

THE GENUS *ALOE* L. (ASPHODELACEAE: ALOOIDEAE) IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

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Abstract: The Eastern Cape is extremely diverse and is a climatic, topographic and geological transition zone. This transitional nature of the environment is reflected in the phytogeographical and phytosociological complexity of the Eastern Cape. The region has a very diverse flora comprising ca. 8 300 taxa (species and infraspecific taxa). A total of 39 aloes occur in the Eastern Cape of which ten (26%) are endemic to the area, with a further four (10%) being near-endemic. A key to the aloes of the Eastern Cape is provided, as well as a short description, distribution map and information on habitat, flowering time, and conservation status for each of the species.

Introduction

Eastern Cape

The Eastern Cape is situated on the southeastern seaboard of South Africa and has a ca. 800 km long coastline with the Indian Ocean. Covering an area of ca. 170 000 km², it is the second largest province and represents 14% of the land mass of South Africa (<http://www.ectourism.co.za>; http://en.wikipedia.org/wiki/Eastern_Cape). The Eastern Cape is a climatic, topographic and geological transition zone and the landscape is therefore extremely variable, with marked environmental heterogeneity over short distances (Gibbs Russell and Robinson 1981; Cowling 1982).

Rain can fall at nearly any time of the year over much of the area and rainfall distribution is bimodal, with spring and autumn peaks. The western parts of the Eastern Cape mostly receive winter rainfall with dry summers, while summer rain prevails over the northeastern parts of the province. The coastal mountains receive a high percentage of their precipitation as orographic rain. Rainfall is generally unreliable, with droughts not being uncommon. Snow occasionally falls at lower altitudes and is a rather regular occurrence in the mountainous areas of the interior (Gibbs Russell and Robinson 1981; Cowling 1982; Cowling 1983).

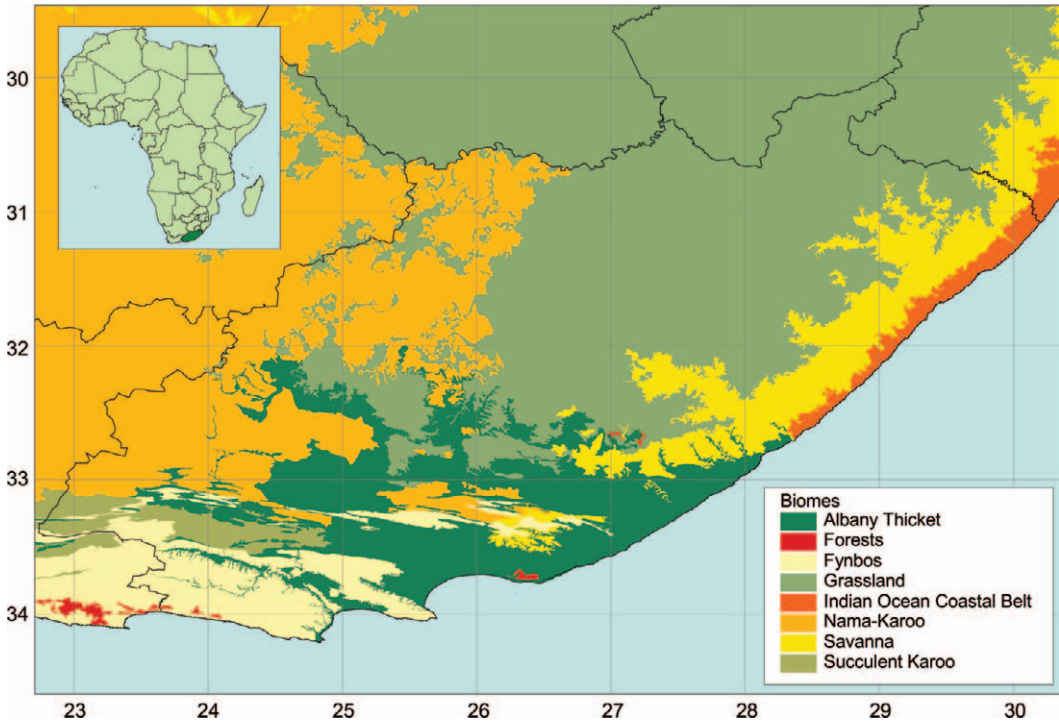
Coastal conditions are generally moist, but are interrupted by wide river valleys with a semi-arid valley climate. The valleys, with unpredictable rainfall and large annual and diurnal temperature ranges, become increasingly dry inland until the almost desert-like conditions of the interior basins are reached. These dry interior basins lie between the coastal mountains and the escarpment. They receive very little

rain since they are situated in the rainshadow of the coastal mountains (Cowling 1982; Cowling 1983).

The geology of the Eastern Cape is also diverse (Cowling 1982). Since soil is directly related to the geology of an area, soil type in the Eastern Cape can also change abruptly. Given that soil type affects water availability and that there is considerable interaction between climatic and edaphic parameters, this variability produces a wide range of habitats over short distances (Gibbs Russell and Robinson 1981).

It is therefore not surprising that the transitional nature of the environment is also reflected in the phytogeographical and phytosociological complexity of the Eastern Cape (Cowling 1982). The flora is a transition between typical Cape flora of the southwest and subtropical flora of further north and east in southern Africa (Cowling 1983). The Eastern Cape is the place in South Africa where the major vegetation units of southern Africa converge. Most biomes of southern Africa (except for the Desert biome) extend into the Eastern Cape (Fig 1) from either the east, north or west, but none are confined to the region and none extend in both directions from the province (Gibbs Russell and Robinson 1981; Lubke 1986). The Albany Thicket Biome is almost restricted to the Eastern Cape, but has outliers in the Western Cape Province (Mucina and Rutherford 2006). Furthermore, five phytochoria (from phytogeography; a geographic area with a relatively uniform composition of plant species) meet in the province. The Eastern Cape therefore has a mosaic of plant communities, each with different chorological affinities, as well as chorologically mixed communities representing all the major vegetation formations of southern Africa (Cowling 1983; Lubke 1986).

Figure 1. Biomes of the Eastern Cape according to Mucina & Rutherford (2006).



Many tropical species reach the southwestern edge of their distribution in the Eastern Cape, and the province is the northern or eastern periphery for many taxa of the southwestern Cape and Karoo. It is the region where many taxa of diverse phytogeographical units reach their limits of distribution (Gibbs Russell and Robinson 1981). It is therefore not surprising that the flora of the Eastern Cape is rich and diverse. The area harbors around 7 500 plant species (ca. 8 300 taxa) in some 242 families, of which just under 1 200 taxa (ca. 15%) are endemic to the province (CL Bredenkamp, pers. comm.).

Despite this diverse flora, the Eastern Cape has generally lower levels of endemism than other areas in southern Africa. This rather low proportion of endemics suggest that there has been little speciation in the region. The high diversity of the region is therefore likely due to the many plant species of different geographical affinities that meet here at the limits of their distribution and not as a result of speciation taking place in the area (Gibbs Russell and Robinson 1981; Cowling 1982).

However, endemism is not uniformly low in all vegetation types or plant groups in the Eastern Cape. High levels of endemism have been recorded in succulents of karroid affinity. Along with the Little Karoo and Namaqualand-Richtersveld region, the Eastern Cape is one of the richest centers of succulent diversity and endemism in South Africa (Cowling 1982; Van Wyk and Smith 2001). The largest proportion of endemics and threatened plants in the Eastern Cape is found in Subtropical Thicket vegeta-

tion of the Pondoland-Maputaland region (Lubke 1986). Despite the low number of endemics, there are four centers of endemism in the Eastern Cape, namely the Cape Floristic Region, the Pondoland Centre, the Drakensberg Alpine Centre and the Albany Centre, the only one confined to the Eastern Cape. The greatest diversity in the Eastern Cape is found around Grahamstown, which seems to be the center of the region and also the core of the Albany Centre of Endemism. It is in this center, around Grahamstown, where the five phytochoria converge. It has many succulent endemics, most of which are associated with the xeric succulent thicket (Van Wyk and Smith 2001).

Eastern Cape aloes

South Africa has by far the largest number of aloes of any country and harbors around 140 taxa out of a world total of ca. 530. The Eastern Cape harbors a total of 39 aloes (35 species + 4 infraspecific taxa) and as in many other African landscapes, the genus is a very conspicuous component of the vegetation and scenery.

Ten (26%) of the aloe taxa in the Eastern Cape are endemic to the province, while a further four (10%) are near-endemic, slightly extending over the borders into the neighboring provinces or Lesotho. Seven of these Eastern Cape endemic aloes are endemic or near-endemic to the Albany Centre of Endemism. A total of 15 (38%) aloes have their main distribution range outside the province and reach the eastern or western limits of their distribution in the Eastern Cape (Table 1).

Table 1. Checklist of endemic and near-endemic *Aloe* taxa of the Eastern Cape Province of South Africa, as well as aloes that have their main distribution range outside the province and reaching the limits of their distribution in the Eastern Cape.

Species	Endemic	Near-endemic	Reaching limit of distribution in Eastern Cape
<i>Aloe africana</i>	X		
<i>Aloe arborescens</i> ssp <i>arborescens</i>			
<i>Aloe aristata</i>			
<i>Aloe barberae</i>			X
<i>Aloe bowiea</i>	X		
<i>Aloe boylei</i>			X
<i>Aloe broomii</i> var <i>broomii</i>			X
<i>Aloe broomii</i> var <i>tarkaensis</i>	X		
<i>Aloe ciliaris</i> var <i>ciliaris</i>	X		
<i>Aloe ciliaris</i> var <i>redacta</i>	X		
<i>Aloe ciliaris</i> var <i>tidmarsbii</i>	X		
<i>Aloe claviflora</i>			X
<i>Aloe comptonii</i>			X
<i>Aloe cooperi</i> ssp <i>cooperi</i>			X
<i>Aloe ecklonis</i>			X
<i>Aloe ferox</i>			
<i>Aloe gracilis</i>	X		
<i>Aloe grandidentata</i>			X
<i>Aloe humilis</i>			
<i>Aloe kniphofioides</i>			X
<i>Aloe linearifolia</i>			X
<i>Aloe lineata</i> var <i>lineata</i>			
<i>Aloe longistyla</i>			
<i>Aloe maculata</i>			
<i>Aloe micracantha</i>		X	
<i>Aloe microstigma</i>			X
<i>Aloe minima</i>			X
<i>Aloe myriacantha</i>			X
<i>Aloe pictifolia</i>	X		
<i>Aloe pluridens</i>		X	
<i>Aloe pratensis</i>			
<i>Aloe reynoldsii</i>	X		
<i>Aloe speciosa</i>			
<i>Aloe striata</i>			
<i>Aloe striatula</i> var <i>caesia</i>	X		
<i>Aloe striatula</i> var <i>striatula</i>		X	
<i>Aloe tenuior</i>		X	
<i>Aloe thraskii</i>			X
<i>Aloe variegata</i>			X
Total: 38	10	4	15

Although the level of endemism for the genus *Aloe* in the Eastern Cape (26%) is slightly higher than the average level of endemism for the Eastern Cape flora as a whole (15%), it is still fairly low. Other members of the family Asphodelaceae are also well represented in the province and some have much higher levels of endemism, for instance, *Gasteria* Duval (83%) and *Haworthia* Duval (60–80%) (Smith and Marx 1990).

The aloes found in the Eastern Cape cover the complete range of life forms present in the genus. Here one finds small miniature aloes like *A. aristata* Haw. and *A. bowiea* Schult. & Schult.f., large tree aloes like *A. barberae* T.-Dyer, and everything in between: stemless aloes like *A. broomii* Schönland, grass aloes like *A. ecklonis* Salm-Dyck, creeping aloes like *A. comptonii* Reynolds, rambling aloes like *A. ciliaris* Haw., tall single-stemmed aloes like *A. ferox* Mill., multi-stemmed aloes like *A. arborescens* Mill., speckled aloes such as *A. microstigma* Salm-Dyck, as well as spotted aloes like *A. maculata* All.

This contribution provides the most complete floristic treatment of the aloes of the Eastern Cape available to date. It forms part of a broader project to compile as much information on the genus as possible. Therefore the updated species descriptions are based on the abbreviated description template of the Aloes of the World Project (Smith and others 2008). These have been simplified to capture a broader audience and to make it as user-friendly as possible. It also contains additional information for each aloe, such as flowering time and habitat, as well as the set of characters that distinguish each taxon. In addition, we present an identification key to the aloes of this province, along with a series of species-level distribution maps that give, for the first time, an atlas of aloe occurrence in the Eastern Cape.

Conservation and protection status

Aloes are protected under both provincial and international law. All Eastern Cape aloes, except for *A. arborescens* and *A. ferox*, are listed as either protected or endangered under Eastern Cape nature conservation legislation (Province of the Eastern Cape 2002) and may therefore not be removed from the wild without the necessary permits. Furthermore, all species of *Aloe* (except for *A. vera* L.) appear on CITES (Convention on the International Trade in Endangered Species of Wild Fauna and Flora) Appendices, meaning that trade in aloes is controlled to prevent utilisation that would be incompatible with their survival. The taxa occurring in the Eastern Cape are all listed on Appendix II (CITES 2007) and therefore certain permits are required to trade in these taxa. Conservation status and threats to the survival of each species are given here according to Smith and others (2000) that used the 1994 IUCN Red List categories (IUCN 1994).

Key to the aloes of the Eastern Cape.

- 1a Plants with well-developed stems 2
- 1b Plants acaulescent or with short stems 13

- 2a Trees or tree-like shrubs with erect stems..... 3
- 2b Shrubs with mostly slender, often tangled stems 9
- 3a Stems repeatedly branched **A. barberae**
- 3b Stems usually not branched, or occasionally few-branched 4
- 4a Flowers with mouth curved upward 5
- 4b Flowers straight, mouth not markedly curved upward..... 6
- 5a Flowers up to 55 mm long, dull red in bud, yellow-orange at maturity, enlarging towards markedly upturned mouth; racemes cylindrical, tapering to sharp point **A. africana**
- 5b Flowers ca. 25 mm long, greenish to orange in bud, lemon-yellow to pale orange and greenish tipped at maturity, enlarging toward throat, mouth constricted and upturned; racemes broadly cylindrical, slightly tapering, somewhat truncate..... **A. thraskii**
- 6a Inflorescences simple..... 7
- 6b Inflorescences branched..... 8
- 7a Rosettes erect; leaves dull to bright green, not glaucous, distinctly lineate; racemes uniformly colored, floral buds completely hidden by large bracts **A. lineata**
- 7b Rosettes tilted sideways; leaves dull glaucous green, without markings; racemes bicolored; floral buds not completely hidden by bracts **A. speciosa**
- 8a Leaf margin with reddish to brownish red teeth ca. 6 mm long; racemes cylindrical, very dense, 50–80 cm long..... **A. ferox**
- 8b Leaf margin with white or pale pink teeth 2–3 mm long; racemes conical, dense to rather lax, 25–30 cm long..... **A. pluridens**
- 9a Leaves in terminal rosette, sheath not prominent **A. arborescens**
- 9b Leaves dispersed along stem, with prominent sheaths 10
- 10a Leaf sheath with collar-like, ciliate, auriculate margin..... **A. ciliaris**
- 10b Leaf sheath without collar-like, ciliate, auriculate margin 11
- 11a Stamens and style included or exerted 1–2 mm; pedicels ca. 8 mm long **A. gracilis**
- 11b Stamens and style usually exerted more than 4 mm; pedicels up to 5 mm long 12
- 12a Leaves glossy or milky green, with marginal teeth ca. 1 mm long, 3–8 mm apart; flowers 30–45 mm long; stems robust..... **A. striatula**
- 12b Leaves glaucous to glossy green, margin sometimes entire but often with minute marginal teeth up to 0.5 mm long, 1–2 mm apart; flowers 11–15 mm long; stems slender **A. tenuior**
- 13a Leaves 3-ranked **A. variegata**
- 13b Leaves distichous or in multifariate rosettes 14
- 14a Uppermost portion of the pedicel (flower stalk) and flower, which receive more sun, a deeper red than the paler lower portion; rosette small with numerous, tubercled, white-spotted leaves with long, thin, hair-like leaf tips; resembles a *Haworthia* when not in flower..... **A. aristata**

- 14b No obvious color difference due to exposure to the sun visible on pedicel or flowers; above set of characters not applicable..... 15
- 15a Inflorescences usually branched..... 16
- 15b Inflorescences usually simple..... 20
- 16a Leaves with spines at tip of keel on lower surface **A. comptonii**
- 16b Leaves without spines at tip of keel on lower surface..... 17
- 17a Leaves with prominent spots in transverse bands, sometimes obscurely lineate; marginal teeth prominent, pungent, brown, 3–5 mm long.... 18
- 17b Leaves without spots or with irregularly scattered to confluent spots, distinctly lineate; marginal teeth absent or soft, pink, 1–4 mm long 19
- 18a Racemes cylindric-acuminate, lax..... **A. grandidentata**
- 18b Racemes capitate, dense..... **A. maculata**
- 19a Leaves with irregularly scattered to confluent spots; marginal teeth soft, pink, 1–4 mm long ... **A. reynoldsii**
- 19b Leaves without spots; marginal teeth absent **A. striata**
- 20a Rosettes usually suckering to form dense groups 21
- 20b Rosettes usually single, only occasionally suckering to form small groups..... 25
- 21a Leaves grass-like, 0.4 cm wide; raceme very lax; flowers greenish white..... **A. bowiea**
- 21b Leaves not grass-like, wider than 1 cm; raceme subdense to dense; flowers red or orange 22
- 22a Inflorescence almost horizontal **A. claviflora**
- 22b Inflorescence erect or arcuate-ascending 23
- 23a Leaves with numerous white, non-tuberculate spots; marginal teeth up to 1 mm long..... **A. pictifolia**
- 23b Leaves without spots, sometimes with whitish tubercles or surface spines; marginal teeth longer than 2 mm 24
- 24a Peduncle with sterile bracts ca. 35 mm long, not imbricate; floral buds not hidden by bracts **A. humilis**
- 24b Peduncle completely covered by imbricate sterile bracts up to 60 mm long; floral buds hidden by bracts **A. pratensis**
- 25a Leaves thick, very succulent, not deciduous, with pungent marginal teeth..... 26
- 25b Leaves thin, not very succulent, often narrow and grass-like, mostly deciduous, with soft or minute marginal teeth 28
- 26a Leaves usually copiously white-spotted; stamens and style exerted to 3 mm **A. microstigma**
- 26b Leaves without spots; stamens and style exerted more than 10 mm..... 27
- 27a Large plants, rosettes ca. 1 m in diameter; leaves without scattered surface spines; inflorescence up to 1.5 m high **A. broomii**
- 27b Small plants, rosettes ca. 0.25 m high; leaves with scattered, soft to firm, white surface spines; inflorescence up to 0.2 m high..... **A. longistyla**
- 28a Leaves wider than 5 cm..... 29
- 28b Leaves up to 3 cm wide..... 31
- 29a Leaves distichous; raceme cone-shaped..... **A. cooperi**
- 29b Leaves rosulate; raceme head-shaped 30
- 30a Flowers salmon-pink, greenish tipped, ca. 40 mm long..... **A. boylei**
- 30b Flowers yellow to red, 20–24 mm long..... **A. ecklonis**
- 31a Leaf bases enlarged to form bulb-like underground swelling; raceme cylindrical, lax **A. kniphofioides**
- 31b Leaf bases not enlarged into bulb-like swelling; raceme capitate, dense 32
- 32a Leaves ca. 3 cm wide; flowers ca. 38 mm long.... **A. micracantha**
- 32b Leaves up to 1 cm wide; flowers up to 20 mm long..... 33
- 33a Leaves distichous, rarely rosulate; flowers greenish yellow to yellow..... **A. linearifolia**
- 33b Leaves rosulate; flowers pink or rarely greenish white 34
- 34a Leaves with spots near base on lower surface only; flowers 10–11 mm long, with spreading upturned mouth **A. minima**
- 34b Leaves with spots near base on both surfaces; flowers ca. 20 mm long, with bilabiate upturned mouth **A. myriacantha**

Species descriptions

^E indicates taxa that are endemic to the Eastern Cape Province.

^E*Aloe africana* MILL. [*Uitenhage aloe*; *Uitenhage aalwyn* (Afrikaans); *ikhala* (Xhosa)]

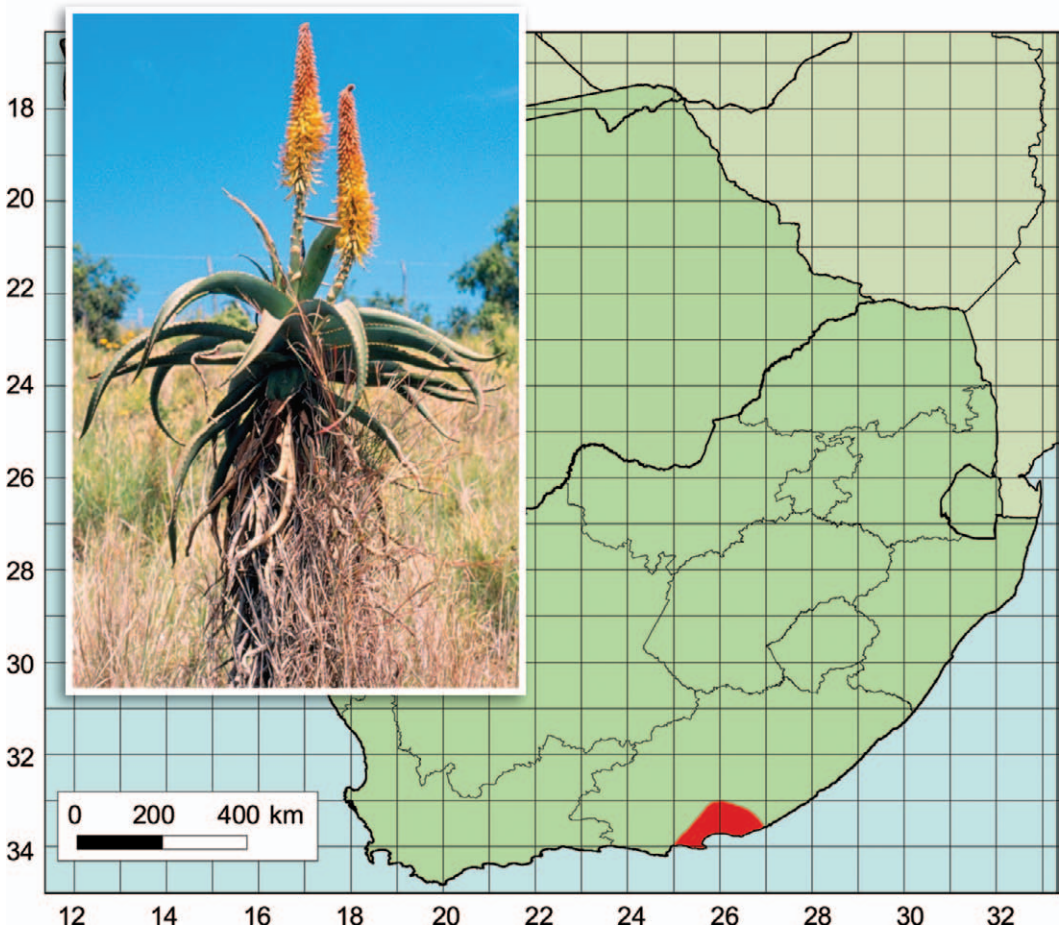
Description: Caulescent plant, up to 4 m high. **Stem** up to 4 m, single or rarely branched, erect, with persistent dried leaves. **Leaves** condensed rosulate, spreading to recurved, dull green to somewhat glaucous, without spots, upper surface glabrous or with few scattered reddish spines in upper third, lower surface with few reddish spines in median line near apex, up to 65 cm long, 12 cm wide at base; margin with pungent, reddish, deltoid teeth, 4–5 mm long, ca. 15 mm apart. **Inflorescences** 0.6–0.8 m high, erect, 2–4-branched. **Racemes** cylindric, tapering to sharp point, 40–60 cm long, dense. **Floral bracts** ca. 11 mm long, 7–8 mm wide. **Pedicels** 5–6 mm long. **Flowers:** *perianth* dull red in bud, yellow-orange at maturity, up to 55 mm long, enlarging towards markedly upcurved mouth, curved-cylindric; outer segments free for ca. 19 mm; **stamens** exerted to 15 mm; **style** exerted to 20 mm.

Flowering time: July to September, some clones flower irregularly throughout the year.

Habitat: Dense bushveld.

