

The plant ecology of the farm Groothoek, Thabazimbi District. III. An annotated checklist

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ABSTRACT

A checklist of 332 plant species representing 226 genera and 84 families is given for the farm Groothoek, Thabazimbi District, Transvaal. The annotations are growth form, utilization class and voucher specimen.

INTRODUCTION

The plant ecology of the farm Groothoek, which covers 4 000 ha in the Thabazimbi District, was studied in order to supply data on the Sour Bushveld (Acocks 1975) for the natural resource inventory of the Department of Agriculture and Water Supply. This veld type is found mainly in the Waterberg of the Transvaal and little is known about it.

A phytosociological classification of the vegetation in a separate publication (Westfall *et al.* 1985) describes the habitats of most of the plant species and these are therefore not repeated here. The checklist serves as a permanent record of the various plant species encountered during the study, and the utilization class annotations are a preliminary classification of plant species response to management in the study area.

STUDY AREA

The study area has been described in a companion paper (Westfall *et al.* 1985).

METHODS

A reconnaissance of the study area was undertaken from October to December 1979 to carry out ground control of aerial photograph interpretation and to become familiar with the terrain, vegetation and plant species. Fertile herbarium specimens were collected during this period. Sampling of the vegetation began in January 1980 and was completed in May of the same year. Species collected were numbered and later identified by the staff of the National Herbarium. The specimens are housed in the National Herbarium (PRE) of the Botanical Research Institute, Pretoria.

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Nomenclature and arrangement follow Gibbs Russell *et al.* (1984). Collecting numbers (all by R. H. Westfall) are indicated in parentheses. All plant names mentioned in Westfall *et al.* (1985) are reflected in this list, even in cases where nomenclature or taxonomy have since been changed. Taxa without collecting numbers represent sight records.

Utilization class annotations are according to Foran *et al.* (1978):

1) Decreaser species — those with a high basal cover in veld which is in good condition. When veld deteriorates, the basal cover of these species decreases.

2) Increaser I species — those with a low basal cover in veld which is in good condition. When veld is under-utilized, the basal cover of these species increases.

3) Increaser II species — those with a low basal cover in veld which is in good condition. When veld is over-utilized, the basal cover of these species increases.

4) Increaser III species — those with a low basal cover in veld which is in good condition. When veld is selectively utilized, the basal cover of these species increases.

The classification of the plant species into the utilization classes is based on the experience of G. du Plooy, Extension Officer, Department of Agriculture and Water Supply, Thabazimbi (pers. comm.) as well as experience gained during field work. The classification is preliminary and subject to modification as more experience is gained.

RESULTS

A total of 332 plant species representing 226 genera and 84 families, was recorded in the study area (Table 1). An analysis of Table 1 shows that six families (7,14% of the total number of families) belong to Pteridophyta, two families (2,38%) to Gymnospermae, eight families (10,71%) to Monocotyledones and 67 families (79,77%) to Dicotyledones. The Poaceae with 30 genera (13,22% of all genera) and 50 species (15,02% of all species) is the largest family in the study area.

TABLE 1.—Plant families recorded on the farm Groothoek, Thabazimbi District, showing number of genera and species recorded in each family

Family	Genera	Species
PTERIDOPHYTA		
Selaginellaceae	1	1
Schizaeaceae	1	1
Cyatheaceae	1	1
Dennstaedtiaceae	1	1
Adiantaceae	2	3
Aspleniaceae	1	1
GYMNOSPERMAE		
Podocarpaceae	1	1
Cupressaceae	1	1
ANGIOSPERMAE		
<i>Monocotyledones</i>		
Poaceae	30	49
Cyperaceae	6	13
Xyridaceae	1	1
Commelinaceae	2	4
Liliaceae	6	10
Amaryllidaceae	2	2
Hypoxidaceae	1	3
Velloziaceae	1	1
Iridaceae	3	3
<i>Dicotyledones</i>		
Ulmaceae	1	1
Moraceae	1	3
Proteaceae	2	4
Loranthaceae	1	1
Santalaceae	2	2
Olaceae	1	1
Amaranthaceae	4	5
Aizoaceae	2	2
Portulacaceae	2	2
Caryophyllaceae	1	1
Ranunculaceae	2	2
Annonaceae	1	1
Capparaceae	1	1
Crassulaceae	1	1
Pittosporaceae	1	1
Myrothamnaceae	1	1
Rosaceae	1	1
Fabaceae		
Subfamily Mimosoideae	2	5
Caesalpinioideae	2	2
Papilionoideae	14	23
Oxalidaceae	1	1
Erythroxylaceae	1	1
Rutaceae	2	2
Simaroubaceae	1	1
Malpighiaceae	1	1
Polygalaceae	1	3
Euphorbiaceae	6	8
Buxaceae	1	1
Anacardiaceae	3	7
Celastraceae	2	4
Icacinaeae	1	1
Sapindaceae	1	1
Rhamnaceae	1	1
Vitaceae	1	2
Tiliaceae	2	5
Malvaceae	1	1
Sterculiaceae	3	3
Ochnaceae	1	1
Clusiaceae	1	2
Elatinaceae	1	1
Cactaceae	1	1
Thymelaeaceae	2	2
Combretaceae	2	5
Myrtaceae	2	2
Melastomataceae	1	1

