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Ferns and flowering plants of Klaserie Private Nature Reserve, eastern Transvaal: an annotated checklist

N. ZAMBATIS*

Keywords: checklist, eastern Transvaal, Klaserie, Savanna Biome

ABSTRACT

An annotated checklist of the plant taxa of the Klaserie Private Nature Reserve, eastern Transvaal Lowveld, is presented. Of the 618 infrageneric taxa recorded, six are pteridophytes and the remainder angiosperms. Of these, 161 are monocotyledons and 451 dicotyledons. Five of the latter are currently listed in the Red Data List of the Transvaal, two of which are first records for the Transvaal Lowveld. The vegetation of the reserve shows strong affinities with the Savanna Biome, and to a lesser degree, with the Grassland Biome.

UITTREKSEL

'n Geannoteerde kontrolelys van die planttaksons van die Klaserie Privaatnatuurreservaat, Oos-Transvaalse Laeveld, word gegee. Van die 618 taksons wat aangeteken is, is ses pteridofiete en die res angiosperme, waarvan 161 monokotiele en 451 dikotiele is. Vyf van laasgenoemde taksons word tans in die Rooidatalys van Transvaal ingesluit. Twee hiervan verteenwoordig eerste rekords vir die Transvaalse Laeveld. Die plantegroei van die reservaat toon 'n sterk affiniteit tot die Savanne Bioom en, tot 'n mindere mate, met die Grasveld Bioom.

INTRODUCTION

No comprehensive plant list of Klaserie Private Nature Reserve (KPNR) has previously been produced. Witkowski (1983) recorded a total of 124 taxa, whereas this list comprises a total of 618 taxa. Additions to this list will no doubt be made in the future. Apart from free-ranging exotic taxa, no other exotic (or indigenous) taxa planted in gardens were included. No algae, mosses, or fungi have been collected or recorded by the author nor, as far as is known, by any other collectors.

STUDY AREA

The Klaserie Private Nature Reserve (KPNR) is situated between the town of Hoedspruit and the Kruger National Park (KNP), with which it shares a common boundary of some seven kilometres. To the east lie the Timbavati, Umbabat, and Ntsiri Private Nature Reserves (Figure 1).

The reserve extends from 24°02′ to 24°16′S, and 31°03′ to 31°19′E and thus falls within the following quarter degree square grids: 2431AA, 2431AB, 2431AC, and 2431AD.

The area was proclaimed as a nature reserve in 1972 and is jointly owned by 107 members. Prior to its proclamation, the area was partly utilized for cattle farming. Diseases and predators, however, led to the abandonment of this form of land use.

With a surface area of 62 818 ha, the KPNR is the largest privately owned nature reserve in the Transvaal Lowveld, and probably the largest in the country. Together with the other two large private nature reserves, Timbavati to the east and Sabi-Sand in the south, as well as a number of smaller private nature reserves in the area, it comprises a portion of an important conservation, tourism, and hunting area of over 180 000 ha.

In terms of a recent Contractual Park Agreement between the National Parks Board and a number of privately owned nature reserves, including the KPNR, bordering the Kruger National Park (KNP), common fences between these reserves and the KNP have been removed.

All the more common larger mammals, including the full spectrum of carnivores occurring in the KNP are also found in the KPNR.

Plant specimens were collected or recorded routinely during the course of other work undertaken in KPNR. This formed part of an overall objective of compiling a herbarium collection of the central Transvaal Lowveld region outside the KNP.

Geologically, KPNR consists primarily of granitoid rocks of the Swazian Period, i.e. Makhutswi Gneiss. The gneiss is intruded by a few relatively small, scattered outcrops of Harmony Granite and the Phalaborwa complex. Other formations which occur in the area include Milky Quartz Pegmatite and a very small outcrop of Dark Greenish Black Clinopyroxene Hornblende of the Rubbervale Formation (Geological Survey 1986).

The geomorphology of KPNR can generally be described as gently rolling or undulating over most of its area, the southern part being almost flat. The northern

* National Parks Board, Kruger National Park, Private Bag X402, Skukuza 1350.
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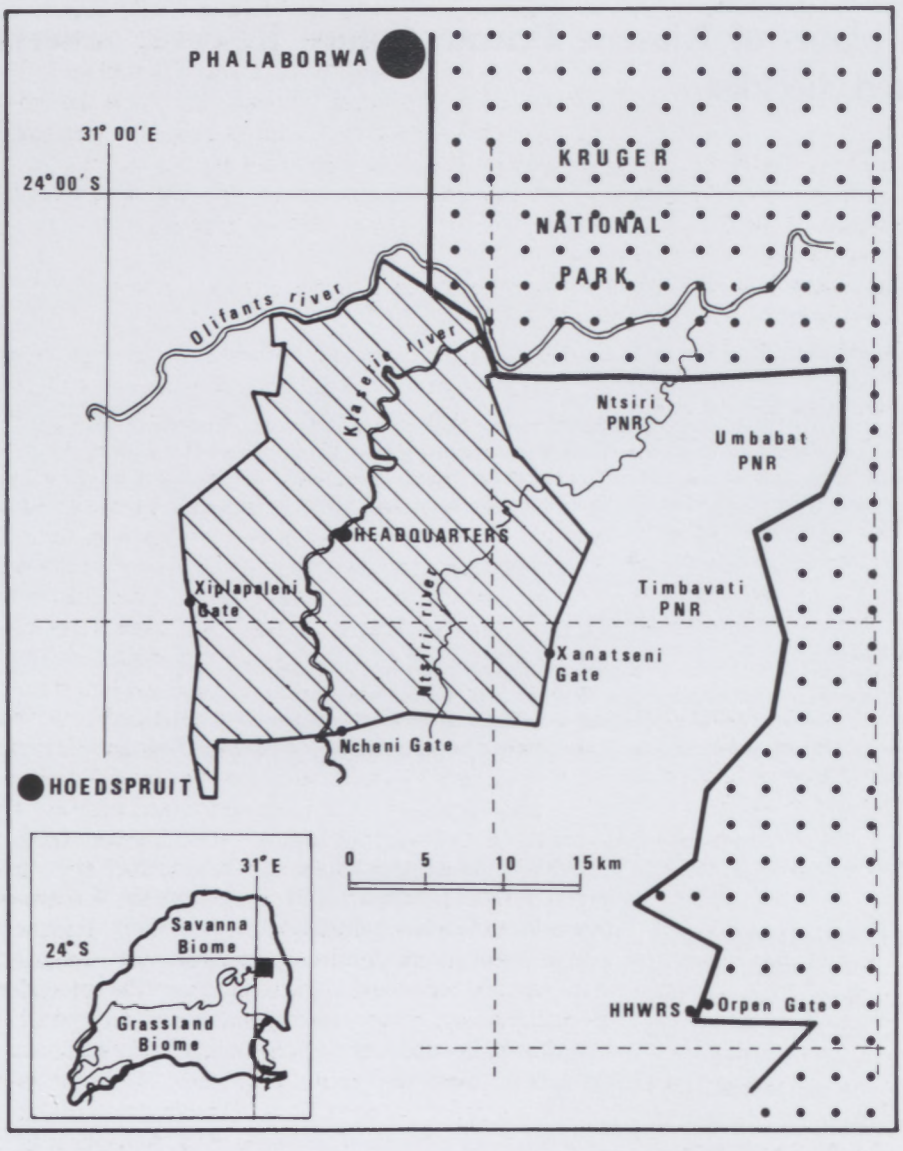

FIGURE 1.—The locality of the Klaserie Private Nature Reserve. Broken lines denote quarter-degree squares. Inset shows the reserve's locality within the Transvaal. Biomes after Rutherford & Westfall (1986), figure taken from Huntley (1989).

third is somewhat more rugged, however, with many relatively short drainage lines. Boulder or rock outcrops are common here, in places forming low koppies or ridges.

Soils of this region generally comprise shallow sandy loam or gravel, and loose surface stones and rocks are common. Elsewhere, soils are generally deeper and primarily sandy to loamy or loamy in texture. Along lower-lying areas, clay-loam or clay predominates, particularly along watercourses. Alluvial sand is frequently encountered along the banks of the rivers and larger seasonal streams.

Drainage is provided primarily by the Olifants, Klaserie, and Ntsiri Rivers. The Olifants and Klaserie are normally perennial, though in recent times, particularly during periods of drought, the Klaserie ceases to flow, and the Olifants decreases to a small stream.

Mean annual rainfall recorded in the reserve over the past 16 years totals 424.7 mm. During this period, a mean annual rainfall of 452.8 mm has been recorded at Ncheni Gate, 408.5 mm at Xanatseni Gate, and 432.0 mm at Xiplapaleni Gate. A mean of 407.8 mm over a 33-year period has been recorded at the reserve's headquarters (Warden's records, unpublished).

The reserve's mean annual rainfall is well below 530 mm, the approximate upper limit for the arid subdivision of the Savanna Biome, and is close to 400 mm, the lower limit given for the dry subdivision of the Grassland Biome (Rutherford & Westfall 1986).

Altitude ranges from 303 m in the northeast at the confluence of the Klaserie and Olifants Rivers, to 535 m in the southwestern corner—a difference of 232 m over a distance of 33 km.

The vegetation of KPNR falls within the Savanna Biome (Gibbs Russell 1987; Rutherford & Westfall 1986). According to Acocks (1988), the only Veld Type of the reserve is Arid Lowveld of the Tropical Bush and Savanna Types (Bushveld). In the northeastern and eastern sectors of the reserve however, mopani veld (*Colophospermum mopane*) is present and is dominant over large areas, decreasing in extent southwards, where it occurs in the form of small, scattered pockets. The vegetation of KPNR has been mapped in greater detail at the reconnaissance level,

and 15 major associations were identified (Zambatis 1983).

METHODS

The great majority of taxa given in the list which follows were collected or recorded over the period 1973 to 1987 by the author whilst in the service of the Transvaal Directorate of Nature and Environmental Conservation (TDNEC). Apart from duplicate specimens donated to the National Botanical Institute's National Herbarium in Pretoria (which undertook the identification of all the specimens collected), the collection is housed in the herbarium of the Hans Hoheisen Wildlife Research Station (HHWRS), bordering the Kruger National Park at Orpen Gate.

Taxa recorded but not collected by the author were listed after being identified by reference to herbarium material collected elsewhere in the region. Where no doubt existed as to their identity, these were recorded without any reference to herbarium material.

Nomenclature, taxonomic sequence of arrangement and spelling used throughout this list follows that of the National Botanical Institute's PRECIS system as detailed in Gibbs Russell *et al.* (1985, 1987, 1988; De Wet *et al.* 1989, 1990, 1991; Arnold & De Wet 1993). Taxonomic numbering has however been omitted in order to enhance clarity and brevity.

Synonyms are given only in those cases where taxonomic revision and subsequent name changes occurred after specimens were originally named.

With few exceptions, the taxa have been annotated with summarized field notes made at the time of collection. A standard sequence of annotation has been followed whereby the first category represents the life form, followed by the height range, vegetation type, habitat, and soil texture. These categories are separated by a comma. Where a category was not recorded, this is indicated by a dash.

The vegetation and habitat types given for each taxon refer only to the specimens collected or recorded. This does not imply that the taxon in general is restricted to this vegetation or habitat type. Many of the taxa occur in a variety of vegetation and habitat types.

Life form classes are according to the Raunkiaer system as used by Müller-Dombois & Ellenberg (1974) and Rutherford & Westfall (1986). Height classes of phanerophytes are those of Müller-Dombois & Ellenberg (1974). The following classes are used:

Phanerophytes (P): perennial plants, usually woody, mean height of the renewal buds > 0.7 m above ground. Mesophanerophytes (Me): mean height of the renewal buds 5–50 m. Microphanerophytes (Mi): mean height of the renewal buds 2–5 m. Nanophanerophytes (N): mean height of the renewal buds < 2 m. Chamaephytes (Ch): perennial plants, generally woody or partly woody, mean height of the renewal buds ≤ 0.7 m. Hemicryptophytes (H): perennial plants, generally herbaceous, renewal buds at, or usually, close to ground level and seldom over 0.1 m. Geophytes (G): perennial plants, usually herbaceous, renewal buds below ground level. Therophytes (T): ephemeral plants (annuals). Lianas (L): plants that grow by supporting themselves on others. Epiphytes (E): plants that germinate and root on other plants, including dead standing plants. Parasites (Pa): green plants growing attached to other living autotrophic plants.

The other annotations are explained below:

Height: given in metres. In most cases, a height range is given, though where only one specimen was collected or recorded, only one height is given. Vegetation type: the dominant (i.e. most abundant) woody species, such as *Combretum, Acacia, Colophospermum*, etc. 'Mixed woodland' is used in cases where dominance by one or more species is not clearly evident and is thus a mixture of various species. The term 'woodland' is used in a broad context and does not necessarily imply a dominance by trees. A common feature in fact is the presence of both trees and shrubs, in varying degrees of dominance, though in no case where 'woodland' is used, is the tree stratum absent. 'Riverine' refers to the woodland and shrubveld along the two perennial rivers, the Olifants and Klaserie, whereas 'seasonal stream' refers to the vegetation occurring along the banks of the numerous watercourses of a seasonal nature, varying from substantial rivers such as the Ntsiri, to the many minor streams, gullies and other tributaries of the perennial rivers. In both these forms of riverine vegetation, physiognomic variations exist and range from poorly developed, to closed tall woodland, with or without a dense (or more open) thicket understorey. Although many taxa are common to both of these riverine forms, sufficient physiognomic and floristic differences in these (and in the water regime) exist to warrant a separation between them. 'Koppie' is applied to a range of vegetation types associated with rocky ridges, koppies, or isolated boulder or rock outcrops of varying extent and height above the surrounding terrain. 'Open parkland' refers to the vegetation structure of the seepline complex where trees are scattered or absent, with a scattered shrub stratum, whereas 'grassland' refers only to seasonally or perennially waterlogged marshy areas (vleis), the presence of woody plants being a rare exception. Habitat: the term 'dryland' refers to the broadly homogeneous area occurring between one drainage line and another, but excludes distinctly different or specialized habitats which are floristically and physiognomically atypical of the surrounding area and which generally occupy the same topographic position. Examples of these exceptions are koppies and rock outcrops, seasonal seepage areas, vleis, and riverine habitats. An overriding feature of dryland is the presence of a woody component in the form of one or two strata, namely tree and shrub layers, each occurring in varying frequency or dominance, ranging from sparse to dense. 'Dryland' is thus synonymous with 'veld', in a broad context, but within the confines of the Savanna Biome of Rutherford & Westfall (1986) and Gibbs Russell (1987).