Distinguishing characters: Leaves of *A. africana* are thinner, narrower, more spreading and recurved than those of other similar-looking single-stemmed aloes in the Eastern Cape (*A. ferox*, *A. lineata*, *A. pluridens*, *A. speciosa* and *A. thraskii*). In addition the rosettes have an ‘untidy’ appearance. The marginal teeth are reddish and the lower surface of the leaf has reddish prickles in the median line. The branched inflo-

Figures 2–35. Distribution maps and images of the *Aloe* species of the Eastern Cape. **Figure 2.** *Aloe africana*.



rescence bears up to four racemes that are cylindrical, strongly tapering to a sharp point and bicolored, with red buds and distinctive yellow-orange flowers that are slender, ca. 50 mm long and cylindrical-curved—in open flowers the mouth is markedly upturned and almost at right angles to the base of the flower.

Conservation status: Least Concern.

Distribution: Endemic to the Eastern Cape between Port Alfred and Humansdorp (Fig 2).

***Aloe arborescens* MILL.** [*Krantz aloë; kranstaalwyn (Afrikaans); tshikhophha (Venda); unomaweni (Xhosa); inkalane (Zulu)*]

Description: Much-branched shrub, 2–5 m high. **Stems** erect, with persistent dried leaves. **Leaves** densely rosulate at branch apices, spreading-recurved, dull green to gray-green, tinged reddish in dry conditions, without spots, lance-shaped, gradually tapering, 50–60 cm long, 5–7 cm wide at base; margin with firm, pale teeth, 3–5 mm long, 5–20 mm apart at midleaf. **Inflorescences** ca. 0.8 m high, erect, usually simple, occasionally with 1–2 short branches. **Racemes** cone-shaped to cone-shaped-cylindrical, 20–30 cm long, dense. **Floral bracts** 15–20 mm

long, up to 12 mm wide. **Pedicels** 35–40 mm long. **Flowers:** *perianth* scarlet, or occasionally yellow, ca. 40 mm long, narrowed above ovary, widening slightly towards mouth, cylindrical-trigonous; outer segments free to base; **stamens** and **style** exserted to 5 mm.

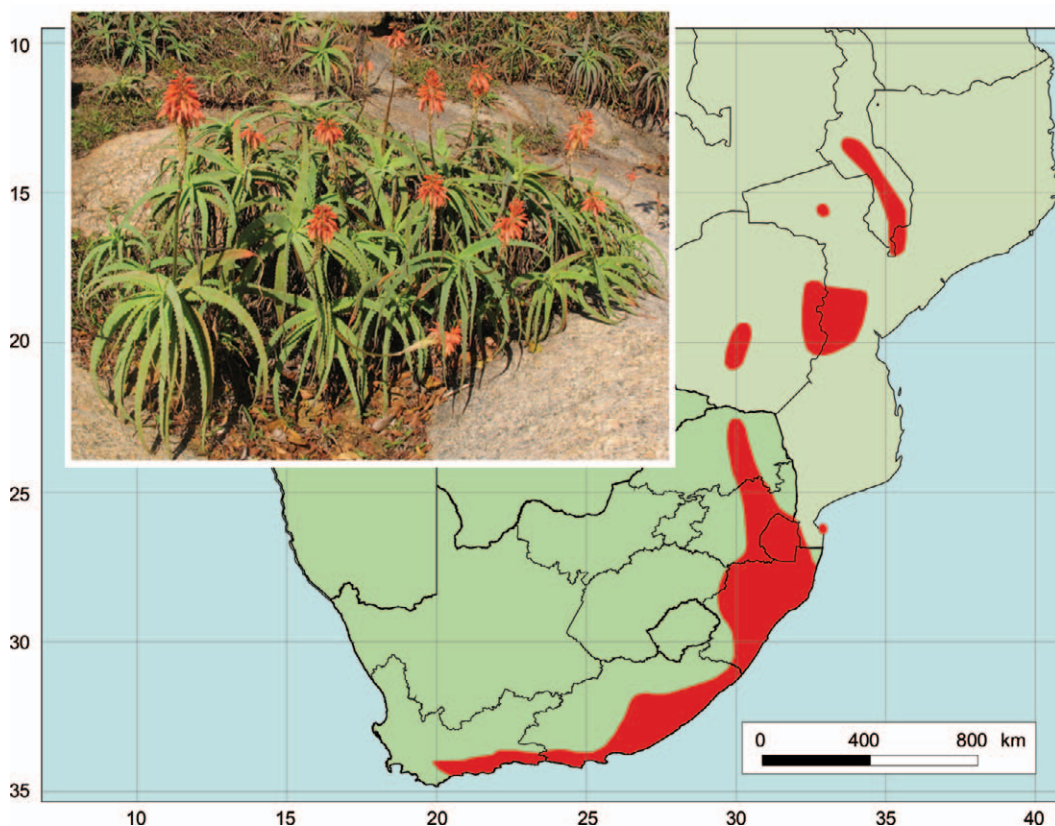
Flowering time: May to August.

Habitat: Rocky outcrops.

Distinguishing characters: Somewhat paradoxically, there is no obvious set of distinguishing characters defining *A. arborescens*, a common and widespread species. It can rather be identified by a combination of the following characters: It is a much-branched shrub up to 5 m high. The grayish green leaves, with pale marginal teeth, are borne in dense rosettes at the branch apices. Inflorescences are usually simple with densely flowered, elongated-inverted, cone-shaped racemes. Floral bracts are large and pedicels are twice as long as the bracts. Flowers are cylindrical, with the outer segments free to the base.

Conservation status: Least Concern.

Distribution: The krantz aloë is very widely distributed in southeastern Africa and has the third widest distribution range of all *Aloe* species. It oc-

Figure 3. *Aloe arborescens* ssp. *arborescens*.

curs from the Cape Peninsula (where it has arguably become naturalized), along the south and east coast of South Africa, through the Western Cape, Eastern Cape and KwaZulu-Natal and inland to Mpumalanga and Limpopo, just entering the eastern Free State, as well as further north to Mozambique and the eastern mountains of Zimbabwe and Malawi (Fig 3).

***Aloe aristata* HAW. [Guinea-fowl aloe; tarentaal-aalwyn (Afrikaans); serelei (Sesotho); umathithibala (Zulu)]**

Description: Acaulescent, usually suckering to form dense clumps. **Leaves** densely rosulate, arcuate-incurved, green with several scattered small, white spots, more copiously spotted and with spots in more or less transverse bands on lower surface, spots subtuberculate to spinulescent, soft white spines in 1–2 rows at apex of keel, narrowly lance-shaped, tapering to hair-like awn, leaf 8–10 cm long, 1.0–1.5 cm wide at base; margin with soft, white, cartilaginous teeth, 1–2 mm long, 1–2 mm apart at midleaf. **Inflorescence** ca. 0.5 m high, erect, usually 2–6-branched, occasionally simple. **Racemes** almost head-shaped, 15–20 cm long, lax. **Floral bracts** 11–12 mm long. **Pedicels** up to 35 mm long. **Flowers:** **perianth** red on upper surface, paler below, ca. 40 mm long, slightly narrowed above ovary, slightly widening towards mouth, base somewhat globose, tube slightly

decurved; outer segments free for 7 mm; **stamens** exerted to 1 mm; **style** exerted 1–2 mm.

Flowering time: August to October or November.

Habitat: Sandy Karoo flats and mountain slopes in grassland.

Distinguishing characters: This is a very distinctive little aloe and is characterized by the numerous, tuberculed, white-spotted leaves with long, thin, hair-like leaf tips, as well as the tubular flowers with fused petals that form a basal swelling around the ovary. Furthermore, the uppermost portion of the pedicel (flower stalk) and flower, which receive more sun, is a deeper red than the paler lower portion, and the peduncle (inflorescence stalk) is without papery bracts. This is the only South African *Aloe* species that resembles a species of *Haworthia* when not in flower.

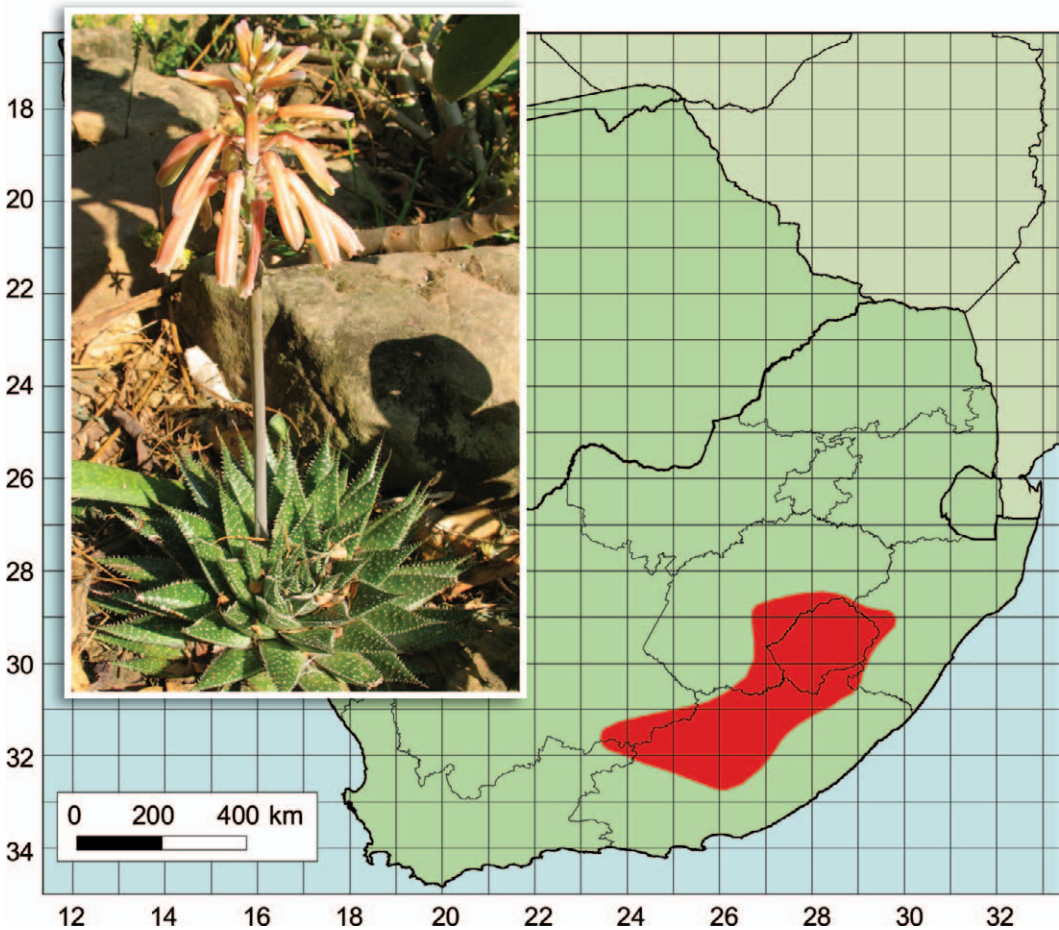
Conservation status: Least Concern.

Distribution: Occurs from the Beaufort West area in the central Karoo, through the Eastern Cape, eastern Free State and Lesotho to southwestern KwaZulu-Natal (Fig 4).

***Aloe barberae* T.-DYER [Tree aloe; boomaalwyn, mikaalwyn (Afrikaans)]**

Description: Caulescent aloe. **Stem** 10–18 m high, copiously dichotomously branched and rebranched from about middle, erect, without persistent dried leaves. **Leaves** densely rosulate, recurved, dull

Figure 4. *Aloe aristata*.



green, without spots, sword-shaped, 60–90 cm long, 7–9 cm wide at base; sheath with greenish white marginal border; margin cartilaginous, with firm, horny, brownish tipped, dull white, deltoid teeth, 2–3 mm long, 10–25 mm apart. **Inflorescences** up to 0.6 m high, erect, dichotomously 3-branched. **Racemes** cylindrical, slightly tapering to sharp point, 20–30 cm long, dense. **Floral bracts** 10 mm long, ca. 1 mm wide. **Pedicels** 10 mm long. **Flowers:** *perianth* rose to rose-pink, greenish tipped, 33–37 mm long, not narrowed above ovary, widening somewhat to slightly upturned mouth, cylindrical; outer segments free almost to base; *stamens* exserted to 15 mm; *style* exserted 15–20 mm.

Flowering time: May to August.

Habitat: Dense, tall bush and low forest.

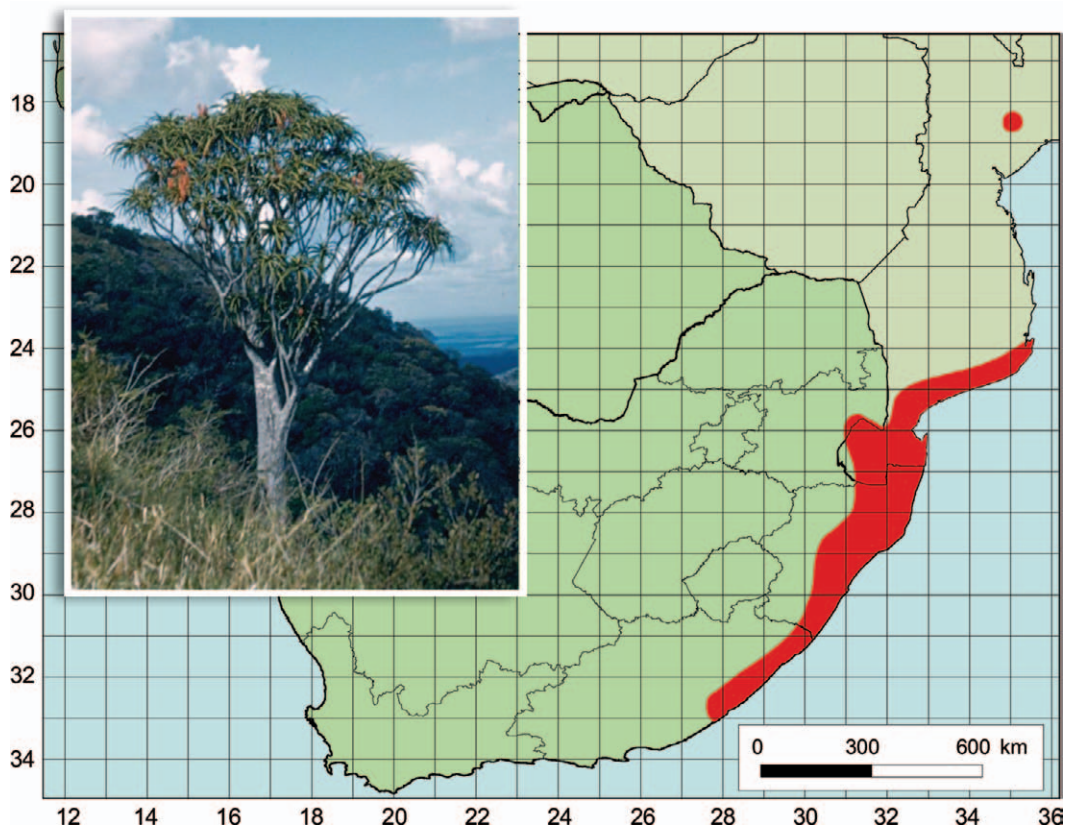
Distinguishing characters: *A. barberae* is a tall, much-branched tree of up to 18 m. Its large bright green, deeply channelled leaves with brownish tipped, dull white teeth distinguish young specimens from other tree aloes. The branched inflorescence bears three racemes that are uniformly colored, dense and cylindrical, with rose-pink flowers and hair-like, coiled floral bracts.

Conservation status: Least Concern.

Distribution: Occurs from East London in the Eastern Cape, along a broad coastal belt through KwaZulu-Natal to Swaziland, just entering Mpumalanga and into southern and central Mozambique. This species is most variable along the KwaZulu-Natal border with Mozambique, where a miniature form has been recorded (Fig 5).

^E*Aloe bowiea* SCHULT. & SCHULT.F. [*Kleinaalwyn* (Afrikaans)]

Description: Small, acaulescent grass-like aloe, suckering to form dense groups; rosettes erect, up to 0.1 m high. **Leaves** rosulate, erect, pale glaucous green, minutely spotted below, distinct longitudinal lines at broadly ovate base, narrowly linear-subulate, 9–11 cm long, 0.4 cm wide above, 2.2 cm wide at base; margin with small, soft, white teeth. **Inflorescence** up to 0.25 m high, erect, simple, rarely branched. **Racemes** cylindrical, ca. 15 cm long, lax. **Floral bracts** 5 mm long, 2 mm wide. **Pedicels** 1–2 mm long. **Flowers:** *perianth* greenish white, 8–15 mm long, enlarging above ovary towards expanded mouth, club-shaped; outer seg-

Figure 5. *Aloe barberae*.

ments free to base; **stamens** exerted to 2 mm; **style** exerted to 8 mm.

Flowering time: December to March.

Habitat: Karroid thicket.

Distinguishing characters: The roots of *A. bowiea* are typically swollen in the middle, tapering to both sides. Important characters distinguishing it from the typical grass aloes in the Eastern Cape (*A. boylei*, *A. cooperi*, *A. ecklonis*, *A. linearifolia*, *A. micracantha*, *A. minima* and *A. myriacantha*) are its very small size and its rosulate leaves, 9–11 cm long, that are very thin (0.4 cm) towards the tip, but broaden considerably (2.2 cm) towards the base, giving the plant a bulb-like appearance. It can be separated from *A. kniphofoides* (which also has a bulb-like underground swelling) by its thin, rarely branched peduncle with small greenish brown flowers, 5–15 mm long, in a lax somewhat cylindrical raceme, and much smaller stature.

Conservation status: Critically Endangered; threats include habitat degradation due to urban and industrial expansion, agricultural development, invasive alien species and illegal harvesting. This is probably the most threatened of all the aloes of South Africa.

Distribution: Endemic to the greater Uitenhage and Port Elizabeth region of the Eastern Cape (Fig 6).

Aloe boylei BAKER [*Boyle's grass aloe; Boyle-segrasaalwyn* (Afrikaans); *isiphukuthwane, isiphuthwane* (Zulu)]

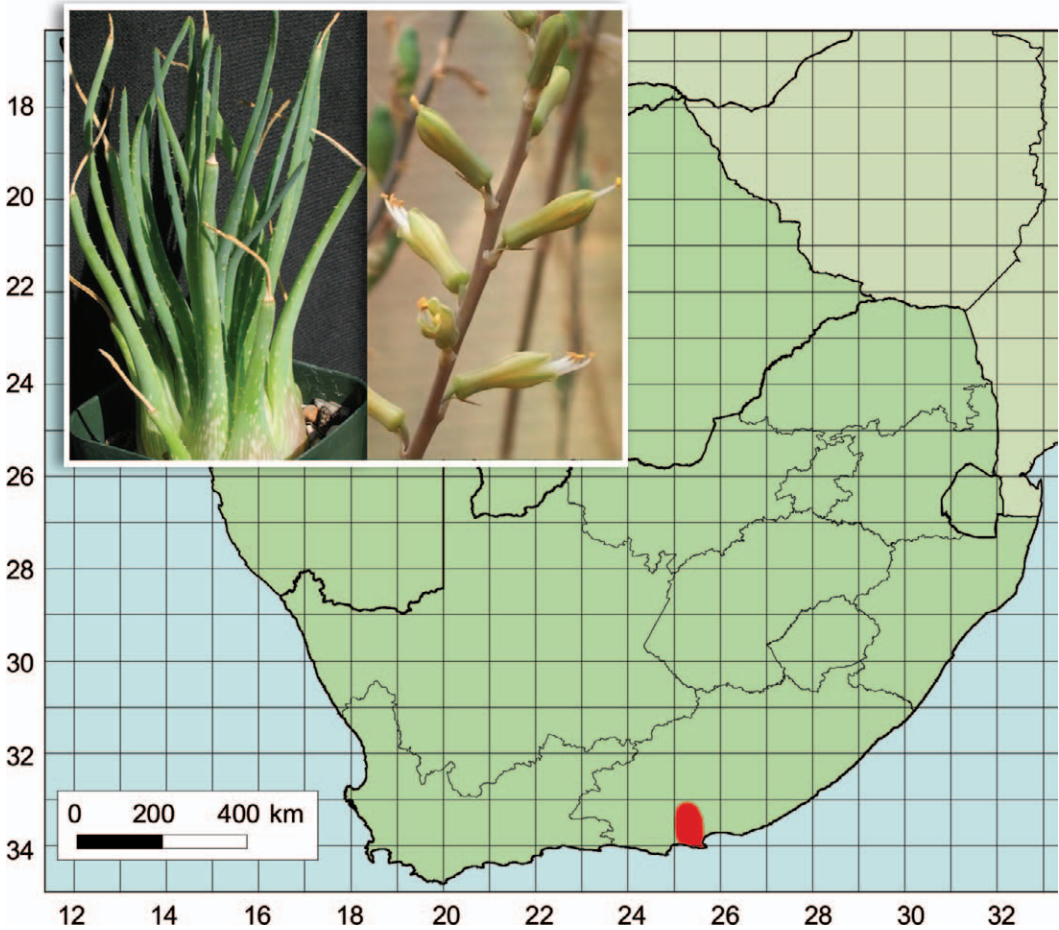
Description: Grass aloe. **Stem** short, up to 0.2 m long, simple or with offshoots from ground level to form dense groups, erect; dried leaves not persistent. **Leaves** rosulate, deciduous, erect, deep green, upper surface usually without spots, sometimes lineate or with few scattered spots near base, lower surface copiously white-spotted near base, lance- to sword-shaped, 50–60 cm long, 6–8 cm wide at base; margin with soft, white teeth, 1–3 mm long, 2–5 mm apart near base. **Inflorescence** 0.4–0.6 m high, erect, simple. **Raceme** head-shaped, almost flat-topped or slightly conic, 10–12 cm long, dense. **Floral bracts** 20–23 mm long, 5–7 mm wide. **Pedicels** 40–45 mm long. **Flowers:** **perianth** salmon-pink, greenish tipped, ca. 40 mm long, narrowing towards mouth, cylindrical, basally stipitate and narrowing into pedicel; outer segments almost free to base; **stamens** scarcely exerted or exerted 1–2 mm; **style** exerted 2–3 mm.

Flowering time: December to January.

Habitat: Eastern escarpment grassland.

Distinguishing characters: This grass aloe differs from the other Eastern Cape grass aloes (*A. cooperi*, *A. ecklonis*, *A. kniphofoides*, *A. linearifolia*, *A. micracantha*, *A. minima* and *A. myriacantha*) by its larger

Figure 6. *Aloe bowiea*.



and broader, rosulate leaves that are 50–60 cm long and 6–9 cm wide with copious white spots near the base of the lower leaf surface. The unbranched inflorescence bears a dense, head-shaped raceme. It can be distinguished from the very similar *A. ecklonis* by its larger leaf cluster of broader leaves and tubular, salmon-pink, green-tipped flowers that are 38–40 mm long.

Conservation status: Least Concern.

Distribution: This species is widely distributed in eastern southern Africa, occurring in the Eastern Cape, western KwaZulu-Natal, eastern Lesotho, eastern Free State, Mpumalanga, western Swaziland and Limpopo (Fig 7).

