

21. Biotic *Acacia* wooded grassland (We)

21.1. Description

Where domestic animals⁽⁸⁾ are numerous, East African evergreen bushland (Be, see Volume 4) has been severely degraded and invaded by *Acacia* species. It is therefore typical to find *Acacia drepanolobium* (a species that also occurs in Somalia-Masai edaphic grassland [we]), *Acacia hockii*, *Acacia kirkii* and *Acacia seyal* (a species that also occurs in Somalia-Masai edaphic grassland [we]) occurring together with evergreen species such as *Carissa edulis*, *Dodonaea viscosa*, *Euclea divinorum*, *Euclea racemosa* and *Tarchonanthus camphoratus* (White 1983 p. 115). In the greater Serengeti region, *Acacia gerrardii* dominates secondary wooded grassland that replaces evergreen bushland, but it also occupies large areas of poorly drained clay soils (White 1983 p. 128).

Evergreen bushland (Be) communities of the Lake Victoria region have been extensively destroyed and replaced by a lightly wooded *Acacia* grassland dominated by *Acacia hockii*, *Acacia gerrardii*, *Acacia kirkii*, *Acacia senegal* (the latter also a characteristic species of deciduous bushland [Bd]⁽⁹⁾) and *Euphorbia candelabrum* (also an emergent of evergreen bushland [Be]). White (1983 p. 182) cites references from Lebrun (1947, 1955) and Liben (1961) that suggest the pathways how evergreen thicket can regenerate within biotic *Acacia* wooded grassland. In one pathway, liana species germinate in the shade of the *Acacias*. These lianas eventually smother the crowns of the *Acacias*, which then creates suitable conditions for the establishment of shrubs and bushes. The shade from these shrubs and bushes finally completely suppresses the heliophilous ('sun-loving') *Acacias* that are no longer able to regenerate. In the alternative pathway, the shade from *Euphorbia candelabrum* causes a diminution in the vigour of the grass layer which then allows the invasion of woody plants (White 1983 p. 182).

We suggest that biotic *Acacia* wooded grassland is an **alternative steady state** of potential natural vegetation (corresponding to disturbance by animals) to the steady state of evergreen bushland (Be, corresponding to limited disturbance by animals). The degree of grazing pressure therefore determines the proportions of biotic *Acacia* wooded grassland compared to evergreen bushland (Be).

8: The same situation arises with wild animals

9: The variety of *Acacia senegal* var. *senegal* is a typical variety of biotic *Acacia* wooded grassland, whereas the variety of *Acacia senegal* var. *kerensis* is a typical variety of deciduous bushland (Bd; F. Gachathi, pers. comm.).



Figure 21.1. Vegetation that was originally classified as “*Acacia* wooded grassland of the Rift Valley” (ACB-RV) was reclassified by VECEA as biotic *Acacia* wooded grassland. Early dry season aspect with discontinuous ground cover. Awash National Park near the Fantale volcano (Ethiopia). Photograph by I. Friis and Sebsebe Demissew (October 2006). Reproduced from *Biologiske Skrifter* of the Royal Danish Academy of Sciences and Letters, Vol. 58, Fig. 16A. 2010.



Figure 21.2. *Acacia senegal* var. *senegal* in Kajiado District (Kenya). The variety of *Acacia senegal* var. *senegal* is a typical variety of biotic *Acacia* wooded grassland, whereas the variety of *Acacia senegal* var. *kerensis* is a typical variety of deciduous bushland (Bd). Photograph by F. Gachathi (2008).

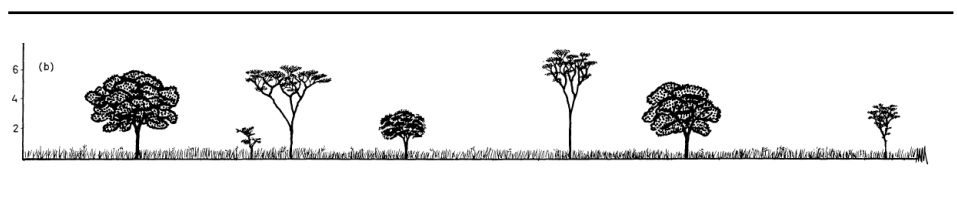
Figure 21.3. Vegetation that was originally classified as “*Acacia – Cymbopogon / Themeda* dry *Acacia* savanna” (original mapping unit P1; *Cymbopogon* and *Themeda* are grass genera) was reclassified as biotic *Acacia* wooded grassland by VECEA. The picture shows an area close to drier *Combretum* wooded grassland (Wcd) near Maddu (Uganda). Photograph by J. Kalema (November 2010).



