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MAP 1. Vegetation map of the study area

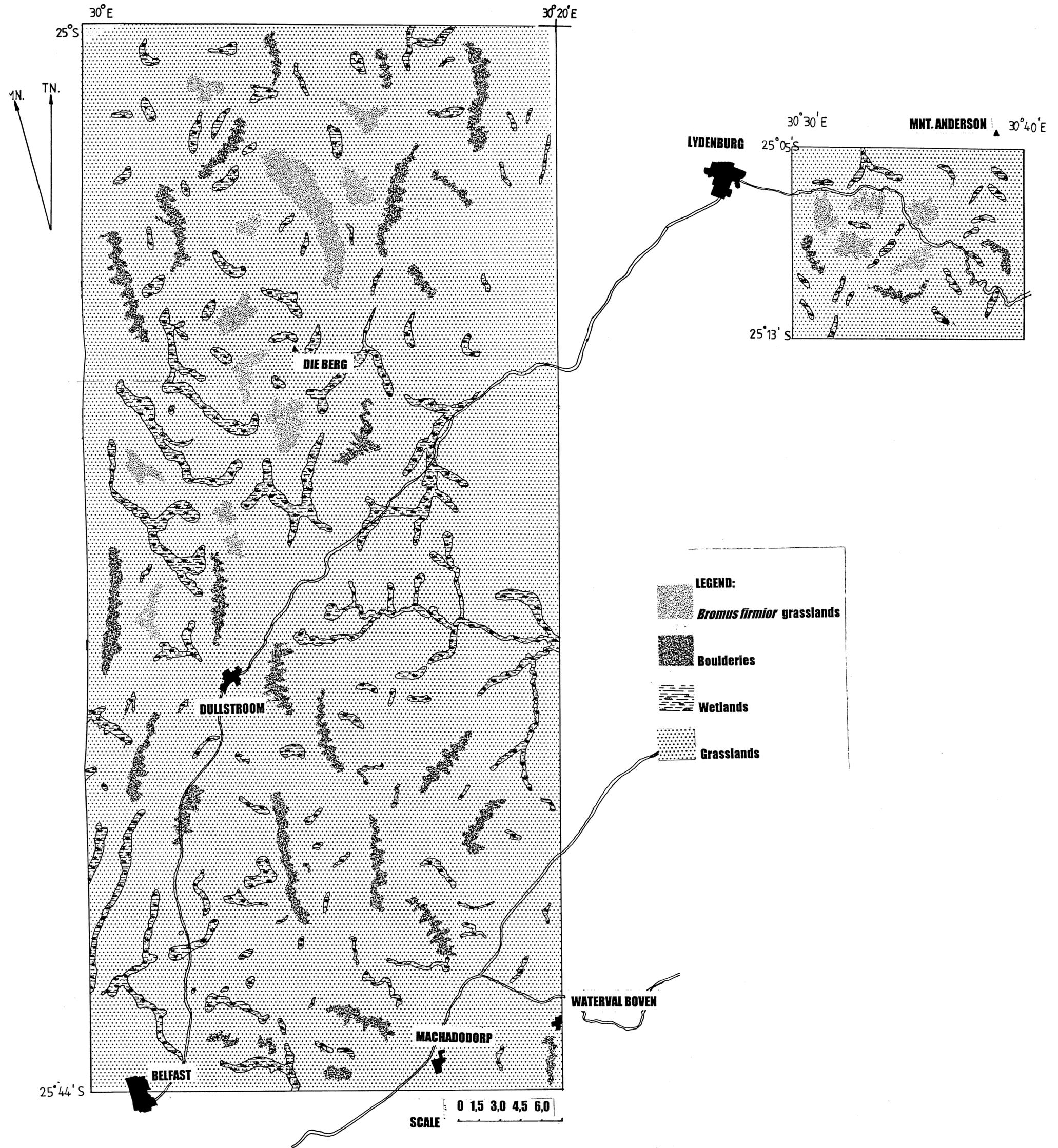


TABLE 1. Phytosociological table showing wetland communities

	1	2	3	4
	1.1. 1.2	2.12.22.32.4	2.5 3.1	3.2 4.14.2
	33111 2321222	130 03 32 130	3113 01321	23221 30 2
	00453 4052480	725 41 00 716	1311 59139	41454 11 1
	75651 3941740	206 19 87 301	3792 24591	48950 19 5
Species Group A				
<i>Ficinia acuminata</i>	++ +			
<i>Dierama pendulum</i>	+++		R	
<i>Mahlenbergia sp.</i>	+++			
<i>Cyrcium racemosum</i>	++ +			
<i>Cyphia stenopetala</i>	++		+	
<i>Brunsvigia radulosa</i>	+ +		R	
<i>Asclepias dissona</i>	+ +			
<i>Vigna vexillata</i>	++ +		R	
<i>Ornithogalum monophyllum</i>	+	+		
<i>Vernonia hirsuta</i>	+ +			
<i>Vernonia sutherlandii</i>	+ +			
<i>Helichrysum pilosellum</i>	+ +			
Species Group B				
<i>Senecio microglossus</i>		+ 1 +		
<i>Polygonum meisnerianum</i>		++		
<i>Kniphofia multiflora</i>		+ +		
<i>Polygonum sp.</i>		A		
<i>Eragrostis cylindriflora</i>		+		1
Species Group C				
<i>Phragmites australis</i>	1B 1B	3A1+1		
<i>Zantedeschia albomaculata</i>	++ +	++ R	++	
<i>Typha capensis</i>	R R	+ 1R	R	
<i>Thelypteris confluens</i>	+ +	++		
<i>Berkheya speciosa</i>	R R	+	RR	
Species Group D				
<i>Geranium multisectum</i>			+++	
<i>Alepidea amatymbica</i>			+++	
<i>Pelargonium alchemilloides</i>			+++	RR
<i>Diclis rotundifolia</i>			+++	
<i>Kyllinga pauciflora</i>		+	+++	
<i>Adiantum capillaris-veneris</i>			+++	
<i>Diheteropogon amplexans</i>			+++	
<i>Aeschynomene rehmannii</i>			+++	
<i>Asclepias cultriformis</i>			+++	
<i>Cephalaria attenuata</i>			+++	
Species Group E				
<i>Scleria dieterlenii</i>			+ 11	
<i>Agrostis gigantea</i>			11	
<i>Sphagnum truncatum</i>			+++	
<i>Senecio striatifolius</i>		+	+	
<i>Rorippa nasturtium-aquaticum</i>			+++	
<i>Aristea sp.</i>			+++	
<i>Disperis cooperi</i>			+++	
<i>Koeleria capensis</i>			+++	
<i>Commelina africana</i>			+++	
<i>Hypoxis rigidula</i>			+++	
<i>Alepidea setifera</i>			+++	
<i>Aloe ecklonis</i>			+++	
<i>Tulbachia nutans</i>			+++	
<i>Helichrysum subglomeratum</i>			+++	
<i>Peucedanum sp.</i>			+++	
Species Group F				
<i>Panicum schinzii</i>			+ 11	
<i>Aponogeton junceus</i>			+++	
<i>Crassula pellucida</i>			+	
<i>Lolium multiflorum</i>			+++	
