NYIKA-VWAZA TRUST RESEARCH STUDY REPORT (2017/18)

Vascular Plant Survey of Vwaza Marsh Wildlife Reserve, Malawi

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ABSTRACT

In 2018 – 19, a survey on vascular plants was conducted in Vwaza Marsh Wildlife Reserve. The reserve is located in the north-western Malawi, covering an area of about 986 km^2. Based on this survey, a total of 461 species from 76 families were recorded (i.e. 454 Angiosperms and 7 Pteridophyta). Of the total species recorded, 19 are exotics (of which 4 are reported to be invasive) while 1 species is considered threatened. The most dominant families were Fabaceae (80 species representing 17. 4%), Poaceae (53 species representing 11.5%), Rubiaceae (27 species representing 5.9 %), and Euphorbiaceae (24 species representing 5.2%). The annotated checklist includes scientific names, habit, habitat types and IUCN Red List status and is presented in section 5.

ACKNOLEDGEMENTS

First and foremost, let me thank the Nyika–Vwaza Trust (UK) for funding this work. Without their financial support, this work would have not been materialized. The Department of National Parks and Wildlife (DNPW) Malawi through its Regional Office (N) is also thanked for the logistical support and accommodation throughout the entire study. Special thanks are due to my supervisor - Mr. George Zwide Nxumayo for his invaluable guidance. Mr. Thom McShane should also be thanked in a special way for sharing me some information, and sending me some documents about Vwaza which have contributed a lot to the success of this work. I extend my sincere thanks to the Vwaza Research Unit team for their assistance, especially during the field work. Lastly, my appreciation goes to the Botanists from the Mzuzu National Herbarium and Botanic Gardens (Mr. Moffart Thera and his assistants) for their help in identifying difficult plant taxa and verifying the final plant list.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

ABBREVIATIONS AND ACRONYMS

APG	Angiosperm Phylogeny Group
CABI	Center for Agriculture and Bioscience International
cm	Centimeter
DNWP	Department of National Parks and Wildlife
et al.	*et alii*, and others
GBIF	Global Biodiversity Information Facility
GISD	Global Invasive Species Database
GPS	Global Positioning System
IUCN	International Union for Conservation Nature
ICN	International Code of Nomenclature
km	Kilometer
m	Meter
NEAP	National Environmental Action Plan
NVT	Nyika – Vwaza Trust
RDL	Red Data List
SABONET	Southern African Botanical Diversity Network
UK	United Kingdom
UTM	Universal Transverse Mercator
VMWR	Vwaza Marsh Wildlife Reserve
WGS	World Geodetic System

1. INTRODUCTION

1.1 Background

Vwaza Marsh Wildlife Reserve (VMWR) lies on the Central African Plateau, west of northern Malawi (Figure, 2) and covers an area of 986 km^2 (McShane & McShane-Caluzi, 1988). Gazetted as a reserve in 1977 and expanded in 1985 to its current size, it encompasses a great variety of habitats (i.e. from lake and marsh vegetation, flood-plain grassland, dambos, thickets, riparian forest, to mopane and miombo woodland) which support a diverse community of wildlife, especially mammals and birds. It is also an Important Bird Area (IBA) due to its ecological importance in maintaining a variety of avifauna, especially biome-restricted birds (Dowsett-Lemaire *et al.* 2001). In addition to being an important part of the protected area system in Malawi, VMWR is an essential component of the wildlife and tourism industry in the country.

McShane & McShane Caluzi, (1988) provide an overview of the ecology and biodiversity of the VMWR. To date, only avifauna seem to have been investigated further in detail (Dowsett-Lemaire *et al.*, 2001; Dowsett-Lemaire, 2014; Engel *et al.*, 2012). In terms of botanical knowledge, no extensive and comprehensive flora accounts of VMWR exist, even though plant collections are reported to have occurred long time ago which probably resulted in a compilation of the basic plant list (McShane, 1985). Therefore, to advance the knowledge in terms of the reserve's botanical diversity, the current survey was proposed. In particular, the survey aimed for what in essence was an annotated vascular plant checklist with indications of habitat and conservation significance based on data of the current field work (2018-19).

Figure 1: A view of Lake Kazuni from the top of Phopo Hill in VMWR (Photo in April, 2018)

1.2 Objectives

The objectives of this survey were to;

1) To document floristic diversity of the VMWR
2) To develop an annotated vascular plant checklist for the VMWR

1.3 Significance of the Study

The core aim of this contribution is to provide a comprehensive checklist of the vascular plant species of VMWR. The checklist is expected to serve as a basis for a better understanding of the Reserve's flora, as well as acting as a valuable reference material.

2. METHODOLOGY

2.1 Survey Area

The survey was carried out in VMWR, located specifically in western Rumphi district alongside the Zambian border to its western boundary (Figure 2). The altitude of the reserve varies from 1082 m to 1660 m above sea level.

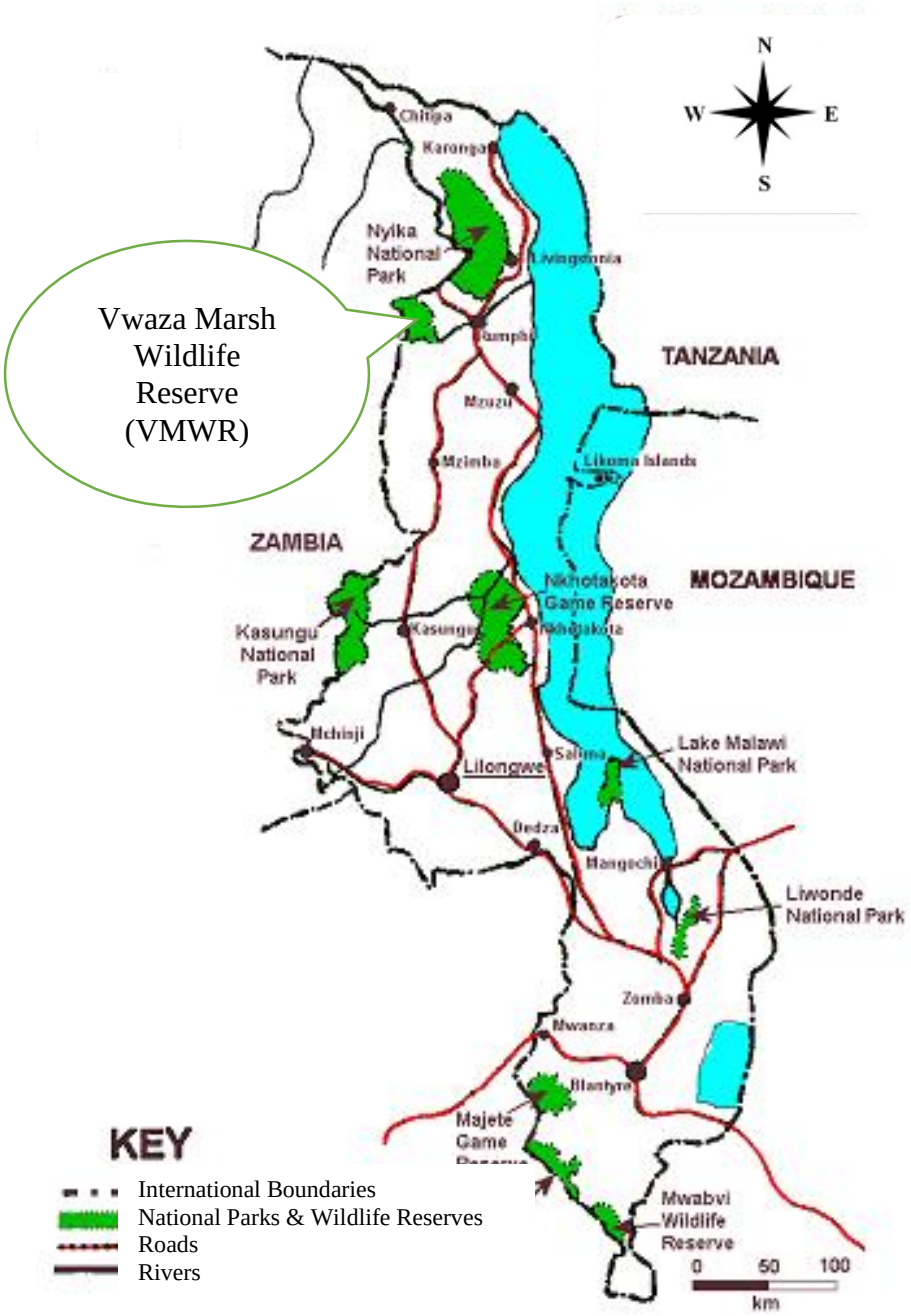

Figure 2: Map of Malawi Showing VMGR and other Protected Areas, adapted from Mgoola, W.O., Msiska, H. G., (2017).

