

The Flora of Kibwezi Forest Reserve, Makueni County

By

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Diplocyclos palmatus

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Abbreviations

APGIII	Angiosperm Phylogeny Group III, the third version of a modern, mostly molecular-based, system of plant classification
ARIDSAK	Agroforestry for Integrated Development of Semi-Arid Areas of Kenya
DSWT	David Sheldrick Wildlife Trust
FR	Forest Reserve
GPS	Global Positioning System
IUCN	International Union for the Conservation of Nature
KEFRI	Kenya Forestry Research Institute
KFS	Kenya Forest Service
NP	National Park

Executive Summary

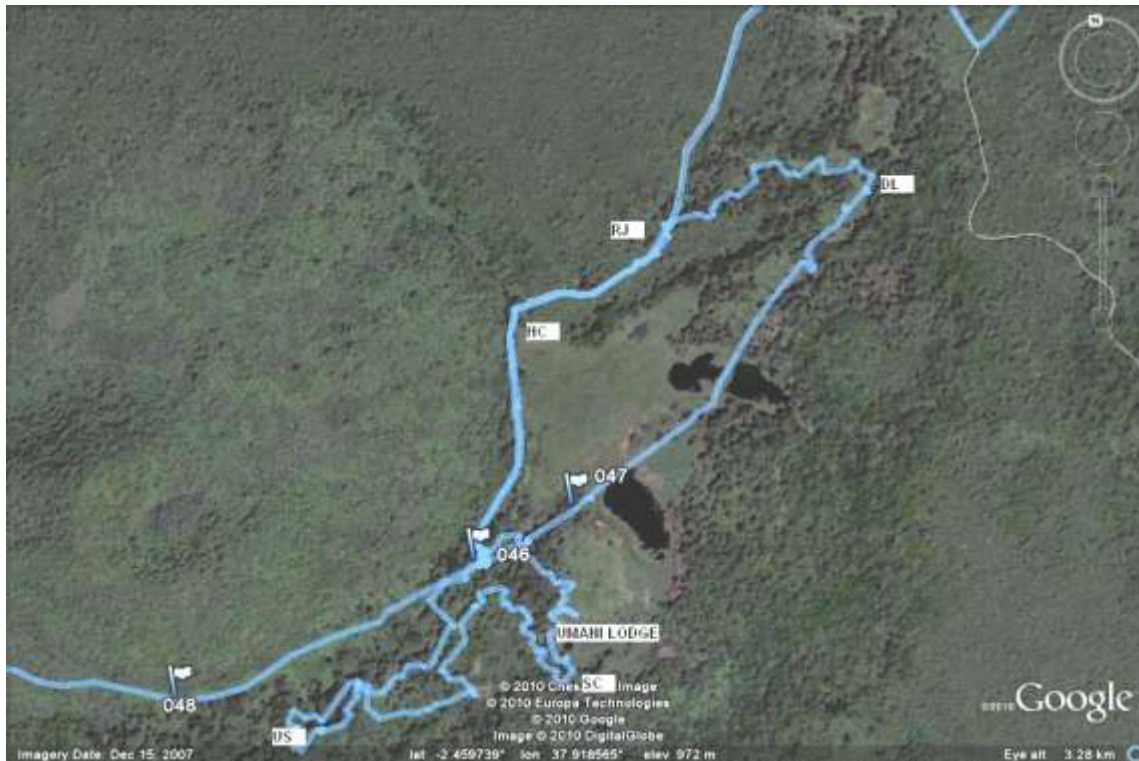
The botanical survey of this small Forest Reserve (58.6 km²), representing 0.01% of Kenya's landmass, resulted in 504 plants being recorded or 7.7% of Kenya's total. The fieldwork was completed in one week, spread over 3 visits, and thus probably only covers approximately 80% of the total number of plant taxa to be found there. This diversity is partly due to the mix of different habitats, but also Kibwezi appears to represent a coastal element intruding into the Somali-Maasai vegetation zone (White, 1983). Another source of diversity is the year round water availability of Umani springs. The importance of these springs both to the local communities and the long term conservation of Kibwezi forest is of major concern and a fair apportioning of the spring water between the two is of utmost importance (see Appendix 4).

1) Introduction

The need to undertake a floral inventory of the Kibwezi Forest Reserve was recognised in the draft General Management Plan (KFS, 2010). Suggested terms of reference were discussed and QL put forward a draft to DSWT in August 2010, subsequently amended (**Appendix 1**). It was realised that the dry season was already well advanced and that the plant survey would need to be done in two stages.

2) Survey

The first field survey took place between 12th to 14th August with the subsequent processing of plant collections and data in Nairobi (Luke & Luke, 2010). The second survey was carried out between 20th to 24th November, followed by identification of additions to the plant list and completion of this report. A further one day visit was made on December 28th to answer some remaining queries.



Map 1

August 2010

The survey commenced on 13th, the morning spent on a circuit (46, 47, DL, RJ, HC and return to 46). The afternoon covered the lodge area and up to the main Umani Springs (not Chai spring as erroneously reported previously) (46, SC, US, 46) - see **Map 1**. The next day the survey followed the new road to Kenze (Kanze) and on to the boundary behind (46–53) returning via 54 and 56 to camp (see **Map 2**). The morning of 15th was spent drying and sorting specimens followed by a brief drive to 55, a return to pack up camp and departure to Nairobi via 56 and 57.



Impatiens nana



Grewia truncata

November 2010

The second visit started on the evening of 20th November.

Day 1

Having waited until rain had been reported a few weeks earlier the forest was fresh and full of 'new' plants not seen on the drier August visit, particularly the short lived annuals and the ephemeral flowers of the bulbous plants (see below).



Crinum zeylanicum



Dorstenia cuspidata



Mbui Nzau Hill from the top of Kenze Hill (pt 112)

After recording and collecting many of the plants on the grassland in front of the lodge and checking some of the queries remaining from August, the team drove out to Kenze Hill through the lava field (pts 49, 50, 51) and climbed to the top of the Hill (pt 112) finding several additional species. The extensive area around Kenze carries a completely different flora to that of the lava areas being Precambrian metamorphic rock or sandy soils derived from the same (Mailu, 1994). The GPS track for this first day was not saved, but the return drive to camp was via pt 113 and pt 56.

Day 2

The second day tracked through pts 114 to 123, the main target being the relatively bare south eastern part of the FR. The fencing project was underway along this boundary, but did not prevent numerous ‘new’ plants being found in this *Lannea/Commiphora* woodland, within a non-volcanic zone, again derived from metamorphic basement rock, but perhaps a little more sandy than the Kenze area. Past intense grazing pressure from adjacent farmers’ livestock was very evident, particularly towards the main road at pt 121. Had there been no rain recently, this area would have been very bare, however it was looking reasonably well covered and will certainly recover quickly if stock is restricted by the fence. The seasonal waterhole ‘Ya Endei’ at pt 120 will obviously continue to attract livestock and will, no doubt, be used as an excuse for continued grazing thereabouts.

Between pts 121 and 122 there are many fine baobabs, but not much else. The nursery/plantation area around pt 122, the remnants of the 12 Ha KEFRI/Belgian project (ARIDSAC, 1999), yielded a few cultivated tree species. This area lies between the oil pipeline cut and the main road. The continuation and expansion of this demonstration plot for plantation forestry would seem a good idea (see below).



Hibiscus kabuyeana



Ornithogalum donaldsonii

Day 3

The target for this day was the northwest boundary area and the land separated from the main forest by the Mombasa-Nairobi Highway. This tracked from the turn off at pt 124, backwards down the track used on Day 1 to pt 052 and then into the black cotton drainage line around pt 129, the waterhole pt 132, the boundary cut pt 131 and then looping round through Mbuinzau Village to the boundary where it intersects the main road (no GPS pt) and on to the cut NE from pt 057.



Map 2

The road to the railway line near pt 133 was investigated and then the KEFRI and KFS offices, where the Forestry Extension Officer, Mr Francis Kungu, was visited. The old alignment for the railway line to collect ballast to pt 134 was surveyed without many additions and then back to camp.



Chlorophytum tuberosum



Lepisanthes senegalensis

Day 4

The morning was spent completing the drying of specimens, a session with Mzee Muthoka to double check his information of local Kamba names and medicinal uses and recollecting a few plants around the springs. Departure for Nairobi was around midday to arrive home late afternoon.

A sequential plant species list was made with each known taxon recorded as a ‘Sight Record’ (SR). Those plants not fully identified were collected and specimens pressed and dried (HS) for study in the herbarium in Nairobi. Determinations are according to the Flora of Tropical East Africa (FTEA, 1952 -) with species names standardised according to the African Plant Database (<http://www.ville-ge.ch/musinfo/bd/cjb/africa/recherche.php>). Although some of the recent family changes according to APG III have been adopted, many of the more startling have been ignored so as not to cause too much confusion!

3) Results

A total of 331 taxa were recorded during the first visit and a further 150 identified after the second trip. Some 50 more taxa were recorded during the one day December visit. (**Appendix 2**). Many of the 21 exotics or coastal species reported previously (Luke & Luke, 2010) as being intended by the architect for use around the lodge have been removed, but not all. Discussion later with DSWT indicated that of those exotics still listed, only the exotic palm species will be allowed to remain. Several exotics were recorded from the “Belgian Project area” bringing the total for exotics, invasives, naturalized or escapes to 27. Thus, **504 taxa** can be considered indigenous to the area.

The survey area adjoins the Chyulu Hills East NP which, with the Mbirikani group ranch on the western side of the hills, now has a plant species inventory of 1140 taxa (Luke, in prep.). Comparing the Kibwezi inventory with the Chyulu list there are 190 taxa NOT found on the latter.



Thilachium africanum



Hibiscus panduriformis

This list consists of :

127	Trees
62	Shrubs
83	Climbers (incl. lianes, scandent shrubs and twiners)
219	Herbs (incl. grasses, sedges, epiphytes and aquatics)
7	Parasites/hemi-parasites
5	Ferns .
1	Lichen

There are a total of 104 plant families represented (not including the lichen). Of these there are 3 fern families, 80 angiosperm, dicotyledon families and 21 monocotyledon families. The four most common families are, in descending order, **Asteraceae** (33), **Acanthaceae** (32), **Euphorbiaceae** (25) (if the newly segregated families, Phyllanthaceae and Putranjivaceae are included), and **Lamiaceae** (20). If, of course, the subfamilies of Leguminosae, Caesalpinoideae, Mimosoidae and Papilionoidae are counted as one family, then this takes first place with 34 taxa.

4) Vegetation Mapping

The Kibwezi FR covers an area of 58.6 km² of which several square km must be taken up with the various infrastructural ‘excisions’(roads, oil pipeline, water pipelines) and the losses to buildings on the Kibwezi town side (KFS, KEFRI and petrol station) (KFS, 2010). The remaining area can be divided into four broad vegetation zones:

1. Wetlands
2. Groundwater Forest
3. Dry Lava ‘Forest’
4. Basement-derived-soil Vegetation (*Combretum* Woodland and *Lannea/Commiphora* Woodland)

The Wetland area in front of the Lodge appears to be an ‘island’ of non-volcanic soil (Mailu, 1994). The two seasonal waterholes (pt 120 and pt 132) can be included in this ‘zone’.

The Lava ‘Forest’ can be further divided into different ages of the lava flows (KFS, 2010) showing different stages of colonisation and development of closed-canopy dry forest. The most recent lava is thought to be 480 ± 200 years ago (Pócs & Luke, 2007). Within these zones there are areas that have been heavily impacted by human activity to a greater or lesser extent (eg. pt 132).



Cucumis cf metulifera



Lagenaria sphaerica



Sarcophyte sanguinea



Vernonia colorata



Ficus wakefieldii and Elder Muthoka



Ficus bussei

Of particular interest is the large number of fig species recorded (12). The last to be recorded, *Ficus lingua*, needs confirmation as the collected material was from discarded monkey harvesting! The large number of Acanthaceae contributes largely to the butterfly diversity and also provides some of the more ornamental plants in the area.



Anisotes ukambensis



Dyschoriste hildebrandtii

The contrast afforded between the lush vegetation of the wetland/groundwater forest area and the xeric, succulent vegetation of the lava flows is a major feature of this forest and should provide huge interest even for the most plant-blind of visitors!



Euphorbia friesiorum



Gomphocarpus kaessneri

5) Species of Conservation Significance

The process of assessing plant species in the region for rarity and threats is just beginning and there is much to be done thus a check on the IUCN Redlist website (IUCN, 2010) will show that only 4 plants from the Kibwezi FR are listed as follows:

Drypetes natalensis var. *leiogyna*
Craibia brevipaudata ssp. *burtii*
Dalbergia melanoxylon
Pistacia aethiopicum

Vulnerable (VU) B1+2b
Endangered (EN) B1+2c
LR/nt
LR/nt

LR/nt stands for Least Risk/Near Threatened. Those plants marked with purple in the ‘comment’ column of the list show some restricted range (endemism) and should be a priority for Red List assessments.

An aspect of the plant inventory is the large number of ‘coastal’ species occurring far outside their main distribution (Beentje, 1994). As yet we can offer no reasonable explanation for this. The species that belong to this element are:

Combretum schumannii, *Grewia micrantha*, *Grewia truncata*, *Abutilon wituense*, *Drypetes natalensis* var. *leiogyna*, *Ficus polita*, *Ficus sansibarica*, *Cissus rotundifolia* var. *ferrugineo-pubescent*, *Cyphostemma buchananii*, *Balanites maughamii* ssp. *acuta*, *Turraea nilotica*, *Sorindeia madagascariensis*, *Strychnos madagascariensis*, *Catunaregam nilotica*, *Psychotria capensis* ssp. *riparia*, *Blepharispermum zanguebaricum*, *Kleinia schweinfurthii*, *Vernonia colorata* ssp. *grandis*, *Stictocardia incomta*, *Dicliptera heterostegia*, *Lantana humuliformis*, *Plectranthus tetragonus*.



Craibia brevicaudata ssp. *burtii*



Cyphostemma sp. aff. *serpens*

6) Exotics and Invasive Species

No serious problems were noted with invasive species. However a programme of removal should be instituted, particularly as regards the aggressive alien, *Xanthium strumarium*. The exotic garden species intended for the Lodge were discussed with DSWF and most have been removed. A consultant has been contracted to utilise Kenyan plants as ornamentals in the lodge, which is a huge improvement. It is hoped that, over time, these will be replaced with purely local species. The exotic trees found within the KEFRI/ARIDSAK plantation area will form a nucleus for continued development of this area as a demonstration and trial plot for local farmers but every effort should be made to utilise promising local agroforestry trees such as *Melicia volkensii*.



Combretum mossambicensis



Momordica rostrata

7) Recommendations

a) Water

The integrity of this forest depends entirely on the water from the springs, indeed the very survival of the groundwater forest is directly dependant. Already there are indications that insufficient water is remaining, with several of the ponds dry and many *Acacia xanthophloea* trees dead or dying. Although it is not proven that the cause of death is the drying out of the ponds it is the most reasonable explanation. It is of utmost importance that the total water offtake by the Ministry of Water (through the 3 existing pipelines plus an estimate for the larger pipeline in progress) is compared to the accurately measured outflow from the springs and an agreement reached for an acceptable amount to be left to water the forest. Failing this, any other environmental issues become of little importance. This is the highest priority issue for the long term conservation of the forest (see **Appendix 4**).

b) Plantations

As mentioned above a suitable area exists for a plantation forestry project. This potential for such a venture to 'show case' DSWT conservation efforts is huge. It will also serve the following purposes: to form the bridge with the local community; to provide local employment; and to provide 'spin-off' in terms of data on methods and suitable tree species for rehabilitation work. Looking at the plan of the electric fence it may be necessary to put up a 2 strand elephant proof fence down the pipeline cut so as to prevent any elephant damage to the plantation/nursery area (the area of Eucalyptus on the western side of the pipeline road should be removed and allowed to return to natural vegetation). It is possible that the portion of the forest on the eastern side of the highway should also be considered for extension of the plantations. An agreement on water availability for the nursery should be part of the lease. This area should not be reserved only for firewood/timber species – there is adequate room to carry a medicinal plant project as well.

c) Rehabilitation

Much of the degraded areas will recover naturally with no outside intervention once grazing pressure is reduced. It is understood that the lease agreement with KFS will not proscribe grazing completely but perhaps a system of opening and closing areas with the control of such

being shared by DSWT in partnership with a local committee can ensure that tree cover is restored to an acceptable level.

d) Monitoring

There are a multitude of monitoring methodologies. Selection of the most appropriate one(s) depends on several factors, the main ones being expense and supervision. If no trained, motivated supervision is envisaged as part of the full time staffing of Umani, then it will be necessary to enter into a contract with some outside agency to perform some annual or biannual monitoring surveys. The cheapest and simplest would be a combination of several fixed plots (say 10 plots of 20 x 20m distributed throughout the FR) and some fixed point photography (from the tops of the hills) maybe coupled with some satellite pictures (or even Google if they start updating imagery more regularly). The final choice can only be made after DSWT set the parameters of budget and staffing. As part of a monitoring programme it is recommended that the plant inventory is continued and the list of Kamba Plant Names is updated, possibly with the continued involvement of Mzee Muthoka and other knowledgeable informants.