<i>Habenaria sp.</i>			+++	
Species Group G				
<i>Epilobium salignum</i>			+++ 1	
<i>Sium repandum</i>			+++	
<i>Kniphofia linearifolia</i>			+++	
<i>Holcus lanatus</i>			+++	
<i>Eucomis comosa</i>			+++	
Species Group H				
<i>Nerine angustifolia</i>			+R	
<i>Carex cognata</i>			A	
<i>Disa cooperi</i>			+	
<i>Eulophia ovalis</i>			+	
<i>Bulbine abyssinica</i>			+	
<i>Eulophia leontoglossa</i>			+	
Species Group I				
<i>Carex austro-africana</i>			+ A1AAB1	
<i>Rumex lanceolatus</i>			+++	
<i>Gunnera perpensa</i>			+++	
<i>Festuca caprina</i>			+++	
<i>Satyrium hallackii</i>			+++	
<i>Senecio serratulioides</i>			+++	
<i>Kniphofia fluvialis</i>			+++	
<i>Leersia hexandra</i>			+++	
Species Group J				
<i>Ischaemum fasciculatum</i>			BB11	
<i>Dolichos faiciformis</i>			+++	
<i>Conyza pinnata</i>			+++	
<i>Digitaria eylesii</i>			11	
<i>Pennisetum macrourum</i>			+++	
<i>Digitaria flaccida</i>			+++	
<i>Pycneus sp.</i>			+++	
<i>Alysicarpus rugosus</i>			+++	
<i>Satyrium parviflorum</i>			+++	
<i>Helichrysum opacum</i>			RR	
<i>Habenaria lithophila</i>			RR	
<i>Eragrostis curvula</i>			RR	
<i>Berkheya echinacea</i>			RR	
Species Group K				
<i>Micanthus junceus</i>			B+BB+ 4	
<i>Ranunculus meyeri</i>			4 B	
<i>Ranunculus multifidus</i>			AA 44	
<i>Juncus exsertus</i>			11 +	
Species Group L				
<i>Helichrysum aureonitens</i>			11	
<i>Hypoxis filiformis</i>			+++	
<i>Agrostis eriantha</i>			1 A A	
<i>Asclepias multicaulis</i>			R + +	
<i>Sebaea leiostyla</i>			+++	
<i>Juncus dregeanus</i>			+++	
<i>Oxalis obliquifolia</i>			+	
<i>Anthericum cooperi</i>			R R	
<i>Ficinia sp.</i>			1	
Species Group M				
<i>Buchnera glabrata</i>			+++	
<i>Habenaria clavata</i>			RR	
<i>Disa aconitoides</i>			RR	
<i>Andropogon eucomis</i>			BB	
<i>Chironia purpurescens</i>			++	
Species Group N				
<i>Disa patula</i>			+++ +	
<i>Helictotrichon turgidulum</i>			+++	
<i>Ornithogalum tenuifolium</i>			++R	
<i>Eragrostis capensis</i>			+	
<i>Bulbostylis sp.</i>			++	
<i>Plectranthus sp.</i>			++	
<i>Alepidea gracilis</i>			++	
Species Group O				
<i>Drosera madagascariensis</i>			++ + 111+	
<i>Eragrostis biflora</i>			1B B	
<i>Asclepias capensis</i>			1 1 1111	
<i>Dierama sp.</i>			+++	
<i>Polygala uncinata</i>			++	
<i>Utricularia prehensilis</i>			++	
<i>Justicia petiolaris</i>			+ B	
