

## 26. Evergreen and semi-evergreen bushland and thicket (synonym: evergreen bushland, Be)

### 26.1. Description

Within volumes 2 to 5, we use the synonym of “evergreen bushland (Be)” as a synonym of “evergreen and semi-evergreen bushland and thicket (Be)”.

White (1983) describes evergreen and semi-evergreen bushland and thickets within the descriptions of two floristic regions: (i) the Somalia-Masai regional centre of endemism (‘East African evergreen and semi-evergreen bushland and thicket’); and (ii) the Lake Victoria regional mosaic (‘evergreen and semi-evergreen bushland and thicket and derived communities’).

Evergreen and semi-evergreen bushland and thicket occurs on the drier slopes of mountains and upland areas in East Africa which rise from the lowlands from the Somalia-Masai region all the way from central Tanzania to Eritrea (and beyond). It often forms an ecotone between Afromontane forest (especially Afromontane single-dominant *Juniperus procera* forest [Fbj]) and deciduous bushland (Bd) - this pattern of occurrence can be clearly observed in northern Kenya such as at on the lower slopes of Mt. Marsabit (2° 16' N, 37° 57' E). The mean annual rainfall is mostly between 500 and 850 mm and is irregularly distributed throughout the year but with two main peaks (White 1983 pp. 48 and 115).

Evergreen bushland varies greatly in composition and richness, but certain species that are nearly always present include *Acokanthera schimperi*, *Carissa spinarum*, *Dodonaea viscosa*, *Euclea divinorum*, *Euphorbia candelabrum*, *Olea europaea* subsp. *cuspidata* (synonym: *Olea africana*), *Tarchonanthus camphoratus* (especially in disturbed areas), *Vepris simplicifolia* (synonym: *Teclea simplicifolia*) together with other species of *Acokanthera*, *Aloe*, *Euclea*, *Euphorbia*, *Sansevieria* and *Vepris*. Succulents such as *Dracaena ellenbeckiana* and *Euphorbia candelabrum* that are present in evergreen bushland are absent from Afromontane single-dominant *Juniperus procera* forest (Fbj, White 1983 p. 115).

Evergreen bushland (in mosaic with Lake Victoria *Euphorbia dawei* scrub forest [fe, see Volume 2] that is edaphically restricted to rocky slopes) probably represents the climax vegetation of large parts of the Lake Victoria region. This evergreen bushland variant is floristically similar but also floristically poorer than the vegetation type with the same name that occurs in the Somalia-Masai region. The principal bushy species include *Allophylus africanus*, *Azima tetracantha*, *Carissa spinarum* (also listed as characteristic in East Africa), *Capparis fascicularis* (listed as a characteristic climber in East Africa), *Capparis tomentosa*, *Erythrococca bongensis*, *Grewia bicolor*, *Maerua triphylla*, *Olea europaea* subsp. *cuspidata* (synonym: *Olea africana*, also listed as characteristic in East Africa), *Psydrax schimperiana*, *Rhus*

*natalensis* (also listed as characteristic in East Africa), *Tarenna graveolens* and *Turraea nilotica*.

Annual rainfall is higher in places where evergreen bushland occurs in the Lake Victoria region (850 mm to 1000 mm) than those places where it occurs in the Somalia-Masai region (500 to 850 mm; White 1983 pp. 48 and 182).

Where evergreen bushland is degraded (as a result from grazing), various *Acacia* species invade and **biotic Acacia wooded grassland** (We) becomes established. This vegetation type forms an alternative steady state of potential natural vegetation to evergreen bushland (*i.e.* it is possible for both types of potential natural vegetation to become established in the areas where they are mapped separately).

The grasslands of the Loita and other plains that occur in Narok district (including parts of the Masai-Mara reserve) are similar in grass species composition as the edaphic grasslands on volcanic soils of the Serengeti plains (gv, see Volume 5). However, these grasslands in Narok district are secondary to evergreen bushland as a result from fire and browsing (White 1983 p. 127). Areas capable of supporting evergreen bushland in Nairobi National Park have been converted to grassland as a result from browsing, grazing and fire (White 1983 p. 116).