Araliaceae	1	2
Apiaceae	1	1
Myrsinaceae	1	1
Sapotaceae	2	2
Ebenaceae	2	5
Oleaceae	3	3
Loganiaceae	3	5
Gentianaceae	1	1
Apocynaceae	3	3
Periplocaceae	1	1
Asclepiadaceae	3	5
Convolvulaceae	1	1
Boraginaceae	1	1
Verbenaceae	4	5
Lamiaceae	4	7
Solanaceae	1	3
Scrophulariaceae	2	2
Selaginaceae	2	3
Acanthaceae	6	6
Rubiaceae	14	16
Dipsacaceae	1	1
Campanulaceae	2	3
Lobeliaceae	1	2
Asteraceae	22	39
Totals	226	332

CHECKLIST

PTERIDOPHYTA

Selaginellaceae

Selaginella dregei (C. Presl) Hieron.

Schizaeaceae

Mohria caffrorum (L.) Desv.; Increaser I.

Cyatheaceae

Cyathea dregei Kunze (*Alsophila dregei* (Kunze) Tryon); Increaser I (1 018).

Dennstaedtiaceae

Pteridium aquilinum (L.) Kuhn; Increaser I.

Adiantaceae

Cheilanthes hirta Swartz; Increaser I (905, 1 004).

Cheilanthes viridis (Forssk.) Swartz (*Pellaea viridis* (Forssk.) Prantl var. *glauca* (Sim) Sim); Increaser I (1 002).

Pellaea calomelanos (Swartz) Link; Increaser I.

Aspleniaceae

Asplenium splendens Kunze; Increaser I (945).

GYMNOSPERMAE

Podocarpaceae

Podocarpus latifolius (Thunb.) R. Br. ex Mirb.; tree; Increaser I.

Cupressaceae

Widdringtonia nodiflora (L.) Powrie; shrub; Increaser I (926).

ANGIOSPERMAE

Monocotyledones

Poaceae

Urelytrum agropyroides (Hack.) Hack. (*U. squarrosum* Hack.); Increaser II.

Elionurus muticus (Spreng.) Kunth; Increaser III.

Miscanthus junceus (Stapf) Gibbs Russell (*Miscanthidium junceum* (Stapf) Stapf); not recorded in sample quadrats; Increaser I (1 006).

Schizachyrium sanguineum (Retz.) Alston; Increaser II.

Andropogon appendiculatus Nees; Increaser II (821).

Andropogon schirensis A. Rich.; Increaser II (913).

Cymbopogon excavatus (Hochst.) Stapf ex Burtt Davy; Increaser I.

Cymbopogon validus (Stapf) Stapf ex Burtt Davy; Increaser II (901, 924, 1 021).

Cymbopogon sp. (817).

Hyparrhenia hirta (L.) Stapf; Increaser II (818).

Monocymbium ceresiiforme (Nees) Stapf; Decreaser (830).

Trachypogon spicatus (L. f.) Kuntze; Increaser I (917).

Heteropogon contortus (L.) Roem. & Schult.; Decreaser.

Diheteropogon amplexans (Nees) Clayton; Increaser II.