A 'seepline complex' represents a specialized habitat for a variety of plant types, a number of which appear to be restricted to this type of habitat. These areas are commonly located on slopes on a catenary sequence of soil

types. Sandy soils occur on the upper side of the seepage area, grading into sandy loam and finally into clayey loam or clay at the bottom of the slope. During the rainy season, and particularly after several days of heavy rain, water seeps to the surface at the sand/clay interface, creating damp or even waterlogged conditions for prolonged periods. A gradient in the distribution of plant types along these areas is also evident, with *Terminalia sericea* characteristically demarcating the upper edge. These areas are vulnerable to erosion when heavily utilized by herbivores due to the concentration of salts which lead to deflocculation and collapse of the clay structure. When in this state, they are known as sodic areas (Scholes 1985). In this article, no distinction has been made between the two, as certain plant taxa occur on both types of habitats, hence the term 'complex'.

A 'rock outcrop' refers to the habitat structure of the koppie vegetation type and can comprise large and extensive boulders, or isolated clumps of rocks. In practically all rock outcrop habitats, soils are shallow to very shallow, and sandy or gravelly, with smaller, loose stones being common.

RESULTS AND DISCUSSION

A total of 618 infrageneric, or 'lower', taxa have been recorded in the KPNR. This does not include specimens identified to the genus level only, except those which are the only members recorded in a particular family or genus. Taxa of the same species but with different subspecies or varieties were regarded as different taxa. These are summarised in Table 1 according to the number of families, genera, and taxa in the pteridophytes, monocotyledons, and dicotyledons.

Twenty-seven (26.2%) of the total number of families contribute 1% or more of the total number of taxa (Table 2). Genera with six or more taxa (≥ 1% of the total number of taxa) are listed in Table 3.

Free-ranging exotics are represented by 39 taxa.

Five taxa, listed as 'rare' in the Red Data List for the Transvaal (Fourie 1986; revised by the Flora Division of TDNEC, unpublished), have been recorded for KPNR. These were all collected by the author (collector's number in brackets): *Aloe vandermerwei (880)*; *Nymphaea lotus (1092)*; *Phyllanthus pinnatus (891, 1214)*; *Ceropegia mafekingensis (1536)*; *Orbea maculata (1602)*.

These represent 2% of the total number of 251 taxa currently listed in the Red Data List for the Transvaal.

TABLE 1.—Number of families, genera and infrageneric taxa recorded in the Klaserie Private Nature Reserve

	Pteridophyta		Monocotyledonae		Dicotyledonae		
	No.	% of total	No.	% of total	No.	% of total	Totals
Families	4	3.9	20	19.4	80	77.7	103
Genera	6	1.7	81	22.8	269	75.6	355
Lower taxa	6	1.0	161	26.1	451	73.0	618

TABLE 2.—Families with 1% or more of the total number of infrageneric taxa

Family	No of infrageneric taxa	% of total no. of infrageneric taxa	No. of genera	% of total no. of genera
Poaceae	80	12.9	40	11.3
Fabaceae	63	10.2	32	9.0
Asteraceae	37	6.2	29	8.2
Cyperaceae	28	4.5	8	2.3
Euphorbiaceae	23	3.7	11	3.1
Malvaceae	20	3.2	5	1.4
Acanthaceae	16	2.6	11	3.1
Rubiaceae	16	2.6	12	3.4
Asclepiadaceae	15	2.4	13	3.7
Convolvulaceae	15	2.4	4	1.1
Lamiaceae	13	2.1	10	2.9
Hyacinthaceae (B)	12	1.9	7	2.0
Tiliaceae	11	1.8	3	0.9
Amaranthaceae	10	1.6	8	2.3
Verbenaceae	10	1.6	8	2.3
Capparaceae	9	1.5	4	1.1
Sterculiaceae	9	1.5	5	1.4
Combretaceae	9	1.5	2	0.6
Cucurbitaceae	9	1.5	5	1.4
Boraginaceae	8	1.3	3	0.9
Amaryllidaceae	7	1.1	5	1.4
Pedaliaceae	7	1.1	6	1.7
Aizoaceae (B)	6	1.0	5	1.4
Crassulaceae	6	1.0	3	0.9
Celastraceae	6	1.0	3	0.9
Vitaceae	6	1.0	3	0.9
Periplocaceae	6	1.0	3	0.9

Two of these, *N. lotus* and *C. mafekingensis*, are first records for the Lowveld (E. van Hoepen pers. comm.). Neither of these taxa have yet been collected in the KNP, though *N. lotus* has apparently been recorded by S.P. Fourie of the TDNEC. In the case of *A. vandermerwei*, the only specimen collected was from a small group which appears to have been planted at Xanatseni Gate. A search for wild-growing specimens in the vicinity of this gate proved fruitless. It is possible that these specimens were introduced into the reserve from beyond its boundaries. This plant thus remains to be confirmed in its natural habitat within the reserve.

Despite its relatively arid climate, and the fact that the surface area of KPNR is a mere 0.1% of the total surface area of the Savanna Biome of 632 034 km, the reserve's

TABLE 3.—Genera with 1% or more of the total number of infrageneric taxa

Genus	No. of lower taxa	% of total no. of lower taxa
Cyperus	14	2.3
Acacia	12	1.9
Eragrostis	11	1.8
Hibiscus	11	1.8
Ipomoea	10	1.6
Grewia	8	1.3
Combretum	7	1.1
Aristida	7	1.1
Sporobolus	6	1.0

618 infrageneric taxa represent 10.7% of the total number of taxa (5 788) recorded in this biome (Gibbs Russell 1987). The riverine habitats along the two perennial rivers of the reserve partly account for this relatively high number of taxa. If the frequency and duration of desiccation of these rivers, however, increases in the future (as it is likely to do, given the ever-increasing human demands on all water resources), a decline of these plant communities, or even the disappearance of certain taxa is likely to occur.

The quarter-degree squares of the KPNR were not included in the PRECIS search undertaken by Gibbs Russell (1987) in her analysis of the southern African biomes, and in the determination of the core areas of these biomes. In this search, she recorded 21 families, comprising 1% or more of the taxa, which together account for 55–60% of the total number of taxa recorded in the Savanna Biome. These families, all of which have been recorded in KPNR as well, account for 459 (74.2%) of the reserve's total number of taxa. These relationships consequently reflect a strong affinity of the flora of KPNR with that of the Savanna Biome in general.

A total of 22 families and 36 genera with 10 taxa or more, have their centres of diversity in the Savanna and Grassland Biomes (Gibbs Russell 1987). All except one of these (Aspleniaceae) and six genera, have also been recorded in the KPNR, indicating a strong relationship with the Grassland Biome as well. It is significant to note though, that the Orchidaceae, represented by a total of 53 taxa common to the Savanna and Grassland Biomes, and which, together with the Lamiaceae, distinguishes the Grassland Biome (Gibbs Russell 1987), is very poorly represented in KPNR, with only two taxa being recorded. This poor representation of the Orchidaceae can most probably be ascribed to the relatively arid climate of KPNR.

In the Umfolozi Game Reserve, on the other hand, this family is absent, in spite of a mean annual rainfall of 625 mm. Downing & Gibbs Russell (1981) suggest that wild herbivores could have severely depleted the rhizomes of any ground orchids present, while extensive and intensive spraying of insecticides during the tse-tse fly eradication campaign could have inhibited sexual reproduction by eliminating insect pollinators of both ground and epiphytic orchids. A similar situation is evident in the Manyeleti Game Reserve, bordering the KNP on the western side of the central region of the Park. Here, Bredenkamp (1982) only recorded one taxon of this family, even though this reserve falls within the mesic subdivision of the Savanna Biome (Rutherford & Westfall 1986). No insecticide spraying has been undertaken in KPNR.

The generally arid nature of a major part of the Lowveld consequently appears to be the reason for the relatively poor representation of this family in this part of the Savanna Biome, which therefore weakens the link between this biome and the Grassland Biome somewhat, at least in this region.

The aridity of KPNR is most probably also the reason for the absence of the Aspleniaceae. This large family appears to be confined to the higher rainfall regions of the country, as shown on the distribution maps of Jacobsen (1983) and Burrows (1990). This is further reflected by the fact that the only two members of this family recorded in the KNP are restricted to the Pretoriuskop area of the Park, which receives the highest mean annual rainfall for the Park of some 722 mm.

Table 4 summarises the life forms of the KPNR flora. This shows that woody plants—phanerophytes and chamaephytes, together comprise 31.7% of all taxa, whereas herbaceous plants, the hemicryptophytes and therophytes, comprise 51.7%. The high frequency of woody and herbaceous taxa is further evidence that the vegetation of the reserve comprises a woody layer above an herbaceous layer.

TABLE 4.—Number of infrageneric taxa and percentage of total per life form category

	P									
Life form	Mes	Mi	N	Ch	H	G	T	L	E	Pa
Number of infrageneric taxa	47	62	35	52	218	48	102	52	1	1
% of total	7.6	10.0	5.7	8.4	35.3	7.8	16.5	8.4	0.2	0.2

Mes, mesophanerophyte; Mi, microphanerophyte; N, nanophanerophyte; Ch, chamaephyte; H, hemicryptophyte; G, geophyte; T, therophyte; L, liana; E, epiphyte; Pa, parasite; P, phanerophyte.

CONCLUSION

The primary purpose of this article is to provide a systematic list of the flora of KPNR, which can be used in a variety of more detailed studies. Nevertheless, this rather brief analysis of the reserve's flora shows that very strong affinities exist with the Savanna Biome, and to a lesser degree, with the Grassland Biome as well. The vegetation of the Klaserie Private Nature Reserve can therefore be regarded as comprising part of the core area of the Savanna Biome.

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SYSTEMATIC CHECKLIST

After the name of the author(s) of the species name, the sequence of annotation is as follows:
collection number : without initials—author; with initials—RPE = R.P. Ellis, JdK = J.P.S. de Kock, P.J.M. = P.J.M. Muller.
§ taxa recorded, but not collected by author.
+ recorded by Witkowski (1983).
* exotic taxa, including naturalized taxa.
life form: Mes, mesophanerophyte; Mi, microphanerophyte; N, nanophanerophyte; Ch, chamaephyte; H, hemicryptophyte; G, geophyte; T, therophyte; L, liana; E, epiphyte; Pa, parasite.
height range in metres.
vegetation type.
habitat.
soil texture.
- not recorded.

PTERIDOPHYTA

SELAGINELLACEAE

Sellaginella

dregei *(C. Presl) Hieron., 1118*, H, 0.02, open parkland, seepline complex, shallow sandy loam on flat sheetrock

MARSILEACEAE

Marsilea

ephippiocarpa *Alston, RPE 3464*, §, T, 0.1–0.15, *Colophospermum* woodland, seasonal pans & still pools, sandy, or black clay

ADIANTACEAE

Actiniopteris

radiata *(J. König ex Sw.) Link, 1591*, H, 0.05–0.1, -, boulder bases, steep south slopes, shade or sunlight, calcrete

Cheilanthes

involuta *(Sw.) Schelpe & N. C. Anthony* var. involuta, *1594*, H, 0.1, - , boulder bases, steep south slopes, shade, shallow sandy

Pellaea

calomelanos *(Sw.) Link* var. calomelanos, *984, 1176, 1595*, H, 0.2–0.3, *Combretum* woodland, steep south or east slopes, shade or sunlight, sandy

THELYPTERIDACEAE

Ampelopteris

prolifera *(Retz.) Copel., 983*, H, 0.4–0.6, riverine, reed bed, damp or saturated river sand

ANGIOSPERMAE–MONOCOTYLEDONAE

TYPHACEAE

Typha

capensis *(Rohrb.) N.E. Br., 970*, H, 2.0, aquatic, dam shores, mud

POACEAE

Sorghum

bicolor *(L.) Moench* subsp. arundinaceum *(Desv.) De Wet & Harlan* (= *S. verticilliflorum* (Steud.) Stapf), §, T, 1.0–1.5, -, seasonally wet areas, loam, sandy loam

versicolor *Andersson, 913, 1121*, H, 1.0, grassland, vlei edge, clayey loam, stony to sandy loam

Bothriochloa

radicans *(Lehm.) A. Camus, 307, 349, 624, 760, 1030*, H, 0.4–0.9, *Combretum* woodland, riverine, dryland, termitarium, river bank, alluvial sand, sandy loam, loam

Dichanthium

annulatum *(Forssk.) Stapf* var. papillosum *(A. Rich.) De Wet & Harlan* (= *D. papillosum* (Hochst.) Stapf), *606*, H, 1.7, riverine, river bed, river sand

Schizachyrium

exile *(Hochst.) Pilg., RPE 3462*, T, -, *Colophospermum* veld, -, gravelly

Andropogon

chinensis *(Nees) Merr.* (= *A. schinzii* Hack.), *311, 759, 909*, H, 1.0–1.5, *Combretum* & mixed woodland, -, sandy loam

gayanus *Kunth* var. polycladus *(Hack.) Clayton* (= var. *squamulatus* (Hochst.) Stapf), *527, 908, 968*, H, 2.0,

riverine, riverbed, rock outcrops, river sand, gravel, stony or sandy loam

Cymbopogon

plurinodis *(Stapf) Stapf ex Burtt Davy, 352*, H, 0.9, *Combretum* woodland, dryland, sandy loam

Hyperthelia

dissoluta *(Nees ex Steud.) Clayton, 963, 990, 1736*, H, 2.0–2.5, *Colophospermum* woodland, disturbed (de-bushed), seasonal stream bank, rock outcrop, stony or sandy loam

Heteropogon

contortus *(L.) Roem. & Schult., 910*, H, 1.0, mixed woodland, dryland, sandy loam

Diheteropogon

amplectens *(Nees) Clayton, 966, 967*, H, 0.9, *Combretum* woodland, rock outcrop, sandy loam

Themeda

triandra *Forssk.*, §, +, H, 0.6, -, -, -

Digitaria

eriantha *Steud., 592*
(= subsp. *eriantha*), *877, 929, 971*
(= subsp. *pentzii* (Stent) Kok), *931*
(= subsp. *stolonifera* (Stapf) Kok), *876, 878, 930, 939*
(= subsp. *transvaalensis* Kok), *1366*
All specimens combined: H, 0.4–1.2, *Combretum* woodland, mixed woodland, riverine, dryland, seepline complex, river bed, river sand, sandy or stony loam, clay

seriata *Stapf, 996*, H, 0.5, riverine, river bank, alluvial sand

Eriochloa

meyeriana *(Nees) Pilg.* subsp. grandiglumis *(Stent & J.M. Rattray) Gibbs Russell, 322*, H, 0.4, riverine, seasonal stream, river sand

meyeriana *(Nees) Pilg.* subsp. meyeriana, *1029, RPE 3460*, H, -, riverine, river bank, alluvial sand

