

*Leucadendron cryptocephalum* Guthrie 1939  
**Concealed Conebush**

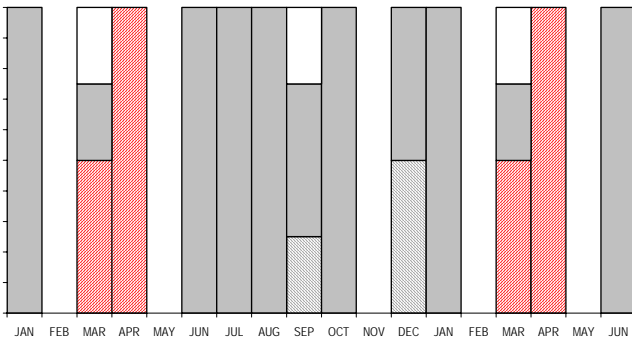
**Other Common Names:** None known.  
**Other Scientific Names:** None.

**36 Records**

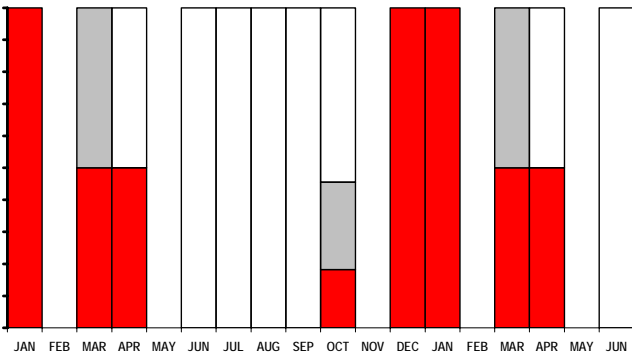
**Population** (36 records): 28% Common, 56% Frequent, 17% Rare.

**Dispersion** (34 records): 74% variable, 26% clumped.

**Flowering** (36 records with: Jan 1, Feb 0, Mar 4, Apr 2, May 0, Jun 1, Jul 2, Aug 9, Sep 4, Oct 11, Nov 0, Dec 2): Buds from Mar to Apr; Flowering and Peak Flowering not recorded; Over from Sep and Dec; Fruit from Jun to Mar; Nothing from Mar and Sep. Peak levels not recorded, probably May. Historically recorded as flowering from late Mar to early May, fruit retained for at least 12 months.



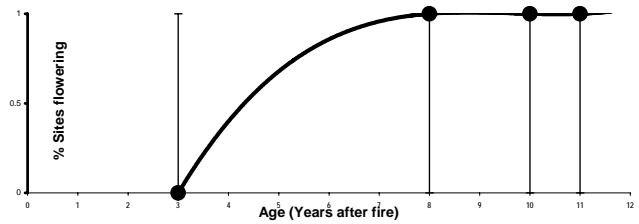
**Growth** (36 records with: Jan 1, Feb 0, Mar 4, Apr 2, May 0, Jun 1, Jul 2, Aug 9, Sep 4, Oct 11, Nov 0, Dec 2): Much from Dec to Apr; Rare from Mar and Oct; None from Apr to Oct. Peak levels unreliable at 100% in Jan.



**Seedlings** (20 records): All without any seedlings present.

**Fire Survival** (1 record): 100% survived by seedlings only.

**Age to first flowering:** First flowers recorded at 8 years, 50% estimated at 5-6 years, and 100% recorded at 8 years.



**Height** (36 records): 3% 0-0.2 m tall, 36% 0.2-1 m tall, 61% 1-2 m tall.

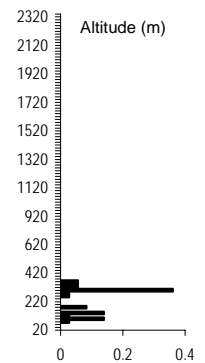
**Pollinators** : No data.

**Detailed Pollinators:** No additional data.

**Habitat:**

**Distance to Ocean** (36 records): 100% inland - further than 2 km from coast.

**Altitude** (36 records): 60 - 360 m; 120 *lq* - 180 *med* - 300 *uq*m.



**Landform** (36 records): 100% deep soil.

**Slope** (36 records): 89% gentle incline, 8% platform, 3% hill top.

**Aspect** (35 records): 61% North, 23% West,

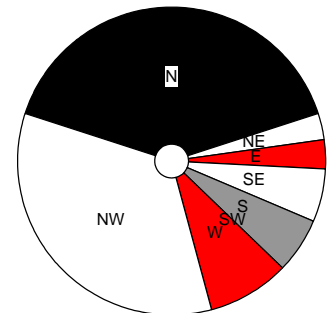
9% South, 7% East.

**Soil Type** (36 records): 36% clayey, 31% gravelly, 22% loamy, 11% sandy.

**Soil Colour** (36 records): 44% brown, 33% grey, 11% orange, 6% yellow, 3% white, 3% red.

**Geology** (34 records): 62% silcrete or ferricrete, 26% shale, 9% sandstone, 3% Tertiary sands.

**Vegetation** (36 records): 97% shrubland, 3% grassland.



**Conservation Status and Threat:**

**Red Data List Status:** Critically Endangered  
 B1a(i)b(i,ii,iii,iv,v)c(iv) +  
 2a(i)b(i,ii,iii,iv,v)c(iv).

**Occurrence** (Fynbos): 25 km<sup>2</sup> with 15% conserved and 25% lost; **Occupancy:** 14 km<sup>2</sup> with 1% conserved and 33% lost.  
**Fragmentation index:** 6%.

**Nature Reserves** (36 records): 0% in Nature Reserves - unconserved.

**Habitat destruction** (36 records): 53% extensive natural habitat, 39% islands, 8% naturally linear habitats.

**Alien Invasive Species** (36 records): 44% Fabaceae (chiefly alien *Acacia*), 33% *Pinus*, 11% *Hakea*, 6% Myrtaceae, 6% none.

**Alien Density** (36 records): 6% alien-free, 83% sparse, 11% abundant.

**Cultivation & Utilization:**

**Picking** (28 records): 100% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

About 30 plants (NAH96030206); 23 plants and 6 dead, 18 plus 7 recruitment (CHE98030501); one male escaped fire no young plants seen despite search (SMRY2090602);  
Several dead plants also (SMR99090302);

**Confusing Species:** Very similar to *L. laureolum* and easily misidentified as such. It is smaller in size, paler in colouring and earlier in flowering. However, it is the very tight involucre leaves which seal off the female flowerheads that are the diagnostic character for this species.

Records of identification queries = 6.

**Variation and Taxonomy:** No variation noted.

**Distribution:** Add.

INCLUDEPICTURE

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*Leucadendron eucalyptifolium* Buek ex Meisn. 1856  
**Gum-leaf Conebush**  
*Grootgeelbos*

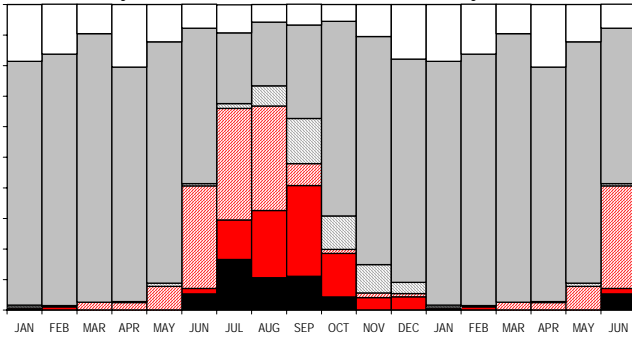
**Other Common Names:** Long-leaf Conebush, Sabulosum, Tall Yellowbush, *Albertiniatolbos*, *Geelbos*, *Langblaartol*.  
**Other Scientific Names:** *salignum* form *eriocladum* (Gand) 1901, *salignum* var. *longifolium* (Meisn.) 1856.

**5072 Records**

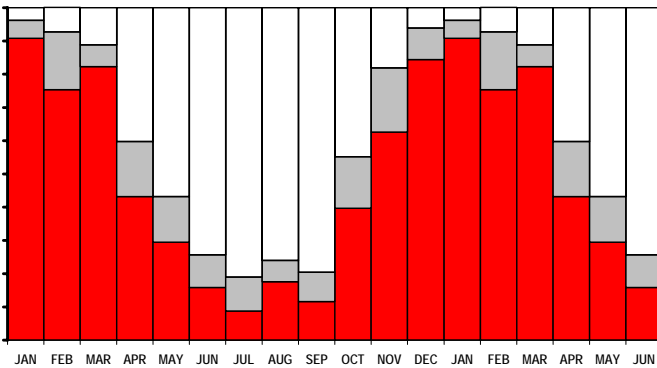
**Population** (5032 records): 6% Abundant, 47% Common, 40% Frequent, 7% Rare, 0.2% Extinct.

**Dispersion** (4821 records): 58% variable, 21% clumped, 18% widespread, 3% evenly distributed.

**Flowering** (4920 records with: Jan 485, Feb 283, Mar 470, Apr 361, May 295, Jun 283, Jul 433, Aug 395, Sep 650, Oct 559, Nov 410, Dec 296): Buds from Jun to Aug; Flowering from Aug to Sep; Peak Flowering and Over not significant; Fruit from all year round; Nothing from Apr. Peak levels at 73% in Aug. Historically recorded as flowering from Jul to Oct depending on locality, fruit retained for several years.



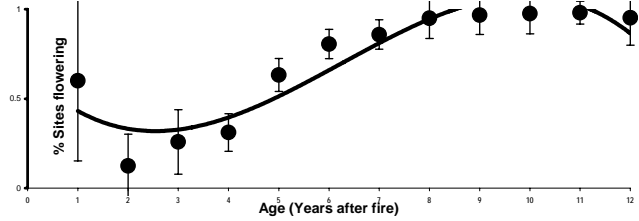
**Growth** (4859 records with: Jan 479, Feb 284, Mar 474, Apr 361, May 285, Jun 276, Jul 422, Aug 391, Sep 636, Oct 547, Nov 409, Dec 295): Much from Oct to May; Rare not significant; None from Apr to Oct. Peak levels at 96% in Jan.



**Seedlings** (2082 records): Absent in 91%: fewer seedlings than prefire adults in 32 cases, and more in 66 cases. Seedlings found in Jan (5), Feb (8), Mar (7), Apr (9), May (4), Jun (7), Jul (13), Aug (6), Sep (15), Oct (18), Nov (4) and Dec (2).

**Fire Survival** (244 records): 73% survived by seedlings only, 14% escaped fires in fire-safe areas, 11% eliminated from the area by fires, 2% resprouted from aerial trunks, 1% resprouted from underground boles.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 4-5 years, and 100% recorded at 14 years.



**Height** (4989 records): 2% 0-0.2 m tall, 21% 0.2-1 m tall, 51% 1-2 m tall, 26% 2-5 m tall, 0.9% taller than 5 m.

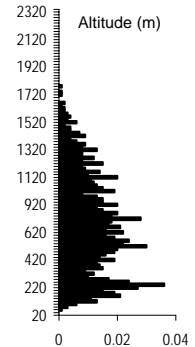
**Pollinators** (16 records): 56% beetles, 19% mites, 13% birds, 6% flies, 6% none observed.

**Detailed Pollinators** (2 records): Orange-breasted Sunbird, Monkey Beetle.

**Habitat:**

**Distance to Ocean** (4945 records): 96% inland - further than 2 km from coast.

**Altitude** (4945 records): 20 - 2360 m; 360 *lq* - 640 *med* - 900 *uq*m.

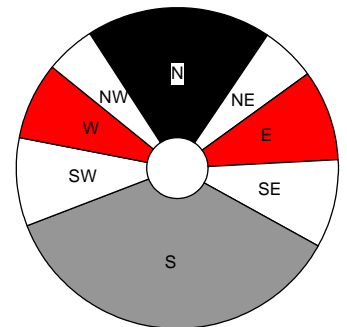


**Landform** (4926 records): 70% deep soil, 24% shallow soil, 5% rocky outcrops, 0.6% riverine, 0.2% swamp.

**Slope** (4936 records): 44% steep incline, 38% gentle incline, 8% platform, 6% hill top, 2% valley bottom, 2% cliff, 0.2% dunes.

**Aspect** (4281 records):

45% South,  
 24% North,  
 16% East,  
 15% West.