2.2 Floristic Field Surveys

Using the already existing habitat classification (Figure, 3) by McShane & McShane Caluzi, (1988), floristic surveys and specimen collections were carried out randomly on foot in all habitat types during 2018/19. Identification of plants in the field was made with the help of relevant flora guide books (e.g. Burrows & Willis, 2005; Baumann, 2005; Palgrave, 2002; and Shorter, 1989), as well as indigenous knowledge from the local people. Botanical specialists from the Mzuzu Botanic Gardens were consulted to help in the identification of difficult plant species and crosscheck the identity of various species. Plants were considered threatened if listed so on the IUCN Red List and invasive if recorded as "invasive," "likely invasive," or "potentially invasive" in the GISD, CABI's Invasive Species Compendium (ISC), and the online Encyclopedia of Life (EOL).

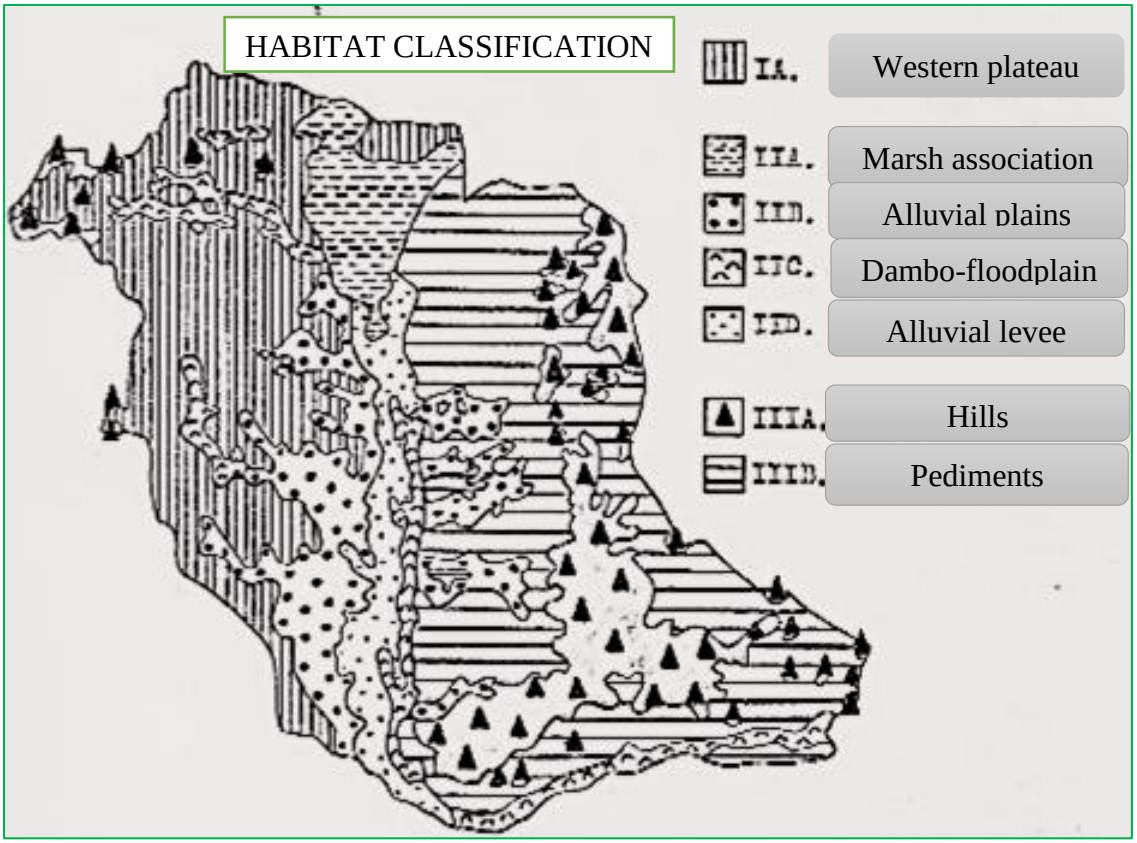

Figure 3: Habitat Classification of VMWR; Adapted from McShane & McShane Caluzi, (1988)

3. RESULTS AND DISCUSSION

3.1 Flora of VMWR

A total of 461 vascular plant species belonging to 76 families were recorded in the field with dicots being the main group (Table 1; Section 5). Of the 76 plant families, the main families in terms of species numbers are Fabaceae (80 species), Poaceae (53 species), Rubiaceae (27 species), and Euphorbiaceae (24). These 4 families comprise 40% of the total flora. As for Pteridophytes, a total of 7 species were recorded in which family Pteridaceae (4 species) was dominant.

Table 1: Floristic Richness of VMWR

Plant group		**Family**	**Species**
Angiosperms	Dicots	59	365
	Monocotyledons	13	89
Pteridophyta		4	7
Total		**76**	**461**

Table 2: Species Richness of the Main Vascular Plant Families in VMWR

Largest Vascular Plant Families	**Number of Species**	**Percent of Flora (%)**
1) FABACEAE	80	17.4
2) POACEAE	53	11.5
3) RUBIACEAE	27	5.9
4) EUPHORBIACEAE	24	5.2

Threatened Species: - Of the total species recorded (Table 1) only *Dombeya acutangula* was the only species considered threatened, i.e. Critically Endangered. (see Section 5).

Exotic and Invasive Species: - Of the total species recorded (Table 1), 19 species are considered exotics (see Section 5). Among the 19 exotics, 4 species are known to be invasive, and their locations were marked and estimated abundances recorded (Table 3).

Table 3: Summarized Findings for Some Exotic/Invasive Species

AREA	SITE LOCATION (GPS COORDINATES)		SPECIES NAME	TOTAL COUNT	MEAN HEIGHT (m)	MEAN DBH (cm)
	LATITUDE	LONGITUDE				
Kazuni	$11^0$07’55.011”S	$33^0$39’19.149”E	*Gmelina arborea*	3	11.5	54
	$11^0$08’03.349”S	$33^0$39’17.618”E	*Tecoma stans*	>50	8	14
Chalepweteka	$11^0$08’02.383”S	$33^0$32’04.593”E	*G. arborea*	26	14	32
	$11^0$07’14.935”S	$33^0$32’11.660”E	*G. arborea*	>50	22	48
	$11^0$07’25.064”S	$33^0$32’09.634”E	*G. arborea*	19	13	43
	$11^0$09’26.556”S	$33^0$31’56.504”E	*Lantana camara*	11	2.5	-
Buluji	$11^0$00’26.347”S	$33^0$28’36.925’E	*G. arborea*	17	14	38
Kawiya	$10^0$53’16.779”S	$33^0$30’40.250”E	*G. arborea*	14	18	32
	$10^0$53’52.860”S	$33^0$30’35.634”E	*G. arborea*	>50	16	44
Chamaji/Kapalala	$10^0$51’50.006”S	$33^0$26’55.072”E	*Toona ciliata*	11	18	48
	-	-	*Eucalptyus sp.*	1	22	55
Zaro/Chamawiya Hill	$11^0$07’52.989”S	$33^0$39’20.539”E	*T. ciliata*	4	18	58
Old Mowa	$10^0$53’29.939”S	$33^0$17’33.442”E	*G. arborea*	>50	16	41
	$10^0$53’28.979”S	$33^0$17’30.411”E	*G. arborea*	21	13	33

NB: Coordinates are in UTM Zone 36, WGS84.

During the survey, *G. arborea* was the only exotic species observed not only in many places, but also in abundance within the reserve as indicated in Table 3 above. Worryingly enough, the species was mostly seen occurring in huge stands or woodlots (Figure 4), a growth pattern which likely seem to have an impact considering that the species is now reported as invasive in Malawi (CABI).

Additionally, *G. arborea* is in fact becoming naturalized and spreading as evidenced by its abundant regenerants (of up to 2 m) that are growing within and beyond the stands.

Toona ciliata, an aggressive invader (CABI), was observed in two sites only with about 15 trees altogether (see Table 3 above). In one site (Chamaji) the species occurred in a cluster of about 11 trees (Figure 5), while on the other site only 4 trees were observed. According to field observation, *T. ciliata* showed no sign of spreading as there was not an instance where regenerants were observed or spotted either near or away from the mature trees.

As for *Lantana camara* and *Tecoma stans*, [both known as highly invasive species, and currently listed as one of the World's 100 Worst Invaders (GISD, 2019)], they equally showed a scattered growth pattern over a large single area (> 400 m^2) in their observed respective sites.

In case of Eucalyptus sp., only a single tree was seen towards Kapala area. Although the genus *eucalyptus* is reported to have substantial negative effects on the environment, especially on soil (impoverishment and encouraging erosion), hydrology (by drying up aquifers), and on biodiversity (not providing food supplies or suitable habitats) (Albaugh et al. 2013), the presence of a single tree is not worrisome. However, regular monitoring should follow for fear of its further spreading as well as future introductions as the genus is widely planted in some villages adjacent to VMWR.

Figure 4; Gmelina arborea stand/woodlot

Figure 5: A cluster of Toona ciliata

4. CONCLUSION AND RECOMMENDATIONS

This report is a preliminary step to improving our understanding of the flora diversity found in VMWR. Over 400 vascular plants were recorded, including 1 threatened species, as well as 4 exotic/invasive species in the other side. However, the presence of invasive species is extremely undesirable due to their negative impacts on the biodiversity. In this regard therefore, strategies are needed to eradicate these exotic invasive species before they become better established.