White (1983) describes relatively undisturbed evergreen bushland (locally impenetrable) that occurred near Nairobi between 1875 and 2080 m. Most of the species that White (1983) listed as characteristic were indicator species (see also section 4.3). Only two species were also listed as characteristic species for deciduous bushland (Bd): *Grewia tembensis* (listed as a smaller bush and shrub for deciduous bushland and thicket, and as a large bush in East African evergreen bushland) and *Sarcostemma viminalis* (a succulent climber).

The indicator species can be further categorized in: (i) characteristic species of the main canopy; (ii) other large bushes; (iii) scattered emergents; (iv) shrubs; (v) climbers; and (vi) scattered stunted individuals that indicate the transition to Afromontane single-dominant *Juniperus procera* forest (Fbj).

Characteristic species of the main canopy (3 to 7 m) include *Acokanthera schimperi*, *Euclea divinorum*, *Gnidia subcordata*, *Olea europaea* subsp. *cuspidata* (synonym: *Olea africana*), also listed as characteristic species for the Lake Victoria region), *Tarchonanthus camphoratus* (especially in disturbed areas) and *Vepris simplicifolia*. (White (1983) did not list *Carissa spinarum*, but this could be an omission).

- Other large bushes include *Canthium keniense*, *Croton dichogamus*, *Dodonaea viscosa*, *Dombeya burgessiae*, *Grewia similis*, *Maytenus heterophylla* and *Rhus natalensis* (also listed as characteristic species for the Lake Victoria region).
- *Euphorbia candelabrum* (a cactoid stem-succulent) occurs throughout as a scattered emergent up to 9 m tall. This species was also listed as a characteristic species for the Lake Victoria region.

- Shrubs include *Aspilia mossambicensis*, *Psiadia punctulata*, *Tinnea aethiopica* and *Turraea mombassana*.
- Climbers include *Capparis fascicularis* (also listed as characteristic species for the Lake Victoria region), *Pterolobium stellatum* and *Scutia myrtina*.
- Scattered stunted individuals that indicate the transition to Afromontane single-dominant *Juniperus procera* forest (Fbj) appear at higher altitudes and include *Calodendrum capense*, *Cussonia holstii*, *Drypetes gerrardii*, *Elaeodendron buchananii*, *Juniperus procera* (evergreen bushland could be the original habitat of this species [White 1983 p. 165]) and *Schrebera alata*.

## 26.2. 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).



Figure 26.1. Evergreen thicket in Queen Elizabeth National Park (Uganda). Emergent *Euphorbia candelabrum* covered by climbers can be seen in various places. Photograph by M. Namaganda (June 2008).



Figure 26.2. Evergreen and semi-evergreen bushland next to a remnant of Afromontane single-dominant *Juniperus procera* forest (Fbj). Near Arero (Ethiopia). Approximate altitude 1800m. Photograph by I. Friis and Sebsebe Demissew (September 2002). Reproduced from Biologiske Skrifter of the Royal Danish Academy of Sciences and letters, Vol. 58, Fig. 23A. 2010.



Figure 26.3. Stands of *Dracaena ombet* subsp. *ombet* in *Acacia*-dominated bushland below remnants of Afromontane single-dominant *Juniperus procera* forest (Fbj). Between Wukro and Berahile (Ethiopia). Approximate altitude 1700 m. Photograph by I. Friis and Sebsebe Demissew (October 2009). Reproduced from Biologiske Skrifter of the Royal Danish Academy of Sciences and letters, Vol. 58, Fig. 23B. 2010.

Figure 26.4. Regrowth of *Tarcho-nanthus camphoratus* in evergreen bushland in a transition zone between *Acacia-Commiphora* deciduous bushland and Afromontane single-dominant *Juniperus procera* forest (Fbj). Between Wukro and Berahile (Ethiopia). Approximate altitude 2000 m. (October 2009). Photograph by I. Friis and Sebsebe Demissew. Reproduced from Biologiske Skrifter of the Royal Danish Academy of Sciences and letters, Vol. 58, Fig. 23D. 2010.



