

## APPENDIX 1.1: SYNOPTIC TABLES

For ease of comparison, species have been listed according to the layer in which they were recorded:

gr = grass

hl = herb

s1 = high shrubs, 1-5 m

s2 = low shrubs, 30 cm - 1 m

t3 = low trees, 2-5 m

t2 = small trees, 5-10 m

Values indicate percentage abundance within each association, thus 100 would indicate that the species has been recorded in every relevé assigned to that association.

Within each layer, species have been listed alphabetically, diagnostic species groups for each association have been indicated on the TWINSPAN Tables in Appendix 1.2.

Table 24: Synoptic Table of associations 1 to 9

Vegetation type		1	2	3	4	5	6	7	8	9
Number of samples		4	11	18	24	65	42	89	56	32
Andropogon chinensis	gr		18		4	15		8		
Antheophora pubescens	gr								2	
Antheophora schinzii	gr	100	36		8	12		6	13	6
Aristida adscensionis	gr		46	78	71	88	86	88	48	63
Aristida congesta	gr		27	44	63	43	29	92	63	66
Aristida effusa	gr			6	17	26	33	46	11	34
Aristida hordeacea	gr		9	50	13	19	2	1		
Aristida meridionalis	gr						14	5	2	3
Aristida pilgeri	gr							5	4	6
Aristida rhiniochloa	gr		18	39	42	60	21	70	13	28
Aristida stipitata	gr			6		3		2	5	6
Bothriochloa radicans	gr			39	25	14	2	2	7	
Brachiaria deflexa	gr	75	55		29	9		18	21	19
Brachiaria eruciformis	gr			11	4	8				
Brachiaria malacodes	gr		9	6	21	25	5	8		13
Brachiaria nigropedata	gr						2			
Brachiaria schoenfelderi	gr			6	4	12				
Brachiaria xantholeuca	gr						5			
Cenchrus ciliaris	gr		9	17	33	80	57	26	21	28
Chloris virgata	gr	100	100	94	88	69	60	79	46	34
Craspedorhachis rhodesiana	gr	25								
Cymbopogon plurinodis	gr				13			9	4	
Dactyloctenium aegyptium	gr	50	36		13	2		8	9	
Dactyloctenium giganteum	gr		9							
Dichanthium annulatum	gr				4	6	2			3
Digitaria eriantha	gr						2			
Digitaria seriata	gr								2	
Digitaria velutina	gr		9	6	25	5		20	2	31
Diplachne fusca	gr		9							
Enneapogon cenchroides	gr	25	27	22	46	99	98	87	73	53
Enneapogon desvauxii	gr				4	29	7	1		3
Enneapogon scoparius	gr				4	3		1	5	3
Eragrostis annulata	gr				8	3	12	2		3
Eragrostis biflora	gr			6	8	2	12	20	13	16
Eragrostis cylindriflora	gr	100	91		13	12		39	14	
Eragrostis dinteri	gr					11		7	30	
Eragrostis echinochloidea	gr			6	21	43	19	5		13
Eragrostis jeffreysii	gr	75	18	6	54	40	12	61	18	19
Eragrostis lehmanniana	gr					5	14			
Eragrostis nindensis	gr					8		14	4	

<b>Vegetation type</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
Eragrostis omahekensis	gr					3	14	1	16	
Eragrostis porosa	gr		36	61	54	66	43	73	79	69
Eragrostis rigidior	gr		18		8	8	5	49	71	81
Eragrostis rotifer	gr	50	55	61	92	51	10	47		16
Eragrostis superba	gr				4	2		2	2	
Eragrostis trichophora	gr	50	36	50	83	52	60	76	45	78
Eragrostis viscosa	gr						7	5		28
Fingerhuthia africana	gr					2			2	
Heteropogon contortus	gr				4	2	2	3	4	6
Heteropogon melanocarpus	gr					2	2			
Melinis kallimorpha	gr						2			
Melinis repens s0 grandiflorum	gr			22	42	42	93	85	79	72
Melinis repens s0 repens	gr		9		4	9	5	11	20	22
Microchloa caffra	gr					2	5	12		22
Monelytrum luederitzianum	gr		36	33	21	29	5	14	11	6
Oropetium capense	gr					2				3
Panicum coloratum	gr			61	46	8		10	2	9
Panicum maximum	gr		9		38	2		19	9	9
Panicum stapfianum	gr	50	46	6	17	17		9		
Pogonarthria fleckii	gr		9		17	11	74	83	79	91
Schmidtia kalihariensis	gr							2	2	
Schmidtia pappophoroides	gr		27	17	8	15	12	38	52	22
Setaria pumila	gr		36	6	50	3		5		22
Setaria verticillata	gr		55	11	63	40	14	12	11	6
Sorghum versicolor	gr					2				
Sporobolus festivus	gr					3		3		
Sporobolus fimbriatus	gr		9					1	2	
Stipagrostis hirtigluma	gr					2	2	3		
Stipagrostis uniplumis	gr		18	22	17	68	98	79	96	53
Tragus berteronianus	gr			11	21	25	14	36	32	31
Tragus racemosus	gr					2				
Tricholaena monachne	gr						12		2	3
Triraphis ramosissima	gr						5			
Urochloa brachyura	gr	25	46	44	42	40	31	51	79	59
Urochloa oligotricha	gr				8	5		3		13
Urochloa trichopus	gr				13	8		9		
Willkommia sarmentosa	gr	100								
Acalypha indica	hl				17	26	7	11	11	6
Acalypha segetalis	hl					5				
Acanthosicyos naudinianus	hl						14	11	30	31
Achyranthes aspera v0 aspera	hl	25	55	11	63	32	10	37	5	19
Achyranthes aspera v0 sicula	hl				4	17				
Acrotome fleckii	hl		27		8	14	52	74	13	3
Acrotome inflata	hl		36	11	50	23	5	36	4	53
Alternanthera nodiflora	hl		9							
Amaranthus thunbergii	hl				17	6	7	10	2	
Aptosimum angustifolium	hl			17	42	9	2	46	45	19
Aptosimum decumbens	hl									22
Aptosimum lineare	hl		9	22	8	29	50	18	2	
Becium filamentosum	hl				21	15	2	7		6
Bidens biternata	hl		27	6	50	29	7	10	4	9
Blepharis integrifolia	hl			6	4			14	5	
Blepharis leendertziae	hl			44	25	22	5	14	5	9
Blepharis mitrata	hl		27		4	8	2	12		3
Boophae disticha	hl						2	2	4	
Bulbostylis hispidula	hl						5	19	11	22
Calostephane divaricata	hl					3		1		
Chamaecrista absus	hl								4	3
Chamaecrista biensis	hl						7	2	4	3
Chamaesyce inaequilatera	hl			11	8	14	10	8	25	31
Cheilanthes viridis	hl							1		
Chenopodium amboanum	hl					11	38			
Chenopodium olukondae	hl		27	17	50	17	2	10	9	
Citrullus lanatus	hl						2	2	4	
Cleome angustifolia s0 diandra	hl					2	2			
Cleome elegantissima	hl						2			
Cleome gynandra	hl					2			2	
Cleome hirta	hl						2		4	6
Cleome monophylla	hl	50	36	11	33	6		38	23	28
Cleome rubella	hl				4	2	21	47	48	19
Commelina benghalensis	hl	50	36	11	46	14	19	69	41	69
Commelina livingstonii	hl			11			21	6	4	6
Commelina subulata	hl	50	36						2	
Commicarpus pentandrus	hl					3				
Convolvulus ocellatus	hl							1		
Corallocarpus welwitschii	hl					5				9