Figure 21.4. Biotic *Acacia* wooded grassland in Akagera National Park (Rwanda). Photograph by C.K. Ruffo (October 2009).



Figure 21.5. *Acacia gerrardii* – *Acacia seyal* wooded grassland with *Themeda* grass understorey. Height of vegetation in meter. Pratt et al. (1966, Fig. 3b). Image obtained from URL: <http://www.jstor.org/stable/2401259>



21.2. Species composition

(Please check the methodology and information from Volumes 2 - 5 for more details on how the information on species composition for the different manifestations of this potential natural vegetation type was compiled. In composition tables, "x" indicates that the species is expected to be present, "C" indicates that the species was identified as characteristic species and "f" indicates a species that was not listed in the documentation that we consulted although it is known to occur in the specific country).

Table 21. Species composition for biotic *Acacia* wooded grassland (We)

SPECIES	Regional status	Ethiopia	Kenya	Rwanda	Tanzania	Uganda (subtypes)	
						WecU (Uganda subtype)	WesU (Uganda subtype)
<i>Acacia gerrardii</i>	indicator species	f	C	C	f	C	C
<i>Acacia hockii</i>	indicator species	f	C	x	f	x	x
<i>Acacia kirkii</i>	indicator species		C	C	f	f	f
<i>Acacia senegal</i>	indicator species	C	x	C	f	x	f
<i>Acokanthera schimperi</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Capparis tomentosa</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Carissa spinarum</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Cussonia holstii</i>	indicator species for evergreen and semi-evergreen bushland and thicket (transition to forest)	f	f	x	f	f	f
<i>Dodonaea viscosa</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Elaeodendron buchananii</i>	indicator species for evergreen and semi-evergreen bushland and thicket (transition to forest)	f	f	x	f	f	f
<i>Euclea divinorum</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Euclea racemosa</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	f	x	f	f	f
<i>Euphorbia candelabrum</i>	indicator species	C	x	C	f	x	f
<i>Grewia bicolor</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x		f	f	f
<i>Grewia similis</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Pterolobium stellatum</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	x	f	f	f
<i>Rhus natalensis</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Schrebera alata</i>	indicator species for evergreen and semi-evergreen bushland and thicket (transition to forest)	f	f	x	f	f	f
<i>Scutia myrtina</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	f	f	f	f
<i>Tarenna graveolens</i>	indicator species for evergreen and semi-evergreen bushland and thicket	f	x	x	f	f	f
<i>Acacia drepanolobium</i>	characteristic species	f	C		f	f	x
<i>Acacia seyal</i>	characteristic species	C	C	C	f	f	x
<i>Grewia tembensis</i>	characteristic species for evergreen bushland and deciduous bushland	f	x				
<i>Acacia brevispica</i>		f	C	f	f	f	f
<i>Acacia mellifera</i>	not characteristic	f	C		f	f	f
<i>Acacia polyacantha</i>		f	C	C	f	f	f
<i>Acacia sieberiana</i>		f	x	C	f	x	f
<i>Acacia tortilis</i>	not characteristic	C	C		f	f	f
<i>Acacia xanthophloea</i>			C		f		
<i>Albizia adianthifolia</i>			f	C	f	x	f
<i>Albizia amara</i>	not characteristic	f	C	C	f	f	f
<i>Allophylus rubifolius</i>		f	x	x	f	f	f
<i>Bersama abyssinica</i>		f	x	x	f	f	f
<i>Boscia angustifolia</i>		f	x	x	f	f	f
<i>Boscia salicifolia</i>		f	x		f	f	x
<i>Combretum molle</i>		f	x	x	f	f	x
<i>Commiphora habessinica</i>		f	x	x	f	f	f
<i>Cordia africana</i>		f	x	x	f	f	f
<i>Cussonia arborea</i>		f	x	x	f	f	f
<i>Dichrostachys cinerea</i>		x	x	f	f	f	f
<i>Dombeya buettneri</i>		f		x			
<i>Dombeya rotundifolia</i>		f	x	x		f	f
<i>Entada abyssinica</i>		f	f	C	f	x	f
<i>Erythrina abyssinica</i>		f	x	x	f	f	f
<i>Erythrina burttii</i>			x				f
<i>Faidherbia albida</i>		C	x		f	f	f
<i>Ficus glumosa</i>		f	x	x	f	f	f
<i>Gardenia ternifolia</i>		f	x	x	f	x	f
<i>Lannea fulva</i>			f	x	f	f	f
<i>Lannea humilis</i>	not characteristic	f	f	x	f	f	x
<i>Lannea schimperi</i>		f	x	x	f	f	x
<i>Lannea schweinfurthii</i>		f	x	x	f	f	f
<i>Maytenus senegalensis</i>		x	x	x	f	x	f
<i>Ozoroa insignis</i>		f	x	x	f	f	f
<i>Pappea capensis</i>		f	x	x	f	f	f
<i>Parinari curatellifolia</i>			x	C	f	f	f
<i>Senna didymobotrya</i>		f	x	x	f	f	f
<i>Terminalia brownii</i>		x	x		f	f	f
<i>Vangueria infausta</i>			x	x	f	f	f
<i>Ximenia americana</i>		f	x	x	f	f	f
<i>Ziziphus abyssinica</i>		f	x	f	f	f	x
<i>Ziziphus mucronata</i>		f	x	x	f	f	f