Species Group P				
<i>Schoenoplectus corymbosus</i>			1 1	
<i>Nariscus keniensis</i>			A+A 1	
<i>Juncus oxycarpus</i>			+++	
<i>Bulbostylis burchellii</i>			+++	
<i>Ledeboeria cooperi</i>			+++	
<i>Gladiolus longicollis</i>			+++	
<i>Denekia capensis</i>			+++	
<i>Satyrium longicauda</i>			+++	
<i>Oidenlandia herbacea</i>			+++	
Species Group Q				
<i>Hypericum aethiopicum</i>			++	
<i>Crassula sarcocaulis</i>			++	
<i>Lelebouria sp.</i>			++	
Species Group R				
<i>Pycneus macranthus</i>				+
<i>Imperata cylindrica</i>				+
<i>Senecio latifolius</i>				+
Species Group s				
<i>Stiburus alopecuroides</i>			A BB	
<i>Monopsis decipiens</i>			++	
<i>Mahlenbergia virgata</i>			++	
<i>Xyris capensis</i>			AA	
<i>Paspalum urvillei</i>			11	
<i>Helictotrichon lalandii</i>			+	
<i>Helictotrichon hirtellum</i>			+	
<i>Cephalaria zeyheriana</i>			+	
Species Group T				
<i>Arundinella nepalensis</i>			11A1	
<i>Fuirena pubescens</i>			3A 3A	
<i>Nariscus congestus</i>			B 3	
<i>Pycnostachys reticulata</i>			113	
<i>Sebaea sedoides</i>			AA BB	
<i>Alloteroopsis sp.</i>			11	
<i>Eleocharis palustris</i>			+++	
<i>Pycneus nitidus</i>			+++	
<i>Mentha aquatica</i>			+++	
<i>Eriocaulon dregei</i>			+++	
<i>Lobelia flaccida</i>			+++	
<i>Aristida aequiglumis</i>			+++	
<i>Helichrysum diffucile</i>			+++	
<i>Helichrysum mundtii</i>			+++	
<i>Pennisetum thunbergii</i>			+++	
<i>Agrostis lachnantha</i>			+++	
<i>Nariscus sumatrensis</i>			+++	
<i>Kyllinga erecta</i>			+++	
<i>Hemarthria altissima</i>			+++	
<i>Setaria pallide-fusca</i>			+++	
<i>Ranunculis baurii</i>			+++	

TABLE 2. Phytosociological table showing bouldery communities

	1		2		3		4
	1.1	1.2	2.1	2.2	3.1	3.2	
	26120	222201	0000000	11101000110	2211	2012	222222
	24284	979986	5336415	30684976205	1180	0090	558955
	08929	760596	7603311	22441862558	3090	9155	717223
Species Group A							
<i>Diospyros whyteana</i>	AAAA1		+	1			+
<i>Cyathea dregei</i>	B++1						
<i>Osmunda regalis</i>	++++						
<i>Erica drakensbergensis</i>	11 +			R		+	
<i>Hypolepis sparsisora</i>	+++						
<i>Pteris catoptera</i>	+++						
<i>Phyllis sp.</i>	1+						
<i>Impatiens sp.</i>	++						
<i>Lycopodium carolinianum</i>	+ +						
<i>Asplenium adiantum-nigrum</i>	+ +						
<i>Agrostis lachnantha</i>	++						
<i>Lycopodium clavatum</i>	+ +	+					