Figure 26.5. Evergreen bushland and thicket in Biharagu (Rwanda). Photograph taken by E. Munyaneza (October 2009).



Figure 26.6. Evergreen bushland was the original vegetation type of most of the Akagera National Park (Rwanda). Photograph by V. Minani (March 2007).





Figure 26.7. As a result from grazing, the original evergreen bushland of Akagera national park (Rwanda) has changed to the alternative steady state of biotic *Acacia* wooded grassland (We). Climbers growing on *Euphorbia candelabrum* (right) can initiate the vegetation succession to evergreen bushland (see also Lebrun [1947] and White [1983 p. 183]; and Photograph by V. Minani (March 2007).



Figure 26.8. Evergreen bushland in the Maasai Mara (original mapping unit 24). The photograph shows *Diospyros abyssinica* together with typical evergreen bushland species of *Euclea divinorum*, *Olea europaea* ssp. *cuspidata* (synonym: *Olea africana*). Person: C.G. Trapnell. Photography by E.C. Truemp.

Table 26. Species composition for Evergreen and semi-evergreen bushland and thicket (synonym: evergreen bushland, Be)

SPECIES	Regional status	Ethiopia	Kenya (BeeK subtype)	Kenya (BewK subtype)	Rwanda	Tanzania	Uganda (BemU subtype)	Uganda (BedU subtype)
<i>Acokanthera schimperi</i>	indicator species	C	x	x	x	f	f	f
<i>Allophylus africanus</i>	indicator species	f	f	x	f	f	x	C
<i>Aloe kedongensis</i>	indicator species		x					
<i>Aspilia mossambicensis</i>	indicator species	f	f	f		f	f	f
<i>Azima tetraacantha</i>	indicator species			x	x		f	f
<i>Canthium keniense</i>	indicator species		x					
<i>Capparis fascicularis</i>	indicator species	f	x	x	x	f	f	x
<i>Capparis tomentosa</i>	indicator species	f	x	x	C	f	f	x
<i>Carissa spinarum</i>	indicator species	f	x	x	C	x	x	x
<i>Croton dichogamus</i>	indicator species	f	x	x	x	x	f	
<i>Dodonaea viscosa</i>	indicator species	C	x	x	f	f	f	f
<i>Dombeya burgessiae</i>	indicator species		x	f	f	f	f	
<i>Dracaena ellenbeckiana</i>	indicator species	C	x	f		f	f	
<i>Erythrococca bongensis</i>	indicator species	f	f	x	x	f	f	
<i>Euclea divinorum</i>	indicator species	C	x	x	x	x	x	f
<i>Euphorbia candelabrum</i>	indicator species	f	x	x	f	x	x	C
<i>Gnidia subcordata</i>	indicator species		x	x		f	f	
<i>Grewia bicolor</i>	indicator species	f	x	x		f	f	f
<i>Grewia similis</i>	indicator species	x	x	x	C	x	C	x
<i>Maerua triphylla</i>	indicator species	f	x	x	x	f	f	
<i>Maytenus heterophylla</i>	indicator species	f	x	f	x	f	f	
<i>Olea europaea</i>	indicator species	C	x	x	C	x	f	f
<i>Psiadia punctulata</i>	indicator species	x	x			f		
<i>Psyrax schimperiana</i>	indicator species	f	x	x	x	f	f	f
<i>Pterolobium stellatum</i>	indicator species	f	x	x	f	f	f	f
<i>Rhus natalensis</i>	indicator species	f	x	x	x	x	x	f
<i>Scutia myrtina</i>	indicator species	f	x	x	x	f	x	f
<i>Tarchonanthus camphoratus</i>	indicator species	C	x	x		f	f	
<i>Tarenna graveolens</i>	indicator species	x	x	x	x	C	f	x
<i>Tinnea aethiopica</i>	indicator species	f	x	x		f	f	x
<i>Turraea mombassana</i>	indicator species	x	x			f		
<i>Turraea nilotica</i>	indicator species	f	f	x		f		
<i>Vepris simplicifolia</i>	indicator species	f	x	x		x		
<i>Vernonia brachycalyx</i>	indicator species	f	f	x	x	f	C	f
<i>Acacia drepanolobium</i>	characteristic species	f	C	f		f	f	f
<i>Acacia gerrardii</i>	characteristic species	f	C	x	f	x	f	x
<i>Acacia hockii</i>	characteristic species	f	C	x	f	f	f	x
<i>Acacia kirkii</i>	characteristic species		x	x	f	f	f	f
<i>Acacia senegal</i>	characteristic species	f	x	x	f	f	f	C
<i>Acacia seyal</i>	characteristic species	f	x	C		f	f	f
<i>Calodendrum capense</i>	characteristic species		x	f		f	f	f
<i>Cissus quadrangularis</i>	characteristic species		x	x	x	f	f	
<i>Cissus rotundifolia</i>	characteristic species	f	f	x		f	x	x
<i>Cussonia holstii</i>	characteristic species	C	x	x	x	f	f	f
<i>Drypetes gerrardii</i>	characteristic species		x	f	C	f	f	
<i>Elaeodendron buchananii</i>	characteristic species	f	x	f	x	x	f	f
<i>Grewia tembensis</i>	characteristic species	x	x	f				