- Themeda triandra *Forssk.*; Decreaser.
 Digitaria diagonalis (*Nees*) *Stapf*; Increaser II (982).
 Digitaria eriantha *Steud.* 'subsp. eriantha'; Decreaser (499).
 Digitaria eriantha *Steud.* 'subsp. transvaalensis'; Decreaser (876).
 Digitaria monodactyla (*Nees*) *Stapf*; Increaser II (955).
 Allotriopsis semialata (*R. Br.*) *Hitchc.*; Increaser I (819).
 Brachiaria nigropedata (*Munro*) *Stapf*; Decreaser (878).
 Paspalum scrobiculatum *L.*; Decreaser (838).
 Panicum maximum *Jacq.*; Decreaser.
 Panicum natalense *Hochst.*; Decreaser.
 Setaria lindenberghiana (*Nees*) *Stapf*; Decreaser (981).
 Setaria megaphylla (*Steud.*) *Dur. & Schinz*; Decreaser (993).
 Setaria sphacelata (*Schumacher*) *Moss* var. *sphacelata* (*S. perennis* *Hack.*); Decreaser (837, 1 026, 1 040).
 Rhynchelytrum nerviglume (*Franch.*) *Chiov.* (*R. setifolium* (*Stapf*) *Chiov.*); Decreaser.
 Rhynchelytrum repens (*Willd.*) *C.E. Hubb.*; Decreaser.
 Tristachya biseriata *Stapf*; Increaser II.
 Tristachya rehmannii *Hack.*; Increaser II (849).
 Loudetia simplex (*Nees*) *C.E. Hubb.*; Increaser III (912).
 Aristida aequiglumis *Hack.*; Increaser II (859).
 Aristida canescens *Henr.*; Increaser II (954).
 Aristida diffusa *Trin.* subsp. *burkei* (*Stapf*) *Meld.*; Increaser II (974).
 Aristida junciformis *Trin. & Rupr.* subsp. *junciformis*; Increaser II (820, 956).
 Perotis patens *Gand.*; Increaser II.
 Sporobolus africanus (*Poir.*) *Robyns & Tournay*; Decreaser (1 044).
 Eragrostis capensis (*Thunb.*) *Trin.*; Decreaser (827).
 Eragrostis curvula (*Schrad.*) *Nees*; Increaser II (880).
 Eragrostis gummiiflua *Nees*; Increaser II (835).
 Eragrostis lappula *Nees* var. *divaricata* *Stapf*; Increaser II (822).
 Eragrostis pallens *Hack.*; Increaser II.
 Eragrostis racemosa (*Thunb.*) *Steud.*; Increaser II.
 Microchloa caffra *Nees*; Increaser II.
 Cynodon dactylon (*L.*) *Pers.*; Increaser II (961).
 Pogonarthria squarrosa (*Roem. & Schult.*) *Pilg.*; Increaser II.
 Trichoneura grandiglumis (*Nees*) *Ekman*; Increaser II.
 Enneapogon pretoriensis *Stent*; Increaser II (975).
- Cyperaceae**
 Cyperus albobstriatus *Schrad.*; sedge; Increaser II (949).
 Cyperus denudatus *L. f.*; sedge; Increaser II (812).
 Cyperus leptocladus *Kunth*; sedge; Increaser II (894).
 Cyperus margaritaceus *Vahl*; sedge; Increaser II (888).
 Cyperus obtusiflorus *Vahl*; sedge; not recorded in sample quadrats; Increaser II (782).
 Cyperus rupestris *Kunth*; sedge; Increaser II (775).
 Cyperus sphaerospermus *Schrad.*; sedge; not recorded in sample quadrats; Increaser II (761).
 Mariscus rehmannianus *C.B. Cl.*; sedge; Increaser II (497).
 Bulbostylis boeckeleriana (*Schweinf.*) *Beetle*; sedge; Increaser II (811).
 Bulbostylis burchellii (*Fical. & Hiern*) *C.B. Cl.*; sedge; Increaser II (842).
 Rhynchospora brownii *Roem. & Schult.* (*R. rugosa* (*Vahl*) *Gate*); sedge; not recorded in sample quadrats; Increaser II (762).
 Coleochloa setifera (*Ridley*) *Gilly*; sedge; Increaser II (904).
 Carex spicato-paniculata *C.B. Cl.*; sedge; Increaser II (952, 1 019).
- Xyridaceae**
 Xyris congensis *Buetttn.*; forb; not recorded in sample quadrats; Increaser II (773).
- Commelinaceae**
 Commelina africana *L.* var. *lancispatha* *C.B. Cl.*; forb; Increaser II (931, 967).
 Commelina erecta *L.*; forb; Increaser II (530).
 Commelina undulata *R. Br.*; forb; not recorded in sample quadrats; Increaser II (789).