<u>Vegetation type</u>		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Corchorus tridens	hl	50	9	6	8	6	2	5		28
Crassula rhodesica	hl		9					2		6
Craterostigma plantagineum	hl					2		6		3
Crotalaria heidmannii	hl					3	7	16	21	9
Crotalaria pisicarpa	hl						17	24	13	6
Crotalaria podocarpa	hl		18	28	4		17	8	38	3
Crotalaria sphaerocarpa	hl						2	1	9	
Crotalaria steudneri	hl		36			2		14		9
Cucumis africanus	hl					2				
Cucumis anguria	hl		36	6	29	26	21	49	14	9
Cucumis kalahariensis	hl						10			
Cucumis sagittatus	hl					2	2			
Cullen obtusifolia	hl					3				
Cyperus amabilis	hl							3		
Cyperus cuspidatus	hl							6		
Cyperus fulgens	hl			72	38	17	7	29	16	25
Cyphostemma cirrhosum	hl							1		
Cyphostemma hereroense	hl					2			2	3
Cyphostemma omburense	hl					2	2			
Dactyliandra welwitschii	hl					6	2	6	4	3
Dicliptera eenii	hl		9				2	1		
Dicoma capensis	hl				4	2	2	8	2	3
Dicoma schinzii	hl					2			2	3
Dicoma tomentosa	hl			6		11	12	38	29	41
Dolichos linearis	hl						2			
Eleusine indica	hl		27			9				
Erucastrum arabicum	hl		27	11	21	35	33	30	4	13
Euphorbia crotonoides	hl					2		2		22
Evolvulus alsinoides	hl		9	11	33	6	69	71	68	78
Felicia smaragdina	hl	25	27			2	55	36	18	38
Flaveria bidentis	hl						2			
Geigeria acaulis	hl				4	26	19	47	14	41
Geigeria ornativa	hl	75	18	6	29	45	60	42	30	3
Gisekia africana	hl		9	6			2	29	63	13
Gisekia pharnacoides	hl						2			
Gladiolus permeabilis	hl						2	3		
Gloriosa superba	hl							1	2	
Harpagophytum procumbens	hl						2	9	27	13
Hebenstretia integrifolia	hl								2	
Helichrysum candolleianum	hl						2	3		
Heliotropium ciliatum	hl						5	1		
Heliotropium marifolium	hl						2	3	2	
Hemizygia petrensis	hl					2	5			
Hermannia modesta	hl		36	17	17	32	38	44	16	34
Hermannia quartiniana	hl				17	3		5	2	3
Hermannia tomentosa	hl					2	12	7	45	9
Hermbstaedtia odorata	hl				13	29	24	20	13	3
Hibiscus calyphyllus	hl					3	43			
Hibiscus fleckii	hl					3	2	20	16	9
Hibiscus palmatus	hl				13	3	5	6	2	13
Hibiscus schinzii	hl					2	2	3	5	
Hirpicium gorterioides	hl		9	6	8	11	19	18	30	16
Indigastrum costatum	hl						2			
Indigofera alternans	hl							5	18	3
Indigofera charlieriana	hl		27	6	8	9	7	14	4	3
Indigofera daleoides	hl						2		2	
Indigofera hochstetteri	hl	25	27	6		17		17	13	13
Indigofera holubii	hl					8		1		6
Indigofera vicioides	hl		18	6	8	2	2	35	11	9
Ipomoea bolusiana	hl			22	8	6	12	19	30	16
Ipomoea coptica	hl	25	27			2		2		
Ipomoea coscinosperma	hl			6		8				
Ipomoea crassipes	hl	25			4			8	25	13
Ipomoea hackeliana	hl						2	2	5	
Ipomoea hochstetteri	hl		18		8			2		
Ipomoea magnusiana	hl									3
Ipomoea oblongata	hl						5	1	5	6
Ipomoea obscura	hl			28	13	8	14	46	39	72
Ipomoea sinensis	hl		36		8	17	38	56	46	28
Jacquemontia tamnifolia	hl							1	2	
Jatropha erythropoda	hl							1	9	9
Justicia anselliana	hl	75	55	11	13			6		
Kalanchoe lanceolata	hl				4	3				6
Kalanchoe rotundifolia	hl							1		3
Kohautia azurea	hl							1		
Kohautia caespitosa	hl				8	11	7	25	13	34