8) Acknowledgements

This study is the result of the suggestion by Ian Games and the approval of Angela Sheldrick. Thanks are due to Lionel Nutter, Peter Wambua, Samwel Adero and James Mbutia of DSWT. The local guidance and plant knowledge of Mzee Muthoka Masila on both visits were a great help and are much appreciated. Dr Henk Beentje of the Royal Botanic Gardens, Kew and Dr Itambo Malombe of the East African Herbarium very kindly reviewed this report and made useful corrections and additions. Thanks are also due to Dr Olivier Hamerlynck for carrying out a rough measurement of the water flow from the springs (**Appendix 4**).

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Appendix 1.

Terms of Reference for Kibwezi Forest Plant Inventory

Tasks

1. Species Inventory

Produce a comprehensive checklist of plant species found within the boundaries of the forest. This will take the form of an Excel spreadsheet ordered by plant family and giving: full botanical name; record reference - whether 'sight record' or specimen collection (herbarium specimen); growth form (habit); rough estimate of abundance (dominant, common, rare); and geo-referenced including GPS points and tracks.

2. Species of Conservation Significance

Any species that are Red Listed (IUCN) will be highlighted with their threat status. Species that are listed within the CITES appendices will be noted.

3. Species of Local Use & Local Names

This will not be comprehensive, but restricted to the main plants utilised according to information supplied by informants at the time of the survey.

4. Exotics and Invasive Species

Alien species will be noted and the severity of infestation reported.

5. Ornamentals

Suggest suitable ornamental, indigenous species to be used in and around Umani lodge.

6. Comments on Draft Vegetation Map

Different zones on the map will be 'ground-truthed' and a rough species association suggested. Inconsistencies of assemblage will be reported where encountered.

7. Recommendations

Monitoring: Suggestions will be made on different methodologies for monitoring forest health in both degraded and intact forest with discussion on their relative merits and disadvantages. I will also include advice on how to go about rehabilitating the degraded areas, particularly the SE corner.

Appendix 2. Plant Species List of Kibwezi FR

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
HS	14360	0		<i>Lichen</i>						medicinal	1005	L	Umani Springs - Kenze Hill pt49 to 50
HS	15033	00	Actiniopteridaceae	<i>Actiniopteris</i>	<i>dimorpha</i>	Pic.Serm.					960	TF	nr pt 056
HS	14961	00	Actiniopteridaceae	<i>Actiniopteris</i>	<i>radiata</i>	(Sw.) Link				photo	955	TF	pt126
SR	204	00	Actiniopteridaceae	<i>Actiniopteris</i>	<i>semiflabellata</i>	Pic.Serm.					1005	TF	Umani Springs - Kenze Hill pt50 to 51
HS	14348 14949	00	Marsileaceae	<i>Marsilea</i>	<i>farinosa</i>	Launert				photo	980	TF	Umani Springs DL to RJ
HS	14339	00	Thelipteridaceae	<i>Cyclosorus</i>	<i>interruptus</i>	(Willd.) H. Ito	var.	<i>interruptus</i>			975	TF	Umani Springs SC to US
SR	133	000	Cycadaceae	<i>Cycas</i>	<i>thouarsii</i>	Gaudich.				introduced	980	T	Umani Springs pt46 to SC
HS	14379	008	Annonaceae	<i>Uvaria</i>	<i>scheffleri</i>	Diels				photo	980	C	Umani Springs SC to US
SR	207	011	Lauraceae	<i>Cassytha</i>	<i>filiformis</i>	L.					1005	C	Umani Springs - Kenze Hill pt50 to 51
SR	148	011	Lauraceae	<i>Persea</i>	<i>americana</i>	Mill.				Cult: Avocado	980	T	Umani Springs SC to US
SR	183	015	Ranunculaceae	<i>Clematis</i>	<i>simensis</i>	Fresen.					1005	C	Umani Springs - Kenze Hill pt49 to 50
SR	153	017	Ceratophyllaceae	<i>Ceratophyllum</i>	<i>submersum</i>	L.	ssp.	<i>submersum</i>		vide FTEA	990	A	Umani Springs SC to US
SR	236	023	Menispermaceae	<i>Chasmanthera</i>	<i>dependens</i>	Hochst.					940	C	pt57 to pt56
SR	252	023	Menispermaceae	<i>Cissampelos</i>	<i>pareira</i>	L.	var.	<i>hirsuta</i>	(DC.) Forman		960	C	Umani Springs pt46 to pt56
SR	073	023	Menispermaceae	<i>Cocculus</i>	<i>hirsutus</i>	(L.) Diels					975	C	Umani Springs DL to RJ
HS	14908	023	Menispermaceae	<i>Tinospora</i>	<i>caffra</i>	(Miers) Troupin					1015	C	Umani Springs - Kenze Hill pt111
SR	250	034	Turneraceae	<i>Streptopetalum</i>	<i>hildebrandtii</i>	Urb.				photo	1025	H	Kenze Hill area pt51 to pt52
HS	15049	034	Turneraceae	<i>Streptopetalum</i>	<i>serratum?</i>	Hochst.					985	H	nr pt 118
SR	234	036	Capparaceae	<i>Boscia</i>	<i>angustifolia</i>	A. Rich.	var.	<i>angustifolia</i>			1020	T	Kenze Hill pt52 to 53
SR	161	036	Capparaceae	<i>Cadaba</i>	<i>farinosa</i>	Forssk.	ssp.	<i>farinosa</i>			1000	S	Umani Springs - Kenze Hill pt46 to 48
HS	14357	036	Capparaceae	<i>Capparis</i>	<i>fascicularis</i>	DC.	var.	<i>elaegnoides</i>	(Gilg) DeWol f	photo	1005	C	Umani Springs pt46
HS	14308	036	Capparaceae	<i>Capparis</i>	<i>fascicularis</i>	DC.	var.	<i>scheffleri</i>	(Gilg & Gilg- Ben.) DeWol f		980	C	Umani Springs - Kenze Hill pt49

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cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	250	036	Capparaceae	<i>Capparis</i>	<i>tomentosa</i>	Lam.					1000	C	Umani Springs pt46 to pt55
SR	024	036	Capparaceae	<i>Maerua</i>	<i>decumbens</i>	(Brongn.) DeWolf					980	S	Umani Springs pt46 to 47
SR	308	036	Capparaceae	<i>Maerua</i>	<i>kirkii</i>	(Oliv.) F. White				Sore throat, Chest	980	T	Twds pt057
SR	203	036	Capparaceae	<i>Maerua</i>	<i>triphylla</i>	A. Rich.	var.	<i>calophylla</i>	(Gilg) DeWolf		1005	T	Umani Springs - Kenze Hill pt50 to 51
SR	035	036	Capparaceae	<i>Thilachium</i>	<i>africanum</i>	Lour.				photo	980	T	Umani Springs pt46 to 47
HS	15050	042	Polygalaceae	<i>Polygala</i>	<i>erioptera</i>	DC.					985	H	nr pt 118
HS	14912	042	Polygalaceae	<i>Polygala</i>	<i>sphenoptera</i>	Fresen.					1025	H	Kenze Hill area pt51 to pt52
SR	105	045	Crassulaceae	<i>Kalanchoe</i>	<i>lanceolata</i>	(Forssk.) Pers.					980	H	Umani Springs pt46 to SC
SR	237	045	Crassulaceae	<i>Kalanchoe</i>	<i>mitejea</i>	Leblanc & Raym. - Hamet					990	H	Kenze Hill to Umani pt53 to 54
HS	14358	045	Crassulaceae	<i>Kalanchoe</i>	<i>rotundifolia</i>	(Haw.) Haw.				1st K4	1005	H	Umani Springs - Kenze Hill pt49 to 50
HS	14330	054	Molluginaceae	<i>Glinus</i>	<i>lotoides</i>	L.					975	H	Umani Springs DL to RJ
HS	14955	054	Molluginaceae	<i>Glinus</i>	<i>setiflorus</i>	Forssk.					990	H	pt120
SR	324	054	Molluginaceae	<i>Mollugo</i>	<i>nudicaulis</i>	Lam.					1005	H	pt 049
SR	277	056	Portulacaceae	<i>Portulaca</i>	<i>quadrifida</i>	L.					985	H	pt118
SR	271	056	Portulacaceae	<i>Talinum</i>	<i>caffrum</i>	(Thunb.) Eckl. & Zeyh.				Tuber flesh white	985	H	pt118
SR	302	056	Portulacaceae	<i>Talinum</i>	<i>portulacastrum</i>	(Forssk.) Schweinf.					980	H	pt119
SR	319	057	Polygonaceae	<i>Oxygonum</i>	<i>sinuatum</i>	(Meisn.) Dammer					980	H	Umani Lodge
HS	14338	057	Polygonaceae	<i>Persicaria</i>	<i>decipiens</i>	(R. Br.) K.L. Wilson					975	H	Umani Springs DL to RJ
SR	195	057	Polygonaceae	<i>Rumex</i>	<i>usambarensis</i>	(Dammer) Dammer				photo	1005	H	Umani Springs - Kenze Hill pt50 to 51
SR	247	059	Phytolaccaceae	<i>Phytolacca</i>	<i>dodecandra</i>	L'Hér.					975	C	Kenze Hill to Umani pt54 to pt46
SR	009	063	Amaranthaceae	<i>Achyranthes</i>	<i>aspera</i>	L.					980	H	Umani Springs pt46
HS	14895	063	Amaranthaceae	<i>Achyranthes</i>	<i>sp</i>						980	H	Umani Springs pt46
SR	231	063	Amaranthaceae	<i>Alternanthera</i>	<i>pungens</i>	Kunth					1020	H	Kenze Hill pt52 to 53

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cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	138	063	Amaranthaceae	<i>Amaranthus</i>	<i>hybridus</i>	L.					980	H	Umani Springs SC to US
HS	15023	063	Amaranthaceae	<i>Aerva</i>	<i>lanata</i>	(L.) Schult.					980	H	Umani Lodge
HS	15023	063	Amaranthaceae	<i>Celosia</i>	<i>schweinfurthiana</i>	Schinz					1005	H	pt 049
SR	231	063	Amaranthaceae	<i>Digera</i>	<i>muricata</i>	(L.) Mart.					955	H	pt 057 to pt 056
SR	283	063	Amaranthaceae	<i>Gomphrena</i>	<i>celosioides</i>	Mart.					970	H	pt121
HS	14952	063	Amaranthaceae	<i>Psilotrichum</i>	<i>elliotii</i>	Baker					980	H	pt119
SR	218	063	Amaranthaceae	<i>Pupalia</i>	<i>lappacea</i>	(L.) A. Juss.	var.	<i>velutina</i>	(Moq.) Hook.f.		1025	H	Umani Springs - Kenze Hill pt51 to 52
HS	14937	067	Geraniaceae	<i>Monsonia</i>	<i>longipes</i>	Knuth					985	H	pt118
SR	137	069	Oxalidaceae	<i>Oxalis</i>	<i>corniculata</i>	L.					980	H	Umani Springs SC to US
HS	14311 14976	071	Balsaminaceae	<i>Impatiens</i>	<i>nana</i>	Gilg				photo. (= Timberlake 1115)	980	H	Umani Springs pt46 to 47
SR	103	077	Onagraceae	<i>Ludwigia</i>	<i>sp.</i>						980	H	Umani Springs pt46 to SC
HS	14905	081	Thymelaeaceae	<i>Gnidia</i>	<i>subcordata</i>	Meisn.					1015	S	Umani Springs - Kenze Hill pt111
SR	294	083	Nyctaginaceae	<i>Boerhavia</i>	<i>repens</i>	L.					970	H	pt131
HS	14966	083	Nyctaginaceae	<i>Commicarpus</i>	<i>grandiflorus</i>	(A. Rich.) Standl.					975	H	pt130
SR	055	083	Nyctaginaceae	<i>Commicarpus</i>	<i>plumbagineus</i>	(Cav.) Standl.					975	H	Umani Springs DL
HS	14366	088	Pittosporaceae	<i>Pittosporum</i>	<i>viridiflorum</i>	Sims					1005	T	Umani Springs - Kenze Hill pt50 to 51
SR	246	101	Passifloraceae	<i>Adenia</i>	<i>globosa</i>	Engl.	ssp.	<i>globosa</i>			975	S	Kenze Hill to Umani pt54 to pt46
SR	147	101	Passifloraceae	<i>Adenia</i>	<i>gummifera</i>	(Harv.) Harms					980	C	Umani Springs SC to US
SR	243	101	Passifloraceae	<i>Adenia</i>	<i>keramanthus</i>	Harms					1005	H	Umani Springs - Kenze Hill pt49
HS	14944	101	Passifloraceae	<i>Adenia</i>	<i>lanceolata</i>	Engl.	ssp.	<i>scheffleri</i>	(Engl.) W.J. de Wilde		985	C	pt118
HS	14321	101	Passifloraceae	<i>Adenia</i>	<i>wightiana</i>	(Wight & Arn.) Engl.	ssp.	<i>africana</i>	W.J. de Wilde		980	C	Umani Springs pt47 to DL
SR	252	101	Passifloraceae	<i>Basananthe</i>	<i>lanceolata</i>	(Engl.) W.J. de Wilde				photo	1025	H	Kenze Hill area pt51 to pt52
SR	326	101	Passifloraceae	<i>Basananthe</i>	<i>hanningtoniana</i>	(Mast.) W.J. de Wilde					975	C	pt 114
HS	14931	103	Cucurbitaceae	<i>Coccinia</i>	<i>trilobata</i>	(Cogn.) C. Jeffrey				photo	990	C	pt116