 Cyanotis pachyrrhiza *Oberm.*; forb; not recorded in sample quadrats; Increaser II (774).
- Liliaceae**
 Littonia modesta *Hook.*; geophyte; Increaser II (887).
 Anthericum galpinii *Bak.* var. *norlindhii* (*Weim.*) *Oberm.*; geophyte; Increaser II (1 013).
 Eriosperrum sp.; geophyte; Increaser II (857).
 Aloe transvaalensis *Kuntze*; succulent; Increaser II.
- Scilla nervosa* (*Burch.*) *Jessop*; geophyte; Increaser II (941).
 Protasparagus buchananii (*Bak.*) *Oberm.* (*Asparagus buchananii* *Bak.*); suffrutex; Increaser II.
 Protasparagus setaceus (*Kunth*) *Oberm.* (*Asparagus setaceus* *Kunth*); suffrutex; Increaser II (1 048).
 Protasparagus suaveolens (*Burch.*) *Oberm.* (*Asparagus suaveolens* *Burch.*); suffrutex; Increaser II.
 Protasparagus virgatus (*Bak.*) *Oberm.* (*Asparagus virgatus* *Bak.*); climber; Increaser II (950).
 Myrsiphyllum asparagoides (*L.*) *Willd.* (*Asparagus asparagoides* (*L.*) *Wight*); climber; Increaser II (1 008).
- Amaryllidaceae**
 Scadoxus puniceus (*L.*) *Friis & Nordal*; geophyte; not recorded in sample quadrats; Increaser II (755).
 Brunsvigia sp., cf. *B. radulosa* *Herb.*; geophyte; Increaser II (927).
- Hypoxidaceae**
 Hypoxis angustifolia *Lam.*; geophyte; Increaser II (723).
 Hypoxis obtusa *Burch.*; geophyte; Increaser II (851).
 Hypoxis rigidula *Bak.*; geophyte; Increaser II (863, 1 028).
- Velloziaceae**
 Xerophyta retinervis *Bak.*; forb; Increaser II.
- Iridaceae**
 Aristea woodii *N.E. Br.*; geophyte; Increaser II (939).
 Tritonia nelsonii *Bak.*; shrub; Increaser II (983).
 Babiana hypogea *Burch.*; geophyte; Increaser II (1 039).
- Dicotyledones**
- Ulmaceae**
 Celtis africana *Burm. f.*; tree; Increaser I.
- Moraceae**
 Ficus ingens (*Miq.*) *Miq.*; tree; Increaser I.
 Ficus sur *Forssk.* (*F. capensis* *Thunb.*); tree; Increaser I (713).
 Ficus thonningii *Blume* (*F. burkei* (*Miq.*) *Miq.*); tree; Increaser II (1 058).
- Proteaceae**
 Faurea saligna *Harv.*; tree; Increaser II (770).
 Protea caffra *Meisn.*; tree or shrub; Increaser II.
 Protea gagedi *J.F. Gmel.*; shrub; Increaser II.
 Protea roupelliae *Meisn.*; tree or shrub; Increaser II.
- Loranthaceae**
 Tapinanthus natalitius (*Meisn.*) *Danser* subsp. *zeyheri* (*Harv.*) *Wiens*; parasitic shrub; not recorded in sample quadrats (715).
- Santalaceae**
 Osyris lanceolata *Hochst. & Steud.*; shrub; Increaser I & II (1 066).
 Thesium racemosum *Bernh.*; forb; Increaser II (836).
- Olacaceae**
 Ximenia americana *L.*; shrub; not recorded in sample quadrats; Increaser I & II (793).
- Amaranthaceae**
 Kyphocarpa angustifolia (*Moq.*) *Lopr.* (*Cyphocarpa angustifolia* *Lopr.*); forb; Increaser II (893, 979).
 Cyathula cylindrica *Moq.*; forb; Increaser II (1 007).
 Achyranthes aspera *L.*; forb; Increaser II (786).
 Achyranthes sicula (*L.*) *All.*; forb; Increaser II (1 016).
 Brayulinea densa (*Willd.*) *Small*; forb; Increaser II (962).
- Aizoaceae**
 Limeum viscosum (*Gay*) *Fenzl* subsp. *viscosum* var. *glomeratum* (*Eckl. & Zeyh.*) *Friedr.*; forb; Increaser II (882).
 Psammotropha mucronata (*Thunb.*) *Fenzl* var. *mucronata*; forb; Increaser II (930).
- Portulacaceae**
 Talinum caffrum (*Thunb.*) *Eckl. & Zeyh.*; forb; Increaser II (490).
 Portulaca kermesina *N.E. Br.*; forb; Increaser II (911).
- Caryophyllaceae**
 Dianthus mooiensis *I. Williams* subsp. *kirkii* (*Burt Davy*) *Hooper*; forb; Increaser II (779).