22. Miombo woodland (Wm)

22.1. Description

Miombo woodland is floristically and physiognomically very different from other types of woodland. It is nearly always dominated by species of *Brachystegia* (we encountered 15 species when compiling national species compositions, see below) either alone or with *Isoberlinia angolensis*, *Julbernardia globiflora* or *Julbernardia paniculata*. The name “muyombo” (plural: “miyombo”) is a Kinyamwezi name that refers to the tree *Brachystegia boehmii* (Lind and Morrison p. 81; one of our co-authors is a botanist and a Mnyamwezi who confirms the local name of this species). Because the dominant species are extremely gregarious, few other species enter the canopy (except in the more stunted variants). The appearance of miombo is distinctive because of the shape of the dominant trees with boles that are mostly short and relatively slender, with branches that are at first markedly ascending before spreading out to support a light, shallow and flat-topped crown and with leaves that are pinnate. Miombo woodland is mostly 10 to 20 m high, but scrub woodland can be as short as 3 m. Most miombo woodlands are semi-deciduous, but some are completely deciduous and some are almost evergreen (White 1983 pp. 92 - 93). There is a marked flush of new leaves (of flaming reds, salmons, pinks and coppery tinges of all hues) just before the rains, a time during which miombo woodlands become especially beautiful (Burt et al. 1942; Lind and Morrison 1974 p. 83).

Miombo woodland is the prevalent vegetation throughout the greater part of the Zambezi region, especially on the main plateau and its flanking escarpments where the soils are freely drained but the rooting environment is restricted. Miombo soils often have a restricted rooting environment⁽¹⁰⁾ since they are shallow and stony, or since a laterite or gley horizon⁽¹¹⁾ occurs near the surface. On moister and deeper soils in higher rainfall areas, miombo has probably replaced Zambezi dry evergreen forest (Fm)⁽¹²⁾ or Zambezi transition woodland (an ecotone in between Zambezi dry evergreen forest, see description of Zambezi dry evergreen forest) after cultivation and fire. Areas on certain deep soils where *Brachystegia longifolia*, *B. spiciformis* and *B. utilis* reach a height of 30 m are probably areas where miombo has replaced Zambezi dry evergreen forest⁽¹³⁾ or Zambezi transition woodland (White 1983 p. 92).

