/R
Xanth. acanthostachya	—		✓/R
Hakea stenocarpa	—		✓/R
Macrozamia riedlii	—		✓/R
Hakea lissocarpa	—		✓/R
Thysanotus thyrsideus	—		✓
Acanthocarpus preissii (dwd)	—		✓
Caladenia flava	—		✓
GRASSES			
Briza maxima	✓		✓
Stipa pycnostachya	✓	✓	✓
Neurachne alopecuroidea	✓		✓
Stipa compressa	✓		
Vulpia ~~muroides~~ myuros	✓		
Danthonia setacea	✓		✓
Briza minor	✓		✓
Tetrarrhena laevis	✓		✓
HERBS			
Xanthosia huegelii	✓		✓
Burchardia congesta	✓		✓
Stylidium bulbiferum (auct)	✓		✓
Caesia micrantha	✓		✓
Romulea rosea	✓		✓/R
Scaevola calliptera	✓		✓
Agrostocrinum scabrum	✓		✓/R
Cassytha pomiformis	✓	✓	✓
Lomandra caespitosa	✓		○
Pithocarpa pulchella	✓	✓	R
Trachymene pilosa	✓		✓
Hydrocotyle callicarpa	✓		✓

HERBS (cont.)	No	Fl	ID
Boranphera microphylla	✓		✓
~~Ten~~ Tripterococcus brunonis	✓		✓
Hyalosperma cotula	✓		✓
Millotia tenuifolia tenuifolia	✓		✓
Drosera macrantha	✓		✓
Cassytha glabella	✓		✓
Drosera menziesii	✓		✓
Stylidium hispidum	✓	✓	✓/R
Thysanotus manglesianus	✓		✓
Thelymitra cornuta	✓		✓
Stylidium pycnostachyum	✓		○
~~Hydrocotyle pilifera (callicarpa)~~	✓		— like
Homalosciadium homalocarpum	✓		✓/R
Hypochaeris glabra	✓		✓
Stylidium calcaratum	✓		✓
Lomandra preissii	✓		✓
Chaemaescilla corymbosa	✓		✓
Stylidium brunonianum	✓		✓
~~Haemodorum sp. indet~~	✓		✓
~~Cassytha pomiformis~~	✓	✓	✓
Haemodorum laxum	✓	✓	✓/R
Stylidium carnosum	✓	—	✓
SEDGES			
Tetraria octandra	✓		✓/R
Tetraria capillaris	✓		✓/R
Mesomelaena tetragona	✓		✓/R
Loxocarya fasciculata	✓		✓/R

Wahlenbergia ...

- Assemblage_2: Taxa of semi-arid to arid temperate areas of the west coast and southern half of Australia, that favour the variety of sandy surfaces (hummock grasslands and shrublands). Some taxa are confined to this coastal strip.
- Assemblage_3: Widespread arid to semi-arid taxa, many of which are confined to finer textured soils, from loamy-sands and sandy-loams to alluvial plains and even samphire pans.
- Assemblage-4: Singleton taxa normally associated with rock surfaces (*Ctenophorus caudicinctus, Morelia perthensis* and *Morethia ruficauda*) were previously included in Assemblage_4 (Fig. DENT) because of the ecotonal position of the quadrat GJ1: low on the scree slope of the Pell range, 0.1 km from the floodways and levee banks of the Gascoyne River.
- Assemblage_5: Species restricted to flood plains and riverine flats.
- Six assemblages comprising one or two taxa that were recorded on only one or two quadrats.

In Figure DENT2, the 63 quadrats have been re-ordered in terms of similarities in their taxa-composition. The sorting strategy yeilded a quadrat-dendrogram that summarised the herpetofaunal patterns of occurrence. As previously, univariate data on aspects of the quadrat's physical environments were superimposed as a histogram on this dendrogram, attribute-by-attribute, to identify the physical attributes that most closely conformed to the herpetofaunal patterns.

PwetQ and TdiurR provided the best fits, and K(HCO3), sand, carbon and electical conductivity (EC) were also significant **(Fig Histo-ecol)**. Pseas, PcldQ, Pann and TwarQ showed the same relationship to the herpetofaunal patterns as PcldQ, with which they are strongly intecorrelated **(Table Ecol_KW)**. Similarly, TannR and Longitude showed the same relationship to the herpetofaunal patterns as TdiurR, with which they are both strongly inter-correlated. This is precisely the same set of attributes as emerged from the species-based analysis.

Table Ecol-KW. Kruskall-Wallis values for physical attributes that showed significant (<0.05) differences between groups of quadrats that had been clustered in terms of similarities in their ecological-taxa composition **(Fig. Histo-ecol)**.

Attribute	**Kruskal-Wallis value**		**Kendall's Tau (prob.)**
	6-groups	**15 groups**	**from Appendix 2.**
PwetQ	49	56	
PcldQ	46	54	0.95 (***)
Pseas	49	55	0.81 (***)
TwarQ	41	49	- 0.84 (***)
Pann	37	47	0.74 (***)
TdiurRa	35	55	- 0.46 (***)
Longitude	39	51	0.80 (***)
TannRa	33	54	0.95 (***)
Altitude	25	46	0.58 (***)
TcldQ	5 ns[a]	46	- 0.27 (**)
Latitude	11 ns	45	- 0.81 (***)
$K(H_2CO_3)$	32	40	- 0.34 (***)

(32 22 41.0 116 00 11.7 210m
7 SATS → PDØP = 3.1 !)

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP: Survey Track on Western Ridge **SITE NUMER** SERPØ5

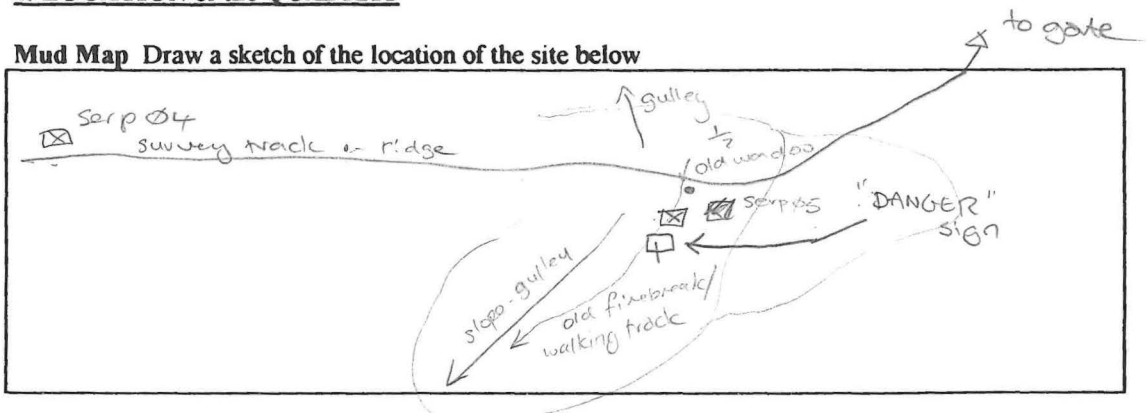
DATE TRIP 24 10 96 **RECORDERS** AM DL

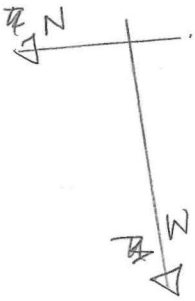
DATE TRIP **RECORDERS**

DATE TRIP **RECORDERS**

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below





Road Location	
Geographic Location	**Latitude** 32 22 41.0 S **Longitude** 116 00 12.6 E **Altitude** 180m (~~4 figure~~ 180M (MAP+GPS))
	GPS ✓ **Accuracy** (6 SATS)
	Map Sheet Jarrandale PDOP-4.2 (4.2)

Photograph	**Name**	**Number** #3	Roll # 4

Topographic Position (Circle the correct response)

Upland		***Lower slope***
Upper slope	4	***Valley***
Midslope		***Washline***

2. SITE DATA Circle the correct response

Slope	**flat**	**gentle** (2)	**steep**	***Aspect*** **N NE E SE S SW (W) NW** (286° 270 315 360 WNW 7.5)
Surface Soil	~~gravelly~~ loamy clay	***Depth to Rock*** 10 – >100	***Colour*** RED	
Exposed Rock	type ~~granite~~ ~~erosion products of granite~~	% surface cover >1° <1°	size range dolerite – 30-40cm blocks (2-3 layers)	
Litter	60-70%	% surface cover	**Depth (cm)** 10-20cm	
Bare Ground	30 /	% surface cover (litter cover)		

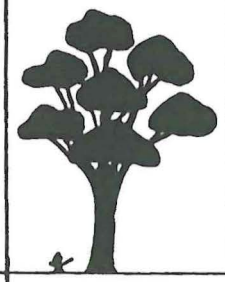
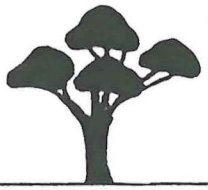
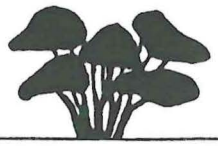
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

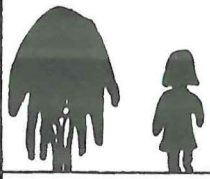
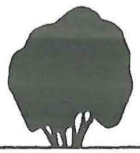
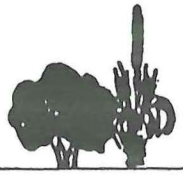
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

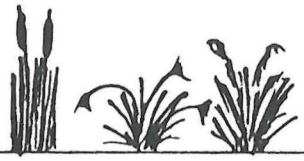
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)	2-10%	10-30%			
DOMINANT SPECIES	E. wandoo	E. wandoo			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					Acanthocarpus preissii 2m  1m
COVER CLASS (%)			2-10%	2-10%	70% ~~30-70~~
DOMINANT SPECIES			H. trifurcata H. undulata (1° dead)	P. biloba H. lissocarpa	Phy. cal Hypo. angust Hibb. spicata

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)		2-10%		2-10%
DOMINANT SPECIES		Stylewandia glauca Orthrosanthus sp		Loxocarya flexuosa

4. VEGETATION CONDITION

Comments Reasonable condition. ADJ to road but other areas too upland.

4/5 4/5

∴ one needs a erosion problem

Dead H. undulata stand. (senescing) dying

1 emergent Alloc. huegliana

2

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP05
Date	24·10·96
	13·12·96(R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Eucalyptus wandoo	✓		✓/R
Allocasuarina huegeliana			✓/R
Hakea undulata	—		✓/R
Hakea lissocarpa	—		✓/R
Hakea trifurcata	—		✓/R
Hibbertia spicata	✓	✓	✓/R
Hibbertia commutata		✓	✓/R
Acacia dentifera	✓	✓	✓/R
Leucopogon pulchellus	✓		✓/R
Hypocalymma angustifolium	✓		✓/R
Petrophile biloba	✓		✓/R
Phyllanthus calycinus	✓		✓/R
Acanthocarpus preissii	✓		✓/R
Grevillea pilulifera	✓		R
Hibbertia mylnei	—		R
~~Hibbertia ? mylnei ? (Broad leaf larg)~~	3	?3	✓
Xanthorrhoea preissii	—		✓/R
Macrozamia riedlii	—		✓/R
Grevillea bipinnatifida	—		✓/R
Acacia pulchella pulchella	—		✓/R
~~Andersonia sp. ?~~	—		✓
Trymalium ledifolium var ros	—		✓
(✓ from SERP04)			

SHRUBS (cont.)	No	Fl	ID
GRASSES			
Briza minor		✓	✓/R
Briza maxima	✓	✓	✓/R
Microlaena stipoides	✓		✓/R
Vulpia myuroides myros	✓		✓/
Aira caryophyllea	✓		✓/
Lolium rigidum	✓		✓
Bromus hordeaceus	✓		✓/
HERBS			
Centaurium erythraea		✓	R
Daucus glochidiatus	✓	✓	✓/R
Scaevola calliptera		✓	R
Stackhousia monogyna	✓	✓	✓/R
Bartsia trixago		✓	R
Hypochaeris glabra		✓	✓/R
Thysanotus manglesianus		✓	✓/R
Linum trigynum	✓	✓	R
Tolpis barbata		✓	R — as in ARSC05 10.12.96
Oxalis perennans	✓	✓	✓/R
Drosera stolonifera	✓		✓/R
Anagallis arvensis	✓		✓/R
Sonchus oleraceus	✓		✓/R

HERBS (cont.)	No	Fl	ID
Monadenia bracteosa	✓	✓	✓/R
Haemodorum sp. indet	✓		✓/R
Conostylis aculeata preissii	✓		✓/R
Ursinia anthemoides	✓		✓/R
Romulea rosea	✓		✓/R
Stypandra glauca	✓		✓/R
Orthrosanthus laxus	✓		✓/R
Galium murale.	✓		✓ Mike
~~Cassytha sp.~~	✓		
Stylidium bulbiferum	✓		✓/R
Cheilanthes austrotenuifolia	✓		✓/R
Cassytha pomiformis	✓	✓	✓/R
~~NC Wahlenbergia?~~	—		✓
Lomandra sp.			✓/
SEDGES			
Desmocladus asper	✓		✓/R

upland wandoo [illegible]

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP05
Date	24.10.96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
E. wandoo	✓		//					Haemodorum sp - narrow	✓		
Allocas. huegeliana	✓		//					step leaf			\\
SHRUBS								Anagallis arvensis	✓		\\
Petrophile biloba	✓		//					Gaulus			
Hakea trifurcata	✓		//					Aira calyophylla			
Hakea lissocarpa	✓										
MALLEES											
Hakea undulata dent lfs	✓		//								
Acacia sp. long, narrow phyllodes	✓		//	GRASSES							
↳ globular inflorescence				Briza maxima	✓		\\				
				Briza minor	✓		\\				
SHRUBS				aira grass > wide lamina	✓		\\				
Hibbertia spicata	✓		//	b hairy leaves	✓						
Hypocalymma angustifolium	✓		\\	Romulea rosea	✓		\\	SEDGES			
Acanthocarpus preissii	✓		\\	Soncus oelarasis	✓		\\	Loxocarya :: flexuosa	✓		\\
phyllanthus calycinus	✓		\\	Oxalis sp.	✓		\\				
Xanthorhoea preissii	·		∘	Small annual grass			\\				
Macrozamia reidlii	✓		∘	Brizula-like grass							
Grevillea bipinnatifida	✓		∘	HERBS							
Hibbertia commutata	✓			Stypandra glauca	✓		\\				
Hypochaeris glabra			\\	Conostylis aculeata	✓		\\				
Leucopogon pulcherrimus	✓		\\	Drosera stolonifera			\\				
Wahlenbergia - ?				Orthrosanthus sp.	✓		\\				
Acacia pulchella	✓		\\	Stylidium bulbiferum	✓		\\				
Andersonia sp				Thysanotus patersonii	✓		\\				
Trimalium				~~Chylanth~~							
				cheilanthes austrotenuifolia	✓						
				ASCINIA anthemoides	✓		\\\				
				cassytha racemosa	✓		\\				
				Lichrotis - ~~Microtis~~ - Monadenia .		·	\\				
				Stackhousia	✓		\\				
				Doccus glychidiathus	✓		\\				

Ursinia anthemoides

daucus glochidiatus

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERPØ5
Date	13.12.96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Lomandra sp			✓
								Grevillea pilulifera			✓
								Yellow flw. Linum			✓
								opp-leaved pink flw			✓
								Unid. long-leaf grass-tall			✓
MALLEES								Broad-leaf-large			
								Hibbertia sp			
				GRASSES				Unid Asteraceae			
								→ go in			
								ARSCØ5 10.12.96			
SHRUBS								Stackhousia sp -		✓	
								SEDGES			
				HERBS							

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP **SITE NUMER** SERPØ6

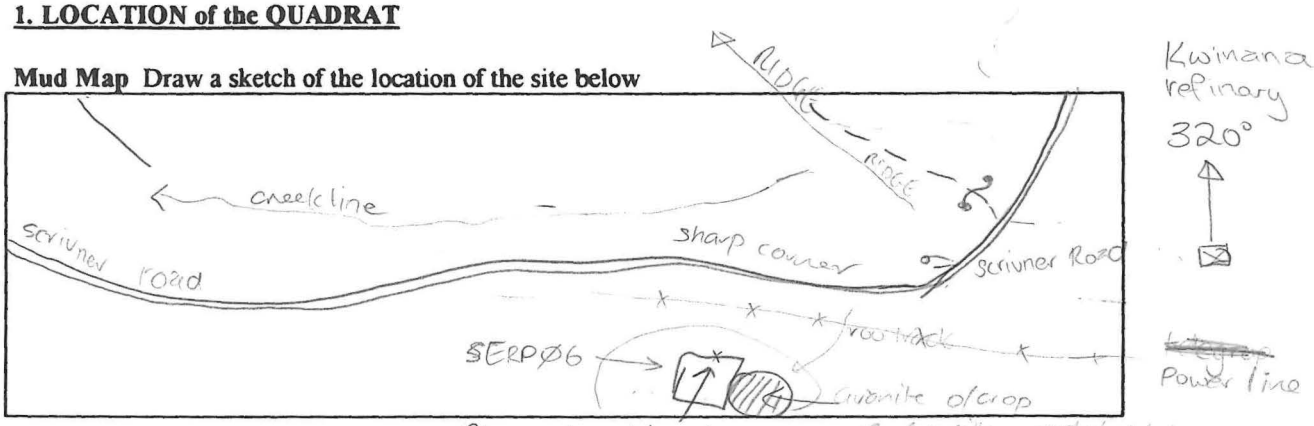
DATE TRIP 24-1Ø-96 **RECORDERS** AM DL

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below



flagged Wandoo ↑ Main branch dead of Grevillea endelicheriana

Road Location	Scrivner Road				
Geographic Location	**Latitude** 32 23 04-5	**S**	**Longitude** 116 00 15-8	**E**	**Altitude** 150m
	GPS ✓		**Accuracy**		
	Map Sheet Jarrahdale		PDØP ±2·7		

Photograph	**Name**	**Number** # 4	Roll #4

Topographic Position	(Circle the correct response)
Upland	***Lower slope***
Upper slope	***Valley***
Midslope	***Washline***

2. SITE DATA Circle the correct response

Slope	**flat**	**gentle** 2	**steep**	***Aspect***	**N NE E SE S SW W NW** 8-5 328° NNW
Surface Soil	gritty, clayey loam		***Depth to Rock*** 0-20	***Colour***	light brown → med. dark brown (chocolate)
Exposed Rock	type granite	% surface cover 30%		size range	→ granite outcrop
Litter	15	% surface cover		**Depth (cm)**	2-5cm
Bare Ground	ind. veges = 35%	% surface cover)			

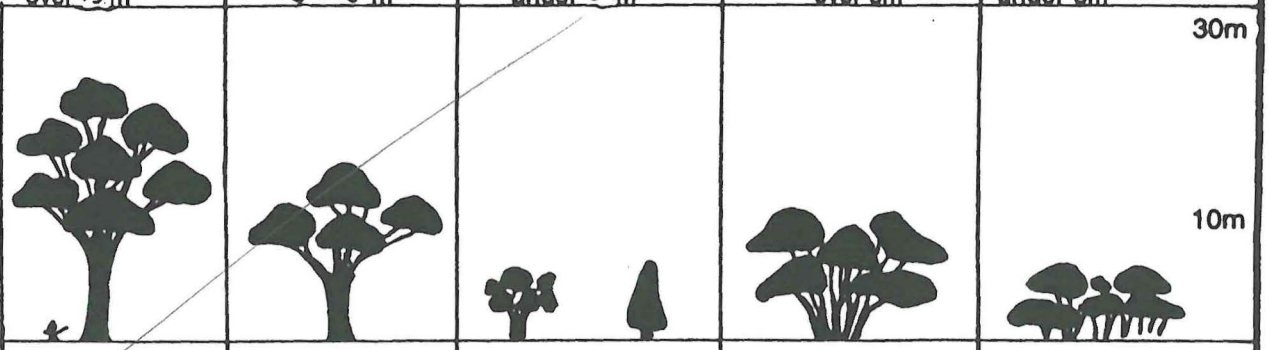
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

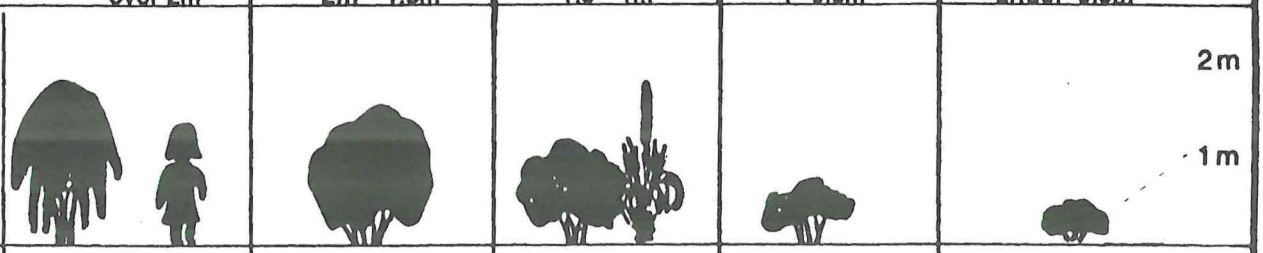
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

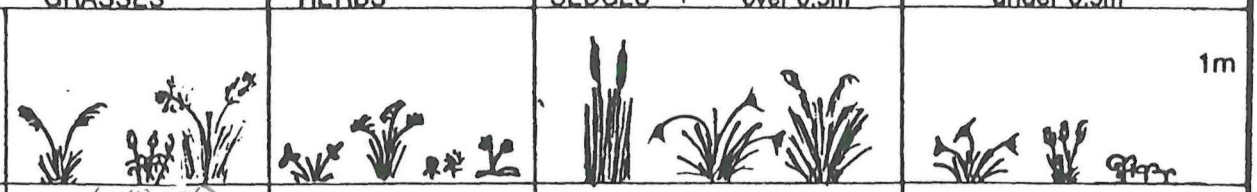
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m 10m
COVER CLASS (%)					
DOMINANT SPECIES					

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					2m 1m
COVER CLASS (%)			10-30%	70%	
DOMINANT SPECIES			G. enderlicheriana	Melaleuca fulgens Darwinia citriodora	

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m
COVER CLASS (%)	(≈10-15%) 2-10%	2-10%		--
DOMINANT SPECIES	Briza maxima Aira caryophyllea Vulpia sp.	Stylidium bulbiferum Cheilanthes austro. Dichopogon hemiphilus Scaphus		-- -

4. VEGETATION CONDITION

Comments Granite heath. Some disturbance → assoc. with roadworks → 4/5. Good condition. Some annual weeds.