In view of this, additional field studies would be useful to better refine the abundance and distribution of species of high management interest (especially threatened plants and invasive non-natives), as such information will be crucial when drafting conservation programme of the Reserve. Further, reliable future works aiming at adding and correcting this checklist are recommended.

5. ANNOTATED CHECKLIST

The annotated checklist that follows summarizes information about each vascular plant species recorded during the current survey. It has been presented in a table format with plant groups, families, and species all arranged alphabetically. Classification of families has followed that of Christenhusz & Chase, (2014) for the Pteridophytes; and APG IV (2016) for the Angiosperms. Species nomenclature has mainly following that of; 1) the African Plant Database - http://www.ville-ge.ch/musinfo/bd/cjb/africa/recherche.php?langue=an , 2) the Global Biodiversity Information Facility (GBIF) – https://www.gbif.org , and 3) the Flora of Malawi website - https://www.malawiflora.com/.

Exotic (Alien) species are designated by an asterisk (*). Due to widespread acceptance of alternative names for some taxa, the most commonly used synonym(s) is sometimes included in square brackets. Abbreviations used in the annotated list follow immediately below;

Habitat Type; H1=IA (Western Plateau); H2=IIA (Marsh Association); H3=IIB (Alluvial Plains); H4=IIC (Dambo Floodplains); H5=IID (Alluvial Levee); H6=IIIA (Hills and Valleys); H7=IIIB (Pediments).

Note - Refer to Figure 3 for location of habitat in the Reserve.

Habit; G = Grass; H = Herb; S = Sedge; Sh = Shrub; Sh/ST = Shrub or small tree.

IUCN Status; CR = Critically Endangered; NT = Near Threatened; LC = Least Concern

FAMILY	SPECIES BOTANICAL NAME	HABIT	HABITAT TYPE	IUCN STATUS	NOTES
	DICOTYLEDON				
Acanthaceae	*Dyschoriste albiflora* Lindau	H	H3, H4, H5, H7	-	
"	*Dyschoriste hildebrandtii* (S.Moore) Lindau [*D. fischeri* Lindau]	H	H3, H5, H7	-	
"	*Justicia phyllostachys* C.B.Clarke	H	H1, H3,H5, H7	-	
"	*Thunbergia crispa* Burkill	Sh	H3, H5, H7	-	

Anacardiaceae	*Lannea humilis* (Oliver) Engl.	Sh/ST	H1, H3, H5, H7	-	
"	*Lannea schimperi* (Hochst. Ex A. Rich.) Engl.	T	H1, H3, H5, H7	-	
"	*Mangifera indica* L.*	T		-	Native of East tropical Asia
"	*Ozoroa reticulata* (E.G. Baker) R. & S. Fernandes	T	H2, H4, H6, H7		
"	*Rhus leptodictya* Diels	T	H1, H5, H6, H7	LC	
"	*Rhus longispina* Engl.	Sh	H1, H4, H	LC	
"	*Rhus ochracea* Meikle var. *ochracea*	Sh	H2, H5, H7	-	
"	*Rhus pyroides* Burch. var. *pyroides* [*R. vulgaris* Meikle]	Sh/ST	H2, H5, H6, H7	LC	
"	*Rhus quartiniana* A. Rich. [*Searsia quartiniana* (A.Rich.) A.J.Mill.]	Sh	H4	-	
"	*Sclerocarya caffra* Sonder [*S. birrea*]	T	H2, H4	-	
Anisophylleaceae	*Anisophyllea boehmii* Engl. [*A. pomifera* Engl. & Brehmer]	T	H1, H5, H6, H7	-	
Annonaceae	*Annona senegalensis* Pers.	T	H1, H3, H5, H6, H7	LC	
"	*Artabotrys monteiroae* Oliv.	Sh	H4, H6, H7	LC	
"	*Friesodielsia obovata* (Benth.) Verde. [*Popowia obovata* (Benth.) Engl. & Diels]	Sh/ST	H1, H4, H5, H7	LC	
"	*Hexalobus monopetalus* (A. Rich) Engl. & Diels	Sh/ST	H1, H4, H5, H7	-	
"	*Uvaria lucida* Benth. subsp. *virens* (N.E. Br.) Verde.	Sh	H1, H4, H7	LC	
"	*Xylopia parviflora* (A. Rich.) Benth.	T	H4, H5	-	
Apiaceae (=umbelliferae)	*Centella asiatica* (L.) Urb. [*C. coriacea* Nannf.]	H	H3, H4, H5	LC	
"	*Heteromorpha kassneri* H. Wolff	Sh	H3, H5	-	

“	*Steganotaenia araliacea* Hochst. [*Peucedanum fraxinifolium* Oliv.]	T	H1, H5, H6, H7	LC	
Apocynaceae	*Acokanthera oppositifolia* (Lam.) Codd	Sh/ST	H1, H3, H5, H6, H7	-	
“	*Carissa edulis* Vahl	Sh/ST	H1, H4, H5, H7	-	
“	*Ceropegia filipendula* K. Schum.	H	H5, H7	-	
“	*Diplorhynchus condylocarpon* (Muell. Arg.) Pichon	Sh/ST	H1, H5, H7	LC	
“	*Holarrhena pubescens* (Buch. -Ham.) Wall.	Sh/ST	H1, H5, H6, H7	LC	
“	*Landolphia parvifolia* K. Schum.	Sh	H1, H7	-	
Asteraceae (=compositae)	*Bidens pilosa* L.*. [*B. sundaica* Blume; *B. leucantha* (L.) Willd.]	H	H1, H4, H5, H7	-	Native to Americans.
“	*Bidens steppia* (Steetz) Sherff [*Coreopsis steppia* Steetz]	H	H1, H3, H4, H7	-	
“	*Bothriocline laxa* N.E.Br.	H	H1, H3, H5, H7	-	
“	*Brachythrix glomerata* (Mattf.) C. Jeffrey	H	H6, H7	-	
“	*Helichrysum kirkii* Oliver & Hiern	H	H1, H5, H7	-	
“	*Hirpicium gracile* (O. Hoffm.) Roes. [*Berkheya gracilis* O. Hoffm]	H	H3, H4, H5	-	
“	*Hypericophyllum compositarum* Steetz	H	H3, H5, H7	-	
“	*Vernonia amygdalina* Delile	Sh/ST	H2, H3, H5	-	
“	*Vernonia bellinghamii* S. Moore	Sh/ST	H1, H6, H7	-	
“	*Vernonia colorata* (Wild) Drake subsp. *oxyura* (O.Hoffm.) C. Jeffrey [*V. oxyura* O. Hoffm.;*V. cirrifera* S. Moore]	Sh/ST	H1, H4, H5, H6, H7	LC	
“	*Vernonia karaguensis* Oliv. & Hiern	H	H3, H4, H5	-	
“	*Vernonia melleri* Oliv. & Hiern var. *melleri* [*V. scabrifolia* var. *amplifolia* O.Hoffm.]	H	H3, H5, H7	-	
“	*Vernonia natalensis* Sch. Bip. Ex Walp.	H	H1, H3, H5, H7	-	

“	*Vernonia suprafastigiata* Klatt.	Sh	H1, H3, H5, H6, H7	-	
Bignoniaceae	*Kigelia africana* (Lam.) Benth.	T	H1, H4, H7	LC	
“	*Markhamia acuminata* (Klotzsch) K. Schum. [*M. zanzibarica*]	T	H1, H4, H5, H6, H7	-	
“	*Markhamia obtusifolia* (Baker) Sprague	Sh/ST	H1, H4, H6, H7	LC	
“	*Stereospermum kunthianum* Cham.	T	H1, H5, H6, H7	LC	
“	*Tecoma stans* L*	T	H7 - Only at Kazuni Camp	-	Native to South America. Is one of the World’s 100 Worst Invaders (GISD, 2019)
Bixaceae	*Bixa orellana* L.*	Sh/ST	H3, H5, H7	LC	Native to tropical Americas.
Boraginaceae (including Codonaceae)	*Ehretia amoena* Klotzsch	Sh/ST	H1, H5, H7	LC	
Burseraceae	*Commiphora africana* (A. Rich.) Engl.	Sh	H1, H5, H7	LC	
“	*Commiphora caerulea* B.D. Burtt	T	H1, H3, H6, H7	-	
“	*Commiphora edulis* (Klotsch) Engl.	Sh/ST	H1, H5, H6, H7	LC	
“	*Commiphora mollis* (Oliver) Engl.	T	H5, H6, H7	LC	
“	*Commiphora* merkeri	T	H3, H7	-	
“	*Commiphora mossambicensis* (Oliver) Engl.	T		-	
“	*Commiphora pyracanthoides* Engl.	Sh/ST	H3, H7	-	
Campanulaceae	Lobelia sp.	H	H4, H5, H7	-	