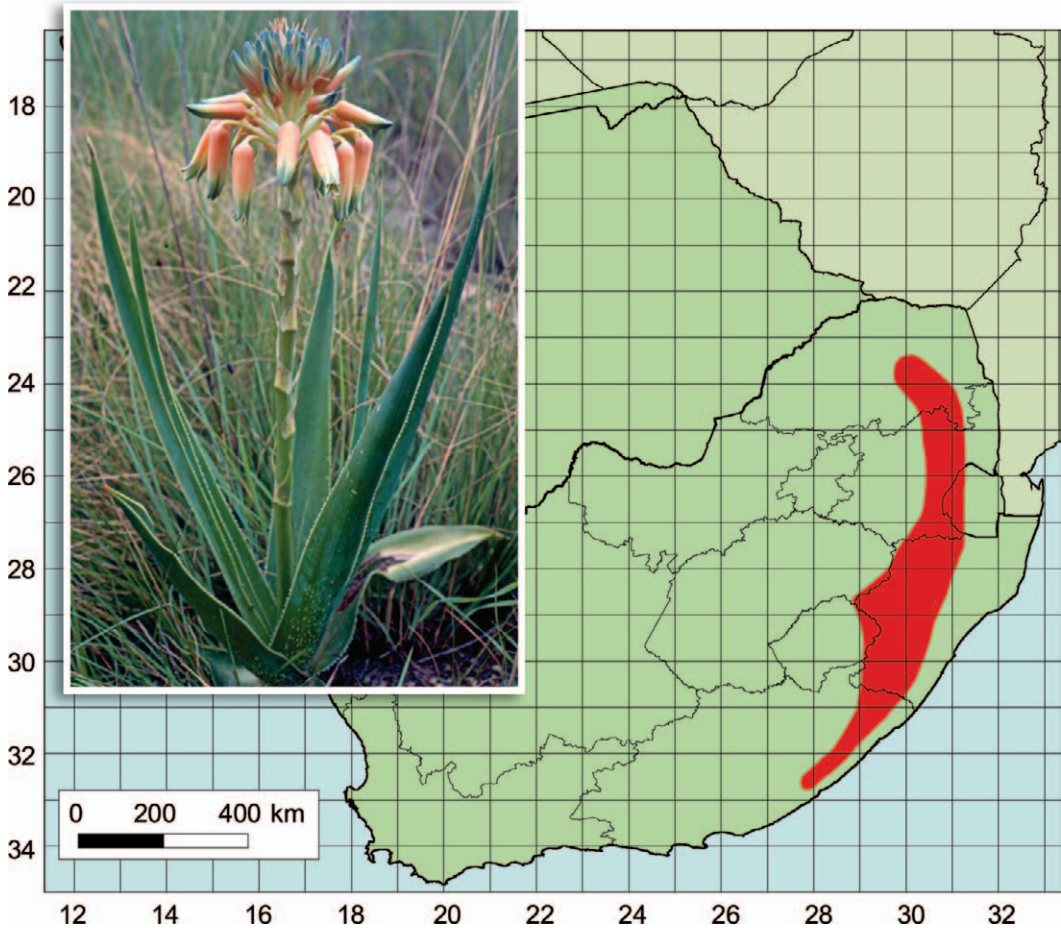
***Aloe broomii* SCHÖNLAND [*Bergaalwyn, slangaalwyn* (Afrikaans)]**

Rosettes up to 1.0 m diameter; leaves yellowish green, ca. 30 cm long, ca. 10 cm wide; floral bracts ca. 30 mm long, ca. 15 mm wide; buds and flowers hidden by large bracts; pedicels 1–2 mm long***A. broomii* var *broomii***

Rosettes up to 1.2 m diameter; leaves glossy reddish to brownish green, up to 50 cm long, 20–30 cm

wide; floral bracts ca. 12 mm long, ca. 5 mm wide; buds and flowers not hidden by bracts; pedicels ca. 4 mm long.....***A. broomii* var *tarkaensis***

Description: Seemingly acaulescent plants; rosettes up to 1.2 m diameter; always robust. **Stem** short, squat or up to 1 m long, usually simple, sometimes dividing at apex, procumbent, with persistent dried leaves. **Leaves** densely rosulate, erectly spreading, yellowish green (var *broomii*) or glossy reddish to brownish green (var *tarkaensis*), obscurely lineate, broadly ovate-lance-shaped, up to 50 cm long, 10–30 cm wide, 5–15 cm of apex dry, terminating in pungent spine; margin with deltoid, reddish brown, pale-tipped teeth, 1–2 mm long, 10–15 mm apart. **Inflorescences** 1.0–1.5 m high, erect, usually simple, rarely 1–2-branched. **Racemes** cylindric, slightly tapering to sharp point, ca. 100 cm long, very dense; buds and flowers hidden by large bracts (particularly in var *broomii*, not as pronounced in var *tarkaensis*). **Floral bracts** ca. 30 mm long, ca. 15 mm wide (var *broomii*) or ca. 12 mm long, ca. 5 mm wide (var *tarkaensis*). **Pedicels** 1–2 mm long (var *broomii*) or ca. 4 mm long (var *tarkaensis*). **Flowers:** *peri-*

Figure 7. *Aloe boylei*.

anth pale lemon, up to 30 mm long, slightly enlarging above ovary, narrowing towards mouth, slightly curved; outer segments free to base; *stamens* exserted to 12 mm; *style* exserted to 15–20 mm.

Flowering time: August to October (var *broomii*); February to March (var *tarkaensis*).

Habitat: Rocky slopes.

Distinguishing characters: The compact, but robust, densely leafy rosettes and long, slender, snake-like racemes make this aloe very easy to recognise. In vegetative characters it somewhat resembles a species of *Agave* L.. A further distinguishing character of *A. broomii* var. *broomii* is the flowers that are hidden by large bracts, even at maturity. The main characters distinguishing *A. broomii* var. *tarkaensis* Reynolds from the typical variety are the flowers and buds that are not hidden by large floral bracts, the longer pedicels and larger leaves.

Conservation status: Least Concern.

Distribution: *A. broomii* var. *broomii* (red on map) occurs in the northeastern corner of the Western Cape, southeastern Northern Cape, western areas of the Eastern Cape, southern Free State and western

Lesotho. *A. broomii* var. *tarkaensis* (orange on map) is endemic to the central western region of the Eastern Cape (Fig 8).

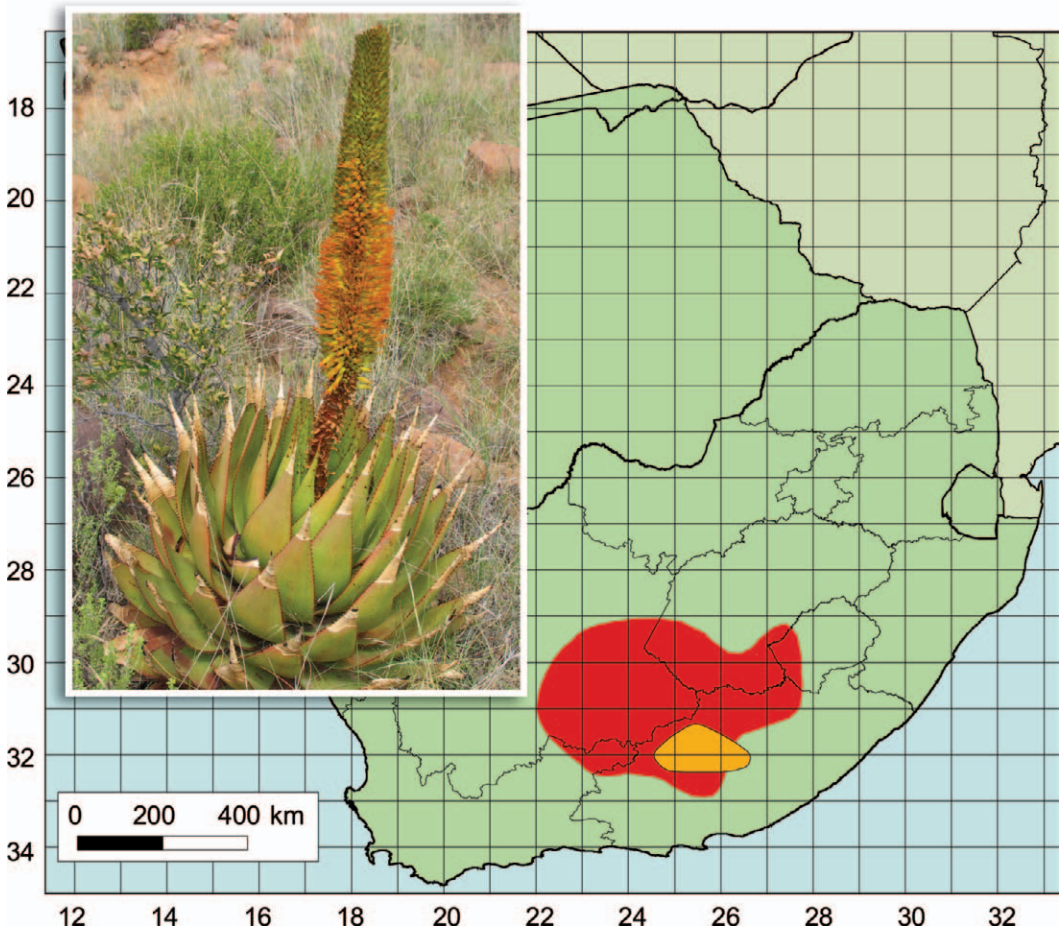
^E*Aloe ciliaris* HAW. [*Rankaalwyn* (Afrikaans)]

Stem up to 5 m long, only terminal portion with leaves; leaves 10–15 cm long, 1.5–2.5 cm wide; sheath obscurely lineate, distinctly auriculate with ciliate margin, cilia 2–4 mm long; racemes dense; floral bracts 4–5 mm long; pedicels 5–8 mm long; flowers 28–35 mm long..... ***A. ciliaris* var. *ciliaris***

Stem up to 3 m long, only terminal portion with leaves; leaves 7–11 cm long, ca. 1.3 cm wide; sheath obscurely lineate, minutely auriculate with ciliate margin, cilia 1–2 mm long; racemes lax; floral bracts 4–5 mm long; pedicels 3–5 mm long; flowers 21–25 mm long..... ***A. ciliaris* var. *redacta***

Stem 2–3 m long, with leaves for most of its length; leaves 7–10 cm long, 1.5–2.0 cm wide; sheath distinctly lineate, slightly auriculate with minutely ciliate margin, cilia shorter than 1 mm; racemes lax; floral bracts 2–3 mm long; pedicels 3–4 mm long; flowers 16–23 mm long..... ***A. ciliaris* var. *tidmarshii***

Figure 8. *Aloe broomii* var *broomii* (red) and *A. broomii* var *tarkaensis* (orange).



Description: Much-branched, tangled shrub. **Stems** long and slender, up to 5 m long, repeatedly branched, scandent. **Leaves** cauline dispersed, spreading to recurved, green, without spots, rather thin, linear-lance-shaped, 7–15 cm long, 1.3–2.5 cm wide; sheath auriculate with ciliate margin, green-lineate, 5–15 mm long; margin with firm, white, cartilaginous teeth, ca. 1 mm long, ca. 3 mm apart. **Inflorescence** 0.2–0.3 m long, ascending, arising laterally below apical leaves, simple, sometimes with short branch. **Racemes** broadly cylindrical, 8–15 cm long, dense (var *ciliaris*) or lax. **Floral bracts** 4–5 mm long or 2–3 mm long (var *tidmarshii*), 1–2 mm wide. **Pedicels** 5–8 mm long (var *ciliaris*) or 3–5 mm long. **Flowers:** *perianth* bright red with yellowish green tips, 28–35 mm long (var *ciliaris*), 21–25 mm long (var *redacta*) or 16–23 mm long (var *tidmarshii*), enlarging slightly towards mouth, slightly club-shaped or cylindrical; outer segments free for 6 mm; *stamens* exserted 2–4 mm (var *ciliaris*) or to 1 mm (var *tidmarshii*); *style* exserted 3–4 mm (var *ciliaris*) or 2–3 mm (var *tidmarshii*).

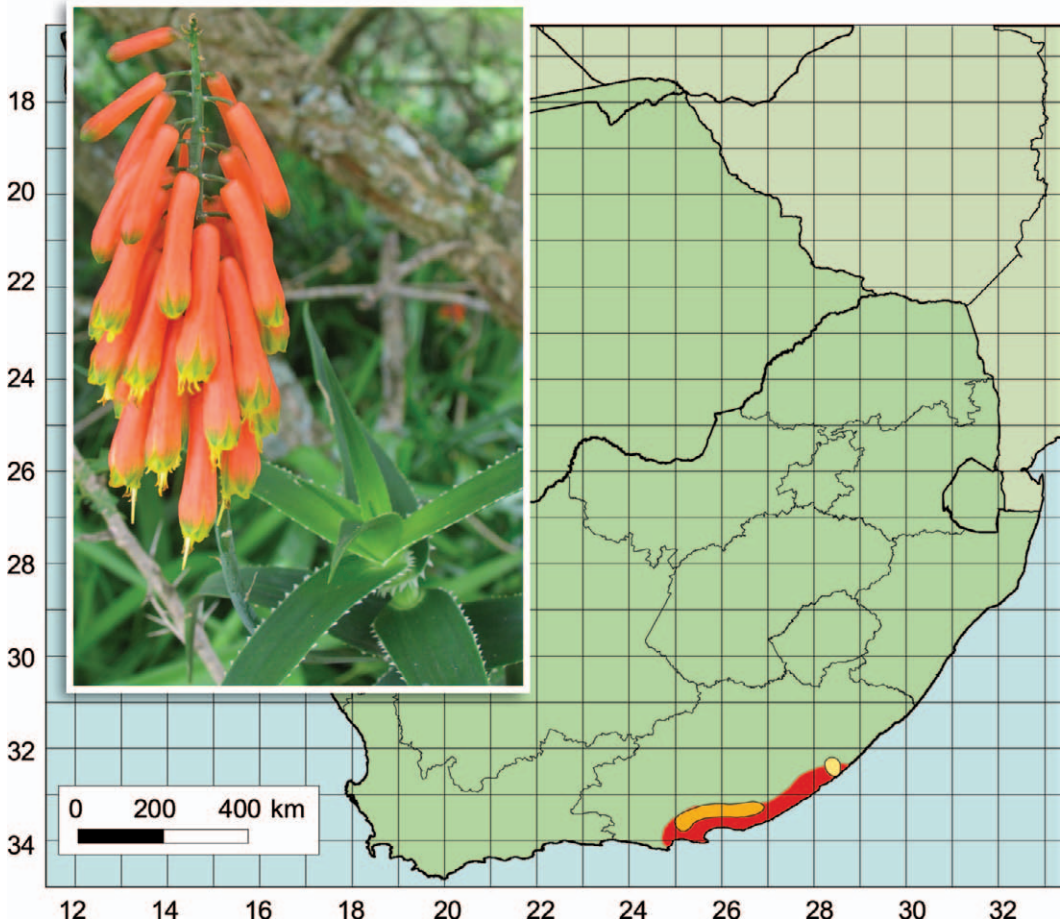
Flowering time: Throughout the year.

Habitat: Dry thicket.

Distinguishing characters: This tangled, climbing shrub is distinguished from other shrub-forming aloes with cauline dispersed leaves in the Eastern Cape (*A. gracilis*, *A. striatula* and *A. tenuior*) by the collar-like, auriculate, ciliate margin of the rather obscurely lined leaf sheaths and flowers that are scarlet-red with yellowish green mouths and 16–35 mm long. In the typical variety, the auriculate sheath margin is particularly prominent, while in *A. ciliaris* var *tidmarshii* Schönland the sheath is only slightly auriculate with very minutely ciliate margins. The latter variety is also smaller than the typical variety in all aspects, while *A. ciliaris* var *redacta* S. Carter exhibits characters that are intermediate between the other two varieties of the species.

Notes: A cytological study of the *A. ciliaris* complex (Brandham and Carter 1990) confirmed the hexaploid nature ($2n = 42$) of *A. ciliaris* var *ciliaris*. Such high levels of polyploidy are uncommon in the genus and in the family as a whole. *Haworthia* is the only other genus in Asphodelaceae in which polyploidy reaches extremely high levels. *Aloe ciliaris* var *tidmarshii* is a diploid ($2n = 14$), while ma-

Figure 9. *Aloe ciliaris* var *ciliaris* (red), *A. ciliaris* var *redacta* (yellow) and *A. ciliaris* var *tidmarshii* (orange).



terial from the Kei River was shown to be the first record of a tetraploid ($2n = 28$) in *Aloe*. This resulted in the description of the intermediate *A. ciliaris* var *redacta*.

Aloe ciliaris var *ciliaris* and *A. ciliaris* var *tidmarshii* are sufficiently different to warrant their recognition at species level. They were, in fact, treated as separate species [*A. ciliaris* and *A. tidmarshii* (Schönland) F. S. Mull.] for many years. However, the discovery of the intermediate polyploid, *A. ciliaris* var *redacta*, indicates a species complex and these taxa are therefore rather recognized at the varietal level.

Conservation status: *A. ciliaris* var *redacta*: Vulnerable; threats include habitat degradation due to agricultural and infrastructure development. The other two varieties are considered Least Concern.

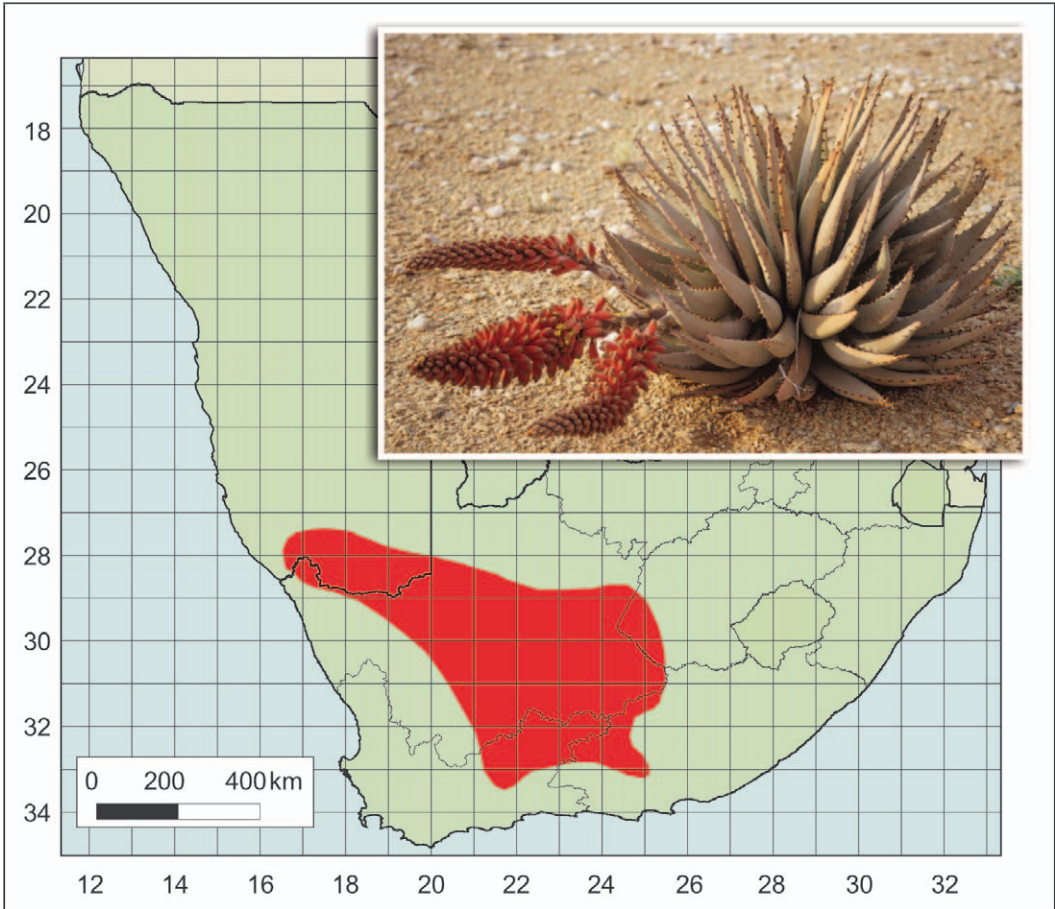
Distribution: *A. ciliaris* var *ciliaris* (red on map) is endemic to the Eastern Cape in a coastal belt from Humansdorp to the Kei River mouth. *A. ciliaris* var *redacta* (yellow on map) is endemic to a small area along the Kei River. *A. ciliaris* var *tidmarshii* (orange on map) is endemic to an inland strip of the Eastern Cape along the Zuurberg range (Fig 9).

***Aloe claviflora* BURCH. [*Aanteelaalwyn*, *kanonaalwyn*, *kraalaalwyn* (Afrikaans)]**

Description: Acaulescent, forming dense, often hollow, circular groups; rosettes not erect, facing outwards, sometimes with short, procumbent stem in older plants, 0.1–0.2 m long. **Leaves** densely rosette, arcuate-erect to falcately upturned, gray-green, without spots, surface rough, few spines along tip of keel, ovate-lance-shaped, up to 20 cm long, 6–8 cm wide at base; margin with sharp, brownish teeth, 2–4 mm long, ca. 10 mm apart. **Inflorescence** up to 0.5 m long, almost horizontal, usually simple or sometimes bifurcate, rarely 3–4-branched. **Raceme** cylindrical, tapering to sharp point, 20–30 cm long, dense. **Floral bracts** ca. 15 mm long, 6–8 mm wide. **Pedicels** 7–10 mm long. **Flowers:** *perianth* buds bright red, with a bloom, greenish tipped, flowers bright red, turning lemon-yellow to ivory with age, 30–40 mm long, club-shaped, gradually tapering into pedicel; outer segments free for 10–20 mm; **stamens** exerted 10–15 mm; **style** exerted to 15 mm.

Flowering time: July to September.

Habitat: Usually on calcrete, margins of Kalahari thornveld.

Figure 10. *Aloe claviflora*.

Distinguishing characters: This aloe is not easily confused with any of the other Eastern Cape aloes. The almost horizontal inflorescences and club-shaped flowers are quite distinctive. So too is its growth form: it forms dense, often hollow, circular groups with rosettes that are not erect, but facing outwards. The leaves are firm and rough, with dark brown marginal teeth.

Conservation status: Least Concern.

Distribution: Widespread from Warmbad and Klein Karas in Namibia, through the Northern Cape and entering the Western and Eastern Cape Provinces, as well as the western Free State (Fig 10). Further to the north in Namibia, two superficially similar species, *A. asperifolia* A. Berger and *A. pachygaster* Dinter, share a preference for extreme aridity.

***Aloe comptonii* REYNOLDS**

Description: Creeping aloe. Acaulescent or stem short, rarely up to 1 m long, decumbent, with persistent dried leaves; rosettes usually in dense groups, erect, 40–50 cm high, up to 60 cm diameter. **Leaves** densely rosulate, erectly spreading, glaucous-green, with reddish tinge, without lines or spots, lance-shaped, gradually tapering, up to 30 cm long,

ca. 9 cm wide, with up to 6 spines at tip of keel; margin with pale brown teeth from white base, 2–3 mm long, 10–15 mm apart. **Inflorescence** 0.8–1 m high, erect to ascending, 3–8-branched. **Racemes** almost head-shaped, rounded, sometimes broadly cone-shaped, up to 15 cm long, dense. **Floral bracts** up to 7 mm long, 3 mm wide. **Pedicels** 30–35 mm long. **Flowers:** *perianth* dull scarlet, 35–40 mm long, slightly narrowed above ovary, widening slightly towards wide open mouth, tapering into pedicels, cylindrical, slightly curved; outer segments free to base or almost so; **stamens** and **style** exerted to 5 mm.

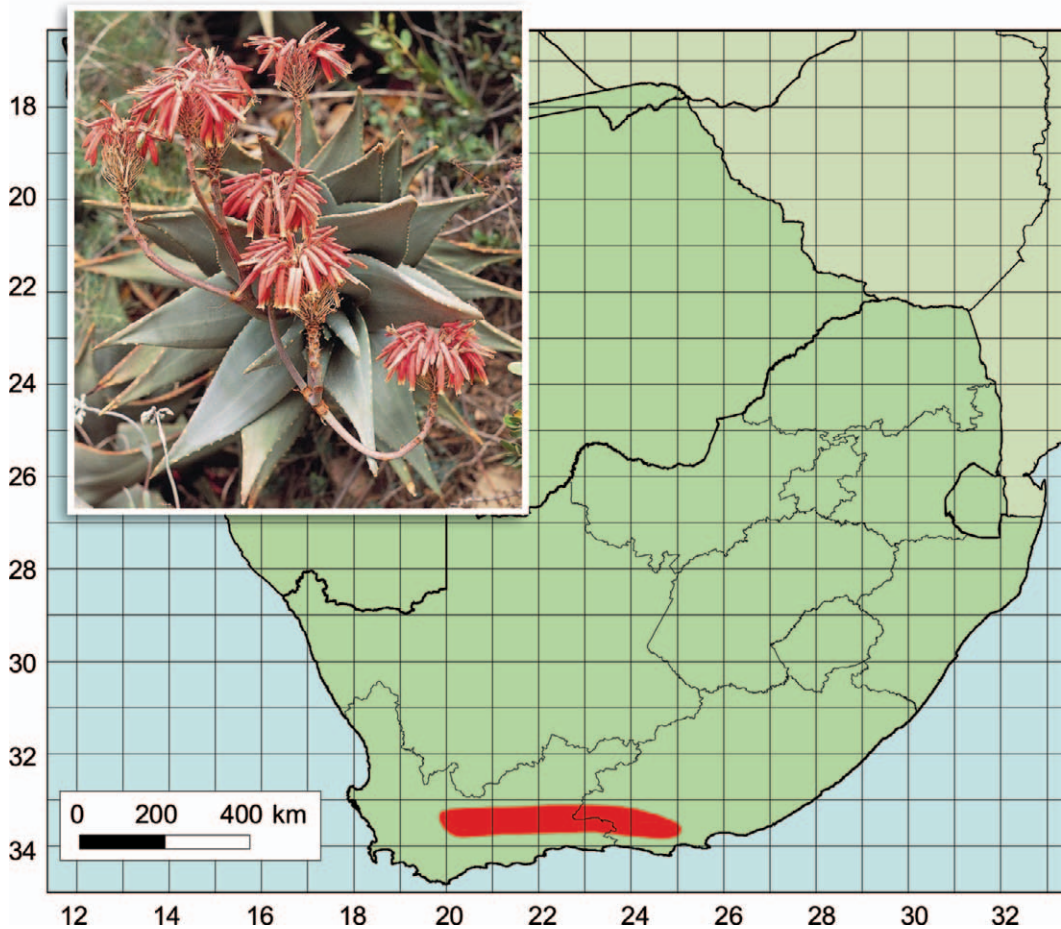
Flowering time: August to December.