- Ranunculaceae
Clematis sp.; climber; Increaser II (1 042).
Clematopsis scabiosifolia (DC.) Hutch.; forb; not recorded in sample quadrats; Increaser II (790).
- Annonaceae
Hexalobus monopetalus (A. Rich.) Engl. & Diels; shrub; Increaser II (896).
- Capparaceae
Cleome maculata (Sond.) Szyszyl.; forb; Increaser II (874).
- Crassulaceae
Crassula sarcocaulis Eckl. & Zeyh. subsp. *sarcocaulis*; succulent forb; Increaser II (1 035).
- Pittosporaceae
Pittosporum viridiflorum Sims; tree; Increaser II (1 052).
- Myrothamnaceae
Myrothamnus flabellifolia (Sond.) Welw.; shrublet; Increaser II.
- Rosaceae
Parinari capensis Harv. subsp. *capensis*; shrublet; Increaser II (834).
- Fabaceae
 Subfamily Mimosoideae
Acacia ataxacantha DC.; semi-scandent shrub; Increaser I.
Acacia caffra (Thunb.) Willd.; tree; Increaser II (1 011).
Acacia karroo Hayne; tree; Increaser II.
Elephantorrhiza burkei Benth.; shrub; Increaser II (899, 900).
Elephantorrhiza obliqua Burt Davy var. *glabra* Phill.; shrub; Increaser II (749).
 Subfamily Caesalpinioideae
Burkea africana Hook.; tree; Increaser II (722).
Cassia comosa (E. Mey.) Vogel var. *capricornia* Steyaert; forb; Increaser II (781).
 Subfamily Papilionoideae
Calpurnia sp., cf. *C. aurea* (Ait.) Benth.; tree; Increaser II (1 073).
Lotononis sp.; forb; Increaser II (815).
Pearsonia cajanifolia (Harv.) Polhill subsp. *cryptantha* (Bak.) Polhill; forb; Increaser II (1 033).
Pearsonia sessilifolia (Harv.) Duemmer subsp. *sessilifolia*; forb; Increaser II (850).
Argyrolobium transvaalense Schinz; shrub; Increaser II (861).
Indigofera comosa N.E. Br.; shrublet; Increaser II (1 023).
Indigofera egens N.E. Br.; forb; Increaser II (868).
Indigofera filipes Benth. ex Harv.; forb; Increaser II (960).
Indigofera hedyantha Eckl. & Zeyh.; forb; Increaser II (920).
Indigofera hilaris Eckl. & Zeyh.; forb; not recorded in sample quadrats; Increaser II (746).
Indigofera spicata Forsk.; forb; Increaser II (847).
Psoralea polysticta Benth.; shrub; Increaser II (1 047).
Tephrosia elongata E. Mey. var. *elongata*; forb; Increaser II (918).
Tephrosia longipes Meisn. var. *lurida* (Sond. J.B. Gillett); forb; Increaser II (879).
Mundulea sericea (Willd.) A. Chev.; shrub; Increaser II (734).
Zornia milneana Mohlenbr.; forb; Increaser II (854, 1 038).
Abrus laevigatus E. Mey.; twining undershrub; Increaser II (992, 1 061).
Glycine wightii (Wight & Arn.) Verdc. subsp. *wightii* var. *longicauda* (Schweinf.) Verdc.; twining forb; Increaser II (988).
Erythrina lysistemon Hutch.; tree or shrub; Increaser (989).
Rhynchosia monophylla Schltr.; twining forb; Increaser II (853, 925).
Rhynchosia spectabilis Schinz; undershrub; Increaser II (980).
Rhynchosia totta (Thunb.) DC.; twining forb; Increaser II (966).
Sphenostylis angustifolia Sond.; shrublet; Increaser II (1 031).
- Oxalidaceae
Oxalis depressa Eckl. & Zeyh.; forb; Increaser II (777).
- Erythroxylaceae
Erythroxylum emarginatum Thonn.; shrub; Increaser I (890).
- Rutaceae
Calodendrum capense (L.f.) Thunb.; tree; not recorded in sample quadrats; Increaser I (808).
- Vepris lanceolata* (Lam.) G. Don.; tree or shrub; Increaser I (1 063).
- Simaroubaceae
Kirkia wilmsii Engl.; tree; Increaser I (994).
- Malpighiaceae
Sphegamnocarpus pruriens (Juss.) Szyszyl. var. *pruriens*; climber; Increaser II (1 074).
- Polygalaceae
Polygala amatymbica Eckl. & Zeyh.; forb; Increaser II (745).
Polygala hottentotta Presl; forb; Increaser II (928).
Polygala uncinata E. Mey. ex Meisn.; forb; not recorded in sample quadrats; Increaser II (802).
- Euphorbiaceae
Pseudolachnostylis maprouneifolia Pax; tree or shrub; Increaser II (886).
Phyllanthus incurvus Thunb.; forb; Increaser II (504).
Phyllanthus parvulus Sond.; forb; Increaser II (881).
Croton gratissimus Burch. subsp. *subgratissimus* (Prain) Burt Davy; tree; Increaser II (889).
Acalypha angustata Sond. var. *glabra* Sond.; forb; Increaser II (914).
Clutia pulchella L.; shrub; Increaser I & II (892, 935, 948).
Euphorbia ingens E. Mey. ex Boiss.; tree; Increaser I.
Euphorbia schinzii Pax; succulent herb; Increaser II.
- Buxaceae
Buxus macowanii Oliv.; shrub; Increaser I (987, 1 067).
- Anacardiaceae
Lannea discolor (Sond.) Engl.; shrub; Increaser II (877).
Lannea edulis (Sond.) Engl.; shrublet; Increaser II (875).
Ozoroa paniculosa (Sond.) R. & A. Fernandes; tree or shrub; Increaser II (797).
Rhus dentata Thunb.; shrub; Increaser I & II (1 037).
Rhus dura Schönl.; shrub; Increaser I (873).
Rhus leptodictya Diels; tree or shrub; Increaser I & II.
Rhus pyroides Burch.; shrub; Increaser II (957, 1 054).
- Celastraceae
Maytenus tenuispina (Sond.) Marais; shrub; Increaser II (856, 883).
Maytenus undata (Thunb.) Blakelock; tree; Increaser I & II (971, 1 059).
Pterocelastrus echinatus N.E. Br.; tree or shrub; Increaser II (951).
Pterocelastrus rostratus (Thunb.) Walp.; shrub; Increaser I (1 010).
- Icacinales
Apodytes dimidiata E. Mey. ex Arn. subsp. *dimidiata*; tree or shrub; Increaser I (895, 907, 970).
- Sapindaceae
Pappia capensis Eckl. & Zeyh.; tree; Increaser II (1 053).
- Rhamnaceae
Ziziph mucronata Willd. subsp. *mucronata*; tree or shrub; Increaser II (963).
- Vitaceae
Rhoicissus digitata (L.f.) Gilg. & Brandt; climber or shrub; Increaser I & II (869).
Rhoicissus tridentata (L.f.) Wild & Drum.; shrub; Increaser II (1 025).
- Tiliaceae
Grewia monticola Sond.; shrub; Increaser II (1 071).
Grewia occidentalis L.; shrub; Increaser I & II (809).
Grewia rogersii Burt Davy & Greenway; shrub; not recorded in sample quadrats; Increaser II (738).
Triumfetta rhomboidea Jacq.; shrublet; Increaser II.
Triumfetta sonderi Fical. & Hiern; forb; Increaser II (852).
- Malvaceae
Pavonia columella Cav.; forb; Increaser II (1 020).
- Sterculiaceae
Dombeya rotundifolia (Hochst.) Planch. var. *rotundifolia*; tree; Increaser I & II.
Hermannia depressa N.E. Br.; forb; Increaser II (1 072).
Waltheria indica L.; forb; Increaser II (485).
- Ochnaceae
Ochna pulchra Hook.; tree or shrub; Increaser I & II.