<i>Blechnum australe</i>	+ +					+	
<i>Scabiosa columbaria</i>	+ +						
<i>Pittosporum viridiflorum</i>	+ +		+				
Species Group B							
<i>Pentaschistis natalensis</i>		A A A					B
<i>Rhynchospora brownii</i>		R++					
<i>Cheilanthes hirta</i>		+ ++	+		+		+
<i>Eragrostis biflora</i>		B B					
<i>Erioseperum porphyrovalve</i>		+ 1	+				
<i>Kniphofia splendida</i>		+ +					
<i>Craterostigma wilmsii</i>		+ +			+	+	
<i>Malafria densiflora</i>		+		+			+
Species Group C							
<i>Koeleria capensis</i>	+1	1 1++				+	+
<i>Erica cerinthoides</i>	+1 +	+				+	+
<i>Bromus firmior</i>	+	1 +					+
<i>Lebouria cooperii</i>	+	+ 1					+
<i>Aristea woodii</i>	+	+ 1	+	+			
<i>Cheilanthes multifida</i>	+	+					
<i>Pelargonium dispar</i>	+	+					+
Species Group D							
<i>Scleria dieterlenii</i>			+ ++				
<i>Senecio erubescens</i>			11 1				
<i>Lotononis hirsuta</i>			+ ++			+	
<i>Callilepis leptophylla</i>			++ +				+
<i>Castalis spectabilis</i>			+++				
<i>Ziziphus mucronata</i>			+1				
<i>Ipomoea papilio</i>			+ +		+		+
<i>Senecio latifolius</i>			++ +				
<i>Celtis africana</i>			++ +	+			
<i>Tephrosia longipes</i>	+		++ +				
<i>Nerine rehmannii</i>			+ +				
<i>Kalachoe thyrsiflora</i>			R +				
<i>Lantana camara</i>			+ +				
<i>Cleome maculata</i>			+				+
Species Group E							
<i>Helichrysum miconiifolium</i>				++++	+		
<i>Themeda triandra</i>			+	A5	+1		
<i>Rhus discolor</i>				1	+1		
<i>Anthospermum rigidum</i>			++	+++			+
<i>Leonotis ocyimifolia</i>			+	++			+
<i>Faurea saligna</i>					1		
<i>Helichrysum callicomum</i>				++			+
<i>Pentanisia angustifolia</i>				++			
<i>Crabbea sp.</i>				+			
<i>Euphorbia guenzlii</i>				++			
<i>Gnidia kraussiana</i>				+			+
<i>Tolpis capensis</i>				+			
<i>Cyanotis pachyrrhiza</i>				++			+
<i>Polygala hottentotta</i>					R +		
<i>Cyrtanthus stenanthus</i>		+		+			
<i>Tephrosia glomeruliflora</i>			+	+			
Species Group F							
<i>Brachiaria bovonei</i>			+11	++	1 1 1		
<i>Clerodendrum triphyllum</i>			+++	+	+ 1 +		
<i>Senecio scitrus</i>			++	+	+		
<i>Tristachya rehmannii</i>			1A		A 3 A		B
<i>Protea caffra</i>			B 1	1	11A		1
<i>Acacia caffra</i>			A+	1	B 1 A		
<i>Sporobolus stapfianus</i>			A+		1 A 1		
<i>Raphionacme hirsuta</i>			+		++		+
<i>Acalypha caperonioides</i>			++		+		+
<i>Lippia javanica</i>			++		+		+