Habitat: Cliffs and slopes, sometimes rocky flats.

Distinguishing characters: This creeping or often acaulescent aloe grows in groups, with its rosettes dangling down cliffs or more or less erect. It has glaucous leaves of which the margins are not white and horny, but has pale brownish cream marginal teeth arising from a white base.

Conservation status: Least Concern.

Distribution: Occurs in a narrow inland strip from east of Steytleville in the Eastern Cape to Montagu in the Western Cape (Fig 11).

Figure 11. *Aloe comptonii*.

Aloe cooperi BAKER [*Cooper's grass aloe*; *Cooperse-grasaalwyn* (Afrikaans); *inqimindolo*, *isiphukuthwane*, *isiphuthumane* (Zulu)]

Description: Grass aloe. Acaulescent or **stem** up to 0.15 m, erect, usually simple, sometimes with offshoots at ground level to form small groups, dried leaves not persistent. **Leaves** distichous, sometimes spirally twisted to rosulate in old plants, deciduous, green, usually without spots on upper surface, with copious white spots at base on lower surface, obscurely lineate, narrowly long-deltoid, distinctly keeled, V-shaped in cross section, 60–80 cm long, 5–6 cm wide at base; margin with firm, white teeth, 1–2 mm long, 1–2 mm apart at midleaf. **Inflorescences** ca. 1 m high, erect, simple. **Raceme** broadly cone-shaped, up to 20 cm long, dense. **Floral bracts** 20–32 mm long. **Pedicels** 40–45 mm long. **Flowers:** *perianth* salmon-pink near base, green at tip, 38–40 mm long, narrowing towards mouth, roundly trigonous, basally stipitate and narrowing into pedicel; outer segments free almost to base; *stamens* not exerted or exerted 1–2 mm; *style* exerted to 5 mm.

Flowering time: January to March.

Habitat: Marshy places or among rocks on hillsides.

Distinguishing characters: This grass aloe can be distinguished from the other Eastern Cape grass aloes (*A. boylei*, *A. ecklonis*, *A. kniphofioides*, *A. linearifolia*, *A. micracantha*, *A. minima* and *A. myriacantha*) by its rather narrow, ridged (keeled or V-shaped) leaves that are 60–80 cm long, 5–6 cm wide and are borne in two ranks, with copious white spots near the base of the lower leaf surface. The unbranched inflorescence bears a dense, cone-shaped raceme with salmon-pink, green-tipped flowers that are 38–40 mm long. The inflorescence is sometimes shorter than the leaves.

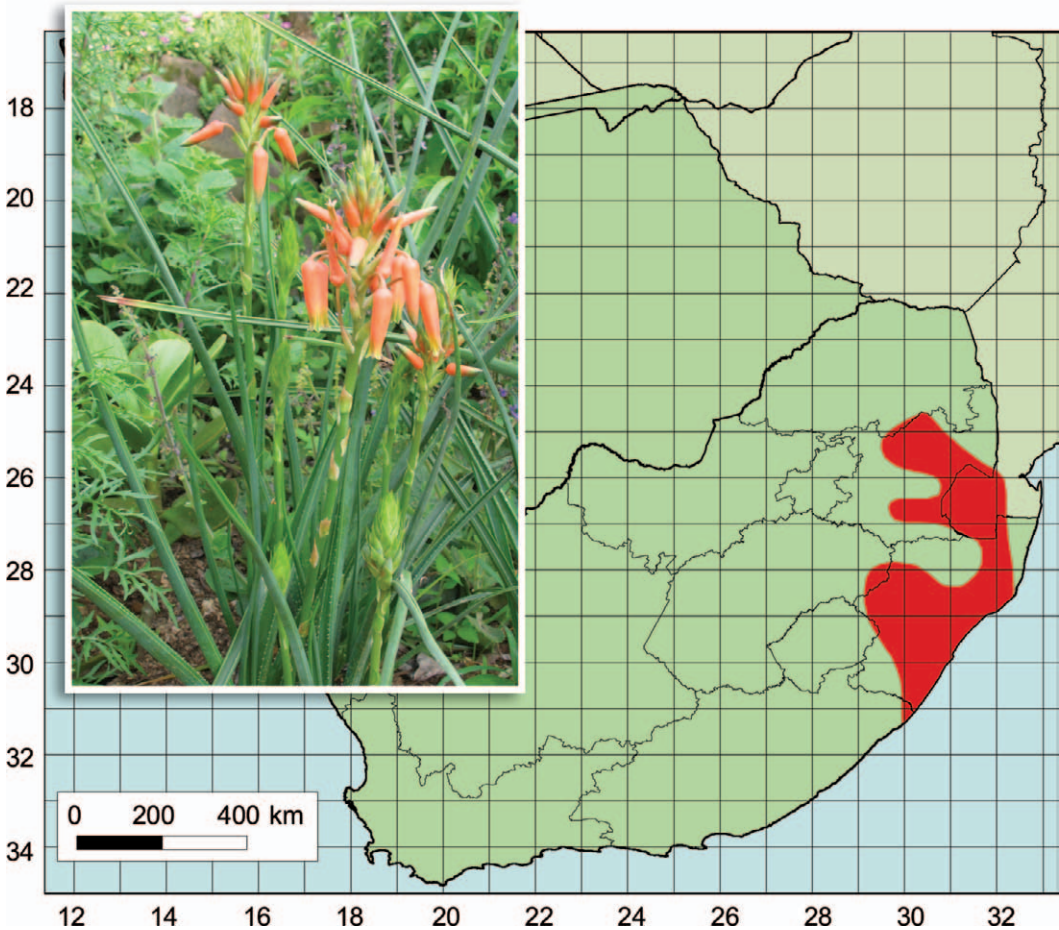
Conservation status: Least Concern.

Distribution: Occurs mainly in KwaZulu-Natal, Swaziland and Mpumalanga. Just entering the northern Eastern Cape and eastern Free State from KwaZulu-Natal (Fig 12).

Aloe ecklonis SALM-DYCK [*Ecklon's grass aloe*; *Ecklon-se-grasaalwyn* (Afrikaans); *maroba libale* (Sesotho); *isiphukuthwane* (Zulu)]

Description: Grass aloe. Acaulescent or **stem** very short; rosettes solitary or in small groups. **Leaves** rosulate, deciduous, erectly spreading, dull green, with-

Figure 12. *Aloe cooperi* ssp. *cooperi*.



out spots, sometimes with few small, white spots near base on lower surface, lance-shaped, up to 40 cm long, up to 9 cm wide at base; margin with firm, white, deltoid teeth, 1–3 mm long, 3–5 mm apart. **Inflorescences** up to 0.5 m high, erect, simple. **Racemes** head-shaped, somewhat flat-topped, ca. 5 cm long, dense. **Floral bracts** 10–13 mm long, 5–9 mm wide. **Pedicels** 30–40 mm long. **Flowers:** *perianth* yellow to red, 20–24 mm long, markedly swollen in middle, narrowing towards slightly upturned mouth, basally stipitate and narrowing into pedicel, roundly trigonous; outer segments free almost to base; *stamens* exserted to 3 mm; *style* exserted to 5 mm.

Flowering time: November to February.

Habitat: Grassland, heavy soils.

Distinguishing characters: This grass aloe can be distinguished from most other Eastern Cape grass aloes (*A. cooperi*, *A. kniphofioides*, *A. linearifolia*, *A. micracantha*, *A. minima* and *A. myriacantha*) by its larger and broader, rosulate leaves that are up to 40 cm long and up to 7 cm wide, occasionally with a few white spots near the base of the lower leaf surface, but usually without spots. The unbranched inflorescence bears a dense, head-shaped raceme. It can

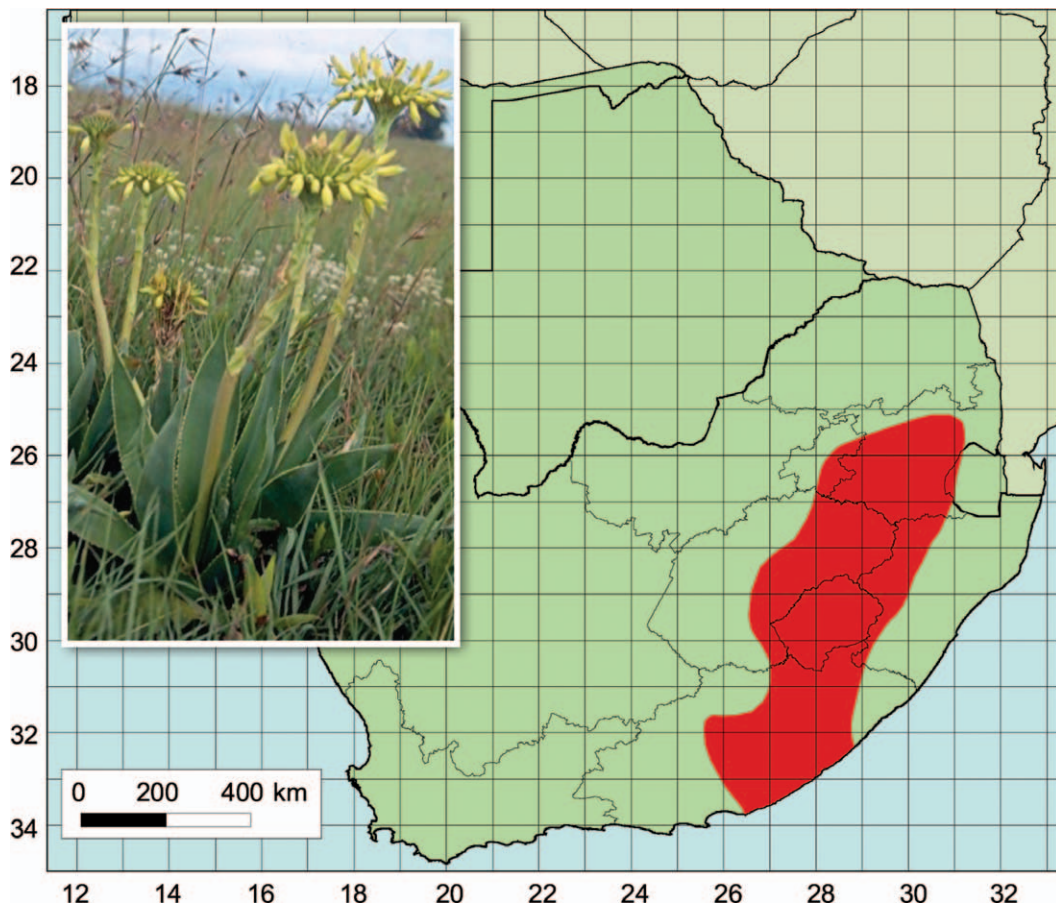
be distinguished from the very similar *A. boylei* by its smaller leaves and yellow to red flowers that are 20–24 mm long and markedly swollen in the middle.

Conservation status: Least Concern.

Distribution: This species is one of the most widely distributed grass aloes in southern Africa, indicating that it is tolerant of climatic variation. It occurs in the Eastern Cape from Bathurst and Tarkastad east- and northeastwards through Lesotho, western KwaZulu-Natal, eastern Free State, Mpumalanga, eastern Gauteng and western Swaziland (Fig 13).

Aloe ferox MILL. [*Bitter aloe*; *tapaalwyn*, *bitteraalwyn*, *opregte-aalwyn*, *karoo-aalwyn* (Afrikaans); *blaba* (Sesotho); *ikhala* (Xhosa); *umblaba* (Zulu)]

Description: Solitary, arborescent plant up to 2–3 m high. **Stem** simple, erect, 2–3 m, can be up to 5 m high, densely covered with persistent dried leaves. **Leaves** densely rosulate, erectly spreading, dull green, sometimes with reddish tinge, without spots, surfaces smooth or with irregular scattered spines, lance- to sword-shaped, up to 100 cm long, 15 cm wide at base, lower surface with few spines in median line near apex; margin with stout, red-

Figure 13. *Aloe ecklonis*.

dish to brownish red, deltoid teeth, ca. 6 mm long, 10–20 mm apart. **Inflorescence** single, ca. 1 m high, erect, 5–8-branched. **Racemes** cylindrical, 50–80 cm long, very dense. **Floral bracts** 8–10 mm long, 3–5 mm wide. **Pedicels** 4–5 mm long. **Flowers:** **perianth** scarlet, sometimes orange, ca. 33 mm long, widening above ovary, slightly narrowed at mouth, club-shaped to cylindrical, slightly ventricose; outer segments free for ca. 22 mm; **stamens** and **style** exerted 20–25 mm.

Flowering time: May to November.

Habitat: Rocky slopes.

Distinguishing characters: The erect, much-branched, candelabra-like inflorescences, with up to eight symmetrical, cylindrical, generally uniformly colored racemes distinguish this aloe from others in the Eastern Cape with erect, unbranched stems covered in persistent dried leaves (*A. africana*, *A. lineata*, *A. pluridens*, *A. speciosa* and *A. thraskii*). Leaf surfaces are either smooth or with scattered spines (particularly in the west) and stout, reddish to brownish red marginal teeth and with a few spines on the median line near the apex on the lower leaf surface. Flowers are cylindrical, uncurved and usually scarlet to orange (although a wide variety of color variations

can sometimes be found) with brown to deep brown inner segment tips.

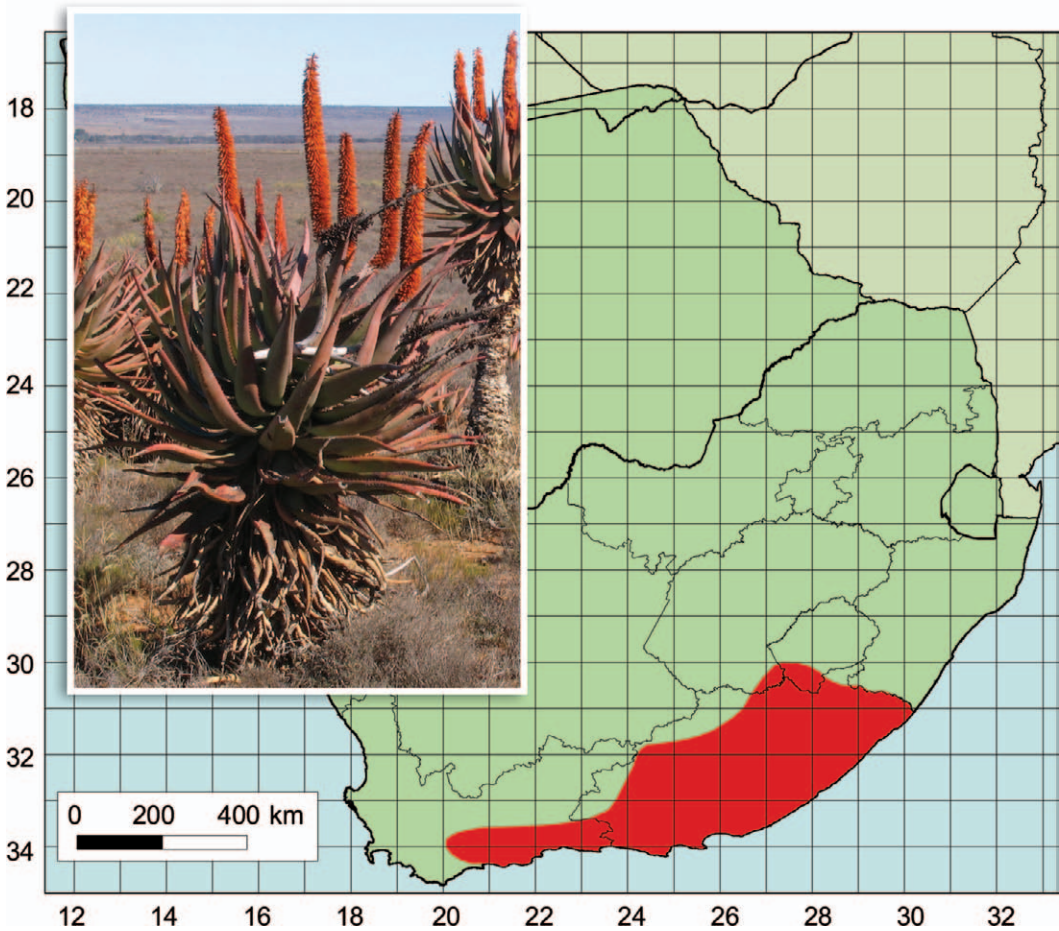
Conservation status: Least Concern.

Distribution: Widespread through most of the Eastern Cape and extending into the southeastern Free State, southern Lesotho and southern Western Cape to the Swellendam area (Fig 14).

^E*Aloe gracilis* HAW. [*Rankaalwyn* (Afrikaans)]

Description: Much-branched, tangled shrub up to 2 m high. **Stems** long and slender, branched at ground level, erect, dried leaves not persistent. **Leaves** cauline dispersed, erectly to horizontally spreading, dull green, without spots, narrowly lance-shaped, up to 25 cm long, ca. 2.5 cm wide at base; sheath not auriculate and without ciliate margin, faintly striated, pale green, 10–15 mm long; margin slightly cartilaginous, with firm, white teeth, up to 1 mm long, 2–5 mm apart. **Inflorescences** 0.2–0.3 m high, erect, simple or 1–2-branched. **Raceme** cylindrical, slightly cone-shaped, ca. 10 cm long, dense. **Floral bracts** 5 mm long, 2–3 mm wide. **Pedicels** 8 mm long. **Flowers:** **perianth** bright red to scarlet, yellowish at mouth, 40–45 mm long, scarcely narrowed above ovary, slightly widening towards

Figure 14. *Aloe ferox*.



mouth, cylindric, slightly decurved; outer segments free for 10–12 mm; *stamens* and *style* included or sometimes exerted 1–2 mm.

Flowering time: May to August.

Habitat: Partly shaded slopes in thicket vegetation.

Distinguishing characters: This much-branched shrub is distinguished from other shrub-forming aloes with cauline dispersed leaves in the Eastern Cape (*A. ciliaris*, *A. striatula* and *A. tenuior*) by its leaf sheaths that are not auriculate, lack a ciliate margin and are only faintly striated and flowers that are bright red to scarlet with yellow mouths and are 40–45 mm long. Interestingly, this is the most challenging scrambling aloe to keep in cultivation.

Conservation status: Least Concern.

Distribution: Endemic to the Eastern Cape in the Port Elizabeth and Joubertina areas (Fig 15).

***Aloe grandidentata* SALM-DYCK [Kleinbontaalwyn (Afrikaans)]**

Description: Acaulescent or with very short stems, suckering to form dense groups; rosettes erect. **Leaves** densely rosulate, spreading, brownish

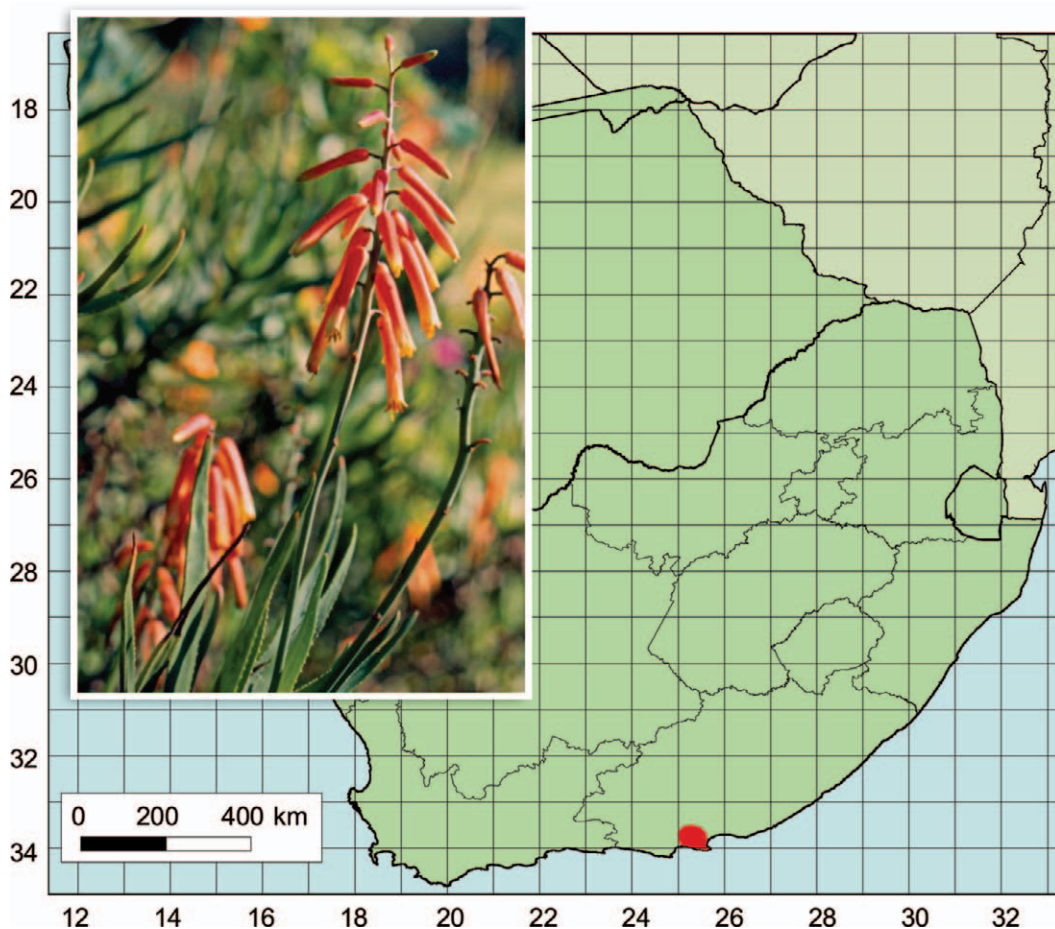
green, with numerous dull, white, oblong spots, usually arranged in interrupted, transverse bands, more prominently marked on lower surface, lance-shaped, 10–15 cm long, usually with additional 5 cm of dried, twisted apex, 6–7 cm wide; margin with pungent, deltoid, reddish brown teeth, 3–5 mm long, 8–10 mm apart. **Inflorescence** ca. 0.9 m high, erect, 4–7-branched. **Raceme** cylindric, slightly tapering to sharp point, terminal raceme up to 15–20 cm long, lax. **Floral bracts** 10–15 mm long. **Pediceles** 10–15 mm long. **Flowers**: *perianth* dull red, 28–30 mm long, not or very slightly narrowed above ovary, enlarging towards middle, distinctly club-shaped; outer segments free for 8–10 mm; *stamens* and *style* exerted to 5 mm.

Flowering time: August to October.

Habitat: Gravelly or stony soil in flat areas and on ironstone koppies.

Distinguishing characters: Distinguished from the other spotted aloe in the Eastern Cape (*A. maculata*) by its club-shaped flowers that are borne in cylindrical racemes and by its leaves that are more prominently marked on the lower surface.

Conservation status: Least Concern.

Figure 15. *Aloe gracilis*.

Distribution: Occurs from southern Botswana, through the Northwest Province, western and central Free State and just into the northwestern Eastern Cape (Fig 16).

***Aloe humilis* (L.) MILL. [Dwarf hedgehog aloe]**

Description: Acaulescent plants, suckering to form dense groups; rosettes erect, up to 0.15 m high. **Leaves** rosulate, erect, glaucous green with dewy bloom, unspotted, obscurely linear-veined, ovate-lance-shaped, very prominently tapering to sharp point, ca. 10 cm long, 1.2–1.8 cm wide, both surfaces tuberculate, with irregularly arranged soft white prickles on lower surface; margin with deltoid, soft white teeth, 2–3 mm long, 3–8 mm apart. **Inflorescence** 0.25–0.35 m high, suberect, simple. **Racemes** cylindrical, up to 10 cm long, dense. **Floral bracts** 25–35 mm long, 5–7 mm wide. **Pedicels** 25–35 mm long. **Flowers:** *perianth* usually scarlet, occasionally orange, rarely yellow, 35–42 mm long, enlarged above ovary, narrowing slightly towards mouth, slightly decurved; outer segments free for 23–28 mm; *stamens* and *style* scarcely exerted.

Flowering time: August to December.

Habitat: Clay soils in Noorsveld, thickets at Red-house near Port Elizabeth.

Distinguishing characters: This miniature aloe can be distinguished by its small, densely clustered rosettes of almost awl-shaped, tuberculate leaves with soft white scattered prickles, its simple inflorescence of which the sterile bracts are not imbricate and large over-sized appearing flowers that taper to both ends.