**Soil Type** (4753 records): 44% sandy, 40% loamy, 5% rocky, 4% peaty, 4% gravelly, 3% clayey.

**Soil Colour** (4733 records): 44% grey, 35% brown, 14% black, 3% yellow, 2% orange, 2% white, 1.0% red.

**Geology** (4807 records): 87% sandstone, 6% shale, 4% Tertiary sands, 2% limestone, 0.6% silcrete or ferricrete, 0.3% granite, 0.2% conglomerate.

**Vegetation** (4923 records): 96% shrubland, 2% plantations, 0.8% thicket, 0.8% grassland, 0.2% forest, 0.2% wooded

grassland, 0.0% woodland, 0.0% agricultural lands, 0.0% suburban.

### Conservation Status and Threat:

**Red Data List Status:** Least Concern.

Occurrence (Fynbos): 21 153 km<sup>2</sup> with 29% conserved and 14% lost; Occupancy: 4 059 km<sup>2</sup> with 42% conserved and 13% lost. Fragmentation index: 9%.

**Nature Reserves** (4945 records): 50% in Nature Reserves.

**Habitat destruction** (4818 records):

87% extensive natural habitat, 5% islands, 4% road verges, 2% naturally linear habitats, 0.7% corridors, 0.6% naturally fragmented habitats, 0.0% patches.

**Alien Invasive Species** (4677 records):

48% none, 24% *Pinus*, 15% *Hakea*, 12% Fabaceae (chiefly alien *Acacia*), 0.9% Myrtaceae, 0.1% other aliens, 0.0% annual alien grasses.

**Alien Density** (4667 records): 48% alien-free, 40% sparse, 8% abundant, 3% dense, 0.3% impenetrable.

### Cultivation & Utilization:

**Picking** (3471 records): 100% no sign of picking, 0.3% lightly picked, 0.0% severely picked.

**Cultivation Status:** Plantings - 12 records (0.2%), Escapes - 2 records (0.04%).

### Atlassers Notes:

Why are the young so small? Drought! (VJK93080803); We noticed 2 or 3 very large plants more than twice the size of the rest and found they are growing in old decomposed ant mounds – don't tell me proteas cant do with a little fertilizer same as one would feed orchids (VJK93041801);

Going to fruit a second time: I think altitude and moisture play a part in maturity - expect seed germinate sooner than on the lower and drier sites (VJK97071802);

Lots of dieback (AGR99090911); Quite a lot dead at edges of seep (AGRY1020106); Over 3/4 of young plants dead! (AGRY2041913); High mortality! (AGRY2042030); Important patches with dead plants (drought) (AMMY0101201); Wide sweep of dieback down centre of valley (OUT99050705); Plants very stressed: lots dead. Driest winter in recorded history – after a very wet summer Dec 1998 (WMPY0110404);

1/10 of previous population (AGRY1070701); 1/100 previous population (AGRY1070702, AGRY1070802); Prefire densities 100 times higher in parts and in other areas 10 times (AGRY1070803); Failed to recruit at this

altitude - lots of skeletons (AGRY2041927); Very bad recruitment compared to *Protea* (AGRY3103118); Virtually no reseedling on hilltop from what was once an incredibly dense population (MHGY0070802);

Lots dead due to pine canopy closure – a few survivors (AGRY3103139); Signs of senescence and starting to die (HRK93081803) Somewhat senescent: 4-5 m tall and 20 years old? (MHG96010204)

Some Inter - Fire Recruitment (PMR91120505); Noticed that a parasite was feeding off the plants and have included a sample of it: *Cassytha* (BHAY0100801);

Wind and sea spray has a major influence of plants, with those on the cliffs wider than they are tall (HRK96032902);

Tops of foliage "cut" - almost pruned - insects? (VCH99090802);

Remarkable mono-culture and very dense on this lower slope of peak (DFJ96121503); So dense the fire was not able to penetrate (VJK97051501);

A Curious Little Stand Of This Species On The Road Verge Amid Forest (AGR93022701); Persists on verge of forestry road through plantation (AKS93091607); Struggling Remnants Grown Inside Fringe Of Pine Plantation (NOG93080102); Confined To Open Road Margin (SGAY0121402);

**Confusing Species:** A distinctive species not easily confused with other species. A few hiccups included: *L. tradouwense* (based on wishful identification of seedlings), *modestum* (!), *muirii*, *coriaceum*, *pubescens*, *pubibracteolatum* and *radiatum*. Understandable mistakes included: *L. xanthoconus*, *salicifolium*, *conicum*, *meridianum*, and *spissifolium*, but all of these have much shorter leaves. In the herbarium it is most easily confused with *L. coniferum* (which has a pointed, rather than blunt mucro).

Records of identification queries = 82.

Records of corrected identification queries = 36.

**Variation and Taxonomy:** A relatively constant species with no noted variation.

**Distribution:** Add.

The record Rogers 27367 from Grahamstown in 1928 is suspicious and might be of planted plants.

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*Leucadendron eucalyptifolium* Rooiberg form  
Rooiberg Conebush

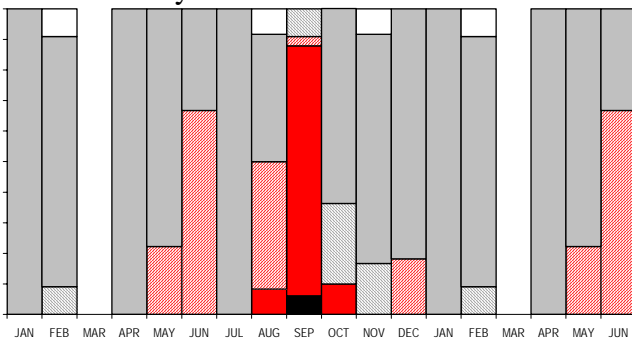
**Other Common Names:** None known.  
**Other Scientific Names:** *None*.

**206 Records**

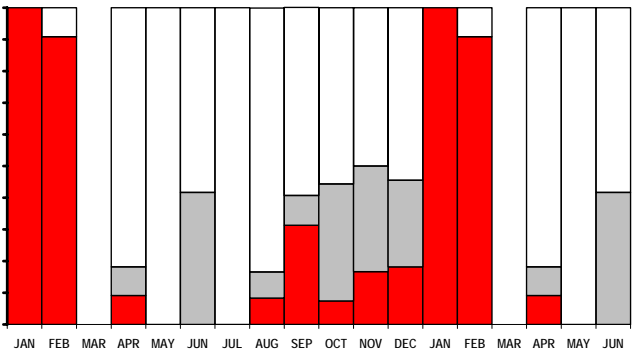
**Population** (205 records): 5% Abundant, 41% Common, 47% Frequent, 6% Rare.

**Dispersion** (197 records): 54% variable, 24% clumped, 16% widespread, 5% evenly distributed.

**Flowering** (204 records with: Jan 7, Feb 11, Mar 0, Apr 11, May 9, Jun 12, Jul 6, Aug 12, Sep 33, Oct 80, Nov 12, Dec 11): Buds from May to Jun and Aug; Flowering from Sep; Peak Flowering not significant; Over from Oct; Fruit from Oct to Aug; Nothing not significant. Peak levels at 100% in Sep. Historically not recorded.



**Growth** (204 records with: Jan 7, Feb 11, Mar 0, Apr 11, May 9, Jun 12, Jul 6, Aug 12, Sep 32, Oct 81, Nov 12, Dec 11): Much from Jan to Feb and Sep; Rare from Jun and Oct to Dec; None from Apr to Dec. Peak levels at 100% in Jan.



**Seedlings** (28 records): All without any seedlings present.

**Fire Survival** : No data.

**Age to first flowering:** First flowers recorded at 100% at 6 years, no data from younger veld.



**Height** (205 records): 8% 0.2-1 m tall, 66% 1-2 m tall, 26% 2-5 m tall.

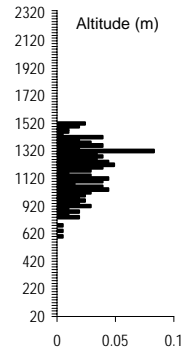
**Pollinators** : No data.

**Detailed Pollinators:** No additional data.

**Habitat:**

**Distance to Ocean** (206 records): 100% inland - further than 2 km from coast.

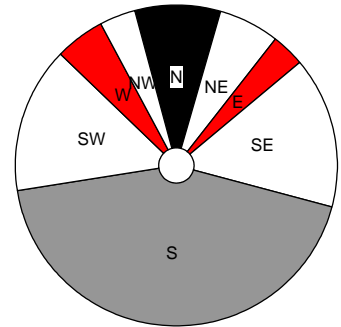
**Altitude** (206 records): 580 - 1420 m; 920<sub>lq</sub> - 1080<sub>med</sub> - 1200<sub>uq</sub>m.



**Landform** (206 records): 81% shallow soil, 19% deep soil, 0.5% rocky outcrops.

**Slope** (206 records): 73% steep incline, 15% gentle incline, 10% hill top, 1% cliff.

**Aspect** (189 records): 59% South, 14% West, 13% North, 13% East.



**Soil Type** (206 records): 56% sandy, 31% loamy, 7% gravelly, 6% rocky.

**Soil Colour** (206 records): 50% brown, 40% grey, 7% black, 2% orange, 0.5% red.

**Geology** (206 records): 100% sandstone.

**Vegetation** (206 records): 100% shrubland.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.

Occurrence (Fynbos): 295 km<sup>2</sup> with 53% conserved and 0% lost; Occupancy: 157 km<sup>2</sup> with 52% conserved and 0% lost. Fragmentation index: 40%.

**Nature Reserves** (206 records): 55% in Nature Reserves - well conserved.

**Habitat destruction** (206 records): 100% extensive natural habitat.

**Alien Invasive Species** (205 records): 96% none, 4% *Hakea*, 0.5% Fabaceae (chiefly alien *Acacia*).

**Alien Density** (205 records): 96% alien-free, 4% sparse.

**Cultivation & Utilization:**

**Picking** (171 records): 100% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Atlasers Notes:** None.

**Confusing Species:** This was usually identified as *L. eucalyptifolium* (outside of flowering this would be the logical conclusion), with a

single record of *L. conicum* (the logical error for a male plant during flowering).  
Records of identification queries = 204.  
Records of corrected identification queries = 204.

**Variation and Taxonomy:** No known variation.

This species differs from *L. eucalyptifolium* in that the males have flowerheads typical of *L. conicum*.

**Distribution:** Add.

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# *Leucadendron gandogerii* Schinz ex Gand. 1913

## Broad-leaf Conebush

### *Berggeelbos*

**Other Common Names:** Decorum, Glabrum, Golden Glory Conebush, Mountain Conebush, Tumbleweed, *Spring Gold*.

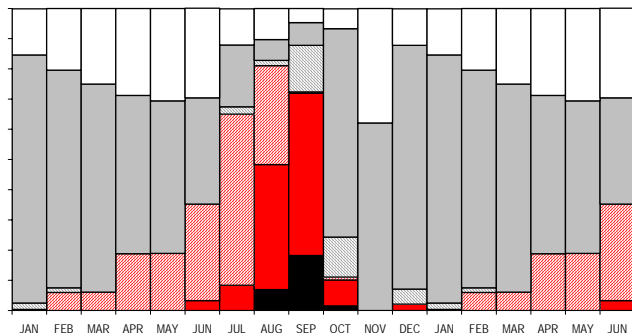
**Other Scientific Names:** *decorum* form *marcrolepis* Gand. 1901, *decorum* var. *zeyherianum* Meisn. 1856, *guthrieae* Salter 1943.

#### 1871 Records

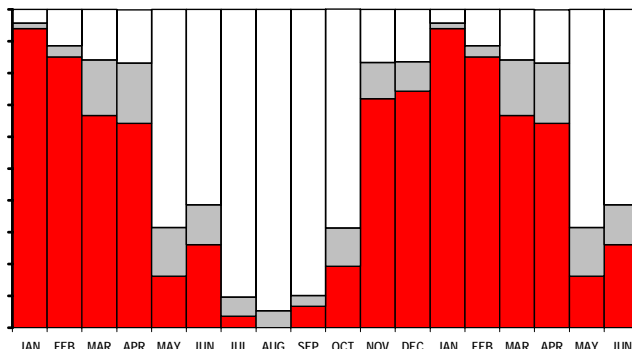
**Population** (1842 records): 3% Abundant, 50% Common, 37% Frequent, 11% Rare.