Vegetation type	1	2	3	4	5	6	7	8	9
Kohautia cynanchica	hl			4		10	8	27	9
Kyllinga alba	hl	25	6	4			8	7	13
Kyllingiella microcephala	hl						3		
Kyphocarpa angustifolium	hl		27	25	34	67	67	34	50
Lablab purpureus	hl						1		
Laggera decurrens	hl				5				
Lapeirousia bainesii	hl				2		1	5	
Lapeirousia coerulea	hl		6				1		
Launaea intybacea	hl							2	
Lepidium africanum	hl		11	4			2		
Leucas martinicensis	hl				6	19			
Limeum argute-carinatum	hl	25	46	6	19	14	45	14	16
Limeum fenestratum	hl					2	2	13	
Limeum myosotis	hl				5	2	2	9	3
Limeum sulcatum	hl		6	4	5	10	7	21	3
Lindernia nana	hl						2		
Lindneria clavata	hl				5	19		38	28
Lotononis listii	hl						8		3
Lotononis platycarpa	hl		27	11		19	10	35	13
Macrotyloma axillare	hl						1		
Marsdenia macrantha	hl			4					
Marsilea aegyptiaca	hl		9						
Merremia palmata	hl		6		3	5	2	2	3
Mollugo cerviana	hl			8	6	10	27	4	28
Momordica balsamina	hl		11		6	2	6	4	16
Monandrus squarrosus	hl	75					2		
Monsonia umbellata	hl						2		
Nelsia quadrangula	hl		18	11	33	22	7	37	9
Nerine laticoma	hl		6						
Nidorella resedifolia	hl		36	78	42	57	24	28	32
Ocimum americanum	hl		27	56	54	46	50	76	36
Oldenlandia herbacea	hl	75	18				1		
Ondetia linearis	hl		100	50	38	29	21	54	5
Ophioglossum polyphylla	hl	50	9	6	4	2	5	3	2
Ornithoglossum viride	hl						3	2	3
Osteospermum muricatum	hl		36		4	5			3
Oxalis purpurascens	hl				4	2	2		16
Oxygonum alatum	hl						14	18	3
Oxygonum sinuatum	hl		9	6	8	3	7	20	39
Pegolettia senegalensis	hl				3		2		3
Peliostomum leucorrhizum	hl				35	24	11	9	
Pergularia daemia	hl				3	7		4	6
Peristrophe hereroensis	hl					2	1		
Phyllanthus maderaspatensis	hl		9	28	25	57	48	34	36
Phyllanthus pentandrus	hl		9		8	3	7	21	21
Platycarpha carlinoides	hl				13	6	5	8	
Plectranthus neochilus	hl			4				1	
Pogonarthria squarrosa	hl							1	
Polycarpaea corymbosa	hl								3
Portulaca kermesina	hl	75	27	6	4		2	6	2
Portulaca oleracea	hl			4				5	
Pterodiscus aurantiacus	hl					2		1	2
Raphionacme lanceolata	hl			4	6		11	18	13
Raphionacme velutina	hl		6				2		6
Requienia sphaerospermum	hl					10		18	
Rhynchosia minima	hl			4	3				
Rhynchosia totta	hl				2	2		5	6
Rothia hirsuta	hl							1	
Ruellia sp nova	hl							1	
Ruellioopsis damarensis	hl		17	8				8	9
Schkuhria pinnata	hl		28	21	8			9	3
Selago lepida	hl			25			3		
Senecio eenii	hl							2	
Senna italica	hl				2			2	
Sericorema sericea	hl				9	10	1	2	
Sesamum capense	hl			4	3	7	2	18	3
Sesamum triphyllum	hl					2			
Sesbania macowaniana	hl			4		2			
Sida cordifolia	hl					24	3	9	3
Solanum capense	hl				2	10			
Striga gesnerioides	hl					2			
Tagetes minuta	hl			13			3		
Talinum arnotii	hl	46	44	38	60	50	78	82	63
Talinum caffrum	hl			4					
Talinum crispatum	hl								13
Talinum tenuissimum	hl						1	2	