The Flora of Kibwezi Forest Reserve – WRQ Luke 18

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	249	103	Cucurbitaceae	<i>Cucumis</i>	<i>cf metulifera</i>	Naudin				photo	980	C	Umani Springs pt46 to pt55
SR	054	103	Cucurbitaceae	<i>Cucumis</i>	<i>dipsaceus</i>	Spach				photo	980	C	Umani Springs pt47 to DL
HS	15052	103	Cucurbitaceae	<i>Cucumis</i>	<i>prophetarum</i>	L.	ssp.	?			985	C	nr pt 118
SR	099	103	Cucurbitaceae	<i>Diplocyclos</i>	<i>palmatius</i>	(L.) C. Jeffrey				photo	980	C	Umani Springs RJ to HC
SR	080	103	Cucurbitaceae	<i>Gerrardanthus</i>	<i>lobatus</i>	(Cogn.) C. Jeffrey					980	C	Umani Springs RJ to HC
SR	293	103	Cucurbitaceae	<i>Kedrostis</i>	<i>pseudogijef</i>	(Gilg) C. Jeffrey					970	C	pt131
SR	291	103	Cucurbitaceae	<i>Lagenaria</i>	<i>cf siceraria</i>	(Mollina) Standl.					940	C	pt122
SR	025	103	Cucurbitaceae	<i>Lagenaria</i>	<i>sphaerica</i>	(Sond.) Naudin				photo	980	C	Umani Springs pt46 to 47
SR	265	103	Cucurbitaceae	<i>Momordica</i>	<i>boivinii</i>	Baill.				photo	985	H	pt118
SR	296	103	Cucurbitaceae	<i>Momordica</i>	<i>rostrata</i>	A. Zimm.					940	C	nr pt57
SR	320	103	Cucurbitaceae	<i>Oreosyce</i>	<i>africana</i>	Hook.f.					970	C	pt 136 to pt 046
SR	067	103	Cucurbitaceae	<i>Peponium</i>	<i>vogelii</i>	(Hook.f.) Engl.					975	C	Umani Springs DL to RJ
HS	14936	103	Cucurbitaceae	<i>Trochomeria</i>	<i>macrocarpa</i>	(Sond.) Hook.f.	ssp.	<i>macrocarpa</i>			985	H	pt118
HS	14310	103	Cucurbitaceae	<i>Zehneria</i>	<i>scabra</i>	(L.f.) Sond.	ssp.	<i>scabra</i>		?Coastal glabrous form.	980	C	Umani Springs pt46 to 47
HS	14900	114	Ochnaceae	<i>Ochna</i>	<i>ovata</i>	F. Hoffm.					1005	T	Umani Springs - Kenze Hill pt49
SR	286	118	Myrtaceae	<i>Eucalyptus</i>	<i>sp</i>					Cult:	940	T	pt122
SR	031	118	Myrtaceae	<i>Syzygium</i>	<i>guineense</i>	(Willd.) DC.	ssp.	<i>guineense</i>			980	T	Umani Springs pt46 to 47
HS	14920	121	Combretaceae	<i>Combretum</i>	<i>apiculatum</i>	Sond.	ssp.	<i>apiculatum</i>			1025	T	Kenze Hill area pt51 to pt113
HS	14919	121	Combretaceae	<i>Combretum</i>	<i>collinum</i>	Fresen.	ssp.	<i>binderanum</i>	(Kotsc hy) Okafor		1025	T	Kenze Hill area pt51 to pt113
HS	14921	121	Combretaceae	<i>Combretum</i>	<i>exalatum</i>	Engl.					980	S	pt113
SR	219	121	Combretaceae	<i>Combretum</i>	<i>molle</i>	G. Don					1035	T	Kenze Hill Ranger Camp pt52
SR	056	121	Combretaceae	<i>Combretum</i>	<i>mossambicense</i>	(Klotzsch) Engl.				photo	975	S	Umani Springs DL to RJ
SR	069	121	Combretaceae	<i>Combretum</i>	<i>schumannii</i>	Engl.					975	T	Umani Springs DL to RJ
SR	172	121	Combretaceae	<i>Terminalia</i>	<i>brownii</i>	Fresen.				Chest complaints,	1000	T	Umani Springs - Kenze Hill pt48 to 49

The Flora of Kibwezi Forest Reserve – WRQ Luke 19

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
										lost voice			
SR	122	121	Combretaceae	<i>Terminalia</i>	<i>mantaly</i>	Perrier				exotic	980	T	Umani Springs SC to US
SR	241	122	Rhizophoraceae	<i>Cassipourea</i>	<i>celastroides</i>	Alston					975	T	Kenze Hill to Umani pt53 to 54
HS	14344	128	Tiliaceae	<i>Corchorus</i>	<i>olitorius</i>	L.					980	H	Umani Springs pt46 to SC
HS	15042	128	Tiliaceae	<i>Grewia</i>	<i>nematopus?</i>	K. Schum.					1000	S	Back of Umani Hill
HS	14967	128	Tiliaceae	<i>Grewia</i>	<i>micrantha</i>	Bojer				1st K4?	970	T	pt131
HS	14356	128	Tiliaceae	<i>Grewia</i>	<i>plagiophylla</i>	K. Schum.					1000	T	Umani Springs - Kenze Hill pt48
SR	006	128	Tiliaceae	<i>Grewia</i>	<i>truncata</i>	Mast.					980	S	Umani Springs pt46
SR	224	128	Tiliaceae	<i>Grewia</i>	<i>villosa</i>	Willd.					1025	S	Kenze Hill pt52 to 53
HS	14320	128	Tiliaceae	<i>Triumfetta</i>	<i>flavescens</i>	A. Rich.					980	H	Umani Springs pt47 to DL
SR	078	130	Sterculiaceae	<i>Dombeya</i>	<i>kirkii</i>	Mast.				photo	980	T	Umani Springs RJ to HC
SR	255	130	Sterculiaceae	<i>Dombeya</i>	<i>rotundifolia</i>	(Hochst.) Planch.					1035	T	Kenze Hill pt52 to pt112
SR	262	130	Sterculiaceae	<i>Hermannia</i>	<i>exappendiculata</i>	(Mast.) K. Schum.				photo	975	H	pt114
SR	217	130	Sterculiaceae	<i>Melhanina</i>	<i>velutina</i>	Forssk.					1025	H	Umani Springs - Kenze Hill pt51 to 52
SR	274	130	Sterculiaceae	<i>Sterculia</i>	<i>rhynchocarpa</i>	K. Schum.					985	T	pt118
SR	162	131	Bombacaceae	<i>Adansonia</i>	<i>digitata</i>	L.					1000	T	Umani Springs - Kenze Hill pt46 to 48
HS	15043	132	Malvaceae	<i>Abutilon</i>	<i>bidentatum?</i>	(Hochst.) A.Rich.					975	H	nr pt 114
HS	14337	132	Malvaceae	<i>Abutilon</i>	<i>cf wituense</i>	Baker f.					975	H	Umani Springs DL to RJ
HS	15043	132	Malvaceae	<i>Abutilon</i>	<i>grandiflorum</i>	G. Don	var.	<i>grandiflorum?</i>			985	H	nr pt 046
SR	295	132	Malvaceae	<i>Abutilon</i>	<i>pannosum</i>	(G. Forst.) Schlecht.	var.	<i>figarianum</i>	(Webb) Verdc.?		975	H	pt130
SR	048	132	Malvaceae	<i>Hibiscus</i>	<i>cannabinus</i>	L.				photo	980	H	Umani Springs pt47 to DL
SR	235	132	Malvaceae	<i>Hibiscus</i>	<i>kabuyeana</i>	Mwachala				photo	1020	H	Kenze Hill pt52 to 53
SR	115	132	Malvaceae	<i>Hibiscus</i>	<i>micranthus</i>	L.f.					980	H	Umani Springs pt46 to SC
SR	016	132	Malvaceae	<i>Hibiscus</i>	<i>ovalifolius</i>	(Forssk.) Vahl					980	H	Umani Springs pt46
HS	14329	132	Malvaceae	<i>Hibiscus</i>	<i>panduriformis</i>	Burm.f.				photo	980	H	Umani Springs pt47 to DL
HS	14345	132	Malvaceae	<i>Malvastrum</i>	<i>coromandelianum</i>	(L.) Garcke					980	H	Umani Springs pt46 to SC

The Flora of Kibwezi Forest Reserve – WRQ Luke 20

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR		132	Malvaceae	<i>Pavonia</i>	<i>burchellii</i>	(DC.) R.A. Dyer				photo. Drawing thorns	1000	H	Umani Springs - Nr US
HS	14336	132	Malvaceae	<i>Sida</i>	<i>alba</i>	L.					975	H	Umani Springs DL to RJ
SR	230	132	Malvaceae	<i>Thespesia</i>	<i>garckeana</i>	F. Hoffm.	var.	<i>garckeana</i>			1020	T	Kenze Hill pt52 to 53
SR	211	133	Malpighiaceae	<i>Caucanthus</i>	<i>auriculatus</i>	(Radlk.) Nied.					1005	C	Umani Springs - Kenze Hill pt50 to 51
SR	004	135	Erythroxylaceae	<i>Erythroxylum</i>	<i>fischeri</i>	Engl.					980	T	Umani Springs pt46
HS	15035	136	Euphorbiaceae	<i>Acalypha</i>	<i>ciliata?</i>	Forssk.					980	H	Umani Lodge
HS	15039	136	Euphorbiaceae	<i>Acalypha</i>	<i>crenata?</i>	A. Rich.					1005	H	Pt 049
SR	020	136	Euphorbiaceae	<i>Acalypha</i>	<i>fruticosa</i>	Forssk.	var.	<i>fruticosa</i>			980	S	Umani Springs pt46
SR	152	136	Euphorbiaceae	<i>Acalypha</i>	<i>racemosa</i>	Baill.					980	H	Umani Springs SC to US
SR	083	136	Euphorbiaceae	<i>Croton</i>	<i>dichogamus</i>	Pax					980	S	Umani Springs RJ to HC
SR	180	136	Euphorbiaceae	<i>Croton</i>	<i>megalocarpus</i>	Hutch.					1000	T	Umani Springs - Kenze Hill pt48 to 49
SR	213	136	Euphorbiaceae	<i>Croton</i>	<i>scheffleri</i>	Pax				Toothache	1025	T	Umani Springs - Kenze Hill pt51 to 52
SR	150	136	Euphorbiaceae	<i>Euphorbia</i>	<i>bussei</i>	Pax	var.	<i>kibwezensis</i>	(N.E. Br.) S. Carter		980	T	Umani Springs SC to US
SR	192	136	Euphorbiaceae	<i>Euphorbia</i>	<i>candelabrum</i>	Kotschy					1005	T	Umani Springs - Kenze Hill pt49 to 50
SR	268	136	Euphorbiaceae	<i>Euphorbia</i>	<i>cuneata</i>	Vahl					985	S	pt118
HS	14906	136	Euphorbiaceae	<i>Euphorbia</i>	<i>friesiorum</i>	(Hassl.) S. Carter				photo, K4 Endemic	1015	S	Umani Springs - Kenze Hill pt111
SR	079	136	Euphorbiaceae	<i>Euphorbia</i>	<i>gossypina</i>	Pax	var.	<i>gossypina</i>			980	C	Umani Springs RJ to HC
SR	242	136	Euphorbiaceae	<i>Euphorbia</i>	<i>scheffleri</i>	Pax				Milk in eyes to remove FB, Styptic for wounds	975	S	Kenze Hill to Umani pt53 to 54
SR	276	136	Euphorbiaceae	<i>Euphorbia</i>	<i>tenuispinosa</i>	Gilli					985	S	pt118
SR	136	136	Euphorbiaceae	<i>Euphorbia</i>	<i>hirta</i>	L.					980	H	Umani Springs SC to US
SR	288	136	Euphorbiaceae	<i>Jatropha</i>	<i>curcas</i>	L.				Cult:	940	T	pt122
SR	053	136	Euphorbiaceae	<i>Ricinus</i>	<i>communis</i>	L.					980	S	Umani Springs pt47 to DL
SR	177	136	Euphorbiaceae	<i>Synadenium</i>	<i>compactum</i>	N.E. Br.	var.	<i>rubrum</i>	S. Carter		1000	T	Umani Springs - Kenze Hill pt48 to 49

The Flora of Kibwezi Forest Reserve – WRQ Luke 21

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
HS	15051	136	Euphorbiaceae	<i>Tragia</i>	<i>ukambensis</i>	Pax	var.	<i>ukambensis?</i>			985	C	nr pt 118
HS	14312	136	Euphorbiaceae	<i>Tragiella</i>	<i>natalensis</i>	(Sond.) Pax & K. Hoffm.					980	C	Umani Springs pt46 to 47
SR	066	136	Phyllanthaceae	<i>Bridelia</i>	<i>taitensis</i>	Vatke & Pax					975	T	Umani Springs DL to RJ
SR	232	136	Phyllanthaceae	<i>Flueggea</i>	<i>virosa</i>	(Willd.) Voigt	ssp.	<i>virosa</i>		Sore bones!	1020	S	Kenze Hill pt52 to 53
SR	279	136	Phyllanthaceae	<i>Meineckia</i>	<i>phyllanthoides</i>	Baill.	ssp.	<i>somalensis</i>	(Pax) Webste r		980	H	pt119
HS	14347	136	Phyllanthaceae	<i>Phyllanthus</i>	<i>maderaspatensis</i>	L.	var.	<i>maderaspatensis</i>			980	H	Umani Springs pt46 to SC
HS	14346	136	Phyllanthaceae	<i>Phyllanthus</i>	<i>rotundifolius</i>	Willd.					980	H	Umani Springs pt46 to SC
HS	14355 15026	136	Putranjivaceae	<i>Drypetes</i>	<i>natalensis</i>	(Harv.) Hutch.	var.	<i>leiogyna</i>	Brenan	photo. 1 st K4. VU B1+2b	990	T	Umani Springs - US to pt46
SR	018	146	Caesalpiniaceae	<i>Bauhinia</i>	<i>tomentosa</i>	L.					980	S	Umani Springs pt46
SR	281	146	Caesalpiniaceae	<i>Cassia</i>	<i>abbreviata</i>	Oliv.	ssp.	<i>kassneri</i>	(Baker f.) Brenan	photo. Malaria	990	T	pt120
SR	303	146	Caesalpiniaceae	<i>Chamaecrista</i>	<i>absus</i>	(L.) H.S. Irwin & Barneby					985	H	pt115
HS	14958	146	Caesalpiniaceae	<i>Coulteria</i>	<i>sp</i>					Cult:	940	T	pt122
SR	333	146	Caesalpiniaceae	<i>Delonix</i>	<i>regia</i>	(Hook.) Raf.				Cult:	940	T	nr pt122
SR	285	146	Caesalpiniaceae	<i>Leucaena</i>	<i>sp</i>					Cult:	940	T	pt122
SR	106	146	Caesalpiniaceae	<i>Senna</i>	<i>singueana</i>	(Delile) Lock					980	T	Umani Springs pt46 to SC
SR	075	147	Mimosaceae	<i>Acacia</i>	<i>brevispica</i>	Harms				Head sores	975	S	Umani Springs DL to RJ
SR	226	147	Mimosaceae	<i>Acacia</i>	<i>drepanolobium</i>	Sjoestedt					1025	T	Kenze Hill pt52 to 53
SR	220	147	Mimosaceae	<i>Acacia</i>	<i>hockii</i>	De Wild.					1035	T	Kenze Hill Ranger Camp pt52
SR	141	147	Mimosaceae	<i>Acacia</i>	<i>mellifera</i>	(Vahl) Benth.	ssp.	<i>mellifera</i>			980	T	Umani Springs SC to US
SR	216	147	Mimosaceae	<i>Acacia</i>	<i>nilotica</i>	(L.) Delile	ssp.	<i>subalata</i>	(Vatke) Brenan		1025	T	Umani Springs - Kenze Hill pt51 to 52
SR	082	147	Mimosaceae	<i>Acacia</i>	<i>robusta</i>	Burch.	ssp.	<i>usambarensis</i>	(Taub.) Brenan		980	T	Umani Springs RJ to HC
SR	094	147	Mimosaceae	<i>Acacia</i>	<i>tortilis</i>	(Forssk.) Hayne	ssp.	<i>spirocarpa</i>	(A. Rich.)		980	T	Umani Springs RJ to HC

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
									Brenan				
SR	003	147	Mimosaceae	<i>Acacia</i>	<i>xanthophloea</i>	Benth.				Sores on children	980	T	Umani Springs pt46
SR	214	147	Mimosaceae	<i>Albizia</i>	<i>amara</i>	(Roxb.) Boivin	ssp.	<i>sericocephala</i>	(Benth.) Brenan		1025	T	Umani Springs - Kenze Hill pt51 to 52
SR	081	147	Mimosaceae	<i>Albizia</i>	<i>anthelmintica</i>	Brongn.					980	T	Umani Springs RJ to HC
SR	060	147	Mimosaceae	<i>Albizia</i>	<i>gummifera</i>	(J.F. Gmel.) C.A. Sm.	var.	<i>gummifera</i>			975	T	Umani Springs DL to RJ
SR	223	147	Mimosaceae	<i>Dichrostachys</i>	<i>cinerea</i>	(L.) Wight & Arn.	ssp.	<i>africana</i>	Brenan & Brummitt		1025	T	Kenze Hill pt52 to 53
SR	171	147	Mimosaceae	<i>Entada</i>	<i>leptostachya</i>	Harms					1000	C	Umani Springs - Kenze Hill pt48 to 49
SR	096	147	Mimosaceae	<i>Newtonia</i>	<i>hildebrandtii</i>	(Vatke) Torre					980	T	Umani Springs RJ to HC
SR	140	147	Mimosaceae	<i>Pithecellobium</i>	<i>dulce</i>	(Roxb.) Benth.				naturalised	980	T	Umani Springs SC to US
SR	089	148	Papilionaceae	<i>Abrus</i>	<i>schimperi</i>	Baker	ssp.	<i>schimperi</i>			980	C	Umani Springs RJ to HC
SR	318	148	Papilionaceae	<i>Aeschynomene</i>	<i>indica?</i>	L.					980	H	Umani Lodge
SR	109	148	Papilionaceae	<i>Clitoria</i>	<i>ternatea</i>	L.				photo	980	C	Umani Springs pt46 to SC
HS	14974	148	Papilionaceae	<i>Craibia</i>	<i>brevicaudata</i>	(Vatke) Dunn	ssp.	<i>burtii</i>	(Baker f.) J.B. Gillett	photo. K4/T5 Endemic	920	T	pt133
HS	14917	148	Papilionaceae	<i>Crotalaria</i>	<i>goodiiiformis</i>	Vatke					1035	S	Kenze Hill pt52 to pt112
SR	169	148	Papilionaceae	<i>Dalbergia</i>	<i>melanoxydon</i>	Guill. & Perr.					1000	T	Umani Springs - Kenze Hill pt48 to 49
HS	14909	148	Papilionaceae	<i>Dolichos</i>	<i>kilimandscharica</i>	Taub.	ssp.	<i>parviflorus</i>	Verdc.		1025	H	Kenze Hill area pt51 to pt52
SR	290	148	Papilionaceae	<i>Gliricidia</i>	<i>sepium</i>	(Jacq.) Walp.				Cult:	940	T	pt122
HS	14334	148	Papilionaceae	<i>Mucuna</i>	<i>gigantea</i>	(Willd.) DC.	ssp.	<i>quadrialata</i>	(Baker) Verdc.		975	C	Umani Springs DL to RJ
SR	107	148	Papilionaceae	<i>Ormocarpum</i>	<i>kirkii</i>	S. Moore					980	T	Umani Springs pt46 to SC
SR	168	148	Papilionaceae	<i>Philenoptera</i>	<i>ericalyx</i>	(Harms) Schrire					1000	T	Umani Springs - Kenze Hill pt48 to 49
HS	15034	148	Papilionaceae	<i>Rhynchosia</i>	<i>malacophylla?</i>	(Spreng.) Bojer					970	C	pt 136 to pt 046
HS	14327	148	Papilionaceae	<i>Sesbania</i>	<i>sesban</i>	(L.) Merr.	var.	<i>nubica</i>	Chiov.		980	S	Umani Springs pt47 to DL