Brachiaria

deflexa *(Schumach.) C.E. Hubb. ex Robyns*
(= *Pseudobrachiaria deflexa* (Schumach.) Launert), *593, 602*, T, 0.7–0.9, *Combretum* woodland, dryland, disturbed (old lands), loam

nigropedata *(Ficalho & Hiern) Stapf, 616, 945*, H, 0.6, *Combretum* & mixed woodland, dryland, sandy loam

serrata *(Thunb.) Stapf, 528*, H, 0.5, *Combretum* woodland, dryland, rock outcrop, -

xantholeuca *(Schinz) Stapf, 601*, T, 0.7, -, disturbed (old lands), loam

Paspalum

urvillei *Steud.*, 1025*, H, 2.0, aquatic, shores of dam, sandy loam

Urochloa

mosambicensis *(Hack.) Dandy*, §, +, H, 0.4, *Combretum* woodland, dryland, sandy loam

trichopus *(Hochst.) Stapf, 331*, T, 0.3, riverine, -, sandy loam

Echinochloa

jubata *Stapf*, §, H, -, -, -, -

Panicum

coloratum *L.* var. coloratum, *611*, H, 0.4–0.5, *Combretum* woodland, dryland, sandy loam

deustum *Thunb., 361, 926*, H, 1.3, riverine, woodland, river and stream bank shade, rock outcrop, river sand, stony

maximum *Jacq., 313, 360, 589, 591, 949*, H, 0.7–2.0, woodland, riverine, dryland shade, termitarium, river banks, sandy loam, river sand

Setaria

incrassata *(Hochst.) Hack.*
(= *S. woodii* Hack. var. *woodii*), *604*, H, 1.5, grassland, vlei, clay, clayey loam

sagittifolia *(A. Rich.) Walp.*
(= *Cymbosetaria sagittifolia* (A. Rich.) Schweick., *1096*), T, 0.5–1.0, -, rock outcrop, loam

ustilata *De Wit, 915, 1646*, T, 0.4–0.6, mixed woodland, seasonal stream, shade under *Combretum*, river sand, sandy loam

verticillata *(L.) P. Beauv., 603*, T, 0.7, -, disturbed (old lands), loam

Melinis

repens *(Willd.) Zizka* subsp. repens
(= *Rhynchelytrum repens* (Willd.) C.E. Hubb.), *387*, T, 0.6, -, disturbed (roadside, de-bushed), sandy loam

Tricholaena

monachne *(Trin.) Stapf & C.E. Hubb. 363*, H, 0.6, *Combretum* woodland, dryland, sandy loam

Pennisetum

macrourum *Trin., 1676*, H, 2.0–3.0, riverine, river bed, river sand

setaceum *(Forssk.) Chiov.*, 987*, H, 0.9, -, abandoned garden, stony loam

Cenchrus

ciliaris *L., 324, 334, 526*, H, 0.3–0.5, riverine, termitarium, stream bank, sandy stony loam, loam

Phragmites

mauritianus *Kunth, 1022*, H, 5.0, riverine, river bed, river sand

Stipagrostis

hirtigluma *(Trin. & Rupr.) De Winter* subsp. patula *(Hack.) De Winter, 1674*, H, 0.4, *Combretum* woodland, dryland, shallow gravel

Aristida

adscensionis *L.*
(= subsp. *guineensis* (Trin. & Rupr.) Henrard), *761, 916, 948*, T, 0.5–0.9, mixed woodland, disturbed, roadside, stony or sandy loam
(= subsp. *adscensionis, 989*), T, 0.8, *Combretum–Commiphora* woodland, rock outcrop, shallow stony

canescens *Henrard* subsp. ramosa *De Winter, 351, 398, 594*, H, 0.2–0.6, *Combretum* woodland, dryland, sandy loam, loam

congesta *Roem. & Schult.* subsp. barbicollis *(Trin. & Rupr.) De Winter, 398, 594, 997, 998*, T, 0.4–0.6, *Combretum* woodland, dryland, disturbed (roadside, overgrazed), stony or sandy loam, loam

meridionalis *Henrard, 610*, H, 0.9, *Combretum* woodland, dryland, rock outcrop, stony gravel

scabrivalvis *Hack.* subsp. scabrivalvis, *944*, T, 0.5, -, roadside, sandy loam

stipitata *Hack.* subsp. graciliflora *(Pilg.) Melderis, 391*, T, 0.5, *Combretum* woodland, dryland, sandy loam

Tragus

berteronianus *Schult., 325*, T, 0.3, *Combretum* woodland, disturbed (trampled), dryland, sandy loam

Perotis

patens *Gand.*, §, T, 0.3, *Combretum* woodland, dryland, sandy

Sporobolus

festivus *A. Rich.*
(= var. *fibrosus* Stent), *RPE 3464D*, H, -, *Colophospermum* woodland, -, shallow gravelly

fimbriatus *(Trin.) Nees, 933, 935, 937*, H, 1.0, mixed woodland, riverine, dryland, river bed, stony or sandy loam

nitens *Stent, 350, 927, 1010*, H, 0.2, *Combretum* woodland, dryland, sandy

panicoides *A. Rich., 936*, T, 0.7, mixed woodland, dryland, sandy loam

stapfianus *Gand.*, §, H, 0.2, -, -, -

virginicus *(L.) Kunth, RPE 3463*, H, -, -, -, -

Eragrostis

ciliaris *(L.) R. Br.*, §, T, 0.3, -, disturbed (garden), sandy

cylindriflora *Hochst., 390, 977*, T, 0.2–0.4, -, disturbed (roadside), sandy loam

gummiflua *Nees*, §, H, 0.3–0.5, grassland, open parkland, seepline complex, sandy clay, clayey loam

heteromera *Stapf, 917*, H, 1.5, riverine, grassland, seasonal stream, vlei, sandy, clay loam, clay

inamoena *K. Schum., 946*, H, -, grassland, open parkland, seepline complex, sandy clay

lehmanniana *Nees* var. lehmanniana, *RPE 3464*, H, -, -, -

pilosa *(L.) P. Beauv.*, 892, 1009*, T, 0.2–0.3, -, garden lawn, sandy loam

rigidior *Pilg., 934*, H, 1.0, mixed woodland, dryland, sandy loam

rotifer *Rendle, 321, 607, 912*, H, 0.9–1.5, riverine, river bed, river sand, coarse river sand

superba *Peyr., 316, 938*, H, 0.4–0.5, *Combretum* & *Colophospermum* woodland, dryland, sandy loam

trichophora *Coss. & Durieu, 932*, H, 0.3, -, disturbed (roadside, old lands), sandy loam

sp., *613, 947*, -, 0.6–1.5, riverine, river bed, seasonally waterlogged river sand, sandy loam

Cynodon

dactylon *(L.) Pers.*, §, +, H, 0.2, riverine, river bank, sand bank, alluvial sand

Enteropogon

macrostachyus *(A. Rich.) Benth., 525, 911*, H, 1.0, mixed woodland, dryland, sandy loam, loam

Chloris

gayana *Kunth, 358*, H, 0.9–1.0, riverine, river bed, river sand

mossambicensis *K. Schum., 928*, H, 0.4, riverine, seasonal stream, river & stream bank, clayey loam

roxburghiana *Schult., 353*, H, 0.7, -, termitarium, sandy clay

Oropetium

capense *Stapf, RPE 3464E*, H, -, *Colophospermum* veld, -, shallow gravel

Dactyloctenium

aegyptium *(L.) Willd., 561*, T, 0.6, open parkland, seepline complex, garden, loam

geminatum *Hack., 1410*, H, 0.7, riverine, reed bed, river sand

giganteum *Fisher & Schweick., 965, 1645*, T, 0.5–1.0, riverine, outer edge of river bed, alluvial sand

Pogonarthria
squarrosa *(Roem. & Schult.) Pilg.*, §, H, 0.2–0.4, *Combretum* & mixed woodland, dryland, overgrazed areas, sandy

Diplachne
fusca *(L.) P. Beauv. ex Roem. & Schult., RPE 3464A*, H, *Colophospermum* veld, -, heavy black turf

Trichoneura
grandiglumis *(Nees) Ekman* var. grandiglumis, §, +, H, 0.2–0.3, *Combretum* woodland, dryland, sandy

Enneapogon
cenchroides *(Roem. & Schult.) C.E. Hubb., 355, 988*, T, 0.3–0.6, *Acacia* woodland, dryland, rock outcrop, shallow stony loam

Schmidtia
pappophoroides *Steud., 309, 969*, H, 0.2–0.5, *Combretum* woodland, riverine, dryland, riverbank, sandy, alluvial sand

Fingerhuthia
africana *Lehm., 312*, H, 0.5, *Colophospermum* woodland, dryland, sandy

Megastachya
mucronata *(Poir.) P. Beauv.*, +, T, -, -, -, -

CYPERACEAE

Cyperus
articulatus *L., 585*, H, 1.2, riverine, river bed, river sand
compressus *L., 918, 1647*, H, 0.5, seasonal stream, stream bed, river sand
difformis *L., 595, 612*, H, 0.3–0.7, grassland, riverine, vlei, river bed, river sand
distans *L. f., 1586*, H, 1.4, riverine, reed bed, river sand
fastigiatus *Rottb., 587*, H, 1.8, riverine, reed bed, river sand
immensus *C.B. Clarke, 588*, H, 2.7, riverine, reed bed, river sand
iria *L., 596*, H, 0.3–0.4, grassland, vlei, sandy
margaritaceus *Vahl*, +, H, -, -, -, -
obtusiflorus *Vahl* var. obtusiflorus, *346B. 920*, H, 0.2–0.4, *Combretum* and mixed woodland, tree shade in dryland, sandy loam
rupestris *Kunth* var. rupestris
(= *C. rupestris* Kunth), *258*, H, 0.1, grassland, vlei, black clayey loam
sexangularis *Nees, 320*, H, 0.9, riverine, river bed, river sand
sphaerospermus *Schrad.*, §, H, -, -, -, -
tenax *Boeck., 586, 599*, H, 1.4, riverine, river bed, river sand
thorncroftii *McClean, 1633*, H, 0.3, rock outcrop, edge of small seasonal rock pool, granite rock

Pycreus
macrostachyos *(Lam.) J. Raynal, 597*, H, 0.6–0.7, grassland, vlei, sandy
pumilus *(L.) Nees*
(= subsp. *patens* (Vahl) Podlech), *609*, T, 0.1, riverine, river bed, river sand

Mariscus
indecorus *(Kunth) Podlech*, §, H, -, -, -, -
rehmannianus *C.B. Clarke, 919*, T, 0.4, mixed woodland, dryland, sandy loam
squarrosus *(L.) C.B. Clarke*, §, H, -, -, -, -

Kyllinga
alba *Nees, 257*, H, 0.1, grassland, vlei, black clayey loam

Fuirena
ciliaris *(L.) Roxb.* var. ciliaris, *1117*, H, 0.4, open parkland, seepline complex, waterlogged sandy clayey loam
pubescens *(Poir.) Kunth, 625*, H, 0.4, grassland, vlei, sandy

Fimbristylis
bisumbellata *(Forssk.) Bubani, 1347*, H, 0.2–0.3, riverine, river bed, alluvial & river sand
ferruginea *(L.) Vahl*, §, H, 0.5, -, -, -
microcarya *F. Muell., 608*, H, 0.1–0.2, riverine, river bed, river sand

Bulbostylis
burchellii *(Ficalho & Hiern) C.B. Clarke, 986*, H, 0.4, rock outcrop, seepage area amongst boulders, sandy
hispidula *(Vahl) R.W. Haines, 397*, H, 0.3, -, garden, sandy loam

Cladium
mariscus *(L.) Pohl* subsp. jamaicense *(Crantz) Kük., 890*, H, 2.0, riverine, dam shore, alluvial sand, clay

ARECACEAE

Phoenix
reclinata *Jacq.*, §, Mi, 2.0, riverine, seasonal stream, river & stream bank or bed, alluvial sand, river sand

Hyphaene
coriacea *Gaertn.*
(= *H. natalensis* Kuntze), §, Mi, 1.3, -, -

ARACEAE

Stylochiton
natalensis *Schott, 1365*, G, 0.5, mixed woodland, *Combretum–Commiphora* woodland, dryland, sandy or stony loam

COMMELINACEAE

Commelina
africana *L.* var. lancispatha *C.B. Clarke, 1058*, H, 0.3–0.7, mixed woodland, dryland, sandy loam
diffusa *Burm. f.* subsp. scandens *(C.B. Clarke) Oberm., 1368*, H, 0.6, riverine, reed bed, river sand
subulata *Roth, 1095*, T, 0.3, aquatic, seasonal pan, waterlogged clay

Cyanotis
speciosa *(L. f.) Hassk., 1088*, H, 0.1–0.2, *Colophospermum* woodland, bare soil, sandy clay

COLCHICACEAE

Gloriosa
superba *L.*, §, G, 1.3, mixed woodland, dryland, sandy loam

Camptorrhiza
strumosa *(Baker) Oberm., 1537*, G, 0.2, *Colophospermum* woodland/riverine ecotone, dryland, sandy clayey loam

ASPHODELACEAE (PART A)

Trachyandra
saltii *(Baker) Oberm.* var. saltii, *253, 1533*, G, 0.1, *Combretum* woodland, dryland, sandy loam

Anthericum
cooperi *Baker, 254*, G, 0.1, *Combretum* woodland, dryland, sandy loam
galpinii *Baker* var. galpinii, *373, 1052, 1350*, G, 0.2–0.3, *Acacia/Combretum* woodland, open parkland, dryland, seepline complex, stony sandy loam
longistylum *Baker, 1216*, G, 0.3, open parkland, seepline complex, sandy clayey loam

HYACINTHACEAE (PART A)

Schizobasis
intricata *(Baker) Baker, 1505, 1623*, G, 0.3–0.5, *Combretum–Commiphora* woodland, dryland, shallow gravel, sandy loam

ERIOSPERMACEAE

Eriospermum
burchellii *Baker, 314*, G, 0.3, *Colophospermum* woodland, dryland, gravel
galpinii *Schinz, 617, 1056*, G, 0.2, grassland, open parkland, vlei, seepline complex, loam, sandy clay
luteo-rubrum *Baker*, §, G, -, -, -, -

ASPHODELACEAE (PART B)

Aloe
lutescens *Groenew.*, §, N, -, -, -, -
marlothii *A. Berger* subsp. marlothii, §, N, -, -, -, -
vandermerwei *Reynolds, 880*, N, 1.2, -, yard of entrance gate (planted ?), sandy, stony

HYACINTHACEAE (PART B)

Albuca
angolensis *Welw., 1617, 1635*, G, 0.6–2.0, koppie, rock outcrop, shallow loam, humus-rich loam

Urginea
epigea *R.A. Dyer, 1049*, G, 1.0–1.4, mixed woodland, dryland, sandy loam
sanguinea *Schinz, 1624*, G, -, *Combretum* woodland, dryland, sandy loam

Drimia
sp. cf. D. elata *Jacq., 1618*, G, 0.3, open mixed woodland, dryland, clayey loam

Dipcadi
glaucum *(Ker Gawl.) Baker, 1587*, G, 0.4, *Combretum* woodland, dryland, shallow sandy or stony loam
gracillimum *Baker, 359*, G, 0.4–0.5, *Combretum* woodland/riverine ecotone, river bank, dryland, alluvial sand, stony loam
viride *(L.) Moench, 1586*, G, 1.0, *Combretum* woodland, dryland, sandy loam