2

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP06
Date 24.10.96
13.12.96(R)

Label each plant with plants number, site code, date and plant's name or working name if required
Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Eucalyptus wandoo (seedling) ✓	—		✓/R
NE Pimelea sp. imbricata?			
Grevillea endlicheriana ✓	✓		✓/R
Trymalium ledifolium var. ✓		✓	R
Labichea lanceolata ✓	✓	✓	✓/R
Acacia oncinophylla oncinophylla ✓		✓	R
Darwinia citriodora ✓	✓		✓/R
Daviesia horrida ✓	✓		✓/R
Hovea pungens ✓	✓		✓/R
Melaleuca radula ✓	✓		✓/R
NE ~~Trymalium floribun. seedlings could be T. led.~~	✓		
Acacia pulchella pulchella ✓			✓/R
Diplopeltis ~~huegeli~~ huegelii ✓	✓		✓/R
Hibbertia mylnei ✓	✓	✓	~~✓/R~~
Gompholobium marginatum ✓	—		✓/R
Grevillea bipinnatifida ✓	—	—	✓/R
Trymal. ledifolium seedlings ✓	—		✓/R
H			

SHRUBS (cont.)	No	Fl	ID
GRASSES			
Neurachne alopecuroidea ✓	✓	✓	✓/R
Vulpia bromoides ✓		✓	
Aira caryophyllea ✓	✓	✓	✓/R
Avena ~~sp.~~ barbata ✓	✓	✓	✓/R
Briza maxima ✓	✓		✓/R
Danthonia setacea ✓	✓		✓
Vulpia myuros (mike) ✓	✓		✓/R
Briza minor ✓		—	✓/R
HERBS			
Bartsia trixago ✓	✓	✓	✓/R
Trachymene coerulea ✓		✓	R
Hypochaeris glabra ✓	✓	✓	✓/R
Linum trigynum ✓		✓	✓/R
Senecio diaschides ✓		✓	R
Dioscorea hastifolia ✓	✓		✓/R
Caesia micrantha ✓	✓		✓/R
Haemodorum discolor ✓	✓	✓	✓/R
Thysanotus dichotomus ✓	✓		✓/R
Thysanotus manglesianus ✓	✓		✓/R
Ursinia anthemoides ✓	✓		✓/R
ADJ: Dampiera linearis ✓	✓		
	✓		✓/R

HERBS (cont.)	No	Fl	ID
ADJ: Oxalis perennans ✓	✓		
Galium divaricatum ✓	✓		✓
Cheilanthes austrotenuifolia ✓	✓		✓
Xanthosia candida ✓	✓		✓/R
Sonchus oleraceus ✓	✓		✓/R
Trifolium cernuum ✓	✓		✓/R
Anagalis arvensis ✓	✓		✓/R
Centaurium erythraea ✓	✓		✓
Parentucellia latifolia ✓	✓		✓/R
Wahlenbergia preissii ✓	✓		✓
Lotus sp sterile ✓	✓		✓
Centrolepis drummondiana ✓	✓		✓
Kennedia stirlingii ✓	✓		✓
Trachymene pilosa ✓	✓		—
Drosera micrantha ✓	✓		✓
Monadenia bracteosa ✓		✓	✓/R
Borya sphaerocephala ✓	—	—	✓/R
Romulea rosea ✓		—	✓/R
Stylidium bulbiferum ✓		—	✓/R
Daucus glochidiatus ✓		—	✓/R
SEDGES.			
Desmocladus asperus ✓	—		✓/R

condition (52).

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP06
Date	24.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
E wandoo (seedling)	✓		
SHRUBS			
Melaleuca ? fulgens/radula	✓		III
Daviesia ? divaricans	✓		II
Diplopeltis sp.	✓		III
Pimelia sp-	✓		
MALLEES			
Grevillea endlicheriana	✓		III
Darwinia citriodora	✓		II
Gompholobium marginatum	✓		II
Lobichea ? punctata ? (Shrub)	✓		II
SHRUBS → lancedata			
Acacia pulchella (seedling) & adult	✓	✓	II
Grevillea tripinnatifida	✓	✓	II
(adult)			

SHRUBS (cont.)	No	Fl	ID
Trymalium? seedlings - stipules on leaves			
(Grevillea seedling?)			III
Borya sphaerocephala	✓		II
Kennedia prostrata?? (NF)	✓		III
GRASSES			
Briza maxima	✓		II
Avena fatua	✓		II
Briza minor	✓		III
Romulea vosea	✓		~~II~~
Neurachne alopec. // Amphipogon?	✓		III
Micrudis sp. (as in SERP065)	III		
Monodain ←			
~~Neurachne alopecoides~~			
Neurachne alopecoides / Amphipogon	✓		III
HERBS			
Drosera menzesii? / pallida?			
Cheilanthes austrotenuifolia	✓		III
Dioscorea hastifolia	✓		II
Stylidium bulbiferum	✓		
Scroph - large pink-white corolla		✓	II
Caesia Micrantha	✓		III
Xanthosia candida	✓		II
Thysanotus dichotomous	✓		III
Dorcus → Daucus Daucus glochidiatus			III
Vesinia anthemoides	✓		II
Hemiandra pungens → (not Hovea!)			II
Sonchus Allearosus - like weed			III
Danthonia sp			II

HERBS (cont.)	No	Fl	ID
Arctotis arvensis	✓		III
Wahlenbergia? - yellow fl.	✓		I
Unid dicot weed →	✓		
Superficially like Hypochaeris glabra			II
Chickweed - Gaulis			III
Romulea vosea	✓		
Haemodorum sp →	✓		I
Medicago / Trifolium	✓		I
Hypochaeris glabra	✓		III
Aira caryophylla	✓		III
Thysanotus patersonii	✓		III
SEDGES			
Unid legume - 5 pinnae (leaflets) on pinnate leaf LOTUS			III
Hoxocarpa flexuosa	✓		III
Scroph - small purple corolla	✓		III
Aira caryophyllae	✓		II
Small, climbing Drosera			III
Vulpia sp	✓		II
Lepidosperma - Sword leaf	✓		
Unid Small asteraceae			
~~Trachymene sp~~			
Trachymene sp. → large Daucus			III

Trachymene coerulea → prob the other large Lantana species

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERPØ6
Date	13-12-96
	Restore

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

No wandoo trees in plot

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Neurachne alopecuroidea			✓
								White scraper			✓
								Avena sp.			✓
								Linum (Not Wahrenbergia)			✓
								Arctotheca sp			
								Senecio sp			✓
MALLEES								Hypochaeris glabra			✓
								Unid herb			
				GRASSES				↳ superficially			
								like Lantana			✓
								Acacia microphylla?			✓
SHRUBS								↳ check id!			
								Jacksonia nimi-nichi bark			
								SEDGES			
								Trymalium ledifolium			
								Large-leaved Hibbertia	?		✓
				HERBS							

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP. → creekline track **SITE NUMER** SERPØ7

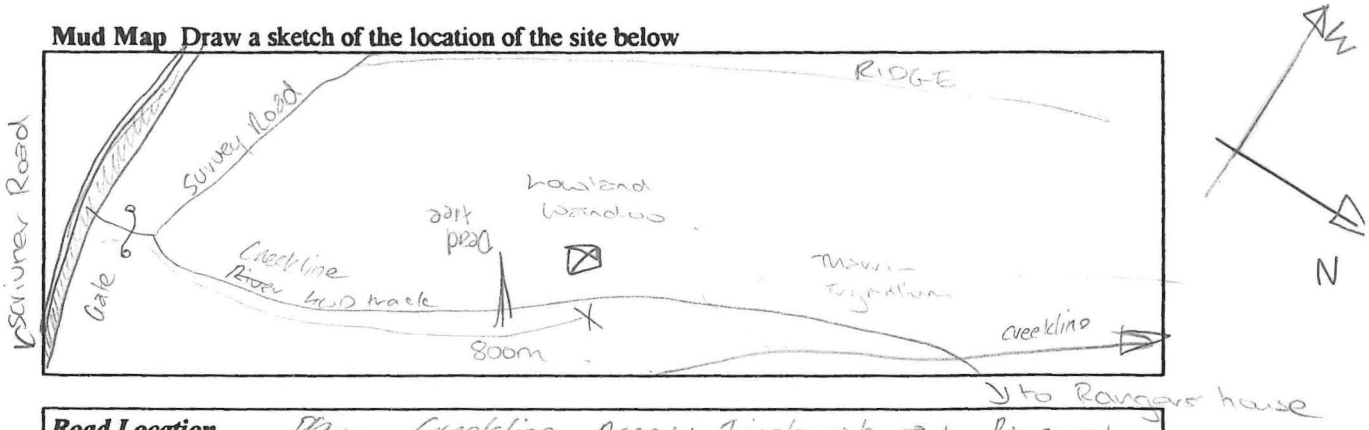
DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below



Road Location	River Creekline Access Firebreak → to Rangers house

Geographic Location	**Latitude** 32 22 50.3 **S**	**Longitude** 116 00 24.9	**E Altitude** —	160m (map)
	GPS ✓	**Accuracy**		
	Map Sheet Jarrahdale		PDØP = 4.4	

Photograph	**Name**	**Number**	#5 Roll #4

Will probably come out same as SERPØ5.

Topographic Position		**(Circle the correct response)**
Upland	***Lower slope***	Valley east of 1st Ridge
Upper slope	***Valley***	
Midslope	***Washline***	

valley MS

2. SITE DATA Circle the correct response

Slope	**flat**	**gentle**	**steep**	***Aspect***	**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**

A 2.5 60° ENE

Surface Soil	clayey loam	***Depth to Rock***	10 cm → 100cm	***Colour***	orange → Dic Ferron

scree slope with runoff from ridge

Exposed Rock	type Granite	% surface cover	1%	size range	2cm → 20cm		

+ dolerite pebbles = scree slope with erosion products.

Litter	70%	% surface cover	**Depth (cm)**	5-15cm

Bare Ground	1	% surface cover)	(thick leaf litter cover)

With loose rock in the soil profile!

Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

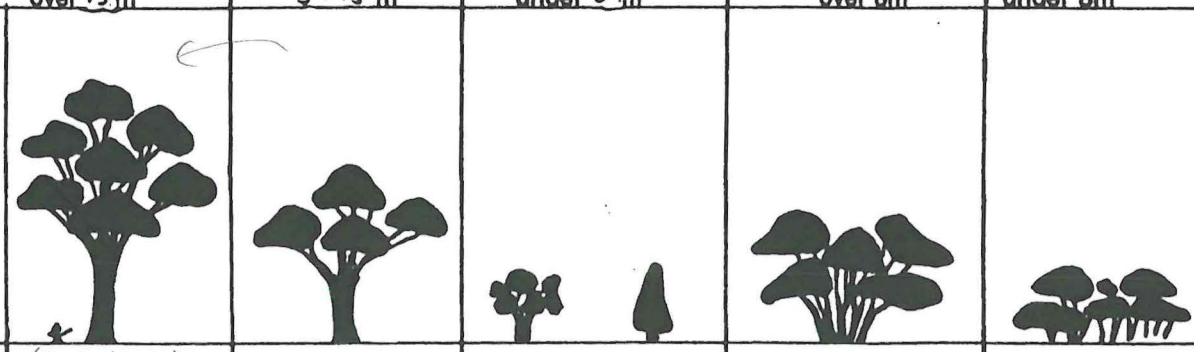
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

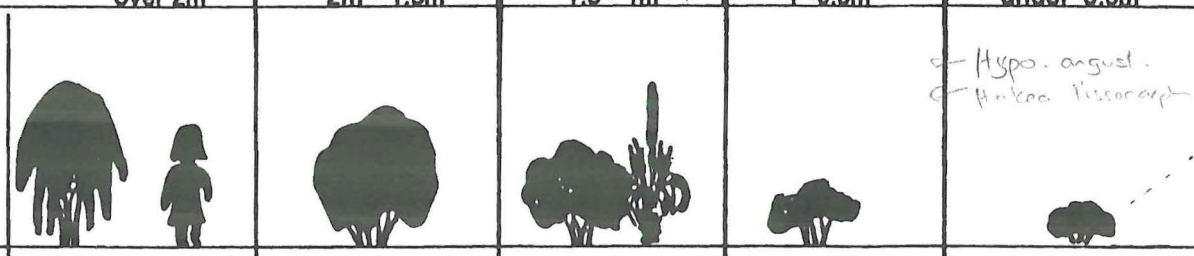
3. VEGETATION STRUCTURE AND COVER

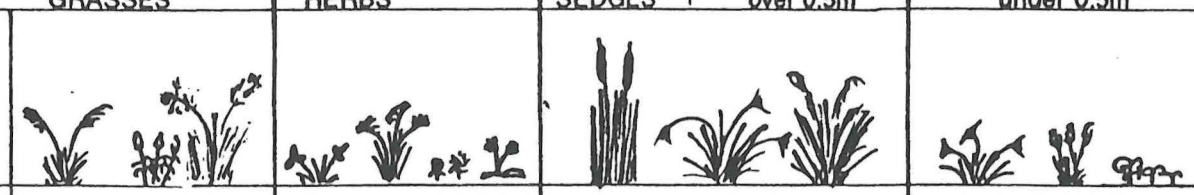
For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

1° Tall open wandoo woodland (10-30%)

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m / 10m
COVER CLASS (%)	(class 10-30) 30-40% !	2-10 %			
DOMINANT SPECIES	E. wandoo	E. wandoo			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					← Hypo. angust. ← Hakea tissoranta 2m / 1m
COVER CLASS (%)				—	30 — 70 %
DOMINANT SPECIES				Hypo. F.	← Xan. preissii
					Hibb hypericoides
					phy. cal

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m
COVER CLASS (%)		10-30%		—
DOMINANT SPECIES		Stypandra glauca		—
		Cheilanthes aust.		-

4. VEGETATION CONDITION

Comments * Weed invasion minor.

~ 4/5. Long interfire period. Rotting stumps ~~signs~~

Tall wandoo. Adjacent slope (downslope) has been recently burnt & extensive weed invasion has followed subsequent to fire

7

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP07
Date	24.10.96
	13.12.96 (R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check / taste-leaf cut SERP06 ....

TREES	No	Fl	ID
Euc. wandoo	✓	—	✓/R
ADJ: Allocas. huegeliana	✓	—	✓/R
Xanthorrhoea preissii	✓	—	✓/R
Macrozamia riedlii	✓	—	✓/R
Hakea lissocarpha	✓	—	✓/R
Hypocalymma angustifolium	✓	—	✓/R
Gompholobium marginatum	✓		✓/R
Leucopogon capitellatus	✓	✓	✓/R
Hibbertia hypericoides	✓	✓	✓/R
~~Leucopogon propinquus~~	✓	✓	
Grevillea pilulifera	✓		✓/R
Hibbertia commutata	✓		✓/R
Daviesia horrida	✓		✓/R
Dryandra lindleyana lindleyana	✓		✓/R
Hibbertia spicata	✓		✓/R
Phyllanthus calycinus	✓		✓/R
Thomasia foliosa	✓		✓/R
Olearia paucidentata	✓		✓/R
Kunzea micrantha	✓		✓/R
Acacia pulchella	✓	—	✓/R
Petrophile biloba	✓	—	✓/R
Grevillea bipinnatifida	✓	—	✓/R
Xanthorrhoea gracilis	✓	—	✓/R
Astroloma pallidum	✓	—	R
NE Drosera sp. ?menziesii		—	✓
Leucopogon pusilla	✓	—	✓/R
Arthropodium capillipes		—	✓/R
Cheilanthes austrotenuifolia	✓		✓/R
Povanthera microphylla	✓		✓
Centrolepis drummondiana	✓		✓
Hydrocotyle pilifera ?/callicarpa	✓		✓
Monadenia bracteosa	✓		✓/R

SHRUBS (cont.)	No	Fl	ID
Thysanotus sp. ~~thyrsoideus~~ (dichotomus)	✓	—	✓
Caladenia sp.	✓	✓	✓
Dampiera linearis	✓	✓	✓/R
Paventucellia viscosa	✓	✓	✓
Lomandra integra	✓	✓	✓
Sondhus deraceas	✓	✓	✓/R
Stylidium bulbiferum (indet)	✓	✓	✓/R
Haemodorum discolor	✓	✓	✓
GRASSES			
Stipa pychostachya	✓	✓	✓/R
Aira cinyophyllea	✓	✓	✓/R
Microlaena stipoides	✓	✓	✓/R
Danthonia sp	✓	✓	✓/R
Poa drummondiana	✓	✓	✓
Dichelachne crinita	✓	✓	✓/R
Briza maxima	✓	✓	✓/R
Neurachne aloepecuroidea	✓	✓	✓/R
Briza minor	✓	—	✓/R
HERBS			
Centaurium erythraea	✓	✓	R
Conostylis setosa	✓	✓	✓/R
Bartolia trixago	✓	✓	✓/R
Wahlenbergia preissii	✓	✓	✓/R
Scaevola glandulifera	✓	✓	✓/R
Dampiera alata	✓	✓	✓
Stachousia monogyna	✓	✓	✓/R
Anagalis arvensis	✓	✓	✓
Opercularia vaginatum	✓	✓	✓/R
Caesia micrantha	✓	✓	✓/R
Stylidium hispidum	✓	✓	✓/R
Senecio diaschides	✓	✓	✓/R
Eryngium pinnatifidum	✓	✓	✓/R

HERBS (cont.)	No	Fl	ID
Arthrosanthus laxus	✓		✓/R
Levenhookia stipitata	✓		✓/R
Comesperma calymega	✓		✓
Oxalis perennans	✓		✓/R
Romulea rosea	✓	—	✓/R
Burchardia congesta	✓		✓/R
Agrostocrinum scabrum	✓		✓/R
Tricoryne elatior	✓		✓/R
Dianella revoluta	✓		✓/R
Ursinia anthemoides	✓		✓/R
Acanthocarpus preissii	✓		✓
Xanthosia candida	✓		✓/R
Ptilotus manglesii	✓		✓/R
Lomandra hermaphrodita	✓		✓
Thysanotus manglesianus? (T. dichotomus)	✓		
Lomandra caespitosa	✓	✓	✓/R
Lomandra ?odora	✓		✓
Paventucellia latifolia	✓	✓	
T. manglesianus	✓		✓
Haemodorum simplex	✓		✓
Soweabaea laxiflora	✓		✓/R
Stypandra glauca	✓		✓/R
Dioscorea hastifolia	✓		✓/R
SEDGES			
Schoenus unispicatus	✓	✓	✓/R
Desmodadus aspera	✓		✓/R
Schoenus nanus	✓		✓
Tetraria octandra	—		✓/R

Astroloma ciliatum ✓ R.