SPECIES	Regional status	Ethiopia	Kenya (BeeK subtype)	Kenya (BewK subtype)	Rwanda	Tanzania	Uganda (BemU subtype)	Uganda (BedU subtype)
<i>Juniperus procera</i>	characteristic species	C	x	f		f	f	f
<i>Sarcostemma viminale</i>	characteristic species	f	f	f	x			
<i>Schrebera alata</i>	characteristic species	C	x	f	x	f	f	f
<i>Acacia brevispica</i>		f	C	C	x	x	C	C
<i>Acacia lahai</i>		f	x	x		f	f	f
<i>Acacia mellifera</i>	not characteristic	f	C	f		f	f	f
<i>Acacia nilotica</i>	not characteristic	f	x	f		f	f	x
<i>Acacia polyacantha</i>		f	x	x	f	f	f	f
<i>Acokanthera oppositifolia</i>	characteristic genus		f	x				
<i>Albizia amara</i>	not characteristic	f	x	f	f	f	f	x
<i>Albizia coriaria</i>		f	f	C		f	x	f
<i>Albizia zygia</i>			f	f		f	x	x
<i>Allophylus rubifolius</i>		f	x	x	x	f	f	f
<i>Annona senegalensis</i>		f	x	x	f	f	f	f
<i>Antidesma venosum</i>		f	f	x		f	x	f
<i>Apodytes dimidiata</i>		f	x	x	x	f	f	f
<i>Balanites aegyptiaca</i>		f	x	f	f	f	f	x
<i>Berberis holstii</i>		C	f	f		f	f	f
<i>Berchemia discolor</i>		C	f	f		f	f	f
<i>Boscia angustifolia</i>		f	f	f	x	f	f	x
<i>Bridelia micrantha</i>		f	x	x	f	f	f	f
<i>Bridelia scleroneura</i>		f	f	f		f	x	C
<i>Cadaba farinosa</i>	not characteristic	f	f	x	x	f	f	f
<i>Canthium lactescens</i>		x	x	f	x	f	C	f
<i>Catha edulis</i>		C	x	f	f	f	f	f
<i>Clausena anisata</i>		f	x	x	x	f	f	f
<i>Clerodendrum myricoides</i>		x	x	x	x	f	f	f
<i>Combretum molle</i>		f	x	f	x	f	f	f
<i>Commiphora africana</i>	not characteristic	x	f	f	f	f	f	x
<i>Cordia monoica</i>	not characteristic	f	x	x		x	f	f
<i>Crotalaria agatiflora</i>		f	x	x	f	f	f	f
<i>Croton macrostachyus</i>		f	x	x	x	f	f	f
<i>Cussonia arborea</i>		f	x	x	x	f	f	f
<i>Dichrostachys cinerea</i>		f	f	x	f	f	f	x
<i>Dombeya rotundifolia</i>		x	x	x	f		f	f
<i>Dovyalis abyssinica</i>		f	x	x		f	f	f
<i>Erythrina abyssinica</i>		f	x	x	f	f	f	f
<i>Euclea racemosa</i>	characteristic genus	C	x	x	x	C	x	f
<i>Euphorbia tirucalli</i>		x	x	x	x	f	x	x
<i>Faurea rochetiana</i>		f	x	f	x	f	f	f
<i>Faurea saligna</i>			x	x	f	f	f	f
<i>Ficus glumosa</i>		f	x	x	f	f	f	f
<i>Flacourtia indica</i>		f	x	x	x	f	f	f
<i>Gardenia ternifolia</i>		f	x	x	f	f	f	f
<i>Grewia mollis</i>		f	x	x	f	f	C	C
<i>Harrisonia abyssinica</i>		f	x	x	x	f	x	C
<i>Indigofera swaziensis</i>			x	x		f	f	f