Capparaceae	*Boscia angustifolia* A. Rich.	T	H1, H5, H7	LC	
"	*Boscia salicifolia* Oliver	T	H1, H5, H6, H7	LC	
"	*Capparis tomentosa* Lam.	Sh/ST	Hi, H3, H5, H6, H7	-	
"	*Maerua angolensis* DC.	T	H1, H3, H5, H6, H7	LC	
"	*Maerua juncea* Pax	Sh	H1, H5, H6, H7	-	
"	*Maerua kirkii* (Oliver) F. White	Sh/ST	H1, H5, H7	-	
				-	
Caricaceae	*Carica papaya* L*	T	H1, H7	-	The original habitat is believed to be Central America and southern Mexico. Around Camp houses.
Celastraceae	*Hippocratea africana* (Willd) Loes. [*Loeseneriella africana* (Willd.) N. Hallé var. *richardiana* (Cambess.) N. Hallé]	Sh	H4, H5, H7	-	
"	*Hippocratea parvifolia* Oliver	H	H3, H5, H7	-	
"	*Maytenus buchananii* (Loes.) Wileze. [*Gymnosporia buchananii* Loes.]	Sh/ST	H4	-	
"	*Maytenus heterophylla* (Ecklon & Zeyher) N.K.B. Robson [*Gymnosporia buxifolioides* Loes.]	Sh/ST	H3, H4	-	
"	*Maytenus putterlickioides* (Loes.) Exell & Mendonca	Sh	H4, H5	-	
"	*Maytenus senegalensis* (Lam.) Exell [*Gymnosporia senegalensis* (Lam.) Loes.]	Sh/ST	H1, H5, H7	-	
"	*Pleurostylia africana* Loes. [*P. capensis*]	T	H1, H5, H7	-	
"	*Hippocratea buchananii* Loes. [*Reissantia buchananii* (Loes.) N.Hallé]	Sh/ST	H3, H7	-	
Chrysobalanaceae	*Magnistipula butayei* De Wild. subsp. *bangweolensis* F. White	T	H1, H5 H7	LC	

"	*Maranthes floribunda* (Baker) F. White	T	H1, H4, H5, H7	-	
"	*Parinari curatellifolia* Planch. Ex Benth. [*P. mobola* Oliv.]	T	H1, H7	LC	
Clusiaceae (guttiferae)	*Garcinia huillensis* Welw. ex Oliver [*G. buchananii Baker*]	T	H1, H4, H5, H7	-	Synonym of G. buchananii according to White et al. (2001).
"	*Garcinia livingstonei* T. Ander [*G. angolensis* Vesque]	Sh/ST	H2, H4, H5	-	
"	*Psorospermum febrifugum* Spach	Sh/ST	H2, H5, H7	LC	
Combretaceae	*Combretum adenogonium* Steud. ex A. Rich. [*C. fragrans* F. Hoffm.]	Sh/ST	H1, H4, H5, H6, H7	LC	
"	*Combretum albopunctatum* Suess.	Sh/ST	H1, H3, H5, H7	-	
"	*Combretum apiculatum* Sonder	T	H1, H6, H7	LC	
"	*Combretum collinum* Fresen.	Sh/ST	H1, H6, H7	LC	
"	*Combretum imberbe* Wawra	T	H1, H4, H6, H7	LC	
"	*Combretum microphyllum* Klotzsch [*C. paniculatum*]	Sh/ST	H2, H4, H5	-	
"	*Combretum molle* R. Br. ex G. Don.	T	H1, H5, H6, H7	LC	
"	*Combretum mossambicense* (Klotzsch) Engl.	Sh/ST	H3, H4, H7	LC	
"	*Combretum psidioides* Welw.	Sh/ST	H6, H7	LC	
"	*Combretum zeyheri* Sond.	T	H1, H4, H6, H7	LC	
"	*Terminalia sericea* Burch. ex DC.	T	H6, H7	LC	Protected by Law in Malawi (NEAP, 1994)
"	*Terminalia stenostachya* Engl. & Diels	T	H1, H4, H6, H7	-	
Connaraceae	*Rourea orientalis* Baill. [*Byrsocarpus orientalis* (Baillon) Baker]	Sh/ST	H1, H4, H7	LC	

Convolvulaceae	*Ipomoea aquatica* Forsk.	H	H2, H3, H4	LC
"	*Ipomoea tenuirostris* Steud. ex Choisy subsp.*tenuirostri*	H	H3, H4, H5, H7	-
"	*Turbina stenosiphon* (Hall. F.) Meeuse	Sh	H2, H4, H5	-
Dioscoreaceae	*Dioscorea dumetorum* (Kunth) Pax. [*D. triphylla* Schimp. ex Kunth, non A. Rich.]	H	H1, H3, H4, H5, H7	-
Dipterocarpaceae	*Monotes africanus* (Welw.) A.DC.	T	H1, H5, H6, H7	-
"	*Monotes discolor* R.E.Fr. var. *cordatus* (Hutch.) Duvign.	T	H1, H5, H6, H7	-
"	*Monotes glaber* Sprague	T	H1, H3, H5, H7	-
Ebenaceae	*Diospyros kirkii* Hiern	Sh/ST	H1, H5, H7	-
"	*Diospyros lycioides* Desf. subsp. *sericea* (Berrh. Ex. Krauss) de Winter	Sh/ST	H1, H5, H6, H7	-
"	*Diospyros mespiliformis* Hochst ex A.DC.	T	H1, H4, H5, H7	-
"	*Diospyros squarrosa* Klotzsch	Sh	H4, H5, H7	-
"	*Euclea natalensis* A. DC.	Sh/ST	H1, H3, H4, H5, H7	-
"	*Euclea racemosa* Murr. subsp. *Schimperi* (A.DC.) F. White [*E. schimperi* (A.DC.) Dandy]	Sh/ST	H1, H4, H5, H7	-
Ericaceae	*Philippia benguelensis* (Oliv.) Britten [*Erica benguelensis* (Engl.) E.G.H. Oliv.]	Sh/ST	H3, H4, H5	-
Euphorbiaceae	*Acalypha chirindica* S. Moore	Sh/ST	H1, H4, H5, H7	-
"	*Acalypha ornata* A. Rich. [*A. moggii* Compton]	Sh/ST	H3, H4, H7	LC
"	*Antidesma venosum* E. Mey. ex Tul.	Sh/ST	H3, H4, H5	LC

"	*Bridelia cathartica* Bertol. F.	Sh/ST	H1, H5, H6, H7	LC	
"	*Bridelia micrantha* (Hochst.) Baill.	T	H2, H3, H4	LC	Protected by Law in Malawi (NEAP, 1994)
"	*Croton gratissimus* Burch.	Sh/ST	H1, H5, H6, H7	LC	
"	*Euphorbia cooperi* (N.E.Brown ex. A. Berger	T	H1, H7	LC	
"	*Euphorbia ingens* E. Mey. Ex Boiss. [*E. candelabrum*]	T	H1, H6, H7	LC	
"	*Euphorbia matabelensis* Pax	Sh/ST	H1, H5, H6, H7	-	
"	*Euphorbia tirucalli* L.	Sh/ST	H1, H5, H7	LC	
"	*Hymenocardia acida* Tul.	Sh/ST	H1, H5, H6, H7	LC	
"	*Maprounea africana* Muell. Arg.	T	H1, H5, H7	-	
"	*Margaritaria discoidea* (Baill.) Webster [*Phyllanthus discoideus*]	T	H1, H4, H7	LC	
"	*Oldfieldia dactylophylla* (Welw. ex Oliver) J. Leonard	Sh	H1, H3, H5	-	
"	*Phyllanthus engleri* Pax	Sh/ST	H1, H3, H5, H7	-	
"	*Phyllanthus reticulatus* Poir.	Sh/ST	H4, H5	-	
"	*Pseudolachnostylis maprouneifolia* Pax	T	H1, H5, H6, H7	-	
"	*Ricinodendron rautanenii* Schinz [*Schinziophyton rautanenii*]	T	H1, H5, H6, H7	-	
"	*Securinega virosa* (Roxb. ex Willd.) Pax & K. Hoffm. [*Flueggea virosa*]	Sh/ST	H3, H4, H7	-	
"	*Synadenium kirkii* N.E. B.r. [*Euphorbia kirkii*]	Sh/ST	H1, H4, H7	-	
"	*Uapaca kirkiana* Muell. Arg.	T	H7	LC	
"	*Uapaca nitida* Muel. Arg.	T	H1, H6, H7	-	
"	*Uapaca robynsii* De Wild.	T	H6, H7	-	
"	*Uapaca sansibarica* Pax	T	H1, H5, H7	LC	
Fabaceae (=legumiaosae)	*Abrus schimperi* Hochst. ex Baker subsp. *africanus* (Vatke) Ver.	Sh	H4, H5	LC	