Drosera stolonifera ✓ ✓/R

ADJ: Lineum trigynum ✓

ADJ Lomandra sparteus. (Rescore) ✓

ADJ: Conostylis aculeata ✓

Mile

Mile

- Examples of the sand environments that dominate the Eremean (Australia's red centre) are well representedin the study area, as are a variety of the semi-arid woodlands, sand heaths and coastal habitats of the South-west.
- Rich *Lerista* assemblages were associated with the *Eucalypt* and/or *Acacia* litter-patches found on virtually all non-saline quadrats in the study area, even quadrats with only a thin sandy soil A-horison (3.8 +/- 1.4, 56). Seven species were recorded on some quadrats (BB4, CU3, PE4 & ZU3). **Kendrick (19??)** concluded that there has been a significant radiation of *Lerista* taxa in the study area.
- The arid-adapted genera *Ctenophorus, Diplodactylus*, *Ctenotus* and *Lerista* are very diverse (10, 11, 18 and 23 species respectively) with high levels of syntopy among *Ctenotus* and *Lerista* species, particularly on the 14 quadrats which represented the red sand-hummock grass environments that dominate Australia's arid zone: 7.8+/-1.6(14) versus 4.2+/-1.9(49) *Ctenotus* + *Lerista* species per quadrat. In equivalent sand-hummock grass habitats of the Great Victoria Desert, elsewhere in temperate Western Australia, Pianka (1969b) noted up to seven Ctenotus species in "ecologic sympatry".

Heatwole and Taylor (1987, p. 215 *et seq.*) reviewed the literature on factors that are known to affect richness in reptile assemblages. A range of factors, including rainfall, amount of sunshine, structural complexity in vegetation and productivity have been shown to have a positive correlation with species richness. In arid regions of Australia, richness has also been explained in terms of environmental heterogeneity, the presence of hummock grass, occupation by reptiles of niches elsewhere occupied by other animal taxa, and low nutrients (poor soils) limiting homeotherms (see Heatwole and Taylor 1987 p. 220, **Morton 19??, Pianka 19??, but also see Rosensweig 199??)**.

The 14 quadrats representing these low nutrient, red sand with hummock-grass environments in the Irwin-Carnarvon study area had the richest assemblages we encountered. They yeilded an average of 21.5 +/- 4.8 (SD) herpetofaunal species (BB4, PE2,5, CU2-5, MR2-5, NE1, KE1-2; Table QR). Rich reptile assemblages have previously been reported from such hummock grasslands on red sand in the Great Victoria Desert (Pianka 1969, Armstrong 1992). For instance, Pianka (1969a) reported 39 species of lizard co-existing in sympatry in a square kilometre of sandridge habitat, and at several sandplain sites he reported up to 30 species. Elsewhere in Central Australia, Fyfe (1985) found that hummock grasslands on red sand surfaces supported a greater number of reptile species than did the Mulga shrublands that occurred on finer textured soils in the same area.

Patterns in the Species Composition of Assemblages

Scale is important in determining which environmental attributes emerge as significant correlates between compositional patterns and environmental attributes (Whitmore 1984, **Also check Dale's paper in A. J. Ecol.**). Regional studies have usually linked compositional patterns to climatic and/or geological categories (Ashton 1976, McKenzie *et al.* 1987b, 1991a, 1992, 1994, McKenzie & Rolfe 1995). In more geographically restricted studies, topographic setting and lithology become important (Whitmore 1984).

In all sites check operculum id - check previous - was an adj - 1 - plot -

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP07
Date	24.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

Acanthocarpus preisii

TREES	No	Fl	ID
E. wandoo	✓		
Allocas. huegliana (AD5)			
SHRUBS			
Daviesia? divergens	✓		|||
Phyllanthus calycinus	✓		|||
Acacia pulchella	✓		
~~MALLEES~~			
Xan. preisii	✓		
Hibbertia hypericoides		✓	
Macrozamia reidlii	✓		
Stypandra glauca	✓		
~~SHRUBS~~			
Hakea lissocarpha	✓		
Hypocalymma angustifolium		✓	|||
Dry. nivea	✓		|||
Thomasia foliosa	✓		|||
Petrophile bildea	✓		
Macrozamia reidlii	✓		
Hibb. commutata	✓		|||
Kunzea? sp.	✓		|||
Tetraria — Tetrahrica capillepes? (rough base) Lepidosperma?			
Ptilotus manglesii	✓		|||
Opercularia echinocephala	✓		|||
Asteroloma sp	✓		|||
^ Chorizema - trifoliate leaf - ^			
Inflated pods ↑ Hovea?			
~~Acanthocarpus preisii~~ (N!)			
~~Stypheliaa?~~ (N!)			
Grevillea bipinnatifida	✓		|||
Grevillea pilulifera ? - check id.	✓		|||
Dianella revoluta	✓		|||
~~Danthonea~~ Danthonia sp	✓		|||

SHRUBS (cont.)	No	Fl	ID
Xanthosia candida	✓		|||
Dampiera linearis	✓		|||
Unid small shrub/ seedling (Trymal ecclifolium)			
(Conf. as Grevillea. or Grevillea ??)	|||		
Walenbergia - hairy leaves			|||
?? H. spicata ?? check id			|||
Small annual Schoenus - / Isolepis (Scirpus?)			|||
GRASSES			
Microlaena? / Poa			|||
NB. Long-leaved tall grass prob is this spp.	✓		|||
Briza maxima	✓		|||
Neurachne alopecuroidea	✓		|||
Stipa elegantissima	✓		|||
Briza minor	✓		
Caesia micrantha	✓		|||
Drosera stolonifera			
HERBS			
Stylidium bulbiferum	✓		|||
Sowerbaea laxiflora	✓		
Stypandra glauca	✓		|||
Stylidium piliferum	✓		|||
Cheiranthes austrotenuifolia	✓		|||
Orthrosanthus sp.	✓		|||
Conostylis setosa	✓		|||
Arthropodium capillipes	✓		
Oxalis ? corniculata	✓		|||
Trichoryne elatior	✓		|||
Hairy / ligulate grass	✓		|||
Burchardia ~~tenella~~ congesta	✓		|||
~~Eryngium~~ Eryngium pinnatifidum	✓		|||

HERBS (cont.)	No	Fl	ID
Leucrhodia pusilla	✓		|||
Thysanotus ? patersonii			|||
Drosera menziesii ? (glabrous)			
Scaevola sp →	✓		|||
Black based Schenus	✓		|||
Large, white Scroph	✓		|||
Senecio sp	✓		|||
Lomandra caespitosa	✓		|||
Aira caryophyllea	✓		|||
Ursinia anthemoides	✓		|||
Haemodorum sp. strapleaf	✓		|||
Stackhousia sp. ~~hum~~	✓		|||
Unid Small rhombic leaf seedling - ? Scaevola?			
SEDGES			
Lepidosperma large terete smooth stal			
Loxocarya flexuosa	✓		|||
~~Glossodiscus sp.~~ Agrostocrinum scab			✓
~~Diastorea elastifolia~~ Dioscorea hastifolia			✓
Microtis - Microtis - small Asteraceae			|||
Tetrahrica octandra - Tetraria	✓		|||
Lepidosperma - glabrous. terete (tenui)			
Short Lomandra? fine leaves		✓	
~~[illegible]~~			
Hydrocotyle sp. (single plant)			
Sonchus olerasis			
Romulea rosea	✓		
Caledenia sp - single leaf - Spider orchid			|||
Arthropodium capillipes	✓		
Thysanotus - terete leaf (at seeds)			|||
Anagallis arvensis	✓		|||
Terete leaf - Anthrocaceae	?		|||
Centrolepis drummondii			
Olearia paucidentata			✓ |||

Small Nab. ← Unid Euphorb ||| terete
very Narrow leaf Haemodorum |||
single petiole → Small annual grass → |||
Gomphalobium marginatum |||
Wiry leaved Haemodorum → collected 2d inflor. as adj? - check match. → Haemodoraceae
Xanthoretha gracilis |||

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP07
Date 13.12.96
Rescue

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

+ sighted Brush-tail possum

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Opp-leaved pink fw herb		///	
								Asterolonza pallidum			
								Hairy-leaved grass			
								Briza minor			
								Asterolonza ciliatum			
MALLEES								Adj. Lomandra spartens			
								Ptilotus manderii		//	
				GRASSES				Dianella revoluta ssp		///	
								Leucopogon pulchella		///	
								Burchardia congesta		///	
SHRUBS								Stackhousia sp INFI		///	
								SEDGES			
								Opercularia hispidula	///		
								bedinii			
								Tetrarheena laevis	///		
				HERBS				ADJ - Corysteylis aculeata	///		
								ADJ - Linum - yellow fws			

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP (Creekline) **SITE NUMER** SERP08

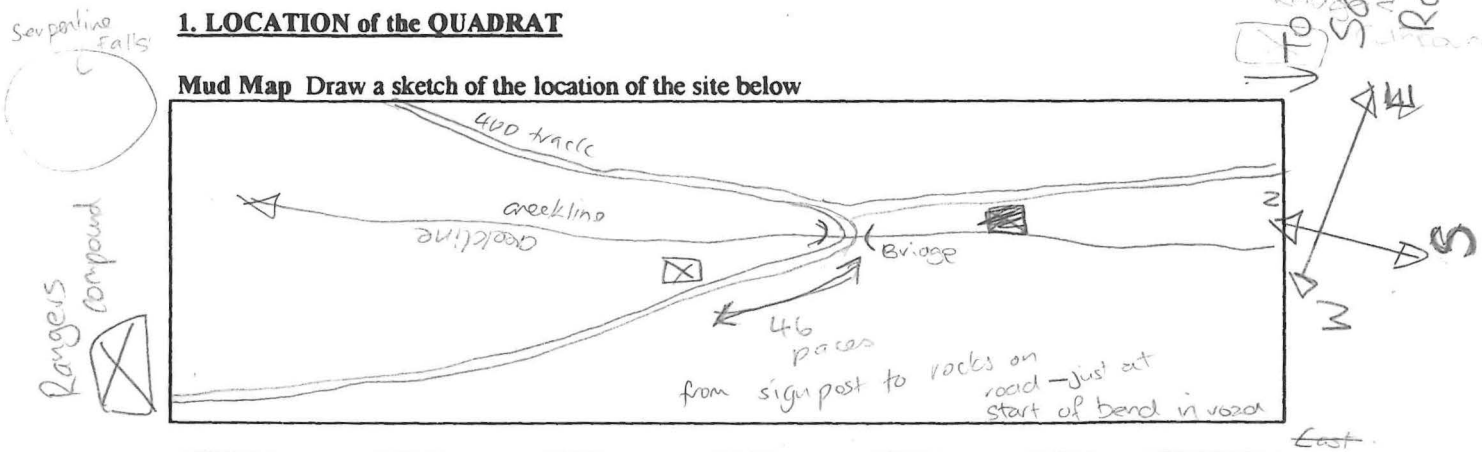
DATE TRIP 25.10.96 **RECORDERS** AM DL

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below



Road Location	Gated 4WD track follows creekline in ~~East~~ valley east of 1st Ridge

Paraiwana
Easting: 406778
Nth: 6417916

Geographic Location	**Latitude** 32° 22' 25.0" S	**Longitude** 116° 00' 22.4" E	**Altitude** 60m	
No fix	**GPS**	**Accuracy** - from map		
	Map Sheet			

Photograph	**Name**	**Number** #6	Roll #4

Topographic Position		(Circle the correct response)
Upland	***Lower slope***	
Upper slope	***Valley***	
Midslope	***Washline***	- Creekline in Valley

Lo. slope valley

2. SITE DATA Circle the correct response

Slope	**flat**	**gentle**	**steep**		***Aspect***	**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**
		2					52°		52°		2		
		(v-humis!)					0-30cm		! 30-100				

9 °, 45 - 90

Surface Soil	rich loam	***Depth to Rock***	0-30cm	***Colour***	Dk Brown

Exposed Rock	type granite !!	% surface cover	2	size range	20-30cm

Litter	>80	% surface cover		**Depth (cm)**	2-3 layers 10cm

Bare Ground	0	% surface cover)

Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

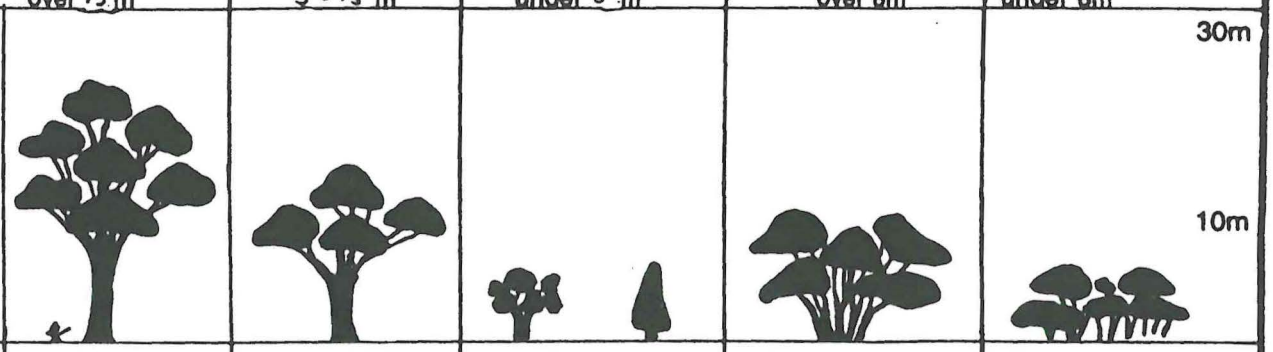
Creek at base of steep granite hillsides
∴ granite influence
& granite boulders in creekbed

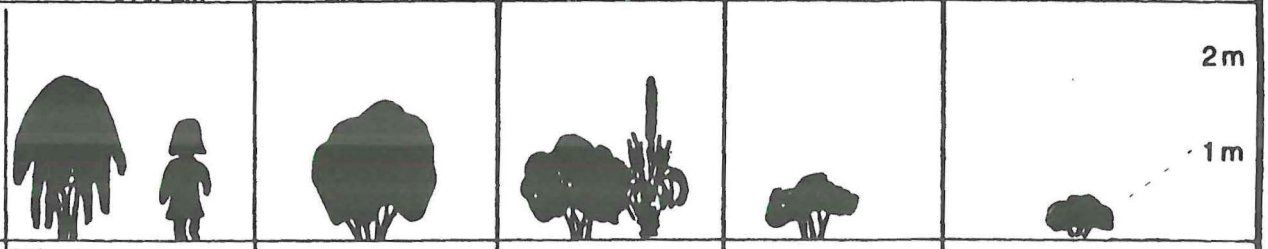
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

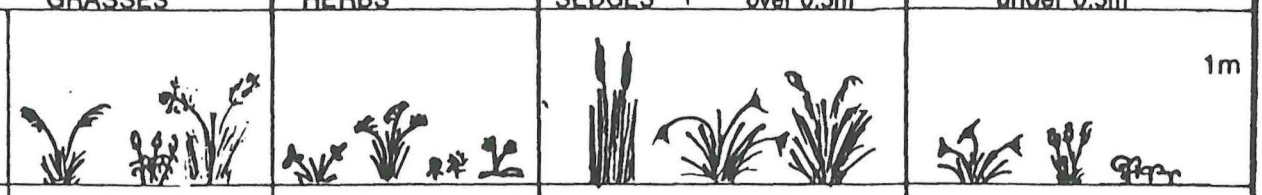
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					
COVER CLASS (%)		2-10%			
DOMINANT SPECIES		E. calophylla			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					
COVER CLASS (%)	10-30 10- 30-70%	>70% !	10-30%		2-10%
DOMINANT SPECIES	H. trifurcata	Dryandra civisdora Trymalium floribundum Podonea sp.	Thysanotus spatulatus		Acanthocarpus preissii

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				
COVER CLASS (%)		2-10		–
DOMINANT SPECIES		Tra		– –

4. VEGETATION CONDITION

Comments Fire History of creekline unknown. Tall stands of Hakea trifurcata 4 5/5 Excellent condition. However, Ivel sonia invading from creekline in adjacent areas & vegetation fringed by road on both sides. Very thick vegetation!

* Lots of H. trifurcata

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP08
Date 25.10.96
13.12.96(R)

Label each plant with plants number, site code, date and plant's name or working name if required
Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
Eucalyptus calophylla ✓	—		✓/R								
Allocasuarina ~~[illegible]~~ huegeliana ✓	—		✓/R								
Macrozamia riedlii ✓	—		✓/R								
Melaleuca radula ✓	✓		✓/R								
Hakea trifurcata ✓	✓		✓/R								
Melaleuca aff scabra ✓	✓		✓/R								
Calytrix acutifolia ✓	✓		✓/R								
Trymalium floribundum flor. ✓	✓		✓/R	GRASSES							
Thomasia foliosa ✓	✓		✓/R	Neurachne alopecuroidea ✓	✓		✓/R				
Hibbertia spicata spicata ✓	✓		✓/R	Briza maxima ✓	✓		✓/R				
Xanthorrhoea preissii (Not [illegible]) ✓	✓		✓/R	Tetrarrhena laevis ✓		✓	R				
Labichea lanceolata ✓	✓		✓/R	Amphipogon ? sp. strictus. ✓		✓	R				
Baeckea camphorosmae ✓	✓		✓/R	Stipa ? pycnostachya ✓	—		✓/R				
Dodonaea ceratocarpa ✓	✓		✓/R	Microlaena stipoides ✓	—		✓/R				
Darwinia citriodora ✓	✓		✓/R								
Hypocalymma angustifolium ✓	✓		✓/R								
Phyllanthus calycinus ✓	✓		✓/R								
Acacia pulchella pulchella ✓	✓		✓/R	HERBS							
Daviesia horrida ✓	✓	✓	✓/R	Anagallis arvensis ✓	✓		✓				
Dryandra lindleyana lindleyana ✓	✓		✓/R	Acanthocarpus preissii ✓	✓		✓/R				
~~Conostyli~~				Tricoryne elatior ✓	✓		✓/R				
Xanthorrhoea preissii/[illegible]?	✓		✓/R	Conostylis aculeata preissii ✓	✓		✓/R				
Astroloma pallidum ✓	[illegible]	✓	R	Burchardia congesta ✓	✓	✓	✓/R				
~~Acanthocarpus preissii~~	=		✓/R	Thysanotus dichotomus ✓	✓		✓/R	SEDGES			
~~NE Xanth. gracilis ?? (No herb material)~~	—		✓	Haemodorum sp indet ✓	✓		✓/R	Desmocladus asper ✓	✓		✓/R
				Chamaescilla corymbosa ✓	✓		✓/R	~~NE Tetraria capillaris ?~~	—		✓
				Caesia micrantha (sterile) ✓	✓		[illegible]				
				Lomandra micrantha ✓	✓		✓				
				Lomandra nigricans ✓		✓	R				
				Cheilanthes austrotenuifolia ✓	—		✓/R				
				Thysanotus manglesianus ✓	—		✓				

Although climatic attributes provided the best fits, a wide array of climatic and substrate gradients were strongly correlated with the compositional patterns revealed by our numerical analysis of the total data-base. **Many of these environmental gradients were not inter-correlated**, and several distinct stepwise structures dominated both the quadrat and the species classification dendrograms, so we concluded that the component species were responding to different environmental gradients and/or to the same gradients differently.

On the reasoning that species which usually co-occur are more likely to be responding to the same environmental gradient/s than are species with different patterns of co-occurrence, we sought to untangle the biogeographical processes by treating the four species assemblages derived from the overall analysis as independent data-sets, and analysing them separately (cf. McKenzie *et al.* 1989, 1991a, McKenzie & Belbin 1991). Strong relationships between herpetofaunal patterns and soil-geomorphic attributes emerged for species assemblage_1 (soil pH), assemblage_3 (soil texture) and assemblage_4 (over-bank stream flow). Assemblage_2 conformed with a gradient in winter rainfall.