<b>Vegetation type</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
Tephrosia burchellii	hl						2			
Tephrosia dregeana	hl					2	2	3		3
Tephrosia lupinifolia	hl							1	5	
Tephrosia purpurea	hl			6		2		5	16	6
Trianthema triquetra	hl							1		3
Tribulus terrestris	hl					8	2	8	5	3
Trochomeria debilis	hl					2				
Tylosema esculentum	hl						2			9
Urginea sanguinea	hl					2	10			
Ursinia nana	hl							1		
Vahlia capensis	hl		18							
Vernonia fastigiata	hl	25			4	8			2	
Vernonia poskeana	hl				4	11	5	3	13	59
Waltheria indica	hl					2		6	9	6
Withania somnifera	hl							2		
Xanthium spinosum	hl				4					
Xanthium strumarium	hl				4					
Xenostegia tridentata	hl								9	3
Xerophyta humilis	hl	50	27	11	13	2		23	4	3
Zehneria marlothii	hl				13					
Zornia glochidiata	hl						5		7	3
Acacia erioloba	s1						2		7	
Acacia erubescens	s1					6		2	4	
Acacia fleckii	s1							5	13	34
Acacia hebeclada	s1		18		54	17	14	34	38	22
Acacia hereroensis	s1							1		
Acacia karroo	s1				8					
Acacia mellifera	s1	25	73	100	96	82	71	89	91	78
Acacia reficiens	s1	25	27	61	42	32	31	55	21	63
Acacia senegal	s1						2			
Acacia tortilis	s1		55	61	58	49	10	37	16	9
Albizia anthelmintica	s1				4	8	14	7		34
Boscia albitrunca	s1	25	27	22	4	15	12	45	18	38
Boscia foetida	s1					5	10	2		13
Catophractes alexandri	s1	75	9		17	20	19	35	36	6
Combretum apiculatum	s1							7		25
Commiphora africana	s1					2			2	6
Commiphora angolensis	s1					2			9	22
Commiphora glandulosa	s1	25			4		5	1	2	13
Commiphora tenuipetiolata	s1									6
Cordia sinensis	s1				4					3
Dichrostachys cinerea	s1			22	38	14	43	47	39	97
Ehretia rigida	s1			28	29	14	10	33	29	19
Gossypium triphyllum	s1		9							
Grewia bicolor	s1				17	5	2	2	2	69
Grewia flava	s1		18	11	50	34	7	40	70	66
Grewia flavescens v0 flavescens	s1				4	3	5	7	4	25
Grewia flavescens v0 olukokondae	s1			6	8		2	1	16	34
Grewia retinervis	s1								2	19
Helinus integrifolius	s1						2	1		16
Lonchocarpus nelsii	s1									9
Lycium bosciifolium	s1			6	13	17	7	11	57	
Lycium oxycarpum	s1		18	44	38	22	21	42	25	9
Maerua schinzii	s1					2	2			
Maytenus senegalensis	s1				4					
Mundulea sericea	s1							1	2	
Phaeoptilum spinosum	s1				13	5	2	9		
Rhigozum brevispinosum	s1							8	23	13
Rhus ciliata	s1							1		
Rhus marlothii	s1			6	8	2		1	2	3
Solanum kwebense	s1									3
Tarchonanthus camphoratus	s1		18		46	3		15	23	9
Terminalia prunioides	s1									13
Terminalia sericea	s1								7	
Triaspis hypericoides	s1									3
Ziziphus mucronata	s1		18	22	58	11	2	20	16	9
Abutilon austro-africanum	s2		18	22	17	2	7	20	13	3
Acacia erioloba	s2								4	
Acacia erubescens	s2							1		
Acacia fleckii	s2									9
Acacia hebeclada	s2				4	6	5	7	2	
Acacia hereroensis	s2					2				
Acacia karroo	s2				4					
Acacia mellifera	s2	25	46	50	29	45	60	32	14	19
Acacia reficiens	s2		9		8	14	21	7		9
Acacia tortilis	s2		27	6	8	23	5	8	4	

<u>Vegetation type</u>		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Aizoon virgatum	s2					15	2	1		6
Albizia anthelmintica	s2			6	8	9	33	9	2	3
Asparagus africanus	s2		9		13	14		16	50	13
Asparagus cooperi	s2			6	29	12	2	3	11	25
Barleria lanceolata	s2		9	28	58	42	48	76	32	41
Barleria rigida	s2					2				
Barleria senensis	s2					2	2	2		3
Blepharis obmitrata	s2					11	10	11		3
Boscia albitrunca	s2		27	50	50	29	43	40	34	34
Boscia foetida	s2					6		1		3
Catophractes alexandri	s2					6	10	6	4	
Chascanum pinnatifidum	s2			6	17	45	67	58	46	22
Clerodendrum ternatum	s2								14	38
Clerodendrum uncinatum	s2								2	19
Combretum apiculatum	s2							3		6
Commiphora africana	s2								2	13
Commiphora angolensis	s2						2	1	2	19
Commiphora pyracanthoides	s2			11	4	14	10	18	23	44
Cordia sinensis	s2									3
Crotalaria argyrea	s2							1		
Croton gratissimus	s2									3
Cyphostemma congestum	s2				4	3		20	9	31
Dichrostachys cinerea	s2		9		4	11	19	8	18	19
Ehretia rigida	s2		36	6	29	20	41	26	13	22
Elephantorrhiza elephantina	s2								2	
Eriocephalus pubescens	s2					8		1		
Felicia anthemidodes	s2		9	44	29	15	2	27	36	
Felicia clavipilosa	s2				4	2	2			
Gomphocarpus fruticosus	s2				4	2			2	3
Gossypium triphyllum	s2					5		7	4	3
Grewia bicolor	s2				4	3		1		9
Grewia flava	s2		9	6	4	25	24	42	25	3
Grewia flavescens vO flavescens	s2				8	12	43	11		16
Grewia flavescens vO olukondae	s2							1	4	
Grewia schinzii	s2						7			
Helichrysum tomentosulum	s2									3
Helinus integrifolius	s2				4	2		2	2	9
Helinus spartioides	s2		9			6	5	2	20	
Heliotropium lineare	s2					3				
Heliotropium ovalifolium	s2					6				
Heliotropium steudneri	s2		9	6	25	42	19	39	54	22
Hermannia damarana	s2					3				
Hermannia rautanenii	s2			6	4	2	19	1	11	3
Hibiscus caesius	s2				4		2	3		
Hibiscus calyphyllus	s2		36	39	38	28	14	47	9	41
Hibiscus discophorus	s2							1		
Hibiscus elliotiae	s2			17	8	3	2	38	9	63
Hypoestes forskaoilii	s2			11	13			2		3
Indigofera rautanenii	s2			11	13	26	38	63	48	13
Ipomoea verbascoidea	s2					2		1		38
Kleinia longiflora	s2		18	6		5		3		
Lantana angolensis	s2				21	25	19	18	11	19
Lantana camara	s2					2				
Lantana dinteri	s2					2				
Lessertia benguellensis	s2					2				
Leucas pechuelii	s2			17	13	23	17	3	2	6
Leucosphaera bainesii	s2	100	82	100	75	95	57	65	27	25
Lonchocarpus nelsii	s2							1		6
Lycium bosciifolium	s2					6		6	2	
Lycium eenii	s2		55	83	92	75	81	93	70	28
Lycium oxycarpum	s2		36	33	8	25	43	25	11	3
Maerua juncea	s2			6		2		7	23	
Maerua parvifolia	s2					3	2	2		3
Maytenus senegalensis	s2				4	5				3
Megalochlamys marlothii	s2		9	22	13	8	12	14	2	41
Melhaniania acuminata	s2									6
Melhaniania virescens	s2					6	2			3
Monechma divaricatum	s2					9		2	4	3
Monechma genistifolium	s2			11	17	66	74	25	7	38
Neorautaneniania mitis	s2					2	7	3	46	31
Otoptera burchellii	s2		9	6	21	49	29	26	64	25
Ozoroa paniculosa	s2							2	2	
Pavonia burchellii	s2									
Pechuel-Loeschea leubnitziae	s2		36	39	38	22	7	33	25	25
Petalidium englerianum	s2			6	13	14		3	2	
Petalidium ramulosum	s2					9			7	6