**Dispersion** (1702 records): 81% variable, 9% clumped, 9% widespread, 0.5% evenly distributed.

**Flowering** (1822 records with: Jan 235, Feb 201, Mar 132, Apr 191, May 111, Jun 91, Jul 83, Aug 58, Sep 214, Oct 197, Nov 169, Dec 140): Buds from Jun to Aug; Flowering from Aug to Sep; Peak Flowering from Sep; Over not significant; Fruit from Oct to Jul; Nothing from Feb to Jun and Nov. Peak levels at 88% in Sep. Historically recorded as flowering from late Aug to Sep, fruit retained.



**Growth** (1803 records with: Jan 233, Feb 201, Mar 132, Apr 190, May 111, Jun 88, Jul 83, Aug 57, Sep 208, Oct 192, Nov 168, Dec 140): Much from Nov to Apr and Jun; Rare from Apr; None from May to Oct. Peak levels at 96% in Jan.



**Seedlings** (892 records): Absent in 92%: fewer seedlings than prefire adults in 9 cases, and more in 28 cases. Seedlings found in Jan (12), Feb (2), Mar, May (5), Jun (3), Jul (2), Aug, Sep (9) and Nov (2).

**Fire Survival** (115 records): 86% survived by seedlings only, 10% eliminated from the area by fires, 3% escaped fires in fire-safe areas.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 4-5 years, and 100% recorded at 12 years.



**Height** (1824 records): 4% 0-0.2 m tall, 71% 0.2-1 m tall, 23% 1-2 m tall, 0.8% 2-5 m tall.

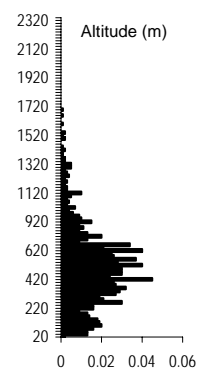
**Pollinators** (12 records): 50% beetles, 17% bees or wasps, 17% flies, 17% none observed.

**Detailed Pollinators** (5 records): Honey Bee (2), Great Protea Beetle (2), Scarab Beetle.

#### Habitat:

**Distance to Ocean** (1805 records): 82% inland - further than 2 km from coast.

**Altitude** (1805 records): 20 - 1600 m; 300 *lq* - 460 *med* - 600 *uq*m.



#### Landform

(1770 records): 74% deep soil, 21% shallow soil, 3% rocky outcrops, 1% swamp, 0.2% riverine.

**Slope** (1771 records): 44% gentle incline, 42% steep incline, 9% hill top, 4% platform, 1% cliff, 0.6% valley bottom.

**Aspect** (1597 records): 42% South, 22% North, 19% West, 17% East.

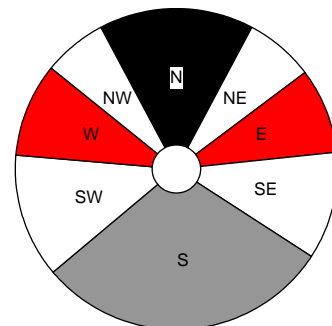
#### Soil Type

(1763 records): 55% sandy, 19% loamy, 13% peaty, 6% gravelly, 5% rocky, 1% clayey.

#### Soil Colour

(1762 records): 62% grey, 19% black, 12% brown, 5% white, 0.9% orange, 0.4% yellow, 0.2% red.

**Geology** (1757 records): 96% sandstone, 3% shale, 0.3% Tertiary sands, 0.2% silcrete or ferricrete, 0.1% limestone, 0.1% conglomerate.



**Vegetation** (1801 records): 100% shrubland, 0.1% thicket, 0.1% agricultural lands, 0.1% plantations, 0.1% grassland.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.

Occurrence (Fynbos): 2 707 km<sup>2</sup> with 18% conserved and 32% lost; Occupancy: 973 km<sup>2</sup> with 34% conserved and 14% lost. Fragmentation index: 24%.

**Nature Reserves** (1805 records): 52% in Nature Reserves - well conserved.

**Habitat destruction** (1752 records): 98% extensive natural habitat, 1% naturally linear habitats, 0.9% islands, 0.2% naturally fragmented habitats, 0.2% road verges, 0.2% corridors.

**Alien Invasive Species** (1735 records): 55% none, 30% *Pinus*, 7% *Hakea*, 6% Fabaceae (chiefly alien *Acacia*), 1% Myrtaceae.

**Alien Density** (1734 records): 55% alien-free, 39% sparse, 5% abundant, 0.9% dense, 0.1% impenetrable.

**Cultivation & Utilization:**

**Picking** (1268 records): 98% no sign of picking, 1% lightly picked, 0.4% severely picked.

**Cultivation Status:** Plantings - 12 records (0.6%), Escapes - 4 records (0.2%).

**Witch's Broom Infestation:** 1 record (0.05%).

**Atlassers Notes:**

Something eating fruit out of cones – baboons or rodents? (AGR95040104); Cones pared open by baboons or even rodents (APE92060705); Much evidence of chopped down plants by Vlei Rat *Otomys Irroratus* (JID96092109);

Etiolated and chlorotic - growing under a gum plantation (NGF96070602);

The cold here has obviously restricted the growth and they have not even set seed and cones yet (PVR98020701);

Only females picked (AGR91120808);

Ratio of males to females 10:1 - due to picking related mortality (AGR91120808);

One dead plant (APE92060606);

*Leucadendron xanthoconus* replaced gradually by *L. gandogeri* which dominated most of the higher altitude area and steeper slopes (AGR91120711); *Leucadendron xanthoconus* and *gandogeri* almost completely mutually exclusive in this area (OGM93022802, OGM93022805); More abundant as an altitude increased (PAT95092305);

Road verge plants - escaped from flower picking trucks? (SMRY0052401);

**Confusing Species:** Regularly confused with *L. laureolum*, especially populations with more closed cones – a few populations with features of *L. laureolum* (slightly curved inner involucre bracts and clasping involucre leaves, for example on the plains at Hermanus) confused the situation. Less frequently (6% of cases) confused with *L. microcephalum*, when not in flower (but is a taller plant, with asymmetrical fruit and large-brown involucre bracts). Odd careless errors with *L. meridianum* and *L. tinctum*.

Records of identification queries = 156.

Records of corrected identification queries = 82.

**Variation and Taxonomy:** There is variation in this species – some of it may be due to hybridization with associated species:

- Larger leaves at Bettys Bay;
- Large leaves, conspicuous long basal bracts, very large cones and rough fruit on the western end of Groenlandberg;
- Broad, elliptic, red leaves: higher altitudes of the Hottentots Holland;
- Slightly keeled involucre leaves and large cones at Hermanus at lower altitudes.

**Distribution:** Add.

INCLUDEPICTURE

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*Leucadendron laureolum* (Lam.) Fourcade 1792, 1934

**Golden Sunshinebush**

*Louriertolbos*

**Other Common Names:** Broad Goldtips, Comely Euryspermum, Decorum, Decorum Star, Golden Conebush, Lustral-leaf Conebush, Yellow Tulip Conebush, *Geelbos*, *Inca Gold*.

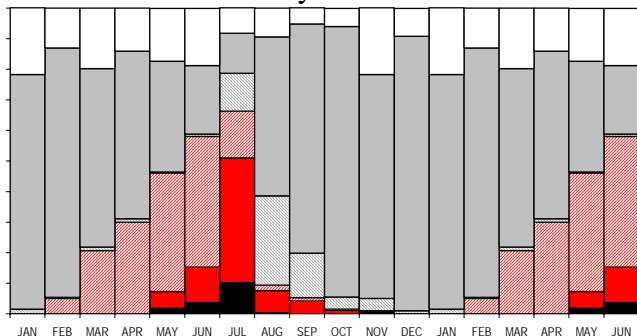
**Other Scientific Names:** *ciliata* (Thunb.) 1806, *decorum* R.Br. 1810, *decorum* (Salisb) 1796, *decorum* var. *dregeanum* Meisn. 1856, *strobilina* (Lam) 1804, *venosa* (Thunb.) 1803, *venulosa* (Steud.) 1841.

**3544 Records**

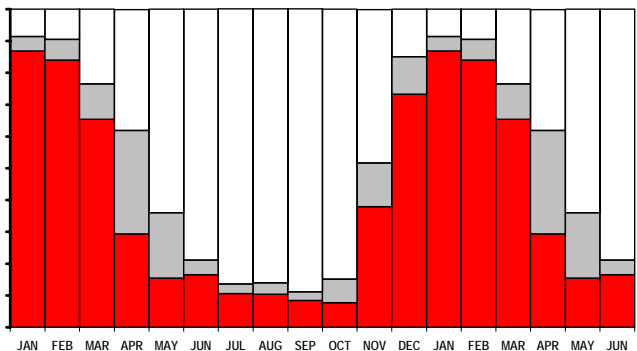
**Population** (3427 records): 2% Abundant, 49% Common, 40% Frequent, 9% Rare, 0.2% Extinct.

**Dispersion** (3248 records): 73% variable, 14% widespread, 12% clumped, 0.8% evenly distributed.

**Flowering** (3467 records with: Jan 271, Feb 261, Mar 363, Apr 263, May 312, Jun 241, Jul 314, Aug 342, Sep 378, Oct 323, Nov 202, Dec 197): Buds from Mar to Jun; Flowering from Jul; Peak Flowering not significant; Over from Aug; Fruit from Aug to Jun; Nothing from Jan, Mar and Nov. Peak levels at 79% in Jul. Historically recorded as flowering from Jun, fruit retained for several years.



**Growth** (3358 records with: Jan 268, Feb 263, Mar 370, Apr 255, May 283, Jun 218, Jul 303, Aug 338, Sep 359, Oct 311, Nov 195, Dec 195): Much from Nov to Apr; Rare from Apr to May; None from Mar to Nov. Peak levels at 91% in Jan.

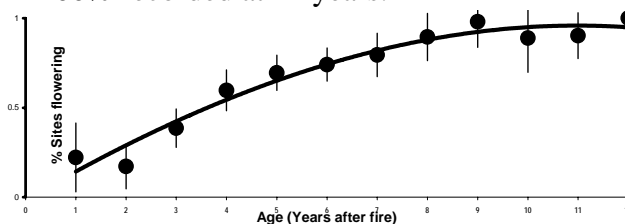


**Seedlings** (1217 records): Absent in 81%: fewer seedlings than prefire adults in 65 cases, and more in 52 cases. Seedlings found in Jan

(12), Feb (16), Mar (5), Apr (3), May (13), Jun (11), Jul (17), Aug (20), Sep (8), Oct (6) and Nov (6).

**Fire Survival** (278 records): 83% survived by seedlings only, 10% escaped fires in fire-safe areas, 5% eliminated from the area by fires, 2% resprouted from underground boles, 0.4% resprouted from aerial trunks.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 3-4 years, and 100% recorded at 12 years.



**Height** (3499 records): 5% 0-0.2 m tall, 45% 0.2-1 m tall, 46% 1-2 m tall, 4% 2-5 m tall, 0.1% taller than 5 m.

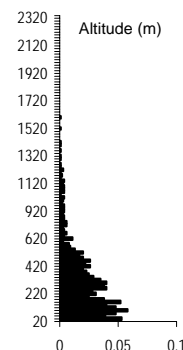
**Pollinators** (15 records): 60% beetles, 20% bees or wasps, 13% flies, 7% birds.

**Detailed Pollinators** (5 records): Honey Bee (2), Orange-breasted Sunbird, Great Protea Beetle, Conebush Beetle.

**Habitat:**

**Distance to Ocean** (3392 records): 62% inland - further than 2 km from coast.

**Altitude** (3397 records): 20 - 1500 m; 100<sub>lq</sub> - 240<sub>med</sub> - 360<sub>uq</sub>m.

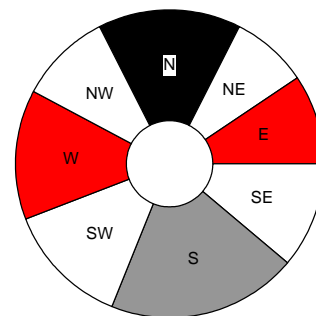


**Landform** (3375 records):

76% deep soil, 16% shallow soil, 7% rocky outcrops, 1% swamp, 0.5% riverine, 0.1% lake edge.

**Slope** (3360 records): 55% gentle incline, 21% steep incline, 15% platform, 5% hill top, 3% valley bottom, 0.3% cliff, 0.2% dunes.

**Aspect** (2776 records): 32% South, 25% West, 24% North, 18% East.



**Soil Type** (3372 records):

80% sandy, 10% loamy, 5% gravelly, 2% rocky, 2% clayey, 0.9% peaty.