“	*Acacia albida* Del. [*Faidherbia albida* (Delile) A.Chev.]	T	H3, H4, H7	LC	
“	*Acacia ataxacantha* DC. Var. australis Burtt Davy [*Senegalia ataxacantha*]	Sh/ST	H1, H4, H5, H7	LC	
“	*Acacia erubescens* Welw. ex Oliver [*Senegalia erubescen*]	Sh/ST	H1, H3, H5, H7	-	
“	*Acacia hockii* De Wild [*Vachellia hockii*]	Sh/ST	H2, H4, H5	-	
“	*Acacia karroo* Hayne [*Vachellia Karroo*]	T	H2, H3, H5	-	
“	*Acacia kirkii* Oliv. [*Vachellia kirkii*]	T	H2, H3, H4	LC	
“	*Acacia macrothyrsa* Harms [*A. amythethephylla; Vachellia macrothyrsa*]	T	H7	-	
“	*Acacia nigrescens* [*Senegalia nigrescens*]	T	H3, H5, H7	-	
“	*Acacia nilotica* (L) Del. subsp. *kraussiana* (Benth.) Brenan [*Vachellia nilotica*]	T	H1, H3, H5, H7	LC	
“	*Acacia pilispina* Pichi-Sermolli [*Vachellia pilispina*]	T	HH7	-	
“	*Acacia polyacantha* Willd. subsp. *campylacantha* (Hochst ex A. Rich.) Brenan. [*Senegalia polyacantha*]	T	H1, H4, H5, H6, H7	-	
“	*Acacia robusta* Burch. subsp. *clavigera* (E. Meyer) Brenan [*Vachellia robusta*]	T	H7	-	
“	*Acacia* sieberiana DC. var. *woodii* (Burtt Davy) Keay & Brenan [*Vachellia sieberiana*]	T	H3, H7	-	
“	*Acacia tortilis* (Forsk.) Hayne subsp. *spirocarpa* (Hochst. Ex A. Rich.) Brenan [*Vachellia tortilis*]	T	H1, H6, H7	-	
“	*Acacia xanthophloea* Benth.[*Vachellia xanthophloea*]	T	H2, H3, H4	LC	
“	*Aeschynomene abyssinica* (A. Rich.) Vatke	Sh	H5, H7	-	
“	*Aeschynomene leptophylla* Hars	Sh	H3, H5, H7	-	
“	*Aeschynomene nodulosa* (Baker) E.C. Baker	Sh	H1, H5, H7	-	
“	*Afzelia quanzensis* Welw.	T	H1, H5, H6, H7		Protected by Law in Malawi (NEAP, 1994)
“	*Albizia amara* (Roxb.) Boiv	T	H1, H5, H7	LC	
“	*Albizia anthelmintica* (A. Rich.) A. Brongn.	Sh/ST	H1, H3, H5, H7	-	
“	*Albizia antunesiana* Harms	T	H3, H4, H6, H7	-	

“	*Albizia harveyi* E. Fourn.	T	H1, H5, H7	LC	
“	*Albizia versicolor* Welw. ex Oliver	T	H1, H3, H7	-	
“	*Amblygonocarpus andongensis* (Oliv.) Exell & Torre	T	H1, H3, H5, H6, H7	-	
“	*Bauhinia galpinii* N.E. Brown	Sh	H1, H4, H7	-	
“	*Bauhinia petersiana* Bolle.	Sh	H1, H5, H7	LC	
“	*Brachystegia allenii* Burtt Davy & Hutch.	T	H1, H5, H7	LC	
“	*Brachystegia boehmii* Taub.	T	H1, H6, H7	LC	
“	*Brachystegia bussei* Harms	T	H1, H6	LC	
“	*Brachystegia longifolia* Benth.	T	H1, H5, H6, H7	LC	
“	*Brachystegia manga* De Wild.	T	H1, H5, H6, H7	LC	
“	*Brachystegia microphylla* Harms	T	H6, H7	-	
“	*Brachystegia spiciformis* Benth.	T	H1, H5, H6, H7	-	
“	*Brachystegia stipulata* De Wild.	T	H1, H4, H5, H7	-	
“	*Brachystegia taxifolia* Harms	T	H1 H5, H6, H7	-	
“	*Brachystegia utilis* Burtt Davy & Hutch.	T	H6, H7	LC	
“	*Burkea africana* Hook.	T	H1, H5, H7	-	Protected by Law in Malawi (NEAP, 1994)
“	*Cassia abbreviata* Oliver	T	H1, H5, H7	-	
“	*Cassia mimosoides* L.	H	H1, H3, H6, H7	-	
“	*Cassia petersiana* Bolle [*Senna petersiana* (Bolle) Lock]	Sh/ST	H3, H4, H5	LC	
“	*Cassia siamea* Lam.* [*Senna siamea*]	T	H1, H7	LC	Native to South-East Asia. Recorded as both invasive and not invasive by difference sources.
“	*Cassia singueana* Delile [*Senna singueana*]	T	H1, H3, H5, H7	LC	

“	*Colophospermum mopane* (Kirk ex Benth.) Kirk ex J. Leonard	T	H3, H7	-	Protected by Law in Malawi (NEAP, 1994).
“	*Craibia brevicaudata* (Vatke) Dunn.	T	H1, H4, H7	NT	
“	*Crotalaria alexandri* Baker f.	H	H1, H3, H4, H5, H7	-	
“	*Dalbergia arbutifolia* Baker	Sh/ST	H1, H3, H4, H5, H7	LC	
“	*Dalbergia melanoxylon* Guill. & Baker	Sh/ST	H3, H5, H7	NT	
“	*Dalbergia nitidula* Welw. ex Baker	Sh/ST	H1, H5, H6, H7	LC	
“	*Dichrostachys cinerea* (L.) Wight & Arn. subsp. *africana* Brenan & Brummitt.	Sh/ST	H1, H4, H5, H7	LC	
“	*Dolichos kilimandscharicus* Taub.	H	H1, H3, H5, H7	-	
“	*Elephantorrhiza goetzei* (Harms) Harms	Sh/ST	H1, H4, H5, H7	LC	
“	*Eriosema psoraleoides* (Lam.) G. Don.	H	H3, H4, H5, H7	-	
“	*Erythrina abyssinica* Lam. ex DC. [*E. tomentosa* R.Br. ex A.Rich.]	T	H1, H6, H7	LC	
“	*Erythrophleum africanum* (Benth.) Harms	T	H1, H3, H5, H7	LC	
“	*Indigofera atriceps* Hook. F. subsp. *atriceps*	H	H5, H7	-	
“	*Indigofera* lupatana Baker f.	Sh	H1, H3, H5 H7	-	
“	*Indigofera dendroides* Jacq.	H	H2, H3, H5	-	
“	*Isoberlinia angolensis* (Welw. ex Benth.) Hoyle & Brenan	T	H1, H6, H7	LC	
“	*Julbernardia globiflora* (Benth.) Troupin	T	H1, H5, H7	LC	
“	*Julbernardia paniculata* (Benth.) Troupin	T	H1, H5, H7	LC	
“	*Lonchocarpus capassa* Rolfe [*Philenoptera violacea* (Klotze) Schrire]	T	H3, H4, H6, H7	-	
“	*Macrotyloma axillare* (E. Mey.) *Verdc. var. macrantha* (Brenan) *Verdc.*	H	H4, H5, H7	-	

“	*Mucuna poggei* Taub. *subsp. pesa* (De Wild.) Verdc. [*Mucuna pesa* De Wild].	Sh	H1, H4, H5, H7	-	
“	*Mucuna stans* Welw. ex Baker.	Sh	H1, H6 H7	-	
“	*Mundulea sericea* (Willd.) A.Chev.	Sh/ST	H1, H3, 57	LC	
“	*Ormocarpum kirkii* S. Moore	Sh/ST	H1, H3, H5, H7	LC	
“	*Peltophorum africanum* Sonder	T	H3, H5, H7	LC	
“	*Pericopsis angolensis* (Baker) van Meeuwen. [*Afrormosia angolensis*]	T	H1, H6, H7	LC	
“	*Piliostigma thonningii* (Schumach.) Milne-Redhead [*Bauhinia thonningii* Schumach.]	T	H1, H3, H5, H6, H7	-	
“	*Pterocarpus angolensis* DC.	T	H1, H6, H7	LC	Protected by Law in Malawi (NEAP, 1994)
“	*Pterocarpus rotundifolius* (Sonder) Druce	T	H1, H3, H5, H6, H7	LC	
“	*Rhynchosia buchananii* Harms	H	H1, H3, H5, H7	-	
“	*Sphenostylis stenocarpa* (Hochst. ex A. Rich.) Harms. [*S. congoensis*A.Chev.]	H	H1, H5, H6, H7	-	
“	*Swartzia madagascariensis* Desv.	Sh/ST	167	-	
“	*Tephrosia elata* Delfers subsp. *heckmanniana* (Harms) Brumm.	Sh	H1, H3, H5, H7	-	
“	*Tephrosia vogelii* Hook. f.	H	H5, H7	LC	
“	*Tylosema fassoglense* (Kotsch ex Schweinf.) Torre & Hillcoat	Sh	H3, H5	-	
“	*Xeroderris stuhlmannii* (Taub.) Mendonca & E.P. Sousa	T	H1, H5, H6, H7	-	
Gentianaceae	*Chironia laxiflora* Baker	H	H1, H5, H7	-	
“	*Faroa acaulis* R.E.Fr.	HH	H3, H4, H5	-	
“	*Swertia stellarioides* Ficalho	H	H2, H3, H4	-	
Lamiaceae (=labiatae)	*Aeollanthus rehmanii* Gurke	H	H1, H3, H5, H7	-	