- Clusiaceae**
Hypericum aethiopicum *Thunb.* subsp. *sonderi* (*Bred.*) *N.K.B. Robson*; forb; Increaser II (841).
Hypericumalandii *Choisy*; forb; Increaser II (831).
- Elatinaceae**
Bergia decumbens *Planch. ex Harv.*; forb; Increaser II (816, 826).
- Cactaceae**
Opuntia sp.; succulent shrub; exotic; Increaser II.
- Thymelaeaceae**
Gnidia caffra *Meisn.*; forb; not recorded in sample quadrats; Increaser II (798).
Passerina montana *Thoday*; ericoid shrub; Increaser I (756).
- Combretaceae**
Combretum apiculatum *Sond.*; tree; Increaser II.
Combretum moggii *Exell*; shrub; Increaser I (891, 998).
Combretum molle *R. Br. ex G. Don*; tree; Increaser II.
Combretum zeyheri *Sond.*; tree; Increaser II.
Terminalia sericea *Burch. ex DC.*; tree; Increaser II.
- Myrtaceae**
Syzygium guineense (*Willd.*) *DC.*; tree; not recorded in sample quadrats; Increaser I & II (729).
Heteropyxis natalensis *Harv.*; tree; Increaser I & II (848).
- Melastomataceae**
Dissotis debilis (*Sond.*) *Triana* var. *debilis* forma *debilis*; forb; not recorded in sample quadrats; Increaser I & II (765).
- Araliaceae**
Cussonia paniculata *Eckl. & Zeyh.*; tree; Increaser II (1029).
Cussonia spicata *Thunb.*; tree or shrub; Increaser I & II (978).
- Apiaceae**
Heteromorpha arborescens (*Spreng.*) *Cham. & Schlechtd.*; shrub; Increaser II (1068).
- Myrsinaceae**
Myrsine africana *L.*; shrub; Increaser I & II (946).
- Sapotaceae**
Bequaertiodendron magalismontanum (*Sond.*) *Heine & J.H. Hemsl.*; tree or shrub; Increaser I & II.
Mimusops zeyheri *Sond.*; tree or shrub; Increaser II (910).
- Ebenaceae**
Euclea crispa (*Thunb.*) *Guerke* var. *crispa*; tree or shrub; Increaser I & II (518).
Euclea linearis *Zeyh. ex Hiern*; shrub; Increaser II.
Euclea natalensis *A. DC.*; shrub; Increaser II (959, 1049).
Diospyros lyciodes *Desf.* subsp. *guerkei* (*Kuntze*) *De Winter*; shrub; Increaser II (958, 1050).
Diospyros whyteana (*Hiern*) *F. White*; shrub; Increaser II (944).
- Oleaceae**
Schrebera alata (*Hochst.*) *Welw.*; tree; Increaser II (972).
Olea europaea *L.* subsp. *africana* (*Mill.*) *P.S. Green*; tree or shrub; Increaser II (999, 1065).
Jasminum multipartitum *Hochst.*; climbing shrub; Increaser I (754).
- Loganiaceae**
Strychnos cocculoides *Bak.*; tree; Increaser II.
Strychnos madagascariensis *Poir.*; tree; Increaser II (973).
Strychnos pungens *Soler.*; tree; Increaser II (872).
Nuxia congesta *R. Br. ex Fresen.*; tree; Increaser II (909, 997).
Buddleja salviifolia (*L.*) *Lam.*; tree; Increaser I (1017).
- Gentianaceae**
Chironia purpurascens (*E. Mey.*) *Benth. & Hook. f.* subsp. *humilis* (*Gilg*) *Verdoorn*; forb; Increaser II (829).
- Apocynaceae**
Acokanthera oppositifolia (*Lam.*) *Codd*; tree or shrub; Increaser II (1057).
Landolphia capensis *Oliv.*; shrub; Increaser II (866).
Diplorhynchus condylocarpon (*Mull. Arg.*) *Pichon*; tree or shrub; Increaser II (544).
- Periplocaceae**
Cryptolepis oblongifolia (*Meisn.*) *Schltr.*; shrub; Increaser II.
- Asclepiadaceae**
Pachycarpus schinzianus (*Schltr.*) *N.E. Br.*; forb; Increaser II (846).
Asclepias fruticosa *L.*; forb; Increaser II (711).