**Soil Colour** (3358 records): 65% grey, 18% brown, 11% white, 3% black, 2% orange, 0.9% yellow, 0.7% red.

**Geology** (3317 records): 90% sandstone, 4% shale, 2% limestone, 2% Tertiary sands, 1% silcrete or ferricrete, 0.7% granite, 0.2% conglomerate.

**Vegetation** (3384 records): 98% shrubland, 0.7% plantations, 0.5% grassland, 0.2% thicket.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.

Occurrence (Fynbos): 6 741 km<sup>2</sup> with 29% conserved and 29% lost; Occupancy: 1 201 km<sup>2</sup> with 48% conserved and 16% lost. Fragmentation index: 8%.

**Nature Reserves** (3397 records): 72% in Nature Reserves - well conserved.

**Habitat destruction** (3318 records): 95% extensive natural habitat, 2% islands, 2% naturally linear habitats, 0.4% naturally fragmented habitats, 0.3% road verges, 0.1% corridors, 0.1% patches.

**Alien Invasive Species** (3249 records): 44% none, 26% Fabaceae (chiefly alien *Acacia*), 24% *Pinus*, 4% *Hakea*, 1% Myrtaceae, 0.1% other aliens.

**Alien Density** (3242 records): 44% alien-free, 44% sparse, 9% abundant, 2% dense, 0.3% impenetrable.

**Cultivation & Utilization:**

**Picking** (2213 records): 99% no sign of picking, 0.8% lightly picked, 0.2% severely picked.

**Cultivation Status:** Plantings - 67 records (2%), Augmentations - 1 record (0.03%), Escapes - 23 records (0.6%).

**Atlasers Notes:**

Huge Cones: 55mm Across (AGRY4050110); Something Has Been Eating Seeds From The Cones Systematically – a Rodent? (APE92051003); Worm Eaten Cones (KJO98080803); A Caterpillar Was Eating One Of The Cones (LYM99042102); A Few Plants Had Survived The Last Fire But Their Flowers Have Been Largely Damaged By Insects (NGF95091601);

Some Recruitment Seen In Slightly Eroded Gully Despite Some Plant Cover (AGRY0041601); No Dead Bushes Seen - Seeds Must Have Blown In (CVV95052102);

Most Cones Had Opened - The Plants Looked Moribund (NGFY2010509, 11);

2 Dead (AGR99092906); 1 Dead Plant Seen (AGRY0122101); A Few Large Dead Bushes With Old Cones - No Other Dead Protea Bushes (CVV95082001); Dead (CVV96052602); Many Seedlings Dead On Account Of Drought (and Other Plants Too) (WIJY0111904);

Female Next To Road Very Large Bush With Very Few Cones No Pollinators Male Within Easy Range? (AKS96060801); One Live Big Female (CVVY0102202); Only 1 Found (FBH95071501);

2 Orange Breasted Sunbirds On The plants While We Were Present - Not For Pollination No Doubt (FBH95080501); Ants On Cones (FBH95091001); PO Ants on flowerheads (IKA92072401);

**Confusing Species:** Most often confused with *L. gandogerii* (53% of corrected cases) and *strobilinum* (19%) – both of which do not have shallow grooves on the cones, and have flat involucral leaves. Less frequently confused with *L. coniferum* (9% - with much narrower leaves), *microcephalum* (6% - very similar vegetatively, but with brown basal bracts), *cryptocephalum* (4% - very similar, but a smaller plant, paler and with tighter involucral bracts), and odd cases of *spissifolium* and *linifolium*. Superficially similar plants in the Sun Conebushes were never mistaken for this species, presumably because of its serotinous cones.

Records of identification queries = 124.

Records of corrected identification queries = 68.

**Variation and Taxonomy:** A constant species without any variation.

**Distribution:** Add.

INCLUDEPICTURE

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*Leucadendron strobilinum* (L.) Druce 1771, 1917  
**Peninsula Conebush**  
*Rotstolbos*

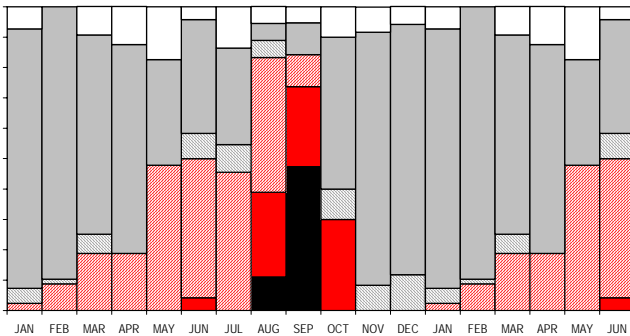
**Other Common Names:** Mountain Rose, Rock Conebush, Strobiled Protea, *Bergroos*.  
**Other Scientific Names:** *arcuata* var.  $\beta$  Lam 1791, *ciliata* Desf 1815, *concolor* R.Br. 1810, *obliqua* var.  $\beta$  Lam 1804, *saxatile* Salter 1943, *squarrosus* R.Br. 1810.

**327 Records**

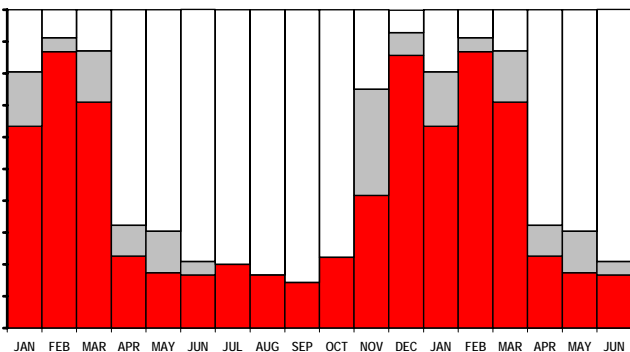
**Population** (322 records): 0.3% Abundant, 26% Common, 49% Frequent, 24% Rare, 0.3% Extinct.

**Dispersion** (285 records): 72% variable, 19% clumped, 8% widespread, 2% evenly distributed.

**Flowering** (318 records with: Jan 41, Feb 68, Mar 32, Apr 32, May 23, Jun 24, Jul 22, Aug 18, Sep 19, Oct 10, Nov 12, Dec 17): Buds from May to Aug; Flowering from Aug to Oct; Peak Flowering from Sep; Over not significant; Fruit from Oct to Jul; Nothing not significant. Peak levels at 89% in Aug. Historically recorded as flowering from XXX.



**Growth** (305 records with: Jan 41, Feb 68, Mar 31, Apr 31, May 23, Jun 24, Jul 20, Aug 18, Sep 14, Oct 9, Nov 12, Dec 14): Much from Oct to Apr and Jul; Rare from Nov; None from Jan and Apr to Nov. Peak levels at 93% in Dec and 91% in Feb.



**Seedlings** (77 records): Absent in 84%: fewer seedlings than prefire adults in 4 cases, and more in 2 cases. Seedlings found in Jan, Feb, Mar (2), Apr and Jul.

**Fire Survival** (13 records): 38% survived by seedlings only, 31% eliminated from the area by fires, 31% escaped fires in fire-safe areas.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 4-5 years, and 100% consistently recorded after 5 years, with some evidence of senescence after 21 years.



**Height** (323 records): 0.6% 0-0.2 m tall, 29% 0.2-1 m tall, 58% 1-2 m tall, 12% 2-5 m tall.

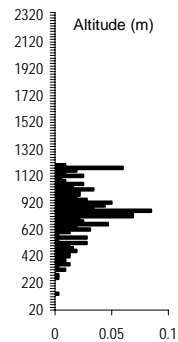
**Pollinators** : No data.

**Detailed Pollinators:** No additional data.

**Habitat:**

**Distance to Ocean** (315 records): 70% inland - further than 2 km from coast.

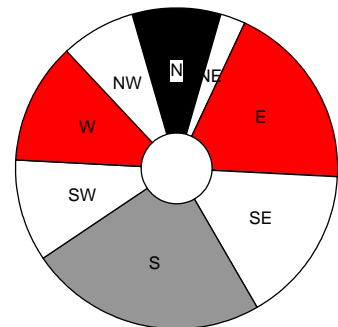
**Altitude** (315 records): 120 - 1100 m; 640 *lq* - 740 *med* - 800 *uq*m.



**Landform** (314 records): 55% deep soil, 35% shallow soil, 10% rocky outcrops, 0.3% riverine, 0.3% swamp.

**Slope** (314 records): 43% steep incline, 34% gentle incline, 13% hill top, 5% cliff, 4% platform, 1.0% valley bottom.

**Aspect** (258 records): 36% South, 28% East, 22% West, 14% North.



**Soil Type** (314 records): 78% sandy, 9% loamy, 9% rocky, 2% peaty, 2% gravelly.

**Soil Colour** (312 records): 73% grey, 15% brown, 8% black, 3% white, 0.6% orange.

**Geology** (314 records): 97% sandstone, 2% shale, 0.3% granite.

**Vegetation** (313 records): 97% shrubland, 2% thicket, 0.3% grassland, 0.3% wooded grassland, 0.3% forest.

**Conservation Status and Threat:**

**Red Data List Status:** Near Threatened D2(ii).

Occurrence (Fynbos): 154 km<sup>2</sup> with 50% conserved and 43% lost; Occupancy: 71 km<sup>2</sup> with 79% conserved and 15% lost.  
Fragmentation index: 44%.

**Nature Reserves** (315 records): 99% in Nature Reserves - well conserved.

**Habitat destruction** (311 records): 96% extensive natural habitat, 2% naturally linear habitats, 1% islands, 0.6% naturally fragmented habitats.

**Alien Invasive Species** (309 records): 48% *Pinus*, 46% none, 6% Fabaceae (chiefly alien *Acacia*), 0.3% *Hakea*.

**Alien Density** (309 records): 46% alien-free, 53% sparse, 2% abundant.

**Cultivation & Utilization:**

**Picking** (146 records): 99% no sign of picking, 1% lightly picked.

**Cultivation Status:** Plantings - 4 records (1%).

**Witch's Broom Infestation:** 1 record (0.3%).

**Atlassers Notes:**

One plant in forest is height code 5 (greater than 5 m tall) but is half dead - most on cliffs are smaller (AKS93042904); Very old bushes with heavy thick trunks (DJL94120503); 3 remarkably large male plants 3x6 m with trunks 300 mm diam. Female plants much smaller. These plants must be a record for this species being in such undisturbed fynbos

which alas is going to be burnt within the next year (EGH92010801);  
Protected from the recent fire by rocks (PVR97082708);

3 plants all healthy (2 Males 1 Female) (NAH92050902);

Galls on stems near leaves (WIJ96072103);  
Beetles on buds (eating?) (NAH92050902);

**Confusing Species:** Illustrated as *L. grandiflorum* by Edwards in 1814. Confused with *L. laureolum* (with yellow keeled involucre leaves and ridged cones) and *L. gandogeri* (which does not occur naturally on the Peninsula)

Records of identification queries = 19.

Records of corrected identification queries = 8.

**Variation and Taxonomy:** Salter noted that the plants in exposed high slopes had cones and leaves half the size of those in more sheltered positions. Atlassers noted no variation, other than that older plants were taller.

**Distribution:** Add.

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*Leucadendron spissifolium* subspecies *spissifolium* (Salisb. ex Kn.) William 1809,  
1967

**Common Spear-leaf Conebush**  
*Vleigeelbos*

**Other Common Names:** Crowded-leaf Euryspermum, Goldtips Conebush, Shiney-cone Conebush, Volufe-leaf Euryspermum, *Blinktolbos*, *Geelperdebos*, *Knopbos*, *Knopiesgeelbos*, *Kraaltolbos*, *Perdebos*, *Riviertolbos*, *Tolletjies*, *Vleigeelbos*, *Watertolbos*, *Corringle Gold*.

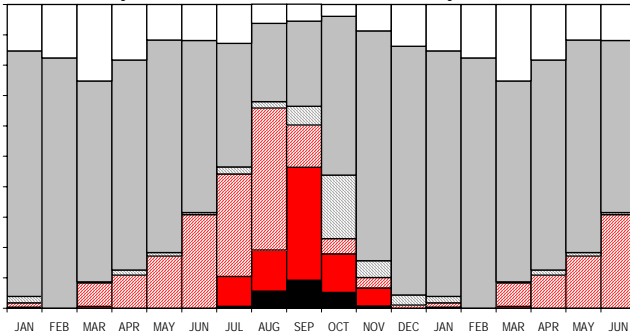
**Other Scientific Names:** *adscendens* var. *pallens* Phill & Hutch 1912, *beukianum* Meisn. 1856, *glabrum* R.Br. 1810, *glabrum* var. *angustifolium* Meisn 1856, *marginata* (Willd.) 1813, *minus* Phill & Hutch 1912, *minus* var. *glabrescens* Phill & Hutch. 1912, *riparium* Salter 1943, *riparium* var. *collinum* Salter 1943, *riparium* var. *pillansii* Salter 1943, *volutifolium* (Salisb. ex Kn.) 1809.