<i>Aloe transvaalensis</i>			++		+		+
<i>Englerophytum magalimontanum</i>			1A		+		+
<i>Xysmalobium parviflorum</i>			++		+		+
<i>Berkheya echinacea</i>			+		+		+
<i>Pearsonia sp.</i>			+		1		
<i>Maytenus heterophylla</i>			+		+		
<i>Xerophyta retinervis</i>			++		+		+
<i>Raphionacme zeyheri</i>			+		+		
<i>Hypoxis rigidula</i>			+		++ 1		
<i>Ctenium concinnium</i>					+		
<i>Ledebouria marginata</i>					+		
Species Group G							
<i>Hahtenbergia lycopodioides</i>		+		+		+++	+
<i>Selaginella kraussiana</i>				++		1+A	A
<i>Hahtenbergia virgata</i>				+		+++	+
<i>Helichrysum galpinii</i>						+ 3A	
<i>Coleochloa setifera</i>		A				33	
<i>Brachiaria brizantha</i>						R +	
<i>Aeolanthus buchnerianus</i>						++	
<i>Crassula setulosa</i>		+				++	1
<i>Rumex acetosella</i>				+		++	
<i>Khadia sp.</i>						+	
Species Group H							
<i>Dicoma anomala</i>		+		+		++	
<i>Hypoxis costata</i>				+		++	
<i>Stachys natalensis</i>						++	
<i>Rabdosiella calycina</i>						B	
<i>Hypoxis gerrardii</i>						1	
<i>Isolepis setacea</i>						1	
<i>Lightfootia denticulata</i>						++	
Species Group I							
<i>Digitaria monodactyla</i>						++	+
<i>Aristida junciformis</i>				A	+	A+1	1++
<i>Selago lydenburgensis</i>					++	A11	+
<i>Oldenlandia herbacea</i>						++	+
<i>Laperousia sandersonii</i>						++	+
<i>Erioseperum abyssinicum</i>		+				R+1	++
<i>Helichrysum lepidissimum</i>					++	++	R
<i>Psammotropha myriantha</i>						++	B
<i>Silene burchellii</i>						++	+
<i>Indigofera hedyantha</i>						++	++
<i>Rhynchosia nervosa</i>		+				++	++
<i>Eragrostis sclerantha</i>						++	++
<i>Helichrysum rugulosum</i>					+	+	++
<i>Protasparagus larcinus</i>						++	+
<i>Gladiolus elliotii</i>						+	+
<i>Senecio oxyrlifolia</i>						+	+
<i>Gladiolus calcaratus</i>						+	R
<i>Trachyandra asperata</i>						++	+
<i>Sporobolus discosporus</i>						+	R
<i>Eragrostis pseudosclerantha</i>						+	1
<i>Vernonia oligocephala</i>				+		+	+
<i>Crassula lanceolata</i>						+	+
Species Group J							
<i>Heteropogon contortus</i>		+			1+	1+++	+
<i>Eragrostis nindensis</i>					1	1	+
<i>Monocymbium cereifolium</i>						1	+
<i>Richardia brasiliensis</i>						1 1	+
<i>Guzania krebsiana</i>						++	+
<i>Eriosema simulans</i>						++	+
<i>Pelargonium luridum</i>						++	+
<i>Nonopsis decipiens</i>						++	1