<b>Vegetation type</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
Phaeoptilum spinosum	s2						14	2		
Pollichia campestris	s2		9	6	13	19	5	21	30	16
Ptychobium biflorum	s2			28	8	22	67	87	54	53
Pupalia lappacea	s2		46	39	58	55	74	71	34	63
Rhigozum brevispinosum	s2							1	7	3
Rhus ciliata	s2							2		
Rhus marlothii	s2					2		2		
Seddera suffruticosa	s2					5	19	1	11	16
Sida ovata	s2					3	2	2	2	
Solanum burchellii	s2			33	21	8	5	16	36	9
Solanum catombelense	s2					2		16	4	
Solanum delagoense	s2					3		2		13
Solanum dinteri	s2		9		13	12	2	11		
Solanum incanum	s2			22	17	11	10	21	18	9
Solanum kwebense	s2				13	3	2	1		53
Solanum nigrum	s2					3	2	2		
Solanum supinum	s2				4			6	2	
Tarchonanthus camphoratus	s2		9		8	8		9	7	9
Terminalia prunioides	s2									3
Terminalia sericea	s2								4	3
Tetragonia calycina	s2		9	44	21	14	31	28		
Ziziphus mucronata	s2				13	8	5	10	2	
Acacia erioloba	t3					5	5		57	6
Acacia hebeclada	t3				4		7		4	
Acacia hereroensis	t3							1		
Acacia karroo	t3				4					
Acacia reficiens	t3		27	33	33	19	50	21	21	44
Acacia tortilis	t3		46	61	54	20	2	16	7	
Albizia anthelmintica	t3			11	4	9	41	23	4	50
Boscia albitrunca	t3		91	72	67	39	57	72	80	28
Combretum apiculatum	t3							1		
Combretum imberbe	t3							1	2	
Commiphora tenuipetiolata	t3									6
Lonchocarpus nelsii	t3				4			1	2	66
Ozoroa insignis	t3									3
Terminalia prunioides	t3									6
Terminalia sericea	t3								13	6
Ziziphus mucronata	t3				4		2			
Acacia erioloba	t2					2				
Acacia tortilis	t2		9			9				

**Table 25: Synoptic Table of associations 10-14**

<b>Vegetation type</b>		<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
Number of samples		10	28	30	35	23
Andropogon chinensis	gr		11			4
Andropogon gayanus	gr				3	
Antheophora pubescens	gr	10	36	10	14	22
Antheophora schinzii	gr				3	9
Aristida adscensionis	gr	60	7	30	14	13
Aristida congesta	gr			17	11	
Aristida effusa	gr	40	46	63	60	65
Aristida meridionalis	gr				6	
Aristida rhinichloa	gr	30	43	20	9	22
Bothriochloa radicans	gr		11	27	6	4
Brachiaria deflexa	gr	10		30	37	
Brachiaria malacodes	gr		14	10	6	13
Cenchrus ciliaris	gr	100	71	97	94	52
Chloris virgata	gr			10	9	4
Coelachyrum yemenicum	gr		4			4
Cymbopogon plurinodis	gr				9	
Cynodon dactylon	gr				3	
Dichanthium annulatum	gr					4
Digitaria seriata	gr			3	26	
Digitaria velutina	gr		4	17	29	
Enneapogon cenchroides	gr	100	54	60	74	74