**3445 Records**

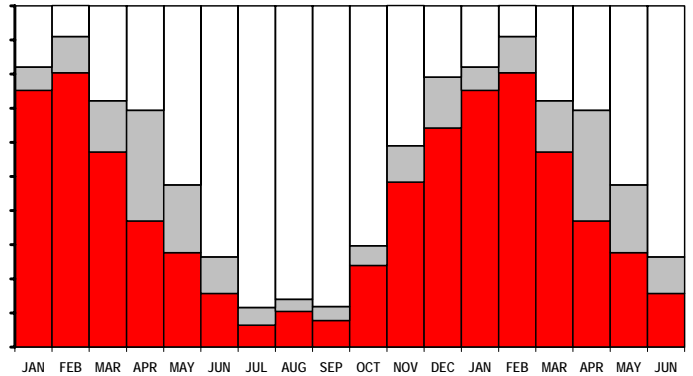
**Population** (3421 records): 0.2% Abundant, 23% Common, 60% Frequent, 17% Rare.

**Dispersion** (3153 records): 72% variable, 24% clumped, 3% widespread, 0.9% evenly distributed.

**Flowering** (3409 records with: Jan 281, Feb 267, Mar 357, Apr 175, May 180, Jun 143, Jul 172, Aug 287, Sep 468, Oct 440, Nov 436, Dec 203): Buds from Jun to Aug; Flowering from Sep; Peak Flowering not significant; Over from Oct; Fruit from all year round; Nothing from Mar. Peak levels at 68% in Aug. Historically recorded as flowering from Aug to Oct depending on locality, fruit retained for some years.



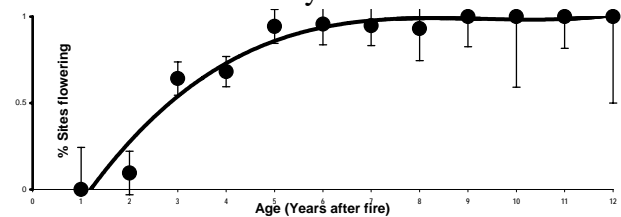
**Growth** (3375 records with: Jan 278, Feb 265, Mar 353, Apr 173, May 177, Jun 140, Jul 173, Aug 286, Sep 462, Oct 431, Nov 436, Dec 201): Much from Oct to May; Rare from Apr to May; None from Mar to Dec. Peak levels at 91% in Feb.



**Seedlings** (1534 records): Absent in 96%; fewer seedlings than prefire adults in 23 cases, and more in 5 cases. Seedlings found in Jan (5), Mar (4), Apr (2), May, Jun (2) and Nov (14).

**Fire Survival** (328 records): 96% resprouted from underground boles, 3% escaped fires in fire-safe areas, 1% survived by seedlings only.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 2-3 years, and 100% recorded at 9 years.



**Height** (3416 records): 2% 0-0.2 m tall, 87% 0.2-1 m tall, 11% 1-2 m tall, 0.4% 2-5 m tall.

**Pollinators** (36 records): 75% beetles, 22% flies, 3% birds.

**Detailed Pollinators** (12 records): Monkey Beetle (10), Great Protea Beetle (2).

**Habitat:**

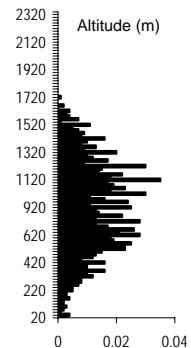
**Distance to Ocean** (3343 records): 98% inland - further than 2 km from coast.

**Altitude** (3344 records): 20 - 1680 m; 540 *lq* - 800 *med* - 1020 *uq*m.

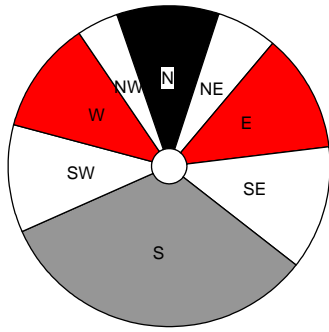
**Landform** (3334 records):

73% deep soil,  
22% shallow soil,  
3% rocky outcrops,  
0.9% swamp,  
0.3% riverine.

**Slope** (3335 records): 51% steep incline, 37% gentle incline, 5% hill top, 3% platform, 2% cliff, 1% valley bottom.



**Aspect** (3101 records):  
45% South,  
21% East,  
19% West,  
15% North.



**Soil Type** (3316 records):  
40% sandy,  
31% loamy,  
10% gravelly,  
7% rocky,  
6% peaty,  
6% clayey.

**Soil Colour** (3299 records): 41% brown,  
41% grey, 11% black, 3% orange, 2% white,  
1% yellow, 0.8% red.

**Geology** (3279 records): 75% sandstone,  
17% shale, 6% granite, 2% silcrete or  
ferricrete, 0.3% conglomerate.

**Vegetation** (3338 records): 97% shrubland,  
1% plantations, 0.9% grassland,  
0.2% thicket.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.  
Occurrence (Fynbos): 20 198 km<sup>2</sup> with 19%  
conserved and 20% lost; Occupancy:  
2 525 km<sup>2</sup> with 46% conserved and 11%  
lost. Fragmentation index: 6%.

**Nature Reserves** (3344 records): 56% in  
Nature Reserves - well conserved.

**Habitat destruction** (3300 records):  
95% extensive natural habitat, 2% islands,  
2% naturally linear habitats, 0.4% road  
verges, 0.4% naturally fragmented habitats,  
0.1% corridors.

**Alien Invasive Species** (3264 records):  
41% none, 37% *Pinus*, 16% *Hakea*,  
5% Fabaceae (chiefly alien *Acacia*),  
0.8% Myrtaceae, 0.1% other aliens,  
0.1% annual alien grasses.

**Alien Density** (3258 records): 41% alien-free,  
49% sparse, 7% abundant, 2% dense,  
0.3% impenetrable.

**Cultivation & Utilization:**

**Picking** (2316 records): 100% no sign of  
picking, 0.1% lightly picked.

**Cultivation Status:** Plantings - 2 records  
(0.06%).

**Atlassers Notes:**

Amazingly tall: over 3m tall in 2 year old veld!  
(AGR93071811); Unusual tall form as seen  
near Maraisberg and Pakhuispass  
(AMMY3112622, 23); Unusual and tall form  
like on Grootberg (AMMY3112718); Long  
and straggly (CJL98061602); 2 m tall - have  
christened them subspecies *robusta*  
(VJK93053002); Very tall - nearly 2 m  
(VJK93082201); Tallest I ever have seen  
(VJK99092407);

Male plants with very small leaves  
(AGR92021302);

Silvery peach leaves (AGRY2031206); A very  
pretty silver form! (AGRY2041916); Silver  
form (AGRY2041924, AGRY2042013, 16);  
Bud and old leaves silvery (GYC92070504);  
Silver hairs on leaves (SHR98112901-03);

New leaves incredibly hairy = 'furry'

(AGR96032911);  
Looked like *L. gandogerii* except resprouting  
(APE92081617);

In bud and flowering later than those in  
Tradouw Pass (VJK93082201); Flowering  
late here (VJK93091901);

Male flowerheads "smelly" (WMPY1111704);

Hairy-pollinator: beetle 5mm long  
(AGRY4092604); Also pollinated by  
Longhorn Beetles (LYM97091004); Both  
types of heads covered in ants  
(WEL95030501);

Several had single stems - old veld  
(WIJ95031109);

Replaces *L. salignum* up slope  
(AGR92021301);

Only males (AGR96121103; AGR97121329);

Only females (AGR99071808); My lonely  
hearts protea: 1 female and 5 small males  
clustered together yet common on map  
(AWA96100901);

Very stressed (WMPY0110408);

**Confusing Species:** The commonest problem

(29% of corrected queries, over half of all  
queries) was a reluctance to identify  
subspecies, even when these were obvious.  
The most common misidentification was  
with *L. spissifolium* subsp. *fragrans* (47% of  
corrected queries; this has much narrower  
leaves), part of the problem was an error in  
the field guide regarding leaf sizes). Very  
few cases of misidentification with *L.*  
*salignum* (with silvery hairy, not smooth  
red/brown cones) were noted. Confusion  
with the following non-resprouters was  
noted: *diemontianum* (3%), *elimense* (1%),  
*glaberrimum* (1%), *laureolum* (3%),  
*strobilinum* (1%), *tinctum* (3%). A single  
case of confusion with *L. arcuatum* was  
noted (different seeds, not serotinous).

Records of identification queries = 133.

Records of corrected identification queries = 59.

**Variation and Taxonomy:** Williams found it  
impossible to divide this subspecies into  
smaller taxa. There are numerous ecotypes  
but, but no geographically distinct forms. He  
furthermore states (italics quoted from  
Williams 1972): Salter (1943) "*thought he*  
*could*" discern 3 taxa (varieties) on the Cape  
Peninsula. Phillips and Hutchingson (1912)  
"*envisaged*" 3 taxa (2 species and one  
variety) from the Caledon Division. He did  
note the following variation, but did not  
formally recognize it with a name:

- Thin adpressed pubescence on upper  
branches and leaves: Piketberg and  
Clanwilliam;
- Linear oblong leaves with new branches and  
leaves villous: Langeberg near Riversdale;
- Large and small leaved populations and  
sometimes intermediate populations, may  
occur on the same mountain.

**Distribution:** Add.

INCLUDEPICTURE

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*Leucadendron spissifolium* subspecies *fragrans* Williams 1972  
**Fragrant Spear-leaf Conebush**

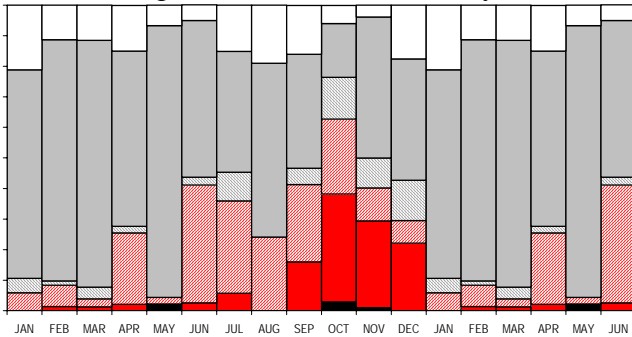
**Other Common Names:** None known.  
**Other Scientific Names:** *None*.

**846 Records**

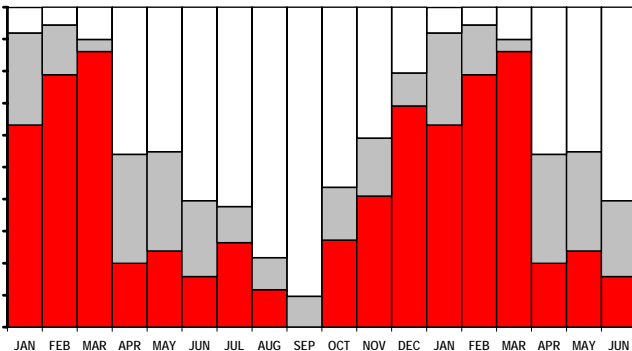
**Population** (844 records): 0.9% Abundant, 18% Common, 65% Frequent, 16% Rare.

**Dispersion** (774 records): 61% variable, 22% clumped, 12% widespread, 5% evenly distributed.

**Flowering** (823 records with: Jan 85, Feb 71, Mar 78, Apr 47, May 45, Jun 39, Jul 53, Aug 58, Sep 75, Oct 102, Nov 102, Dec 68): Buds from Apr and Jun to Oct; Flowering from Oct to Dec; Peak Flowering and Over not significant; Fruit from Nov to Sep; Nothing from Jan. Peak levels at 76% in Oct. Historically recorded as flowering from Sep in the coastal ranges and Nov on the Swartberg, fruit retained for some years.