“	*Clerodendrum eriophyllum* Gürke [*C. glabrum* E. Mey.]	Sh	H1, H5, H7	-	
“	*Gmelina arborea* Roxb.*	T	H1, H4, H7	LC	Mostly seen in old village sites
“	*Hoslundia opposita* Vahl	H	H1, H3, H5, H6, H7	-	
“	*Leonotis ocymifolia* (Burm.f) *Iwarsson var. raineriana* (Visiani) Iwarsson	H	H2, H5, H7	-	
“	*Ocimum obovatum* E. Mey. ex Benth. subsp. *obovatum var. obovatum*	Sh	H2, H5	-	
“	*Plectranthus esculentus* N.E. Br.	H	H3, H4, H5	-	
“	*Premna senensis* Klotzsch	Sh/ST	H1, H3, H5, H7	-	
“	*Tinnea aethiopica* Kotschy & Peyr.	Sh	H3, H7	-	
“	*Vitex doniana* Sweet.	T	H4, H5, H7	LC	
“	*Vitex madiensis* Oliver	T	H1, H5, H7	LC	
“	*Vitex payos* (Lour.) Merr	T	H5, H6, H7	-	
“	*Vitex mombasse* Vatke	Sh/ST	H1, H3, H5, H7	-	
Linaceae	*Hugonia busseana* Engl. [*H. orientalis.* Engl.]	Sh	H4, H5, H7	-	
Loganiaceae	*Strychnos cocculoides* Baker	Sh/ST	H1, H5, H6, H7	LC	
“	*Strychnos innocua* Delile	Sh/ST	H2, H3, H4, H7	LC	
“	*Strychnos madagascariensis* Poiret. [*S. innocua* Del.]	Sh/ST	H1, H4, H5, H7	-	
“	*Strychnos mitis* S. Moore	T	H2, H4, H5	-	
“	*Strychnos potatorum* L.f. [*S. stuhlmannii*]	T	H2, H4, H5	-	
“	*Strychnos pungens* Solered.	T	H1, H6, H7	LC	
“	*Strychnos spinosa* Lam.	Sh/ST	H1, H2, H4, H5, H7	-	

Loranthaceae	*Agelanthus subulatus* (Engl.) Polhill & Wiens	Sh	H3, H4, H5, H7	-	
"	*Phragmanthera cornetii* (Dewèvre) Polhill & Wiens	Sh	H3, H5, H7	-	
Lythraceae	*Ammannia prieuriana* Guill. & Perr.	H	H2, H4, H7	-	
Malvaceae	*Abutilon longicuspe* Hochst. ex A. Rich.	Sh	H3, H4, H6, H7	-	
"	*Adansonia digitata* L.	T	H1, H3, H7	-	
"	*Azanza garckeana* (F. Hoffm.) Exell & Hillc. [*Thespesia garckeana* F.Hoffm.]	T	H1, H5, H7	-	
"	*Dombeya acutangula* Cav.	Sh	H1, H4, H5,	CR	
"	*Dombeya kirkii* Mast.	Sh/ST	H4, H5		
"	*Grewia bicolor* Juss.	Sh/ST	H1, H3, H6, H7	-	
"	*Grewia flavescens* Juss. var. *flavescens*	Sh/ST	H1, H6, H7	-	
"	*Grewia herbacea* Welw. ex Hiern	Sh	H1, H5, H6, H7	-	
"	*Grewia monticola* Sonder	Sh/ST	H1, H5, H6 H7	-	
"	*Grewia stolzii* Ulbrich	Sh	H1, H5, H7	-	
"	*Kosteletzkya adoensis* (Hochst. ex A. Rich.) Mast.	Sh	H3, H4, H7	-	
"	*Sida alba* L.	Sh	H3, H5, H7	-	
"	*Sparrmannia ricinocarpa* (Eckl. & Zeyh.) Kuntze	Sh	H3, H4, H5	-	
"	*Sterculia africana* (Lour.) Fiori	T	H3, H6, H7	LC	
"	*Sterculia quinqueloba* (Garcke) K. Schum.	T	H6, H7	-	
"	*Urena lobata* L.*	Sh	H4, H5, H7	-	Probably originated in tropical Asia
"	*Waltheria indica* L.	Sh	H1, H5, H6, H7	-	
Melastomataceae	*Antherotoma naudinii* Hook. f.	H	H2, H3	-	
"	*Dissotis speciosa* Taub. [*D. macrocarpa* Gilg]	Sh	H2, H5, H7	-	

“	*Memecylon flavovirens* Baker	Sh/ST	H1, H4, H6	-	
Meliaceae	*Khaya nyasica* Stapf ex Baker f. [*K. anthotheca* (Welw.) C.DC.]	T	H2, H3	-	Protected by Law in Malawi (NEAP, 1994)
“	*Toona ciliata* M. Roem.*	T	H2, H4	LC	Native to Australia and Asia
“	*Trichilia capitata* Klotzsch	Sh/ST	H1, H4, H5	-	
“	*Turraea nilotica* Kotschy & Peyr.	Sh/ST	H1, H5, H6, H7	LC	
“	*Turraea robusta* Gürke	Sh/ST	H1, H4, H5, H7	LC	
Menispermaceae	*Tiliacora funifera* (Miers) Oliver	Sh	H4	-	
Moraceae	*Cardiogyne africana* [*Maclura africana*]	Sh/ST	H1, H3, H4, H5, H7	-	
“	*Ficus capensis* Thunb. [*F. sur* Forssk.; *F. mallotocarpa* Warb.]	T	H4, H5	-	
“	*Ficus ingens* (Miq) Miq.	Sh/ST	H6, H7	LC	
“	*Ficus natalensis* Hochst.	T	H1, H3, H4, H5, H7	LC	
“	*Ficus ovata* Vahl	T	H1, H5, H7	-	
“	*Ficus sansibarica* Warb.	T	H1, H3, H5, H7	-	
“	*Ficus stuhlmannii* Warb.	T	H1, H4, H5	-	
“	*Ficus sycomorus* L.	T	H3, H4, H5	LC	
“	*Ficus thonningii* Blume [*F. burkei; F. petersii*]	T	H6, H7	LC	
Musaceae	*Musa sapientum* L.*	H	H1	-	Native to Tropical Indomalaya and Australia
Myrtaceae	Eucalyptus sp.*	T	H4		Native to Australia

“	*Syzygium cordatum* Hochst. ex Krauss.	T	H1, H4, H7	LC
“	*Syzygium guineense* (Willd.) DC. subsp. *guineense.*	T	H1, H4, H6, H7	LC
Ochnaceae	*Brackenridgea zanguebarica* Oliver	Sh/ST	H1, H4, H5, H7	-
“	*Ochna puberula* Hook.	Sh/ST	H1, H5, H6, H7	-
“	*Ochna rovumensis* Gilg.	Sh/ST	H3, H4, H5	-
“	*Ochna schweinfurthiana* F. Hoffm.	Sh/ST	H1, H5, H7	LC
Olacaceae	*Olax dissitiflora* Oliv.	Sh/ST	H1, H4, H5	LC
“	*Olax obtusifolia* De Wild.	Sh/ST	H1, H4, H5, H7	-
“	*Ximenia americana* L.	Sh/ST	H1, H5, H7	LC
“	*Ximenia caffra* Sonder	Sh/ST	H1, H4, H5, H7	-
Oleaceae	*Jasminum fluminense* Vell.	Sh	H2, H4	-
“	*Schrebera alata* (Hochst.) Welw. [*S. argyrotricha* Gilg; *S. mazoensis* S.Moore]	T	H1, H4, H6, H7	LC
“	*Schrebera trichoclada* Welw.	Sh/ST	H1, H4, H5, H7	LC
Passifloraceae	*Adenia cissampeloides* (Planch. ex Hook.) Harms [*A. gummifera* (Harv.) Harms var. *gummifera*]	Sh	H1, H5, H7	-
“	*Adenia rumicifolia* Engl. & Harms	Sh	H4, H5, H7	-
Polygalaceae	*Polygala usafuensis* Gurke	H	H3, H5, H7	-
“	*Polygala albida* Schinz subsp. *stanleyana* (Chodat) Paiva	H	H1, H3, H5, H7	-
“	*Polygala exelliana* Troupin	Sh	H2, H4	-
“	*Polygala macrostigma* Chodat [*P. splendens* Exell]	Sh	H1, H5, H7	-