Ornithogalum
seineri *(Engl. & K. Krause) Oberm., 326, 855*, G, 0.2–0.3, *Combretum* woodland, dryland, old lands, gravel, sandy loam

Drimiopsis
burkei *Baker*, §, G, 0.2, *Combretum* woodland, koppie, dryland shade, rock outcrop, sandy, shallow

Ledebouria
apertiflora *(Baker) Jessop, 1305*, G, 0.2, open parkland, seepline complex, sandy clay
cooperi *(Hook. f.) Jessop*, §, G, -, -, -, -
marginata *(Baker) Jessop, 1254*, G, 0.1, *Combretum* woodland, dryland, clayey loam
sp., *1509*, -, 0.3, mixed woodland, dryland, sandy loam

DRACAENACEAE
Sansevieria
hyacinthoides *(L.) Druce, 1372, 1373*, H, 0.3–0.5, koppie, mixed woodland, open parkland, rock outcrop, seepline complex (upper edge), shallow, sandy, sandy clayey loam
pearsonii *N.E. Br., 1611*, H, 0.3–0.7, koppie, rock outcrop, sandy loam

ASPARAGACEAE
Protasparagus
africanus *(Lam.) Oberm.*
(= *Asparagus africanus* L.), §, G, 0.6, *Combretum* woodland, dryland, sandy loam
buchananii *(Baker) Oberm.*
(= *Asparagus buchananii* Baker), §, G, 2.0–3.0, koppie, rock outcrop, sandy loam
exuvialis *(Burch.) Oberm.*
(= *Asparagus exuvialis* Burch.), *376*, G, 0.6, *Combretum* woodland, dryland, sandy loam
natalensis *(Baker) Oberm.*
(= *Asparagus falcatus* L. var. *ternifolius* (Baker) Jessop), *1067*, G, 1.0, *Colophospermum* woodland, erosion area, gravelly clay

AMARYLLIDACEAE
Scadoxus
multiflorus *(Martyn) Raf.* subsp. multiflorus, *1257*, G, 0.3, mixed woodland, termitarium, sandy loam, sandy clayey loam
Boophane
disticha *(L. f.) Herb.*, §, G, 0.5, mixed woodland, *Combretum* woodland, dryland, sandy loam
Crinum
buphanoides *Welw. ex Baker*, §, G, 0.4, open parkland, seepline complex, clayey loam, clay
graminicola *I. Verd.*, §, G, 0.6, *Combretum* woodland, dryland, sandy loam
minimum *Milne-Redh., 1236*, G, 0.2, *Combretum* woodland, dryland, sandy loam
Ammocharis
coranica *(Ker Gawl.) Herb., 1504*, G, 0.3, riverine, river bank, alluvial sand
Pancratium
tenuifolium *Hochst. ex A. Rich.*, §, G, 0.2, *Combretum* woodland, dryland, sandy loam

HYPOXIDACEAE
Hypoxis
hemerocallidea *Fisch. & C.A. Mey.*
(= *H. rooperi* S. Moore), §, G, 0.3, -, -, -

VELLOZIACEAE
Xerophyta
retinervis *Baker*, §, Ch, 0.4–0.7, *Combretum* woodland, dryland, shallow sandy or gravelly loam

DIOSCOREACEAE
Dioscorea
sylvatica *(Kunth) Eckl.* var. sylvatica, *1287*, Ch, 1.5, seasonal stream, stream bank, shallow, stony

IRIDACEAE
Lapeirousia
masukuensis *Vaupel & Schltr. 1345*, G, 0.4, open parkland, seepline complex, sandy clay
sandersonii *Baker*, §, G, 0.4–0.5, open parkland, seepline complex, sandy clay

ORCHIDACEAE
Ansellia
africana *Lindl.*
(= *A. gigantea* Rchb. f. var. *nilotica* (Baker) Summerh.), *1288, 1311*, E, 0.6, riverine, *Acacia* woodland, *Diospyros mespiliformis, Acacia nigrescens*, -

Eulophia
petersii *Rchb. f., 1516*, H, 1.2, koppie, rock outcrop, shallow leaf litter and humus

ANGIOSPERMAE–DICOTYLEDONAE

SALICACEAE
Salix
mucronata *Thunb.* subsp. capensis *(Thunb.) Immelman*
(= *S. capensis* Thunb.), *1028*, Mi, 3.0, riverine, river bank, alluvial sand

MORACEAE
Maclura
africana *(Bureau) Corner, 1035*, Mi, 3.0, riverine, river bank, alluvial sand
Ficus
abutilifolia *(Miq.) Miq.*
(= *F. soldanella* Warb.), *992*, Me, 7.0–10.0, koppie, rock outcrop, stony loam
glumosa *(Miq.) Delile*
(= *F. sonderi* Miq., §, +, Me, -, -, -, -
ingens *(Miq.) Miq.* var. ingens, *1517*, Me, 5.0, riverine cliff, rock outcrop, shallow, gravelly
sycomorus *L., 1401*, Me, 15.0–20.0, riverine, river bank, alluvial sand

URTICACEAE
Pouzolzia
mixta *Solms*
(= *P. hypoleuca* Wedd.), *1596*, N, 1.5, koppie, rock outcrop, humus-rich sandy loam

LORANTHACEAE
Plicosepalus
kalachariensis *(Schinz) Danser, 1162*, Pa, -, woodland, *Acacia nigrescens*, -

SANTALACEAE
Osyridicarpos
schimperianus *(Hochst. ex A. Rich.) A. DC., 1612*, H, 0.5, seasonal stream, vertical stream bank, alluvial sand

OLACACEAE
Ximenia
americana *L.* var. americana, *577*, N, 1.5, *Combretum* woodland, dryland, loam
caffra *Sond.* var. caffra, *1742*, N, 1.2–2.0, *Combretum–Commiphora* woodland, seasonal stream, dryland, stream bank thicket, stony sandy loam, alluvial sand

POLYGONACEAE
Polygonum
aviculare *L.* *, §, H, -, -, -, -
Persicaria
serrulata *(Lag.) Webb & Moq., 600, 1027, 1393*, Ch, 0.6–1.0, riverine, river bed, river sand, alluvial sand
Oxygonum
sinuatum *(Hochst. & Steud. ex Meisn.) Dammer, 368, 1309, 1642*, H, 0.2–0.3, -, disturbed (old lands), de-bushed area, sandy loam

CHENOPODIACEAE
Chenopodium
ambrosioides *L.* *, *943*, T, 0.6, riverine, river bed, river sand
schraderianum *Roem. & Schult.* *, *1418*, T, 0.7, riverine, river bed, river sand

AMARANTHACEAE
Hermbstaedtia
odorata *(Burch.) T. Cooke* var. odorata, *562*, Ch, 0.6, *Combretum* woodland, dryland, loam
Sericorema
remotiflora *(Hook. f.) Lopr.*, §, Ch, 0.6, *Colophospermum* woodland, dryland, clayey loam
Kyphocarpa
angustifolia *(Moq.) Lopr., 1007*, H, 1.0, mixed woodland, dryland, sandy loam
cruciata *(Schinz) Schinz, 1187*, T, 0.3–0.4, mixed woodland, trampled veld, clayey loam
Cyathula
cylindrica *Moq., 590*, T, 1.0, *Combretum* woodland, dryland, sandy loam

lanceolata *Schinz*
(= *C. hereroensis* Schinz), *771*, Ch, 0.3, -, disturbed (de- bushed), sandy

Pupalia
lappacea *(L.) A. Juss.* var. lappacea *
(= *P. atropurpurea* (Lam.) Moq.), *1160, 1342*, H, 0.4–1.5, riverine, river bank, disturbed (roadside), gravel, sandy loam

Achyranthes
aspera *L.* var. aspera *, *1159, 1477*, Ch, 0.4–1.5, riverine, shade of riverine woodland, alluvial sand

Alternanthera
pungens *Humb., Bonpl. & Kunth* *, *1330*, H, 0.03–0.05, -, disturbed areas, gravel, sandy loam

Gomphrena
celosioides *Mart.* *, *1319*, H, 0.3, aquatic, seepage below dam, sandy, stony

NYCTAGINACEAE

Commicarpus
fallacissimus *(Heimerl) Heimerl ex Oberm., Schweick. & I. Verd.*, *1306*, Ch, 0.2, *Combretum* woodland, disturbed (trampled area next to waterhole), sandy clay loam
plumbagineus (Cav.) Standley, §, Ch, 1.2, riverine, river bank, sandy loam

Boerhavia
diffusa *L.**, *283, 285, 1253*, Ch, 0.2–0.6, grassland, vlei, disturbed (garden), sandy clayey loam, loam, clayey loam

AIZOACEAE (PART A)

Limeum
dinteri *G. Schellenb.*, §, H, -, -, -, -
fenestratum *(Fenzl) Heimerl* var. fenestratum, *942*, H, 0.4, -, disturbed (roadside), gravel
myosotis *H. Walter* var. confusum *Friedrich*, §, T, -, -, -, -
pterocarpum *(J. Gay) Heimerl* var. pterocarpum, *1581*, T, 0.5, *Combretum* woodland, heavily trampled and overgrazed areas, sandy loam
sulcatum *(Klotzsch) Hutch.* var. sulcatum, *280, 622, 1474*, H, 0.1–0.5, *Combretum* woodland, dryland, disturbed (garden), roadside, sandy, sandy loam

AIZOACEAE (PART B)

Gisekia
africana *(Lour.) Kuntze* var. africana, *941, 1580*, T, 0.02–0.05, *Combretum* woodland, dryland, roadside, sandy loam, gravel
africana *(Lour.) Kuntze* var. cymosa *Adamson*, *335*, T, 0.3, *Combretum* woodland, dryland, sandy

Mollugo
cerviana *(L.) Ser. ex DC.*, *389*, T, 0.06–0.1, -, disturbed (garden), sandy loam

Glinus
bainesii *(Oliv.) Pax*, *1319*, T, 0.3, aquatic, seepage below dam, sandy, stony

Hypertelis
salsoloides *(Burch.) Adamson* var. salsoloides, *364*, H, 0.2, *Combretum* woodland, dryland, sandy loam

Corbichonia
decumbens *(Forssk.) Exell*, *377, 1069*, Ch, 0.03–0.05, *Colophospermum* woodland, dryland, disturbed (roadside), sandy gravel, clay

PORTULACACEAE

Talinum
caffrum *(Thunb.) Eckl. & Zeyh.*, *1252*, G, 0.2, open parkland, seepline complex, clayey loam

Portulacaria
afra *Jacq.*, §, N, 1.7, koppie, rock outcrop, sandy, gravelly

Portulaca
oleracea *L.**, *1259*, Ch, 0.06, -, disturbed (garden), sandy loam
pilosa *L.*, *338, 1583*, H, 0.04–0.08, *Combretum* woodland, koppie, rock outcrop, disturbed (roadside), shallow, stony, sandy loam
quadrifida *L.*, *1078*, T, 0.1, open parkland, seepline complex, sandy clay

NYMPHAEACEAE

Nymphaea
lotus *L.*, *1092*, G, -, aquatic, seasonal pan, clay
nouchali *Burm. f.* var. caerulea *(Savigny) Verdc.*
(= *N. caerulea* Savigny), *1108*, G, -, aquatic, seasonal pan, clay
(= *N. capensis* L.), *1107*, G, -, aquatic, seasonal pan, clay

MENISPERMACEAE

Cocculus
hirsutus *(L.) Diels* *, *1620*, L, 2.0, riverine, river bank, shallow loam on quartzite

Tinospora
fragosa *(I. Verd.) I. Verd. & Troupin*
(= *Desmonema fragosum* I. Verd.), §, L, 5.0, koppie, rock outcrop, sandy

ANNONACEAE

Hexalobus
monopetalus *(A. Rich.) Engl. & Diels* var. monopetalus, *960, 1627, 1682*, Mi, 2.0–4.0, koppie, rock outcrop, shallow gravel, sandy loam

PAPAVERACEAE

Argemone
mexicana *L.* *, *1217*, T, 0.6, -, disturbed (old lands, roadside), sandy loam
ochroleuca *Sweet* subsp. ochroleuca *
(= *A. subfusiformis* G. B. Ownbey), *386*, T, 0.6, riverine, disturbed (old lands, roadside), river sand, sandy loam

BRASSICACEAE

Lepidium
africanum *(Burm. f.) DC.* subsp. africanum, *1080*, T, 0.3, -, disturbed (garden), sandy loam

CAPPARACEAE

Cleome
angustifolia *Forssk.* subsp. petersiana *(Klotzsch ex Sond.) Kers*, *336*, T, 0.7, *Combretum* woodland, dryland, gravelly loam
gynandra *L.*, §, T, 0.5, -, disturbed (old lands), sandy loam
hirta *(Klotzsch) Oliv.*, *1019*, T, 0.6–1.0, riverine, river bank, alluvial sand
maculata *(Sond.) Szyszyl.*, *1592*, T, 0.2–0.3, mixed woodland, dryland, trampled and overgrazed areas, shallow, sandy
monophylla *L.*, *392*, T, 0.2–0.3, *Combretum* woodland, dryland, sandy loam

Capparis
tomentosa *Lam.*, §, +, L, 1.5–10.0, riverine, seasonal stream, river & stream banks, alluvial sand, loam, clay loam

Boscia
albitrunca *(Burch.) Gilg & Gilg-Ben.* var. albitrunca
(= *Boscia albitrunca* (Burch.) Gilg & Gilg-Ben.), *976*, Me, 4.0–6.0, koppie, rock outcrop, stony loam

Maerua
juncea *Pax* subsp. crustata *(Wild) Wild*, *1687, 1716*, N, 1.5–2.0, open parkland, dryland, alluvial sand, sandy loam
parvifolia *Pax*, *339, 1003*, N, 0.6–0.8, *Combretum* woodland, dryland, seasonal stream bank, sandy loam, loam

CRASSULACEAE

Cotyledon
barbeyi *Schweinf. ex Baker*, *1175*, H, 0.6, riverine, quartzite cliffs, shallow sandy gravel

Kalanchoe
lanceolata *(Forssk.) Pers.*, §, H, 0.6, open parkland, seepline complex, clayey loam
longiflora *Schltr. ex J.M. Wood*, *1033, 1173*, H, 1.0, koppie, riverine, rock outcrop, quartzite cliffs, sandy gravel
paniculata *Harv.*, *1038, 1174, 1194*, H, 1.5–2.0, koppie, open parkland, mixed woodland, rock outcrop, seepline complex, erosion areas, shallow gravel, sandy loam, clayey loam
rotundifolia *(Haw.) Haw.*, *1480*, H, 0.3–0.5, open *Acacia* woodland, seepline complex, sandy loam

Crassula
expansa *Dryand.* subsp. fragilis *(Baker) Toelken*, *1475*, H, 0.3, open parkland, seepline complex, sandy loam