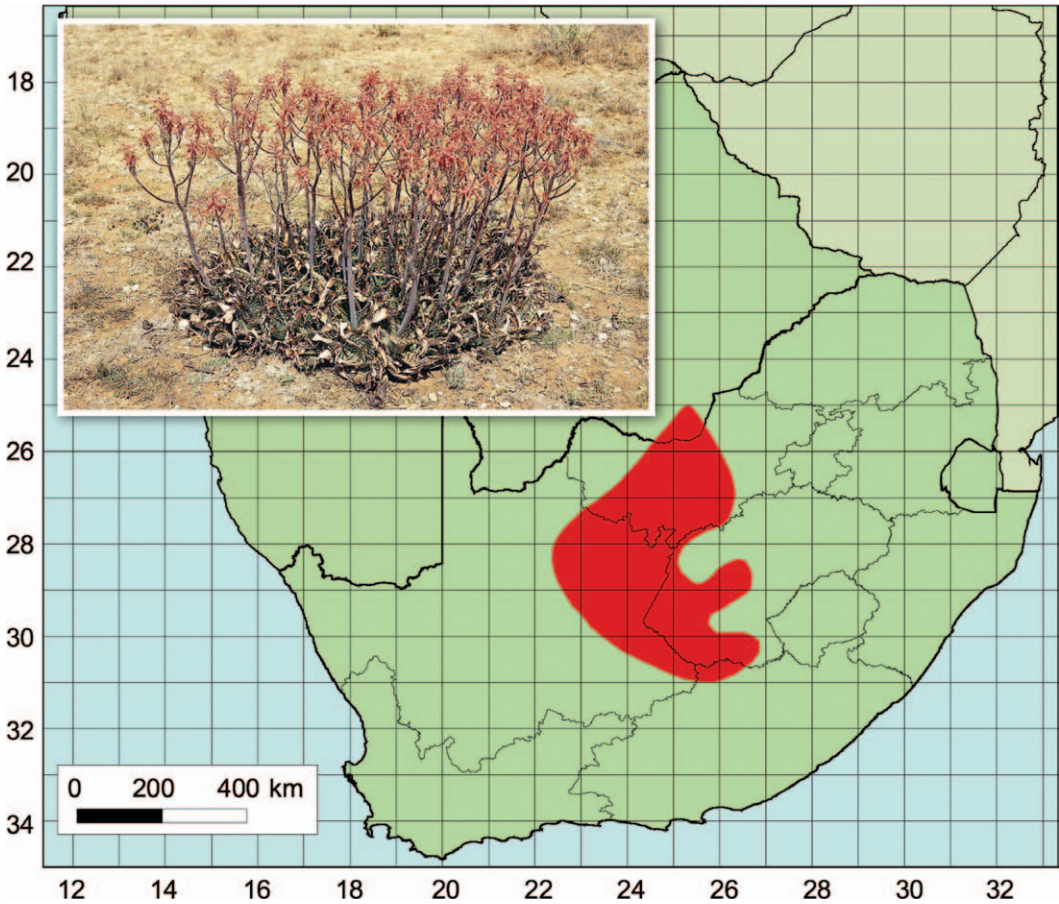
Conservation status: Least Concern.

Distribution: Occurs widely from Alexandria in the western Eastern Cape to Mossel Bay in the eastern Western Cape (Fig 17).

***Aloe kniphofioides* BAKER [Grass aloe, poker aloe; grasaalwyn (Afrikaans); inhlatjana (Swazi)]**

Description: Grass aloe. Acaulescent; rosettes solitary, leaf bases forming bulb-like underground swelling. **Leaves** rosulate, erect, green, without spots, narrowly linear, 20–30 cm long, 0.6–0.7 cm wide; margin entire or minutely dentate, with small, white teeth, ca. 0.7 mm long, 1–2 mm apart. **Inflorescence** up to 0.55 m high, erect, simple. **Raceme** cylindrical, 10–15 cm long, very lax, few-flowered.

Figure 16. *Aloe grandidentata*.



Floral bracts up to 15 mm long, 4–6 mm wide. **Pedicels** up to 15 mm long. **Flowers:** *perianth* scarlet, green-tipped, 35–50 mm long, base rounded, not narrowed above ovary, cylindrical, slightly curved; outer segments free for 6–8 mm; *stamens* and *style* not or very shortly exserted to 1 mm.

Flowering time: November to December.

Habitat: Grassy slopes in stony ground.

Distinguishing characters: This grass aloe can be distinguished from the other Eastern Cape grass aloes (*A. boylei*, *A. cooperi*, *A. ecklonis*, *A. linearifolia*, *A. micracantha*, *A. minima* and *A. myriacantha*) by its distinctive underground bulb and unbranched inflorescence with long, narrow, bright red flowers (35–50 mm long) in a very lax, cylindrical raceme.

Conservation status: Least Concern (Smith and others 2000). However, according to Craib (2005) this aloe is threatened by habitat fragmentation, poor fire management and loss of its pollinator. Based on the 2001 IUCN Red List categories (IUCN 2001) it should be regarded as Vulnerable (SANBI 2007).

Distribution: This species has a disjunct distribution: it occurs in the Kokstad area on the border of KwaZulu-Natal and the Eastern Cape Province; and also along the escarpment in northern KwaZulu-

Natal, Mpumalanga and Swaziland, just entering the eastern Free State (Fig 18).

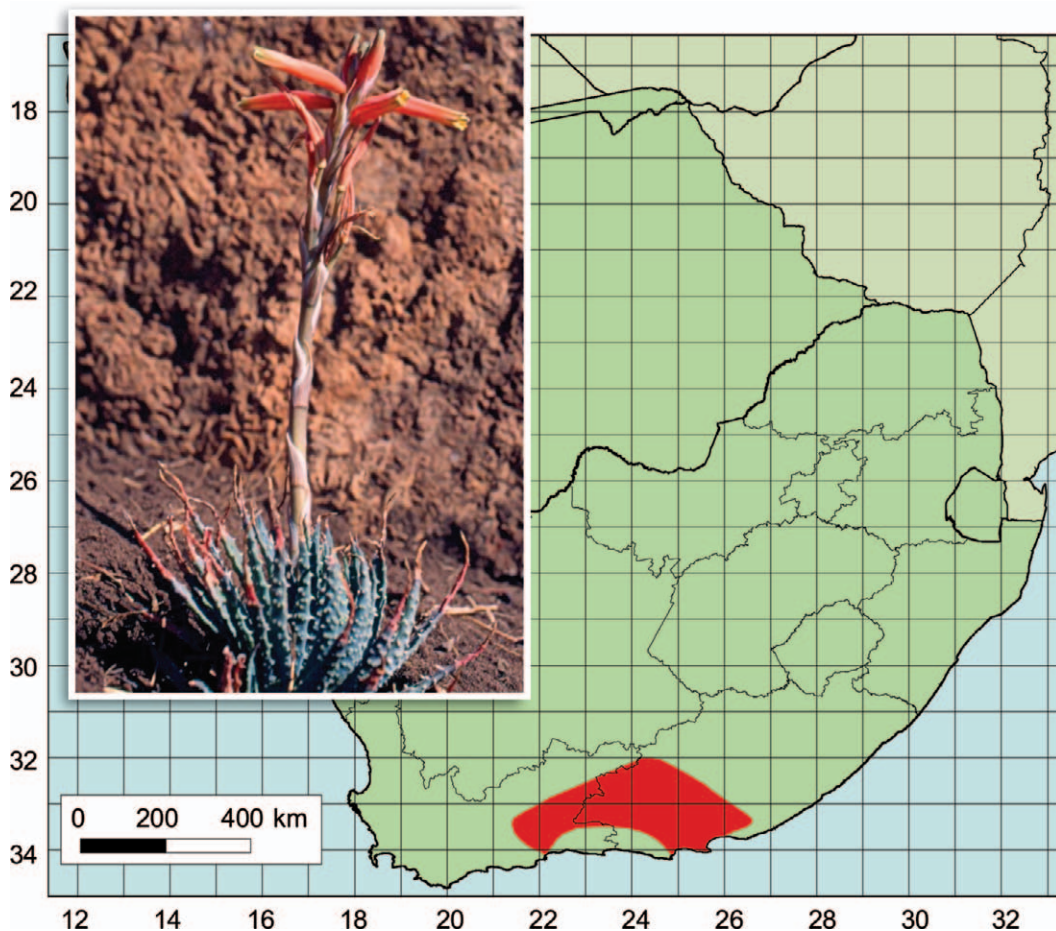
***Aloe linearifolia* A. BERGER [*Inkubuyana* (Zulu)]**

Description: Grass aloe, up to ca. 0.3 m high. Acaulescent or **stem** very short, usually simple, occasionally 1–2-branched at ground level, erect. **Leaves** usually distichous, rarely rosulate, erect to erectly spreading, deciduous, green, with copious white and brown spots near base on lower surface, linear, ca. 25 cm long, 0.5–0.8 cm wide, basal portion dilating and becoming amplexicaul; margin usually minutely dentate near base, teeth up to 0.5 mm, up to 4 mm apart, without teeth upwards. **Inflorescence** 0.20–0.25 m high, erect, simple. **Racemes** head-shaped, ca. 2 cm long, dense. **Floral bracts** up to 10 mm long, 5 mm wide. **Pedicels** 12–15 mm long. **Flowers:** *perianth* greenish yellow to yellow, ca. 12 mm long, base tapering into pedicel, not narrowed above ovary, mouth slightly upturned, cylindrical-trigonous; outer segments free almost to base; *stamens* exserted 0–2 mm; *style* exserted 1–2 mm.

Flowering time: January to February.

Habitat: Grassland.

Distinguishing characters: This small grass aloe can

Figure 17. *Aloe humilis*.

be distinguished from the other Eastern Cape grass aloes (*A. boylei*, *A. cooperi*, *A. ecklonis*, *A. kniphofoides*, *A. micracantha*, *A. minima* and *A. myriacantha*) by its long, narrow leaves, ca. 25 cm long and 0.5–0.8 cm wide, that are usually borne in two ranks, with copious white and brown spots near the base of the lower leaf surface. The unbranched inflorescence bears a dense, head-shaped raceme of greenish yellow to yellow, ca. 12 mm long flowers with upturned (but not bilabiate) mouths.

Conservation status: Least Concern (Smith and others 2000). However, according to Craib (2005) this aloe is threatened by habitat degradation owing to overgrazing, urbanization, invasive alien plants, afforestation and agriculture. Based on the 2001 IUCN Red List categories (IUCN 2001) it should be regarded as Near Threatened (SANBI 2007).

Distribution: Occurs from north of Port St Johns in the Eastern Cape into southern and central KwaZulu-Natal, with scattered localities in northern KwaZulu-Natal, at the Swaziland border near Barberton and in the Lydenburg area in Mpumalanga (Fig 19).

***Aloe lineata* (AITON) HAW. var *lineata* [Streepaalwyn (Afrikaans)]**

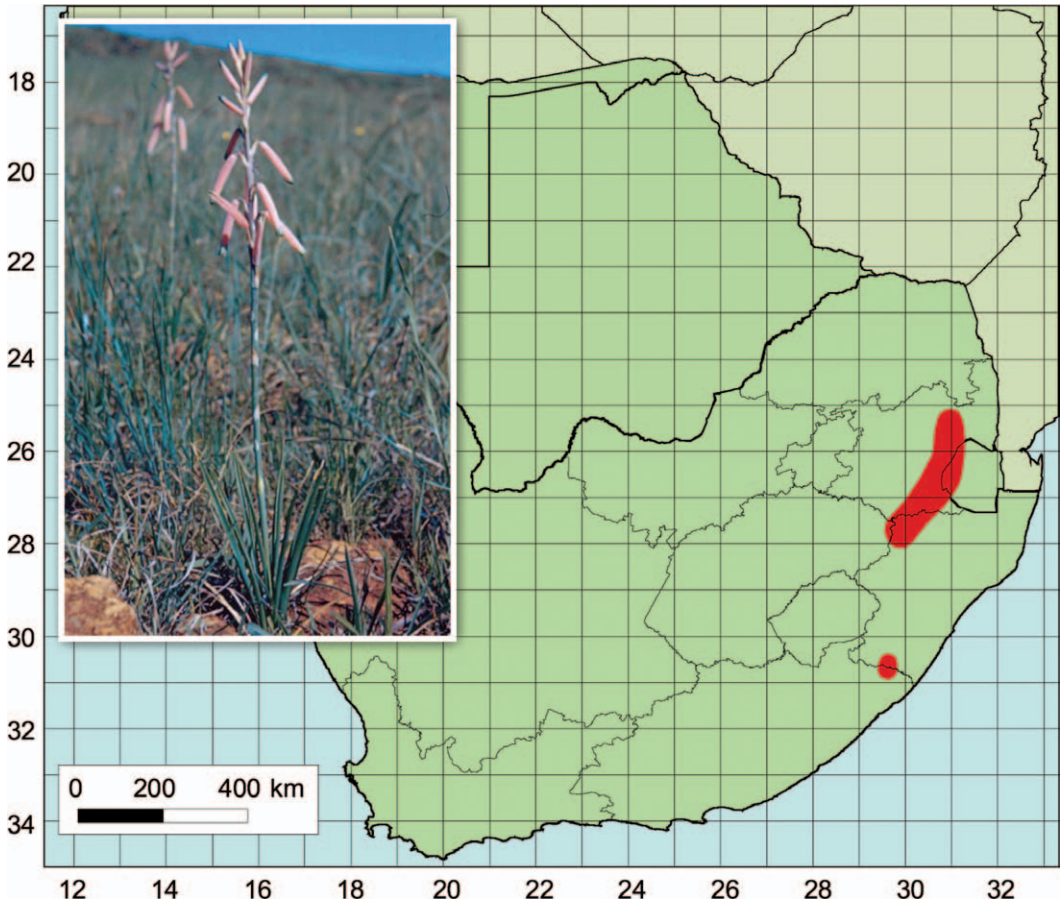
Description: Tree-like shrub, up to 1.5 m high. **Stem** simple or branched low down, erect, usually covered in persistent dried leaves. **Leaves** very densely rosulate, ascending or sometimes spreading, dull to bright green, not glaucous, distinctly lineate, lance-shaped, tapering to sharp point, ca. 30 cm long, ca. 7 cm wide; margin reddish brown, horny, with pungent, deltoid, reddish brown teeth, 4–6 mm long, 5–15 mm apart. **Inflorescence** 0.75–1.00 m high, erect, simple. **Racemes** cone-shaped, 20–30 cm long, dense; buds densely congested and hidden by longer fleshy bracts. **Floral bracts** ca. 20 mm long, 10–12 mm wide. **Pedicels** ca. 40 mm long. **Flowers:** *perianth* salmon-pink to orange, 45–50 mm long, slightly constricted above ovary, widening towards middle, slightly narrowing towards mouth, cylindrical-trigonous; outer segments free to base or almost so; **stamens** exerted 1–3 mm; **style** exerted to 4 mm.

Flowering time: January to March.

Habitat: Thicket and dense bushy vegetation.

Distinguishing characters: *A. lineata* can be dis-

Figure 18. *Aloe kniphofioides*.



tinguished from other tree-like aloes in the Eastern Cape (*A. africana*, *A. barberae*, *A. ferox*, *A. pluridens*, *A. speciosa* and *A. thraskii*) by its stem that is usually branched low down, its distinctly lineate, bright green leaves with reddish brown marginal teeth and the buds that are hidden by large floral bracts. The raceme of the simple inflorescence is cone-shaped and uniformly colored, with cylindric, uncurved flowers.

Conservation status: Least Concern.

Distribution: This aloe has a disjunct distribution. It occurs between Grahamstown and Hankey in the Eastern Cape and also between Riversdale and Ladismith in the Western Cape (Fig 20).

***Aloe longistyla* BAKER [Karoo aloe; karoo-aalwyn, ramenas (Afrikaans)]**

Description: Acaulescent; rosettes single or occasionally branched at base to form clumps of 2–3 or occasionally up to 10, dense and compact, up to 0.25 m high, erect or growing at an angle. **Leaves** densely rosulate, arcuate-erect incurved, grayish green, distinctly waxy, without spots, lance-shaped, 12–15 cm long, ca. 3 cm wide at base, both surfaces with soft to firm white spines, apex usually terminating in spine; margin with firm, horny, white, deltoid

teeth, 3–4 mm long, ca. 5 mm apart. **Inflorescence** 0.15–0.20 m high, erect to slightly slanted, simple. **Racemes** broadly cone-shaped, exceptionally large relative to plant, ca. 11 cm long, dense. **Floral bracts** 25–30 mm long, 12–15 mm wide. **Pedicels** 6–8 mm long. **Flowers:** *perianth* pale salmon-pink to coral-red, ca. 55 mm long, slightly constricted and upcurved towards mouth, cylindric; outer segments free for 13 mm; **stamens** exserted to 20 mm; **style** exserted to 25 mm.

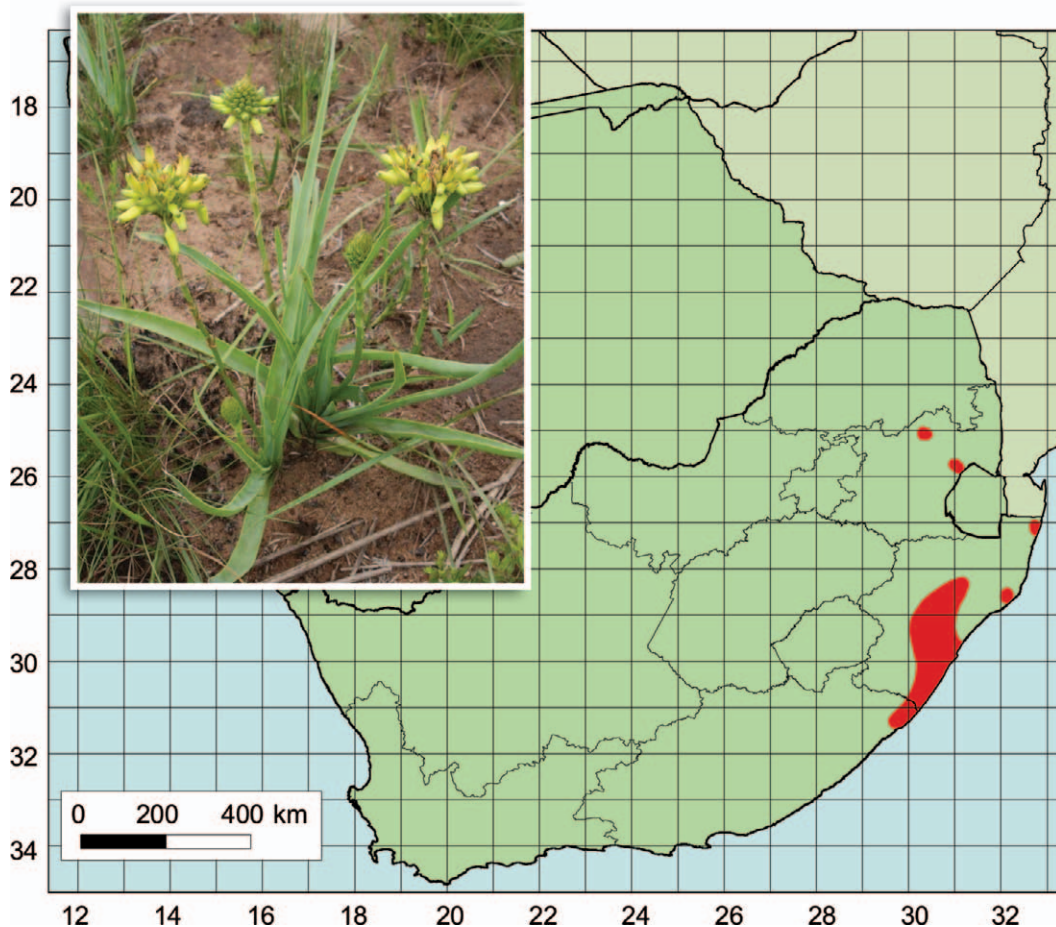
Flowering time: July to September.

Habitat: Flat stony or sandy areas, or on gentle slopes, usually in shade of small bushes.

Distinguishing characters: This aloe has small, dense, acaulescent rosettes with prickly leaves and simple inflorescences that are unusually large relative to the small rosettes. Flowers are very long (ca. 55 mm), with upturned mouths and very long-exserted stamens and style. The huge fruit, of up to 50 × 30 mm, is another striking feature of the plants seen after flowering.

Conservation status: Vulnerable; threats include illegal collecting, overgrazing and trampling.

Distribution: Occurs widely in the western parts of the Eastern Cape and eastern Western Cape (Fig 21).

Figure 19. *Aloe linearifolia*.

Aloe maculata ALL. [*Common soap aloe; bontaalwyn, seepaalwyn (Afrikaans); lekhala (Sesotho); ingcelwane (Xhosa); amahlala, icena (Zulu)*]

Description: Acaulescent or with stem up to 0.5 m high; rosettes solitary or suckering to form dense groups. **Leaves** densely rosulate, erectly spreading to slightly recurved, upper surface pale to darker green, with numerous, dull, white spots in irregular broken, wavy, transverse bands, lower surface paler green, obscurely lineate and usually without spots, narrowly to broadly lance-shaped, up to 25–30 cm long, 8–12 cm wide, with dried twisted apex; margin with pungent, horny, brown teeth, 3–5 mm long, ca. 10 mm apart. **Inflorescence** 0.4–1.0 m high, erect, branched. **Raceme** head-shaped, flat-topped, 10–12 cm long, dense. **Floral bracts** ca. 12–23 mm long, 3–5 mm wide. **Pedicel** 35–45 mm long. **Flowers:** *perianth* usually pink to orange, sometimes yellow or red, 35–45 mm long, distinctly swollen basally, constricted above ovary, enlarging towards wide open mouth, slightly decurved; outer segments free for 10–15 mm; *stamens* exserted 1–3 mm; *style* exserted to 5 mm.

Flowering time: June to July or September to January.

Habitat: Rocky outcrops, thicket and grassland.

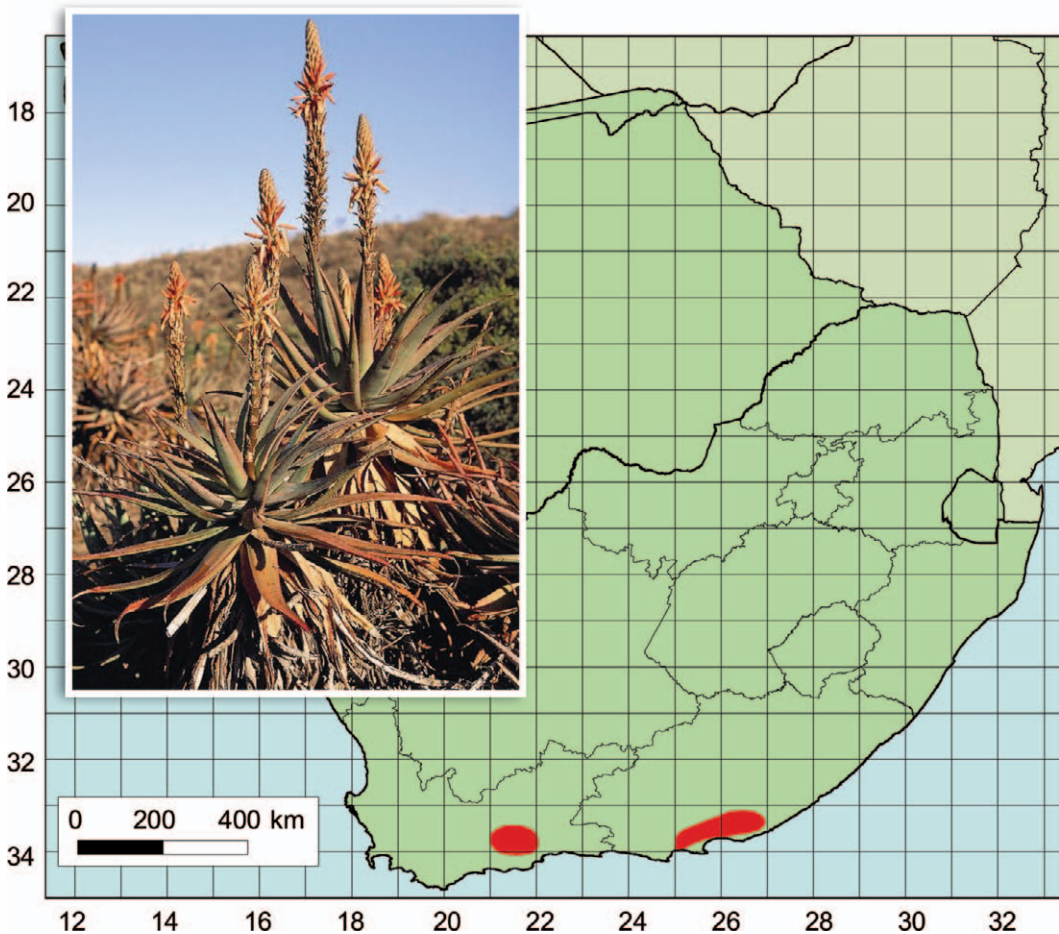
Distinguishing characters: This is the most variable of the spotted aloes. It is distinguished from the other spotted aloe in the Eastern Cape (*A. grandidentata*) by its flat-topped, head-shaped racemes and leaves that are copiously spotted above, but obscurely lineate and usually unspotted on the lower surface.