These analyses of the individual assemblages revealed that patterns in species composition of the herpetofaunal assemblages were being influenced by environmental processes operating at two geographical scales:

- A biogeographical scale related to the differences between the Eremean and South-western faunas, and corresponding to the study area's arid-to-mesic and tropical-to-temperate climatic gradients.
- An ecological scale related to geomorphic and soil attributes.

Localised patterns of allopatry among closely related species belonging to the more diverse genera was an additional source of variation in assemblages_2 and _3. Our ecologically re-defined taxa virtually eliminated this variation without losing ecological discrimination, indicating that the reserve system will need to sample the geographical extent of the winter-rainfall and soil texture gradients, if evolutionary processes are to be protected.

The classification structures derived from a matrix of frog, gecko, dragon and skink trap-records (Figure TRAP.2wa) were virtually identical to the structures derived from the total data-set (Figure DENT). Snakes, pygopids and goannas were poorly sampled on our quadrats, perhaps because of their mobility and low densities. Pragmatically, these three taxa could have been ignored, and the labour-intensive hand-foraging methods deleted, without sacrificing ecological or biogeographical discrimination or changing the outcomes of the study.

REFERENCES

Armstrong, G.P. (1992). Reptiles. pp 163-179. In: A Biological Survey of the Yellabinna Region, South Australia, in October 1987. (Ed by P.G. Copley & C.M. Kemper). National Parks and Wildlife Service. South Australian Department of Environment and Land Management.

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP08
Date 25.10.96

Label each plant with plants number, site code, date and plant's name or working name if required
Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
E. calophylla	✓		
SHRUBS			
Allocasuarina huegliana	✓		
Dodonaea ? sp cerasocarpa			✓
Hakea trifurcata	✓		✓
MALLEES			
Darwinia citriodora	✓		✓
Trymalium floribundum	✓		✓
Dryandra nivea	✓		✓
Labichea ? sp (tall shrub)	✓		✓
SHRUBS			
Calytrix acutifolia	✓		✓
Acanthocarpus preissii	✓		✓
Thomasia sp foliosa	✓		✓
Daviesia ? divergens	✓		✓
(1° broadleaved form)			
Macrozamia riedlii	✓		✓
Phyllanthus calycinus (NF)	✓		✓
Baeckea camphorosmae	✓		✓
Acacia pulchella	✓		✓
Stipa elegantissima	✓		
~~or~~ Pyrostachyum			
prob. same as			
other species			

SHRUBS (cont.)	No	Fl	ID
Hibbertia spicata			✓
Melaleuca aff. scabra	✓		✓
Melaleuca radula // fulgens	✓		✓
Tricorynne elatior	✓		✓
Xanthorrhoea gracilis	✓		
Hypocalymma angustifolium			✓
Small, unid seedling Scaevola?			
? ↳ Stirodia? Diplotellis?			
GRASSES			
Hairy-lamina grass			
Hairy-ligued grass			
Amphipogon // Neurachne	✓		✓
Stipa sp - v. hairy stem & lamina	✓		
Briza Maxima	✓		✓
HERBS			
Thysanotus sp? spatens ??			✓
Conostylis aculeata	✓		
Burchardia or Caesia			✓
↳ unknown - white bases			
& brown papery scale — Burchardia			
Cheilanthes austrotenuifolia	✓		✓
Thysanotus patersonii	✓		✓

HERBS (cont.)	No	Fl	ID
Haemodorum sp.	✓		✓
Arthropodium			
Anagallis arvensis (seedling)			✓
Chamescilla ? corymbosa			✓
SEDGES			
Lepidosperma ? - round-edged	✓		
Lepidosperma tenue, ? scabrous		✓	
Loxocarya flexuosa	✓		✓
Lomandra ? preissii	✓		
Tetrarria capillaris ?			

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP08

Date 13.12.96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Thysanotus dichotomous			✓
								Tetrarrhena laevis			✓
								Burchardia congesta			✓
								Nemacaulis/Amph			✓
								L NE			
								Xanth. preissii			✓
MALLEES								Astroloma pallidum			✓
				GRASSES							
SHRUBS											
								SEDGES			
				HERBS							

Check in specimens if sparse in flor tall grass.

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP. Chelfham Rd Access **SITE NUMER** SERPØ9 (Rescore)

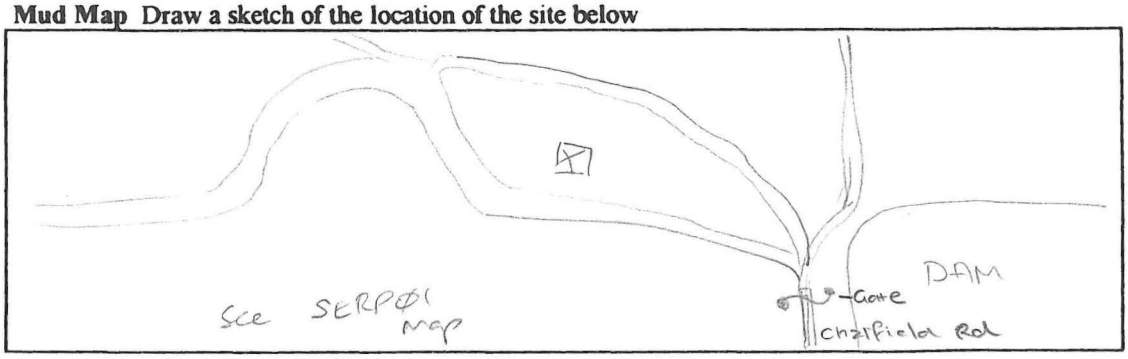
DATE TRIP 29.10.96 **RECORDERS** AM

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below



Road Location			36.3		- chatfield Rd	
		32 22 ~~35.8~~		115 59 42.8		
Geographic Location	**Latitude** 32 22		**S Longitude** 115 59 43.6		**E Altitude** ~~60m~~ 55	
	GPS ✓		**Accuracy**			
	Map Sheet Jarrahdale		PDØP = 3.3 3.3		GSAT	
Photograph	**Name**		**Number** #8 + #9		Rd' #4	

Topographic Position		(Circle the correct response)
Upland	***Lower slope***	→ Flats at base of foothills RHS.
Upper slope	***Valley***	
Midslope	***Washline***	

2. SITE DATA Circle the correct response

Slope	**flat**	**gentle**	**steep**		***Aspect***	**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**

Surface Soil	~~loamy sand~~ Sandy loam	***Depth to Rock***	>1m	***Colour***	Dk Brown-grey
Exposed Rock	type —	% surface cover	—	size range	—
Litter	30	% surface cover		Depth (cm)	2-3cm 1 layer
Bare Ground	2	% surface cover)			

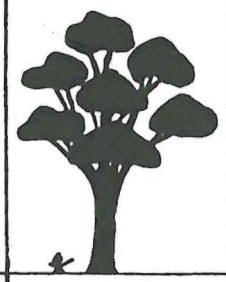
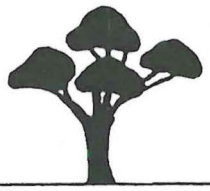
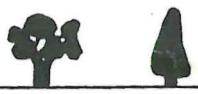
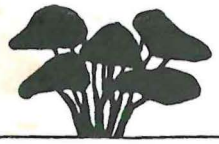
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

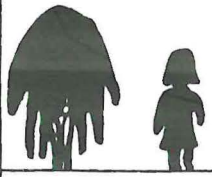
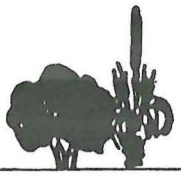
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

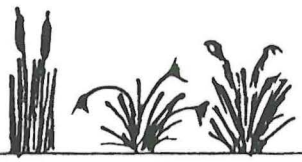
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)		2-10%			
DOMINANT SPECIES		E. lane-poolii			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					2m  1m
COVER CLASS (%)				10-30%	10-30%
DOMINANT SPECIES				Stylingia latifolia Mel. aff. scabra	Dasypogon bromeliifolius Patersonia occidentalis

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)				30-70%
DOMINANT SPECIES				Mid sedges Small Restio Large Gahnia Med Meeoneleaena tetragon

4. VEGETATION CONDITION

Comments 5/5 - Some weeds. Remnant sandplain at base of foothills. Rescore. E. lane-poolii x Poorly drained winter wet depression. has Sedge community.

1.0

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIFIC PRESCENCE

SITE No	SERP09
Date	29.11.96
	13.12.96 (R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

-Rescore Bronwyn SERP1.

TREES	No	Fl	ID
Eucalyptus lane-poolei	✓	✓	✓/R
Eucalyptus calophylla	—		✓/R
Xanthorrhoea ~~preissii~~ acanthostachya ?			✓/R
Kingia australis			✓/R
Kunzea sp. micrantha	—		✓/R
Lechenaultia biloba		✓	✓/R
Nuytsia rapitatum	✓	✓	✓/R
Acacia lateriticola	✓	✓	✓/R
Jacksonia restioides		✓	R
Bossiaea aciocarpa	✓		✓/R
Baeckea camphorosmae	✓		✓/R
Hakea ceratophylla	✓	✓	✓
Melaleuca aff. scabra	✓		✓/R
Stirlingia latifolia	✓	—	✓/R
Dryandra linder. lindle.	—		✓/R
Dasypogon bromeliodes	—		✓/R
ADS: Bodonaea ceratocarpa	—		✓
(IN) Hypocalymma angustifolium	—		✓
ADS. Euc. marginata	—		✓

SHRUBS (cont.)	No	Fl	ID
Caesia occidentalis	✓		✓
Lomandra caespitosa	✓		
~~AT. Ficinia elatior (not on map)~~	—		✓
Leucopogon pusilla	—		
Stylidium brunonianum	—		✓/R
~~Syn. Borya scirpoidea~~	—		✓/R
Previous record = B. scirpoidea Hebb det R sphaerocephala			
GRASSES			
Neurachne alopecuroidea	✓	✓	✓/R
Briza maxima	✓		✓/R
Briza minor	✓		✓/R
~~Danthonia sp.~~		✓	✓/R
Vulpia bromoides	✓		✓
Danthonia setacea	✓		✓/R
HERBS			
Hypochaeris glabra	✓	✓	✓/R
Ursinia anthemoides	✓	✓	✓/R
Xanthosia huegelii	✓	✓	✓/R
Stylidium bulbifera	✓	✓	✓
Opercularia vaginata	✓	✓	✓/R
Dampiera linearis	✓	✓	✓/R
Podolepis gracilis	✓	✓	✓/R
Siloxerus humifusus	✓	✓	✓/R
(IN) Patersonia occidentalis	✓		✓/R
Anigozanthus manglesii	✓		✓/R
Philydrella pygmaea	✓		✓
Cassytha pomiformis	✓		✓/R
Chaenascilla corymbosa	✓		✓/R

HERBS (cont.)	No	Fl	ID
Drosera rosulata	✓		✓
Lotus angustissimus	✓		✓
Centrolepis aristata	✓		✓
Hemiolosciadium hydrocarpum	✓		✓/R
Dampiera alata	—		✓
Stylidium calcaratum	✓		✓/R
Trachymene pilosa	✓		✓
Pterochaeta paniculata	✓		✓/R
Hydrocotyle callicarpa	✓		✓/R
Borya sphaerocephala	✓		✓/R
Sowerbaea laxiflora	✓		✓/R
Romulea rosea	✓		✓/R
Lomandra hermaphrodita	✓		✓
Dasypogon bromeliifolius	✓		✓/R
Drosera stolonifera	✓		✓/R
~~Stirlingia latifolia~~	✓		
~~Lomandra sericea~~	✓		
Thysanotus manglesianus ? state	✓		
Cassytha glabella	✓	✓	✓/R
Haemodorum laxum	✓		✓
Lomandra brittanii	✓		
Lomandra sericea	✓		✓
Brachyscome ciliaris	✓		✓
SEDGES			
Cyathochaeta avenacea	✓	✓	✓/R
Hypolaena exsulca	✓	✓	✓/R
Mesomelaena tetragona	✓		✓/R
Loxocarya fasciculata	✓		✓/R
Schoenus sculptus	✓		✓
Schoenus nanus	✓		✓
Isolepis marginata	✓		✓
Tetraria octandra	✓		✓/R

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP09
Date	29.10.96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
E. lane-poolii	✓		✓R
E. calophylla ~~(Marginata?)~~	✓		✓R
SHRUBS			
Xanthorhoea sp. preissii ?	✓		
Kingia australis	✓		✓
Melaleuca scabra	✓		✓
MALLEES			
Stylingia bifolia	✓		✓
Baeckea camphorosmae	✓		✓
Patersonia occidentalis	✓		✓
~~Haem~~			
~~SHRUBS~~			
~~Unid small Dampiera gauls~~			
Dryandra nivea	✓		✓
Kunzea sp.	✓		✓
Lechenaultia biloba	✓		✓
Opercularia echinocephala	✓		✓
Dasypogon bromeliodes	✓		✓
Xanthosia huegelii	✓		✓
6-leaflet Tiny Legume Pea			✓
Anigozanthus manglesianus	✓		✓
ADS (Dodonaea)			
Trifolium elatior	✓		

SHRUBS (cont.)	No	Fl	ID
Bossiea ? eriocarpa			✓
Labichea punctata	✓		
Sowerbaea laxiflora	✓		✓
Acacia drummondi seedling	✓		✓
→ dwarf Nemcia	✓		
Hovea hovea	✓		✓
Hydrocotyle			✓
Levenhookia			
GRASSES			
Briza maxima	✓		✓
Neurachne alopecuroides	✓		✓
Unid grass → Danthonia ?	✓		
Chaemosila corymbosa	✓		✓
Small Annual grass			
- flowers on peduncles			
Drosera ? erythrorhiza (red)			
HERBS			
Caesia sp. occidentalis ~~punctata~~ (Angel)	✓		✓
Drosera stolonifera	✓		✓
Pampiera linearis	✓		✓
Romulea rosea	✓		✓
Stylidium calcaratum			✓
Ursinia anthemoides			✓
Hypochaeris glabra	✓		✓
Stylidium brunoniatum			✓
Briza minor	✓		✓

HERBS (cont.)	No	Fl	ID
Haemodorum sp. ~~(thin leaf~~ broad)			✓
Phyllydrella pygmaea			✓
Cassytha sp	✓		✓
Unid small white Asteraceae		✓	
Borya sphaerocephala	✓		✓
Podotheca sp.	✓		✓
Waitzia paniculatum	✓		✓
Tiny Stylidium pusillum			
Trachymene pilosa			✓
Annual schoenus ? / Isolepis			✓
Centrolepis aristata			✓
SEDGES			
Mesomelaena: tetragona	✓		✓
Loxocarya fasciculata	✓		✓
unid Reotio -	✓		✓
Lomandra ~~hermaphrodita~~ sericea	✓		
Unid sedge with fuzzy inflorescence - gauls.			
Cadnia // Tetratria octandra	✓		✓
prob Loxocarya			
Curled-leaf Lomandra // (L. angustifolia - like) L. hermaphrodita !	✓		
L. angustatum	✓		
Haloa ceratophylla // uvaria // (ADJ !			
incrassata !			

ADJ - Hypo. angustifolium

- E. marginata

Pollides

leaves

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERPØ9
Date 13·12·96
2nd Rescore of Boka plot

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Nemcia sp	//		
								↳ capitatum?			
								Grey Lomandra	//		
								Hypocalyma angustifolium (IN)			
								Cyanthochloetae sp			
MALLEES								Danthonia sp.	///		
								Dampiera sp.	//		
				GRASSES				Stylidium bulbiferum	/		
								Unid, terete-leaf shrub - jacksonia.			
SHRUBS								with scale leaves -			
								Unid Leptospermum - kunzea!			
								SEDGES			
								Briza minor	//		
								Lepidosperma tenuiloba (NF)	///		
								Podotheca sp	//		
								Dampiera alata	//		
				HERBS				Ursinia anthemoides	/		

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA SERPENTINE NP **SITE NUMER** SERP10

DATE TRIP 29.10.96 **RECORDERS** AM

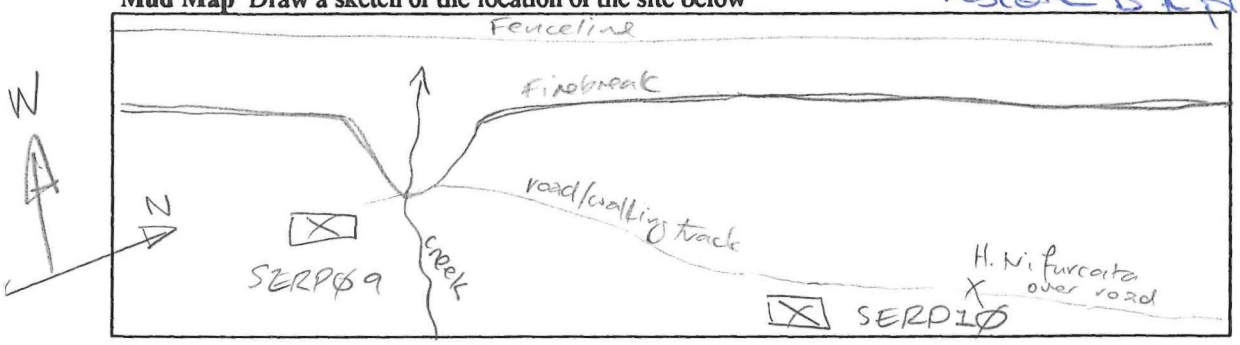
DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below

Rescore BK plot.



1.