VAHLIACEAE

Vahlia
capensis *(L. f.) Thunb.* subsp. capensis, *365*, H, 0.2, *Combretum* woodland, dryland, sandy loam
capensis *(L. f.) Thunb.* subsp. vulgaris *Bridson* var. longiflora *(Gand.) Bridson*, *1263*, H, 0.2, -, disturbed (de-bushed), sandy loam

FABACEAE

Albizia
anthelmintica *(A. Rich.) Brongn.*, *1619*, Mi, 3.0–4.0, riverine, river bank, sandy loam
brevifolia *Schinz*, *1412, 1590*, Mi, 5.0, koppie, rock outcrop, -
forbesii *Benth.*, *1171*, Me, 20.0, open parkland, riverine, seasonal stream, seepline complex, river bank, sandy clayey loam

harveyi *E. Fourn., 261, 904*, Me, 5.0–8.0, *Acacia* & mixed woodland, dryland, seepline complex, sandy loam, loam

Acacia

erubescens *Welw. ex Oliv., 1589, 1622*, Me, 5.0–6.0, *Combretum–Commiphora* woodland, riverine, open parkland, dryland, river bank, seepline complex, shallow gravel, shallow stony loam

exuvialis *I. Verd., 1396*, Mi, 1.5–3.0, mixed woodland, dryland, shallow stony loam

gerrardii *Benth.* var. gerrardii, *1352, 1353, 1679*, Mi, 3.0–4.0, mixed woodland, open parkland, riverine, dryland, seepline complex, stream bank, sandy loam, sandy clayey loam

grandicornuta *Gerstner*, +, Me, -, -, -

mellifera *(Vahl) Benth.* subsp. detinens *(Burch.) Brenan, 1184, 1715*, Me, 6.0–10.0, riverine, mixed woodland, dryland, river bank, river bed, alluvial sand, clayey loam

nigrescens *Oliv.*, §, +, Me, -, -, -

nilotica *(L.) Willd. ex Delile* subsp. kraussiana *(Benth.) Brenan*, §, +, Me, -, -, -

robusta *Burch.* subsp. clavigera *(E. Mey.) Brenan, 1195*, Me, 10.0, riverine, river bank, alluvial sand

schweinfurthii *Brenan & Exell* var. schweinfurthii, §, L, 10.0, riverine, river bank, alluvial sand

senegal *(L.) Willd.* var. leiorhachis *Brenan*, §, Me, 6.0, *Combretum* woodland, dryland, stony sandy loam

senegal *(L.) Willd.* var. rostrata *Brenan, 598*, Mi, 1.8–4.5, *Combretum–Acacia* woodland, open parkland, dryland, seepline complex, loam, clayey loam

tortilis *(Forssk.) Hayne* subsp. heteracantha *(Burch.) Brenan, 914*, Me, 7.0, riverine, *Acacia* woodland, river bank, dryland, disturbed (old lands & cattle kraals), alluvial sand, stony loam, loam

Dichrostachys

cinerea *(L.) Wight & Arn.* subsp. africana *Brenan & Brummitt* var. africana, *388*, Mi, 1.8, woodland, shrubveld, dryland, sandy loam

Colophospermum

mopane *(J. Kirk. ex Benth.) J. Kirk ex J. Léonard*, §, +, Me, 2.0–15.0, woodland & shrubveld dominant, -, sandy loam, clayey loam

Schotia

brachypetala *Sond.*, §, +, Me, 10.0, riverine, termitarium, river bank, dryland, sandy clayey loam

capitata *Bolle*, §, N, 0.5–1.5, open parkland, seepline complex, clayey loam

Bauhinia

galpinii *N.E. Br.*, §, +, Mi, 5.0, riverine, river bank, alluvial sand, loam

Cassia

abbreviata *Oliv.* subsp. beareana *(Holmes) Brenan*, §, +, Me, 3.0–6.0, *Acacia* & mixed woodland, dryland, sandy loam

Chamaecrista

mimosoides *(L.) Greene*
(= *Cassia mimosoides* L.), §, Ch, 0.3, *Combretum* & mixed woodland, dryland, sandy loam

stricta *E. Mey.*
(= *Cassia quarrei* (Ghesq.) Steyaert), *1104*, Ch, 0.3, *Combretum* woodland, dryland, sandy loam

Senna

italica subsp. arachoides *(Burch.) Lock*
(= *Cassia italica* (Mill.) Lam. ex F.W. Andrews subsp. *arachoides* (Burch.) Brenan), *366*, H, 0.2, *Colophospermum–Combretum* woodland, dryland, sandy loam

occidentalis *(L.) Link* *
(= *Cassia occidentalis* L.), §, Ch, 1.1, riverine, river bank, sandy loam

petersiana *(Bolle) Lock*
(= *Cassia petersiana* Bolle), §, N, 1.5, -, roadside, sandy loam

Pterolobium

stellatum *(Forssk.) Brenan, 1181*, Mi, 3.0, riverine, river bank, alluvial sand

Peltophorum

africanum *Sond.*, §, +, Me, 6.0, mixed woodland, dryland, sandy loam

Bolusanthus

speciosus *(Bolus) Harms* §, +, Me, 8.0, *Acacia* & mixed woodland, riverine, seasonal stream, dryland, river & stream bank, sandy loam

Crotalaria

burkeana *Benth., 1089*, Ch, 0.4, -, disturbed (old lands, roadside), sandy loam

laburnifolia *L.* subsp. australis *(Baker f.) Polhill, 1314*, Ch, 0.6, -, disturbed (roadside), sandy loam

monteiroi *Taub. ex Baker f.* var. galpinii *Burtt Davy ex I. Verd.*
(= *C. rigidula* Baker f.), §, Ch, 1.0, seasonal stream, stream bank, sandy loam

schinzii *Baker f., 277, 308, 1134*, H, 0.2–1.0, *Combretum* woodland, dryland, disturbed (roadside), sandy loam

virgulata *Klotzsch* subsp. grantiana *(Harv.) Polhill*, 575, 1105, H, 0.2–0.3, *Combretum* woodland, dryland, disturbed (roadside), sandy loam, loam

Indigofera

bainesii *Baker, 964*, H, 0.2, -, disturbed (roadside), stony loam

costata *Guill. & Perr.* subsp. macra *(E. Mey.) J.B. Gillett*
(= *I. macra* E. Mey.), §, H, 0.5, seasonal stream, stream bank, sandy loam

filipes *Benth. ex Harv., 1017, 1321*, T, 0.5, *Combretum* woodland, dryland, disturbed (roadside), gravel, sandy or stony loam

galpinii *N.E. Br., 1511*, T, 0.3, -, disturbed (garden), stony or sandy loam

lydenburgensis *N.E. Br., 1473*, Ch, 0.5–0.6, mixed woodland, open parkland, seepline complex, sandy loam

Tephrosia

longipes *Meisn.* subsp. longipes, *881, 1071*, Ch, 0.6–1.0, riverine, river bed, disturbed (roadside), river sand, stony loam

polystachya *E. Mey.* var. latifolia *Harv.*, §, Ch, 0.4, -, -, -

rhodesica *Baker f.* var. rhodesica, *982*, Ch, 0.4, -, disturbed (de- bushed), sandy clayey loam

villosa *(L.) Pers.* subsp. ehrenbergiana *(Schweinf.) Brummitt* var. daviesii *Brummitt, 1130*, Ch, 1.0, -, disturbed (roadside), gravel, sandy clay

Mundulea

sericea *(Willd.) A. Chev.*, §, +, Mi, 2.0, open parkland, upper edge of seepline complex, sandy clayey loam

Sesbania

bispinosa *(Jacq.) W. Wight* var. bispinosa *, *921, 1135*, Mi, 2.0–2.5, seasonal stream, stream bed, river sand, silt

sesban *(L.) Merr.* subsp. sesban var. nubica *Chiov., 1493*, H, 2.0, riverine, river bank, alluvial sand

Ormocarpum

trichocarpum *(Taub.) Engl., 524*, Mi, 1.6–2.4, mixed woodland, open parkland, dryland, seepline complex, stony loam, sandy clayey loam

Aeschynomene

indica *L., 1166*, T, 1.0, seasonal stream, stream bank, alluvial sand

Stylosanthes

fruticosa *(Retz.) Alston, 1147*, H, 0.3, open parkland, seepline complex, sandy clayey loam

Zornia

glochidiata *DC., 1124*, T, 0.3, -, disturbed (roadside), sandy loam

Dalbergia

melanoxylon *Guill. & Perr., 1402*, Mi, 3.0, open parkland, riverine, upper edge of seepline complex, alluvial sand, sandy clayey loam

Lonchocarpus

capassa *Rolfe, 341*, Me, 10.0, riverine, woodland, river bank, dryland, alluvial sand, loam

Xanthocercis

zambesiaca *(Baker) Dumaz-le-Grand, 579*, Me, 12.0–15.0, riverine, *Combretum–Commiphora* woodland, river bank, termitarium, alluvial sand, clayey loam

Abrus

precatorius *L.* subsp. africanus *Verdc., 1115*, L, 2.0, riverine, seasonal stream, river & stream bank, alluvial sand, sandy loam

Erythrina

humeana *Spreng.*, §, N, 1.5–2.0, riverine, seasonal stream, river & stream bank, alluvial sand, sandy loam

Rhynchosia

caribaea *(Jacq.) DC., 886*, L, 1.0, *Colophospermum* woodland, dryland, sandy clay

minima *(L.) DC.* var. prostrata *(Harv.) Meikle, 382*, H, 0.6, *Combretum* woodland, dryland, disturbed (roadside), gravel

sp., *276*, -, 0.6, *Combretum* woodland, dryland, sandy

Eriosema

psoraleoides *(Lam.) G. Don, 884*, Ch, 2.0, riverine, river bed, river sand

Vigna

unguiculata *(L.) Walp.* subsp. unguiculata, *1112, 1643*, L, 1.0–2.0, riverine, mixed woodland, river bank, dryland, alluvial sand, sandy loam

Dolichos

trilobus *L.* subsp. transvaalicus *Verdc., 1320*, L, 0.6, aquatic, seepage below dam, deep shade, clayey loam

Macrotyloma

axillare *(E. Mey.) Verdc.* var. axillare, *1123*, L, 0.5, *Combretum* woodland, dryland, sandy or stony loam

Decorsea

schlechteri *(Harms) Verdc., 1355*, L, 2.0, seasonal stream, woodland, stream bank, dryland, alluvial & river sand, sandy loam

GERANIACEAE
Monsonia
angustifolia *E. Mey. ex A. Rich., 1077*, Ch, 1.0, mixed woodland, dryland, sandy loam
burkeana *Planch. ex Harv., 1059*, T, 0.3, *Combretum* woodland, dryland, sandy loam
glauca *R. Knuth, 1020, 1053*, H, 0.2–0.4, *Combretum* woodland, koppie, dryland, rock outcrop, stony loam

OXALIDACEAE
Oxalis
corniculata *L.* *, *1207*, H, 0.08, -, disturbed (garden lawn), sandy loam
latifolia *Humb., Bonpl. & Kunth* *, *1021*, T, 0.2, mixed woodland, deep shade in dryland, loam

ZYGOPHYLLACEAE
Tribulus
terrestris *L., 328*, T, 0.2, riverine, river bank, disturbed (roadside, debushed, trampled), sandy loam, loam
zeyheri *Sond.* subsp. zeyheri, *1004*, T, 0.2, -, disturbed (roadside), sandy loam

BALANITACEAE
Balanites
maughamii *Sprague, 1405*, Me, 12.0, open woodland, dryland, alluvial sand, sandy loam

RUTACEAE
Zanthoxylum
capense *(Thunb.) Harv.*, §, Mi, 1.2, mixed woodland, dryland thicket, stony loam
Teclea
pilosa *(Engl.) I. Verd., 1048*, N, 1.0, riverine, river bank, sandy clayey loam

SIMAROUBACEAE
Kirkia
wilmsii *Engl., 1413*, Me, 6.0, koppie, rock outcrop, shallow sandy

BURSERACEAE
Commiphora
africana *(A. Rich.) Engl., 340, 576, 974*, Mi, 1.2–3.0, koppie, *Combretum* woodland, rock outcrop, dryland, stony loam, sandy loam
glandulosa *Schinz*, §, Mi, 4.0, *Combretum* woodland, dryland, shallow gravelly
merkeri *Engl., 342*, Me, 1.2, riverine, river bank, stony loam
mollis *(Oliv.) Engl., 957*, Me, 5.0, *Combretum–Commiphora* woodland, mixed woodland, dryland, shallow stony
pyracanthoides *Engl., 993, JdK 10*, N, 1.5, koppie, rock outcrop, sandy

PTAEROXYLACEAE
Ptaeroxylon
obliquum *(Thunb.) Radlk.*, §, Mi, 3.0, koppie, rock outcrop, sandy, gravelly

MELIACEAE
Turraea
obtusifolia *Hochst., 887, 922, 1086*, Ch, 0.7–1.0, *Colophospermum, Combretum*, & mixed woodland, dryland, stony, sandy loam, sandy clay loam
Trichilia
emetica *Vahl*, §, Me, 10.0, riverine, river bank, alluvial sand

MALPIGHIACEAE
Triaspis
hypericoides *(DC.) Burch.* subsp. nelsonii *(Oliv.) Immelman, 1349*
(= *T. nelsonii* Oliv.), *773*, N, 0.5–1.5, *Combretum* & mixed woodland, dryland, rocky, stony
Sphedamnocarpus
pruriens *(Juss.) Szyszyl.* subsp. pruriens, *885, 1110*, L, 1.5–2.0, *Colophospermum, Combretum*, and mixed woodland, dryland, sandy loam, sandy clayey loam

POLYGALACEAE
Polygala
sphenoptera *Fresen., 1146*, H, 0.5, *Combretum* woodland, dryland, sandy loam