SPECIES	Regional status	Ethiopia	Kenya (BeeK subtype)	Kenya (BewK subtype)	Rwanda	Tanzania	Uganda (BemU subtype)	Uganda (BedU subtype)
<i>Lannea fulva</i>			f	f	x	f	f	f
<i>Lannea humilis</i>	not characteristic	f	x	f	f	f	f	x
<i>Lannea schweinfurthii</i>		f	x	f	f	x	f	x
<i>Lecaniodiscus fraxinifolius</i>		f	x	x		f	f	f
<i>Lippia kituiensis</i>			x	x		f		
<i>Maytenus senegalensis</i>		f	x	f	x	f	f	f
<i>Maytenus undata</i>		f	x	f	x	f	f	f
<i>Oncoba spinosa</i>		f	x	x		f	f	f
<i>Ormocarpum kirkii</i>			x	f		f		
<i>Osyris lanceolata</i>		f	x	f	x	f	f	f
<i>Ozoroa insignis</i>		f	x	x	f	f	f	f
<i>Pappea capensis</i>		C	x	x	x	x	f	f
<i>Pavetta crassipes</i>		f	x	x		f	f	f
<i>Pistacia aethiopica</i>		C	x	f		f	f	f
<i>Pittosporum viridiflorum</i>		C	x	f	x	f	f	f
<i>Rhamnus staddo</i>		f	x	f	x	f	f	f
<i>Rhoicissus revouilii</i>		f	f	x	x	f	f	f
<i>Rhoicissus tridentata</i>		f	x	x	x	f	x	x
<i>Rhus vulgaris</i>		f	x	x	x	f	f	f
<i>Senna didymobotrya</i>		x	x	f	f	f	f	f
<i>Solanecio cydoniifolius</i>			x	f	x	f	f	f
<i>Solanecio mannii</i>		f	x	f	x	f	f	f
<i>Steganotaenia araliacea</i>		f	f	x	f	f	f	x
<i>Stereospermum kunthianum</i>		f	x	x		f	f	x
<i>Strychnos henningsii</i>		f	x	f		x	f	f
<i>Terminalia brownii</i>		f	x	x		f	f	f
<i>Tetradenia riparia</i>		f	x	x	f			
<i>Vangueria apiculata</i>		f	x	x	x	f	x	f
<i>Vangueria infausta</i>			x	x	x	f	f	f
<i>Vangueria madagascariensis</i>		x	x	x		f	x	f
<i>Vepris nobilis</i>	characteristic genus (synonym: Teclea)	f	x	x	x	C	C	f
<i>Vepris trichocarpa</i>	characteristic genus (synonym: Teclea)		x		x	C		x
<i>Zanthoxylum chalybeum</i>		f	x	f	x	f	f	x
<i>Zanthoxylum usambarense</i>		C	f	f	f	f		
<i>Ziziphus abyssinica</i>		f	x	x	f	f	f	C
<i>Ziziphus mucronata</i>		f	x	x	f	x	f	f
<i>Ziziphus pubescens</i>		f	x	x		f	x	f