Asclepias sp.; forb; Increaser II (828).
Secamone alpinii *Schultes*; shrubby climber; Increaser II (953).
Secamone filiformis (*L.f.*) *J.H. Ross*; shrubby climber; Increaser I (991).
- Convolvulaceae**
Ipomoea bathycolpos *Hallier f. var. bathycolpos*; forb; Increaser II (858).
- Boraginaceae**
Ehretia rigida (*Thunb.*) *Druce*; shrub; Increaser II (1069).
- Verbenaceae**
Lantana rugosa *Thunb.*; shrub; Increaser I & II (509).
Lippia javanica (*Burm. f.*) *Spreng.*; shrublet; Increaser II (840, 1041).
Vitex pooara *Corbishley*; tree or shrub; Increaser II (885).
Vitex rehmannii *Guerke*; tree or shrub; Increaser II (538).
Clerodendrum glabrum *E. Mey.*; tree; Increaser II (1070).
- Lamiaceae**
Leonotis leonurus (*L.*) *R. Br.*; forb; Increaser II.
Stachys natalensis *Hochst.* var. *galpinii* (*Briq.*) *Codd*; forb; not recorded in sample quadrats; Increaser II (740).
Stachys natalensis *Hochst.* var. *natalensis*; forb; Increaser II (862, 969).
Plectranthus fruticosus *L'Hérit.*; forb; Increaser II (947).
Plectranthus verticillatus (*L.f.*) *Druce*; forb; Increaser II (990).
Plectranthus sp.; undershrub; Increaser II (906).
Becium obovatum (*E. Mey. ex Benth.*) *N.E. Br.*; forb; Increaser II (902).
- Solanaceae**
Solanum giganteum *Jacq.*; forb; Increaser II (1009).
Solanum panduraeforme *E. Mey.*; forb; Increaser II (1051).
Solanum rigescens *Jacq.*; forb; not recorded in sample quadrats; Increaser II (771).
- Scrophulariaceae**
Nemesia fruticans (*Thunb.*) *Kuntze*; forb; Increaser II (929).
Sutera palustris *Hiern*; forb; Increaser II (1022).
- Selaginaceae**
Selago capitellata *Schltr.*; forb; Increaser II (919).
Striga bilabiata (*Thunb.*) *Kuntze*; parasitic forb (968).
Striga gesnerioides (*Willd.*) *Vatke ex Engl.*; parasitic forb (984).
- Acanthaceae**
Chaetacanthus costatus *Nees*; shrublet; Increaser II (933).
Ruellia cordata *Thunb.*; forb; Increaser II (860).
Barleria bremekampii *Oberm.*; shrublet; Increaser II (1005).
Blepharis subvolubilis *C.B. Cl.* var. *subvolubilis*; forb; Increaser II (976).
Crossandra greenstockii *S. Moore*; shrublet; not recorded in sample quadrats; Increaser II (731).
Hypoestes verticillaris (*L.f.*) *R. Br. ex C.B. Cl.*; forb; Increaser II (995).
- Rubiaceae**
Oldenlandia herbacea (*L.*) *Roxb.*; forb; Increaser II (763).
Tarenna supra-axilaris (*Hemsl.*) *Brem.* subsp. *barbertonensis* (*Brem.*) *Bridson* (*T. barbertonensis* (*Brem.*) *Brem.*); shrub; Increaser II (1000).
Gardenia volkensii *K. Schum.* subsp. *volkensii* (*G. spatulifolia* *Stapf & Hutch.*); shrub; Increaser I & II (884, 1046).
Rothmannia capensis *Thunb.*; tree; Increaser I (1051).
Tricalysia lanceolata (*Sond.*) *Burt Davy*; tree; Increaser I (1060).
Pentanisia angustifolia (*Hochst.*) *Hochst.*; forb; Increaser II (943).
Vangueria infausta *Burch.* subsp. *infausta*; shrub; Increaser II (772).
Pygmaeothamnus zeyheri (*Sond.*) *Robyns* var. *zeyheri*; perennial shrublet with woody rootstock; Increaser II (832, 897).
Tapiphyllum parvifolium (*Sond.*) *Robyns*; shrub; Increaser II (871).
Canthium gilfillanii (*N.E. Br.*) *O.B. Miller*; shrub not recorded in sample quadrats; Increaser I (717).