RHS laterite

Road Location	32 22 31.2	Chatfield Rd	32 22 31.2
		47.3	115 59 47.
Geographic Location	**Latitude** 32 22 **S**	**Longitude** 115 59 **E**	**Altitude** 60m (GSAT)
	GPS ✓	**Accuracy**	
	Map Sheet Jarrahdale	PDOP = 2.4	

Photograph	**Name**	**Number** #10 + #11 Roll #4

Topographic Position (Circle the correct response)

Upland	***Lower slope***	Foothills of scarp
Upper slope	***Valley***	1.0
Midslope	***Washline***	

2. SITE DATA Circle the correct response

WSW 247°

Slope **flat** **gentle** 2 **steep** ***Aspect*** **N NE E** 6.5 **SE S SW W NW**

Surface Soil gritty, clayey gravel → gravelly-loam ***Depth to Rock*** 0-30cm ***Colour*** orange-brown

Exposed Rock type laterite **% surface cover** ~~75%~~ 50% **size range** 1-3cm

Litter 40 **% surface cover** **Depth (cm)** 2-5cm (1-2 layers)

Bare Ground 10 **% surface cover)**

Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

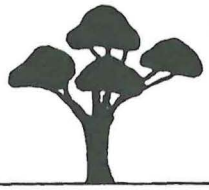
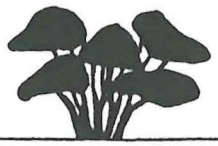
* colluvial deposits from upper slope
Granite influenced sands
& laterite + dolerite clays

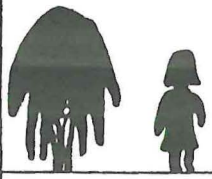
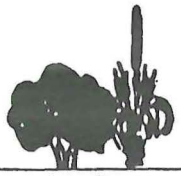
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

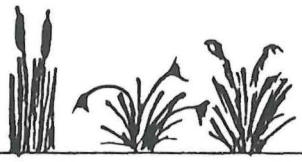
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)		2-10%			
DOMINANT SPECIES		E. marginata			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					2m 1m
COVER CLASS (%)			10-30% ~~2-10%~~	10 - 30%	
DOMINANT SPECIES			X acanthostachys	L. multiflora	Mel. aff. scabra
			H. crassifolia	H. lissocarpha	Calo. foucultosis
			H. cuclocarpa	Dry. armata	Baeckea camphorosmae

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)				—
DOMINANT SPECIES				—
				-

4. VEGETATION CONDITION

Comments Stunted Mallee-Form (resprout from lignotuber) jarrah

5/5 GOOD/Excellent condition. Avoo grazing

1.0

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP10

Date 29.10.96

13-12-96(R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Eucalyptus marginata ssp ✓	✓		
elegantissima			
Xanthorrhoea acanthostachya ✓	—		✓/R
Hakea undulata ✓	—		✓/R
NE ~~Verticordia acerosa acerosa~~	✓		○
Calothamnus torulosis ✓	✓		✓/R
Leucopogon pulchellus ✓	✓	✓	✓/R
Hypocalymma angustifolium ✓	✓	✓	✓/R
Pimelea imbricata peligera	✓	✓	✓/R
Acacia obovata ✓	✓		✓/R
Gompholobium polymorphum ✓	✓		✓/R
Andersonia lehmanniana ✓	✓		✓
~~Kunzea micrantha~~ ✓	✓		○
Gompholobium knightianum ✓	✓		✗
Acacia lateriticola ✓	✓		✓/R
Astroloma pallidum ✓	✓		✓/R
Bossiaea eriocarpa ✓	✓		○
Hibbertia hypericoides ✓	✓		✓/R
Baeckea camphorosmae ✓	✓		✓/R
Melaleuca aff scabra ✓	✓		✓/R
Hibbertia commutata ✓	✓		✓/R
Lambertia multiflora ✓	✓		✓/R
Thomasia ~~foliosa~~ glutinosa ✓	✓		✓/R
Isopogon asper ✓	✓		✓/R
Dryandra armata ✓	✓		✓/R
Synaphea gracillima ✓	✓		✓/R
Dryandra lindleyana lindleyana ✓	—		✓/R
Hakea cyclocarpa ✓	—		✓/R
Hakea lissocarpha ✓	—		✓/R
NE ~~Hibbertia acerosa~~ ? ✓	—		✓/R
Petrophile striata ✓	—		✓/R

SHRUBS (cont.)	No	Fl	ID
Drosera menziesii ✓	✓		✓/R
Drosera stolonifera ✓	—		✓/R
Gompholobium marginatum ✓	—		✗
GRASSES Briza minor ✓	—		✓/R
Poa drummondiana ✓	✓		✓
Briza maxima ✓	✓		✓/R
Danthonia sp.		✓	
Stipa sp.		✓	
Aira caryophyllea ✓	✓		✓/R
Danthonia acerosa ✓	✓		
Stipa pycnostachya ✓	✓	✓	✓/R
Danthonia setacea ✓	✓		
Neurachne alopecuroidea ✓	—		✓/R
HERBS			
Pterochaeta paniculata ✓	✓	✓	✓/R
Levenhookia pusilla ✓	✓	✓	✓/R
Hypochaeris glabra ✓	✓	✓	✓/R
Xanthosia huegelii ✓	✓	✓	✓/R
Hydrocotyle callicarpa ✓	✓	✓	✓/R
Millotia? tenuifolia : sterile ✓		✓	R
Podolepis gracilis ✓	✓	✓	✓/R
Patersonia pygmaea ✓	✓	✓	✓/R
Olearia paucidentata ✓	✓	✓	✓/R
Patersonia occidentalis ✓	✓	✓	✓
Lobelia gibbosa ✓	[illegible]	✓	R
Pithocarpa pulchella ✓	✓	✓	✓/R
Stylidium hispidum ✓	✓	✓	✓/R

HERBS (cont.)	No	Fl	ID
Lomandra sericea ✓	✓	✓	✓/R
Lomandra hermaphrodita ✓	✓		✓
Homalosciadium homalocarpum ✓	✓		✓/R
Laxmannia squarrosa ✓	✓		✓/R
Trachymene pilosa ✓	✓		✓/R
Cassytha pomiformis ✓	✓	✓	✓/R
Levenhookia stipitata ✓	✓		
Actinotus leucocephalus ✓	✓		✓/R
Sonchus oleraceus ✓	✓		✓/R
Chamaescilla corymbosa ✓	✓		✓/R
Hypochaeris glabra ✓	✓		✓/R
Caesia micrantha (NF) ✓	✓		✓/R
Dampiera alata ✓	✓		✓
Lomandra nigricans ✓	✓		✓/R
Goodenia caerulea ✓	✓		○
Tetratheca nuda ✓	✓		✓/R
Stylidium brunonianum ✓	✓		✓/R
Stylidium bulbiferum ([illegible]) ✓	✓		✓ OK
Tripterococcus brunonis ✓	✓		✓/R
Haemodorum laxum ✓	✓		✓
Polygonum aviculare ✓	✓		✓
Stylidium carnosum ✓	—		✓/R
SEDGES			
Schoenus grammatophyllus ✓	✓		✓/R
Loxocarya fasciculata ✓	✓		✓/R
Tetraria octandra ✓	✓		✓/R
Schoenus aff brevisetis ✓	✓		✓/R
? has been incorporated.			
Entered as S. brevisetis			

Not seen on rescore.

✓ pos. SERP03

✓ SERP03 ? / SERP04 ?

T3 + 2 + 4 87 Lechenaultia seedlings - Leucopogon seedlings!

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP10
Date	29.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

NR: SERP09 (B. Minor) Lepidospermum angustatum

TREES	No	Fl	ID
E. marginata	✓		✓
Hakea undulata	✓		
SHRUBS			
Xanthorrhoea acanthostachya	✓		
Calothamnus torulosis	✓		✓
MALLEES			
Lambertia multiflora	✓		✓
Melaleuca aff. scabra	✓		✓
Dryandra nivea	✓		✓
Pimelia ciliatum	✓		✓
SHRUBS			
Hakea cyclocarpa	✓		
Hakea lissocarpa	✓		
Hibbertia acerosa			
Dryandra armata	✓		✓
Leucopogon pulcherrimus	✓		✓
Hibbertia commutata	✓		✓
Isopogon asper	✓		✓
Hibbertia hypericoides	✓		✓
Baeckea camphorosmae	✓		✓
Petrophile sviata	✓		
Unid			
Synaphaea sp.			✓
Hypocalymma angustifolium			✓
White-hirsute Apiaceae	✓		✓
↳ large herb Pithocarpa			
Caesia micrantha			
Dampiera alata // Platysacae			✓
Acamptholobium sp - Narrow, trifoliate leaf			✓

SHRUBS (cont.)	No	Fl	ID
Tetratheca sp - scabrous			✓
Xanthosia huegii seedlings	✓		✓
Acacia sp? drummondii seedling	✓		
6-leaflet yellow Pea			
Small Trifoliate seedling			✓
= Gompholobium marginatum	✓		✓
Patersonia pygmaea? (NF)	✓		✓
Acacia sp → undulate leaves	✓		✓
GRASSES			
Climbing Drosera		✓	
↳ multiflora radicans			
leaves // whorl.			
Astroloma/Leucopogon			
↳ A. lenmannianum?			✓
Whorled leaves - twirling			
Neurachne alopecuroidea	✓		✓
Briza maxima	✓		✓
HERBS			
Lasmannia squamosa	✓		✓
Stylidium brunonianum	✓		✓
Stylidium piliferum	✓		✓
Stylidium carnosum	✓		
Caesia? sp? - NA //			✓
Drosera stolonifera			✓
Tripterococcus sp	✓		✓
Thysanotus?			
Drosera menziesii			✓
Small, wiry Schoenus			✓
Thomasia // Lasiopetalum			✓

HERBS (cont.)	No	Fl	ID
Haemodorum sp.	✓		✓
Levenhookia pusilla	✓		✓
Trachymene pilosa	✓		✓
Waitzia paniculatum	✓		✓
Chaemosila corymbosa			✓
Cassytha racemosa	✓		✓
Hypochaeris glabra	✓		✓
Hydrocotyle sp.	✓		✓
Hommal homma	✓		✓
- Stipa sp -	✓		✓
Aira caryophyllea	✓		✓
Stackhousia? (NF)			
Tiny Annual grass (long twisted awn)			
SEDGES			
lepidospermum tenue scabrous			✓
Loxocarya fasciculata	✓		✓
Lomandra ? hystricacantha	✓		✓
Tetraria octandra	✓		✓
Small white Asteraceae ?			
Olearia paucidentata	✓		✓
Sonchus oleraceus			✓
Black-base Schoenus	✓		✓
Astroloma pallida	✓		✓
Danthonia sp			✓
Briza minor			✓
Gompholobium knightianum			
Stylidium bulbiferum	✓		
Lomandra caespitosa			✓
Poa sp.			✓
Orthrosanthus / Patersonia?			✓
Unid Dicot Seedling in roo-roo			✓
↳ Bollya??			

Schoenus? sp? _ Tall Lomandra
↳ black bases & Papery leaf margins

Lots of T. pygmaea

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP10
Date	Rescore 13.12.96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

Lox. Pasiculatin in SERP09

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Stipa sp.			
								Unid asteraceae	✓		
								L white tomentose			
								indumentum (NF)			
								Lomandra hermaphrodita	✓		
								(as in plot SERP09)			
MALLEES								Patersonia pygmaea	✓		
				GRASSES				Lep. tereti, smooth, large,			
								Melotia	✓		
SHRUBS								Mira sp.	✓		
								Hydrocotyle	✓		
								SEDGES			
								Tripterococcus brunonis	✓		
								Hypocalymma angustifolium	✓		
								Andersonia lehmanniana	✓		
								Brachycomb ?	✓		
				HERBS				Pimelia imbricata	✓		
								Comphoebium knightianum	✓		
								Cladi			
								id H. acerosa			
								Not seen on rescove (NF)			
								Purple Lobelia			

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Upper Scriner Rd Serpentine NP. **SITE NUMER** SERP 11

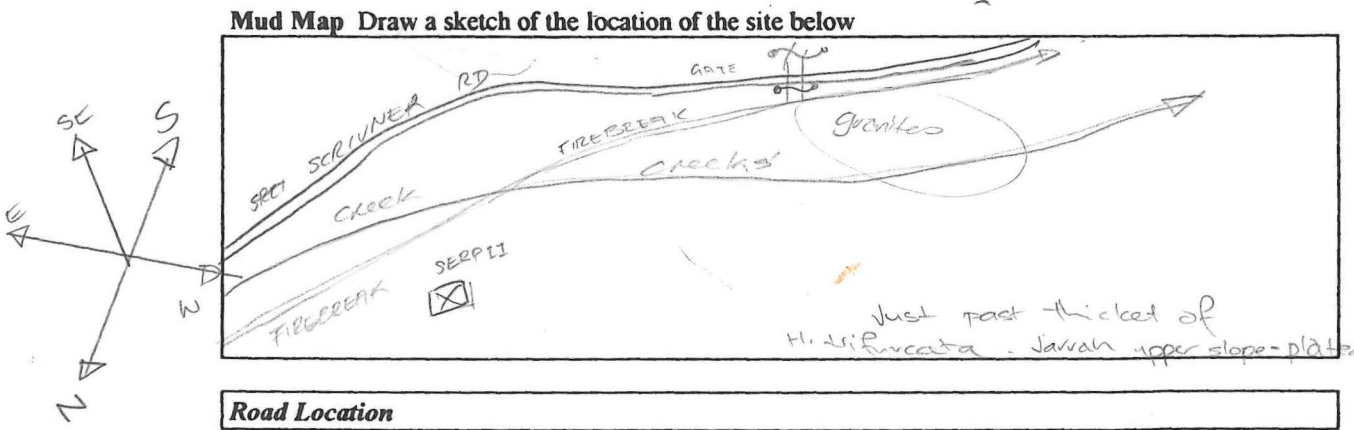
DATE TRIP 30 10 96 **RECORDERS** AM

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below



Road Location

Geographic Location **Latitude** 32 22 46-7 **S** **Longitude** 116 00 58-0 **E** **Altitude** 250m SSAT
GPS **Accuracy** ±1000m
Map Sheet Jarrahdale

Photograph **Name** **Number** #13 (#12 = mistake) Roll #4

Topographic Position (Circle the correct response)

Upland 5 ***Lower slope***
Upper slope (see map) ***Valley***
Midslope ***Washline***

2. SITE DATA Circle the correct response

Slope **flat** **gentle** 2 **steep** ***Aspect*** **N** **NE** **E** **SE** 4 **S** **SW** **W** **NW** 138° SE (~90, 135, 180)

Surface Soil loamy gravel ***Depth to Rock*** 0-30cm ***Colour*** red orange-brown

Exposed Rock type laterite % surface cover 20 size range 1-3cm 5-10cm!

Litter 40 % surface cover Depth (cm)

Bare Ground 5 % surface cover)

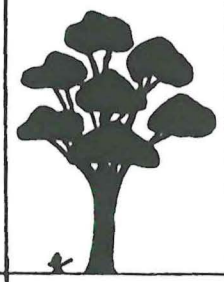
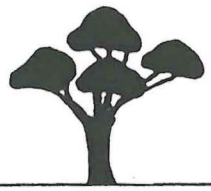
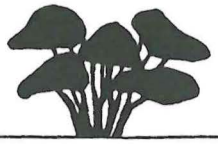
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

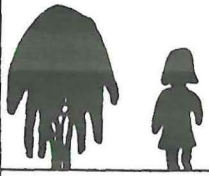
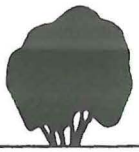
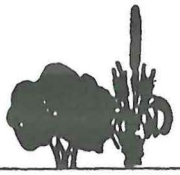
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)	10-30%	2-10%			
DOMINANT SPECIES	E. marginata	E. marginata			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					-Rich mixed shrub understorey 2m  1m
COVER CLASS (%)				2-10%	70%
DOMINANT SPECIES				H. lissoraphis	H. lisso
				Xan. preissii	Dry. nivea
					Hibb. hypericoides

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)		2-10%		2-10%
DOMINANT SPECIES		Sc. neuvolu sp.		Loxocarya fasciculata
		Conostylis setosa		Tetraria octandra
		Anigozanthus sp		Lepidosperma sp
				Lomandra hermaphrodita
				Lomandra caespitosa

4. VEGETATION CONDITION

Comments BURNT 1993-1994. History of logging - 4N
Few weeds ∴ 4-4½

?

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Serpentine NP - Lewis Rd **SITE NUMER** SERP 13

DATE TRIP 30.10.96 **RECORDERS** AM

DATE TRIP **RECORDERS**

DATE TRIP **RECORDERS**

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below

900 from start gravel end of Lewis Rd

see other sheet!

Road Location	39.0	29.3	
Geographic Location	**Latitude** 32 21 39.0 S (~~39.4~~) **Longitude** 116 00 29.3 E (6 SATS) **Altitude** 200m **GPS** ✓ **Accuracy** 5.1 - PDOP **Map Sheet** Jarrahdale		
Photograph	**Name**	**Number** # 14	Roll # 4

Topographic Position (Circle the correct response)

Upland		*Lower slope*
Upper slope		*Valley*
Midslope	MIDSLOPE 3	*Washline*

2. SITE DATA Circle the correct response

Slope	flat	gentle	steep	***Aspect*** N NE E SE S SW W NW

Surface Soil	***Depth to Rock***	***Colour***

Exposed Rock	type	% surface cover	size range

Litter	% surface cover	Depth (cm)

Bare Ground	% surface cover)

Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

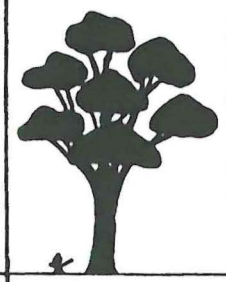
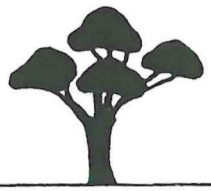
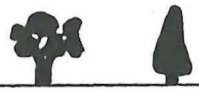
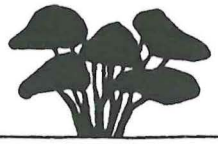
SERP 12 300m from 1st gate HEAD EAST of Scrivator Road

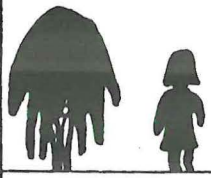
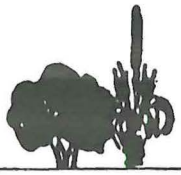
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

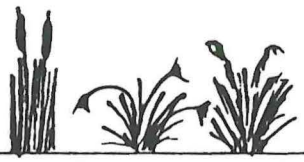
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					 30m 10m
COVER CLASS (%)					
DOMINANT SPECIES					

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					 2m 1m
COVER CLASS (%)					
DOMINANT SPECIES					

	GRASSES	HERBS	SEDGES	over 0.5m	under 0.5m
LIFE FORM					 1m
COVER CLASS (%)					
DOMINANT SPECIES					

4. VEGETATION CONDITION

Comments

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP11
Date	30.10.96
	13.12.96(R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Eucalyptus marginata	—		✓/R
~~Dry linden lindley~~	—	✓	✓/R
Hakea undulata ADS			
Dryandra lindleyana lindleyana		✓	
Leucopogon capitellatus	✓	✓	✓/R
Hypocalymma robustum	✓		✓/R
Bossiaea ornata	✓		✓/R
Hovea chorizemifolia	✓		✓/R
Phyllanthus calycinus	✓		✓/R
Grevillea pilulifera	✓	✓	✓/R
Hibbertia commutata	✓	✓	✓/R
Hibbertia hypericoides	✓	✓	✓/R
Acomphodobium marginatum	✓		✓/R
Lechenaultia biloba	✓		✓/R
Pronaya fraseri fraseri	✓	✓	✓/R
Hibbertia acerosa	✓	✓	✓/R
Acacia lateriticola	✓	✓	✓/R
Acacia tetragonophylla	✓	✓	✓/R
~~Pronaya fraseri fraseri~~	✓	✓	
Astroloma pallidum	✓		✓/R
Pimelea drissii (not ciliata)	✓		✓/R
Sphaerolobium medium	✓		✓/R
Acacia nervosa	✓		✓/R
Astrolotha ciliatum	✓		✓/R
Daviesia decurrens	✓		✓/R
Synaphea gracillima	✓	—	✓/R
Hypochaeris glabra	✓	—	✓/R
Stylidium carnosum	✓	—	✓/R
Ptilotus manglesii	✓	—	R

SHRUBS (cont.)	No	Fl	ID
Thelymitra crinita	✓		✓/R
Lomandra brittanii	✓		✓/R
Cassytha pomiformis	✓	✓	
Trichocline spathulatum	✓		✓/R
Drosera pallida	✓		✓
Anigozanthus manglesii	✓		✓/R
Drosera menziesii	✓		
Lotus sp.	—	—	✓
GRASSES			
Stipa pycnostachya	✓	✓	✓/R
Neurachne alopecuroidea	✓	✓	✓/R
Danthonia setacea	✓	✓	✓/R
Poa drummondiana	✓	✓	✓/R
Vulpia ~~muroides~~ myuros	✓	✓	✓/R
Tetrarrhena laevis	✓	—	R
Aira caryophyllea	✓	—	R
HERBS			
Burchardia congesta	✓		✓/R
Dampiera alata	✓		✓/R
Dampiera linearis	✓	✓	✓/R
Conostylis aurifera	✓	✓	✓/R
Xanthosia huegelii	✓		✓/R
Patersonia occidentalis	✓		✓/R
Conostylis setosa	✓		✓/R
Stylidium brunonianum	✓		✓/R
Senecio diasciides	✓		✓/R
Olearia paucidentata	✓		✓/R
Opercularia echinocephala	✓	✓	✓/R
Conostylis aurifera	✓		✓/R
Scaevola callipteria	✓	✓	✓/R

HERBS (cont.)	No	Fl	ID
Tricoryne pilosa	✓		✓/R
Pterochaeta paniculata	✓		✓/R
Hydrocotyle callicarpa	✓	✓	✓/R
Pentapeltis peltigera	✓		✓/R
Xanthosia candida	✓		✓/R
Craspedia variifolia variabilis	✓		✓
Hyalosperma cotula	✓	✓	✓/R
Agrostocrinum scabrum	✓	✓	✓/R
Goodenia caerulea	✓	✓	✓/R
ADS: Thysanotus thyrsoideus	✓		
Chaemoescilla corymbosa	✓	✓	✓/R
Hydrocotyle callicarpa	✓	✓	
Phallangium paradoxum	✓	✓	✓/R
Stylidium hispidum	✓	✓	✓/R
Crasspedia variaflora	✓		✓
Stylidium junceum	✓		✓
Caesia micrantha	✓		✓
Opercularia apiciflora	✓		✓
NE Anigozanthus ? sterile	✓		
~~NE Patersonia juncea ? sterile~~	✓		—
Centaurium erythraea	✓		
Linum trigynum	✓		
Lomandra nigricans (oic)	✓	1	✓
Lomandra micrantha	✓		✓/R
SEDGES			
Tetraria capillaris	✓	✓	✓/R
Schoenus unispicularis	✓		—
Tetraria octandra	✓		✓/R
Mesomelaena gracilicepsis	✓		—
Loxocarya fasciculata	✓	✓	✓/R
NE Schoenus sp.	✓		

Ptilotus

Figure Assem1. 2wa. Assemblage_1 re-ordered according to species co-occurrences at the same quadrats and similarities in the overall composition of the quadrats. Quadrat codes are printed vertically.

```
                                BBBCE|CCCC|G|KKMMMM|K
                                BBBUL|UUUU|J|EERRRR|E
                                24561|2345|2|122534|3

Acanthophis pyrrhus                  |    | |  *   |
Lerista aff. muelleriC               |    | |  *   |
Ctenotus saxatilis                   |    | | **   |
Diporiphora winneckei                |    | | **   |
Notoscincus ornatus                  |    | | **   |
Lerista kennedyensis                 |    | | *    |
                                -----+----+-+------+-
Aprasia smithi                       |    | |     *|
Cyclodomorphus melanops              |    | |     *|
Ramphotyphlops aff. grypusC          |    | |     *|
Ctenotus piankai                     |    | |    ***|
Menetia aff. greyiiC                 |    | |   ****|
Lerista bipes                        |    | |      *|
Ctenophorus femoralis                |    | | *   *|
Ctenophorus clayi                    |    | | * * **|
Ctenophorus rufescens                |    | | *  ***|
Menetia aff. surdaA                  |    | | *   **|
Varanus brevicauda                   |    | | **  **|
Ctenotus calurus                     |    | | *****|
Ctenotus aff. hanloniB               |    | | ******|*
Ctenophorus aff. rubensB             |    |*| ******|
Ctenotus pantherinus                 | *  | | ******|
Ctenotus iapetus                     | ****| | ******|
Cyclorana platycephalus              |    | |  *   |
Lerista planiventralis          *****| ** | | *   *|
```

Burchardia = prob Caesia (NF!)