“	*Securidaca longipedunculata* Fresen.	T	H1, H4, H5, H7	-
Polygonaceae	*Polygonum senegalense* Meisn.	H	H2, H4	LC
“	*Polygonum nepalense* Meisn. [*P. alatum* Buch. -Ham. ex Spreng.]	H	H2, H4, H5	-
Primulaceae	*Embelia schimperi* Vatke	Sh	H1, H5, H7	LC
“	*Rapanea melanophoeos* (L.) Mez	T	H3, H5, H7	-
Proteaceae	*Faurea saligna* Harvey	T	H1, H3, H5, H7	-
“	*Faurea delevoyi* De Wild.	T	H4	-
“	*Faurea rochetiana* (A. Rich.) Chiov. ex Pic.Serm. [*F. speciosa* Welw.]	T	H1, H5, H6, H7	-
“	*Protea angolensis* Welw.	Sh/ST	H1, H4, H5, H7	-
“	*Protea madiensis* Oliv. subsp. *Madiensis*	Sh	H5, H7	-
“	*Protea rupestris* R.E.Fr.	T	H6, H7	-
“	*Protea welwitschii* Engl. subsp. *welwitschii*	Sh/ST	H1, H4, H5, H7	-
Rhamnaceae	*Berchemia discolor* (Klotzsch) Hemsley	T	H4, H5, H7	LC
“	*Ziziphus abyssinica* Hochst. ex A. Rich.	Sh/ST	H1, H5, H7	LC
“	*Ziziphus mucronata* Willd.	Sh/ST	H4, H7	LC
Rhizophoraceae	*Cassipourea mollis* (R.E. Fr.) Alston	T	H1, H3, H5, H7	LC
Rubiaceae	*Canthium crassum* Hiern [*Multidentia crassa (Hiern) Bridson & Verdc. var.crassa*]	Sh/ST	H1, H6, H7	LC
“	*Canthium huillense* Hiern [*Psydrax livida (Hiern) Bridson*]	Sh/ST	H1, H6, H7	-

“	*Canthium zanzibaricum* Klotzsch [*Keetia zanzibarica* (Klotzsch) Bridson]	Sh/ST	H3, H4, H5	-
“	*Crossopteryx febrifuga* (Afzel. Ex G. Don.) Benth.	Sh/ST	H1, H5, H7	LC
“	*Feretia aeruginescens* Stapf	Sh/ST	H2, H4, H5	-
“	*Fadogia triphylla* Baker var. *triphylla*	H	H1, H4, H5, H7	-
“	*Fadogia homblei* De Wild [*F. monticola* Robyns]	H	H1, H4, H7	-
“	*Gardenia resiniflua* Hiern	Sh	H1, H3, H4, H7	-
“	*Gardenia spathulifolia* Stapf & Hutch. [*G. volkensii*]	Sh/ST	H1, H4, H5, H7	-
“	*Hymenodictyon floribundum* (Hochst. & Steud) B.L. Robinson	Sh/ST	H6, H7	-
“	*Hymenodictyon parvifolium* Oliver subsp. *scabrum* (Stapf) Verde.	Sh/ST	H1, H4, H5, H7	LC
“	*Leptactina benguelensis* (Benth. & Hook.f.) R.D.Good subsp. *Pubescens* Verdc.	Sh	H3, H5, H6, H7	-
“	*Oldenlandia herbacea* (L.) Roxb.	H	H2, H3, H4, H7	LC
“	*Oldenlandia rosulata* K. Schum. *var. parviflora* Bremek.	H	H1, H4, H5, H7	-
“	*Otiophora scabra* Zucc. subsp. *scabra*	H	H4, H5	-
“	*Pachystigma pygmaeum* (Schltr.) Robyns	Sh	H4, H5	-
“	*Pavetta cataractarum* S. Moore	Sh/ST	H1, H3, H5, H7	-
“	*Pavetta schumanniana* K.Schum.	Sh/ST	H1, H3, H5, H6, H7	LC
“	*Polysphaeria dischistocalyx* Brenan	Sh	H3, H4, H5, H7	-
“	*Psychotria kirkii* Hiern	Sh	H1, H3, H4, H5, H7	-
“	*Psychotria mahonii* C.H.Wright	T	H1, H4, H5, H7	-
“	*Psychotria spithamea* S.Moore .	Sh	H1, H3, H6, H7	-

"	*Rothmannia engleriana* (K. Schum.) Keay	Sh/ST	H1, H4, H6, H7	-	
"	*Tapiphyllum cinerascens* (Welw. ex Hiern) Robyns var. *laevius* (K. Schum.) Verdc.	Sh/ST	H6, H7	-	
"	*Vangueria infausta* Burch.	T	H1, H4, H5, H7	LC	
"	*Vangueriopsis lanciflora* (Hiern) Robyns	Sh/ST	H1, H3, H6	-	
"	*Xeromphis obovata* (Hochst.) Keay [*Catunaregum spinosa*]	Sh/ST	H1, H3, H4, H5, H7	-	
Rutaceae	*Melia azedarach* L.*	T	H4, H5, H7	LC	A native of Asia
"	*Zanthoxylum chalybeum* Engl.	Sh/ST	H1, H5, H7	LC	
Salicaceae	*Flacourtia indica* (Burm. F.) Merr.	Sh/ST	H1, H5, H7	LC	
"	*Oncoba spinosa* Forsk.	Sh/ST	H2, H4, H5	LC	
"	*Salix mucronata* Thunb. subsp.*mucronata* [*S. subserrata* Willd]	Sh/ST	H2, H4	-	
Sapindaceae	*Allophylus africanus* P. Beauv.	Sh/ST	H1, H5, H6, H7	-	
"	*Allophylus congolanus* Gilg.	Sh/ST	H4, H5	-	
"	*Pappea capensis* Ecklon & Zether	T	H3, H4, H7	LC	
"	*Zanha africana* (Radlk.) Exell	T	H1, H4, H6, H7	-	
Sapotaceae	*Bequeartiodendron magalismontanum* (Sonder) Heine & Hemsly [*Englerophytum magalismontanum*]	T	H2, H6, H7	-	
"	*Manilkara mochisia* (Baker) Dubard	Sh/ST	H1, H3, H5, H7	LC	
"	*Mimusops zeyheri* Sonder	T	H3, H4, H6, H7	LC	

Solanaceae	*Capsicum annuum* L.*	H	H1, H7	LC	Native to Southern North America and Northern South America.
"	Datura sp.*	H	H1, H4, H5, H7	-	Probably introduced from Mexico.
"	*Physalis peruviana* L.*	H	H1, H7	-	Native of South America.
"	*Solanum nigrum* L*. [*S. guineense* (L.) Lam.; *S. suffruticosum* Schousb. ex Willd.]	H	H5, H7	-	Regarded as indigenous to Eurasia, but possibly also natural in Africa.
"	*Solanum panduriforme* Drege ex Dun.	Sh	H1, H3, H5, H7	-	Cover illustration.
Velloziaceae	*Xerophyta retinervis* Baker [*Vellozia retinervis* Baker]	Sh	H6, H7	-	
"	*Xerophyta equisetoides* Baker var. *pubescens* L.B.Smith & Ayensu	Sh	H1, H5, H6, H7	-	
Verbenaceae	*Duranta repens* L.* [*D. erecta*]	Sh/ST	H5, H7	-	Native of Central America
"	*Lantana camara* (L)*	Sh	H4, H7	-	Native to Central and South America. Is one of the World's 100 Worst Invaders (GISD, 2019)
"	*Lantana trifolia* L.*	Sh	H4, H5 H7	-	Probably from the Americas.
"	*Lantana rhodesiensis* Moldenke	Sh	H1, H4, H5, H7	-	
Vitaceae	*Cayratia gracilis* (Guill. & Perr.) Suesseng [*Cissus gracilis* Guill. & Perr.]	H	H2, H3, H4, H5	-	
"	*Cissus quadrangularis* L.	H	H1, H3, H5, H7	-	

"	*Cyphostemma wittei* (Staner) Wild & R.B. Drumm. [*C. hermannioides* Wild & R.B.Drumm.]	H	H1, H3, H7	-	
"	*Rhoicissus tridentata* (L. f.) Wild & R.B. Drumm. subsp. *cuneifolia* (Eckl. & Zeyh.) N.R.Urton	Sh	H1, H4, H6, H7	-	
Zygophyllaceae	*Balanites aegyptiaca* (L.) Delile	Sh/ST	H1, H4, H5, H7	LC	
	MONOCOTYLEDONS				
Asparagaceae	*Asparagus plumosus* Baker [*Protasparagus plumosus* (Baker) Oberm.]	Sh	H1, H5, H7	-	
"	*Asparagus racemosus* Willd. [*Protasparagus racemosus* (Willd.) Oberm.]	Sh	H1, H4, H7	-	
"	*Chlorophytum floribundum* Baker	H	H1, H7	-	
"	*Chlorophytum zingiberastrum* Nordal & A.D.Poulsen	H	H4	-	
"	*Sansevieria downsii* Chahin.	H	H1, H3, H5, H7	-	
Amaryllidaceae	*Scadoxus multiflorus* (Martyn) Raf. subsp. *multiflorus* [*Haemanthus multiflorus* Martyn]	H	H1, H3, H4, H5	-	
Araceae	*Pistia stratiotes* L.	H	H2, H3	LC	
Arecaceae (=palmae)	*Borassus aethiopum* Mart.	T	H1, H4, H6, H7	LC	Protected by Law in Malawi (NEAP, 1994).
"	*Phoenix reclinata* Jacq.	T	H2, H4	LC	
Asphodelaceae	*Aloe christianii* Reynolds	H	H1, H5, H7	-	
Cyperaceae	*Ascolepis capensis* (Kunth) Ridl.	S	H2, H4, H5	LC	
"	*Bulbostylis oritrephes* (Ridl.) C.B. Clarke. [*B. trichobasis* (Baker) C.B. Clarke; *B. caespitosa* Peter; *Abildgaardia oritrephes* (Ridl.) Lye;]	S	H3	-	