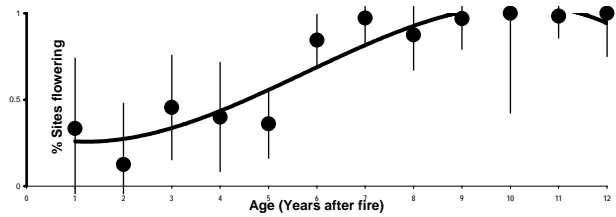
**Growth** (824 records with: Jan 87, Feb 71, Mar 79, Apr 50, May 42, Jun 38, Jul 53, Aug 60, Sep 73, Oct 103, Nov 100, Dec 68): Much from Oct to May and Jul; Rare from Jan and Apr to Jun; None from Apr to Dec. Peak levels at 94% in Feb.



**Seedlings** (339 records): Absent in 92%; fewer seedlings than prefire adults in 6 cases, and more in 8 cases. Seedlings found in Jan, Feb, Mar, Jul (10) and Sep.

**Fire Survival** (56 records): 79% resprouted from underground boles, 9% survived by seedlings only, 7% resprouted from aerial trunks, 4% escaped fires in fire-safe areas, 2% eliminated from the area by fires.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 5-6 years, and 100% recorded at 10 years, with signs of senescence after 20 years.



**Height** (840 records): 7% 0-0.2 m tall, 83% 0.2-1 m tall, 10% 1-2 m tall, 0.8% 2-5 m tall, 0.1% taller than 5 m.

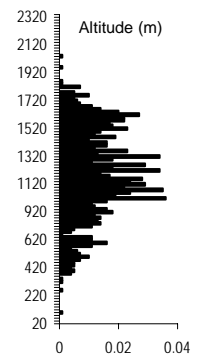
**Pollinators** (16 records): 69% beetles, 25% flies, 6% none observed.

**Detailed Pollinators** (1 record): Green Beetle.

**Habitat:**

**Distance to Ocean** (830 records): 100% inland - further than 2 km from coast.

**Altitude** (830 records): 80 - 1940 m; 880 *lq* - 1080 *med* - 1320 *uq* m.

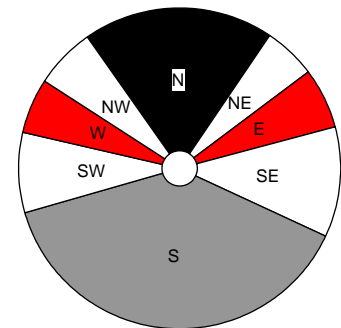


**Landform** (825 records): 55% deep soil, 39% shallow soil, 5% rocky outcrops, 0.4% riverine, 0.2% swamp.

**Slope** (828 records): 53% steep incline, 35% gentle incline, 7% hill top, 2% platform, 2% cliff, 0.4% valley bottom.

**Aspect** (759 records): 49% South, 26% North, 13% East, 12% West.

**Soil Type** (825 records): 38% loamy, 31% sandy, 10% rocky, 9% peaty, 9% gravelly, 4% clayey.



**Soil Colour** (823 records): 41% grey, 32% brown, 25% black, 1% orange, 0.4% yellow, 0.1% white, 0.1% red.

**Geology** (825 records): 96% sandstone, 4% shale, 0.1% conglomerate, 0.1% granite, 0.1% silcrete or ferricrete.

**Vegetation** (827 records): 96% shrubland, 2% grassland, 1% wooded grassland, 0.7% plantations, 0.1% forest, 0.1% agricultural lands.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern. Occurrence (Fynbos): 10 475 km<sup>2</sup> with 33% conserved and 12% lost; Occupancy: 783 km<sup>2</sup> with 47% conserved and 6% lost. Fragmentation index: 4%.

**Nature Reserves** (830 records): 58% in Nature Reserves - well conserved.

**Habitat destruction** (803 records): 97% extensive natural habitat, 2% islands,

0.6% corridors, 0.4% naturally linear habitats, 0.1% road verges, 0.1% patches.

**Alien Invasive Species** (780 records):  
65% none, 21% *Pinus*, 12% *Hakea*,  
0.9% Fabaceae (chiefly alien *Acacia*),  
0.1% annual alien grasses, 0.1% other aliens.

**Alien Density** (773 records): 66% alien-free,  
29% sparse, 3% abundant, 2% dense.

**Cultivation & Utilization:**

**Picking** (532 records): 100% no sign of picking, 0.4% lightly picked.

**Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

Thin and tall - not bushy (OBK96040714);  
About 5% plants females and 95% males  
(DOA92102309);

Remarkable to find healthy conebrush growing  
in dense pine plantation (DFJ97083003);

**Confusing Species:** By far the most confusion  
was with neighbouring subspecies. Thus

subspecies *spissifolium* (which much broader rounded leaves) accounted for 49% of corrected queries, *phillipsii* (with linear oblanceolate – not subcanaliculate leaves and oval – not lanceolate acute basal bracts) for 21%, and a reluctance to identify subspecies for 24%. A single case of confusion with *L. salignum* (a resprouter with broader leaves and hairy cones) and *teretifolium* (a non-resprouter, with very different cones) was also noted.

Records of identification queries = 124.

Records of corrected identification queries = 84.

**Variation and Taxonomy:** No variation noted.

**Distribution:** Add.

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*Leucadendron spissifolium* subspecies *natalense* (Thode & Gilg.) Williams 1913,  
1972

**Natal Spear-leaf Conebush**  
*Natalgeelbos*

**Other Common Names:** Pondo Spear-leaf Conebush.

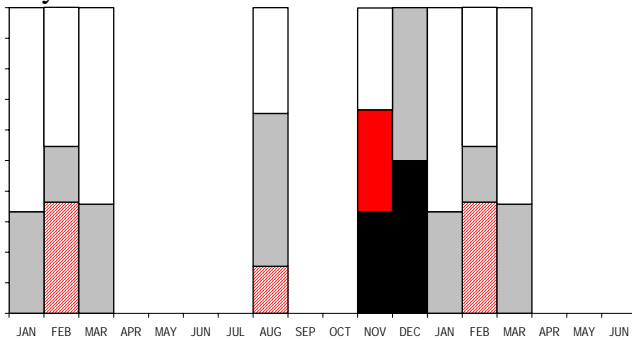
**Other Scientific Names:** None.

**64 Records**

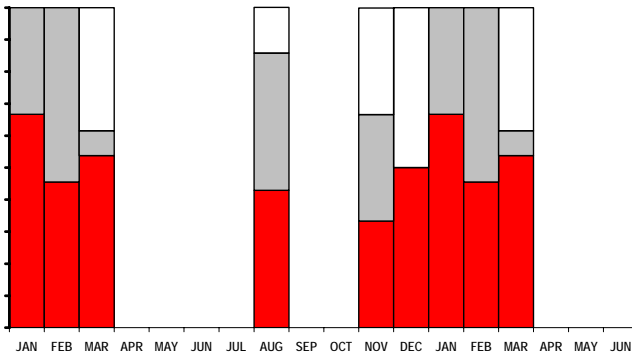
**Population** (63 records): 2% Abundant, 41% Common, 48% Frequent, 10% Rare.

**Dispersion** (62 records): 50% variable, 32% clumped, 15% widespread, 3% evenly distributed.

**Flowering** (59 records with: Jan 3, Feb 11, Mar 14, Apr 0, May 0, Jun 0, Jul 0, Aug 26, Sep 0, Oct 0, Nov 3, Dec 2): Buds from Feb; Flowering from Nov; Peak Flowering from Nov to Dec; Over not recorded; Fruit from Dec to Jan and Mar to Aug; Nothing from Jan to Nov. Peak levels unreliable at 67% in Nov. Historically recorded as flowering from Sep to Nov, fruit retained for several years.



**Growth** (60 records with: Jan 3, Feb 11, Mar 13, Apr 0, May 0, Jun 0, Jul 0, Aug 28, Sep 0, Oct 0, Nov 3, Dec 2): Much from all year round; Rare from Jan to Feb and Aug to Nov; None from Mar and Nov to Dec. Peak levels unreliable at 100% from Jan to Feb.



**Seedlings** (30 records): Absent in 93%: fewer seedlings than prefire adults in 1 case. Seedlings found in Jan.

**Fire Survival** (39 records): 95% resprouted from underground boles, 3% survived by seedlings only, 3% resprouted from aerial trunks.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 1 years, and 100% recorded at 4 years.



**Height** (61 records): 21% 0-0.2 m tall, 77% 0.2-1 m tall, 2% 1-2 m tall.

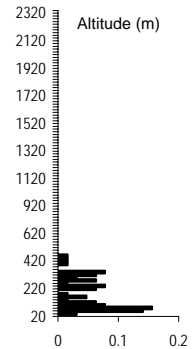
**Pollinators** : No data.

**Detailed Pollinators:** No additional data.

**Habitat:**

**Distance to Ocean** (64 records): 52% inland - further than 2 km from coast.

**Altitude** (64 records): 20 - 460 m; 60<sub>lq</sub> - 100<sub>med</sub> - 160<sub>uq</sub>m.



**Landform** (64 records):

64% deep soil, 14% riverine, 14% shallow soil, 6% rocky outcrops, 2% swamp.

**Slope** (63 records): 54% gentle incline, 16% steep incline, 16% platform, 10% valley bottom, 5% hill top.

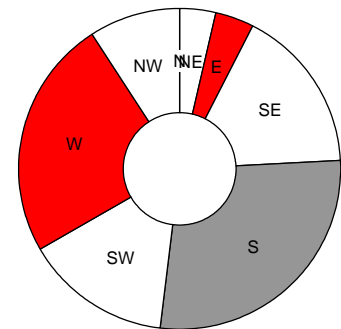
**Aspect** (54 records): 44% South, 37% West, 13% East, 6% North.

**Soil Type** (63 records):

46% sandy, 43% loamy, 6% peaty, 3% clayey, 2% rocky.

**Soil Colour** (63 records):

56% grey, 32% brown, 13% black.



**Geology** (64 records): 94% sandstone, 6% Tertiary sands.

**Vegetation** (63 records): 76% grassland, 16% shrubland, 8% wooded grassland.

**Conservation Status and Threat:**

**Red Data List Status:** Near Threatened B2a(ii)b(i,ii,iii,iv,v).

Occurrence: 1 784 km<sup>2</sup> with 6% conserved and 9% lost; Occupancy: 85 km<sup>2</sup> with 42% conserved and 10% lost. Fragmentation index: 5%.

**Nature Reserves** (64 records): 81% in Nature Reserves - well conserved.

**Habitat destruction** (56 records):  
68% extensive natural habitat, 18% naturally linear habitats, 5% islands, 4% corridors, 4% naturally fragmented habitats, 2% patches.

**Alien Invasive Species** (56 records): 79% none, 11% Fabaceae (chiefly alien *Acacia*), 5% Myrtaceae, 4% *Hakea*, 2% other aliens.

**Alien Density** (56 records): 79% alien-free, 20% sparse, 2% abundant.

**Cultivation & Utilization:**

**Picking** (44 records): 100% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

This population is undoubtedly this subspecies, but far larger in cone and leaf size than populations to the north: It probably deserves subspecies status (AGR99082711);

**Confusing Species:** None noted.  
Records of identification queries = 1.

**Variation and Taxonomy:** No variation noted.

**Distribution:** Add.

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*Leucadendron spissifolium* subspecies *oribinum* Williams 1972

**Oribi Spear-leaf Conebush**

*Oribigeelbos*

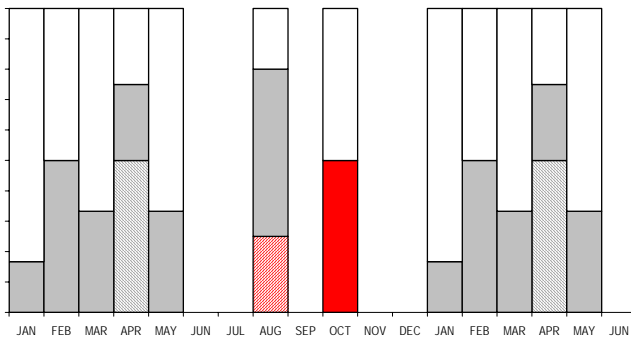
**Other Common Names:** None known.  
**Other Scientific Names:** None.