<b>Vegetation type</b>		<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
Enneapogon desvauzii	gr	100	39	17		52
Enneapogon scoparius	gr		64	47	26	30
Eragrostis annulata	gr	50				
Eragrostis biflora	gr		4	3	9	
Eragrostis echinochloidea	gr	90	86	87	77	70
Eragrostis jeffreysii	gr	60	32	17	31	9
Eragrostis nindensis	gr	10	46	17	37	48
Eragrostis pilgeriana	gr				6	
Eragrostis porosa	gr	80		43	51	44
Eragrostis rigidior	gr			3	29	
Eragrostis rotifer	gr			17	14	
Eragrostis superba	gr			7	9	
Eragrostis trichophora	gr		75	90	66	17
Eragrostis viscosa	gr		21	3	9	
Fingerhuthia africana	gr	70	61	10	26	48
Heteropogon contortus	gr		46	13	34	61
Melinis repens s. grandiflora	gr	30	25	37	74	70
Melinis repens s. repens	gr		4	7	20	9
Microchloa caffra	gr		11	10	11	
Monelytrum luederitzianum	gr	10		20		4
Oropetium capense	gr	20	11	3	6	4
Panicum coloratum	gr		4		9	
Panicum maximum	gr			10	20	4
Panicum stapfianum	gr			3		
Pogonarthria fleckii	gr		7	13	40	30
Pogonarthria squarrosa	gr				11	
Schmidtia pappophoroides	gr		21		17	
Setaria pumila	gr		4	17	26	4
Setaria verticillata	gr	30		17	29	9
Sporobolus festivus	gr	10				
Sporobolus fimbriatus	gr			20	6	9
Sporobolus panicoides	gr		18	10	9	17
Stipagrostis hirtigluma	gr	30	93	40	37	78
Stipagrostis uniplumis	gr	100	39	43	43	22
Tragus berteronianus	gr	10	21	47	63	26
Tragus racemosus	gr	10				
Triaraphis schinzii	gr				6	
Urochloa brachyura	gr	10	21	40	60	17
Urochloa oligotricha	gr		11	33	29	4
Urochloa trichopus	gr				6	
Acalypha indica	hl	10		27	17	
Acanthosicyos naudinianus	hl			3		
Achyranthes aspera v. aspera	hl	40		17	46	17
Acrotome fleckii	hl	10			29	
Acrotome inflata	hl			17	17	30
Amaranthus thunbergii	hl				3	
Ancylanthos bainesii	hl			7		
Aptosimum decumbens	hl		46	30	49	13
Aptosimum lineare	hl		7	17	3	
Becium filamentosum	hl		61	63	71	30
Bidens biternata	hl			3	40	9
Blepharis integrifolia	hl			3	6	
Blepharis leendertziae	hl	10	7	17	14	4
Blepharis mitrata	hl		18	7	6	4
Boerhavia coccinea	hl				3	
Boerhavia diffusa	hl			3	14	4
Boophane disticha	hl			3		
Bulbostylis hispidula	hl			7	9	4
Calostephane divaricata	hl	20		3		17
Chamaecrista absus	hl				3	
Chamaecrista biensis	hl			3	6	
Chamaesyce glanduligera	hl	10				
Chamaesyce inaequilatera	hl	20		23	14	



<u>Vegetation type</u>		<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
Chenopodium olukondae	hl		4	3	23	4
Cleome angustifolia s. diandra	hl					9
Cleome hirta	hl				3	
Cleome monophylla	hl			3	6	
Cleome rubella	hl			3	3	
Commelina benghalensis	hl			20	40	
Commelina livingstonii	hl		25	23	9	
Commicarpus pentandrus	hl			17		
Corchorus tridens	hl		25	70	20	9
Crassula rhodesica	hl			3		
Craterostigms plantagineum	hl				3	
Crotalaria heidmannii	hl	10		7		
Crotalaria podocarpa	hl				3	4
Crotalaria steudneri	hl			3		
Cucumis anguira	hl	40		23	6	
Cyperus fulgens	hl		11	7	9	
Cyperus margaritaceus	hl				11	4
Cyphostemma hereroense	hl			10		
Dactyliandra welwitschii	hl				3	
Dicoma capensis	hl	10				
Dicoma schinzii	hl		4		3	
Dicoma tomentosa	hl		4	3	9	9
Erucastrum arabicum	hl	30	4	10	14	
Euphorbia crotonoides	hl				3	
Evolvulus alsinoides	hl	10	14	30	66	4
Felicia smaragdina	hl			7		
Flaveria bidentis	hl				6	
Geigeria acaulis	hl			17	3	
Geigeria ornativa	hl	10	64	30	14	
Geigeria schinzii	hl		7		3	
Gisekia africana	hl				29	9
Gladiolus species	hl				3	
Gloriosa superba	hl			3		
Harpagophytum procumbens	hl			10	3	
Hermannia modesta	hl		4	20	6	
Hermannia quartiniana	hl	20	32	7	23	4
Hermannia tomentosa	hl		14	10	26	4
Hermbstaedtia fleckii	hl				6	9
Hermbstaedtia odorata	hl	10	4	7	3	
Hibiscus fleckii	hl			3	6	
Hibiscus palmatus	hl		14	37	6	
Hirpicium gorterioides	hl	10	14	3	6	
Indigastrum costatum	hl		25	23	9	
Indigofera charlieriana	hl	10	7	10	14	35
Indigofera vicioides	hl			7	11	9
Ipomoea bolusiana	hl		7	13		
Ipomoea crassipes	hl			17		
Ipomoea oblongata	hl			3		
Ipomoea obscura	hl		25	10	11	
Ipomoea sinensis	hl		4	30	17	
Jatropha erythropoda	hl			3		
Justicia anselliana	hl				3	
Kalanchoe lanceolata	hl		11	10		
Kalanchoe rotundifolia	hl					4
Kohautia caespitosa	hl	30	11	13	26	13
Kohautia cynanchica	hl					4
Kyllinga alba	hl			3	17	4
Kyphocarpa angustifolia	hl			10	9	4
Lapeirousia bainesii	hl			3		
Lapeirousia coerulea	hl				3	
Limeum argute-carinatum	hl			3	3	
Limeum myosotis	hl				3	
Limeum sulcatum	hl		14		57	