EUPHORBIACEAE
Securinega
virosa *(Roxb. ex Willd.) Pax & K. Hoffm., 333*, N, 1.5–2.0, riverine, seasonal stream, roadside, open parkland, river bank, stream bank, seepline complex, sandy loam, loam, clay loam
Phyllanthus
maderaspatensis *L., 347*, Ch, 0.5, *Combretum* woodland, dryland, sandy
pinnatus *(Wight) G.L. Webster*
(= *P. kirkianus* Müll.Arg.), *891, 1214*, N, 1.5, *Colophospermum* woodland, dryland, stony loam
reticulatus *Poir., 1675*, Mi, 1.0–3.0, riverine, seasonal stream, river bank, stream bank, alluvial sand, sandy loam
Bridelia
cathartica *Bertol. f., 1129, 1403*, Mi, 2.0–3.0, riverine, river bank, alluvial sand
micrantha *(Hochst.) Baill.*, §, +, Mi, 5.0, riverine, river bank, alluvial sand
mollis *Hutch.*, §, +, Me, 6.0, koppie, rock outcrop, sandy
Croton
megalobotrys *Müll.Arg., 1404*, Me, 4.0, riverine, river bank, alluvial sand
Acalypha
indica *L., 940, 1005, 1429, 1585*, T, 0.4–0.5, -, disturbed (roadside, garden), gravel, sandy loam
villicaulis *Hochst.*
(= *A. petiolaris* Hochst.), §, H, 0.3–0.5, riverine, seasonal stream, river & stream bank, alluvial sand, sandy loam
Tragia
dioica *Sond., 772*, H, 0.3, *Combretum* & mixed woodland, dryland, disturbed (overgrazed, trampled), sandy
rupestris *Sond., 1068, 1113*, L, 0.6–1.5, riverine, seasonal stream, river & stream bank, alluvial sand, sandy loam
Dalechampia
galpinii *Pax, 1116*, L, 1.0, mixed woodland, dryland, stony loam
Jatropha
curcas *L.* *, *1610*, Ch, 0.7, koppie, rock outcrop, sandy loam
spicata *Pax*
(= *J. messinica* E.A. Bruce), *958*, Ch, 0.7, koppie, rock outcrop, sandy or stony loam
zeyheri *Sond.* var. zeyheri, *259, 621, 1262*, H, 0.2–0.3, *Combretum* woodland, dryland, sandy loam
Spirostachys
africana *Sond.*, §, +, Me, 4.0–10.0, riverine, seasonal stream, open parkland, river & stream bank, seepline complex, clayey loam, clay
Euphorbia
cooperi *N.E. Br. ex A. Berger* var. cooperi, §, Mi, 3.0, *Combretum–Commiphora* woodland, dryland, stony sandy loam
guerichiana *Pax, 925*, N, 1.3, mixed woodland, dryland, stony
schinzii *Pax*, §, Ch, 0.5, *Combretum–Commiphora* woodland, dryland, shallow stony sandy loam
tirucalli *L.*, §, L, 6.0, riverine, rocky river bank (cliff), shallow stony
Chamaesyce
hirta *(L.) Millsp.*
(= *Euphorbia hirta* L.), *1008*, H, 0.1–0.3, -, disturbed (garden, roadside), sandy loam
neopolycnemoides *(Pax & K. Hoffm.) Koutnik*
(= *Euphorbia neopolycnemoides* Pax & K. Hoffm.), *1094*, H, 0.3, koppie, rock outcrop, loam

ANACARDIACEAE
Sclerocarya
birrea *(A. Rich.) Hochst.* subsp. caffra *(Sond.) Kokwaro*
(= *S. caffra* Sond.), §, +, Me, 3.0–15.0, *Acacia & Combretum* woodland, dryland, sandy loam
Lannea
schweinfurthii *(Engl.) Engl.* var. stuhlmanni *(Engl.) Kokwaro*
(= *L. stuhlmannii* (Engl.) Engl.), §, Me, 8.0, *Combretum* & mixed woodland, dryland, sandy loam
Ozoroa
paniculosa *(Sond.) R. Fern. & A. Fern.* var. paniculosa, *895, 1332, JdK 8*, Mi, 2.0–4.0, mixed woodland, dryland, stony loam
Rhus
gueinzii *Sond, 980*, Mi, 2.0–4.0, riverine, seasonal stream, river & stream bank, alluvial sand, sandy loam
pentheri *Zahlbr., 1140*, Mi, 1.0, -, termitarium, sandy clay

CELASTRACEAE
Maytenus
heterophylla *(Eckl. & Zeyh.) N. Robson, 893, 1057*, Mi, 2.0–3.0, riverine, seasonal stream, open parkland, mixed woodland, river & stream

bank, seepline complex, dryland, alluvial sand, sandy loam, sandy clay

senegalensis *(Lam.) Exell*, §, +, JdK 21, Mi, 1.0–2.5, riverine, seasonal stream, river & stream bank, alluvial sand, sandy loam

Cassine

aethiopica *Thunb.* §, +, Mi, -, -, -, -

burkeana *(Sond.) Kuntze, 1044*, Mi, 2.0–3.0, riverine, seasonal stream, river & stream bank, sandy loam

transvaalensis *(Burtt Davy) Codd, 1186*, Me, 6.0–8.0, mixed woodland, koppie, dryland, rock outcrop, sandy loam

Hippocratea

longipetiolata *Oliv.*, §, +, L, 3.0, koppie, seasonal stream, rock outcrop, stream bank, termitarium, shallow stony & sandy, sandy clay

SAPINDACEAE

Cardiospermum

corindum *L., 1015, 1064*, L, 1.0–2.0, *Combretum* & mixed woodland, dryland, stony loam

Pappea

capensis *Eckl. & Zeyh.*, §, +, Mi, 4.0, koppie, open parkland, rock outcrop, seepline complex, sandy, gravelly, clayey loam

Dodonaea

angustifolia *L. f.*
(= *D. viscosa* Jacq. var. *angustifolia* Benth.), *1628*, Mi, 3.0–4.0, riverine, river bed, river sand

RHAMNACEAE

Ziziphus

mucronata *Willd.* subsp. mucronata, §, +, Me, 6.0, mixed woodland, dryland, sandy loam

Berchemia

discolor *(Klotzsch) Hemsl., 961, 1036*, Me, 3.0–6.0, koppie, riverine, rock outcrop, river bank, alluvial sand, sandy

zeyheri *(Sond.) Grubov*, +, Me, -, -, -, -

VITACEAE

Rhoicissus

tridentata *(L. f.) Wild & R.B. Drumm.* subsp. cuneifolia *(Eckl. & Zeyh.) N.R. Urton, 1158*, L, 3.0, riverine, river bank, alluvial sand

Cissus

cornifolia *(Baker) Planch.*
(= *C. lonicerifolia* C.A. Sm.), §, N, 1.2, *Combretum* & mixed woodland, dryland, sandy loam

quadrangularis *L.*, §, L, 4.0, *Combretum* & mixed woodland, dryland, sandy loam

rotundifolia *(Forssk.) Vahl, 1032*, L, 3.0, koppie, rock outcrop, sandy

Cyphostemma

puberulum *(C.A. Sm.) Wild & R.B. Drumm., 1111, 1114*, L, 1.5, mixed woodland, riverine, dryland, river bank, alluvial sand, sandy loam, clayey loam

schlechteri *(Gilg & M. Brandt) Desc. ex Wild & R.B. Drumm., 1258*, L, -, -, termitarium, red sandy loam

TILIACEAE

Corchorus

asplenifolius *Burch., 1639*, H, 0.2, *Combretum* woodland, dryland, sandy loam

confusus *Wild, 281*, H, 0.2, *Combretum* woodland, dryland, sandy

Grewia

bicolor *Juss., 310, 501, 1398, PJM 02, 03, 04, JdK 28, 29*, Mi, 1.2–3.0, *Combretum* & *Combretum–Commiphora* woodland, dryland, shallow gravel, stony loam, sandy loam

flava *DC., 279*, Mi, 1.5, *Combretum* woodland, dryland, sandy

flavescens *Juss.* var. flavescens, *JdK 25, 26*, §, +, Mi, 2.0– 3.0, *Combretum–Commiphora* woodland, dryland, shallow gravel

hexamita *Burret, 252*, Mi, 1.5–3.0, *Combretum* woodland, dryland, stony loam

monticola *Sond.*, +, Mi, -, -, -, -

subspathulata *N.E. Br., 1397, PJM 01, JdK 27*, Mi, 2.0, *Combretum* & *Combretum–Commiphora* woodland, -, shallow gravel, sandy loam

sulcata *Mast., 1026, 1414*, Mi, 1.0–1.5, riverine, river bank, alluvial sand

villosa *Willd., 999*, N, 0.7, *Acacia* & mixed woodland, dryland, termitarium, sandy clayey loam

Triumfetta

rhomboidea *Jacq., 1640*, Ch, 1.5, riverine, river bank, alluvial sand

MALVACEAE

Abutilon

angulatum *(Guill. & Perr.) Mast.* var. angulatum, §, T, 1.2, riverine, river bank, sandy, loam

austro-africanum *Hochr., 275, 1055*, H, 0.3–0.4, *Combretum* & mixed woodland, dryland, sandy loam

englerianum *Ulbr., 374*, H, 0.5, -, termitarium, loam

ramosum *(Cav.) Guill. & Perr., 1641*, H, 1.5, riverine, river bank, alluvial sand

Sida

chrysantha *Ulbr., 282, 1054, 1133, 1265*, H, 0.3–0.5, *Combretum* & mixed woodland, dryland, disturbed (roadside), gravelly loam, sandy loam, sandy clayey loam

cordifolia *L., 951, 1144*, H, 0.5–0.6, koppie, rock outcrop, disturbed (old lands), course gravel, sandy loam

rhombifolia *L., 1334*, H, 0.4, riverine, river bed, river sand

Pavonia

burchellii *(DC.) R.A. Dyer, 619, 906, 1051, 1083*, H, 0.3–0.6, *Acacia, Combretum*, & mixed woodland, dryland, termitarium, sandy loam, loam, clayey loam

Hibiscus

calyphyllus *Cav., 1081*, H, 0.4, open parkland, seepline complex, sandy clay

cannabinus *L., 1018, 1163*, H, 1.7, seasonal stream, stream bed, river sand

coddii *Exell, 1614*, H, 1.0, koppie, rock outcrop, shallow sandy

engleri *K. Schum., 354, 1367*, H, 0.7–1.0, koppie, riverine, rock outcrop, river bank, shallow sandy loam

meyeri *Harv.* subsp. meyeri, *1261*, H, 1.0, *Combretum* woodland, dryland, sandy loam

micranthus *L. f., 251*, H, 0.9, *Combretum* woodland, dryland, stony loam

praeteritus *R.A. Dyer, 385, 874, 1099*, H, 1.0–2.0, riverine, seasonal stream, river & stream bank, sandy loam, loam

pusillus *Thunb., 1087*, H, 0.3, *Combretum* & mixed woodland, dryland, sandy clayey loam

schinzii *Gürke, 1149*, H, 0.1, -, disturbed (old lands, roadside), sandy loam

sidiformis *Baill., 1340*, H, 0.3, -, disturbed (roadside), gravel, sandy loam

upingtoniae *Gürke, 1085*, L, 0.4, mixed woodland, dryland, sandy clayey loam

Gossypium

herbaceum *L.* subsp. africanum *(Watt) Vollesen*
(= var. *africanum* (Watt) Hutch. & R.L.M. Ghose), *873*, N, 1.5, mixed woodland, dryland, sandy loam

BOMBACACEAE

Adansonia

digitata *L.*, §, Me, 15.0, *Acacia* woodland, dryland, sandy loam

STERCULIACEAE

Melhania

acuminata *Mast.* var. acuminata, §, Ch, 0.5–0.6, *Colophospermum* woodland, disturbed (overgrazed & trampled), sandy, gravel

forbesii *Planch. ex Mast.*, §, +, Ch, 0.6, *Combretum, Acacia*, & mixed woodland, riverine, dryland, disturbed (overgrazed & trampled), river bank, sandy loam

prostrata *DC., 379*, H, 0.3, -, disturbed (roadside), gravel

rehmannii *Szyszyl., 1714*, Ch, 0.3–0.7, *Combretum* woodland, dryland, shallow gravel

Dombeya

rotundifolia *(Hochst.) Planch.* var. rotundifolia, §, Mi, 3.0, koppie, riverine, seasonal stream, rock outcrop, river & stream bank, sandy loam

Hermannia

glanduligera *K. Schum.*
(= *H. viscosa* sensu Burtt Davy non Hiern), *1400*, H, 0.6, -, disturbed (roadside), dryland, sandy loam

modesta *(Ehrenb.) Mast., 278, 1125*, T, 0.2–0.5, *Combretum* woodland, dryland, disturbed (roadside), stony, sandy loam

Waltheria

indica *L., 605, 1126*, H, 0.4–0.5, *Combretum* woodland, dryland, disturbed (roadside), stony, sandy loam

Sterculia

rogersii *N.E. Br., 955*, Mi, 3.0, koppie, rock outcrop, shallow stony loam

OCHNACEAE

Ochna

inermis *(Forssk.) Schweinf., 991, 1045*, Mi, 2.0, koppie, rock outcrop, stony loam

pretoriensis *E. Phillips*, +, Mi, -, -, -, -

CLUSIACEAE

Garcinia

livingstonei *T. Anderson, 1415*, Me, 15.0, riverine, river bank, alluvial sand

ELATINACEAE
Bergia
decumbens *Planch. ex Harv., 1615*, H, 0.1–0.2, aquatic, dam shores, clay

VIOLACEAE
Hybanthus
capensis *(Thunb.) Engl., 255*, H, 0.3, *Combretum* woodland, dryland, loam
enneaspermus *(L.) F Muell. *, 1082, 1255*, T, 0.1, *Combretum* woodland, disturbed (de-bushed), dryland, sandy loam, sandy clayey loam

TURNERACEAE
Tricliceras
glanduliferum *(Klotzsch) R. Fern.*
(= *Wormskioldia glandulifera* Klotzsch), *1339*, T, 0.3, -, disturbed (roadside), sandy loam
laceratum *(Oberm.) Oberm.*
(= *Wormskioldia lacerata* Oberm.), *620*, T, 0.2, *Combretum* woodland, -, sandy, stony
longipedunculatum *(Mast.) R. Fern.* var. longipedunculatum
(= *Wormskioldia longipedunculata* Mast.), §, T, 0.3, -, disturbed (roadside), gravel, sandy loam

PASSIFLORACEAE
Adenia
digitata *(Harv.) Engl., 1507*, L, 1.5, *Combretum* woodland, dryland, shallow stony loam
hastata *(Harv.) Schinz* var. hastata, *1354*, L, 2.0, *Combretum* woodland, dryland, red sandy loam

THYMELAEACEAE
Gnidia
rubescens *B. Peterson, 319*, H, 0.4, *Combretum* woodland, dryland, disturbed (roadside), gravel

LYTHRACEAE
Ammannia
senegalensis *Lam. ex Poir, 1164*, T, 0.6, seasonal stream, stream bed, damp river sand

COMBRETACEAE
Combretum
apiculatum *Sond.* subsp. apiculatum, §, +, Mi, 3.0–5.0, woodland dominant, dryland, sandy loam
erythrophyllum *(Burch.) Sond., 1417*, Me, 5.0, riverine, river bank, river bed, alluvial & river sand
hereroense *Schinz, 343*, Mi, 3.0–5.0, *Combretum* woodland, riverine, seasonal stream, dryland, river & stream bank, gravel, alluvial sand, sandy loam
imberbe *Wawra*, §, +, Me, 10.0, mixed woodland, riverine & seasonal stream, dryland, river & stream bank, clayey loam, clay
microphyllum *Klotzsch*
(= *C. paniculatum* Vent. subsp. *microphyllum* (Klotzsch) Wickens), §, L, 10.0, riverine, river bank, alluvial sand
mossambicense *(Klotzsch) Engl., 323*, Mi, 1.5–2.5, riverine, *Combretum* woodland, river bank, stony or sandy loam
zeyheri *Sond., 262*, Me, 4.5–6.0, mixed woodland, dryland, loam
Terminalia
prunioides *M.A. Lawson, 317*, Me, 6.0, *Combretum* woodland, dryland, shallow stony loam
sericea *Burch. ex DC.*, §, +, Me, 6.0, *Combretum* woodland, open parkland, upper edge of seepline complex, sandy loam