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP11
Date	30.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

Stylidium pycnostachyum ??
Stylidium juncum
2 sp Crospedia — Basal rosette — Amplexed leaves

TREES	No	Fl	ID
E. marginata	✓		
SHRUBS			
Drummondia viscosa	✓		
Hibbertia hypericoides	✓		
Phyllanthus calycinus	✓		//
MALLEES			
Hibb. commutata	✓		//
Hibb. aserosa	✓		//
Hakea lissocarpa	✓		
Xan. preissii	✓		
SHRUBS			
Boschiea anata	✓		//
Conostylis setosa	✓		
Sphaerolobium medium	✓		//
Daviesia preissii?	?		//
Grevillea? pilulifera	✓		//
(Fruit) Hovea? chorizemifolia			//
Pimelia sp. stamenolens?	✓		//
Hypocalymma robustum	✓		///
Pentapeltis peltigera	✓		//
Unid grass: rough wide terminal NF			?
Opercularia hispidula	?		
Lechenaultia biloba	✓		//
Lomandra sp. papery margins	✓		//
Danthonia sp.	✓		//
Opercularia - echinocephala	✓		//
Tiny everlasting	✓		
not Helip. cotula		//	
× Dampiera alata // Acacia wilderiana	//		
D. alata			

SHRUBS (cont.)	No	Fl	ID
Xanthosia huegelii			//
Conocarpus // Grevillea	✓		//
Synaphea sp. petiolaris			//
Comph. marginatum	✓		//
Acacia sp. - truncat apices	✓		//
6-leaflet Tri Pea			
Chaemosila? corymbosa	✓		//
GRASSES			
Acacia nervosa	✓		//
Astroloma pallidum	✓		///
Stylidium carnosum	✓		
Conocarpus cordiger	✓		//
Drosera pallida			///
Thelymitra crinita (WA) IN	✓		//
Hypochaeris glabra			
Xanthosia? candida	✓		//
Acacia drummondii	✓		//
HERBS			
Stylidium brunonianum	✓		///
Scaevola? platyphylla	✓		//
Trichodine spathulatum	✓		//
Small Helipterum? // Rodanthe			/
Cotula			
Drosera menziesii			
Dampiera linearis	✓		//
Stylidium piluliferum	✓		//
Agrostocrinum scabrum	✓		//
Senecio sp.	✓		//
Vulpia sp.	✓		//
Newcastelia stoepeanoides	✓		//

HERBS (cont.)	No	Fl	ID
Cassytha sp (smooth)	✓		
Poa sp	✓		///
Billardiera sp	✓		///
Epacrid → Astroloma? Leuc. cop.			
Stipa elegantissima pycno.	✓		//
Patersonia umbrosa	✓		///
Burchardia congesta	✓		///
Olearia paucidentata	✓		///
Angiozanthus manglesianus	✓		///
Crospedia sp.			///
Hydrocotyle sp	✓		///
Trachymene pilosa			///
Neilleia paniculatum			///
SEDGES			
Lomandra fasiculata	✓		///
Lepidosperma angustatum			
× Tetraria capillaris	✓		
× Lepidosperma tenete smooth	✓		
→ L. sericea			
× Lomandra sp. basal inflor. hemiandrotrita			
Tetraria octandra	✓	///	
Lepidosperma - rough tenete	✓		
Lomandra caespitosa? brittani.	✓		//
Unid sp. Euphorb			
Caesia micrantha (NF)	///		///
Laxmannia or covey sheoaks			///
ADS → Hakea undulata			
Lomandra preissii	//		
Astrolomma ciliatum?	//		

prob deciduous

alate NF form

Unid rhizome (Mirasache) → Phalangium paradoxum

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP 17
Date	13/12.96
	Rescore

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Goodenia caerulea			✓
								Gonocarpus sp		✓✓	
								Danthonia sp		✓✓	
								Dampiera decurrens		✓✓✓	
								Trichymitra sp		✓✓✓	
								Lomandra ? nigricans		✓✓✓	
MALLEES								Acacia terticfolia		✓✓	
								~~Lobelia pinifolia~~ ??			
				GRASSES				↳ Billardiera sp	✓✓		
								Philotus manglesii	✓✓		
								Astrolomia sp - tall ered	✓✓✓		
SHRUBS								Stylidium ~~celeraku~~	✓✓		
								↳ camosum			
								SEDGES			
								Chamesila corymbosa	✓		
								Acacia pulchella seedling ?		✓✓	
								↳ drummondii ?			
								Senecio sp	✓		
				HERBS				Lomandra preissii (IN)	✓✓		
								Tetratheca ciliata			
				Andersonia ? →				Astrolora sp			
								↳ curled leaves			
								prob same as before			
								Aira canophyllae -	✓		
								~~Anthoxanthum ciliatum~~			

73 + 13 + 6
= 92 (3 miss)
AIM
100 by
SUNDAY!

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA SERPENTINE NP - Scriner Rd **SITE NUMER** SERP12

DATE TRIP 30.10.96 **RECORDERS** AM

DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

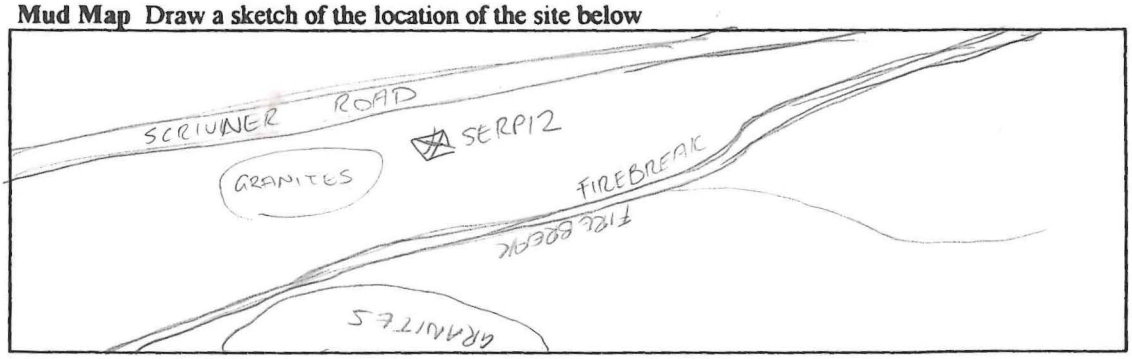
E
N
S

1. LOCATION of the QUADRAT

In E. Iaelbe!

ODOMETER – to 1st firebreak gate.

Mud Map Draw a sketch of the location of the site below



Road Location	32 22 57.0 116 06 41.4

32 22 57.0
116 06 41.4
PDOP 2.7

Geographic Location	**Latitude** 32 22 ~~32 22 57.3~~ **S**	**Longitude** 116 06 ~~116 06 41.8~~ **E**	**Altitude** SA	205m (5SAT)
	GPS ✓	**Accuracy**		
	Map Sheet Jarrahdale	PDOP 4/6 2.7		

Photograph	**Name**	**Number** # 13 + #14 Roll #4

Topographic Position		(Circle the correct response)
Upland		***Lower slope***
Upper slope	✓	***Valley***
Midslope		***Washline***

2. SITE DATA Circle the correct response

Slope	**flat**	**gentle** 2.5	**steep**	***Aspect***	**N**	**NE**	**E** 6	**SE**	**S**	**SW**	**W**	**NW**

252° 270 315 - 360

Surface Soil	gritty loamy clay	***Depth to Rock***	30-40	***Colour***	grey-brown rust orange's

Exposed Rock	type granite	% surface cover	10	size range	Boulders' 60cm - 150cm

Litter	80	% surface cover	**Depth (cm)**	20-30cm

Bare Ground	2%	% surface cover) 12

incl. rocks' = 12%

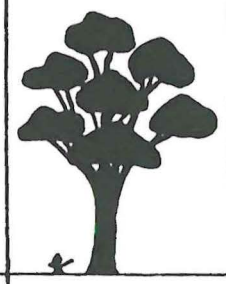
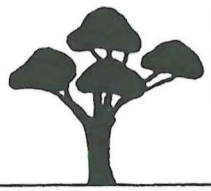
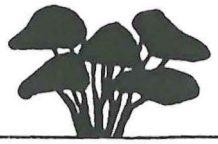
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

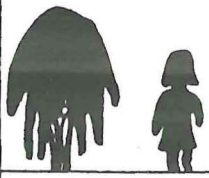
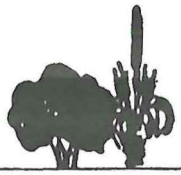
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

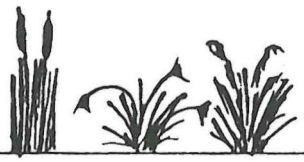
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)		30 - 70%			
DOMINANT SPECIES		E. laelei			
		E. marginata			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					2m  1m
COVER CLASS (%)				10 - 30	10 - 30%
DOMINANT SPECIES				H. stenocarpa	Melaleuca scabra
				Nemcia cymatum	Leucop. Hibb. hypericoides
				Bossiaea eriocarpa	

	GRASSES	HERBS	SEDGES	over 0.5m	under 0.5m
LIFE FORM					1m 
COVER CLASS (%)					30 - 70%
DOMINANT SPECIES					Melaleuca tetragona

ADS. Thicket of H. trifurcata

4. VEGETATION CONDITION

Comments 4/5. Road track & heavy roo grazing. Unt
Long unburnt. E. laelei conspicuous in landscape.
Part of band of E. laelei running into valley
Emergent X. preissii & influence from adjacent granite
V. sedge understorey.

2

V. tall thicket of H. trifurcata adjacent

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP12
Date	30.10.96
	3.12.96 (R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Eucalyptus calophylla	✓		✓/R
Euc. laeliae	—		✓/R
Darwinia thymoides		✓	R
Allocasuarina humilis	✓		✓/R
Eriostemon spicata	✓		✓/R
Hakea stenocarpa	✓		✓/R
Pimelea preissii	✓		✓/R
Hypocalymma angustifolium	✓		✓/R
Hibbertia commutata	✓		✓/R
Hibbertia hypericoides	✓		
Hakea trifurcata	✓		✓/R
Olearia paucidentata	✓		✓/R
ADS: Grevillea bipinnatifida			R
Melaleuca aff scabra	✓		✓/R
Dryandra bipinnatifida	✓		✓/R
Andersonia lehmanniana	✓		✓/R
Petrophile striata	✓		✓/R
Acacia pulchella pulchella	✓	✓	✓/R
Bossidea sp. Wanoona (ind=v)		✓	✓/R
Baeckea camphorosmae	✓	✓	✓/R
Kunzea micrantha	✓	✓	✓/R
Leucopogon pulchellus	✓		✓/R
Olax benthamiana	✓	✓	✓/R
Nemcia dilatata	✓	✓	✓/R
Acacia alata alata	✓		✓
Lechenaultia biloba	✓	✓	R
Templetonia biloba	✓	✓	R
Xanthorrhoea preissii	✓	—	✓/R
Dryandra armata	✓	—	✓/R
Xanthorrhoea gracilis	✓	—	✓/R

SHRUBS (cont.)	No	Fl	ID
Dry. lindle... lindlei	✓	—	✓/R
Hakea amplexicaulis	✓	—	✓/R
Hakea lissocarpha	✓	—	R
Gompholobium marginatum	✓	—	R
GRASSES			
Danthonia setacea	✓	✓	✓/R
Stipa pycnostachya	✓	✓	✓
Poa drummondiana	✓	✓	✓
Tetrarrhena laevis	✓		✓/R
Danthonia acerosa	✓	✓	✓/R
Amphipogon sp.	✓	✓	
Aira caryophyllea	✓	✓	R
Nevrachne aloepecuroidea	✓	—	✓/R
HERBS			
Dampiera alata	✓	✓	✓/R
Dampiera linearis	✓	✓	✓/R
Agrostocrinum scabrum	✓	✓	✓/R
Scaevola callipteria	✓	✓	✓/R
Burchardia congesta	✓	✓	✓/R
Caesia micrantha	✓	✓	✓
Arthropodium capillipes	✓	✓	✓/R
Stylidium brunonianum	✓	✓	✓/R
~~Caesia micrantha~~	✓		✓
Opercularia apiciflora	✓	✓	✓/R
Gonocarpus cordiger	✓	✓	✓/R
Stylidium hispidum	✓	✓	✓/R
Comesperma virgatum	✓	✓	✓/R

HERBS (cont.)	No	Fl	ID
Patersonia pygmaea	✓	✓	✓/R
Billardiera parviflora gutata	✓	✓	✓/R
Cassytha pomiformis	✓	✓	✓
Cassytha racemosa	✓		✓
Cassytha glabella	✓	✓	✓/R
Lomandra brittanii	✓	✓	✓
Lomandra purpurea	✓		✓
Lomandra preissii (narrow)	✓	✓	✓
Wahlenbergia preissii	✓	✓	
Goodenia caerulea	✓	✓	R
Haemodorum discolor	✓	✓	✓/R
Drosera menziesii	✓	✓	✓
Tricholine spathulatum	✓	—	✓/R
Stylidium bulbiferum	✓	—	✓/R
Xanthosia huegelii	✓	—	R
SEDGES			
Mesomelaena tetragona	✓	✓	✓/R
Tetraria capillaris	✓		✓/R
Tetraria octandra	✓		✓/R
Mesomelaena graciliceps	✓		
ADS: Cyathochaeta avenacea	✓		

Figure Assem2. 2wa. Assemblage_2 re-ordered according to species co-occurrences at the same quadrats and similarities in the overall composition of the quadrats. Quadrat codes are printed vertically.

```
                                  BBNMMM|BCCCCCEEZZZZPPPP|NNNNNNNZ|B|BMPN|CMM|BKM
                                  BBERRR|BUUUUULLUUUUEEEE|AAAAEEEU|O|OREE|UDD|OED
                                  254132|4453621221342534|23451235|3|2415|112|524
                                        |                 |        | |    |   |
Aprasia fusca                           |   *  *          |        | |    |   |
Lerista haroldi                         |   *             |        | |    |   |
Aprasia haroldi                         |      *          |        | |    |   |
Ramphotyphlops australis                |      *          |        | |    |   |
                                  ------+-----------------+--------+-+----+---+---
Pygopus lepidopodus                     |         *       |        | |    |   |
Tympanocryptis adelaidensis             |         *       |        | |    |   |
Vermicella bimaculata                   |         *       |        | |    |   |
                                  ------+-----------------+--------+-+----+---+---
Ctenophorus aff. rubensA                |     *           |        | |    |   |
Neobatrachus pelobatoides               |                 |       *| |    |   |
Crenadactylus ocellatus                 |    *   *        | *****  | |    |   |
Ctenotus alleni                         |                 | ** *** | |    |   |
Cryptoblepharus carnabyi                |          *      |       *| |    |   |
Ctenotus lesueurii                      |          *      |       *| |    |   |
Lerista humphriesi                      |          *      |        | |    |   |
Lerista decora                          |          *** * |       *| |    |   |
Ctenophorus maculatus                   |          **     |  **   *| |    |   |
Lerista aff. kendrickiA                 |          *      |** *    | |    |   |
Delma aff. australisA                   |          *      | *      | |    |   |
Vermicella multifasciata                |            *    |        | |    |   |
Lerista aff. praepeditaB                |   ** *     ****|        |*|    |   |
Lerista varia                           |    *       ****|   *    | |    |   |
Tiliqua rugosa                          |            ****|        |*|    |   |
Menetia aff. surdaB                     |         *  **  |* ****  | |    |   |
Diplodactylus ornatus                   |     *** **  ***|        | |    |   |
Lialis burtonis                       *|   *     ** **  |        | |    |   |***
Ctenotus fallens                        |   **  ** * **  | ***    | |    |   |
Diplodactylus aff alboguttatusA         |   * * ** ******| ***    | |    |   |
```

Check opercularia from SERP11 Grass in

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	SERP12
Date	30.10.96

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

Granite

Not dolerite

No Jarrah!