- Canthium huillense* *Hiern*; shrub; Increaser II (996).
Pachystigma triflorum *Robyns*; shrub; Increaser I & II (870).
Fadogia monticola *Robyns*; shrublet; Increaser II (799).
Anthospermum rigidum *Eckl. & Zeyh.*; forb; Increaser II (855).
Richardia brasiliensis *Gomez*; procumbent forb; Increaser II (843).
Richardia scabra *L. (Borreria scabra)* (*Schumach. & Thonn.* K. Schum.); forb; Increaser II (1 043).

Dipsacaceae

- Scabiosa columbaria* *L.*; forb; Increaser II (825).

Campanulaceae

- Wahlenbergia caledonica* *Sond.*; forb; Increaser II (922).
Wahlenbergia lycopodioides *Schltr. & V. Brehm.*; forb; Increaser II (938).
Lightfootia paniculata *Sond.*; forb; not recorded in sample quadrats; Increaser II (750).

Lobeliaceae

- Lobelia aquaemontis* *E. Wimm.*; forb; Increaser II (940).
Lobelia decipiens *Sond.*; forb; Increaser II (814).

Asteraceae

- Vernonia galpinii* *Klatt*; shrublet; Increaser II (977, 1 012).
Vernonia natalensis *Sch. Bip.*; shrublet; Increaser II (865, 1 027).
Vernonia oligocephala (*DC.*) *Sch. Bip. ex Walp.*; shrublet; Increaser II (844).
Vernonia staehelinoides *Harv.*; forb; Increaser II (965, 1 032).
Felicia muricata (*Thunb.*) *Nees* subsp. *strictifolia* *Grau*; forb; Increaser II (803).
Conyza scabrida *DC.*; forb; Increaser II (1 055).
Brachylaena rotundata *S. Moore*; shrub; Increaser II (903).
Gnaphalium filagopsis *Hilliard & Burt* (*Amphidoxa filaginea* *Fical. & Hiern*); forb; Increaser II (824).
Helichrysum caespitium (*DC.*) *Harv.*; forb; Increaser II (751).
Helichrysum cephaloideum *DC.*; forb; Increaser II (937).
Helichrysum kraussii *Sch. Bip.*; shrublet; Increaser II.
Helichrysum mimetes *S. Moore*; forb; Increaser II (923).
Helichrysum nudifolium (*L.*) *Less.* var. *nudifolium*; forb; Increaser II (839).
Helichrysum uninervium *Burt* *Davy*; forb; Increaser II (778).
Helichrysum sp.; forb; Increaser II (921).
Stoebe vulgaris *Levy*; ericoid shrublet; Increaser III (724).
Geigeria burkei *Harv.* subsp. *burkei* var. *burkei*; shrublet; Increaser II (833).
Geigeria burkei *Harv.* subsp. *burkei* var. *zeyheri* (*Harv.*) *Merxm.*; shrublet; Increaser II (934).
Geigeria elongata *Alston*; forb; Increaser II (898).
Bidens pilosa *L.*; exotic forb; Increaser II.
Schkuhria pinnata (*Lam.*) *Cabr.*; forb; exotic; Increaser II (964).
Tagetes minuta *L.*; forb; exotic; Increaser II.
Brachymeris bolusii *Hutch.*; shrublet; Increaser II (1 014).
Lopholaena coriifolia (*Sond.*) *Phill. & C.A. Sm.*; shrub; Increaser II (1 036).
Cineraria lobata *L'Hérit.*; forb; Increaser II (932).

- Senecio barbertonicus* *Klatt*; shrub; Increaser II (1 003).
Senecio conrathii *N.E. Br.*; forb; Increaser II (823).
Senecio erubescens *Ait.* var. *crepidifolius* *DC.*; forb; Increaser II (813).
Senecio oxyriifolius *DC.*; forb; Increaser II (1 024).
Senecio pleistocephalus *S. Moore*; shrub; Increaser II (1 056).
Senecio ruwenzoriensis *S. Moore*; forb; Increaser II (1 034).
Senecio venosus *Harv.*; forb; Increaser II (864).
Euryops pedunculatus *N.E. Br.*; shrub; Increaser II (916).
Osteospermum jucundum (*Phill.*) *T. Norl.*; forb; Increaser II (942).
Ursinia nana *DC.*; forb; Increaser II (936).
Gazania krebiana *Less.* subsp. *serrulata* (*DC.*) *Roessl.*; forb; Increaser II (804).
Berkheya carlinopsis *Welw. ex O. Hoffm.* subsp. *magalimontana* (*H. Bol.*) *Roessl.*; forb; Increaser II (908).
Dicoma anomala *Sond.* subsp. *anomala*; forb; Increaser II (915).
Gerbera ambigua (*Cass.*) *Sch. Bip.*; forb; Increaser II (1 030).

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UITTREKSEL

'n Kontrolelys van 332 plantspesies, wat 226 genusse en 84 families verteenwoordig, word gegee vir die plaas Groothoek, distrik Thabazimbi, Transvaal. Groeivorm, benuttingsklas en kontrole-eksemplaar word aangetoon.

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