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	269	148	Papilionaceae	<i>Stylosanthes</i>	<i>fruticosa</i>	(Retz.) Alston					985	H	pt118
SR	251	148	Papilionaceae	<i>Tephrosia</i>	<i>interrupta</i>	Engl.					1000	H	Umani Springs pt46 to pt55
HS	15040	148	Papilionaceae	<i>Tephrosia</i>	<i>pumila</i>	(Lam.) Pers.	var.	<i>pumila?</i>			1005	H	pt049
HS	14324	148	Papilionaceae	<i>Vigna</i>	<i>schimperii</i>	Baker					980	C	Umani Springs pt47 to DL
HS	14915	156	Salicaceae	<i>Flacourtia</i>	<i>indica</i>	(Burm.f.) Merr.					1035	T	Kenze Hill pt52 to pt112
SR	194	156	Salicaceae	<i>Scolopia</i>	<i>zeyheri?</i>	(Nees) Harv.					1005	T	Umani Springs - Kenze Hill pt50 to 51
SR	146	165	Ulmaceae	<i>Celtis</i>	<i>africana</i>	Burm.f.					980	T	Umani Springs SC to US
SR	015	165	Ulmaceae	<i>Trema</i>	<i>orientalis</i>	(L.) Blume					980	T	Umani Springs pt46
HS	14893	167	Moraceae	<i>Dorstenia</i>	<i>cuspidata</i>	A. Rich.	var.	<i>brinkmaniana</i>	Hijman	2nd for Kenya. photo	980	H	Umani Lodge
SR	049	167	Moraceae	<i>Ficus</i>	<i>bussei</i>	Mildbr. & Burret				photo. 1st K4?	980	T	Umani Springs pt47 to DL
HS	14367	167	Moraceae	<i>Ficus</i>	<i>glumosa</i>	Delile					1005	T	Umani Springs - Kenze Hill pt50 to 51
HS	14361 14972	167	Moraceae	<i>Ficus</i>	<i>ingens</i>	(Miq.) Miq.					1005	T	Umani Springs - Kenze Hill pt50
HS	14959 15032	167	Moraceae	<i>Ficus</i>	<i>lingua</i>	De Wild. & T. Durand	ssp.	<i>lingua?</i>		1st K4? Need fresh material	955	T	pt124
SR	057	167	Moraceae	<i>Ficus</i>	<i>lutea</i>	Vahl					975	T	Umani Springs DL to RJ
HS	14377	167	Moraceae	<i>Ficus</i>	<i>natalensis</i>	Hochst.					975	T	Kenze Hill to Umani pt54 to pt46
SR	145	167	Moraceae	<i>Ficus</i>	<i>polita</i>	Vahl	ssp.	<i>polita</i>			980	T	Umani Springs SC to US
HS	14375	167	Moraceae	<i>Ficus</i>	<i>sansibarica</i>	Warb.	ssp.	<i>sansibarica</i>		1st for K4?	975	T	Kenze Hill to Umani pt54
SR	028	167	Moraceae	<i>Ficus</i>	<i>scassellatii</i>	Pamp.	ssp.	<i>scassellatii</i>			980	T	Umani Springs pt46 to 47
HS	14373	167	Moraceae	<i>Ficus</i>	<i>stuhlmannii</i>	Warb.					990	T	Kenze Hill to Umani pt53 to 54
SR	002	167	Moraceae	<i>Ficus</i>	<i>sycomorus</i>	L.	ssp.	<i>sycomorus</i>			980	T	Umani Springs pt46
SR	117	167	Moraceae	<i>Ficus</i>	<i>wakefieldii</i>	Hutch.				photo	980	T	Umani Springs pt46 to SC
SR	068	169	Urticaceae	<i>Girardinia</i>	<i>diversifolia</i>	(Link) Friis					975	H	Umani Springs DL to RJ
HS	15024	169	Urticaceae	<i>Laportea</i>	<i>aestuans</i>	(L.) Chew					980	H	Umani Lodge
SR	166	173	Celastraceae	<i>Gymnosporia</i>	<i>putterlickioides</i>	Loes.					1000	S	Umani Springs - Kenze Hill pt48 to 49
SR	098	173	Celastraceae	<i>Loeseneriella</i>	<i>africana</i>	(Willd.) N. Hallé				photo	980	C	Umani Springs RJ to HC

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cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	178	173	Celastraceae	<i>Maytenus</i>	<i>undata</i>	(Thunb.) Blakelock					1000	T	Umani Springs - Kenze Hill pt48 to 49
SR	181	173	Celastraceae	<i>Mystroxydon</i>	<i>aethiopicum</i>	(Thunb.) Loes.					1005	T	Umani Springs - Kenze Hill pt49 to 50
HS	14353	173	Celastraceae	<i>Pristimera</i>	<i>polyantha</i>	(Loes.) N. Hallé					990	C	Umani Springs SC to US
SR	070	173	Celastraceae	<i>Salacia</i>	<i>stuhlmanniana</i>	Loes.					975	C	Umani Springs DL to RJ
SR	301	179	Icacinaceae	<i>Apodytes</i>	<i>dimidiata</i>	Arn.	var.	<i>dimidiata</i>			940	T	Twds pt057
SR	245	179	Icacinaceae	<i>Pyrenacantha</i>	<i>kaurabassana</i>	Baill.					1015	C	Umani Springs - Kenze Hill pt111
SR	104	180	Salvadoraceae	<i>Salvadora</i>	<i>persica</i>	L.					980	T	Umani Springs pt46 to SC
SR	298	182	Olacaceae	<i>Ximenia</i>	<i>caffra</i>	Sond.					930	T	pt135
HS	14960	183	Opiliaceae	<i>Opilia</i>	<i>amentacea</i>	Roxb.					955	C	pt126
HS	14971	183	Opiliaceae	<i>Opilia</i>	<i>campestris</i>	Engl.	var.	<i>campestris</i>			985	T	pt132
HS	14365	185	Loranthaceae	<i>Agelanthus</i>	<i>kayseri</i>	(Engl.) Polhill & Wiens					1005	P	Umani Springs - Kenze Hill pt50 to 51
SR	210	185	Loranthaceae	<i>Erianthemum</i>	<i>dregei</i>	(Eckl. & Zeyh.) Tiegh.					1005	P	Umani Springs - Kenze Hill pt50 to 51
SR	297	185	Loranthaceae	<i>Plicosepalus</i>	<i>curviflorus</i>	(Oliv.) Tiegh.					930		pt135
SR	227	185	Loranthaceae	<i>Plicosepalus</i>	<i>meridianus</i>	(Danser) Polhill & Wiens				photo	1025	P	Kenze Hill pt52 to 53
SR	102	185	Loranthaceae	<i>Plicosepalus</i>	<i>sagittifolius</i>	(Engl.) Danser					980	P	Umani Springs pt46 to SC
HS	14362	185	Viscaceae	<i>Viscum</i>	<i>tuberculatum</i>	A. Rich.					1005	P	Umani Springs - Kenze Hill pt50 to 51
SR	188	186	Santalaceae	<i>Osyris</i>	<i>lanceolata</i>	Hochst. & Steud.					1005	T	Umani Springs - Kenze Hill pt49 to 50
SR	323	186	Santalaceae	<i>Thesium</i>	<i>triflorum</i>	L.f.					1005	S	pt049
SR	033	189	Balanophoraceae	<i>Sarcophyte</i>	<i>sanguinea</i>	Sparrm.	ssp.	<i>piriei</i>	(Hutch.) B. Hansen	Photo. Foot&Mouth cure for cattle?	980	P	Umani Springs pt46 to 47
SR	245	190	Rhamnaceae	<i>Berchemia</i>	<i>discolor</i>	(Klotzsch) Hemsl.					975	T	Kenze Hill to Umani pt53 to 54
SR	165	190	Rhamnaceae	<i>Helinus</i>	<i>mystacinus</i>	(Aiton) Steud.				flws hairy	1000	C	Umani Springs - Kenze Hill pt46 to 48

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cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	239	190	Rhamnaceae	<i>Scutia</i>	<i>myrtina</i>	(Burm.f.) Kurz					990	S	Kenze Hill to Umani pt53 to 54
SR	292	190	Rhamnaceae	<i>Ziziphus</i>	<i>mucronata</i>	Willd.	ssp.	<i>mucronata</i>			975	T	pt129
SR	238	193	Vitaceae	<i>Ampelocissus</i>	<i>africana</i>	(Lour.) Merr.	var.	<i>africana</i>			980	C	Umani Lodge
SR	241	193	Vitaceae	<i>Cayratia</i>	<i>gracilis</i>	(Guill. & Perr.) Suesseng.					980	C	Umani Lodge
HS	14941	193	Vitaceae	<i>Cissus</i>	<i>aphyllantha</i>	Gilg & Brandt					985	C	pt118
SR	228	193	Vitaceae	<i>Cissus</i>	<i>cornifolia</i>	(Baker) Planch.				Cholera	1025	H	Kenze Hill pt52 to 53
HS	14332	193	Vitaceae	<i>Cissus</i>	<i>petiolata</i>	Hook.f.					975	C	Umani Springs DL to RJ
SR	090	193	Vitaceae	<i>Cissus</i>	<i>quadrangularis</i>	L.	var.	<i>pubescens</i>	Dewit		980	C	Umani Springs RJ to HC
HS	14374	193	Vitaceae	<i>Cissus</i>	<i>rotundifolia</i>	(Forssk.) Vahl	var.	<i>ferrugineo- pubescens</i>	Verdc.	1st for K4?	975	C	Kenze Hill to Umani pt53 to 54
SR	149	193	Vitaceae	<i>Cissus</i>	<i>rotundifolia</i>	(Forssk.) Vahl	var.	<i>rotundifolia</i>			980	C	Umani Springs SC to US
HS	14914	193	Vitaceae	<i>Cyphostemma</i>	<i>buchananii</i>	(Planch.) Wild & R.B. Drumm.					1035	C	Kenze Hill pt52 to pt112
HS	14939	193	Vitaceae	<i>Cyphostemma</i>	<i>kibweziense</i>	Verdc.				K4/K6 Endemic	985	H	pt118
HS	14970	193	Vitaceae	<i>Cyphostemma</i>	<i>serpens</i>	(A. Rich.) Desc.	ssp.	<i>serpens</i>			985	C	pt132
HS	14913	193	Vitaceae	<i>Cyphostemma</i>	<i>aff serpens</i>	(A. Rich.) Desc.				photo (Luke 3855A, 11447)	1025	H	Kenze Hill area pt51 to pt52
HS	14979	193	Vitaceae	<i>Cyphostemma</i>	<i>sp B of UKWF</i>					Does not = C.maranguens e as per FTEA	940	C	Twds pt057
HS	14932	193	Vitaceae	<i>Cyphostemma</i>	<i>thomasii</i>	(Gilg & Brandt) Desc.					985	C	pt118
SR	184	193	Vitaceae	<i>Rhoicissus</i>	<i>tridentata</i>	(L.f.) Wild & R.B. Drumm.					1005	C	Umani Springs - Kenze Hill pt49 to 50
SR	007	194	Rutaceae	<i>Clausena</i>	<i>anisata</i>	(Willd.) Benth.					980	T	Umani Springs pt46
SR	212	194	Rutaceae	<i>Fagaropsis</i>	<i>hildebrandtii</i>	(Engl.) Milne- Redh.					1025	T	Umani Springs - Kenze Hill pt51

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
HS	14376	194	Rutaceae	<i>Vepris</i>	<i>eugeniifolia</i>	(Engl.) I. Verd.					975	T	Kenze Hill to Umani pt54 to pt46
SR	202	194	Rutaceae	<i>Vepris</i>	<i>simplicifolia</i>	(Engl.) Mziray					1005	T	Umani Springs - Kenze Hill pt50 to 51
HS	14910	194	Rutaceae	<i>Zanthoxylum</i>	<i>chalybeum</i>	Engl.	var.	<i>chalybeum</i>		photo. Fevers	1025	T	Kenze Hill area pt51 to pt52
SR	289	195	Balanitaceae	<i>Balanites</i>	<i>aegyptiaca</i>	(L.) Delile	var.	<i>aegyptiaca</i>		Cult?	940	T	pt122
SR	108	195	Balanitaceae	<i>Balanites</i>	<i>maughamii</i>	Sprague	ssp.	<i>acuta</i>	Sands		980	T	Umani Springs pt46 to SC
SR	229	195	Simaroubaceae	<i>Harrisonia</i>	<i>abyssinica</i>	Oliv.					1020	S	Kenze Hill pt52 to 53
SR	244	196	Burseraceae	<i>Commiphora</i>	<i>africana</i>	(A. Rich.) Engl.					975	T	Kenze Hill to Umani pt53 to 54
SR	100	196	Burseraceae	<i>Commiphora</i>	<i>baluensis</i>	Engl.					980	T	Umani Springs RJ to HC
HS	15058	196	Burseraceae	<i>Commiphora</i>	<i>campestris</i>	Engl.	ssp.	<i>campestris</i>		var. heterophylla (Engl.) J.B. Gillett	985	T	pt118
SR	243	196	Burseraceae	<i>Commiphora</i>	<i>edulis</i>	(Klotzsch) Engl.	ssp.	<i>boiviniana</i>	(Engl.) J.B. Gillett		975	T	Kenze Hill to Umani pt53 to 54
SR	299	196	Burseraceae	<i>Commiphora</i>	<i>eminii</i>	Engl.	ssp.	<i>zimmermannii</i>	(Engl.) J.B. Gillett		940	T	Twds pt057
SR	246	196	Burseraceae	<i>Commiphora</i>	<i>habessinica</i>	(O.Berg) Engl.	ssp.	<i>habessinica</i>			1015	T	Umani Springs - Kenze Hill pt111
SR	097	196	Burseraceae	<i>Commiphora</i>	<i>mildbraedii</i>	Engl.	ssp.	<i>mildbraedii</i>			980	T	Umani Springs RJ to HC
HS	14902	196	Burseraceae	<i>Commiphora</i>	<i>ovalifolia</i>	J.B. Gillett				K4/K6 Endemic	1005	T	Umani Springs - Kenze Hill pt49
SR	233	196	Burseraceae	<i>Commiphora</i>	<i>samharensis</i>	Schweinf.		.			1020	T	Kenze Hill pt52 to 53
SR	240	196	Burseraceae	<i>Commiphora</i>	<i>schimperi</i>	(O. Berg) Engl.					980	T	Umani Lodge
SR	284	197	Meliaceae	<i>Azadirachta</i>	<i>indica</i>	A. Juss.				Cult: Neem	940	T	pt122
SR	309	197	Meliaceae	<i>Melia</i>	<i>volkensii</i>	Guerke				“children’s illness”	980	T	Twds pt057
HS	14340	197	Meliaceae	<i>Trichilia</i>	<i>emetica</i>	Vahl					975	T	Umani Springs DL to RJ
SR	199	197	Meliaceae	<i>Turraea</i>	<i>mombassana</i>	C. DC.	ssp.	<i>cuneata</i>	(Guerke) Styles & F. White		1005	S	Umani Springs - Kenze Hill pt50 to 51