TREES	No	Fl	ID
E. laeli	✓		✓/✗
~~E. marginata~~			
E. calophylla	✓		✓/✗
SHRUBS			
Xan. preissii	✓		
Nemcia cuneatum	✓		✓
~~MALLEES~~			
Petrophile striata	✓		✓
Melaleuca aff. scabra	✓		✓
Hakea stenocarpa	✓		✓
Leucopogon? pulchrinnus	✓		✓
~~SHRUBS~~			
Dryandra armata	✓		
Allocas. humilis	✓		✓
Eriostemon spicatum	✓		✓
Bossiaea ornata/eriocarpa	✓		✓
Hakea trifurcata	✓		✓
Xanthorrhoea gracilis	✓		
Acacia pulchella	✓		✓
Kunzea? sp.	✓		✓
Comesperma virgatum			✓
Opercularia hispidula	✓		✓
Persoonia sp. ?? Olax	✓		✗
Baeckea camphorosmae	✓		✓
Dampiera alata	✓		✓
Hydrocotyle capillaris	✓		✓

SHRUBS (cont.)	No	Fl	ID
Hypocalymma angustifolium	✓		✓
Dryandra nivea	✓		✓
Tetratheca laevis	✓		✓
Acacia alata	✓		✓
Hakea amplexicaulis	✓		✓
Astroloma tenuiflorum	✓		✓
Billardiera sp? Bicolor?	✓		✓
Hibbertia commutata			✓
GRASSES			
Neurachne alopecuroidea	✓		
Danthonia sp.	✓		✓
Burchardia longata	✓		✓
Scaevola platyphylla	✓		✓
Stylidium piliferum	✓		✓
Dryandra bipinnatifida	✓		✓
Stipa elegantissima			✓
Pimelia ?suaveolens?	✓		✓
Leucopogon pusilla			
HERBS			
Agrostocrinum scabrum			✓
Drosera sp			✓
(Small climber, alt. leaves)			
Stylidium bulbocaulon			✓
Climbing Drosera - multi-cauline leaves (ribbon)			
Stackhousia sp (NF)			
Acacia alata			

HERBS (cont.)	No	Fl	ID
Haemodorum sp. Swanleaf	✓		✓
Cassytha sp glabella	✓		✓
Drosera sp. Menziesii?			✓
Cassia micrantha	✓		✓
~~Acacia~~			
Olearia paucidentata	✓		✓
Poa sp			✓
Dampiera linearis	✓		✓
Patersonia pygmaea	✓		✓
Triglochin spatulatum			✓
Conocarpus erdiger			✓
SEDGES			
Mesomelaena tetragona	✓		✓
Tetraria octandra	✓		✓
Tetraria // Lepidosperma			
Lepidosperma angustatum	✓		
Tetraria capillaris	✓		✓
Lomandra? caespitosa	✓		✓
Lomandra preissii	✓		✓
Lomandra hermaphrodita	✓		✓

NB also found in SERP11

10 0 10 2 10 0

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SELP 12
Date	13~~10~~-96
	13.12.96

Revisit

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

~~Haemodorum not in flow~~

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Goodenia caerulea			✓
								Darwinia thymoides			✓
								Stylidium bulbiferum			✓
								Aira canophyllae			✓
								Xanthosia huegii			✓
								Agr. scabrum			✓
MALLEES								Hakea lissocarpa			✓
								Trichodine spathulatum			✓
				GRASSES							
SHRUBS											
								SEDGES			
								ADJ. Grevillea dipinnatifida			✓
								Lechenaultia biloba			✓
								Gomph. marginatum			✓
								Templetonia biloba			✓
				HERBS							

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

→ Lewis Rd

BUSHLAND AREA Serpentine NP **SITE NUMER** SERP 13

DATE TRIP 30.10.96 **RECORDERS** AM

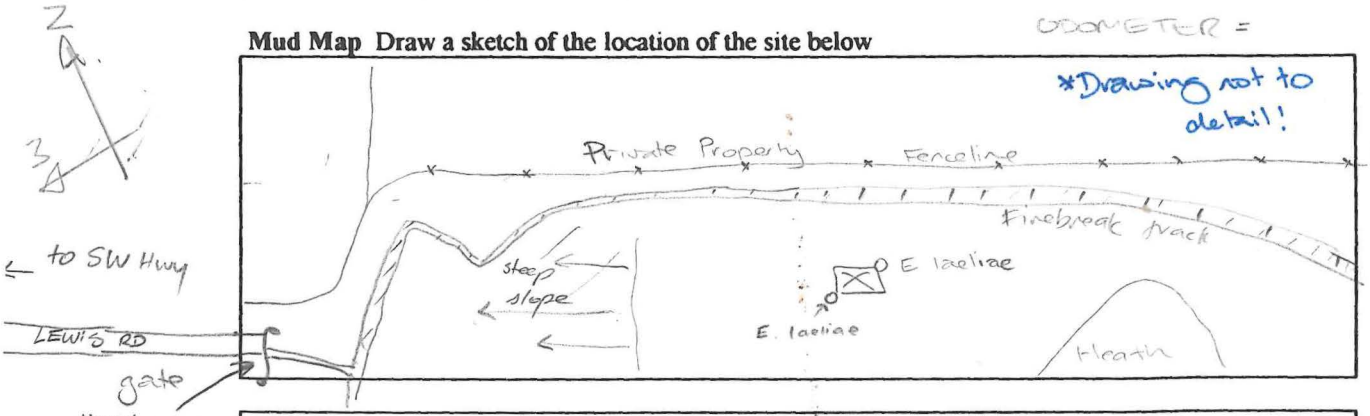
DATE TRIP _____ **RECORDERS** _____

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below

ODOMETER =



Road Location	Lewis Rd, Serpentine

Geographic Location	**Latitude**	**S Longitude**	**E Altitude**
	GPS	**Accuracy**	- see other sheet
	Map Sheet Jarrahdale		

Photograph	**Name**	**Number** #14	Roll #4

Topographic Position	(Circle the correct response)
Upland	***Lower slope***
Upper slope	***Valley***
Midslope	***Washline***

No 360 270

2. SITE DATA Circle the correct response

2.5 286° WNW 7.5

Slope	**flat**	**gentle**	**steep**	***Aspect***	**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**

clay loam Dk Brown

Surface Soil	loamy clay	***Depth to Rock***	10 - 30cm	***Colour***	orange - Dk Brown

granite

Exposed Rock	type gravel	% surface cover	1%	size range	5 - 20cm

Litter	80	% surface cover	**Depth (cm)**	20 - 30cm

Bare Ground		% surface cover)

thick leaf litter

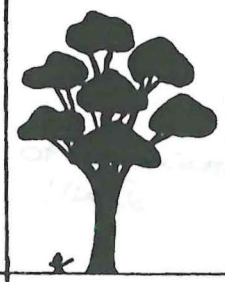
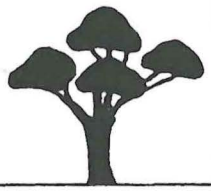
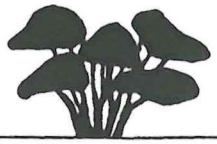
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

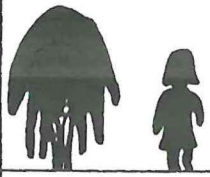
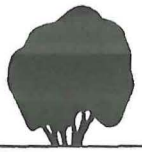
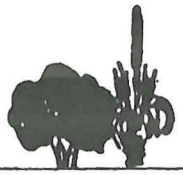
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

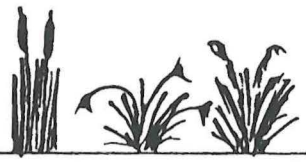
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)		E. 10-30%			
DOMINANT SPECIES		E. laeli			
		E. calophylla			

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	~~1.5 - 1m~~	1 -0.5m	under 0.5m
LIFE FORM			2-1.5m 		Pseudoeg camphorosmae 2m Astrolorea fasciculata H. lissocarpa 1m 
COVER CLASS (%)		10-30%	10-30%	10-30% ~~30-70%~~	30-70%
DOMINANT SPECIES			Xan acanthostachya	Melaleuca scabra	Hibb. hypocoicoides
		H. trifurcata →	~~H. lissocarpa~~	Hypo angustifolium	Dag rivea
			H. undulata		← Leucopogon pulchellus

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)	2-10%	MIXED HERBS 2-10%		10-30%
DOMINANT SPECIES	Briza maxima	Lagenifera huegelii		Lepidosperma ~~tenuis~~
		Stylidium bulbiferum		Tetraria octandra
		Caesia, Burchardia		Tetraria capillaris

Low layer Chamaesila

4. VEGETATION CONDITION

Comments 3→3½/5. V. weedy - influx from adjacent pasture

Long time unburnt - Senescent H. undulata

(3)-2.5.

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP 13
Date 30.10.96
14.12.96 (R)

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Eucalyptus calophylla	✓		✓/R
Euc. Flabellae	—		✓/R
Macrozamia riedlii	—		✓/R
Xanthorrhoea acanthostachyer	—		✓/R
Leucopogon pulchellus	✓		✓/R
Leucopogon capitellatus	✓	✓	✓/R
Melaleuca aff. scabra		✓	✓/R
Allocasuarina humilis	✓	✓	✓/R
Grevillea pilulifera	✓	✓	✓/R
Hibbertia hypericoides	✓		✓/R
Baeckea camphorosmae	✓		✓/R
Astroloma pallidum	✓		✓/R
Dryandra lindleyana lindleyana	✓	✓	✓/R
Hypocalymma angustifolium	✓		✓/R
Hakea lissocarpha	✓		✓/R
Hakea trifurcata	✓		✓/R
~~Hypocalymma angustifolium~~	✓		✓/R
Hibbertia commutata	✓		✓/R
Lechenaultia biloba	✓	✓	R
Acacia pulchella pulchella	✓	✓	✓/R
Acacia lateriticola	✓		✓/R
Synaphea gracillima	✓	✓	✓/R
Hakea undulata	—		✓/R
Petrophile striata	—		✓/R
Gompholobium marginatum	—		✓/R
Eriostemon spicatum	—		R
Ursinia anthemoides	—		✓
Stylidium connosum	—		✓
Trachymene pilosa	—		✓
Isopogon asper	—		R

SHRUBS (cont.)	No	Fl	ID
Haemodorum? laxum	✓		✓
Haemodorum discolor	✓		✓
Drosera menziesii	✓		✓
Drosera erythrorhiza	✓		✓/R
~~Drosera pallida??~~	—		—
Hypochaeris glabra	—		✓/R
Centrolepis aristata	—		✓/R
GRASSES Microlaena stipoides			
Briza maxima	✓		✓/R
Aira caryophyllea	✓		✓/R
Briza minor	✓		✓/R
Stipa pycnostachya	✓	✓	✓/R
Danthonia setacea	✓	✓	✓
Avena barbata	✓		✓
Poa drummondiana	✓		✓
Neurachne alopecuroidea	—		✓/R
Tetrarrhena laevis	—		✓/R
HERBS			
Dampiera linearis	✓		✓/R
Stylidium humonianum	✓		✓/R
Stylidium bulbiferum (undet)	✓		✓/R
Tetratheca nuda	✓		✓
Lagenifera huegelii	✓		✓/R
Opercularia apiciflora	✓	✓	✓/R
Centaurium erythraea	✓	✓	✓/R
Chamaescilla corymbosa	✓	✓	✓/R
Thysanotus manglesianus (sterile)	✓		✓
Burchardia congesta	✓		✓/R
Lomandra sonderi		✓	R
Goodenia caerulea	✓	✓	R
Caesia micrantha	✓		✓/R

HERBS (cont.)	No	Fl	ID
Romulea rosea	✓		✓/R
Centrolepis drummondiana	✓		✓
Levenhookia pusilla	✓		✓/R
Honaloscidium honalocarpum	✓		✓
Wahlenbergia preissii	✓		✓
Crassula pedicellosa	✓		
Boya sphaerocephala	✓		✓/R
Patersonia pygmaea	✓		✓/R
Isotoma hypocrateriformis	✓		
Trifolium cernuum	✓	✓	R
Comesperma ciliatum	✓		✓/R
Cassytha pomiformis	✓	✓	✓/R
Lomandra brittanii	✓		✓
Lomandra purpurea	✓		✓/R
Lomandra micrantha	✓		✓/R
Monadenia bracteata	✓		✓
Thelymitra crinita	✓		✓
Caladenia marginata	✓		✓
Microtis media medea	✓		
Craspedia sp ~~variabilis~~	—		✓
Galium sp	—		✓
Levenhookia stipitata	—		✓
SEDGES			
Tetraria capillaris	✓		✓/R
Tetraria octandra	✓		✓/R
Schoenus grammatophyllus	✓	✓	✓/R
Juncus pallidus	✓		
Loxocarya fasciculata	✓		✓/R
Mesomelaena tetragona	—		R

```
Vermicella littoralis                |   **     *****  |        | |     |   |
Cyclodomorphus celatus               |    *    **  *   | ***    | |     |   |
Ctenophorus badius             *     |********     *   | *   *  | |     |***|*
Lerista elegans                ******|*********** ***  |   *    | |     |   |
Morethia lineoocellata          **   |****  *********  |        | |****|   |
Lerista lineopunctulata        ***   |*****   * ******|***     | |     |   |
Lerista aff. praepeditaA             |******  ****     |****** *| |     |   |
Menetia amaura                   *   |  * **  *** * **|    ****| |   *|   |
Arenophryne rotunda                  |      * ****     |       *| |     |   |
Diplodactylus spinigerus             |      ******     |        | |     |   |
Pletholax gracilis                   |      *  * **    |        | |     |   |
Tympanocryptis parviceps             |    * ***        |        | |     |   |
                               ------+-----------------+--------+-+-----+---+---
Ctenotus aff. hanloniA               | *** *           |        | |     |   |
Ramphotyphlops aff. grypusB          | *               |        | |     |   |
Delma butleri                        | ** *         *  |        | |     |   |
Menetia aff. greyiiB                 | ****            |        | |     |   |
Pseudonaja nuchalis                  |*** *            |        | |     |   |
Diplodactylus rankini                | *  *            |        | |     |   |
Demansia psammophis                  |    *            |        | |     |   |
Delma nasuta                         | *            *  |        | |     |   |
Diplodactylus michaelseni            |              *  |        | |     |   |
Pseudechis australis                 |              *  |        | |     |   |
```

CONDT = 3½

Anagalis-like weed – ⊘ ⁿ leaves // C. esculentum

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE Label each plant with plants number, site code, date and plant's name or working name if required

SITE No	STRP13
Date	30.10.96
	14.12.96 (R)

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

No jarrah in plot

Tiny annual grass →

Dampiera alata (ADS)

C. drummondii

TREES	No	Fl	ID
~~Eucalyptus~~			
E. ixiliaei	✓		✓
E. calophylla			✓
SHRUBS			
Xan. acanthostachya	✓		✓
Hypocalymma angustifolium	✓		✓
MALLEES			
Astroloma / Stuchelia	✓		
Comesperma virgatum			✓
Hakea undulata	✓		
Hakea lissocarpha	✓		✓
Hakea trifurcata ~~SHRUBS~~ H. trifurcata	✓		
Opercularia ? echinocephala	✓		✓
Baeckea camphorosmae	✓		✓
Hibbertia commutata	✓		✓
Dampiera linearis	✓		✓
Leucopogon pulchellum	✓		✓
Grevillea seedling	✓		✓
pilulifera			
Hibbertia hypericoides	✓		✓
Allocasuarina humilis			
seedling			✓
Acacia pulchella	✓		✓
Conospedia sp.			
Leucopogon	✓		✓
Gaulis (chickweed)			✓
Briza minor	✓		✓
Aira caryophyllea	✓		✓
Romphobolbium marginatum	✓		✓
Stackhousia (NF)			
H. trifurcata	✓		✓

SHRUBS (cont.)	No	Fl	ID
Synaphaea sp.	✓		✓
Macrozamia reidlii	✓		
Drosera ? palida			
Hibbertia commutata	✓		✓
Neurachne alopecuroides	✓		
Lagenifera huegelii	✓		✓
Caesia micrantha	✓		✓
Burchardia congesta	✓		✓
GRASSES			
Briza maxima	✓		✓
Stipa sp.	✓		✓
Unid. hirsute grass → Poa ?			
Thelymitra crinita	✓		
Dryandra nivea	✓		✓
Drosera erythrorhiza			✓
Romulea rosea	✓		✓
Hypochaeris glabra	✓		
(Dubious) → Centrolepis drummondii OK			✓
HERBS			
Caesia // Burchardia ??			
Arthrochilus ~~Monadenia~~ dis. orchid !	✓		✓
Stylidium brunonianum	✓		✓
Stylidium bulbifavum	✓		✓
Tetratheca ? - speteus ? (nuda)			✓
Centrolepis aristata			
Ursinia anthemoides			
Thysanotus patersonii			✓
Dampiera linearis	✓		✓
Stylidium carnosum			

HERBS (cont.)	No	Fl	ID
Haemodorum sp. –	✓		✓
Cassytha sp.	✓		✓
Melaleuca aff. scabra	✓		✓
Tetratheca laevis	✓		
Avena sp.			✓
Poa sp.			✓
Danthonia sp	✓		✓
Drosera menziesii			✓
Schoenus - blackbase	✓		
Caladenia flava (NF)			✓
Acacia drummondii	✓		✓
Leucopogon pusilla			✓
Loxocarya fasiculata	✓		✓
SEDGES			
Lomandra preissii	✓		✓
Tetraria capillaris	✓		✓
Lepidosperma ~~[illegible]~~	✓		
Tetraria octandra scabrous	✓		✓
Lomandra ~~hastilis~~	✓		
(NF) Nothiercharpia sp.	✓		
Tiny Leucopogon			
Borya sphaerocephala	✓		
4 white petals pink (not lilac)			
Astroloma sp.	✓		
Trachymene pilosa			
Chiamosia corymbosa	✓		✓
Lomandra caespitosa	✓		
Petrophile sciata	✓		
Patersonia lugmaea	✓		✓
Hydrocotyle			

Stipa

Leucopogon

include H. undulata

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

structural description

5. SPECIES PRESCENCE

SITE No	SERP13
Date	14.12.96
	Reserve

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

2m layer

Quartzite

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Dry. nivea	11		
								Danthonia sp	11		
								Eriostemon spicatum			
								Chaemosilla corymbosa	11		
								Lomandra sparsicis	11		
								Hakea undulata			
MALLEES								Goodenia raenulea	11		
								Loxocarya ~~[illegible]~~			
				GRASSES				Isopogon aspera	11		
								~~Synopo~~ fusiculata			
SHRUBS								Synaphea ?petiolaris	4		
								SEDGES			
								Mesomelaena tragorea	✓		11
								Lechenaultia biloba	NF		
								~~Microtis~~ sphaeradenia		11	
								Medicago →	11		
				HERBS				Burchardia congesta	11		
								Pink flw. opp-leaved herb	4		

280° DAM

314° DAM

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA ~~SERPN~~ Serpentine National Park → WEST CORNER **SITE NUMER** SERP14

DATE TRIP 31·10·96 **RECORDERS** AM.

DATE TRIP _____ **RECORDERS** _____

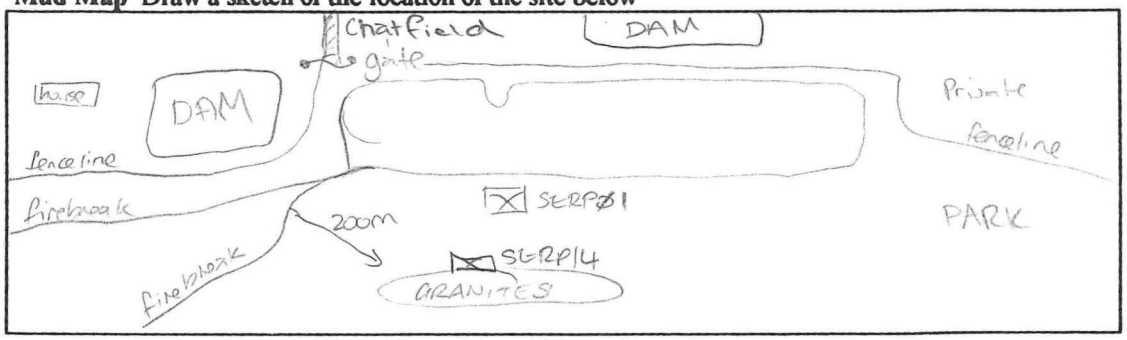
DATE TRIP _____ **RECORDERS** _____

W

1. LOCATION of the QUADRAT

x In remote location on mountain side. WEST FACE of RIDGE NEAR SUMMIT!

Mud Map Draw a sketch of the location of the site below



RIVER ROAD

Road Location	off Chatfield Rd			
Geographic Location	**Latitude** 32 42·9 22	**S Longitude** 116 00 2·5	**E Altitude** 130m	
	GPS ✓	**Accuracy**		
	Map Sheet Jaurdale	PDOP = 7·0		
Photograph	**Name**	**Number** #19 + #20 / Roll #4		

Topographic Position (Circle the correct response)

Upland		***Lower slope***
Upper slope	✓	***Valley***
Midslope		***Washline***

2. SITE DATA Circle the correct response

3° 7

Slope **flat** **gentle** **steep** ***Aspect*** **N NE E SE S SW W NW**

Surface Soil loamy grit - gri ***Depth to Rock*** 0-20cm ***Colour*** DK-MED BROWN

Exposed Rock type granite **% surface cover** 45% **size range** 60-150cm

Litter 65 **% surface cover** **Depth (cm)** 10cm

↳ Allocas. huegliana needles

Bare Ground 0 **% surface cover)**

with Rock - 40%

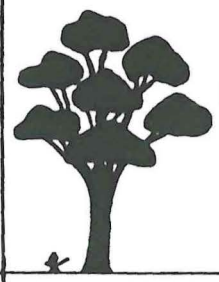
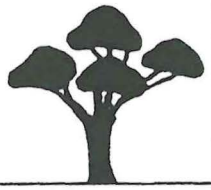
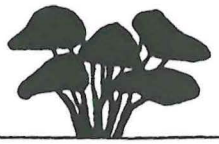
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

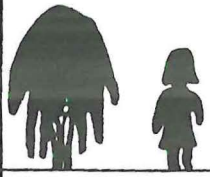
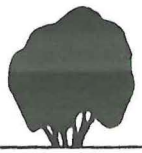
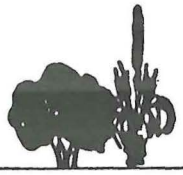
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					30m  10m
COVER CLASS (%)			10-30%		
DOMINANT SPECIES			Allocas. huegliana		

	SHRUBS				SHRUBS
	over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	under 0.5m
LIFE FORM					2m  1m
COVER CLASS (%)			2-10%	30-70%	
DOMINANT SPECIES			Grevillea erebenica	Melt. viridiflora	
				Dodonaea sp.	