“	*Carex spicato-paniculata* C.B.Clarke	S	H1, H4, H5, H7	-
“	*Coleochloa setifera* (Ridley) Gilly.	S	H2, H3, H4	-
“	*Courtoisina cyperoides* (Roxb.) Soják. [*C. cyperoides* (Roxb.) Nees]	S	H3, H4, H5	LC
“	*Cyperus distans* L.f.	S	H2, H3, H4, H7	LC
“	*Cyperus esculentus* L. var. *esculentus*	S	H2, H3, H4, H5	LC
“	*Cyperus involucratus* Rottb.	S	H2, H3, H4	LC
“	*Cyperus papyrus* L.	S	H2	LC
	Eleocharis brainii Svenson	S	H2, H4	LC
“	*Kyllingiella microcephala* (Steud.) Haines & Lye	S	H4, H5	-
“	*Scirpus rogersii* N.E.Br.	S	H2, H4, H5	-
Dioscoreaeceae	*Dioscorea dumetorum* (Kunth) Pax	Sh	H4, H5, H7	-
Colchicaceae	*Gloriosa superba* L. [*G. simplex* L; *G. virescens* Lindl.]	H	H1, H3, H4, H5, H7	LC
Commelinaceae	*Commelina africana* L. var. *africana*	H	H3, H5, H7	LC
Orchidaceae	*Habenaria retinervis* Summerh.	H	H2, H4	-
“	*Habenaria splendens* Rendle	H	H2, H4	-
“	*Habenaria unicicalcar* Summerh.	H	H2, H4	-
“	*Habenaria walleri* Reichb.	H	H2, H4	-
“	*Liparis mulindana* Schltr.	H	H3, H4, H5	-
“	*Microcoelia globulosa* (Hochst.) L.Jonss	H	H4, H5	-
“	*Nervilia ballii* G.Will.	H	H4, H5, H7	-
“	*Platycoryne crocea* (Schweinf. ex Rchb.f.) Rolfe	H	H1, H5, H7	-
“	*Polystachya brassii* Summerh.	H	H1, H5, H7	-

Poaceae (=gramineae)	*Andropogon amplectens* Nees.	G	H3, H5, H7	-
"	*Andropogon schinzii* Halk.	G	H5, H7	-
"	*Andropogon schirensis* Hochst. ex A. Rich. [*A. schirensis* A. Rich. var. *angustifolius* Stapf]	G	H1, H3, H4, H7	-
"	*Arundinella nepalensis* Trin.	G	H2, H4, H5	-
"	*Bewsia biflora* (Hack.) Gooss. [*Diplachne biflora* Hack.]	G	H1, H3, H5, H7	-
"	*Brachiaria brizantha* (A. Rich.) Stapf	G	H1, H5, H7	-
"	*Brachiaria humidicola* (Rendle) Schweickerdt	G	H4, H5	-
"	*Brachyachne fulva* Stapf [*B. fibrosa* C.E.Hubb]	G	H1, H3, H4, H5, H7	-
"	*Chloris gayana* Kunth	G	H1, H2, H3, H4, H5, H7	-
"	*Chloris virgata* Sw.	G	H1, H3, H4, H5, H7	-
"	*Cymbopogon densiflorus* (Steud.) Stapf	G	H2, H4, H5	-
"	*Cynodon dactylon* Pers.	G	H1, H3, H5, H7	-
"	*Echinochloa haploclada* (Stapf) Stapf	G	H2, H3, H4	-
"	*Echinochloa pyramidaris*	G	H2, H3, H4	-
"	*Echinochloa stagnina* Beauv.	G	H2, H3, H4	LC
"	*Eleusine coracana* (L.) Gaertn. subsp. *africana* (Kennedy-O' Bryne) Hilu & De Wet. Goose	G	H1, H3, H4, H7	LC
"	*Eragrostis arenicola* C.E. Hubbard	G	H4, H5, H7	-
"	*Eragrostis castellanea* Buscal & Muschl.	G	H3, H4	-
"	*Eragrostis hispida* K. Schum. [*E. blepharolepis* Hack.]	G	H2, H4, H5	-
"	*Hemarthria natans* Stapf	G	H4, H5	-
"	*Heteropogon contortus* (L.) Roem. & Schult.	G	H1, H3, H6, H7	-
"	*Hyparrhenia filipendula* (Hochst.) Stapf. var. *filipendula*	G	H3, H4, H6, H7	-
"	*Hyparrhenia welwitschii* (Randle) Stapf var. *macrantha*	G	H3, H4, H6, H7	-

“	*Loudetia simplex* (Nees) C.E. Hubbard	G	H1, H2, H3, H4, H5, H6, H7	-
“	*Melinis ambigua* Hack. subsp. *ambigua*	G	H4, H5	-
“	*Microchloa caffra* Nees	G	H3, H4, H5, H7	-
“	*Monocymbium ceresiiforme* (Nees) Stapf.	G	H1, H3, H5, H7	-
“	*Oryza barthii* A. Chev.	G	H2, H3, H4	LC
“	*Panicum chionachne* Mez	G	H2, H4	-
“	*Panicum maximum* Jacq.	G	H1, H3, H5, H7	-
“	*Panicum phragmites* Stapf	G	H2, H4, H5	-
“	*Panicum repens* L.	G	H2, H4, H5, H7	LC
“	*Pennisetum purpureum* Schumach.	G	H2, H4	LC
“	*Phacelurus huillensis* (Rendle) Clayton [*Thyrsia huillensis* (Rendle) Stapf; *Thyrsia undulatifolia* (Chiov.) Robyns]	G	H3, H5, H7	-
“	*Phragmites mauritianus* Kunth.	G-like	H2, H4	LC
“	*Poa annua* L.	G	H1, H5, H7	LC
“	*Pogonarthria squarrosa* (Roem. & Schult.) Pilg.	G	H1, H3, H5, H7	-
“	*Rhynchelytrum repens* (Willd.) C.E. Hubb. [*Melinis repens*]	G	H1, H5, H7	-
“	*Sacciolepsis africana* C.E. Hubbard ex Snowden	G	H2, H3, H5, H7	-
“	*Setaria homonyma* (Steud.) Chiov.	G	H1, H2, H3, H5, H7	-
“	*Setaria incrassata (Hochst.) Hackel* [*S. phragmitoides* Stapf; *S. palustris* Stapf]	G	H2, H3	-
“	*Setaria pumila* (Poir.) Roem. & Schult. [*S. pallida-fusca* (Schumach.) Stapf & C.E.Hubb.; *S. ustilata* de Wit]	G	H2, H3, H5, H7	-
“	*Setaria sphacelata* (Schum.) Moss [*S. anceps* Stapf; *S. trinervia* Stapf]	G	H2, H3, H4	-

“	*Setaria verticillata* (L.) Beauv.	G	H2, H4	-	
“	*Sorghastrum bipennatum* (Hack.) Pilg.	G	H4, H5, H7	-	
“	*Sporobolus mollier* Hack.	G	H4, H7	-	
“	*Sporobolus pyramidalis* P. Beauv.	G	H2, H3, H5	-	
“	*Sporobolus sanguineus* Rendle	G	H1, H3, H5, H7	-	
“	*Stereochlaena comeronii* (Stapf.) Pilg.	G	H1, H3, H5, H7	-	
“	*Themeda triandra* Forsk.	G	H1, H3, H4, H5, H7	-	
“	*Tristachya superba* (De Not.) Schweinf. & Aschers	G	H3, H4, H5	-	
“	*Vossia cuspidata* (Roxb.) Griff.	G	H2, H4, H5	LC	
“	*Zonotriche inamoena* (K. Schum.) Clayton [*Tristachya inamoena* K. Schum; *Piptostachya inamoena* (K. Schum.) Phipps]	G	H1, H4, H5, H7	-	
Typhaceae	*Typha australis* (Schum. & Thonn.) Vatke	H	H2, H4, H5	LC	
Zingiberaceae	*Siphonochilus aethiopicus* (Schweinf.) B.L. Burtt. [*Kaempferia aethiopica*(Schweinf.) Benth.]	H	H1, H5, H7	-	
	PTERIDOPHYTA				
Dennstaedtiaceae	*Pteridium aquilinum* (L.) Kuhn var. *aquilinum*	H	H1, H5, H7	LC	Considered invasive sometimes
Equisetaceae	*Equisetum ramosissimum* Desf.	H	H3, H4	LC	
Isoetaceae	*Isoetes schweinfurthii* A.Braun	H	H3, H4, H5, H7	LC	
Pteridaceae	*Aspidotis schimperi* (Kunze) Pic.Serm.	H	H3, H5, H6, H7	LC	

“	*Pellaea dura* (Willd.) Hook. var. *dura*	H	H1, H4, H6, H7	-
“	*Pellaea pectiniformis* Baker	H	H1, H3, H6, H7	-
“	*Pteris friesii* Hieron. [*P. catoptera* Kunze var. *friesii* (Hiern.) Verdc.]	H	H1, H3, H6, H7	-

Dichrostachys cinerea (L.)

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