MYRTACEAE
Syzygium
guineense *(Willd.) DC.*, §, Me, 10.0, riverine, river bed, river sand

ONAGRACEAE
Ludwigia
octovalvis *(Jacq.) P.H. Raven* subsp. octovalvis, *1128, 1338*, H, 1.0, riverine, river bed, wet river sand
polycarpa *Short & Peter ex Torr. & A. Gray, 1165*, T, 0.9, seasonal stream, stream bed, river sand
stolonifera *(Guill. & Perr.) P.H. Raven, 1535*, H, 0.1–0.2, aquatic, river bed, mud

APIACEAE
Steganotaenia
araliacea *Hochst., 1613*, Mi, 4.0, koppie, rock outcrop, loam

PLUMBAGINACEAE
Plumbago
zeylanica *L.*, §, H, 1.2, riverine, river bank, sandy loam

SAPOTACEAE
Manilkara
mochisia *(Baker) Dubard, 362*, Mi, 2.5–5.0, riverine, open parkland, river bank, seepline complex, sandy loam, clayey loam

EBENACEAE
Euclea
divinorum *Hiern, 1042*, Mi, 2.0–3.0, seasonal stream, open parkland, stream bank, seepline complex, sandy-loam, sandy clayey loam
natalensis *A. DC.* subsp. natalensis, *1046*, Mi, 2.0, riverine, seasonal stream, river & stream bank, alluvial sand, sandy loam
undulata *Thunb.* var. undulata, *375, 1331*, N, 1.0–2.0, *Combretum* & mixed woodland, dryland, sandy loam, loam
Diospyros
mespiliformis *Hochst. ex A. DC., 399*, Me, 15.0–20.0, riverine, seasonal stream, river & stream bank, termitarium, sandy loam, clayey loam

OLEACEAE
Jasminum
fluminense *Vell., 1063*, L, 0.6, seasonal stream, stream bank, sandy loam
multipartitum *Hochst., 344*, L, 4.0, *Combretum* woodland, dryland, gravel
sp. cf. J. stenolobum *Rolfe, 1534*, N, -, koppie, rock outcrop, gravel

LOGANIACEAE
Strychnos
madagascariensis *Poir., 981, JdK 5*, Mi, 1.5–3.5, *Combretum* woodland, koppie, dryland, rock outcrop, gravel, stony loam, sandy
spinosa *Lam., 1406*, Mi, 3.0, open woodland, dryland, alluvial sand
Nuxia
oppositifolia *(Hochst.) Benth., 1336, 1409*, Mi, 3.0–4.0, riverine, seasonal stream, river & stream bed, river sand, sandy loam

GENTIANACEAE
Enicostema
hyssopifolium *(Willd.) I. Verd., 1079*, H, 0.1, open parkland, seepline complex, sandy clay

APOCYNACEAE
Carissa
bispinosa *(L.) Desf. ex Brenan* subsp. bispinosa, §, +, N, 1.0–1.7, riverine, seasonal stream, river & stream bank, sandy loam, loam
Adenium
multiflorum *Klotzsch*
(= *A. obesum* (Forssk.) Roem. & Schult. var. *multiflorum* (Klotzsch) Codd), §, +, N, 0.5–1.2, koppie, open parkland, rock outcrop, seepline complex, sandy, sandy clay loam
Pachypodium
saundersii *N.E. Br., 962*, N, 0.7–1.2, koppie, rock outcrop, sandy loam
Strophanthus
gerrardii *Stapf, 1303*, L, 7.0, riverine, seasonal stream, river & stream bank, alluvial sand

PERIPLOCACEAE
Cryptolepis
obtusa *N.E. Br.*, §, L, 1.3–1.8, riverine, river bed (reed bed), river sand
Stomatostemma
monteiroae *(Oliv.) N.E. Br., 1329*, Ch, 0.4, koppie, rock outcrop, seepline complex, loam, clay
Raphionacme
burkei *N.E. Br., 1625, 1626*, G, 0.2–0.3, *Combretum* woodland, dryland, sandy loam
galpinii *Schltr., 1593*, G, 0.1–0.2, *Combretum* woodland, dryland, sandy loam
monteiroae *(Oliv.) N.E. Br.*, §, G, -, -, -, -
sp., *1579, 1598*, -, 1.0, koppie, rock outcrop (dolerite), loam, humus-rich loam

ASCLEPIADACEAE
Schizoglossum
sp., *1264*, H, 0.2, *Combretum–Acacia* woodland, dryland, clay loam
Kanahia
laniflora *(Forssk.) R. Br., 1377*, H, 1.0, riverine, river bed river sand

Stenostelma
capense *Schltr.*
(= *Schizoglossum capense* (Schltr.) H. Huber), *337*, G, 0.1, *Combretum* woodland, dryland, shallow sandy
Asclepias
fruticosa *L.*, §, H, 1.0, riverine, river bed, river sand
Sarcostemma
viminale *(L.) R. Br.*, §, L, 4.0, mixed woodland, dryland, sandy loam
Secamone
parvifolia *(Oliv.) Bullock, 1308*, L, 0.05, riverine, river bank, alluvial sand
Ceropegia
mafekingensis *(N.E. Br.) R.A. Dyer, 1536*, G, 0.3, *Colophospermum* shrubveld, dryland, sandy clayey loam
rendallii *N.E. Br., 1170*, G, 1.5, seasonal stream, stream bank thicket, sandy gravelly loam
Stapelia
gettliffei *Pott-Leend., 1599*, Ch, 0.2, *Combretum–Commiphora* woodland, dryland, shallow sandy & stony
gigantea *N.E. Br.*, §, Ch, 0.3, open riverine shrubveld, riverbank, sandy loam
Orbea
maculata *(N.E. Br.) L.C. Leach, 1602*, Ch, 0.1–0.2, *Combretum–Commiphora* woodland, dryland, shallow sandy & stony
Pachycymbium
rogersii *(L. Bolus) M.G. Gilbert*
(= *Caralluma rogersii* (L. Bolus) E.A. Druce & R.A. Dyer), §, Ch, 0.2–0.3, open parkland, seepline complex, clayey loam
Huernia
kirkii *N.E. Br.*, §, Ch, 0.1, *Colophospermum* woodland, dryland, red sandy loam
Pergularia
daemia *(Forssk.) Chiov.* var. daemia, *1161*, L, 2.0, riverine, disturbed (roadside), stony sandy loam
Fockea
angustifolia *K. Schum., 1427, 1600*, G, 0.2-0.4, open *Combretum & Colophospermum* woodland, dryland, shallow stony, clay loam, clay

CONVOLVULACEAE
Evolvulus
alsinoides *(L.) L.* var. linifolius *(L.) Baker, 348*, H, 0.1, *Combretum* woodland, dryland, sandy
Seddera
suffruticosa *(Schinz) Hallier f.* §, H, 0.4, mixed woodland, dryland, sandy loam
Merremia
kentrocaulos *(C.B. Clarke) Rendle*, §, L, 2.0, *Combretum* woodland, dryland, gravel, loam
palmata *Hallier f.*, §, L, 1.0, *Colophospermum* woodland, dryland, sandy loam
tridentata *(L.) Hallier f.* subsp. angustifolia *(Jacq.) Ooststr.* var. angustifolia, *979*, H, 0.06, -, disturbed (roadside), sandy loam
Ipomoea
albivenia *(Lindl.) Sweet*, §, L, 6.0, riverine, seasonal stream, open parkland, river & stream bank, seepline complex, clayey loam
arachnosperma *Welw.*, §, L, 1.2, *Combretum* woodland, dryland, sandy loam
bolusiana *Schinz* subsp. bolusiana, §, H, 0.1, *Combretum* & mixed woodland, dryland, sandy loam
coptica *(L.) Roth ex Roem. & Schult.* var. coptica, *1139*, H, 0.05, *Combretum* woodland, disturbed (roadside), sandy
crassipes *Hook., 346A, 723, 1154*, H, 0.05–0.2, *Combretum* & mixed woodland, dryland, disturbed (roadside), sandy, stony sandy loam
hochstetteri *House, 1114A*, L, 2.0, riverine, mixed woodland, river bank, dryland, alluvial sand, sandy loam
magnusiana *Schinz* var. eenii *(Rendle) A. Meeuse, 1013*, L, 0.1, open mixed woodland, dryland, stony loam
magnusiana *Schinz* var. magnusiana, *1114*, L, 2.0, riverine, mixed woodland, river bank, dryland, alluvial sand, sandy loam
obscura *(L.) Ker Gawl.* var. fragilis *(Choisy) A. Meeuse, 1351*, L, 0.1, *Combretum* woodland, dryland, shallow stony
sinensis *(Desr.) Choisy* subsp. blepharosepala *(Hochst. ex A. Rich.) Verdc.*, §, L, 1.3, *Combretum* woodland, dryland, sandy clayey loam

BORAGINACEAE
Cordia
monoica *Roxb., 1597*
(= *C. ovalis* R. Br. ex DC.), *1119, 1152, JdK 16*, Mi, 2.0–4.5, open parkland, koppie, closed riverine woodland, seepline, termitarium, rock outcrop, sandy humus-rich loam, sandy clay loam, clayey loam
Ehretia
amoena *Klotzsch, 722, 894*, Mi, 1.3–2.0, open woodland, seasonal stream, dryland, stream bank, stony, sandy loam
obtusifolia *Hochst. ex DC., 1233*, N, 2.0, *Combretum–Terminalia* woodland, dryland, shallow stony
rigida *(Thunb.) Druce*, §, N, 0.2–0.6, open parkland, *Acacia* woodland, seepline complex, dryland, sandy clayey loam
Heliotropium
lineare *(A. DC.) Gürke*, §, T, 0.3, -, -, -
ovalifolium *Forssk.*, §, H, -, -, -, -
steudneri *Vatke, 274*, H, 0.2–0.4, *Acacia* woodland, disturbed (overgrazed & trampled), sandy loam
strigosum *Willd., 907*, T, 0.3, -, disturbed (roadside), gravel

VERBENACEAE
Verbena
bonariensis *L.* *, H, 1.4, grassland, vlei margin, clay loam
Lantana
rugosa *Thunb., 1070*, Ch, 0.6–0.8, mixed woodland, dryland, sandy loam
Lippia
javanica *(Burm. f.) Spreng.*, §, N, 1.0–1.3, riverine, river bank, alluvial sand
Phyla
nodiflora *(L.) Greene* var. nodiflora, *1343*, H, 0.06, aquatic, dam seepage, sandy clay
Plexipus
hederaceus *(Sond.) R. Fern.* var. hederaceus
(= *Chascanum hederaceum* (Sond.) Moldenke var. *hederaceum*), *770*, H, 0.3, *Combretum* woodland, dryland, stony, sandy
incisus *(H. Pearson) R. Fern.*
(= *Chascanum incisum* (H. Pearson) Moldenke), §, H, 0.3, *Colophospermum* woodland, dryland, sandy loam
pinnatifidus *(L. f.) R. Fern.* var. racemosus (Schinz ex Moldenke) R. Fern.
(= *Chascanum pinnatifidum* (L. f.) E. Mey. var. *racemosum* Schinz ex Moldenke), *520, 1289*, H, 0.4–0.5, *Colophospermum* woodland, disturbed (de-bushed), shallow stony loam, loam
Priva
meyeri *Jaub. & Spach* var. meyeri, §, H, 1.0, riverine, river bank, alluvial sand
Duranta
erecta *L.* *
(= *D. repens* L.), §, Ch, 3.0, -, -, -
Clerodendrum
ternatum *Schinz* var. ternatum
(= *C. ternatum* Schinz var. *lanceolatum* (Gürke) Moldenke), §, Ch, 0.3, koppie, rock outcrop, sandy, gravelly

LAMIACEAE
Leonotis
nepetifolia *(L.) R. Br., 995*, T, 1.5, seasonal stream, stream bank, clayey loam
Leucas
neuflizeana *Courbon*, §, H, 0.3–0.4, *Combretum* woodland, dryland, sandy loam
sexdentata *Skan, 1000, 1106*, H, 0.2–0.4, *Combretum* & open woodland, dryland, disturbed (roadside), stony sandy loam
Tetradenia
riparia *(Hochst.) Codd*
(= *Iboza riparia* (Hochst.) N.E. Br.), §, N, 1.2–2.0, riverine, river bank, rocky sandy loam
Endostemon
tereticaulis *(Poir.) M.R. Ashby, 1584*, H, 0.3, *Combretum* woodland, dryland, sandy loam
Plectranthus
tetensis *(Baker) Agnew, 953, 1472, 1603*, H, 0.05–0.12, koppie, *Acacia* woodland, rock outcrop, seepline complex, sandy loam, loam, clayey loam
xerophilus *Codd*, §, H, 2.0, koppie, rock outcrop, stony loam
Hoslundia
opposita *Vahl, 1337*, H, 2.0, seasonal stream, stream bank, sandy loam
Hemizygia
elliottii *(Baker) M. Ashby, 306, 623, 1327, 1335*, H, 0.4–0.5, *Combretum* woodland, koppie, dryland, rock outcrop, gravelly, stony, sandy
petrensis *(Hiern) M. Ashby*, §, H, 0.3–0.4, *Combretum* woodland, dryland, gravelly, stony
Ocimum
canum *Sims*, §, H, 0.4, *Combretum & Acacia* woodland, dryland, sandy loam

Becium
filamentosum *(Forssk.) Chiov.*
(= *B. knyanum* (Vatke) N.E. Br. ex Broun & R.E. Massey), §, H, 0.5, *Combretum & Colophospermum* woodland, dryland, sandy loam

Orthosiphon
suffrutescens *(Thonn.) J.K. Morton*, §, H, 0.5, *Colophospermum* woodland, riverine, dryland, river bank, alluvial sand, gravelly, sandy loam

SOLANACEAE

Solanum
coccineum *Jacq., 1084*, Ch, 0.4–0.5, open parkland, seepline complex, disturbed (overgrazed & trampled), sandy clay
incanum *L., 371*, Ch, 1.3, -, disturbed (old lands), sandy loam
panduriforme *E. Mey., 250*, Ch, 0.5, -, disturbed (overgrazed, trampled, & roadside), gravel, sandy loam

Datura
stramonium *L.* *, §, T, 1.2, riverine, river bed, river sand

SCROPHULARIACEAE (PART A)

Aptosimum
lineare *Marloth & Engl., 614*, H, 0.2, *Combretum* woodland, dryland, sandy loam