<i>Hemizygia albiflora</i>						+	A
<i>Rhynchosia monophylla</i>						+	+
<i>Rhynchosia totta</i>						+	+
<i>Thesium lobelioides</i>						+	+
<i>Indigofera sanguinea</i>						+	+
<i>Indigofera anguifolia</i>						+	+
<i>Helichrysum oreophilum</i>						+	+
<i>Justicia anagalloides</i>						+	+
Species Group K							
<i>Vernonia natalensis</i>							++ +
<i>Helichrysum albifolium</i>							++ +
<i>Geigeria burkei</i>							++ +
<i>Rhus montana</i>					1		++ +
<i>Schistostephium crateagifolium</i>							++ +
<i>Acalypha peduncularis</i>							++ +
<i>Vernonia sutherlandii</i>							++ +
<i>Berkheya insignis</i>							++ +
<i>Helichrysum pilosellum</i>							++ +
<i>Crassula vaginata</i>							++ +
<i>Peucedanum magalimontanum</i>		+					++ +
<i>Agrostis gigantea</i>							++ +
<i>Hypericum aethiopicum</i>							++ +
<i>Pimpinella transvaalensis</i>					R		++ +
<i>Vernonia hirsuta</i>							++ +
<i>Eragrostis capensis</i>							++ +
<i>Alepeidea longifolia</i>							++ +
<i>Crocosmia paniculata</i>							++ +
<i>Crabbea acaulis</i>							++ +
Species Group L							
<i>Cyanotis speciosa</i>						+++	++ +
<i>Hebenstretia angolensis</i>						+++	++ +
<i>Helichrysum polycladum</i>						+++	++ +
<i>Othonna natalensis</i>						+	++ +
<i>Gnidia splendens</i>						1	1 +
<i>Cymbopogon validus</i>						1	1 +
<i>Aristida sp.</i>						+	1 +
<i>Sutera caerulea</i>						+	++ +
<i>Ledebouria sp.</i>						+	++ +
<i>Pearsonia sessilifolia</i>						+	++ +
<i>Oxalis depressa</i>						+	++ +
<i>Zornia capensis</i>						+	++ +
<i>Lopholaena distacha</i>						+	++ +
<i>Hahtenbergia squamifolia</i>		+				+	++ +
Species Group M							
<i>Pellaea calomelanos</i>						++++	++ +
<i>Commelina africana</i>						+++	++ +
<i>Loudetia simplex</i>						++	++ +
<i>Panicum natalense</i>						++	++ +
<i>Elyonurus muticus</i>						++	++ +
<i>Bulbostylis oritrepes</i>						++	++ +
<i>Hypoxis iridifolia</i>						++	++ +
<i>Lanana edulis</i>						++	++ +
<i>Senecio venosus</i>						++	++ +
<i>Lopholaena corifolia</i>						++	++ +
<i>Eragrostis racemosa</i>						++	++ +
<i>Diheteropogon amplexans</i>						++	++ +
<i>Tetrastelago wilmsii</i>						++	++ +
<i>Rhoississus tridentata</i>						++	++ +
<i>Haplocarpha scaposa</i>						++	++ +
<i>Eulalia villosa</i>						++	++ +
<i>Protea roupelliae</i>						++	