Most of the dominant species of miombo woodland are widely distributed, have wide ecological amplitudes and combine in kaleidoscopic patterns. It is therefore difficult further subclassify miombo woodland based on distribution of the dominant species (but see below). However, it is possible to make a distinction between wetter miombo and drier miombo based on **associated vegetation types** (White 1983 p. 93):

- Wetter miombo woodland is associated with Zambezi dry evergreen forest and thicket (Fm), Zambezi swamp forest (fs), Zambezi evergreen riparian forest (fr) and wet dambos. Annual rainfall is usually more than 1000 mm, but less on Kalahari Sand. Nearly all the dominant spe-

10: This statement is very often not true as soils under Miombo woodland can be very deep (even up to 8 m; J. Timberlake, personal communication).

11: The statements regarding stony or laterite/gley horizons may be true in plateau regions where miombo is relatively stunted and patchy. It is not the case on escarpment soils which are deep and stone free (P. Smith, pers. comm.). Whereas miombo of the Rift Valley escarpments and steeper hills slopes in Malawi are often on lithosols, this is not always the case. Deeper soils in Kasungu District (Malawi) are covered by typical miombo woodland (C. Dudley, pers. comm.).

12: The interpretation that areas within the Zambezi floristic region that have deeper soils would only have Zambezi dry evergreen forest as the climax vegetation type - and not Miombo woodland - is not generally accepted. It is known that Miombo woodland occurs in areas with deeper soils, and it is not certain that all these areas with deeper soils previously supported Zambezi dry evergreen forest (P. Smith and J. Timberlake, pers. comm.; see also comments for Zambezi dry evergreen forest in Volume 2).

13: Neither Trapnell thought nor I think that miombo has replaced dry evergreen forest. We think (thought) instead that Chipya woodland (Cy in the VECEA map) is part of that succession (P. Smith, personal communication).

cies of miombo woodland are included and *Brachystegia floribunda*, *B. glaberrima*, *B. taxifolia*, *B. wangermeeana* and *Marquesia macro-ura* (a principal canopy associate) are widespread.

- Drier miombo woodland is associated with Zambezan dry deciduous forest and thicket (Fn), Zambezan deciduous riparian forest (see fr) and dry dambos. Annual rainfall is less than 1000 mm. *Brachystegia boehmii*, *B. spiciformis* and *Julbernardia globiflora* are often the only dominants that are present, whereas *Brachystegia floribunda* is absent or very local.

Scrub miombo woodland occurs at high altitudes, on certain shallow soils and in ecotones between miombo woodland and dambo grassland. Towards the altitudinal limits of miombo (between 1600 and 2100 m), scrub miombo woodland occurs that is no more than 6 m tall and is usually dominated by *Brachystegia spiciformis* and more rarely by *Brachystegia floribunda*, *B. microphylla*, *B. taxifolia* or *Uapaca kirkiana* (a species that occurs scattered in miombo woodland as small trees). Scrub miombo woodland on shallow soils occurs on soils overlying laterite (3 m tall scrub woodland of *Brachystegia boehmii*) and soils derived from siltstone (3 to 5 m tall scrub woodland of *Brachystegia stipulata* and *Julbernardia globiflora*). Most of the dominant species of miombo woodland are usually absent from scrub miombo woodland (usually 4 to 7 m tall) at the edges of dambos, except for *Brachystegia boehmii* (White 1983 p. 99).

Zanzibar-Inhambane transition woodland (communities that are intermediate between forest and woodland where Zanzibar-Inhambane forest species occur together with heliophilous ['sun-loving'] Zambezan woodland species) is dominated by *Brachystegia spiciformis*. Some of these communities are stable, whereas others are clearly seral as forest encroachment can be observed (as some patches in the Shimba Hills where saplings of the forest species *Paramacrolobium coeruleum* [characteristic for moister variants of Zanzibar-Inhambane undifferentiated forest, Fp] form an almost pure understorey). *Brachystegia spiciformis* forms almost pure stands on white sterile sands where complete succession to forest is unlikely, as in the Arabuko-Sokoke forest (Fp; White 1983 p. 188).