Conservation status: Least Concern.

Distribution: This species is one of the most widely distributed of the spotted aloes. It occurs along the coast from the Cape Peninsula, widespread throughout the Eastern Cape, Lesotho, the eastern Free State, KwaZulu-Natal, and southeastern Mpumalanga to western and southern Swaziland (Fig 22).

Aloe micracantha HAW. [*Wateraalwyn (Afrikaans)*]

Description: Grass aloe, 0.35–0.50 m high; rosettes usually solitary. Acaulescent or **stem** very short, simple, sometimes 1–2-branched, erect. **Leaves** multifarious, sub-distichous in young plants, erect, rigid, deep green to yellowish green, with copious white, subtuberculate and subspinulescent spots, narrowly deltoid, tapering to sharp point, up to 50 cm long, ca. 3 cm wide at base; margin cartilaginous, armed with firm,

Figure 20. *Aloe lineata* var. *lineata*.

white teeth, up to 2 mm long, 1–3 mm apart. **Inflorescence** 0.45–0.50 m high, erect, simple. **Racemes** head-shaped, somewhat flat-topped, ca. 8 cm long, dense. **Floral bracts** ca. 35 mm long, ca. 17 mm wide. **Pedicels** ca. 35 mm long. **Flowers:** *perianth* salmon-pink to reddish orange, ca. 38 mm long, slightly constricted above ovary, slightly widening towards wide open mouth, basally stipitate, straight, cylindrical-trigonous; outer segments free to base; *stamens* exerted 0–1 mm; *style* exerted 1–2 mm.

Flowering time: December to January.

Habitat: Well-drained, sandy or stony areas in grassy fynbos.

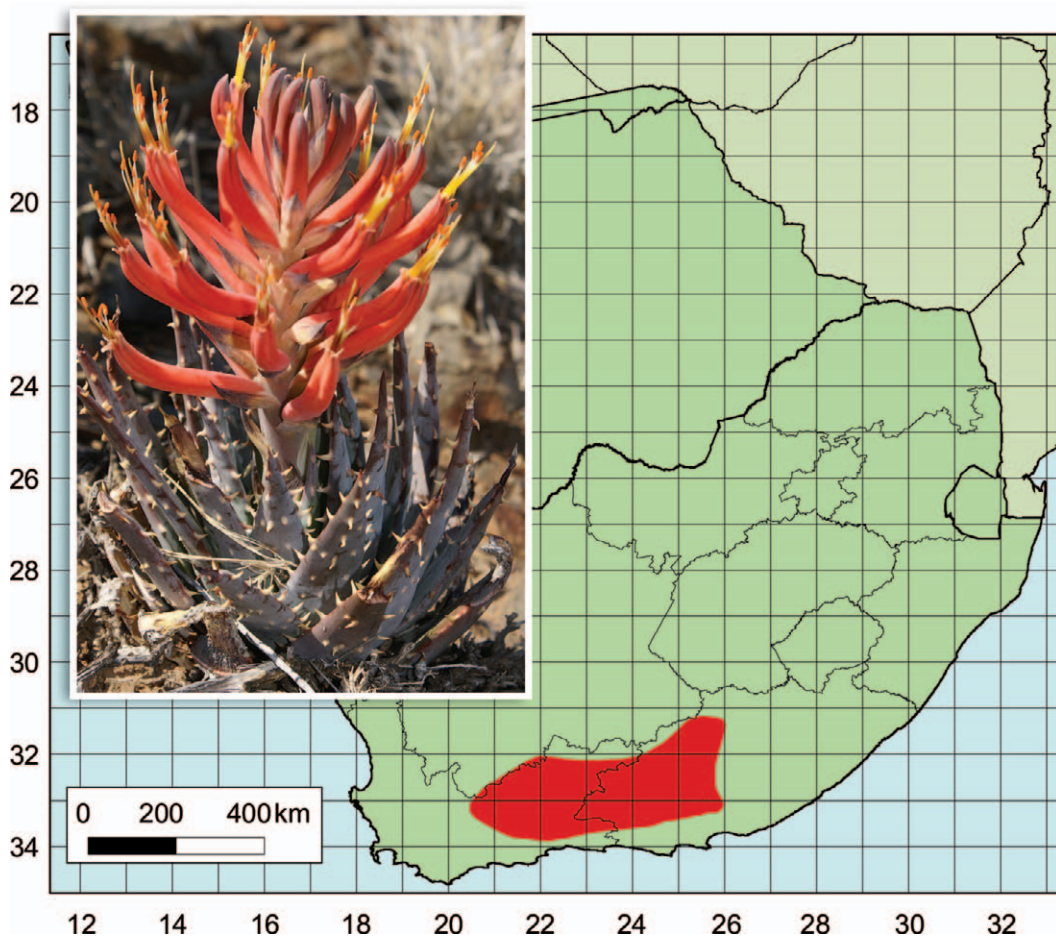
Distinguishing characters: This grass aloe is distinguished from the other Eastern Cape grass aloes (*A. boylei*, *A. cooperi*, *A. ecklonis*, *A. knipbofoides*, *A. linearifolia*, *A. minima* and *A. myriacantha*) by its usually solitary, multifarious rosettes with deep yellowish green leaves that are up to 50 cm long and ca. 3 cm wide and copiously white-spotted on both surfaces. The unbranched inflorescence bears a dense, head-shaped raceme of salmon-pink, ca. 38 mm long, cylindrical flowers. The pedicel, perianth and ovary are all salmon-pink.

Conservation status: Vulnerable; threats include habitat degradation owing to urban expansion and agricultural development (Smith 1993; Smith and others 2000). According to Craib (2005) this aloe is further threatened by alien invasive plants. Based on the 2001 IUCN Red List categories (IUCN 2001) it should be regarded as Near Threatened (SANBI 2007).

Distribution: Occurs in a coastal strip from Bathurst in the Eastern Cape to Uniondale areas in the Western Cape. It is the grass aloe with the most westerly distribution in southern Africa (Fig 23).

***Aloe microstigma* SALM-DYCK**

Description: Acaulescent or **stem** short, up to 0.5 m high, up to 0.1 m diameter, simple or branched, mostly procumbent, usually erect, with persistent dried leaves; rosettes usually single, sometimes in small groups. **Leaves** densely rosulate, erectly spreading, usually reddish green (color can vary tremendously), both surfaces usually copiously white-spotted, obscurely lineate, lance-shaped to deltoid, up to 30 cm long, ca. 6 cm wide at base, without spines or prickles; margin reddish brown, cartilaginous, with pungent, reddish brown, deltoid teeth, 2–4 mm long, 5–10 mm

Figure 21. *Aloe longistyla*.

apart. **Inflorescences** 0.6–0.8 m high, erect or slightly arcuate-erect, simple. **Racemes** cone-shaped to cylindrical, tapering to sharp point, 20–40 cm long, dense, bicolored. **Floral bracts** ca. 12–15 mm long, 4–7 mm wide. **Pedicels** 25–30 mm long. **Flowers:** **perianth** dull red in bud, yellowing with age, sometimes uniformly yellow or red, 25–30 mm long, enlarging slightly towards middle, narrowing towards mouth; outer segments free to base; **stamens** exerted 1–3 mm; **style** exerted to 3 mm.

Flowering time: May to August.

Habitat: Dry karroid slopes.

Distinguishing characters: This aloe is distinguished by its usually copiously white-spotted leaves and simple inflorescence that is 0.6–0.8 m high, with bicolored racemes of greenish yellow, 25–30 mm long flowers. Floral bracts are half as long as the pedicels.

Conservation status: Least Concern.

Distribution: This aloe has a disjunct distribution. It occurs fairly widespread in the western Eastern Cape, the central areas of the Western Cape and just into the Northern Cape in the Tankwa Karoo, as well as in southwestern Namibia (Fig 24).

***Aloe minima* BAKER [Inhlatjana (Swazi); isipukutwane (Zulu)]**

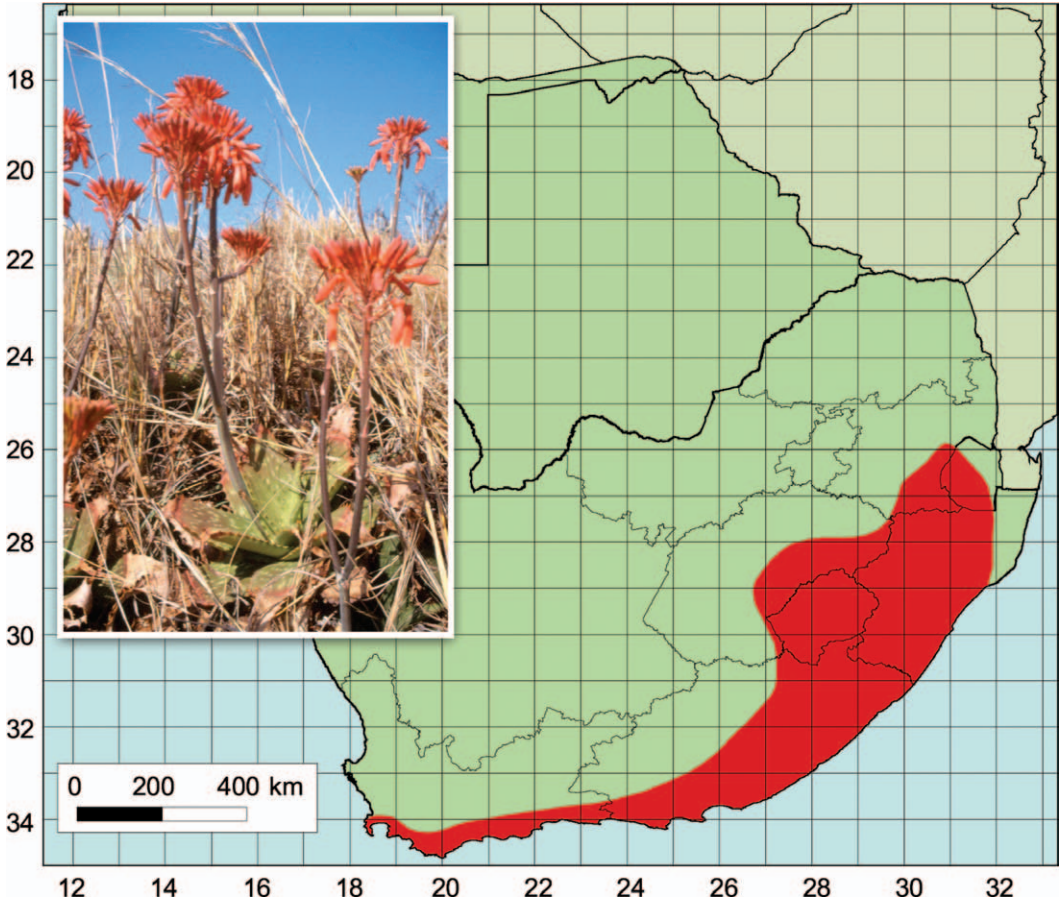
Description: Grass aloe, 0.2–0.3 m high. Acaulescent; rosettes single, erect. **Leaves** rosulate, sub-erect, rather rigid, green, lower surface with copious slightly tuberculate-spinulescent spots towards base, linear, 25–35 cm long, 0.4–0.6 cm wide; margin ciliate, with minute whitish teeth in lower half, up to 0.5 mm long, 1–2 mm apart. **Inflorescence** 0.3–0.5 m high, erect, simple. **Racemes** head-shaped, ca. 30 cm long, dense. **Floral bracts** 5–10 mm long, 3–5 mm wide. **Pedicels** 10–20 mm long. **Flowers:** **perianth** dull pink, 10–11 mm long, narrowing towards upturned mouth, basally stipitate, cylindrical-trigonous; outer segments free; **stamens** and **stigma** not or only slightly exerted.

Flowering time: February to March.

Habitat: Grassland on fairly heavy soils with loose stones.

Distinguishing characters: This grass aloe is distinguished from the other Eastern Cape grass aloes (*A. boylei*, *A. cooperi*, *A. ecklonis*, the *A. kniphofioides*, *A. linearifolia*, *A. micracantha* and *A. myriacantha*)

Figure 22. *Aloe maculata*.



by its simple inflorescence that is up to 0.05 m high, bearing a dense, head-shaped raceme of dull pink, small flowers (10–11 mm long), with spreading, upturned (but not bilabiate) mouths. The rosulate leaves are 25–35 cm long and 0.4–0.6 cm wide, with copious, slightly tuberculate-spinulescent white spots near the base on the lower leaf surface.

Conservation status: Least Concern.

Distribution: Occurs from the Port Edward area in the Eastern Cape, widespread through KwaZulu-Natal and along the escarpment into western Swaziland and Mpumalanga (Fig 25).

***Aloe myriacantha* (HAW.) SCHULT. & SCHULT.F. [Umakhuphulwane (Zulu)]**

Description: Grass aloe, 0.2–0.3 m high. Acaulescent; rosettes single or suckering to form small groups. **Leaves** rosulate, erectly spreading, dull green, with few white spots towards base, with more copious somewhat tuberculate-subspinulescent spots on lower surface, narrowly linear, ca. 25 cm long, 0.8–1.0 cm wide; margin with minute white teeth, up to 0.5–1 mm long and more crowded near base, smaller above. **Inflorescence** 0.20–0.25 m high, erect, simple. **Racemes** head-

shaped, ca. 4.5 cm long, dense. **Floral bracts** up to 20 mm long, 5–12 mm wide. **Pedicels** 10–25 mm long. **Flowers:** *perianth* dull reddish pink, rarely greenish white, ca. 20 mm long, not or only slightly narrowed above ovary, basally substipitate, cylindric-trigonous, mouth distinctly bilabiate, upturned; outer segments free; **stamens** and **style** exerted 0–1 mm.

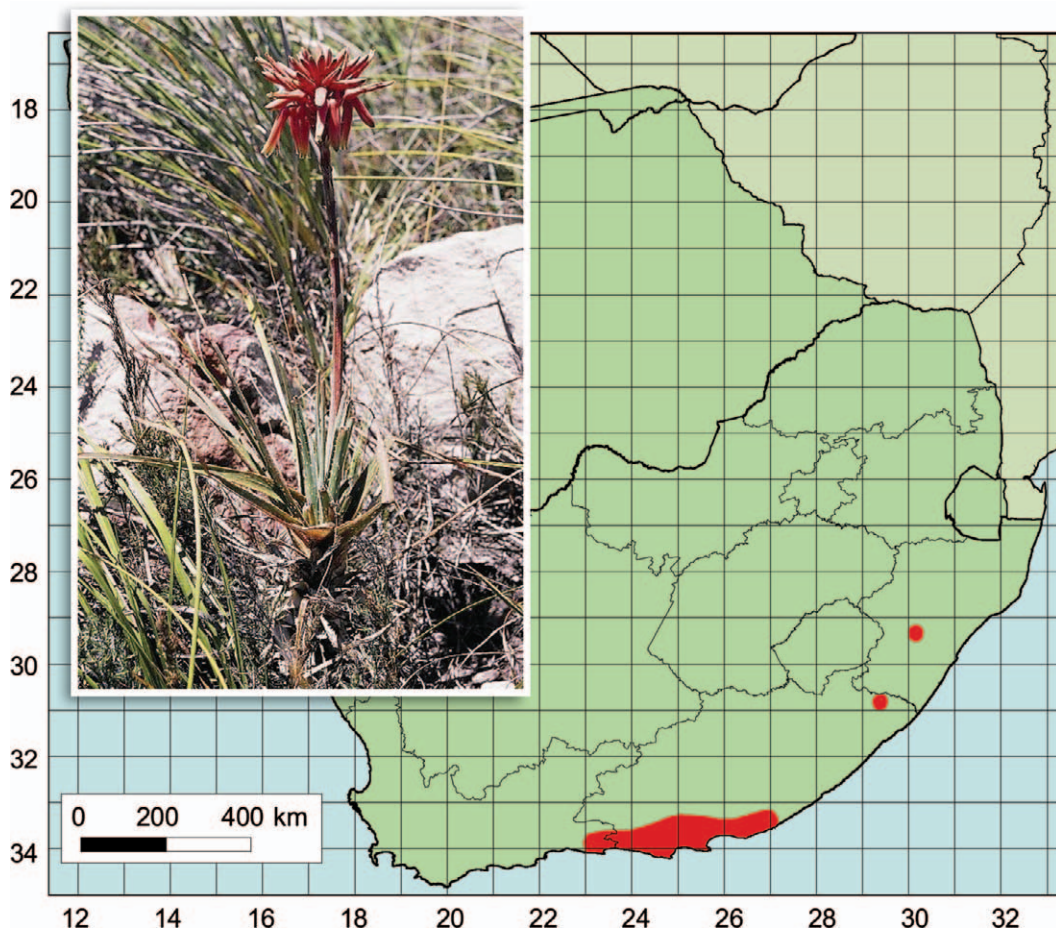
Flowering time: March to April.

Habitat: Stony grassland.

Distinguishing characters: This grass aloe is distinguished from the other Eastern Cape grass aloes (*A. boylei*, *A. cooperi*, *A. ecklonis*, *A. kniphofioides*, *A. linearifolia*, *A. micracantha* and *A. minima*) by its dull pinkish red flowers that are ca. 20 mm long, with distinctly bilabiate, upturned mouths, and are borne in dense, head-shaped racemes on unbranched inflorescences. The rosulate leaves are 25–40 cm long and 0.8–1.0 cm wide, with a few white spots towards the base of the leaf; spots are more copious and somewhat tuberculate-spinulescent on the lower leaf surface.

Conservation status: Least Concern.

Distribution: This species has probably the widest distribution range of any *Aloe*. It occurs from

Figure 23. *Aloe micracantha*.

the Humansdorp area in the Eastern Cape, along the coast and widespread through KwaZulu-Natal, northwards along the escarpment through western Swaziland to the Bosbokrand area in Mpumalanga. It is also found further north on the border between Zimbabwe and Mozambique, in Malawi, and the Eastern Arc of mountains in Tanzania and Kenya, as well as Uganda, Burundi and Rwanda in southern Tropical Africa (Fig 26).

^E*Aloe pictifolia* HARDY

Description: Shrubby plants, up to 0.3 m high. **Stem** short, branching at base, arcuate-ascending, creeping or pendent, with persistent dried leaves. **Leaves** rosulate, suberectly spreading, blue-gray-green, with numerous white spots on both surfaces, narrowly lance-shaped, tapering to sharp point, 12.0–17.5 cm long, 1.0–2.5 cm wide, lower surface with prickles on keel near tip; margin minutely dentate, with small pungent, red-brown teeth, ca. 1 mm long, 4–5 mm apart. **Inflorescence** ca. 0.2 m high, arcuate-ascending, simple. **Racemes** cylindric, tapering to sharp point, 14–17 cm long, dense. **Floral bracts** ca. 10 mm

long, 3–4 mm wide. **Pedicels** 10–15 mm long. **Flowers:** *perianth* scarlet, with greenish tips, 15–18 mm long, slightly narrowing towards mouth, cylindric-trigonous; outer segments free to base; **stamens** and **style** exerted 1–2 mm.

Flowering time: June to September.

Habitat: Steep rocky outcrops and cliffs.

Distinguishing characters: This short-stemmed aloe branches from the base to form a shrubby plant with small, clumped rosettes growing on cliffs. It is further distinguished by its narrow, copiously white-spotted leaves. The spots are smaller and more densely packed than those of *A. microstigma*.

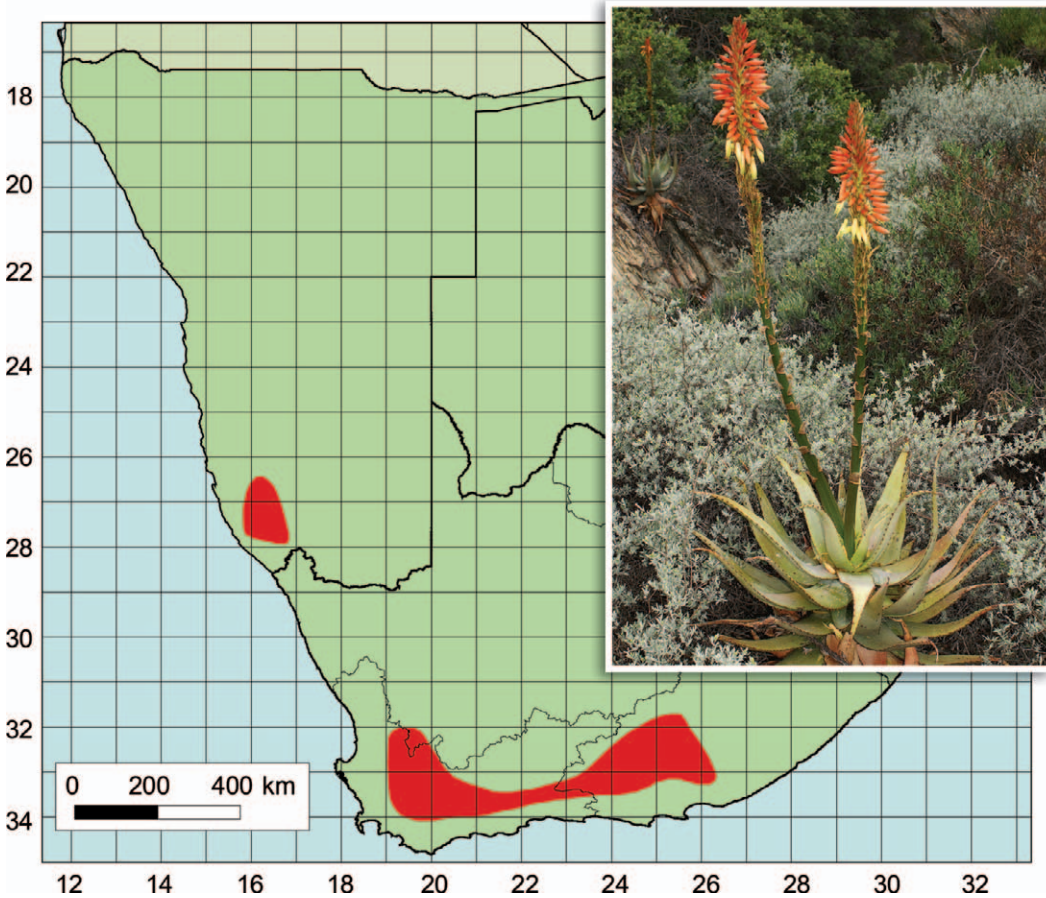
Conservation status: Vulnerable; threats include its restricted distribution range.

Distribution: Endemic to the Humansdorp district of the Eastern Cape (Fig 27).

Aloe pluridens HAW. [*French aloe; fransaalwyn, garaa (Afrikaans)*]

Description: Tree or shrub, 2–3 m high, sometimes reaching 5 m. **Stem** simple or branched at ground level, at or above the middle, erect, with persistent dried leaves in upper half. **Leaves** densely rosulate, erectly spreading and gracefully recurved, some-

Figure 24. *Aloe microstigma*.



times falcately deflexed, pale to yellowish green, obscurely lineate, lance-shaped-falcate, 60–70 cm long, 5–6 cm wide at base; margin narrow, white, cartilaginous, with deltoid, incurved, white or very pale pink teeth, 2–3 mm long, 5–10 mm apart. **Inflorescence** up to 1 m high, erect, up to 4-branched. **Racemes** cone-shaped, 25–30 cm long, subdense. **Floral bracts** ca. 20 mm long, 10–12 mm wide. **Pedicels** 30–35 mm long. **Flowers:** *perianth* salmon-pink to dull scarlet, 40–45 mm long, slightly constricted above ovary, slightly widening towards mouth, cylindrical-trigonous; outer segments free to base; *stamens* exerted 2–4 mm; *style* exerted to 5 mm.

Flowering time: May to July.

Habitat: Succulent thicket vegetation.