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	085	197	Meliaceae	<i>Turraea</i>	<i>nilotica?</i>	Kotschy & Peyr.				1 st K4?	980	T	Umani Springs RJ to HC
SR	032	198	Sapindaceae	<i>Allophylus</i>	<i>ferrugineus</i>	Taub.	var.	<i>ferrugineus</i>			980	S	Umani Springs pt46 to 47
HS	14341	198	Sapindaceae	<i>Allophylus</i>	<i>rubifolius</i>	(Hochst.) Engl.	var.	<i>dasystachys</i>	(Gilg) Verdc.		980	T	Umani Springs RJ to HC
SR	072	198	Sapindaceae	<i>Cardiospermum</i>	<i>corindum</i>	L.					975	C	Umani Springs DL to RJ
SR	196	198	Sapindaceae	<i>Dodonaea</i>	<i>viscosa</i>	Jacq.	var.	<i>angustifolia</i>	(L.f.) Benth.		1005	T	Umani Springs - Kenze Hill pt50 to 51
SR	029	198	Sapindaceae	<i>Glennia</i>	<i>africana</i>	(Radlk.) Leenh.					980	T	Umani Springs pt46 to 47
SR	063	198	Sapindaceae	<i>Haplocoelum</i>	<i>foliolosum</i>	(Hiern) Bullock	ssp.	<i>strongylocarpum</i>	(Bullock) Verdc.		975	T	Umani Springs DL to RJ
SR	058	198	Sapindaceae	<i>Lepisanthes</i>	<i>senegalensis</i>	(Poir.) Leenh.				photo	975	T	Umani Springs DL to RJ
SR	185	198	Sapindaceae	<i>Pappea</i>	<i>capensis</i>	Eckl. & Zeyh.				Anaemia	1005	T	Umani Springs - Kenze Hill pt49 to 50
HS	14304	198	Sapindaceae	<i>Zanha</i>	<i>golungensis</i>	Hiern				in hort	980	T	Umani Springs pt46
SR	225	205	Anacardiaceae	<i>Lannea</i>	<i>rivae</i>	(Chiov.) Sacleux					1025	T	Kenze Hill pt52 to 53
HS	14973	205	Anacardiaceae	<i>Lannea</i>	<i>schweinfurthii</i>	(Engl.) Engl.	var.	<i>stuhlmannii</i>	(Engl.) Kokwaro	Joint aches	920	T	pt133
SR	256	205	Anacardiaceae	<i>Lannea</i>	<i>triphylla</i>	(A. Rich.) Engl.					1035	T	Kenze Hill pt52 to pt112
SR	222	205	Anacardiaceae	<i>Ozoroa</i>	<i>insignis</i>	Delile	ssp.	<i>reticulata</i>	(Baker f.) J.B. Gillett		1025	T	Kenze Hill pt52 to 53
SR	197	205	Anacardiaceae	<i>Pistacia</i>	<i>aethiopica</i>	Kokwaro					1005	T	Umani Springs - Kenze Hill pt50 to 51
SR	052	205	Anacardiaceae	<i>Rhus</i>	<i>natalensis</i>	C. Krauss					980	T	Umani Springs pt47 to DL
SR	061	205	Anacardiaceae	<i>Rhus</i>	<i>vulgaris</i>	Meikle?					975	T	Umani Springs DL to RJ
SR	236	205	Anacardiaceae	<i>Sclerocarya</i>	<i>birrea</i>	(A. Rich.) Hochst.	ssp.	<i>birrea</i>			1020	T	Kenze Hill pt52 to 53
SR	142	205	Anacardiaceae	<i>Sorindeia</i>	<i>madagascariensis</i>	DC.					980	T	Umani Springs SC to US
SR	182	212	Araliaceae	<i>Cussonia</i>	<i>holstii</i>	Engl.					1005	T	Umani Springs - Kenze Hill pt49 to 50
HS	14342	213	Apiaceae	<i>Hydrocotyle</i>	<i>mannii</i>	Hook.f.					980	H	Umani Springs HC
SR	050	213	Apiaceae	<i>Hydrocotyle</i>	<i>ranunculoides</i>	L.f.					980	H	Umani Springs pt47 to DL
SR	037	213	Apiaceae	<i>Steganotaenia</i>	<i>araliacea</i>	Hochst.				eye dawa	980	T	Umani Springs pt47 to DL

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cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	071	221	Ebenaceae	<i>Diospyros</i>	<i>abyssinica</i>	(Hiern) F. White	ssp.	<i>abyssinica</i>			975	T	Umani Springs DL to RJ
SR	175	221	Ebenaceae	<i>Diospyros</i>	<i>consolatae</i>	Chiov.					1000	T	Umani Springs - Kenze Hill pt48 to 49
SR	144	221	Ebenaceae	<i>Diospyros</i>	<i>mespiliformis</i>	A. DC.					980	T	Umani Springs SC to US
HS	14368	221	Ebenaceae	<i>Euclea</i>	<i>divinorum</i>	Hiern				photo	975	T	Umani Springs DL to RJ
SR	238	222	Sapotaceae	<i>Manilkara</i>	<i>mochisia</i>	(Baker) Dubard					990	T	Kenze Hill to Umani pt53 to 54
HS	14956	228	Loganiaceae	<i>Strychnos</i>	<i>madagascariensis?</i>	Poir.				1 st for K4?	970	T	pt121
SR	179	229	Oleaceae	<i>Jasminum</i>	<i>fluminense</i>	Vell.					1000	C	Umani Springs - Kenze Hill pt48 to 49
SR	189	229	Oleaceae	<i>Jasminum</i>	<i>schimperi</i>	Vatke					1005	C	Umani Springs - Kenze Hill pt49 to 50
HS	14916	229	Oleaceae	<i>Jasminum</i>	<i>streptopus</i>	E. Mey.					1035	C	Kenze Hill pt52 to pt112
SR	187	229	Oleaceae	<i>Olea</i>	<i>europaea</i>	L.	ssp.	<i>cuspidatus</i>	(G. Don) Cif.		1005	T	Umani Springs - Kenze Hill pt49 to 50
SR	001	230	Apocynaceae	<i>Tabernaemontana</i>	<i>ventricosa</i>	A. DC.				photo	980	T	Umani Springs pt46
HS	14943	231	Apocynaceae	<i>Baseonema</i>	<i>gregorii</i>	Schltr. & Rendle				photo	985	C	pt118
SR	282	231	Apocynaceae	<i>Ceropegia</i>	<i>aristolochioides</i>	Decne.				photo	970	C	pt121
HS	15041	231	Apocynaceae	<i>Cynanchum</i>	<i>gerrardii</i>	(Harvey) Liede					1005	C	pt050
HS	14945	231	Apocynaceae	<i>Cynanchum</i>	<i>hastifolium</i>	N.E. Br.				photo	985	C	pt118
HS	14880	231	Apocynaceae	<i>Gomphocarpus</i>	<i>kaessneri</i>	() Goyder & Nicholas				photo	980	H	Umani Lodge
HS	15038	231	Apocynaceae	<i>Marsdenia</i>	<i>sp.</i>						1005	C	pt049
SR	023	231	Apocynaceae	<i>Parquetina</i>	<i>calophyllus</i>	(Baill.) Venter				photo	980	C	Umani Springs pt46 to 47
SR	095	231	Apocynaceae	<i>Pergularia</i>	<i>daemia</i>	(Forssk.) Chiov.	ssp.	<i>daemia</i>			980	C	Umani Springs RJ to HC
SR	186	231	Apocynaceae	<i>Schizostephanus</i>	<i>alatus</i>	K. Schum.					1005	C	Umani Springs - Kenze Hill pt49 to 50
SR	176	231	Apocynaceae	<i>Secamone</i>	<i>attenuifolia</i>	Goyder				K3/K4/K6 only?	1000	C	Umani Springs - Kenze Hill pt48 to 49
HS	14903	231	Apocynaceae	<i>Secamone</i>	<i>parvifolia</i>	(Oliv.) Bullock					1005	C	Umani Springs - Kenze Hill pt49
HS	14980	231	Apocynaceae	<i>Secamone</i>	<i>punctulata</i>	Decne.					940	C	Twds pt057
HS	15036	231	Apocynaceae	<i>Tylophora</i>	<i>sp.</i>						1005	C	pt049

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
HS	14371	232	Rubiaceae	<i>Catunaregam</i>	<i>nilotica</i>	(Stapf) Tirveng.					1025	S	Umani Springs - Kenze Hill pt51 to 52
SR	240	232	Rubiaceae	<i>Coptosperma</i>	<i>graveolens</i>	(S. Moore) Degreef					990	T	Kenze Hill to Umani pt53 to 54
SR	221	232	Rubiaceae	<i>Gardenia</i>	<i>ternifolia</i>	Schumach. & Thonn.	ssp.	<i>jovis-tonantis</i>	(Welw.) Verdc.	(var. goetzei)	1025	T	Kenze Hill pt52 to 53
SR	191	232	Rubiaceae	<i>Hymenodictyon</i>	<i>parvifolium</i>	Oliv.	ssp.	<i>parvifolium</i>			1005	T	Umani Springs - Kenze Hill pt49 to 50
SR	143	232	Rubiaceae	<i>Meyna</i>	<i>tetraphylla</i>	(Hiern) Robyns	ssp.	<i>comorensis</i>	(Robyns) Verdc.		980	S	Umani Springs SC to US
HS	14953	232	Rubiaceae	<i>Oldenlandia</i>	<i>corymbosa</i>	L.	var.	<i>linearis?</i>	(Robyns) Verdc.		980	H	pt119
SR	258	232	Rubiaceae	<i>Pavetta</i>	<i>crassipes?</i>	K.Schum.					1035	S	Kenze Hill pt52 to pt112
HS	15021	232	Rubiaceae	<i>Pavetta</i>	<i>gardeniifolia</i>	A. Rich.	var.	<i>gardeniifolia</i>			970	T	pt 136 to pt 046
HS	14350 14879	232	Rubiaceae	<i>Pavetta</i>	<i>sepium</i>	K. Schum.	var.	<i>merkeri</i>	(K. Krause) Bridson		980	S	Umani Springs SC to US
HS	14359	232	Rubiaceae	<i>Pavetta</i>	<i>teitana</i>	K. Schum.					1005	S	Umani Springs - Kenze Hill pt49 to 50
SR	251	232	Rubiaceae	<i>Pentanisia</i>	<i>ouranogyne</i>	S. Moore					1025	H	Kenze Hill area pt51 to pt52
SR	335	232	Rubiaceae	<i>Pentas</i>	<i>parvifolia</i>	Hiern	fo.	<i>spicata</i>	Verdc.		940	H	nr pt134
SR	027	232	Rubiaceae	<i>Psychotria</i>	<i>capensis</i>	(Eckl.) Vatke	ssp.	<i>riparia</i>	(K. Schum. & K. Krause) Verdc.	(var. riparia)	980	T	Umani Springs pt46 to 47
SR	257	232	Rubiaceae	<i>Psychotria</i>	<i>kirkii</i>	Hiern					1035	S	Kenze Hill pt52 to pt112
SR	190	232	Rubiaceae	<i>Psydrax</i>	<i>schimperiana</i>	(A. Rich.) Bridson	ssp.	<i>schimperiana</i>			1005	T	Umani Springs - Kenze Hill pt49 to 50
HS	14951	232	Rubiaceae	<i>Rothmannia</i>	<i>fischeri</i>	(K. Schum.) Bullock	ssp.	<i>verdcourtii</i>	Bridson		980	T	pt119
SR	193	232	Rubiaceae	<i>Rubia</i>	<i>cordifolia</i>	L.	ssp.	<i>conotricha</i>	(Gandoger) Verdc.		1005	H	Umani Springs - Kenze Hill pt50 to 51
SR	157	232	Rubiaceae	<i>Vangueria</i>	<i>infausta</i>	Burch.	ssp.	<i>rotundata</i>	(Robyns)	(var. ?)	990	S	Umani Springs - US to pt46

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
									Verdc.				
SR	331	238	Asteraceae	<i>Acanthospermum</i>	<i>hispidum</i>	DC.				Introduced weed	940	H	nr pt118
HS	14333	238	Asteraceae	<i>Acmella</i>	<i>caulirhiza</i>	Delile					975	H	Umani Springs DL to RJ
HS	14352	238	Asteraceae	<i>Adenostemma</i>	<i>mauritianum</i>	DC.					990	H	Umani Springs SC to US
SR	163	238	Asteraceae	<i>Aspilia</i>	<i>mossambicensis</i>	(Oliv.) Wild				Stomach ulcers, deep wounds	1000	S	Umani Springs - Kenze Hill pt46 to 48
HS	15057	238	Asteraceae	<i>Athroisma</i>	<i>gracile</i>	(Oliv.) Mattf.	ssp.	?			985	H	nr pt118
HS	14364	238	Asteraceae	<i>Bidens</i>	<i>cinerea</i>	Sherff					1005	H	Umani Springs - Kenze Hill pt50 to 51
SR	111	238	Asteraceae	<i>Bidens</i>	<i>pilosa</i>	L.					980	H	Umani Springs pt46 to SC
HS	15031	238	Asteraceae	<i>Bidens</i>	<i>schimperii</i>	Walp.					970	H	pt 136 to pt 046
HS	15029	238	Asteraceae	<i>Blainvillea</i>	<i>gayana</i>	Cass.					970	H	pt 136 to pt 046
HS	14351	238	Asteraceae	<i>Blepharispermum</i>	<i>zanguebaricum</i>	Oliv. & Hiern				Mouth sores	980	C	Umani Springs SC
SR	287	238	Asteraceae	<i>Brachylaena</i>	<i>huillensis</i>	O. Hoffm.				Cult:	940	T	pt122
HS	14323	238	Asteraceae	<i>Crassocephalum</i>	<i>picridifolium</i>	(DC.) S. Moore					980	H	Umani Springs pt47 to DL
SR	113	238	Asteraceae	<i>Eclipta</i>	<i>prostrata</i>	(L.) L.					980	H	Umani Springs pt46 to SC
SR	328	238	Asteraceae	<i>Helichrysum</i>	<i>glumaceum</i>	DC.					985	H	nr pt118
SR	263	238	Asteraceae	<i>Kleinia</i>	<i>abyssinica</i>	(A. Rich.) A. Berger	var.	<i>hildebrandtii</i>	(Vatke) C. Jeffrey		985	H	pt115
HS	14934	238	Asteraceae	<i>Kleinia</i>	<i>schweinfurthii</i>	(Oliv. & Hiern) A. Berger				in hort	985	H	pt118
HS	15020	238	Asteraceae	<i>Lagascea</i>	<i>mollis</i>	Cav.				1st K4? Introduced weed	970	H	pt154
HS	14977	238	Asteraceae	<i>Launaea</i>	<i>cornuta</i>	(Oliv. & Hiern) C. Jeffrey					980	H	Umani Lodge
SR	040	238	Asteraceae	<i>Mikania</i>	<i>chenopodiifolia</i>	Willd.					980	C	Umani Springs pt47 to DL
SR	206	238	Asteraceae	<i>Osteospermum</i>	<i>vaillantii</i>	(Decne.) T. Norl.					1005	H	Umani Springs - Kenze Hill pt50 to 51
HS	14313	238	Asteraceae	<i>Pluchea</i>	<i>ovalis</i>	(Pers.) DC.					980	H	Umani Springs pt46 to 47