The dominant species that were encountered when compiling the species composition for miombo include *Brachystegia allenii*, *Brachystegia boehmii*, *Brachystegia bussei*, *Brachystegia floribunda*, *Brachystegia glaberrima*, *Brachystegia glaucescens*⁽¹⁴⁾, *Brachystegia longifolia*, *Brachystegia manga*, *Brachystegia microphylla*, *Brachystegia puberula*, *Brachystegia spiciformis*, *Brachystegia stipulata*, *Brachystegia taxifolia*, *Brachystegia utilis*, *Brachystegia wangermeeana*, *Isoberlinia angolensis*, *Julbernardia globiflora* and *Julbernardia paniculata*.

Among other *Brachystegia* species listed by White (1983 pp. 92 -93), *Brachystegia bakeriana* and *Brachystegia russelliae* occur in Zambia (based on information from the African Flowering Plants Database), but these are among a limited number of *Brachystegia* species that occur on Kalahari Sand (the most widespread species is *Brachystegia spiciformis*). *Brachystegia russelliae* is a geoxylic suffrutex (see descriptions of Kalahari

14: *Brachystegia glaucescens* is now - incorrectly - treated as a synonym of *Brachystegia microphylla*. However, these species are morphologically and ecologically different (P. Smith and J. Timberlake, personal communication)

woodlands [Wk]), whereas *Brachystegia bakeriana* is sometimes only 1.3 m high due to frost or unfavourable soil conditions(White 1983 pp. 92 and 98). *Brachystegia angustistipulata* and *Brachystegia torrei* are species that are confined to the eastern part of the Zambebian region (i.e. east of the Kalahari Sand) according to White; we have some evidence from the African Flowering Plants Database that *Brachystegia angustistipulata* occurs in Tanzania.



Figure 22.1. Wetter miombo woodland in Zambia (M. Bingham).



Figure 22.2. Wetter miombo woodland in Zambia. Annual grass fires are typical in miombo woodland. Usually not all grass burns each year. (M. Bingham)

Figure 22.3. Miombo woodland (probably near the foothill of Mt. Mulanje as this photograph was obtained from the Mulanje Mountain Conservation Trust; C. Dudley)



Figure 22.4. Some of the typical birds of miombo woodland in their natural habitat. Shell guide to East African birds (1960, reproduced with permission from URL <http://ufdc.ufl.edu/UF00077050>).



Figure 22.5. Profile diagram of Miombo woodland. Pratt et al. (1966, Fig. 3a). Image obtained from URL: <http://www.jstor.org/stable/2401259>

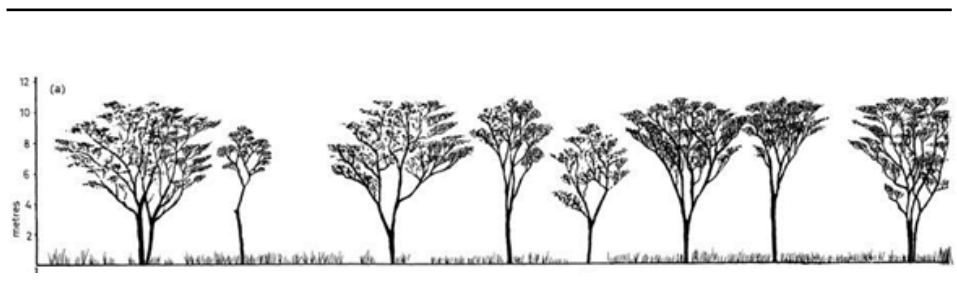




Figure 22.6. *Brachystegia microphylla* upland woodland. *Brachystegia microphylla* is a miombo species that is virtually confined to rocky hills and escarpments (White 1983 p. 93). Gillman (1949, Fig. 13).

Image obtained from URL: <http://www.jstor.org/stable/211155>



Figure 22.7. Miombo woodland near Morogoro (Tanzania). Photograph by Frank Mbago.