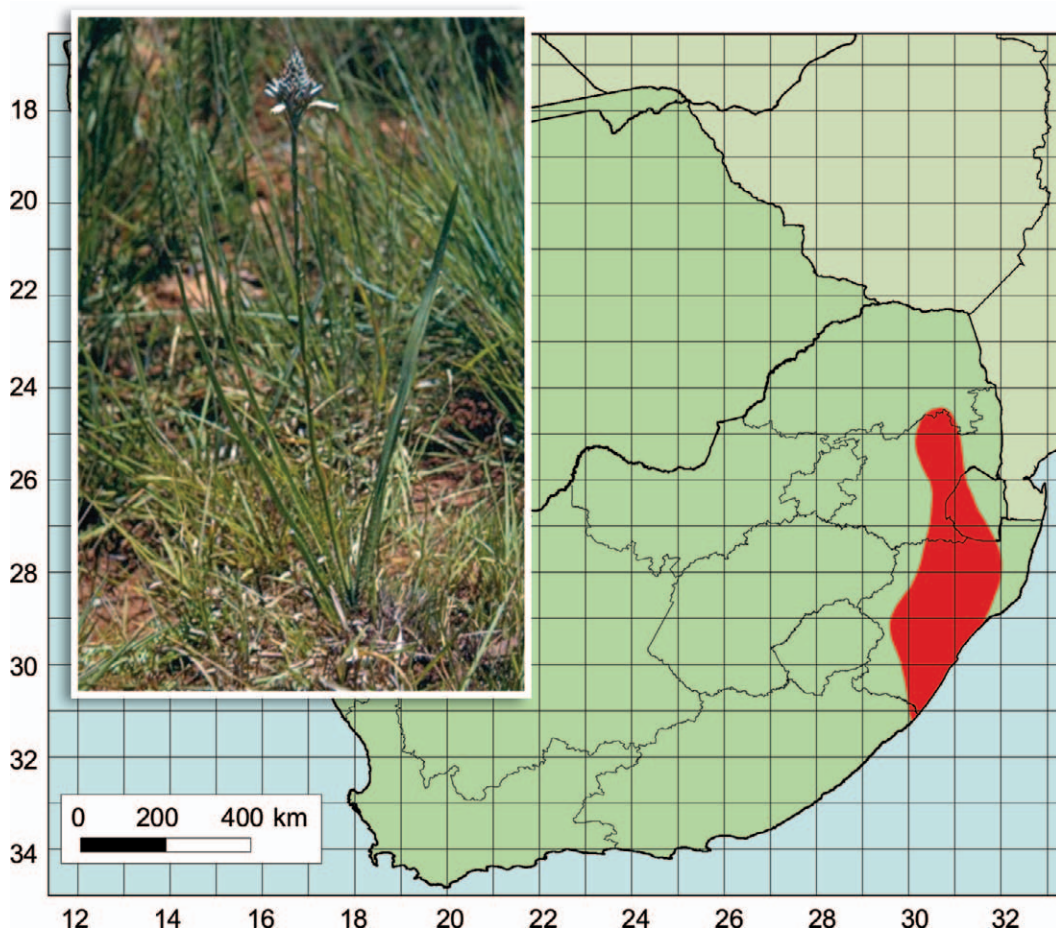
Distinguishing characters: This tall, slender-stemmed aloe is distinguished from other tree-like aloes in the Eastern Cape (*A. africana*, *A. barberae*, *A. ferox*, *A. lineate*, *A. speciosa* and *A. thraskii*) by its narrow, pale green to yellowish green leaves with small, crowded, pinkish white marginal teeth. The branched inflorescence bears up to four racemes that are uniformly colored, cone-shaped and not very densely flowered, with salmon-pink to dull scarlet, cylindrical, uncurved flowers.

Conservation status: Least Concern.

Distribution: This species has a disjunct distribution. It occurs from the Humansdorp area to the Kei River Mouth in the Eastern Cape, as well as in the Durban area in KwaZulu-Natal (Fig 28).

***Aloe pratensis* BAKER [Meadow aloe; lekhala-qualane (Sesotho)]**

Description: Acaulescent; rosettes solitary or in small groups, 0.15–0.25 m diameter. **Leaves** densely rosulate, erectly spreading, glaucous, lineate, lance-shaped to ovate-lance-shaped, up to 15 cm long, 4–5 cm wide, surfaces often with few scattered brownish spines from white tuberculate bases, keel armed with few brown spines 2–3 mm long; margin not distinctly colored, with pungent, deltoid, reddish brown teeth, ca. 5 mm long, ca. 10 mm apart. **Inflorescence** up to 0.6 m high, erect, simple; peduncle almost entirely covered with large, thin, imbricate sterile bracts. **Racemes** cylindrical, ca. 20 cm long, dense; buds completely hidden by large floral bracts. **Floral bracts** up to 40 mm long, 15–18 mm wide. **Pedicels** 25–30 mm long. **Flowers:** *perianth* rose-red, 35–40 mm long, slightly enlarged above ovary, basally stipitate, cylindrical; outer segments free

Figure 25. *Aloe minima*.

to base; **stamens** exerted 0–1 mm; **style** exerted 1–2 mm.

Flowering time: June to October.

Habitat: Rocky slopes in montane grassland.

Distinguishing characters: *A. pratensis* is a distinctive small to medium-sized acaulescent aloe with rosettes solitary or in small groups. Leaves have marginal teeth and surface spines arising from white tuberculate bases. The inflorescence is simple and the peduncle is covered in large, imbricate sterile bracts, with the floral buds hidden by large floral bracts.

Conservation status: Least Concern.

Distribution: It occurs in the central Eastern Cape and along the escarpment to eastern Lesotho and in southwestern KwaZulu-Natal along the Drakensberg Range to Royal Natal National Park (Fig 29).

^E*Aloe reynoldsii* LETTY [Yellow spineless aloe]

Description: Acaulescent or **stem** short, branching at top to form dense groups, without persistent dried leaves. **Leaves** densely rosulate, spreading, glaucous green, distinctly lineate, with numerous irregularly scattered, confluent, narrowly oblong or H-shaped, dull white spots, spots fewer and more obscure on lower surface, ovate-lance-shaped, tapering to sharp

point, up to 35 cm long, ca. 11 cm wide; margin pink, cartilaginous, crenulate, with soft to firm, minute teeth, ca. 1 mm long, 1–4 mm apart. **Inflorescence** up to 0.4–0.6 m high, erect, ca. 4-branched. **Racemes** almost head-shaped, terminal one 5–6 cm long, lax. **Floral bracts** up to 10 mm long, 2–4 mm wide. **Pedicels** 20–25 mm long. **Flowers:** **perianth** yellow, tinged with orange towards mouth, ca. 28 mm long, constricted above ovary to form basal swelling, slightly widening towards mouth, slightly decurved; outer segments free for 5 mm; **stamens** exerted 0–2 mm; **style** exerted 1–2 mm.

Flowering time: September to October.

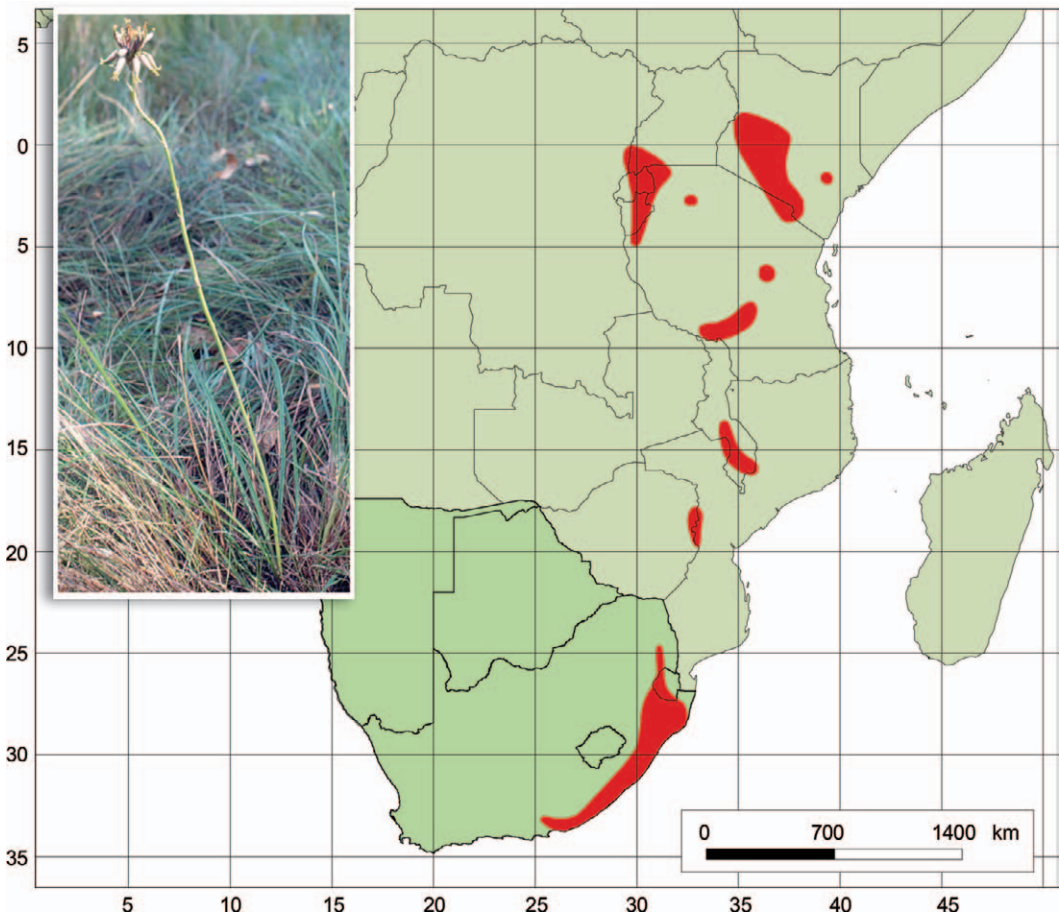
Habitat: Cliff faces and steep grassy slopes.

Distinguishing characters: This acaulescent, clump-forming aloe is distinguished by its lineate leaves with distinctly H-shaped spots and crenulate, finely toothed margin. The peduncle and inflorescence branches are slender, bearing almost head-shaped racemes of yellow flowers that are tinged with orange towards the mouth and paler underneath.

Conservation status: Least Concern.

Distribution: Endemic to the Bashee River valley and tributaries in the Eastern Cape (Fig 30).

Figure 26. *Aloe myriacantha*.



***Aloe speciosa* BAKER [Tilt-head aloe; spaansaalwyn, slaphoringaalwyn (Afrikaans); ikhlala (Xhosa)]**

Description: Tree aloe, up to 5 m high. **Stem** simple or branched low down or above middle, erect, with persistent dried leaves; rosettes tilted sideways. **Leaves** densely rosulate, erect to spreading, dull glaucous green with slight bluish or reddish tinge, lance-shaped, gradually tapering, 60–80 cm long, 7–9 cm wide at base; margin very narrow, deep to pale pink, with very small, pale red teeth, ca. 1 mm long, ca. 10 mm apart. **Inflorescence** ca. 0.5 m high, arcuate-erect, always simple. **Racemes** broadly cylindrical, slightly tapering to sharp point, ca. 30 cm long, very dense, bicolored. **Floral bracts** up to 20 mm long, 10 mm wide. **Pedicels** 5–8 mm long. **Flowers:** *perianth* red in bud, greenish white at maturity, 30–35 mm long, widening above ovary, narrowing slightly towards mouth, straight; outer segments free almost to base; *stamens* and *style* exerted to 16 mm.

Flowering time: August to September.

Habitat: Steep slopes in succulent thicket.

Distinguishing characters: This aloe with its tall, erect stem is distinguished from other tree-like aloes in the Eastern Cape (*A. africana*, *A. barberae*, *A. ferox*, *A. lineata*, *A. pluridens* and *A. thraskii*) by

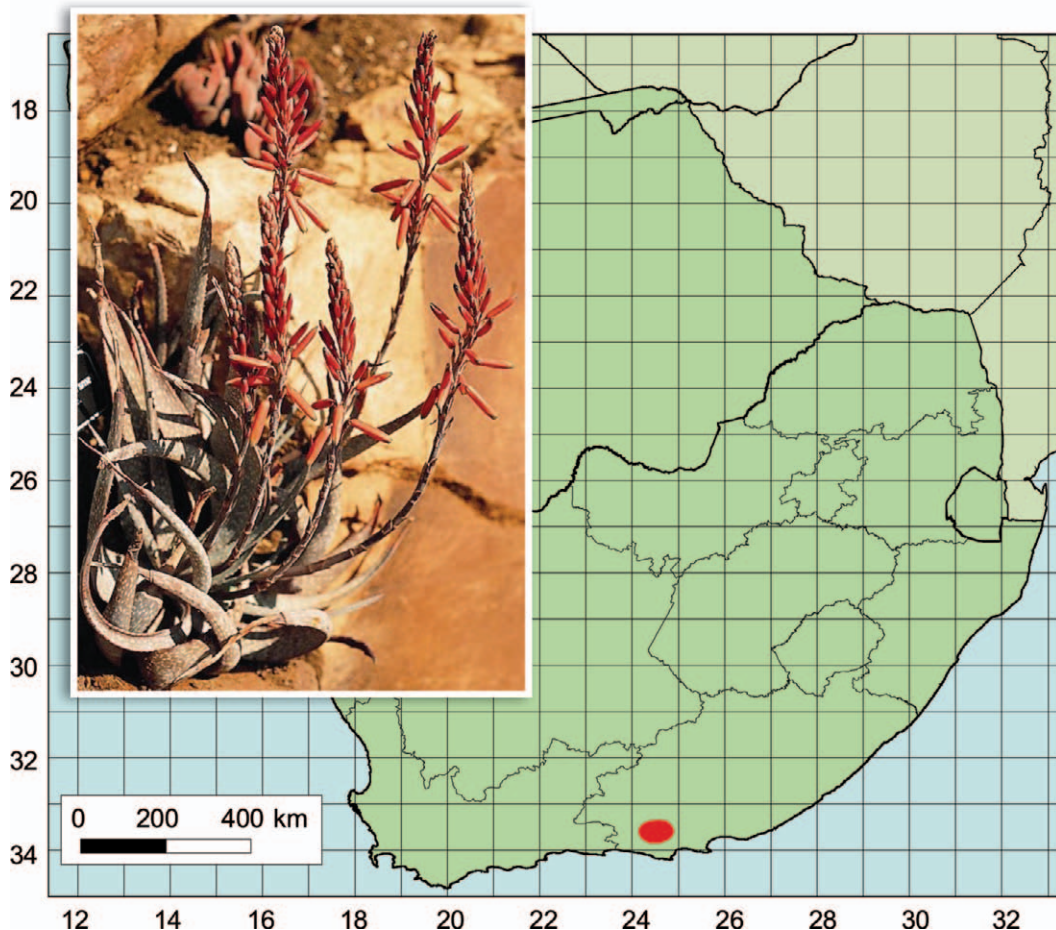
its oblique or tilted rosettes of glaucous leaves with very narrow, deep pink to pale red leaf margins, with very small teeth. The unbranched inflorescence is short with very dense, bi-colored racemes with red buds and greenish white, uncurved flowers. Plants are found in large colonies.

Conservation status: Least Concern.

Distribution: This species has a disjunct distribution range. It occurs in the central and southwestern Eastern Cape, as well as in the south-central Western Cape (Fig 31).

***Aloe striata* HAW. [Coral aloe; makaalwyn, streepaalwyn (Afrikaans)]**

Description: Acaulescent or **stem** short, up to 0.75 m, decumbent, with persistent dried leaves; rosettes usually solitary, rarely up to 6 from branched stem. **Leaves** densely rosulate, spreading-incurved, glaucous to reddish tinged, with distinct or faint longitudinal striations, broadly lance-shaped, gradually tapering, up to 50 cm long, ca. 20 cm wide; margin pale pink to almost red, spineless. **Inflorescences** up to 1 m high, erect, 6–12-branched. **Racemes** head-shaped to slightly cone-shaped, ca. 6 cm long, lax. **Floral bracts** triangular, tapering to sharp point,

Figure 27. *Aloe pictifolia*.

ca. 5 mm long, 3–4 mm wide, whitish, thin, scarious, 3–5-nerved. **Pedicels** 15–25 mm long. **Flowers:** *perianth* peach-red to coral-red, ca. 30 mm long, constricted above ovary to form subglobose basal swelling, slightly enlarging towards mouth, slightly decurved; outer segments free for 6–8 mm; *stamens* exserted to 1 mm; *style* exserted 1–2 mm.

Flowering time: August to October.

Habitat: Variety of habitats, from valley bushveld to bare stony slopes in grassland.

Distinguishing characters: This acaulescent aloe with usually solitary rosettes is easily distinguished by its sea-green striate leaves with narrow pink, toothless margins and by its much-branched inflorescence.

Conservation status: Least Concern.

Distribution: It is widely distributed from east London through the central and western Eastern Cape to near De Doorns in the Western Cape (Fig 32).

***Aloe striatula* HAW. [Mohalakane, seholobe (Sesotho)]**

Plants up to 2 m high; leaves milky green, 10–15 cm long, 1.5–2.5 cm wide; sheath obscurely

lined, 5–15 mm long; flowers yellow, green-tipped, 30–33 mm long, rather straight

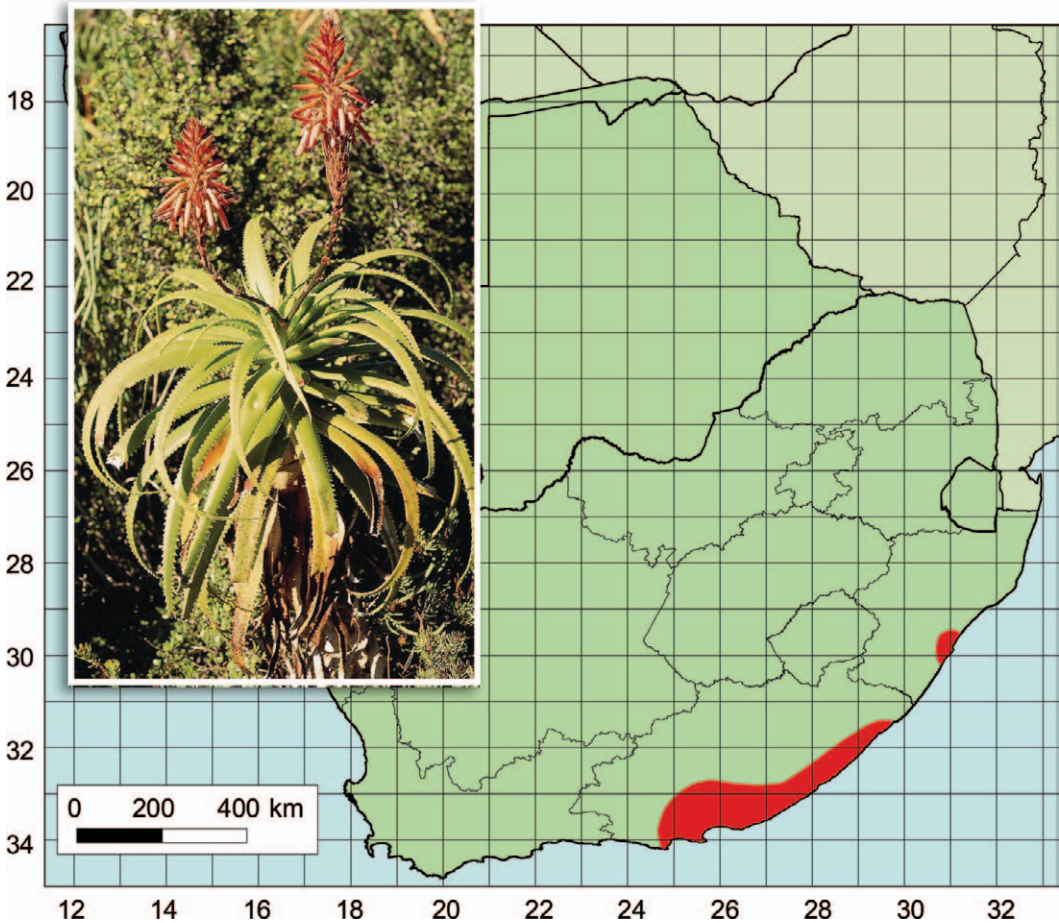
..... ***A. striatula* var *caesia***

Plants up to 1.75 m high; leaves semi-glossy green, up to 25 cm long, ca. 2.5 cm wide; sheath prominently lined, 15–20 mm long; buds red, flowers reddish orange to orange, 40–45 mm long, slightly decurved..... ***A. striatula* var *striatula***

Description: Much-branched shrub, up to 2 m high. **Stem** erect, without persistent dried leaves.

Leaves cauline dispersed, more dense in var *caesia*, spreading to recurved, milky green (var *caesia*) or semi-glossy green (var *striatula*), without spots, linear-lance-shaped, tapering to sharp point, up to 25 cm long, up to 2.5 cm wide at base; sheath green-lined, 5–15 mm long (var *caesia*) or 15–20 mm long (var *striatula*); margin very narrow, cartilaginous, with firm, white, deltoid teeth, ca. 1 mm long, 3–8 mm apart. **Inflorescence** up to 0.4 m high, erect, simple. **Racemes** cylindrical-conic, 10–15 cm long, dense. **Floral bracts** up to 2 mm long, ca. 2 mm wide. **Pedicels** 3–5 mm long. **Flowers:** *perianth* yellow, green-tipped (var *caesia*) or buds red, flowers reddish orange to orange (var *striatula*), 30–33 mm long (var *caesia*)

Figure 28. *Aloe pluridens*.



or 40–45 mm long (var *striatula*), very slightly narrowed above ovary, enlarging towards mouth, rather straight (var *caesia*) or slightly decurved (var *striatula*); outer segments free almost to base; **stamens** exerted to 5 mm; **style** exerted 5–7 mm.

Flowering time: November to January (var *caesia*); October to November (var *striatula*).

Habitat: Among rocks on mountain tops within the winter snow belt.

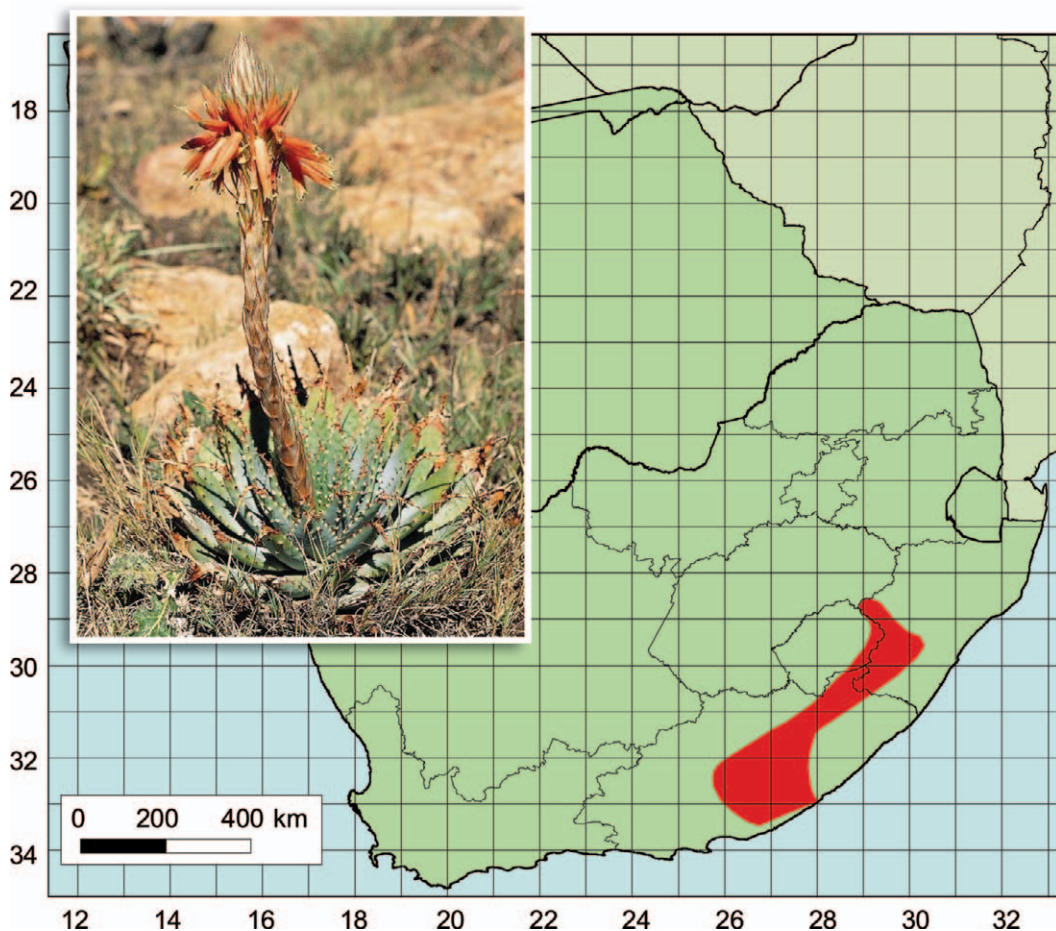
Distinguishing characters: This much-branched shrub is distinguished from other shrub-forming aloes with cauline dispersed leaves in the Eastern Cape (*A. ciliaris*, *A. gracilis* and *A. tenuior*) by its rambling growth form, resulting in large ball-shaped specimens. *A. striatula* var *striatula* is also characterized by the recurved, shiny, dark green leaves with distinctly longitudinally green-lined sheaths and relatively dense racemes with red buds and slightly curved reddish orange flowers of 40–45 mm long that clasp the peduncle. *A. striatula* var *caesia* Reynolds has more spreading, closely packed, grayish green leaves with sheaths only obscurely lined and relatively dense racemes with yellow buds and short, straight, yellow flowers (30–33 mm long).

Conservation status: Least Concern.