<u>Vegetation type</u>		<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
Lindneria clavata	hl	30	4	3		
Lotononis platycarpa	hl	10		3		
Mariscus chersinus	hl				3	
Marsdenia sylvestris	hl			3	9	4
Melanthera triternata	hl				6	
Merremia palmata	hl		7	13		
Mollugo cerviana	hl				14	
Momordica balsamina	hl		4	13		
Monechma debile	hl				20	
Nelsia quadrangula	hl			10		
Nidorella resedifolia	hl	10	54	43	23	13
Ocimum americanum	hl	70	32	30	51	44
Ondetia linearis	hl	10				
Ophioglossum polyphyllum	hl			3	3	4
Osteospermum muricatum	hl			7	3	
Oxalis purpurascens	hl				9	
Oxygonum alatum	hl			3	23	
Oxygonum sinuatum	hl			3	3	
Pegolettia pinnatiloba	hl	20				
Pegolettia senegalensis	hl		7	7	9	30
Peliostomum leucorrhizum	hl	80	39	57	9	17
Pentarrhinum abyssinicum	hl				3	
Pentarrhinum insipidum	hl		4		23	
Pergularia daemia	hl	10		7	9	
Phyllanthus maderaspatensis	hl	40	61	47	31	35
Phyllanthus pentandrus	hl		39	10	57	35
Plectranthus neochilus	hl		4	3		4
Polycarpaea corymbosa	hl				3	
Polygala leptophylla	hl		14		3	
Portulaca kermesina	hl		11	10	3	
Portulaca oleracea	hl				6	
Priva auricoccea	hl		4	3		
Pterodiscus aurantiacus	hl				3	
Raphionacme lanceolata	hl		32	33	23	13
Raphionacme velutina	hl		4			
Rhynchosia minima	hl		7	27	29	26
Rhynchosia totta	hl		32	17	43	30
Rhynchosia venulosa	hl			3		4
Ruellia sp nova	hl		64	47	23	9
Ruelliopsis damarensis	hl		25	27	3	
Schkuhria pinnata	hl			3	9	
Senna italica	hl			7	3	
Sericorema sericea	hl	80	46	10	37	52
Sida cordifolia	hl			3	11	4
Stapelia kwebensis	hl		4		3	
Stapelia schinzii	hl			3		
Tagetes minuta	hl				6	
Talinum arnotii	hl	40	11	27	23	
Talinum tenuissimum	hl		7	7	6	
Tephrosia dregeana	hl	20	36	7	23	39
Tephrosia purpurea	hl			7	23	
Tribulus terrestris	hl	10	11	33	31	22
Trochomeria debilis	hl			3		
Tylosema esculentum	hl			3		
Vernonia poskeana	hl			7	11	4
Waltheria indica	hl		4	3	20	
Xanthium spinosum	hl					4
Xerophyta humilis	hl				3	9
Acacia ataxacantha	s1				11	13
Acacia erioloba	s1		4			4
Acacia erubescens	s1		4			
Acacia fleckii	s1		7		26	4
Acacia hebeclada	s1		4	33	3	9

<u>Vegetation type</u>		<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
Acacia karroo	s1				3	17
Acacia mellifera	s1	80	100	93	91	83
Acacia nilotica	s1			3		
Acacia reficiens	s1	70	86	90	63	57
Acacia tortilis	s1	30	11	20	9	
Albizia anthelmintica	s1	10	4			
Aloe littoralis	s1		4	7	9	
Boscia albitrunca	s1			10		4
Boscia foetida	s1	70	7			4
Catophractes alexandri	s1	80	68	13	23	61
Combretum apiculatum	s1				17	74
Combretum hereroense	s1		7	7	34	22
Combretum imberbe	s1				11	4
Commiphora africana	s1				3	17
Commiphora angolensis	s1		4	7		13
Commiphora glandulosa	s1	10	7	7	17	30
Commiphora glaucescens	s1				3	
Croton gratissimus	s1		18		31	78
Dichrostachys cinerea	s1		64	70	83	96
Dombeya rotundifolia	s1				11	39
Ehretia rigida	s1	30	7	23	14	4
Euclea undulata	s1			3	20	30
Grewia bicolor	s1			10	51	17
Grewia flava	s1	60	46	37	34	52
Grewia flavescens v. flavescens	s1		7	37	74	48
Grewia flavescens v. olukokondae	s1			7		
Grewia retinervis	s1				6	9
Helinus integrifolius	s1				9	17
Lycium bosciifolium	s1			7		
Lycium oxycarpum	s1	20		3		
Maytenus senegalensis	s1		4		23	22
Mundulea sericea	s1		4	3	20	30
Olea europaea	s1		4		6	
Ozoroa insignis	s1					13
Ozoroa paniculosa	s1					4
Peltoporum africanum	s1		11		9	
Phaeoptilum spinosum	s1					4
Rhigozum brevispinosum	s1				6	
Rhus ciliata	s1		4			4
Rhus marlothii	s1		32	23	37	70
Solanum kwebense	s1					4
Tarchonanthus camphoratus	s1		43	20	34	30
Terminalia prunioides	s1		7	13	23	74
Tinnea rhodesiana	s1				3	
Triaspis hypericoides	s1					17
Ximenia americana	s1			10	6	9
Ximenia caffra	s1		4	3	9	
Ziziphus mucronata	s1	20	18	40	26	9
Abutilon austro-africanum	s2			7	40	17
Acacia fleckii	s2			7	3	
Acacia hebeclada	s2		4			
Acacia mellifera	s2	40	14	23	3	30
Acacia reficiens	s2	20	4	7	3	
Acacia tortilis	s2	10	7	7		
Aerva leucura	s2		11	3	26	13
Aizoon virgatum	s2	60	32	57	43	39
Albizia anthelmintica	s2		4	20		4
Aloe littoralis	s2		4	10		
Aloe zebrina	s2		14			
Artemisia afra	s2			3		
Asparagus africanus	s2		14	7	9	
Asparagus cooperi	s2		18	40	11	9
Asparagus exuvialis	s2					4