22.2. Species composition

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Table 22. Species composition for Miombo woodland (Wm)

SPECIES	Regional status	Malawi	Tanzania	Zambia	WmrZ (Zambia subtype)	Wms (scrub miombo subtype)	Coast
<i>Brachystegia allenii</i>	dominant species (virtually confined to rocky hills and escarpments)	x	f	C	f		
<i>Brachystegia boehmii</i>	dominant species (both on escarpments, ridges and certain plateau soils; often one of the few dominant species of drier miombo; scrub woodland on shallow soils or at edges of dambos)	x	f	C		x	
<i>Brachystegia bussei</i>	dominant species (virtually confined to rocky hills and escarpments)	D	f	C	f		
<i>Brachystegia floribunda</i>	dominant species (more characteristic of deeper plateau soils; widespread in wetter miombo; absent or very local in drier miombo; sometimes in scrub woodland towards the altitudinal limits of miombo woodland)	x	f	C		x	
<i>Brachystegia glaberrima</i>	dominant species (more characteristic of deeper plateau soils; widespread in wetter miombo)		f	C			
<i>Brachystegia glaucescens</i>	dominant species (virtually confined to rocky hills and escarpments)	C		f	C		
<i>Brachystegia longifolia</i>	dominant species (more characteristic of deeper plateau soils; also present in northern Kalahari woodland)	x	f	C			
<i>Brachystegia manga</i>	dominant species (more characteristic of deeper plateau soils)	x	f	C			
<i>Brachystegia microphylla</i>	dominant species (virtually confined to rocky hills and escarpments; sometimes in scrub woodland towards altitudinal limits of miombo woodland)	D	f	f	C	x	C
<i>Brachystegia puberula</i>	dominant species (not east of Kalahari sands; also in northern Kalahari woodland)		f	f			
<i>Brachystegia spiciformis</i>	dominant species (more characteristic of deeper plateau soils; often one of the only dominant species of drier miombo; also in Kalahari woodland; dominant species in Zanzibar-Inhambane transition woodland; present in scrub woodland near the altitudinal limits of miombo woodland)	D	f	C		x	C
<i>Brachystegia stipulata</i>	dominant species (also present in scrub woodland on certain shallow soils derived from siltstone)	x	f	x		x	
<i>Brachystegia taxifolia</i>	dominant species (both on escarpments, ridges and certain plateau soils; widespread in wetter miombo; sometimes in scrub woodland towards altitudinal limits of miombo)		f	C	C	x	
<i>Brachystegia utilis</i>	dominant species (both on escarpments, ridges and certain plateau soils)	x	f	C			
<i>Brachystegia wangermeeana</i>	dominant species (more characteristic of deeper plateau soils; widespread in wetter miombo; also in northern Kalahari woodland)		f	C			
<i>Isoberlinia angolensis</i>	dominant species	D	f	C			
<i>Julbernardia globiflora</i>	dominant species (often one of the few dominant species of drier miombo woodland; also in scrub woodland on certain shallow soils derived from siltstone)	D	f	C		x	
<i>Julbernardia paniculata</i>	dominant species (also present in northern Kalahari woodland)	D	f	C			
<i>Anisophyllea boehmii</i>	indicator species	f	f	C			
<i>Faurea saligna</i>	indicator species	x	f	C			C
<i>Marquesia macroura</i>	indicator species		f	C			
<i>Azelia quanzensis</i>	characteristic species	x	f	f			x
<i>Burkea africana</i>	characteristic species	C	f	f		x	
<i>Dombeya rotundifolia</i>	characteristic species	x		x			
<i>Erythrophleum africanum</i>	characteristic species	x	f	C			
<i>Hymenaea verrucosa</i>	characteristic forest species in Zanzibar-Inhambane transition woodland						x
<i>Manilkara sansibarensis</i>	characteristic forest species in Zanzibar-Inhambane transition woodland						x
<i>Parinari curatellifolia</i>	characteristic species	x	f	C		x	f
<i>Pericopsis angolensis</i>	characteristic species	x	f	C			
<i>Pseudolachnostylis maprouneifolia</i>	characteristic species	x	f	x			
<i>Pterocarpus angolensis</i>	characteristic species	x	f	C			f
<i>Terminalia sericea</i>	characteristic species	x	f	f			
<i>Acacia nigrescens</i>	not characteristic	C	f	f			
<i>Acacia polyacantha</i>	not characteristic	x	f	f			f
<i>Acacia sieberiana</i>	not characteristic	x	f	f			f
<i>Albizia amara</i>	not characteristic	x	f	f			
<i>Albizia antunesiana</i>	not characteristic	x	f	x			
<i>Albizia versicolor</i>	not characteristic	x	f	f			f
<i>Anisophyllea boehmii</i>	not characteristic		f	x			
<i>Bauhinia petersiana</i>	not characteristic	x	f	x			
<i>Bobgunnia madagascariensis</i>	not characteristic	x	f	x		x	
<i>Cassia abbreviata</i>	not characteristic	x	f	f			f
<i>Combretum adenogonium</i>	not characteristic	x	f	x			
<i>Combretum collinum</i>	not characteristic	x	f	x			f
<i>Combretum molle</i>	not characteristic	x	f	f			f
<i>Combretum zeyheri</i>	not characteristic	x	f	x			f
<i>Cryptosepalum exfoliatum</i>	not characteristic	f	f	x	C		
<i>Cussonia arborea</i>	not characteristic	x	f	x			
<i>Dalbergia nitidula</i>	not characteristic	x	f	x			f
<i>Dichrostachys cinerea</i>	not characteristic	x	f	x			f
<i>Diospyros kirkii</i>	not characteristic	x	f	x			
<i>Diplorhynchus condylocarpon</i>	not characteristic	x		x			
<i>Faurea rochetiana</i>	species that occurs in scrub woodland at edges of dambos		f	x		x	
<i>Flacourtia indica</i>	not characteristic	x	f	x			f
<i>Hexalobus monopetalus</i>	not characteristic	x	f	x			
<i>Kigelia africana</i>	not characteristic	x	f	f			f
<i>Kirkia acuminata</i>	not characteristic	C	f	f			
<i>Landolphia kirkii</i>	not characteristic	f	f	x			f
<i>Lannea discolor</i>	not characteristic	x		f			
<i>Lannea schweinfurthii</i>	not characteristic						x
<i>Lonchocarpus capassa</i>	not characteristic	x	f	f			f
<i>Markhamia obtusifolia</i>	not characteristic	x	f	x			f
<i>Monotes africanus</i>	not characteristic	x		f			
<i>Ormocarpum kirkii</i>	not characteristic	x	f	f			f
<i>Oxytenanthera abyssinica</i>	(lowland bamboo species)	x	f	f			