**51 Records**

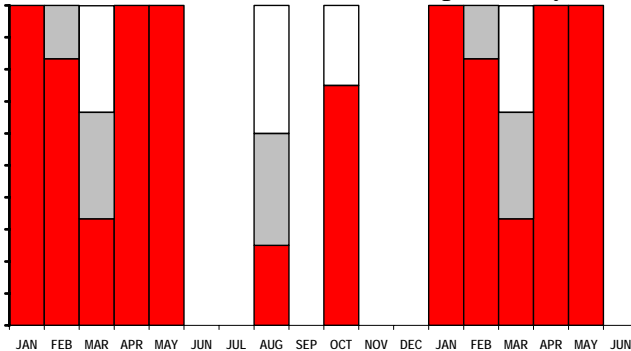
**Population** (51 records): 29% Common, 59% Frequent, 12% Rare.

**Dispersion** (49 records): 53% variable, 37% clumped, 8% widespread, 2% evenly distributed.

**Flowering** (50 records with: Jan 6, Feb 6, Mar 3, Apr 8, May 3, Jun 0, Jul 0, Aug 20, Sep 0, Oct 4, Nov 0, Dec 0): Buds from Aug; Flowering from Oct; Peak Flowering not recorded; Over from Apr; Fruit from Feb to Aug; Nothing from all year round. Peak levels unreliable at 50% in Oct. Historically recorded as flowering from Oct to Nov, fruit retained.



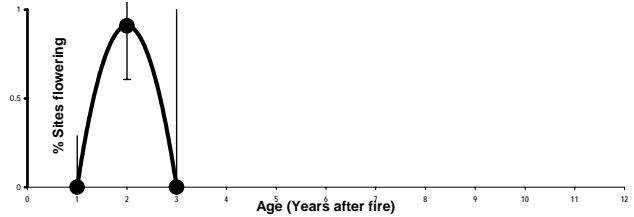
**Growth** (50 records with: Jan 6, Feb 6, Mar 3, Apr 8, May 3, Jun 0, Jul 0, Aug 20, Sep 0, Oct 4, Nov 0, Dec 0): Much from all year round; Rare from Mar and Aug; None from Mar and Aug to Oct. Peak levels unreliable at 100% from Jan to Feb and Apr to May.



**Seedlings** (36 records): Absent in 94%; fewer seedlings than prefire adults in 1 case. Seedlings found in Jan.

**Fire Survival** (44 records): 100% resprouted from underground boles.

**Age to first flowering:** First flowers recorded at 2 years, 50% estimated at 2-3 years, and 100% not recorded – oldest veld recorded was 3 years.



**Height** (51 records): 12% 0-0.2 m tall, 86% 0.2-1 m tall, 2% 2-5 m tall.

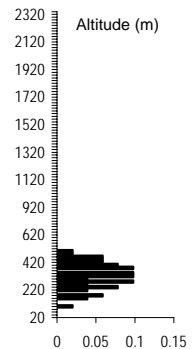
**Pollinators** : No data.

**Detailed Pollinators:** No additional data.

**Habitat:**

**Distance to Ocean** (51 records): 98% inland - further than 2 km from coast.

**Altitude** (51 records): 80 - 500 m; 240<sub>lq</sub> - 320<sub>med</sub> - 380<sub>uq</sub>m.



**Landform** (51 records): 47% deep soil, 45% shallow soil, 4% rocky outcrops, 2% riverine, 2% swamp.

**Slope** (51 records): 53% gentle incline, 33% steep incline, 12% hill top, 2% cliff.

**Aspect** (43 records): 40% South, 34% West, 14% East, 13% North.

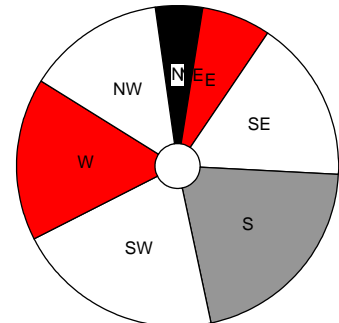
**Soil Type** (50 records): 70% sandy, 30% loamy.

**Soil Colour** (50 records): 68% grey, 24% brown, 8% black.

**Geology** (51 records):

100% sandstone.

**Vegetation** (50 records): 94% grassland, 6% wooded grassland.



**Conservation Status and Threat:**

**Red Data List Status:** Vulnerable

B1a(ii)b(i,ii,iii,iv,y).

Occurrence: 715 km<sup>2</sup> with 12% conserved and 30% lost; Occupancy: 74 km<sup>2</sup> with 35% conserved and 17% lost. Fragmentation index: 10%.

**Nature Reserves** (51 records): 61% in Nature Reserves - well conserved.

**Habitat destruction** (29 records): 93% extensive natural habitat, 7% islands.

**Alien Invasive Species** (35 records): 83% none, 14% Fabaceae (chiefly alien *Acacia*), 3% *Hakea*.

**Alien Density** (35 records): 83% alien-free,  
17% sparse.

**Cultivation & Utilization:**

**Picking** (39 records): 100% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

Few old cones present (NSC95012105);

At low densities (ATA92013001);

2 young plants (VCH99082601);

Young plants present - indicating robust  
population (ATA99042701);

**Confusing Species:** None noted, one case of  
subspecies not entered.

Records of identification queries = 2.

Records of corrected identification queries = 1.

**Variation and Taxonomy:** No variation noted.

**Distribution:** Add.

Williams states known from only 2 locations.

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*Leucadendron spissifolium* subspecies *phillipsii* (Hutchinson) Williams 1912, 1972  
**Kareedouwvlakte Spear-leaf Conebush**

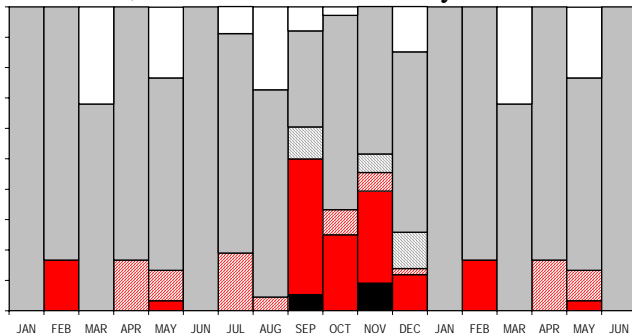
**Other Common Names:** None known.  
**Other Scientific Names:** *gnidioides* Gand. & Schinz 1913, *virgatum* form *gnidioides* Gand. 1901.

**405 Records**

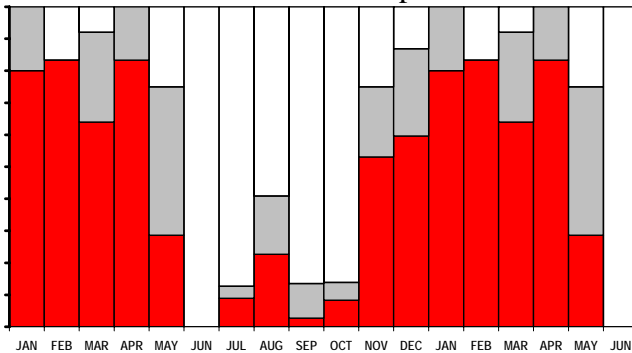
**Population** (398 records): 0.5% Abundant, 33% Common, 59% Frequent, 7% Rare.

**Dispersion** (378 records): 79% variable, 13% clumped, 6% widespread, 2% evenly distributed.

**Flowering** (395 records with: Jan 10, Feb 6, Mar 25, Apr 6, May 30, Jun 9, Jul 79, Aug 22, Sep 38, Oct 36, Nov 33, Dec 101): Buds not significant; Flowering from Sep to Nov; Peak Flowering and Over not significant; Fruit from all year round; Nothing from Mar, May and Aug. Peak levels at 61% in Sep. Historically recorded as flowering from Oct to Nov, fruit retained for some years.



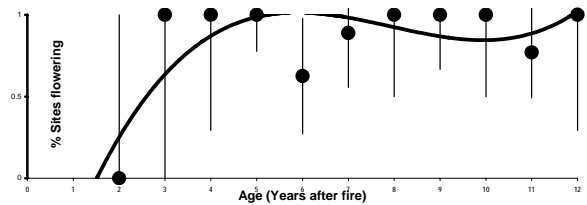
**Growth** (389 records with: Jan 10, Feb 6, Mar 25, Apr 6, May 28, Jun 9, Jul 79, Aug 22, Sep 37, Oct 36, Nov 32, Dec 99): Much from Nov to May and Aug; Rare from Nov to Jan, Mar and May; None from May to Nov. Peak levels at 100% in Jan and Apr.



**Seedlings** (224 records): Absent in 99%: fewer seedlings than prefire adults in 1 case. Seedlings found in Feb.

**Fire Survival** (20 records): 90% resprouted from underground boles, 10% escaped fires in fire-safe areas.

**Age to first flowering:** First flowers recorded at 3 years, 50% estimated at 3-4 years, and 100% recorded after 5 years and consistently after 8 years.



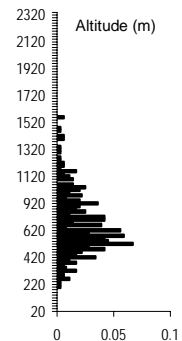
**Height** (400 records): 2% 0-0.2 m tall, 88% 0.2-1 m tall, 10% 1-2 m tall, 0.3% 2-5 m tall.

**Pollinators** (8 records): 88% beetles, 13% flies.  
**Detailed Pollinators** (4 records): Scarab Beetle (2), Great Protea Beetle (2).

**Habitat:**

**Distance to Ocean** (358 records): 100% inland - further than 2 km from coast.

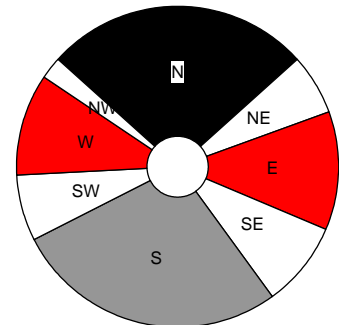
**Altitude** (358 records): 180 - 1460 m; 500 *lq* - 580 *med* - 700 *uq*m.



**Landform** (355 records): 85% deep soil, 12% shallow soil, 3% rocky outcrops, 0.3% riverine, 0.3% swamp.

**Slope** (358 records): 48% gentle incline, 35% steep incline, 13% hill top, 2% platform, 1% valley bottom, 0.6% cliff.

**Aspect** (308 records): 37% South, 31% North, 18% East, 15% West.



**Soil Type** (353 records): 63% loamy, 23% sandy, 7% clayey, 4% peaty, 3% gravelly, 1% rocky.

**Soil Colour** (352 records): 47% brown, 42% grey, 8% black, 1% red, 0.9% orange, 0.3% white, 0.3% yellow.

**Geology** (352 records): 92% sandstone, 6% shale, 1% granite, 0.6% silcrete or ferricrete.

**Vegetation** (355 records): 93% shrubland, 5% plantations, 2% grassland, 0.3% thicket, 0.3% agricultural lands.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.  
 Occurrence (Fynbos): 6 829 km<sup>2</sup> with 39% conserved and 10% lost; Occupancy: 371 km<sup>2</sup> with 43% conserved and 16% lost. Fragmentation index: 3%.

**Nature Reserves** (358 records): 31% in Nature Reserves.

**Habitat destruction** (343 records): 78% extensive natural habitat, 20% islands, 0.9% naturally linear habitats, 0.6% road verges.

**Alien Invasive Species** (349 records):  
52% *Pinus*, 18% *Hakea*, 17% none,  
11% Fabaceae (chiefly alien *Acacia*),  
2% Myrtaceae.  
**Alien Density** (348 records): 17% alien-free,  
54% sparse, 24% abundant, 5% dense.

**Cultivation & Utilization:**

**Picking** (284 records): 100% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Witch's Broom Infestation:** 1 record (0.2%).

**Atlassers Notes:**

Some in excess of 2 m growing alongside jeep track (NOG93052303);

Flowerheads also with a crab spider with a caught fly (AGRY0121210); Beetles moving from plant to plant and feeding on pollen (DFJ97092201);

**Confusing Species:** Most commonly confused (76% of corrected queries) with subspecies *fragrans* (which has narrower leaves and hairy young leaves). The remaining queries were due to atlassers not noting the subspecies.

Records of identification queries = 76.

Records of corrected identification queries = 52.

**Variation and Taxonomy:**

In 1814 Burchell noted that his specimen was a small tree 3 m tall. Williams notes that the population below is a distinct ecotype, but does not formally name it:

- Leaves broader and thicker: Van Stadensberg.