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
HS	14316	238	Asteraceae	<i>Pluchea</i>	<i>sordida</i>	(Vatke) Oliv. & Hiern					980	H	Umani Springs pt47 to DL
HS	14314	238	Asteraceae	<i>Pseudoconyza</i>	<i>viscosa</i>	(Mill.) D'Arcy					980	H	Umani Springs pt46 to 47
SR	280	238	Asteraceae	<i>Solanecio</i>	<i>angulatus</i>	(Vahl) C. Jeffrey					980	C	pt119
SR	310	238	Asteraceae	<i>Solanecio</i>	<i>mannii</i>	(Hook.f.) C.Jeffrey					980	S	Twds pt057
HS	14978	238	Asteraceae	<i>Sonchus</i>	<i>oleracea</i>	L.					980	H	Umani Lodge
HS	14946	238	Asteraceae	<i>Sphaeranthus</i>	<i>kirkii</i>	Oliv. & Hiern	var.	<i>cyathuloides</i>	(O.Hof fm.) Beentje		985	H	pt118
HS	15028	238	Asteraceae	<i>Synedrella</i>	<i>nodiflora</i>	(L.) Gaertn.				1 st K4?	970	H	pt 136 to pt 046
SR	051	238	Asteraceae	<i>Tridax</i>	<i>procumbens</i>	L.				Stomach ulcers	980	H	Umani Springs pt47 to DL
HS	15022	238	Asteraceae	<i>Vernonia</i>	<i>aemulans</i>	Vatke					980	H	Umani Lodge
SR	313	238	Asteraceae	<i>Vernonia</i>	<i>anthelmintica</i>	(L.) Willd.					955	H	pt124
HS	14309	238	Asteraceae	<i>Vernonia</i>	<i>colorata</i>	(Willd.) W.F.M. Drake	ssp.	<i>grandis</i>	(DC.) C. Jeffrey	photo	980	S	Umani Springs pt46 to 47
HS	15047	238	Asteraceae	<i>Vernonia</i>	<i>popeana?</i>	C. Jeffrey					985	H	nr pt118
HS	14950	238	Asteraceae	<i>Vernonia</i>	<i>wakefieldii</i>	Oliv.					980	S	pt119
SR	329	238	Asteraceae	<i>Xanthium</i>	<i>strumarium</i>	L.				Invasive	940	H	nr pt122
SR	330	238	Asteraceae	<i>Zinnia</i>	<i>elegans?</i>	Jacq.				Escape	940	H	nr pt122
SR	062	241	Plumbaginaceae	<i>Plumbago</i>	<i>zeylanica</i>	L.				photo	975	S	Umani Springs DL to RJ
SR	247	244	Lobeliaceae	<i>Cyphia</i>	<i>glandulifera</i>	A. Rich.					1025	H	Kenze Hill area pt51 to pt52
SR	160	249	Boraginaceae	<i>Cordia</i>	<i>monoica</i>	Roxb.					990	T	Umani Springs - US to pt46
HS	15056	249	Boraginaceae	<i>Heliotropium</i>	<i>sessilistigma</i>	Hutch. & E.A.Bruce					985	H	nr pt118
HS	14933	249	Boraginaceae	<i>Heliotropium</i>	<i>steudneri</i>	Vatke	ssp.	<i>steudneri</i>		photo	985	H	pt118
SR	334	249	Boraginaceae	<i>Heliotropium</i>	<i>zeylanicum</i>	(Burm.f.) Lam.					940	H	nr pt134
HS	14335	249	Boraginaceae	<i>Trichodesma</i>	<i>zeylanicum</i>	(Burm.f.) R. Br.					975	H	Umani Springs DL to RJ
HS	14918	250	Solanaceae	<i>Solanum</i>	<i>campylacanthum</i>	A.Rich.				Stomach cramps	1035	S	Kenze Hill pt52 to pt112

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
HS	14305	250	Solanaceae	<i>Solanum</i>	<i>dasyphyllum</i>	Schumach. & Thonn.					980	S	Umani Springs pt46
SR	065	250	Solanaceae	<i>Solanum</i>	<i>lycopersicum</i>	L.				tomato (escape)	975	H	Umani Springs DL to RJ
HS	14957	250	Solanaceae	<i>Solanum</i>	<i>tettense</i>	Klotzsch					940	S	pt122
SR	300	250	Solanaceae	<i>Withania</i>	<i>somnifera</i>	(L.) Dunal					940	H	Twds pt057
SR	170	251	Convolvulaceae	<i>Astripomoea</i>	<i>hyoscyamoides</i>	(Vatke) Verdc.	var.	<i>hyoscyamoides</i>		photo	1000	C	Umani Springs - Kenze Hill pt48 to 49
HS	14318 14894	251	Convolvulaceae	<i>Convolvulus</i>	<i>farinosa</i>	L.					980	C	Umani Springs pt47 to DL
SR	064	251	Convolvulaceae	<i>Ipomoea</i>	<i>kituiensis</i>	Vatke	var.	<i>kituiensis</i>			975	C	Umani Springs DL to RJ
SR	092	251	Convolvulaceae	<i>Ipomoea</i>	<i>lapidosa</i>	Vatke					980	C	Umani Springs RJ to HC
SR	043	251	Convolvulaceae	<i>Ipomoea</i>	<i>obscura</i>	(L.) Ker Gawl.	var.	<i>obscura</i>		photo	980	C	Umani Springs pt47 to DL
HS	14328	251	Convolvulaceae	<i>Ipomoea</i>	<i>sinensis</i>	(Desr.) Choisy	ssp.	<i>blepharosepala</i>	(A. Rich.) Meeuse		980	C	Umani Springs pt47 to DL
SR	317	251	Convolvulaceae	<i>Merremia</i>	<i>palmata?</i>	Hallier f.					980	H	Umani Lodge
HS	14331	251	Convolvulaceae	<i>Stictocardia</i>	<i>incomta</i>	(Hallier f.) Hallier f.				photo	975	C	Umani Springs DL to RJ
SR	253	251	Convolvulaceae	<i>Turbina</i>	<i>stenosiphon</i>	(Hallier f.) Meeuse	var.	<i>stenosiphon</i>			960	C	Umani Springs pt56
HS	14892	252	Scrophulariaceae	<i>Craterostigma</i>	<i>pumilum</i>	Hochst.				photo	980	H	Umani Lodge
SR	112	252	Scrophulariaceae	<i>Cynium</i>	<i>volkensii</i>	Engl.					980	H	Umani Springs pt46 to SC
HS	15053	252	Scrophulariaceae	<i>Pseudosopubia</i>	<i>hilderbrandtii</i>	(Vatke) Engl.					985	H	nr pt118
SR	311	257	Bignoniaceae	<i>Kigelia</i>	<i>africana</i>	(Lam.) Benth.	ssp.	<i>africana</i>		Haemoraging in child birth, Diarrhoea	980	T	twds pt 057
SR	011	259	Acanthaceae	<i>Anisotes</i>	<i>ukambensis</i>	Lindau				photo K4/K6/K7 Endemic	980	T	Umani Springs pt46
SR	088	259	Acanthaceae	<i>Barleria</i>	<i>eranthemoides</i>	C.B. Clarke	var.	?			980	H	Umani Springs RJ to HC
HS	14370	259	Acanthaceae	<i>Barleria</i>	<i>inclusa</i>	I. Darbysh.					1025	H	Umani Springs - Kenze Hill pt51 to 52
HS	14363	259	Acanthaceae	<i>Barleria</i>	<i>ramulosa</i>	C.B. Clarke	ssp.	<i>ramulosa</i>		photo	1005	H	Umani Springs - Kenze Hill pt50 to 51
HS	14325	259	Acanthaceae	<i>Barleria</i>	<i>submollis</i>	Lindau					980	H	Umani Springs pt47 to DL

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SR	116	259	Acanthaceae	<i>Blepharis</i>	<i>maderaspatensis</i>	(L.) Roth					980	H	Umani Springs pt46 to SC
HS	14924	259	Acanthaceae	<i>Crabbea</i>	<i>velutina</i>	S. Moore					975	H	pt114
HS	15046	259	Acanthaceae	<i>Crossandra</i>	<i>subacaulis</i>	C.B. Clarke					985	H	nr pt118
HS	14962	259	Acanthaceae	<i>Crossandra</i>	<i>mucronata</i>	Lindau				photo	965	H	pt127
HS	14307	259	Acanthaceae	<i>Dicliptera</i>	<i>heterostegia</i>	Nees				1st for K4	980	H	Umani Springs pt46
SR	164	259	Acanthaceae	<i>Dicliptera</i>	<i>paniculata</i>	(Forssk.) I. Darbysh.					1000	H	Umani Springs - Kenze Hill pt46 to 48
HS	14315	259	Acanthaceae	<i>Dicliptera</i>	<i>verticillata</i>	(Forssk.) C. Chr.					980	H	Umani Springs pt47
HS	14322	259	Acanthaceae	<i>Duosperma</i>	<i>kilimandscharicum</i>	(Lindau) Dayton					980	S	Umani Springs pt47 to DL
HS	14369	259	Acanthaceae	<i>Dyschoriste</i>	<i>hildebrandtii</i>	(S. Moore) S. Moore				photo	1025	H	Umani Springs - Kenze Hill pt51 to 52
SR	275	259	Acanthaceae	<i>Hygrophila</i>	<i>schulli</i>	(Ham.) M.R. Almeida & S.M. Almeida					985	H	pt118
HS	14354	259	Acanthaceae	<i>Hygrophila</i>	<i>spiciformis</i>	Lindau				photo	1000	H	Umani Springs - US to pt46
SR	198	259	Acanthaceae	<i>Hypoestes</i>	<i>aristata</i>	(Vahl) Roem. & Schult.					1005	H	Umani Springs - Kenze Hill pt50 to 51
SR	022	259	Acanthaceae	<i>Hypoestes</i>	<i>forskaolii</i>	(Vahl) R. Br.	ssp.	<i>forskaolii</i>			980	H	Umani Springs pt46 to 47
HS	14319	259	Acanthaceae	<i>Justicia</i>	<i>betonica</i>	L.				photo	980	H	Umani Springs pt47 to DL
HS	14885	259	Acanthaceae	<i>Justicia</i>	<i>calyculata</i>	Deflers					980	H	Umani Lodge
SR	091	259	Acanthaceae	<i>Justicia</i>	<i>cordata</i>	(Nees) T. Anderson					980	H	Umani Springs RJ to HC
SR	074	259	Acanthaceae	<i>Justicia</i>	<i>dictypteroides</i>	Lindau					975	H	Umani Springs DL to RJ
SR	005	259	Acanthaceae	<i>Justicia</i>	<i>engleriana</i>	Lindau				photo	980	H	Umani Springs pt46
SR	278	259	Acanthaceae	<i>Justicia</i>	<i>flava</i>	(Vahl) Vahl					980	H	pt119
SR	012	259	Acanthaceae	<i>Justicia</i>	<i>nyassana</i>	Lindau					980	H	Umani Springs pt46
SR	021	259	Acanthaceae	<i>Justicia</i>	<i>scandens</i>	Vahl					980	H	Umani Springs pt46
SR	273	259	Acanthaceae	<i>Lepidagathis</i>	<i>scariosa</i>	Nees					985	H	pt118
SR	017	259	Acanthaceae	<i>Phaulopsis</i>	<i>imbricata</i>	(Forssk.) Sweet	ssp.	<i>imbricata</i>			980	H	Umani Springs pt46

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SR	260	259	Acanthaceae	<i>Ruellia</i>	<i>bignoniiflora</i>	S. Moore					980	H	pt113 to Umani Lodge
HS	14922 14923	259	Acanthaceae	<i>Ruellia</i>	<i>prostrata</i>	Jacq.				photo	975	H	pt114
SR	129	259	Acanthaceae	<i>Ruellia</i>	<i>simplex</i>	C. Wright				exotic. photo	980	H	Umani Springs SC to US
SR	321	259	Acanthaceae	<i>Ruttya</i>	<i>fruticosa</i>	Lindau				photo	980	S	pt155
HS	14925	259	Acanthaceae	<i>Thunbergia</i>	<i>reticulata</i>	Nees				K4/K6 Endemic	975	H	pt114
SR	327	263	Verbenaceae	<i>Chascanum</i>	<i>hildebrandtii</i>	(Vatke) J.B. Gillett					985	H	nr pt118
SR	036	263	Verbenaceae	<i>Lantana</i>	<i>camara</i>	L.				naturalised	980	S	Umani Springs pt46 to 47
HS	14942	263	Verbenaceae	<i>Lantana</i>	<i>humuliformis</i>	Verdc.					985	S	pt118
SR	236	263	Verbenaceae	<i>Priva</i>	<i>adhaerens</i>	(Forssk.) Chiov.					980	H	Umani Lodge
HS	15048	264	Lamiaceae	<i>Clerodendrum</i>	<i>eriophyllum</i>	Guerke					985	S	nr pt118
HS	15055	264	Lamiaceae	<i>Endostemon</i>	<i>camporum</i>	(Guerke) M. Ashby					985	H	nr pt118
SR	046	264	Lamiaceae	<i>Leonotis</i>	<i>nepetifolia</i>	(L.) R. Br.	var.	<i>nepetifolia</i>			980	H	Umani Springs pt47 to DL
HS	14306	264	Lamiaceae	<i>Leucas</i>	<i>grandis</i>	Vatke					980	H	Umani Springs pt46
HS	14899	264	Lamiaceae	<i>Leucas</i>	<i>martinicensis</i>	(Jacq.) W.T. Aiton					980	H	Umani Lodge
HS	14969	264	Lamiaceae	<i>Ocimum</i>	<i>filamentosum</i>	Forssk.					985	H	pt132
SR	013	264	Lamiaceae	<i>Ocimum</i>	<i>gratissimum</i>	L. ssp. gratissimum	var.	<i>gratissimum</i>			980	H	Umani Springs pt46
SR	312	264	Lamiaceae	<i>Ocimum</i>	<i>spectabile</i>	(Guerke) A.J.Paton					955	S	pt 057 to pt 056
HS	14372	264	Lamiaceae	<i>Orthosiphon</i>	<i>parvifolius</i>	Vatke					1035	H	Kenze Hill Ranger Camp pt52
HS	14930	264	Lamiaceae	<i>Orthosiphon</i>	<i>thymiflorus</i>	(Roth) Sleesen				photo	990	H	pt116
HS	15054	264	Lamiaceae	<i>Platostoma</i>	<i>hildebrandtii</i>	(Vatke) A.J.Paton					985	H	nr pt118
HS	14378	264	Lamiaceae	<i>Plectranthus</i>	<i>puberulentus</i>	J.K. Morton					960	S	Umani Springs pt56
HS	14343	264	Lamiaceae	<i>Plectranthus</i>	<i>tetragonus</i>	Guerke					980	H	Umani Springs pt46 to SC
SR	156	264	Lamiaceae	<i>Premna</i>	<i>hildebrandtii</i>	Guerke					990	S	Umani Springs SC to US
HS	14964	264	Lamiaceae	<i>Premna</i>	<i>oligotricha</i>	Baker					965	S	pt127
SR	076	264	Lamiaceae	<i>Pycnostachys</i>	<i>umbrosa</i>	(Vatke) Perkins				photo	980	S	Umani Springs RJ