Peliostomum
leucorrhizum *E. Mey. ex Benth.* var. leucorrhizum
(= *P. leucorrhizum* E. Mey. ex Benth.), *523*, H, 0.4, *Combretum* woodland, dryland, stony loam

SCROPHULARIACEAE (PART B)

Buchnera
reducta *Hiern, 1132, 1148*, H, 0.3–0.4, open parkland, seepline complex, sandy clayey loam, waterlogged clayey loam

Cycnium
adonense *E. Mey. ex Benth.* subsp. adonense, §, H, 0.1, *Combretum* woodland, dryland, sandy loam

Striga
asiatica *(L.) Kuntze, 1145*, T, 0.2, open parkland, seepline complex, sandy clayey loam
gesnerioides *(Willd.) Vatke ex Engl., 1120*, T, 0.4, *Combretum* woodland, dryland, stony sandy loam

BIGNONIACEAE

Rhigozum
zambesiacum *Baker*, §, +, Mi, 1.5–2.5, *Acacia, Combretum*, & mixed woodland, dryland, rock outcrop, shallow loam

PEDALIACEAE

Pterodiscus
aurantiacus *Welw., 372*, H, 0.2, *Combretum* woodland, disturbed (old lands), dryland, sandy loam
luridus *Hook. f., 1061*, H, 0.3, open parkland, seepline complex, sandy clayey loam

Harpagophytum
zeyheri *Decne.* subsp. zeyheri, *367*, H, 0.1, *Combretum* woodland, dryland, sandy loam

Holubia
saccata *Oliv., 883, 1582*, T, 0.3–0.4, *Combretum* woodland, disturbed (overgrazed, roadside), stony sandy loam

Sesamum
alatum *Thonn., 1016*, T, 1.0, *Combretum* woodland, disturbed (overgrazed, roadside), stony

Ceratotheca
triloba *(Bernh.) Hook. f., 882, 1006*, T, 1.0, *Combretum* & mixed woodland, disturbed (overgrazed & roadside), stony sandy loam

Dicerocaryum
eriocarpum *(Decne.) Abels*
(= *D. zanguebarium* (Lour.) Merr. subsp. *zanguebarium*), §, H, 0.1, -, disturbed (roadside, trampled river bank), sandy, gravelly

LENTIBULARIACEAE

Utricularia
stellaris *L. f., 1024*, T, 0.05, aquatic, seasonal pan, clay

ACANTHACEAE

Thunbergia
neglecta *Sond., 356, 1060*, H, 0.2–0.6, riverine, *Acacia* & mixed woodland, dryland, sandy loam, loam

Dischoriste
rogersii *S. Moore, 1155*, Ch, 0.3, *Acacia, Combretum*, & mixed woodland, dryland, rock outcrop, disturbed (roadside), shallow sandy loam, sandy clayey loam

Ruellia
patula *Jacq., 345, 1050, 1256, 1260*, H, 0.1–0.3, *Combretum* woodland, dryland, disturbed (overgrazed & de-bushed), stony loam, sandy loam, sandy clayey loam

Crabbea
velutina *S. Moore, 1065*, H, 0.2, mixed woodland, dryland, sandy loam

Barleria
affinis *C.B. Clarke, 972*, H, 0.6, koppie, rock outcrop, stony
crossandriformis *C.B. Clarke, 1023*, H, 0.6, koppie, rock outcrop
elegans *S. Moore ex C.B. Clarke, 1141*, H, 0.6, seasonal stream, stream bank, sandy loam
lancifolia *T. Anderson, 956, 1093, 1131*, H, 0.4–0.7, koppie, mixed woodland, rock outcrop, dryland, stony sandy loam, loam
senensis *Klotzsch, 923*, H, 0.7, mixed woodland, dryland, stony, shallow

Blepharis
aspera *Oberm., 973*, H, 0.3, koppie, rock outcrop, stony

Crossandra
mucronata *Lindau*, §, H, 0.3, open parkland, seepline complex, clayey loam, clay

Hypoestes
aristata *(Vahl) Sol. ex Roem. & Schult.* var. aristata
(= *H. verticillaris* (L. f.) Sol. ex Roem. & Schult.), *1395, 1478*, H, 0.3, riverine, deep shade on river bank, alluvial sand, loam

Rhinacanthus
xerophilus *A. Meeuse, 1333*, H, 0.4–0.5, *Combretum* woodland, shade in dryland, sandy loam

Justicia
flava *(Vahl) Vahl, 357*, H, 0.3, *Acacia* woodland, dryland, loam
protracta *(Nees) T. Anderson* subsp. protracta, *1476*, H, 0.3, riverine, shade on river bank, alluvial sand

Monechma
divaricatum *(Nees) C. B. Clarke, 952*, H, 0.4, koppie, rock outcrop, loam

RUBIACEAE

Kohautia
caespitosa *Schnizl.* subsp. brachyloba *(Sond.) D. Mantell*
(= *K. caespitosa* Schnizl. var. *delagoensis* (Schinz) Bremek.), *394*, T, 0.5, *Combretum* woodland, dryland, sandy loam
cynanchia *DC.*
(= *K. omahekensis* (K. Krause) Bremek.), *395*, T, 0.4, *Combretum & Colophospermum* woodland, dryland, loam
virgata *(Willd.) Bremek., 393*, H, 0.4, *Combretum* woodland, dryland, sandy loam

Agathisanthemum
bojeri *Klotzsch* subsp. bojeri
(= subsp. *australe* Bremek. var. *australe*), *1001*, H, 0.3, -, disturbed (roadside), sandy loam
sp., *578*, -, 0.3, *Combretum* woodland, dryland, sandy

Pentodon
pentandrus *(Schumach. & Thonn.) Vatke* var. minor *Bremek., 1348*, T, 0.3, riverine, river bed, damp river sand

Breonadia
salicina *(Vahl) Hepper & J.R.I. Wood*
(= *Adina microcephala* (Delile) Hiern var. *galpinii* (Oliv.) Hiern, §, +, Me, 15.0–20.0, riverine, river bed, river sand amongst rocks

Gardenia
volkensii *K. Schum.* subsp. spatulifolia *(Stapf & Hutch.) Verdc.*
(= *G. spatulifolia* Stapf & Hutch.), §, +, Mi, 3.0–4.0, *Acacia, Combretum*, & mixed woodland, dryland, shallow gravelly & sandy

Tricalysia
junodii *(Schinz) Brenan* var. junodii
(= *T. allenii* (Stapf) Brenan var. *australis* (Schweick.) Brenan), *959, 994*, N, 1.0–1.5, koppie, *Combretum–Commiphora* woodland, rock outcrop, stony sandy loam

Sericanthe
andongensis *(Hiern) Robbr.* var. andongensis
(= *Tricalysia andongensis* Hiern), *1506*, N, 1.2–1.5, *Combretum–Commiphora* woodland, dryland, shallow sandy loam

Vangueria
infausta *Burch.* subsp. infausta, §, +, Mi, 3.0, koppie, rock outcrop, sandy

Plectroniella
armata *(K. Schum.) Robyns, 1189*, Mi, 3.0–4.0, riverine, seasonal stream, river bank, stream thicket, clayey loam

Pyrostria
hystrix *(Bremek.) Bridson*
(= *Dinocanthium hystrix* Bremek.), *1191*, Mi, 2.0–3.0, riverine, seasonal stream, river & stream bank, sandy loam

Pavetta
catophylla *K. Schum., 975, 1047*, N, 0.8–1.0, koppie, *Combretum* woodland, rock outcrop, partial shade in dryland, stony loam, sandy clayey loam
gardeniifolia *A. Rich.* var. gardeniifolia, *1638, 1677*, Mi, 2.0–4.0, koppie, seasonal stream, rock outcrop (dolerite), stream bank, sandy loam, loam

Richardia
brasiliensis *Gomes *, 1215*, T, 0.05, -, disturbed (garden), sandy loam
scabra *L.*, 1127*, T, 0.05, -, disturbed (roadside), sandy loam

CUCURBITACEAE

Kedrostis
hirtella *(Naudin) Cogn.*, §, L, 2.0, koppie, rock outcrop, gravelly, sandy

Momordica
balsamina *L., 1090*, L, 3.0, seasonal stream, stream bank, alluvial sand, sandy loam
boivinii *Baill., 1304*, L, 0.2, riverine, seasonal stream, river & stream bank shade, humus-rich alluvial sand

Cucumis
anguria *L.*
(= var. *longipes* (Hook. f.) A. Meeuse), §, L, 1.0, *Acacia & Combretum* woodland, dryland, gravelly, sandy
hirsutus *Sond.*, §, L, 1.6, *Acacia & Combretum* woodland, dryland, sandy
metuliferus *Naudin, 1157*, L, 3.0, riverine, seasonal stream, river & stream bank, alluvial sand
zeyheri *Sond., 370*,
(= *C. prophetarum* L. subsp. *zeyheri* (Sond.) C. Jeffrey), *1150*, L, 0.05–0.1, -, disturbed (old lands), sandy loam

Lagenaria
siceraria *(Molina) Standl., 1644*, L, 5.0, riverine, seasonal stream, river & stream bank, alluvial sand

Coccinia
rehmannii *Cogn., 327*,
(= var. *rehmannii*), *1091, 1341, 1399*, L, 0.1–2.0, riverine, seasonal stream, open parkland, *Combretum* woodland, river & stream bank, seepline complex, dryland, disturbed (roadside), gravelly, stony loam, sandy loam, loam

CAMPANULACEAE

Wahlenbergia
undulata *(L. f.) A. DC.*, §, H, 0.3, riverine, river bed, river sand

ASTERACEAE

Ethulia
conyzoides *L. f.* subsp. conyzoides, *1378, 1419*, T, 0.6–0.7, riverine, river bed, reed bed, waterlogged river sand

Vernonia
crataegifolia *Hutch.*, §, N, 1.5, riverine, river bank, sandy loam
fastigiata *Oliv. & Hiern, 1098*, T, 0.4, -, disturbed (roadside), sandy loam
glabra *(Steetz) Vatke* var. glabra, §, H, 0.6, -, disturbed (roadside), gravel, stony loam
oligocephala *(DC.) Sch.Bip. ex Walp.*, §, H, 0.3, *Acacia* woodland, dryland, sandy loam
steetziana *Oliv. & Hiern*
(= *V. poskeana* Vatke & Hildebr. var. *chlorolepis* (Steetz) O. Hoffm.), *1109*, T, 1.0, *Combretum* woodland, disturbed (overgrazed and trampled), sandy loam

Aster
squamatus *(Spreng.) Hieron. *, 1172*, T, 1.0, aquatic, dam seepage, sandy gravel

Nidorella
resedifolia *DC.* subsp. resedifolia, *384*, T, 1.5, riverine, river bank, sandy loam

Blumea
cafra *(DC.) O. Hoffm., 1318*, T, 0.5, aquatic, dam seepage, stony, sandy, clayey loam
gariepina *DC., 1218*, T, 1.0, -, disturbed (de-bushed, roadside), shallow gravel

Pluchea
dioscoridis *(L.) DC., 1031*, N, 0.6, riverine, *Combretum* woodland, river bed, alluvial & river sand

Pechuel-Loeschea
leubnitziae *(Kuntze) O. Hoffm.*, §, Ch, 1.2, *Acacia, Combretum, & Colophospermum* woodland, riverine, seasonal stream, river & stream bank, alluvial sand, clayey loam

Denekia
capensis *Thunb.*, §, T, 0.1–0.2, aquatic, edge of seasonal pan, mud

Epaltes
gariepina *(DC.) Steetz, 1156, 1371*, Ch, 0.3–0.4, riverine, open parkland, river bed, dam shores, seepline complex, disturbed (roadside), alluvial sand, silt

Sphaeranthus
incisus *Robyns, 1192*, T, 0.3, aquatic, dam shore, clay

Helichrysum
candolleanum *H. Buek, 1002, 1151*, H, 0.2–0.3, -, disturbed (old lands, roadside), sandy loam

Calostephane
divaricata *Benth., 924, 1616, 1713*, H, 0.3–0.6, *Combretum* & mixed woodland, dryland, disturbed areas (overgrazed & trampled), shallow sandy gravel

Pegolettia
senegalensis *Cass., 1122*, T, 0.4, -, disturbed (roadside), gravel

Geigeria
burkei *Harv.* subsp. fruticulosa *Merxm.*, §, H, 0.4, riverine, river bed, sand bank, river sand
ornativa *O. Hoffm.*, §, Ch, 0.2–0.3, *Acacia* woodland, dryland, gravelly, sandy

Acanthospermum
hispidum *DC. *, 1479*, T, 0.5–0.6, riverine, river bank (trampled), stony or sandy loam

Xanthium
strumarium *L. *, 1446*, T, 0.4, aquatic, dam seepage, sandy gravel

Zinnia
peruviana *(L.) L. **, §, T, 0.2–0.3, -, disturbed (overgrazed, trampled, & roadside), sandy gravel

Eclipta
prostrata *(L.) L. **, 1344, T, 0.4, aquatic, riverine, dam seepage, river & stream bed sandy, river sand

Aspilia
mossambicensis *(Oliv.) Wild, 1153, 1328*, Ch, 0.6–1.0, mixed woodland, riverine, seasonal stream, shade in dryland & river & stream banks, shallow stony sandy loam

Melanthera
scandens *(Schumach. & Thonn.) Roberty* subsp. dregei *(DC.) Wild, 383*, T, 1.5, riverine, river bank, loam
triternata *(Klatt) Wild*
(= *M. marlothiana* O. Hoffm.), *1346*, T, 1.5, riverine, reed bed, alluvial & river sand

Bidens
pilosa *L. *, 284*, T, 0.2, -, disturbed (overgrazed & trampled, garden), sandy loam, loam

Flaveria
bidentis *(L.) Kuntze **, §, T, 0.3–0.4, riverine, river bed, river sand

Schkuhria
pinnata *(Lam.) Cabrera *, 1209*, T, 0.2, -, disturbed (old lands, roadside, garden), sandy loam

Tagetes
minuta *L. **, §, T, 0.5–0.7, -, disturbed (overgrazed & trampled), sandy loam

Senecio
pleistocephalus *S. Moore*, §, L, 4.0, koppie, rock outcrop, sandy gravel
viminalis *Bremek., 875*, L, 1.5–3.0, riverine, river bank, loam

Emilia
transvaalensis *(Bolus) C. Jeffrey*
(= *Senecio transvaalensis* Bolus), *1391, 1725*, T, 0.4, -, disturbed (roadside), shallow sandy loam

Kleinia
longiflora *DC.*
(= *Senecio longiflorus* (DC.) Sch.Bip), §, Ch, 0.5–0.8, open parkland, seepline complex, clayey loam

Hirpicium
bechuanense *(S. Moore) Roessler, 378, 618*, H, 0.4, *Combretum* woodland, disturbed (roadside), gravel, sandy loam

Sonchus
oleraceus *L. *, 283*, T, 0.5, grassland, vlei, disturbed (garden), loam