SPECIES	Regional status	Malawi	Tanzania	Zambia	WmrZ (Zambia subtype)	Wms (scrub miombo subtype)	Coast
<i>Ozoroa insignis</i>	not characteristic	x	f	f			f
<i>Ptilostigma thonningii</i>	not characteristic	x	f	f			f
<i>Sclerocarya birrea</i>	not characteristic						x
<i>Securidaca longipedunculata</i>		x	f	x			f
<i>Smilax anceps</i>	not characteristic		f	x			
<i>Strychnos cocculoides</i>		x	f	x			f
<i>Strychnos innocua</i>		x	f	x			f
<i>Syzygium guineense</i>	not characteristic	f	f	C		x	f
<i>Thespesia garckeana</i>	not characteristic	x	f	f			
<i>Uapaca kirkiana</i>	species that occurs scattered in miombo as small trees; sometimes in scrub woodland near altitudinal limits of miombo woodland	x	f	x		x	
<i>Uapaca nitida</i>		x	f	x			f
<i>Vangueriopsis lanciflora</i>	not characteristic	x	f	f		x	
<i>Vitex mombassae</i>		x	f	x			f
<i>Xeroderris stuhlmannii</i>	not characteristic	x	f	f			f
<i>Ziziphus abyssinica</i>	not characteristic	x	f	f			f
<i>Ziziphus mucronata</i>	not characteristic	x	f	f			f