Distribution: *A. striatula* var *caesia* (orange on map) is endemic to the western region of the Eastern Cape in the area between Queenstown, Cradock and Middelburg. *A. striatula* var *striatula* occurs in the central Eastern Cape from Graaff-Reinet into southern Lesotho, with a disjunct distribution in the southeastern Free State and western Lesotho (Fig 33).

***Aloe tenuior* HAW. [Fence aloe; heiningaalwyn (Afrikaans); ikhalene (Xhosa); inhlaba empofu (Zulu)]**

Description: Tangled shrub. **Stems** slender, 1–3 m long, branched low down or higher, erectly spreading or scandent to recurved or decumbent, without persistent dried leaves. **Leaves** cauline dispersed, erectly spreading, glaucous to glossy green, without spots, linear-lance-shaped, 10–15 cm long, 1.0–1.5 cm wide; sheath obscurely green-lineate, not auriculate, 0.5–2.5 cm long; margin narrow, white, cartilaginous, sometimes entire but often with minute, white teeth, up to 0.5 mm long, 1–2 mm apart. **Inflorescence** 0.3–0.4 m high, ascending to erect, simple or 1–2-branched. **Racemes** cylindric, slightly

Figure 29. *Aloe pratensis*.

tapering to sharp point, 10–16 cm long, dense. **Floral bracts** ca. 5 mm long, 1–2 mm wide. **Pedicels** 3–5 mm long. **Flowers:** *perianth* yellow, orange or red with yellow tips, 11–15 mm long, very slightly narrowed above ovary, widening towards mouth, cylindrical; outer segments free for 3–6 mm; *stamens* and *style* exerted 4–6 mm.

Flowering time: Throughout the year.

Habitat: Open country on sandy soil, rarely in valley bushveld.

Distinguishing characters: This much-branched, untidy shrub is distinguished from other shrub-forming aloes with cauline dispersed leaves in the Eastern Cape (*A. ciliaris*, *A. gracilis* and *A. striatula*) by its blue-green leaves with the leaf sheath not auriculate and only obscurely lined. The racemes are elongated with small (11–15 mm long) red, orange or yellow cylindrical, uncurved flowers with the genitals long-exserted.

Several varieties have been recognized (Van Jaarsveld 2007) but for the purposes of this paper the taxon is treated as a variable species.

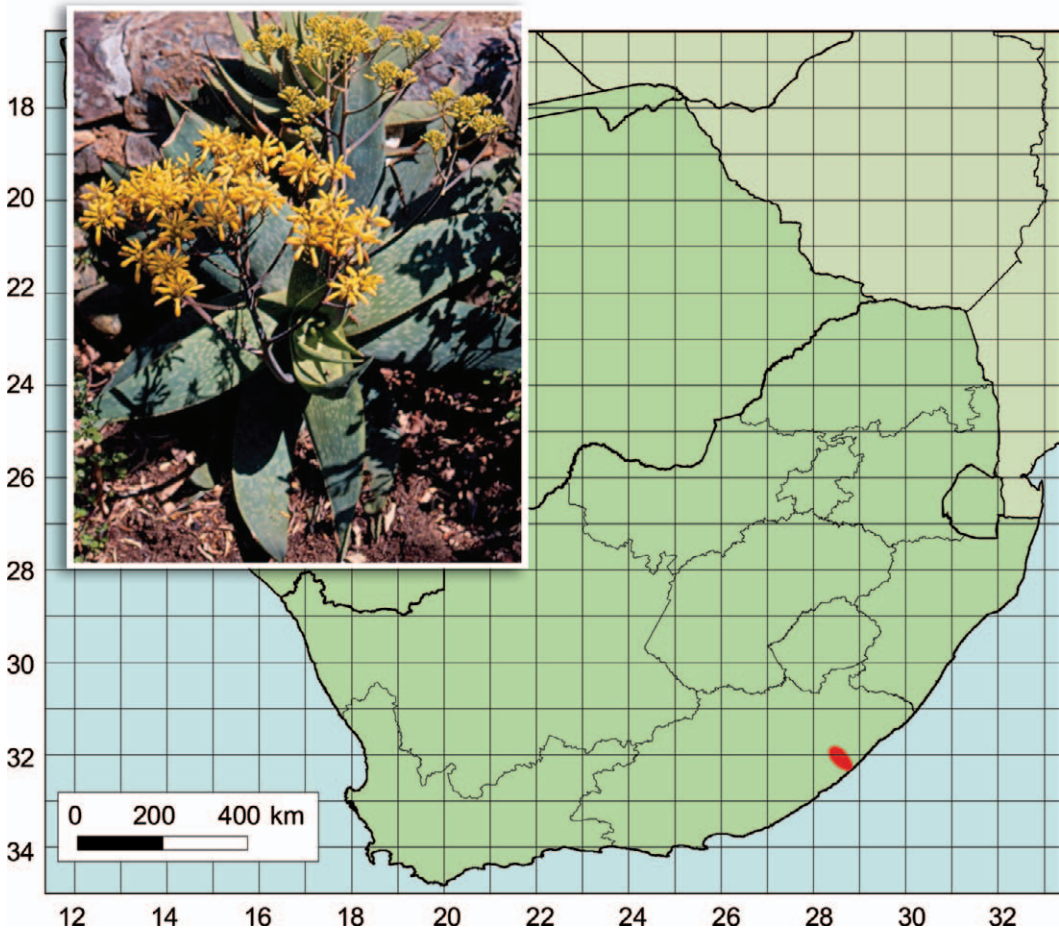
Conservation status: Least Concern.

Distribution: Occurs from the Port Elizabeth and

Jansenville areas in the Eastern Cape into southern KwaZulu-Natal, with a disjunct distribution in northern KwaZulu-Natal at the Swaziland and Mpumalanga border (Fig 34).

***Aloe thraskii* BAKER [Dune aloe, strand aloe; strand-aalwyn (Afrikaans); umhlaba (Zulu)]**

Description: Solitary, arborescent plant, up to 3 m high. **Stem** simple, erect, 1–2 m high, can be up to 4 m, with persistent dried leaves. **Leaves** condensed rosulate, gracefully recurved, dull green to glaucous, without lines or spots, lower surface sometimes with a few spines in median line, lance-shaped, gradually tapering, 160 cm long, 22 cm wide at base; margin very thin, narrow, reddish or brownish red, with small deltoid reddish teeth, ca. 2 mm long, 10–20 mm apart. **Inflorescence** 0.5–0.8 m high, erect, 4–8-branched. **Raceme** broadly cylindrical, slightly tapering, somewhat truncate, up to 25 cm long, usually shorter, very dense. **Floral bracts** 9 mm long, 6 mm wide. **Pedicels** 1–2 mm long. **Flowers:** *perianth* greenish to orange in bud, lemon-yellow to pale orange when mature, greenish tipped, ca. 25 mm long, ca. 6 mm across ovary, enlarging

Figure 30. *Aloe reynoldsii*.

towards throat, mouth constricted and upturned, cylindrical, slightly club-shaped; outer segments free for ca. 17 mm; **stamens** exerted 15–20 mm; **style** exerted to 20 mm.

Flowering time: June to July.

Habitat: Beach dunes.

Distinguishing characters: *A. thraskii* can be distinguished from other single-stemmed aloes in the Eastern Cape (*A. africana*, *A. ferox*, *A. lineata*, *A. pluridens* and *A. speciosa*) by its long, very deeply channelled, much recurved leaves with the tips touching the stem. The narrow leaf margin and marginal teeth are reddish and the lower surface of the leaf usually has reddish prickles in the median line. Plants usually bear about three branched inflorescences each with up to six broadly cylindrical, very dense, slightly bicolored racemes. Floral buds are greenish to orange, while the somewhat club-shaped mature flowers are lemon-yellow to pale orange and greenish tipped, with orange stamens exerted from the constricted and slightly upcurved mouth.

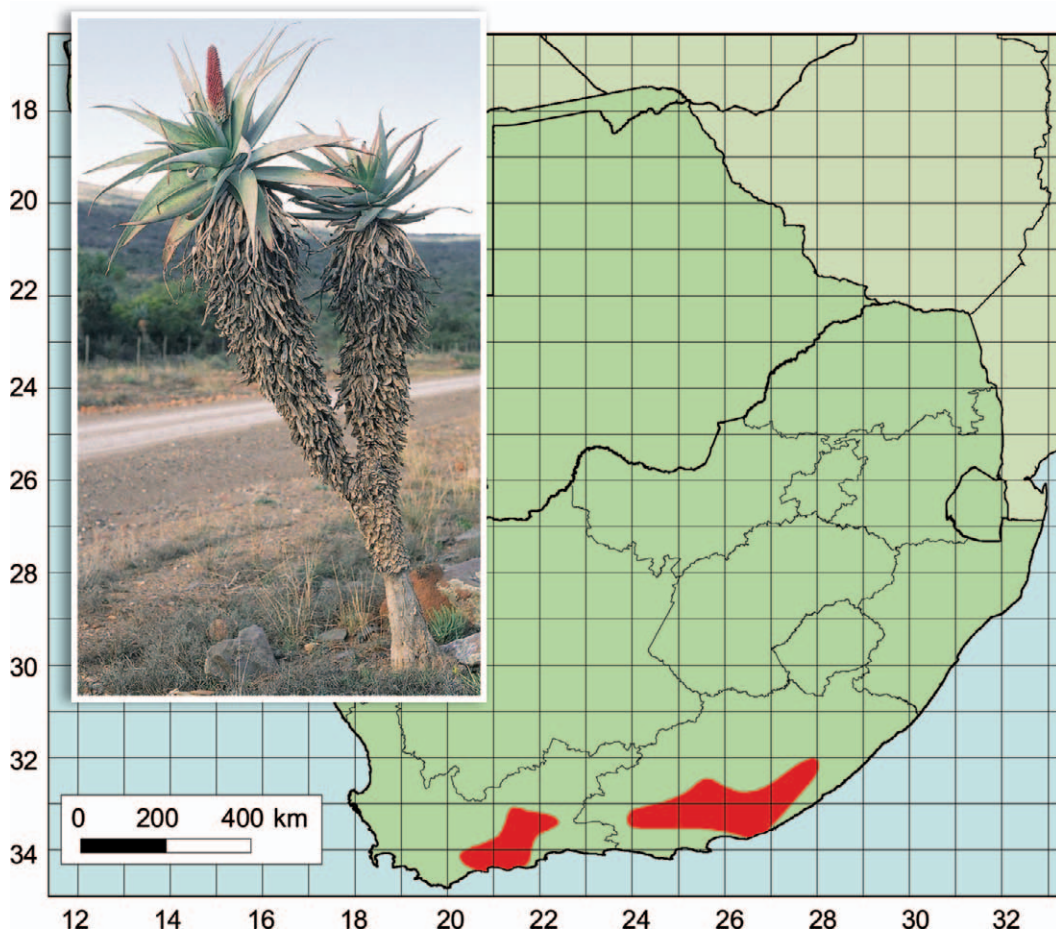
Conservation status: Least Concern (Smith and others 2000). However, based on the 2001 IUCN Red List categories (IUCN 2001) it should be re-

garded as Near Threatened, with threats including habitat loss owing to urban expansion and natural disasters such as floods, as well as illegal collecting (SANBI 2007).

Distribution: Occurs in a narrow coastal strip from the far northern coast of the Eastern Cape into KwaZulu-Natal to just north of Durban (Fig 35).

***Aloe variegata* L. [Partridge breast aloe, variegated aloe; bontaalwyn, kanniedood (Afrikaans)]**

Description: Acaulescent, stoloniferous, suckering to form dense groups; rosettes up to 0.2 m high. **Leaves** distinctly 3-ranked, sometimes with spiral twist, green or brownish, mottled white, lance-shaped to deltoid, keeled, 10–15 cm long, 4–6 cm wide, without spines or prickles; margins white, horny, with closely spaced very minute teeth. **Inflorescences** ca. 0.3 m high, erect, simple or usually 1–2-branched. **Raceme** cylindrical, 10–20 cm long, lax. **Floral bracts** up to 15 mm long, 7 mm wide. **Pedicels** 4–7 mm long. **Flowers:** *perianth* dull pink to red, rarely yellow, 35–45 mm long, slightly constricted above ovary, widening towards wide-open mouth, cylindrical-decurved; outer segments free for

Figure 31. *Aloe speciosa*.

5–7 mm; *stamens* exerted 0–2 mm; *style* exerted 1–2 mm.

Flowering time: July to September.

Habitat: Stony ground, usually under protection of small bushes.

Distinguishing characters: The distinctly mottled, dark green to almost black-green, spineless, 3-ranked leaves make this aloe very unique. The leaves have a creamy white, bony margin, resembling those of species of the related genus *Gasteria*, which is well represented in the Eastern Cape. It is unlikely to be confused with any other species of aloe in the Eastern Cape.

Conservation status: Least Concern.

Distribution: Widespread in southern Namibia, the Northern Cape, eastern parts of the Western Cape and western parts of the Eastern Cape, just entering the western Free State (Fig 36).

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Figure 32. *Aloe striata*.

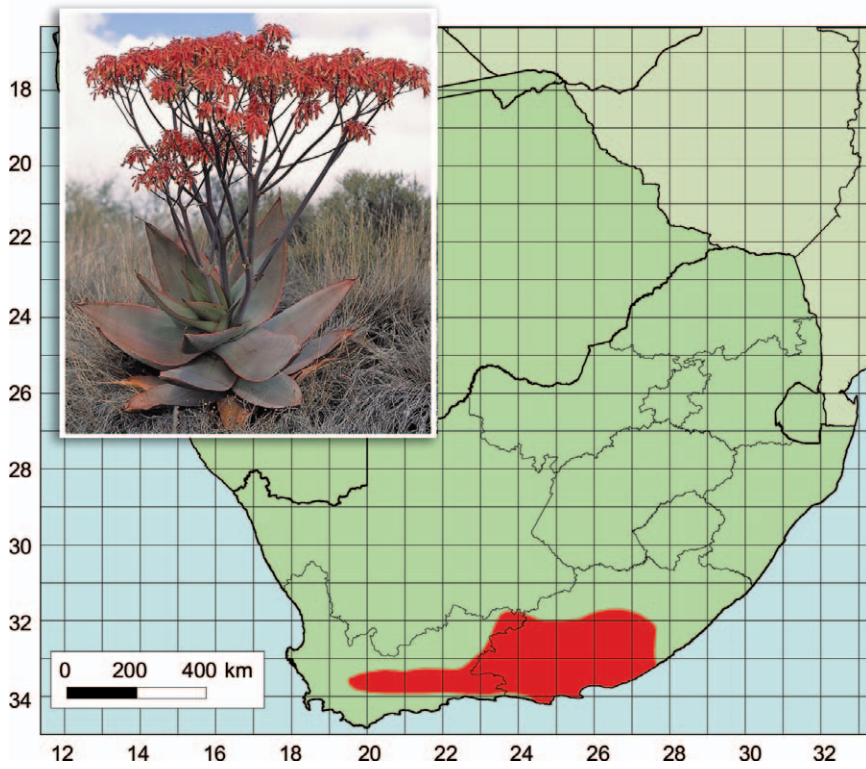


Figure 33. *Aloe striatula* var *caesia* (orange) and *A. striatula* var *striatula* (red).

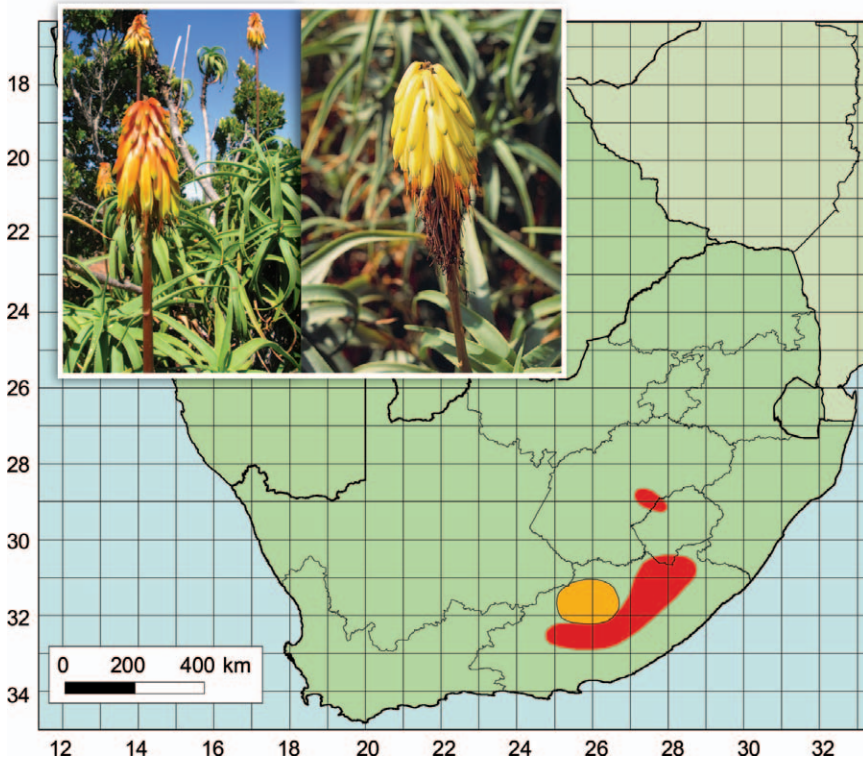


Figure 34. *Aloe tenuior*.

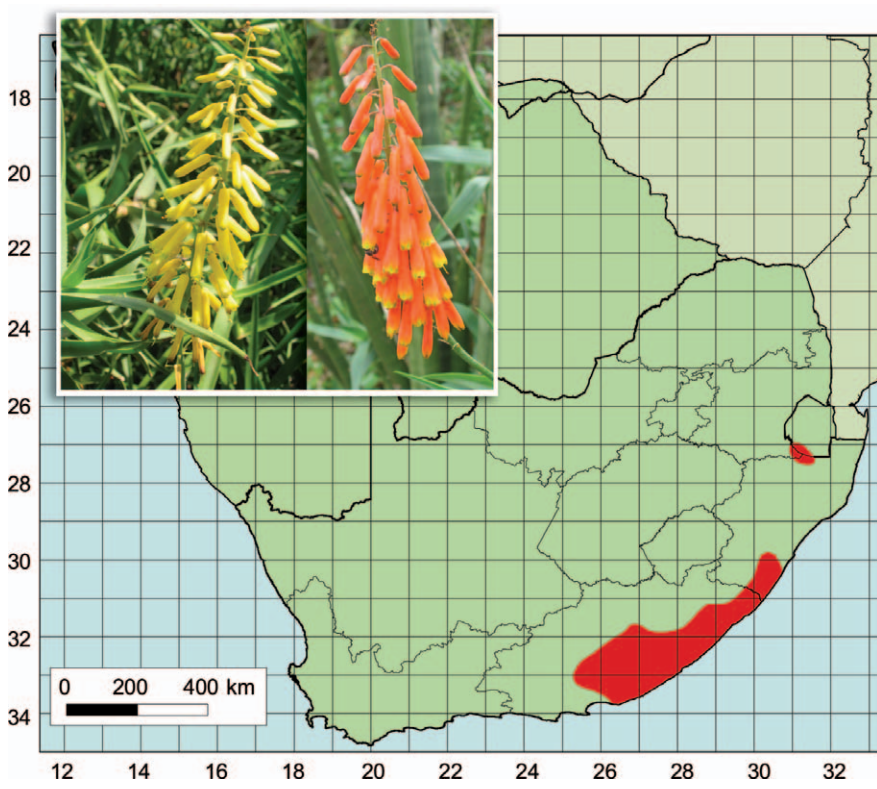


Figure 35. *Aloe thraskii*.

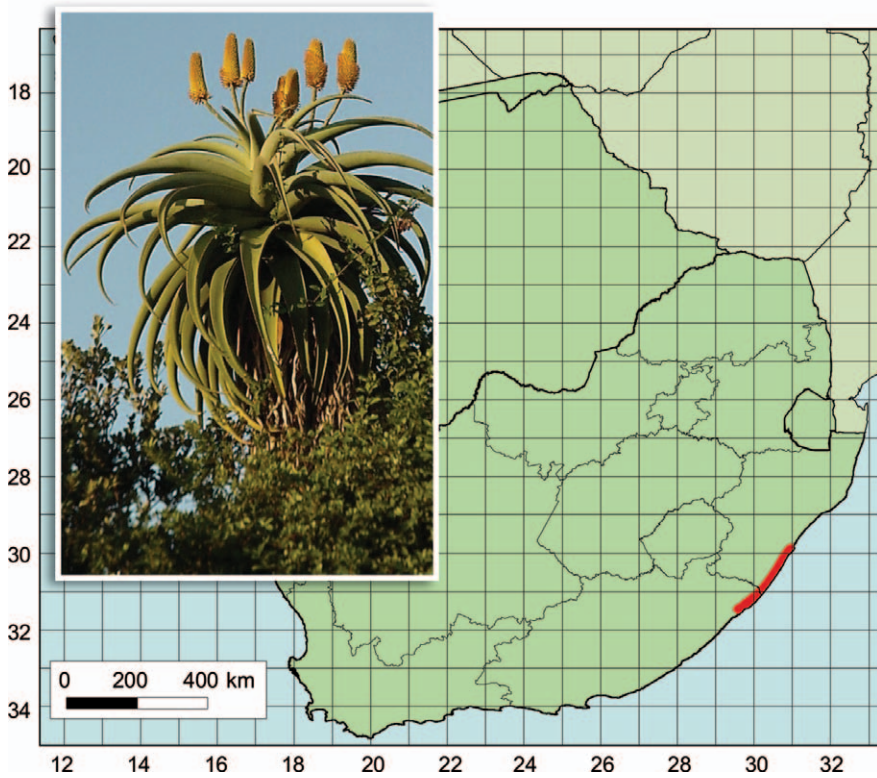
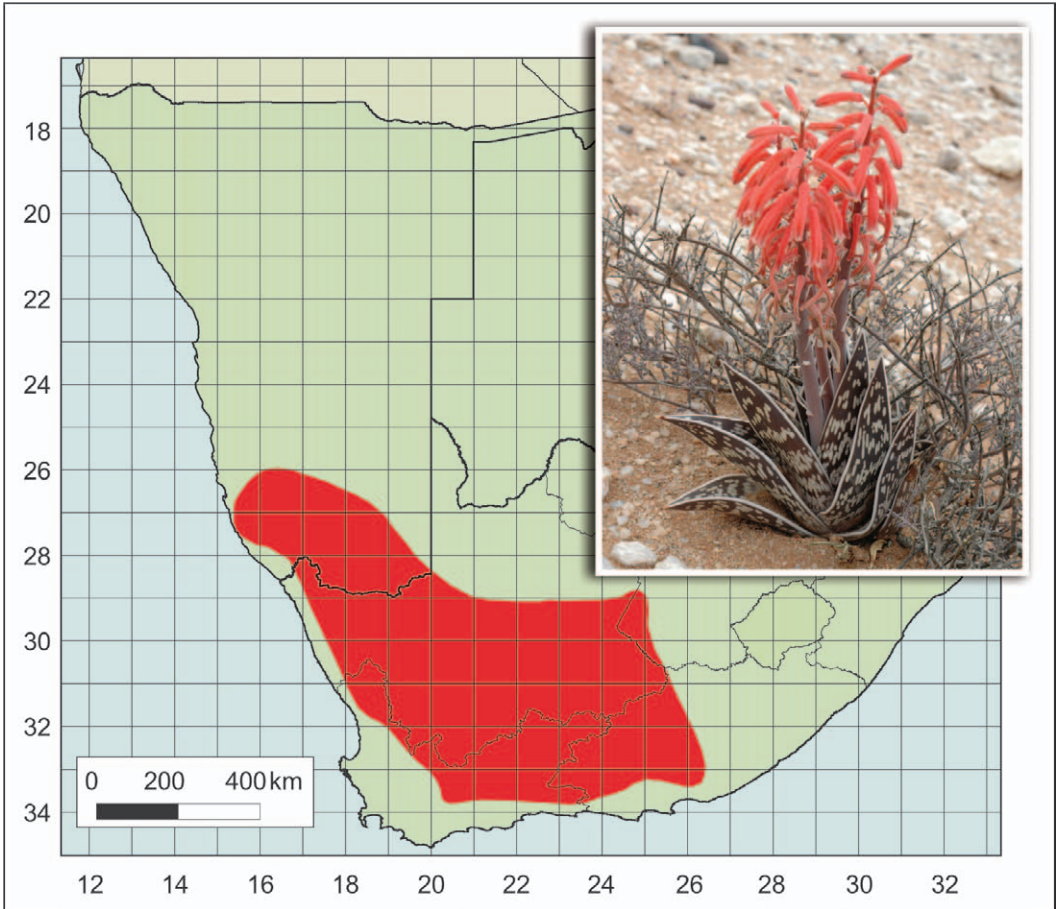


Figure 36. *Aloe variegata*.



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