<b>Vegetation type</b>		<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
Barleria lanceolata	s2	70	7	7		
Barleria senensis	s2		36	13	11	9
Blepharis obmitrata	s2		4	10		35
Boscia albitrunca	s2	10	4	20		4
Boscia foetida	s2	10	4	13		9
Catophractes alexandri	s2	20	4	7		9
Cephalocroton mollis	s2		14			
Chascanum pinnatifidum	s2	40	25	40	17	26
Clerodendrum ternatum	s2		68	10	54	30
Clerodendrum uncinatum	s2		4		9	
Combretum apiculatum	s2				14	
Combretum hereroense	s2		50	13	11	13
Combretum imberbe	s2					4
Commiphora africana	s2		11		17	13
Commiphora angolensis	s2		29	10	20	9
Commiphora pyracanthoides	s2	20	36	10	17	17
Croton gratissimus	s2		32	20	17	9
Cyphostemma congestum	s2				11	
Dichrostachys cinerea	s2		7	17	3	17
Dombeya rotundifolia	s2				3	17
Ehretia rigida	s2	30	43	47	11	17
Eriocephalus pubescens	s2	90	71	23	9	26
Euclea undulata	s2		7	3	14	9
Felicia anthemidodes	s2	20	36	37	17	
Gnidia polycephala	s2		7	7	3	
Gomphocarpus fruticosus	s2			13	11	4
Gossypium triphyllum	s2		4		3	4
Grewia bicolor	s2		7	17	9	
Grewia flava	s2	30	43	47	34	17
Grewia flavescens v. flavescens	s2		14	23	23	9
Grewia flavescens v. olukokonda	s2			13		
Helichrysum cerastioides	s2		11			
Helichrysum tomentosulum	s2		14	10	3	30
Helinus integrifolius	s2		18	7	3	
Helinus spartioides	s2	10	39	17	14	13
Heliotropium ovalifolium	s2		21	3	26	
Heliotropium steudneri	s2	10	39	57	26	4
Hermannia damarana	s2	50				
Hermannia rautanenii	s2			7		
Hibiscus caesius	s2	10	54	7	43	52
Hibiscus calyphyllus	s2		29	53	37	17
Hibiscus discophorus	s2			13		
Hibiscus elliotiae	s2			7	14	
Hiernia angolensis	s2		29	7	3	17
Hypoestes forskalii	s2		18	13	17	26
Indigofera rautanenii	s2	20		3	9	
Ipomoea holubii	s2		4			
Ipomoea verbascoidea	s2		7	13	9	
Kleinia longiflora	s2	20	29	13		
Lantana angolensis	s2	20	64	50	63	26
Lantana camara	s2				3	
Lantana dinteri	s2		21	7	11	17
Leucas pechuelii	s2	60	64	67	26	9
Leucosphaera bainesii	s2	100	43	67	3	4
Lonchocarpus nelsii	s2		4			
Lycium bosciifolium	s2			7		
Lycium eenii	s2	70		13		
Lycium oxycarpum	s2	10		13		
Maytenus senegalensis	s2		7	13	17	9
Megalochlamys marlothii	s2	10	14	27	9	
Melhania acuminata	s2		4	3	14	9
Melhania virescens	s2	90	100	77	83	83
Monechma divaricatum	s2	10	46	7	31	22

<b>Vegetation type</b>		<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
Monechma genistifolium	s2	90	21	47	3	4
Monechma spartioides	s2		7		11	9
Mundulea sericea	s2		4		17	9
Neorautanenia mitis	s2		4	7	17	4
Olea europaea	s2				3	
Opuntia species	s2		4	3	6	
Otoptera burchellii	s2	80	71	63	54	52
Ozoroa paniculosa	s2		14		6	
Pavonia burchellii	s2		11	37	43	30
Pechuel-Loeschea leubnitziae	s2			20		
Petalidium engleranum	s2		14	3	11	
Pollichia campestris	s2	10		20	11	
Ptychlobium biflorum	s2	50	64	40	20	17
Pupalia lappacea	s2	30	7	40	43	22
Rhus ciliata	s2		36	10	23	4
Rhus marlothii	s2	10		3		4
Sarcostemma viminalis	s2				3	
Seddera suffruticosa	s2	80	82	53	51	74
Sida ovata	s2	60	25	17	26	13
Solanum burchellii	s2	40	4	13	9	4
Solanum incanum	s2		14	40	37	
Solanum kwebense	s2		4	23	46	22
Solanum nigrum	s2	10				
Solanum supinum	s2		21	10	6	
Tarchonanthus camphoratus	s2		39	23	17	4
Terminalia prunioides	s2		11	20	6	26
Thesium xerophyticum	s2					4
Tinnea rhodesiana	s2		32		3	4
Triaspis hypericoides	s2		7		3	
Ximenia americana	s2				6	
Ziziphus mucronata	s2		18	33	9	13
Acacia erioloba	t3	10	18	17	9	
Acacia karroo	t3				3	
Acacia reficiens	t3	20	32	40	49	70
Acacia tortilis	t3	10	7	3	3	
Albizia anthelmintica	t3	10	4	20		9
Boscia albitrunca	t3	10	7	17	20	13
Combretum apiculatum	t3					13
Combretum hereroense	t3			3		
Combretum imberbe	t3			3	37	26
Commiphora glaucescens	t3				6	9
Commiphora tenuipetiolata	t3					4
Kigelia africana	t3				3	
Kirkia acuminata	t3				6	
Lannea discolor	t3					9
Lonchocarpus nelsii	t3		4	13	9	9
Maytenus senegalensis	t3				3	
Ozoroa insignis	t3					4
Peltophorum africanum	t3		14		17	26
Terminalia prunioides	t3		4		6	9
Ziziphus mucronata	t3				3	