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				1m 
COVER CLASS (%)		10%-70%		-
DOMINANT SPECIES		Trachymene sp.		-
		Xanthosia candida		-
		Dioscorea hastifolia		

4. VEGETATION CONDITION

some annual weeds 1-5

Comments

5/5

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERD14
Date	14.12.96 (R)
	31.10.96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Allocasuarina lungeliana	—		✓/R
ADJ: Xanthorrhoea preissii	—		R
Grevillea endlicheriana	✓		✓/R
Dodonaea cevatocarpa	✓		✓/R
Calytrix acutiloba	✓	✓	✓/R
Hibbertia spicata	✓	✓	✓/R
Verticordia perrigera	✓	✓	R
Trymalium ledifolium var rom.	✓	✓	✓/R
Hirbelia spinosa	✓		✓/R
Darwinia citriodora	✓		✓/R
Hovea pungens	✓		✓/R
Micrs. lungeliana	✓		✓/R
Melaleuca radula	✓		✓/R
Acacia			
~~(Baeckea camphorosmae~~	—		✓/R
~~↳ prob. ericoid of Baeckea!)~~			

SHRUBS (cont.)	No	Fl	ID
Briza minor	✓	—	✓/R
GRASSES			
Briza maxima	✓	✓	✓/R
~~NE Danthonia sp.~~		✓	
Aira caryophyllea	✓	✓	✓
Danthonia setacea	✓	✓	✓/R
Danthonia acerosa	✓	✓	✓/R
Ehrharta longiflora	✓	✓	
Stipa compressa	✓	✓	✓
Neurachne alopecuroidea	✓	—	✓/R
~~NE Avena sp~~		—	✓
HERBS			
Pterochaeta paniculata	✓	✓	✓/R
Stylidium bulbifera (uncf)	✓	✓	✓/R
Ursinia anthemoides	✓	✓	✓/R
Tricoryne elatior	✓	✓	✓/R
Caesia micrantha	✓	✓	✓/R
Bartsia trixago	✓	✓	✓/R
Scaevola glandulifera	✓	✓	✓/R
Actinotus leucocephalus	✓	✓	R
Trachymene coerulea	✓	✓	✓/R
Rhodanthe corymbosa	✓	✓	✓
Haemodorum discolor		✓	✓/R
Dioscorea hastifolia	✓		✓/R
Xanthosia candida	✓		✓/R

HERBS (cont.)	No	Fl	ID
Thysanotus manglesianus	✓		✓
Cheilanthes austrotenuifolia	✓		✓/R
Sonchus oleraceus	✓		✓/R
Anagalis arvensis	✓		✓/R
Levenhookia pusilla	✓		✓/R
Daucus glochidiatus	✓		✓
Hypochaeris glabra	✓		✓/R
Borya sphaerocephala	✓		✓/R
Wahlenbergia preissii	✓		✓
Burchardia congesta	✓		✓/R
Arthropodium capillipes	✓		✓/R
Lobelia heterophylla	✓	✓	R
Haemodorum laxum	✓		✓/R
Drosera macrantha	✓		✓
Trachymene pilosa	✓	—	✓
NE Drosera patida		—	✓
~~Drosera~~ NE Drosera menziesii		—	✓
Craspedia variabilis	✓	—	✓
Lotus sp.	✓	—	✓
SEDGES			
Schoenus unispicatus	✓	✓	R
Desmocladus asperus	✓	✓	✓/R
Schoenus nanus	✓		✓

Figure Assem3. 2wa. Assemblage_3 re-ordered according to species co-occurrences at the same quadrats and similarities in the overall composition of the quadrats. Quadrat codes are printed vertically.

```
                                 BWMMMMWGGGGMMMWM|BBBB|GNPNNNWWNN|BBBBCNNCCPNPPKKMM|CECZZZ|EZZ|KKK|BCN|P
                                 BORRDROJJJJDDDOD|OOOO|JAEEEEOOEE|BBBOUAAUUEAEEEERR|ULUUUU|LUU|EEE|BUA|E
                                 1225314235412455|1342|1242151334|24555342335521234|416453|221|345|311|1
                                                  |    |          |                  |      |   |   |   |
Cryptoblepharus plagiocephalus        *          |    |          |                  |      |   |   |   |
Egernia depressa                 **   *          |    |      **  |                  |      |   |   |   |
Denisonia fasciata                    *          |    |          |                  |      |   |   |   |
Gemmatophora longirostris            *           |    |          |                  |  *   |   |   |   |
Pseudophryne guentheri               *           |    |          |                  |      |  *|   |   |
Furina ornata                                    |    |        * |                  |      |   |   |   |
Morethia butleri                                 |    |         *|                  |      |   |   |   |
Morethia obscura                                 |    |         *|                  |      |   |   |   |
Delma aff. australisB                         *  |    |         *|                  |      |   |   |   |
Egernia stokesii                                 |    |  *       |                  |      |   |   |   |
Ctenotus uber                     *              |    |*         |                  |      |   |***|   |
Lerista aff. kendrickiB                          |    |          |                  |      |   | * |   |
Lerista aff. muelleriD                           |    |          |               *  |      |   |***|   |
                                 -----------------+----+----------+------------------+------+---+---+---+-
Diplodactylus aff. pulcherB           **    ** * |    |          |                  |      |   |   | * |
Neobatrachus wilsmorei                  *********|    |          |**                |   **  |   |   |   |
Ctenotus schomburgkii            **   ***********|    |*   *** **|       * *        |      |   |   |   |
Rhynchoedura ornata               * *************|    |    *     |                  |      |   |   |   |
Varanus caudolineatus             **     *    * *|    |       *  |                  |      |   |*  |   |
Pseudonaja modesta                    *   **    *|    |          |                  |      |   |   |*  |
Ctenophorus inermis                *   * *****   |   *|          |               *  |    * |   |   |***|
Eremiascincus fasciolatus                *  **   |    |          |             * **|      |   |   |   |
Varanus gouldii                   **   *         |    |   *      |   *   **      *  |      |   |   | * |
Diplodactylus conspicillatus     *    *  * *     |***|          |               **|      |   |   |   |
Ramphotyphlops hamatus             *       * **  |  * |          |  **           *  |      |   |   |   |
Ramphotyphlops aff. grypusA      * ****   *  *   | * |          |                  |      |   |   |   |
Diplodactylus aff alboguttatusB    ** *    *      |    |*         |                *|      |   |   |   |
Cyclorana maini                    * *  ****      |    |          |               *  |      |   |   |   |
```

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No	SERP14
Date	31-10-96

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

5-leaflet pea

Loxocarya flexuosa ✓ //

TREES	No	Fl	ID
Allocasuarina huegliana	✓		
SHRUBS			
Melaleuca radula/~~[illegible]~~	✓		//
Grevillea enderlicheriana	✓		//
~~MALLEES~~			
Mirbelia ~~purgens~~ spinescens	✓		//
Leucopogon pusilla	✓		//
Burchardia congesta	✓		//
~~SHRUBS~~			
Baeckea camphorosmae		✓	
Hibbertia spicata		✓	//
Tenete leaf Haemodorum		✓	//
NRW acline alopecuroides		✓	
Ursinia anthemoides		✓	//
Calytrix gracilifolia		✓	//
Darwinia citriodora		✓	//

SHRUBS (cont.)	No	Fl	ID
Stylidium bulbiferum	✓		//
Anagalis arvensis	✓		//
Xanthosia candida	✓		//
Drosera pallida			//
Davesia pungens ?			
Hovea pungens	✓		✓
Sonchus oleraceus			//
Thysanotus patersonii (climber)		✓	//
GRASSES			
Avena sp.	✓		//
Briza maxima	✓		//
Briza minor			~~[illegible]~~
Borya sphaerocephala	✓		//
Danthonia sp.	✓		//
Drosera menziesii			//
Do			
HERBS			
Craspedia sp.			
Arthropodium capillipes	✓		//
Dioscorea hastifolia	✓		//
~~Austrotriticum~~			
Cheilanthes austrotenuifolia	✓		//
Caesia micrantha	✓		//
Ursinia anthemoides	✓		//

HERBS (cont.)	No	Fl	ID
Haemodorum sp.	✓		///
Trachymene sp. LARGE			✓
Small white Asteraceae			///
(melotid)	✓		
White Scrophn. (Large)	✓		///
Hypochaeris glabra	✓		///
Trifolium elatior	✓		//
Lepidosperma angustatum	✓		
Grevillea? // Trymalium?	✓		//
Scaevola sp.	✓		//
Wahlenbergia sp.			//
SEDGES			
Rough sedge // Sedge (tere			
Waitzia paniculatum	✓		//
Trachymene pilosa	✓		
Anagalis arvensis	✓		///
Aira cargophyllae			
Vulpia sp.	✓		
Stylidium bulbiferum	✓		
Centaurium / (Isolepis) (small)			

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP14
Date 14.12.96
Rescore

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet

- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID	SHRUBS (cont.)	No	Fl	ID	HERBS (cont.)	No	Fl	ID
								Actinotus sp	/		
								Lantana-like herb	/	T. coerulea	
								Haemodorum sp	/		
								(thin strapleaf			
								(noted before on			
								1st score)	///		
MALLEES								Hibbertia spicata	///		
								Loxocarya flexuosa	///		
				GRASSES				Tryoalium sp (seedling)		///	
								Leptocarpa quadrida		///	
								Borya sphaerocephala		///	
SHRUBS											
								Black-base Schoenus		///	
								SEDGES			
								Podonzea ? Ceratophylla		///	
								Lobelia? NF			
								in bud		///	
								Tricoryne elatior		///	
				HERBS							
								Waitzia paniculatum		///	
								Xanth. preissii (ADJ)			
								Verticordia pennigeria			
								Burchardia congesta			

BUSHLAND PLANT SURVEY RECORDING SHEET 1 - use pencil only

BUSHLAND AREA Falls Road Serpentine Np. **SITE NUMER** SERP 15

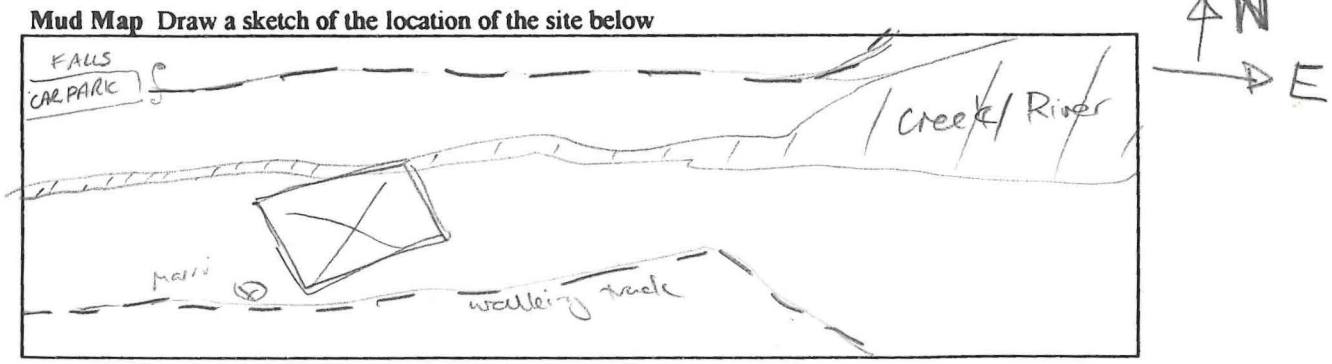
DATE TRIP 8.12.96 **RECORDERS** AM

DATE TRIP _____ **RECORDERS** _____ No Rescore

DATE TRIP _____ **RECORDERS** _____

1. LOCATION of the QUADRAT Creekline Vegetation

Mud Map Draw a sketch of the location of the site below



Road Location Falls Rd Serpentine N.P.

Panaivama Eastings 406988 Nth: 6418350

Geographic Location **Latitude** 32° 22' 11.21" (32 22 11.21) **S** **Longitude** 116° 00' 32.23" (116 00 32.23) (from Map) **E** **Altitude** 55m (map)
GPS **Accuracy**
Map Sheet NO FIX!!

Photograph **Name** **Number** Roll #5 #19,20,21,22

Topographic Position (Circle the correct response)

Upland	*Lower slope*
Upper slope	*Valley*
Midslope	*Washline*

Creekline flat 10

2. SITE DATA Circle the correct response

Slope flat (1.0) gentle steep ***Aspect*** N NE E (0) SE S SW W NW

Surface Soil 10cm ***Depth to Rock*** >1m ***Colour*** Dk Brown (Dk Bn-Blk peat)

Exposed Rock type dolerite % surface cover 0.5% size range 60cm

Litter 80% % surface cover Depth (cm) 10-20cm

Bare Ground 0 % surface cover)

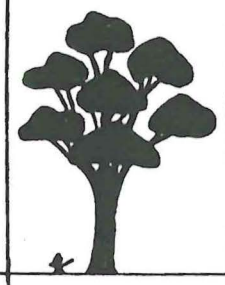
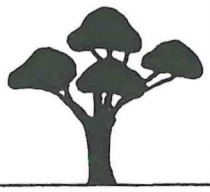
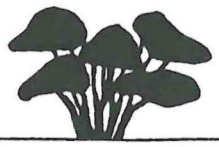
Adapted from 'Bushland Plant Survey' written by B. Keighery (1994) and published by Wildflower Society of WA (Inc). PO Box 64 Nedlands WA 6008

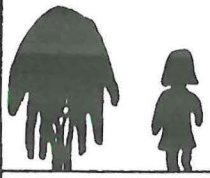
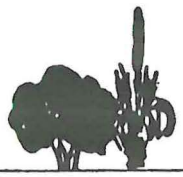
BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

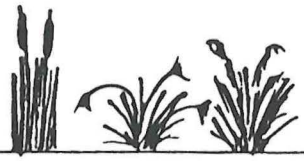
3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below).and dominant species in each layer.

Cover Class	2-10%	10-30%	30 - 70%	over 70%

	TREES			MALLEES	
	over 15m	5 - 15 m	under 5 m	over 8m	under 8m
LIFE FORM					 30m 10m
COVER CLASS (%)		30-70%			
DOMINANT SPECIES		E. radiata			
		E. calophylla			

	SHRUBS over 2m	2m - 1.5m	1.5 - 1m	1 -0.5m	SHRUBS under 0.5m
LIFE FORM	Agonis sp 				 2m 1m
COVER CLASS (%)	30-70%				
DOMINANT SPECIES	Tryp. floribundum				
	Grevillea sp.				
	~~Acacia rhodophylla~~				

	GRASSES	HERBS	SEDGES over 0.5m	under 0.5m
LIFE FORM				 1m
COVER CLASS (%)		10-30%	10-30%	-
DOMINANT SPECIES		Watsonia sp	Gahnia sp.	-
				-

4. VEGETATION CONDITION

Comments 2/5! V. poor condition. Heavily invaded by Watsonia + Blackberry. Remnant creekline vegetation with E. radiata.

K

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP15
Date 8.12.89

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

Nox glabra

TREES	No	Fl	ID
E. ~~[illegible]~~ rudis (?)			///
E. calophylla			///
Melaleuca preissiana?			///
Acacia saligna			//
SHRUBS			
Grevillea sp (creekline)			//
~~MALLEES~~			
Watsonia sp			//
Unid S.African /weed - white flowers)			//
Acacia neurophylla			//
Blackberry			/
SHRUBS			
Trymalium floribundum			\\
Agonis linearifolia			\\\
Creekline myrtaceous			\\\\
↓ / shrub = Astartea			
~~Leptospermum~~			
compact Lepidosperma ? sp			
Whorled leaves			
Unid small			
creekline Melaleuca (NF)			\\\
↳ = Seedling of adult			
Tree!			

SHRUBS (cont.)	No	Fl	ID
Unid Weed - Asteraceae !	\\\		
Tall. Hairy leaves			
=Conyza			
Oxylobium/ Gastrolobium??	\\\		
GRASSES			
Unid grass - NF - L1			
long laminae			
Unid grass flowering			
Tall grass			
Unid avena-like grass			
Unid small grass			
HERBS			
Scaevola sp. (striata?)			
very fine Scaevola			
Unid Watsonia-like Weed			
↳ corms off bulb. = Gladiolus =			
Arctotheca sp		✓	

HERBS (cont.)	No	Fl	ID
Briza maxima			-
Xanthosia candida			\\
Anagallis arvensis			\\
Pelargonium australe	\\		
Adj. Darwinia citriodora'			
SEDGES			
Tall ~~Gahnia?~~ Baumea / Gahnia?	\\		
Smaller Unid Sedge			
Unid - Small inflorescence			\\
Sword sedge Lep			
Unid sedge #3 - Rush-like inflor			\\
↳ cane-like Restio			
Adj. Lepidosperma gladiatum			(IN)

V. tall
Hallo Sten

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

SITE No SERP 75
Date 8.12.96
no rexone

Label each plant with plants number, site code, date and plant's name or working name if required

Record on Sheet
- Column 1 plant name
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

TREES	No	Fl	ID
Melaleuca thaphinophylla	✓		✓
Eucalyptus rudis	✓		✓
Eucalyptus calophylla	—		✓
Beyeria lechenaultii	✓		
Astartea aff. fascicularis	✓		✓
Grevillea manglesii ssp. manglesii	✓		✓
Acacia saligna	✓		✓
Tymelium floribundum flor		✓	✓
Acacia urophylla		✓	✓
Agonis linearifolia		✓	✓
Labichia lanceolata		✓	
Lasiopetalum pterocarpum		✓	
Blackberry = Rubus aff selmeri	—		✓
ADS. Darwinia citriodora	—		✓

SHRUBS (cont.)	No	Fl	ID
GRASSES			
Ehrharta longiflora		✓	✓
Hemarthria uncinata		✓	
Microlaena stipoides		✓	✓
? paspalidium sp sterile iadet		✓	✓
Danthonia setacea	✓		✓
Briza maxima	—		✓
Paspalum dilatatum		✓	
HERBS			
Gladiolus undulatus	✓		✓
Xanthosia candida	✓		✓
Coniza albida	✓	✓	✓
Lobelia alata	✓	✓	○
Sonchus oleraceus	✓	✓	✓
Stylidium calcaratum	✓	✓	○
Trachymene pilosa	✓	✓	○
Watsonia sp	✓	—	✓
~~Scaevola sp? not lobelia?~~			
Anagallis arvensis	✓	—	✓
Pelagonium australe	✓	—	✓

HERBS (cont.)	No	Fl	ID
SEDGES			
Baumea vaginalis	✓		✓
Baumea juncea	✓		✓
Lepyrodia glauca	✓		✓

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Ctenophorus reticulatus        * *  ********** |****|         *|                *|      |   | **|   |*
Diplodactylus squarrosus       ******** *******|****|       ** |* **      *      |      |   |   |** |
Lerista uniduo                 ****************|*** |*** ****  |** * * **      **|      |   |   |   |
Lerista aff. muelleriB         *******    *****|****|  * ******|   *            *|     *|   |   |   |
Ctenophorus scutulatus                    *****| ** | ***** ***|                 |      |   |   |   |
Lerista connivens                  ***       * | * |  ********| *        **     |      |   |   |   |
Heteronotia binoei                 * **    *** |****|*   ******|   *  *     *    |  *   |   |   |   |
Diplodactylus aff. pulcherA     ***            |  * | ** **    |   * **        **|      |   |  *|   |
Menetia aff. greyiiA           *   ** ***   ***|  * |** ** **  |**** **  *       |      |   |* *|   |
Gehyra variegata               ****************| *  |**********|***********  ****|******|   |** |   |
Lerista macropisthopus         *******  * * ***|*** | *********|****     * ******|      |   |** |   |
Diplodactylus strophurus              ** * * * |**  |          |*****************|      |   |   |** |*
Nephrurus levis                *****  *** **  *| ** |*****     |************** **|*** * |*  |   |*  |
Pogona minor                   ** *       ** **|** *| **    ***|*************  **|* *** |***|***|   |
Varanus eremius                ***        **  *|****| ***  **  |***** *    * ****|      |   |   |   |
Vermicella bertholdi                  ***   ***|*** |  *   *   |** * ** *    ****|      |   |   |   |
Pygopus nigriceps                *              |   *| *    *   |                 |      |   |   |   |
Demansia calodera                               |****|          | *** *      *    |      |   |   |   |
Moloch horridus                  *              |*** | *      * |*   ***     *    |    * |   |   |   |*
                               ----------------+----+----------+-----------------+------+---+---+---+-
Ctenotus mimetes                             * | *  |          |                 |      |   |   |   |
Tiliqua occipitalis                            |**  |          |                 |      |   |   |   |
Neobatrachus spC                               |  * |          |  *              |      |   |   |   |
Tiliqua multifasciata                          |  * |          |                 |      |   |   |   |
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