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SR	205	264	Lamiaceae	<i>Rotheca</i>	<i>myricoides</i>	(Hochst.) Steane & Mabb.	ssp.	<i>myricoides</i>			1005	S	Umani Springs - Kenze Hill pt50 to 51
SR	200	264	Lamiaceae	<i>Tetradenia</i>	<i>urticifolia</i>	(Baker) Phillipson					1005	S	Umani Springs - Kenze Hill pt50 to 51
SR	209	264	Lamiaceae	<i>Tinnea</i>	<i>aethiopica</i>	Hook.f.	ssp.	<i>aethiopica</i>			1005	S	Umani Springs - Kenze Hill pt50 to 51
SR	248	264	Lamiaceae	<i>Vitex</i>	<i>strickeri</i>	Vatke & Hildebr.				photo	975	C	Kenze Hill to Umani pt54 to pt46
HS	14907	369	Dioscoreaceae	<i>Dioscorea</i>	<i>quartiniana</i>	A. Rich.	var.	<i>quartiniana</i>			1015	C	Umani Springs - Kenze Hill pt111
SR	151	378	Asparagaceae	<i>Asparagus</i>	<i>buchananii</i>	Baker					980	C	Umani Springs SC to US
SR	254	378	Asparagaceae	<i>Asparagus</i>	<i>denudatus</i>	(Kunth) Baker	ssp.	<i>nudicaulis</i>	(Baker) Sebseb e	K4/K6/T2 Endemic	1035	H	Kenze Hill pt52 to pt112
SR	261	378	Asparagaceae	<i>Asparagus</i>	<i>flagellaris</i>	(Kunth) Baker				Cure for kisonono!	975	H	pt114
SR	008	378	Asparagaceae	<i>Asparagus</i>	<i>setaceus</i>	(Kunth) Jessop					980	C	Umani Springs pt46
SR	325	381	Dracaenaceae	<i>Sansevieria</i>	<i>ballyi?</i>	L.E.Newton					1010	S	pt 156
SR	045	381	Dracaenaceae	<i>Sansevieria</i>	<i>frequens?</i>	B.J. Chahinian					980	S	Umani Springs pt47 to DL
SR	255	381	Dracaenaceae	<i>Sansevieria</i>	<i>robusta</i>	N.E. Br.					960	S	Umani Springs pt56
HS	14947	390	Hypoxidaceae	<i>Hypoxis</i>	<i>angustifolia</i>	Lam.	var.	<i>luzuloides</i>	(Robyn s & Tourna y) Wiland		985	H	pt118
HS	14940	393	Eriospermaceae	<i>Eriospermum</i>	<i>triphyllum</i>	Baker					985	H	pt118
SR	272	398	Aloaceae	<i>Aloe</i>	<i>lateritia</i>	Engl.	var.	<i>lateritia</i>		in hort	985	S	pt118
HS	9499	398	Aloaceae	<i>Aloe</i>	<i>sp</i>					yellow A.rabaiensis?	950	S	nr pt125
SR	253	398	Asphodelaceae	<i>Trachyandra</i>	<i>saltii</i>	(Baker) Oberm.					1035	H	Kenze Hill pt52
HS	14878	399	Anthericaceae	<i>Chlorophytum</i>	<i>gallabantense</i>	Baker					980	H	Umani Lodge
HS	14896	399	Anthericaceae	<i>Chlorophytum</i>	<i>macrophyllum</i>	(A. Rich.) Asch.					1000	H	Umani Springs - Nr US
HS	14877	399	Anthericaceae	<i>Chlorophytum</i>	<i>silvaticum</i>	Dammer				photo	980	H	Umani Lodge
HS	14911	399	Anthericaceae	<i>Chlorophytum</i>	<i>somaliense</i>	Baker				photo	1025	H	Kenze Hill area pt51 to pt52
HS	14928	b 399	Anthericaceae	<i>Chlorophytum</i>	<i>sp. aff. fischeri</i>	(Baker)				Not matched	985	H	pt115

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
						Baker							
HS	15045	399	Anthericaceae	<i>Chlorophytum</i>	<i>sp.</i>					maybe not distinct	985	H	pt115
HS	14928 14935	a 399	Anthericaceae	<i>Chlorophytum</i>	<i>subpetiolatum</i>	(Baker) Kativu				photo	985	H	pt115
HS	14965	399	Anthericaceae	<i>Chlorophytum</i>	<i>tuberosum</i>	(Roxb.) Baker				photo	975	H	pt130
SR	304	402	Hyacinthaceae	<i>Albuca</i>	<i>abyssinica</i>	Jacq.					1150	H	pt112
HS	14887	402	Hyacinthaceae	<i>Dipcadi</i>	<i>sp.</i>					Not matched!	980	H	Umani Lodge
HS	14898	402	Hyacinthaceae	<i>Dipcadi</i>	<i>viride</i>	(L.) Moench					1001	H	Umani Springs - Nr US
SR	259	402	Hyacinthaceae	<i>Drimia</i>	<i>altissima</i>	(L.f.) Ker Gawl.					1025	H	Kenze Hill area pt51 to pt113
HS	14904	402	Hyacinthaceae	<i>Drimiopsis</i>	<i>botryoides</i>	Baker	ssp.	<i>botryoides</i>		photo	1005	H	pt132
HS	14968	402	Hyacinthaceae	<i>Drimiopsis</i>	<i>botryoides</i>	Baker	ssp.	<i>prostrata?</i>	Stedje	1 st for Kenya?	985	H	Umani Springs - Kenze Hill pt49
HS	14897	402	Hyacinthaceae	<i>Ledebouria</i>	<i>kirkii</i>	Stedje & Thulin					1000	H	Umani Springs - Nr US
HS	14886	402	Hyacinthaceae	<i>Ledebouria</i>	<i>revoluta</i>	(L.f.) Jessop					980	H	Umani Lodge
HS	14954	402	Hyacinthaceae	<i>Ornithogalum</i>	<i>donaldsonii</i>	(Rendle) Greenway				photo	980	H	pt119
HS	14883	404	Amaryllidaceae	<i>Crinum</i>	<i>zeylanicum</i>	(L.) L.				photo	980	H	Umani Lodge
SR	235	404	Amaryllidaceae	<i>Scadoxus</i>	<i>multiflorus</i>	(Martyn) Raf.	ssp.	<i>multiflorus</i>			940	H	pt57 to pt56
SR	267	411	Colchicaceae	<i>Gloriosa</i>	<i>superba</i>	L.	var.	<i>superba</i>			985	C	pt118
HS	14889	411	Colchicaceae	<i>Iphigenia</i>	<i>pauciflora</i>	Martelli				photo	980	H	Umani Lodge
SR	087	419	Orchidaceae	<i>Microcoelia</i>	<i>sp.</i>	Lindl.					980	H	Umani Springs RJ to HC
HS	14901	420	Araceae	<i>Amorphophallus</i>	<i>laxiflorus?</i>	N.E. Br.				photo	1005	H	Umani Springs - Kenze Hill pt49
SR	158	420	Araceae	<i>Colocasias</i>	<i>esculenta</i>	(L.) Schott				Escape	990	H	Umani Springs - US to pt46
SR	026	420	Araceae	<i>Pistia</i>	<i>stratiotes</i>	L.					980	H	Umani Springs pt46 to 47
SR	239	420	Araceae	<i>Stylochaeton</i>	<i>borumensis</i>	N.E. Br.					980	H	Umani Lodge
HS	14891	420	Araceae	<i>Stylochaeton</i>	<i>puberulus</i>	N.E. Br.					980	H	Umani Lodge
SR	154	421	Lemnaceae	<i>Lemna</i>	<i>gibba</i>	L.					990	A	Umani Springs SC to US
HS	14890	423	Aponogetonaceae	<i>Aponogeton</i>	<i>abyssinicus</i>	A. Rich.	var.	<i>abyssinicus</i>		photo	980	A	Umani Lodge

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
SR	042	442	Typhaceae	<i>Typha</i>	<i>domingensis</i>	Pers.					980	H	Umani Springs pt47 to DL
SR	266	447	Zingiberaceae	<i>Siphonochilus</i>	<i>aethiopicus</i>	(Schweinf.) B.L. Burtt					985	H	pt118
SR	248	451	Commelinaceae	<i>Aneilema</i>	<i>johnstonii</i>	K. Schum.				photo	1025	H	Kenze Hill area pt51 to pt52
SR	237	451	Commelinaceae	<i>Anthericopsis</i>	<i>sepalosa</i>	(C.B. Clarke) Engl.				photo	980	H	Umani Lodge
SR	047	451	Commelinaceae	<i>Commelina</i>	<i>diffusa</i>	Burm.f.	ssp.	<i>diffusa</i>			980	H	Umani Springs pt47 to DL
HS	14884	451	Commelinaceae	<i>Commelina</i>	<i>latifolia</i>	A. Rich.					980	H	Umani Lodge
HS	14975	451	Commelinaceae	<i>Commelina</i>	<i>melanorrhiza</i>	Faden				photo	980	H	Umani Lodge
SR	305	451	Commelinaceae	<i>Cyanotis</i>	<i>foecunda?</i>	Hassk.					1005	H	pt049
SR	044	459	Cyperaceae	<i>Cladium</i>	<i>mariscus</i>	(L.) Pohl	ssp.	<i>jamaicense</i>	(Crantz) Kuek.		980	H	Umani Springs pt47 to DL
HS	14948	459	Cyperaceae	<i>Cyperus</i>	<i>distans</i>	L.f.					985	H	pt118
HS	14326	459	Cyperaceae	<i>Cyperus</i>	<i>exaltatus</i>	Retz.	var.	<i>dives</i>	(Delile) C.B. Clarke		980	H	Umani Springs pt47 to DL
HS	14881	459	Cyperaceae	<i>Cyperus</i>	<i>grandibulbosus</i>	C.B. Clarke					980	H	Umani Lodge
SR	014	459	Cyperaceae	<i>Cyperus</i>	<i>involutus</i>	Rottb.					980	H	Umani Springs pt46
SR	041	459	Cyperaceae	<i>Cyperus</i>	<i>laevigatus</i>	L.					980	H	Umani Springs pt47 to DL
HS	14888	459	Cyperaceae	<i>Cyperus</i>	<i>michelianus</i>	(L.) Link	ssp.	<i>pygmaeus</i>	(Rottb.) Asch. & Graebn		980	H	Umani Lodge
HS	14938	459	Cyperaceae	<i>Cyperus</i>	<i>mollipes</i>	(C.B. Clarke) K. Schum.					985	H	pt118
HS	14349	459	Cyperaceae	<i>Cyperus</i>	<i>undulatus</i>	Kuek.					980	H	Umani Springs pt46 to SC
HS	14929	459	Cyperaceae	<i>Cyperus</i>	<i>vestitus</i>	Krauss					990	H	pt116
HS	14927	459	Cyperaceae	<i>Kyllinga</i>	<i>alba</i>	Nees					980	H	pt114 to pt115
HS	14882	459	Cyperaceae	<i>Kyllinga</i>	<i>flava</i>	C.B. Clarke					980	H	Umani Lodge
HS	14926	459	Cyperaceae	<i>Kyllinga</i>	<i>microbulbosa</i>	Lye				1st for Kenya, 2nd coll. NB bracts scabrid NOT lvs as in	980	H	pt114 to pt115

cat	No.	fno	family	genus	species	auth.1		var. or ssp.	auth.2	comment	alt	de sc	Locality
										FTEA			
HS	14963	459	Cyperaceae	<i>Kyllingiella</i>	<i>polyphylla</i>	(A. Rich.) Lye					965	H	pt127
SR	316	462	Poaceae	<i>Chloris</i>	<i>gayana</i>	Kunth				planted?	980	H	Umani Lodge
HS	14317	462	Poaceae	<i>Cynodon</i>	<i>dactylon</i>	(L.) Pers.					980	H	Umani Springs pt47 to DL
SR	059	462	Poaceae	<i>Panicum</i>	<i>maximum</i>	Jacq.					975	H	Umani Springs DL to RJ
SR	306	462	Poaceae	<i>Pennisetum</i>	<i>mezianum</i>	Leeke					975	H	pt130
SR	134	462	Poaceae	<i>Pennisetum</i>	<i>sp.</i>					exotic	980	H	Umani Springs SC to US
SR	019	462	Poaceae	<i>Setaria</i>	<i>plicatilis</i>	(Hochst.) Engl.					980	H	Umani Springs pt46
SR	322	462	Poaceae	<i>Sorghum</i>	<i>bicolor</i>	(L.) Moench	ssp.	<i>arundinaceum</i>	(Desv.) De Wet & Harlan		1000	H	pt048
SR	118	462	Poaceae	<i>Stenotaphrum</i>	<i>dimidiatum</i>	(L.) Brongn.				Pemba Grass: introduced	980	H	Umani Springs SC to US
SR	126	468	Arecaceae	<i>Dypsis</i>	<i>decaryi</i>	(Jum.) Beentje & J. Dransf.				exotic	980	T	Umani Springs SC to US
SR	127	468	Arecaceae	<i>Dypsis</i>	<i>lutescens</i>	(H. Wendl.)Bee ntje & J. Dransf.				exotic	980	T	Umani Springs SC to US
SR	030	468	Arecaceae	<i>Phoenix</i>	<i>reclinata</i>	Jacq.					980	T	Umani Springs pt46 to 47
SR	132	468	Arecaceae	<i>Washingtonia</i>	<i>sp.</i>					exotic	980	T	Umani Springs SC to US

Appendix 3 Plant Names in KiKamba

fno	family	genus	species	KiKamba Name	Habit
0		<i>Lichen</i>		Mweipia	L
008	Annonaceae	<i>Uvaria</i>	<i>scheffleri</i>	*Mukukuma	C
015	Ranunculaceae	<i>Clematis</i>	<i>simensis</i>	Mupaki	C
023	Menispermaceae	<i>Chasmanthera</i>	<i>dependens</i>	*Kugiei	C
023	Menispermaceae	<i>Tinospora</i>	<i>caffra</i>	*Ithunzu lka	C
036	Capparaceae	<i>Boscia</i>	<i>angustifolia</i>	Kiluli *Mulule	T
036	Capparaceae	<i>Capparis</i>	<i>fascicularis</i>	Kitanda Mboo *Itandambo	C
				C.sepiaria	
036	Capparaceae	<i>Capparis</i>	<i>fascicularis</i>	Kitanda Mboo *Itandambo	C
				(C.sepiaria)	
036	Capparaceae	<i>Maerua</i>	<i>decumbens</i>	*Munatha	S
036	Capparaceae	<i>Maerua</i>	<i>kirkii</i>	Ipopoto, *Muvovotwe	T
036	Capparaceae	<i>Maerua</i>	<i>triphylla</i>	*Mulingula	T
036	Capparaceae	<i>Thilachium</i>	<i>africanum</i>	*Mutunguu	T
057	Polygonaceae	<i>Rumex</i>	<i>usambarensis</i>	*Kinyonywe	H
081	Thymelaeaceae	<i>Gnidia</i>	<i>subcordata</i>	*Musinziili	S
088	Pittosporaceae	<i>Pittosporum</i>	<i>viridiflorum</i>	*Kaluma	T
101	Passifloraceae	<i>Adenia</i>	<i>gummifera</i>	Isoka	C
101	Passifloraceae	<i>Adenia</i>	<i>lanceolata</i>	*Kalumbu	C
101	Passifloraceae	<i>Adenia</i>	<i>wightiana</i>	*Kali	C
114	Ochnaceae	<i>Ochna</i>	<i>ovata</i>	*Kitandi, Mutandi	T
121	Combretaceae	<i>Combretum</i>	<i>apiculatum</i>	*Mutiithi, Muuanzuki	T
121	Combretaceae	<i>Combretum</i>	<i>collinum</i>	*Mutiithi	T
121	Combretaceae	<i>Combretum</i>	<i>exalatum</i>	*Mukokola	S
121	Combretaceae	<i>Combretum</i>	<i>molle</i>	*Kiama, Muama	T
121	Combretaceae	<i>Combretum</i>	<i>mossambicense</i>	*Mutangwai, Kitangwai	S
121	Combretaceae	<i>Terminalia</i>	<i>brownie</i>	Kiuuku *Muuuku	T
122	Rhizophoraceae	<i>Cassipourea</i>	<i>celastroides</i>	*Muthongori	T
128	Tiliaceae	<i>Corchorus</i>	<i>olitorius</i>	Mulenda	H
128	Tiliaceae	<i>Grewia</i>	<i>kakothamnus?</i>	*Mutuva	S
128	Tiliaceae	<i>Grewia</i>	<i>plagiophylla</i>	Ilawa	T
128	Tiliaceae	<i>Grewia</i>	<i>truncate</i>	Mutuvu	S
128	Tiliaceae	<i>Grewia</i>	<i>villosa</i>	*Mulawa	S
128	Tiliaceae	<i>Triumfetta</i>	<i>flavescens</i>	*Muindanguue	H
130	Sterculiaceae	<i>Dombeya</i>	<i>kirkii</i>	*Muvau, Kivau	T
130	Sterculiaceae	<i>Dombeya</i>	<i>rotundifolia</i>	*Mutoo	T
130	Sterculiaceae	<i>Sterculia</i>	<i>rhynchocarpa</i>	*Muusya	T
131	Bombacaceae	<i>Adansonia</i>	<i>digitata</i>	Kiamba	T
132	Malvaceae	<i>Hibiscus</i>	<i>kabuyeana</i>	Mukoto, Mutulyia Nthongo	H
132	Malvaceae	<i>Pavonia</i>	<i>burchellii</i>	Mutulyia Nthongo	H
132	Malvaceae	<i>Thespesia</i>	<i>garckeana</i>	*Mutoo	T
136	Euphorbiaceae	<i>Acalypha</i>	<i>fruticosa</i>	*Mkukua	S
136	Euphorbiaceae	<i>Acalypha</i>	<i>racemosa</i>	*Mukulwa	H
136	Euphorbiaceae	<i>Croton</i>	<i>dichogamus</i>	Yalula, *Muthinia	S
136	Euphorbiaceae	<i>Croton</i>	<i>megalocarpus</i>	*Muthulu	T
136	Euphorbiaceae	<i>Croton</i>	<i>scheffleri</i>	Muthinia, *Malula	T
136	Euphorbiaceae	<i>Euphorbia</i>	<i>bussei</i>	Kyangadi, *Kithui	T
136	Euphorbiaceae	<i>Euphorbia</i>	<i>candelabrum</i>	*Kyaa	T
136	Euphorbiaceae	<i>Euphorbia</i>	<i>cuneata</i>	*Kilewa	S
136	Euphorbiaceae	<i>Euphorbia</i>	<i>scheffleri</i>	*Kilembwa	S
136	Euphorbiaceae	<i>Euphorbia</i>	<i>hirta</i>	Mutata	H
136	Euphorbiaceae	<i>Ricinus</i>	<i>communis</i>	*Kivunu, Mbaiki	S
136	Euphorbiaceae	<i>Synadenium</i>	<i>compactum</i>	*Kyatha	T
136	Phyllanthaceae	<i>Bridelia</i>	<i>taitensis</i>	*Muandi	T
136	Phyllanthaceae	<i>Flueggea</i>	<i>virosa</i>	*Mukuluu	S
146	Caesalpiniaceae	<i>Bauhinia</i>	<i>tomentosa</i>	*Muandia, Mukundia	S
146	Caesalpiniaceae	<i>Cassia</i>	<i>abbreviata</i>	Mwelandathe	T
146	Caesalpiniaceae	<i>Senna</i>	<i>singueana</i>	*Mukengeka, Munyunga-Nai	T
147	Mimosaceae	<i>Acacia</i>	<i>brevispica</i>	*Mukusw'i	S

147	Mimosaceae	<i>Acacia</i>	<i>drepanolobium</i>	*Kiunga, Muuga	T
147	Mimosaceae	<i>Acacia</i>	<i>hockii</i>	*Muuga	T
147	Mimosaceae	<i>Acacia</i>	<i>mellifera</i>	*Muthiia, Kithiia	T
147	Mimosaceae	<i>Acacia</i>	<i>nilotica</i>	*Musemei	T
147	Mimosaceae	<i>Acacia</i>	<i>robusta</i>	*Kithi	T
147	Mimosaceae	<i>Acacia</i>	<i>tortilis</i>	*Kilaa	T
147	Mimosaceae	<i>Acacia</i>	<i>xanthophloea</i>	*Kimwea, Musewa	T
147	Mimosaceae	<i>Albizia</i>	<i>amara</i>	*Muundua	T
147	Mimosaceae	<i>Albizia</i>	<i>anthelmintica</i>	*Mwowa	T
147	Mimosaceae	<i>Albizia</i>	<i>gummifera</i>	*Methia	T
147	Mimosaceae	<i>Dichrostachys</i>	<i>cinerea</i>	*Muvilisya	T
147	Mimosaceae	<i>Entada</i>	<i>leptostachya</i>	*Mwaittha	C
147	Mimosaceae	<i>Newtonia</i>	<i>hildebrandtii</i>	*Mukame	T
148	Papilionaceae	<i>Abrus</i>	<i>schimperii</i>	Mwe'tha	C
148	Papilionaceae	<i>Craibia</i>	<i>brevicaudata</i>	Kituyu, *Muthi, Mutisi(C.brownii)	T
148	Papilionaceae	<i>Crotalaria</i>	<i>goodiiiformis</i>	*Muthelia	S
148	Papilionaceae	<i>Dalbergia</i>	<i>melanoxylon</i>	Mupingo, *Muvingo	T
148	Papilionaceae	<i>Ormocarpum</i>	<i>kirkii</i>	*Muthingii	T
148	Papilionaceae	<i>Philenoptera</i>	<i>erioalalyx</i>	*Kinguuthe	T
148	Papilionaceae	<i>Sesbania</i>	<i>sesban</i>	*Munyongo	S
156	Salicaceae	<i>Flacourtia</i>	<i>indica</i>	*Kiathani	T
165	Ulmaceae	<i>Celtis</i>	<i>africana</i>	Masambu	T
167	Moraceae	<i>Dorstenia</i>	<i>cuspidata</i>	Ukwazi wa Nduu	H
167	Moraceae	<i>Ficus</i>	<i>glumosa</i>	*Kionywe	T
167	Moraceae	<i>Ficus</i>	<i>ingens</i>	Kikelenzu, *Kionywe	T
167	Moraceae	<i>Ficus</i>	<i>lutea</i>	Kalenzu	T
167	Moraceae	<i>Ficus</i>	<i>natalensis</i>	*Kyumbu	T
167	Moraceae	<i>Ficus</i>	<i>sycomorus</i>	Mukuyu	T
167	Moraceae	<i>Ficus</i>	<i>wakefieldii</i>	Yumbu, *Mumbu	T
173	Celastraceae	<i>Gymnosporia</i>	<i>putterlickioides</i>	*Muthunthi	S
173	Celastraceae	<i>Maytenus</i>	<i>undata</i>	Kyusya Nzuki?	T
173	Celastraceae	<i>Mystroxyton</i>	<i>aethiopicum</i>	*Mukongau	T
180	Salvadoraceae	<i>Salvadora</i>	<i>persica</i>	*Mukayau	T
182	Oleaceae	<i>Ximenia</i>	<i>caffra</i>	*Kitula, Mutula	T
183	Opiliaceae	<i>Opilia</i>	<i>campestris</i>	*Mubrubru	T
186	Santalaceae	<i>Osyris</i>	<i>lanceolata</i>	Ndonga, *Kithawa	T
190	Rhamnaceae	<i>Berchemia</i>	<i>discolor</i>	Kisaaya	T
190	Rhamnaceae	<i>Scutia</i>	<i>myrtina</i>	*Kitumbuu	S
193	Vitaceae	<i>Cissus</i>	<i>aphyllantha</i>	*Mwelengwa	C
193	Vitaceae	<i>Cissus</i>	<i>rotundifolia</i>	Itulo, *Itulu	C
193	Vitaceae	<i>Rhoicissus</i>	<i>tridentata</i>	*Kivosya Ngunguu	C
194	Rutaceae	<i>Clausena</i>	<i>anisata</i>	*Muthingwa	T
194	Rutaceae	<i>Vepris</i>	<i>simplicifolia</i>	Kituyu	T
194	Rutaceae	<i>Zanthoxylum</i>	<i>chalybeum</i>	*Mukenea	T
195	Balanitaceae	<i>Balanites</i>	<i>maughamii</i>	Kibugwa	T
195	Simaroubaceae	<i>Harrisonia</i>	<i>abyssinica</i>	*Mkiliulu	S
196	Burseraceae	<i>Commiphora</i>	<i>africana</i>	*Kitungu, Mutungu	T
196	Burseraceae	<i>Commiphora</i>	<i>baluensis</i>	Itula, *Mutula	T
196	Burseraceae	<i>Commiphora</i>	<i>eminii</i>	!*Mutula, Mutungu	T
196	Burseraceae	<i>Commiphora</i>	<i>habessinica</i>	*Mutungu, Mutungati	T
196	Burseraceae	<i>Commiphora</i>	<i>mildbraedii</i>	Yo'ongoa, *Ngongwa	T
196	Burseraceae	<i>Commiphora</i>	<i>schimperii</i>	*Mutungu	T
197	Meliaceae	<i>Melia</i>	<i>volkensii</i>	Mukau	T
197	Meliaceae	<i>Trichilia</i>	<i>emetica</i>	*Mutuluku, Musambo	T
198	Sapindaceae	<i>Dodonaea</i>	<i>viscosa</i>	*Kithongoi	T
198	Sapindaceae	<i>Haplocoelum</i>	<i>foliolosum</i>	Kikumi, *Mukumi	T
198	Sapindaceae	<i>Pappea</i>	<i>capensis</i>	*Kivaa	T
205	Anacardiaceae	<i>Lannea</i>	<i>rivae</i>	*Kithaalwa	T
205	Anacardiaceae	<i>Lannea</i>	<i>schweinfurthii</i>	Kyuasi, *Muasi	T
205	Anacardiaceae	<i>Lannea</i>	<i>triphylla</i>	*Muthaalwa	T
205	Anacardiaceae	<i>Ozoroa</i>	<i>insignis</i>	*Mugadi	T
205	Anacardiaceae	<i>Pistacia</i>	<i>aethiopica</i>	*Musaa	T

205	Anacardiaceae	<i>Rhus</i>	<i>natalensis</i>	*Mutheu, Kitheu	T
205	Anacardiaceae	<i>Rhus</i>	<i>vulgaris</i>	*Mutheu, Kitheu	T
205	Anacardiaceae	<i>Sclerocarya</i>	<i>birrea</i>	*Muua	T
212	Araliaceae	<i>Cussonia</i>	<i>holstii</i>	*Malende	T
213	Apiaceae	<i>Steganotaenia</i>	<i>araliacea</i>	Kivuavui, *Muvuavui	T
221	Ebenaceae	<i>Diospyros</i>	<i>abyssinica</i>	Chuzi ya Nzuki, *Mukololo,	T
			Mukongoo		
221	Ebenaceae	<i>Diospyros</i>	<i>consolatae</i>	Muti Mailu	T
221	Ebenaceae	<i>Euclea</i>	<i>divinorum</i>	*Mukinyei	T
222	Sapotaceae	<i>Manilkara</i>	<i>mochisia</i>	*Kyaa	T
228	Loganiaceae	<i>Strychnos</i>	<i>madagascariensis?</i>	*Mutolongwe (S.decussata)	T
229	Oleaceae	<i>Jasminum</i>	<i>fluminense</i>	*Uthui	C
229	Oleaceae	<i>Jasminum</i>	<i>streptopus</i>	*Mukondou	C
229	Oleaceae	<i>Olea</i>	<i>europaea</i>	Muthata, *Molialundi	T
231	Apocynaceae	<i>Secamone</i>	<i>punctulata</i>	*Molali	C
232	Rubiaceae	<i>Catunaregam</i>	<i>nilotica</i>	Kikwata	S
232	Rubiaceae	<i>Coptosperma</i>	<i>graveolens</i>	Muthethu	T
232	Rubiaceae	<i>Gardenia</i>	<i>ternifolia</i>	*Mukumuti	T
232	Rubiaceae	<i>Hymenodictyon</i>	<i>parvifolium</i>	*Mulinditi	T
232	Rubiaceae	<i>Meyna</i>	<i>tetraphylla</i>	*Kititii	S
232	Rubiaceae	<i>Pavetta</i>	<i>crassipes?</i>	*Munyenyo? Muvembe	S
232	Rubiaceae	<i>Pavetta</i>	<i>gardeniifolia</i>	*Mwithongoi	T
232	Rubiaceae	<i>Pavetta</i>	<i>teitana</i>	*Musemba-sya-kamwe	S
232	Rubiaceae	<i>Psychotria</i>	<i>capensis</i>	*Mukembia	T
232	Rubiaceae	<i>Psydrax</i>	<i>schimperiana</i>	Mutei	T
232	Rubiaceae	<i>Rothmannia</i>	<i>fischeri</i>	*Mutendeluka	T
232	Rubiaceae	<i>Vangueria</i>	<i>infausta</i>	*Kikomoa, Mukomoa	S
238	Asteraceae	<i>Aspilia</i>	<i>mossambicensis</i>	Muti	S
238	Asteraceae	<i>Bidens</i>	<i>pilosa</i>	Munzee	H
238	Asteraceae	<i>Blepharispernum</i>	<i>zanguebaricum</i>	Muvumando, *Ulumandu	C
238	Asteraceae	<i>Solanecio</i>	<i>mannii</i>	*Mooa, Ilangala	S
238	Asteraceae	<i>Tridax</i>	<i>procumbens</i>	Mumela	H
238	Asteraceae	<i>Vernonia</i>	<i>wakefieldii</i>	*Mweia	S
249	Boraginaceae	<i>Cordia</i>	<i>monoica</i>	Ithee, *Muthei	T
250	Solanaceae	<i>Solanum</i>	<i>dasyphyllum</i>	*Mutongu (S.incanum)	S
250	Solanaceae	<i>Solanum</i>	<i>tettense</i>	*Mutongatongu	S
251	Convolvulaceae	<i>Ipomoea</i>	<i>kituiensis</i>	*Imukondou	C
257	Bignoniaceae	<i>Kigelia</i>	<i>aficana</i>	*Muatine, Kiatine	T
259	Acanthaceae	<i>Anisotes</i>	<i>ukambensis</i>	*Mukea	T
259	Acanthaceae	<i>Duosperma</i>	<i>kilimandscharicum</i>	*Mududi	S
259	Acanthaceae	<i>Lepidagathis</i>	<i>scariosa</i>	*Ithande	H
264	Lamiaceae	<i>Leucas</i>	<i>grandis</i>	*Museve	H
264	Lamiaceae	<i>Ocimum</i>	<i>gratissimum</i>	*Mukandu	H
264	Lamiaceae	<i>Plectranthus</i>	<i>tetragonus</i>	Mtswabena?	H
264	Lamiaceae	<i>Pycnostachys</i>	<i>umbrosa</i>	*Mobong?	S
264	Lamiaceae	<i>Rotheca</i>	<i>myricoides</i>	Muvweia	S
264	Lamiaceae	<i>Tetradenia</i>	<i>urticifolia</i>	*Thivea	S
264	Lamiaceae	<i>Tinnea</i>	<i>aethiopica</i>	*Malika	S
264	Lamiaceae	<i>Vitex</i>	<i>strickeri</i>	*Mwalika	C
378	Asparagaceae	<i>Asparagus</i>	<i>flagellaris</i>	Usuwa?	H
459	Cyperaceae	<i>Cyperus</i>	<i>undulatus</i>	Ikangaa	H
468	Arecaceae	<i>Phoenix</i>	<i>reclinata</i>	*Makindu	T

NB: Names marked ‘*’ from Beentje, 1994, unmarked from Mzee Muthoka
All edited by Dr Itambo Malombe.

Appendix 4

Flow measurement at Umani springs

On January 8th, a flow measurement was performed at Umani springs. The flow was measured at the outlet of the lake, at the beginning of a short canal where a sluiceway with a fixed opening at its top offers possibilities to calculate a water section. **The measurement was performed upstream of the different off-takes for the supply of piped water to settlements along the Nairobi-Mombasa road and therefore represents the net outflow of the springs. Any proposal for additional offtake should be analysed with regard to the different functions this water performs downstream of the offtake, most notably the biodiversity values and the range of ecosystem services (forest productivity, groundwater recharge, tourism and aesthetic values, etc.) provided and ensure that a sufficient flow remains to maintain them.**

Two simple flow estimates were performed using the following equipment:

- Releasing a small half-filled bottle of water at the sluiceway and timing its progress over a known distance to evaluate the speed of the water at the surface. For each distance: 1m, 2m and 5 m from the sluiceway 5 measurements were performed. The measurement at 5m distance was discarded because of a high variability in the surface flow related to the existence of turbulence and eddies.
- Recording the number of revolutions over 30 seconds of a Hydro-Bios propeller held in the centre of the 0.27 m² sluiceway opening (5 replicates).

The 3 estimates gave the same figure: around 0.1 m³/s (100 litres/s) which, in other terms, corresponds to 8640 m³ per day. This is less than half of the figure mentioned in the Kibwezi Forest Reserve General Management Plan (p.24), stating that « Umani spring produces 18,513 m³ water per day » (2.14 times less to be exact). The same document also states that at present 7000 m³ per day are already being extracted. This means only very little residual flow is left to recharge the groundwater and maintain the biodiversity values and ecosystem services downstream.

It would be imperative to know how the figure of 18,513 m³ water per day was arrived at. Was this a single measurement or an average of several measurements over different seasons (dry season, rainy season) and in different years? Which methodology was used?

The measured flows at the water intake are only about 10% of those reported in Mailu (1994) who cites an estimate by Temperly (1955) of 1.05 m³/s. It would be interesting to know how Temperly's estimate was arrived at and if there has possibly been a change in the productivity of the springs over time and if so through what process.

In conclusion, the spring measured seems to be less productive than previous estimates and reasons for this discrepancy would need to be found. On the basis of the precautionary principle more detailed studies would need to be conducted before allowing additional substantial off-takes from the springs, to know what demand the additional off-takes are expected to reply to and on the basis of what criteria these off-takes were established.