**Distribution:** Add.

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***Leucadendron comosum* subspecies *comosum* (Thunb.) R.Br. 1781, 1810**  
**Common Ridge-cone Conebush**

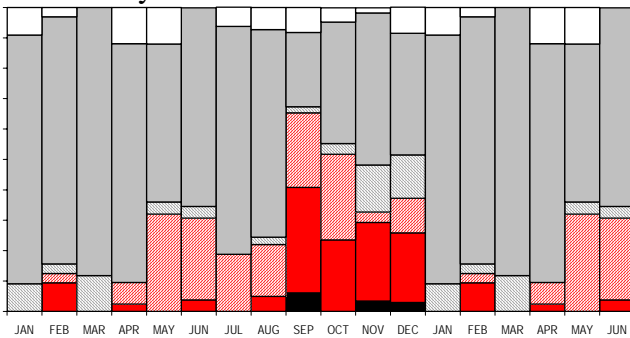
**Other Common Names:** Candelabra Conebush, Ramentaceous Chasme, Tufted Chasme, *Geelbos*, *Kraaltolbos*.  
**Other Scientific Names:** *aemulum* R.Br. 1810, *deasii* Phill 1917, *incurva* (Haw ex Andr) 1805, *ramentaceae* (Salisb. ex Knight) 1809.

**450 Records**

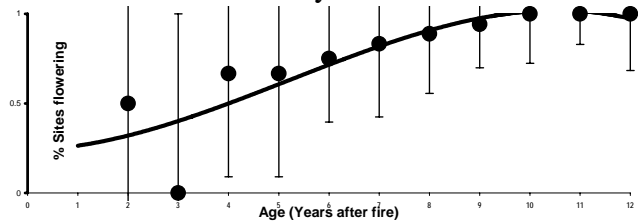
**Population** (441 records): 0.7% Abundant, 24% Common, 57% Frequent, 16% Rare, 1% Extinct.

**Dispersion** (411 records): 47% clumped, 42% variable, 7% evenly distributed, 4% widespread.

**Flowering** (437 records with: Jan 11, Feb 32, Mar 17, Apr 42, May 25, Jun 26, Jul 16, Aug 41, Sep 49, Oct 85, Nov 58, Dec 35): Buds from May to Jun and Sep to Oct; Flowering from Sep to Dec; Peak Flowering and Over not significant; Fruit from all year round; Nothing not significant. Peak levels at 67% in Sep. Historically recorded as flowering from late Oct to Nov, fruit retained for several years.



**Age to first flowering:** First flowers recorded at 2 years, 50% estimated at 4-5 years, and 100% recorded at 10 years.



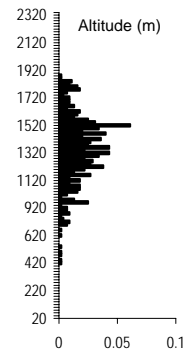
**Height** (437 records): 2% 0-0.2 m tall, 43% 0.2-1 m tall, 48% 1-2 m tall, 7% 2-5 m tall, 0.2% taller than 5 m.

**Pollinators** (7 records): 86% beetles, 14% flies.  
**Detailed Pollinators** (1 record): Great Protea Beetle.

**Habitat:**

**Distance to Ocean** (442 records): 100% inland - further than 2 km from coast.

**Altitude** (442 records): 420 - 1780 m; 1080 *lq* - 1260 *med* - 1400 *uq*m.

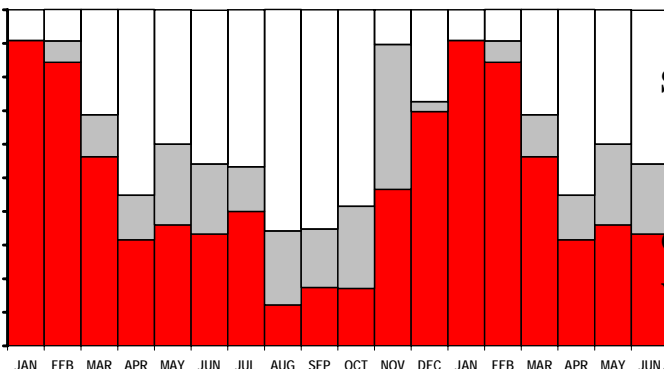


**Landform** (441 records): 66% shallow soil, 27% deep soil, 7% rocky outcrops.

**Slope** (441 records): 63% steep incline, 25% gentle incline, 9% hill top, 2% cliff, 0.7% platform.

**Aspect** (405 records): 58% South, 17% North, 14% East, 11% West.

**Growth** (421 records with: Jan 11, Feb 32, Mar 16, Apr 38, May 25, Jun 24, Jul 15, Aug 41, Sep 46, Oct 82, Nov 58, Dec 33): Much from Nov to Jul; Rare from May to Jun, Aug and Oct to Nov; None from Mar to Oct and Dec. Peak levels at 91% from Jan to Feb.



**Soil Type** (440 records):

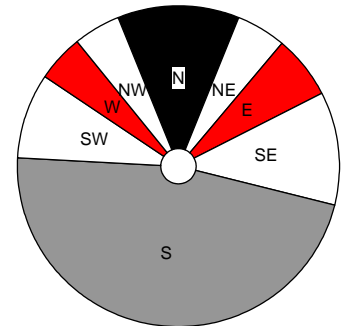
52% sandy, 23% loamy, 20% rocky, 4% gravelly, 0.7% peaty, 0.5% clayey.

**Soil Colour** (438 records):

45% grey, 39% brown, 11% black, 3% orange, 2% yellow, 0.7% white, 0.5% red.

**Geology** (441 records): 98% sandstone, 2% shale.

**Vegetation** (441 records): 100% shrubland, 0.5% grassland.



**Seedlings** (159 records): Absent in 91%: fewer seedlings than prefire adults in 2 cases, and more in 5 cases. Seedlings found in Jan, Apr (2), May, Jul and Dec (2).

**Fire Survival** (24 records): 42% survived by seedlings only, 33% eliminated from the area by fires, 25% escaped fires in fire-safe areas.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.

Occurrence (Fynbos): 10 676 km<sup>2</sup> with 37% conserved and 5% lost; Occupancy: 529 km<sup>2</sup> with 60% conserved and 3% lost. Fragmentation index: 2%.

**Nature Reserves** (442 records): 62% in Nature Reserves - well conserved.

**Habitat destruction** (424 records): 96% extensive natural habitat, 2% islands,

1% naturally linear habitats, 1% naturally fragmented habitats, 0.2% patches.

**Alien Invasive Species** (419 records):

86% none, 6% *Hakea*, 5% *Pinus*, 2% Fabaceae (chiefly alien *Acacia*), 0.2% Myrtaceae.

**Alien Density** (412 records): 88% alien-free, 11% sparse, 0.7% abundant, 0.5% dense, 0.2% impenetrable.

**Cultivation & Utilization:**

**Picking** (336 records): 99% no sign of picking, 0.9% lightly picked, 0.6% severely picked.

**Cultivation Status:** Plantings - 5 records (1%).

**Atlassers Notes:**

Distinct isolated patch never seen here before: leaves more needle-like than in field guides slide photograph taken in case need (DFJ95120303); An extremely fine leaved example <Y Van Wijk 2235> (OUTY0021409); Female cone length of 70 mm, diam of 45 mm, leaves 24 x 1.5 mm 150 mm below cone changing gradually to involucre leaves 40 x 4 mm – a narrow-leaf form of subspecies *comosum* (SMR99080707);

Initially no leaves except new growth! (AWA95061802);

One male only seen (AGR99080710); 10 plants seen - both sexes (DFJ95120303); Small patch of 14 plants in single isolated patch very healthy! (DFJ96110301); One female found lying dead after previous fire but no seedlings could be found (DOA93042803); Only one elderly female plant seen (OGM94011201);

Distribution in veld is only half the area compared to where it was in the previous fire cycle - mainly upslope survival (AGRY2120109); All dead (10-100 plants) (AGRY2120112); Large % of plants dead in area (AMA92112401); Die Back (OUT99100206);

Williams (1972) stated that it may be extinct on Robinson Pass - I have checked it up and it is still there (SHS93070201);

At higher altitude than books say! (AWA99052004);

**Confusing Species:** The narrow-leaf form was often identified as subspecies *homaeophyllum* (which as needle-like leaves, not narrow flattened leaves). One instance of confusion with *L. osbornei*, which has much smoother cones.

Records of identification queries = 21.

Records of corrected identification queries = 7.

**Variation and Taxonomy:** Williams states that it does not vary significantly, but atlassers note that some populations lack the broad adult leaves, and involucre leaves.

**Distribution:** Add.

Williams (1972) attributes its apparent extinction at Garcias Pass and Robinson Pass to its slow growth rate. It has however, been relocated at the latter locality.

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*Leucadendron comosum* subspecies *homaeophyllum* (Meisn.) Williams 1856, 1972  
**Villiersdorp Ridge-cone Conebush**

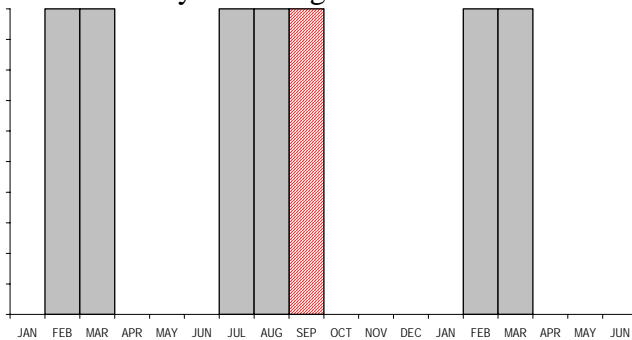
**Other Common Names:** Pine-leaf Chasme.  
**Other Scientific Names:** *aemulum* var.  
*homaeophyllum* Meisn. 1856, *pinifolia*  
 Salisb. ex Knight 1809.

**7 Records**

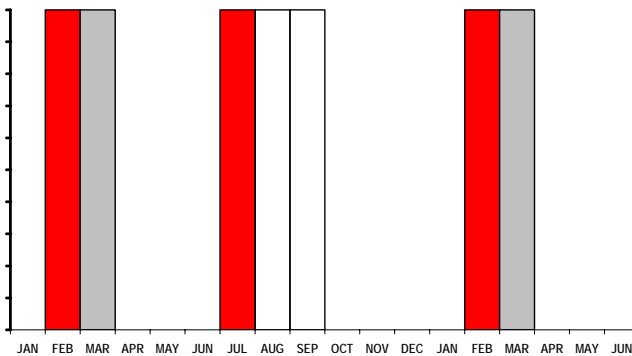
**Population** (7 records): 0% Common, 100% Frequent.

**Dispersion** (7 records): 86% clumped, 14% variable.

**Flowering** (7 records with: Jan 0, Feb 2, Mar 1, Apr 0, May 0, Jun 0, Jul 1, Aug 1, Sep 2, Oct 0, Nov 0, Dec 0): Buds from Sep; Flowering, Peak Flowering and Over not recorded; Fruit from Feb to Aug; Nothing not recorded. Peak levels unreliable at 100% in Sep. Historically flowering season is not recorded.



**Growth** (7 records with: Jan 0, Feb 2, Mar 1, Apr 0, May 0, Jun 0, Jul 1, Aug 1, Sep 2, Oct 0, Nov 0, Dec 0): Much from Feb and Jul; Rare from Mar; None from Aug to Sep. Peak levels unreliable at 100% in Feb and Jul.



**Seedlings** (3 records): All without any seedlings present.

**Fire Survival** : No data.

**Age to first flowering**: No data.

**Height** (7 records): 57% 0.2-1 m tall, 43% 1-2 m tall.

**Pollinators** : No data.

**Detailed Pollinators**: No additional data.

**Habitat:**

**Distance to Ocean** (7 records): 100% inland - further than 2 km from coast.

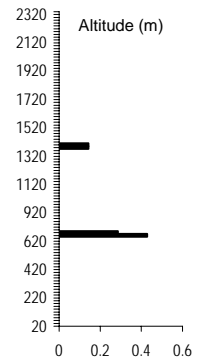
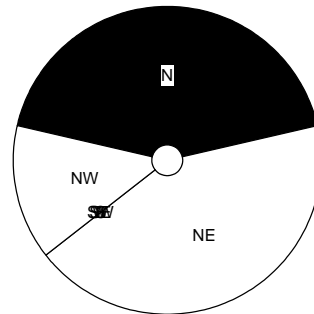
**Altitude** (7 records): 640 - 1300 m; 640<sub>lq</sub> - 660<sub>med</sub> - 660<sub>uq</sub>m.

**Landform** (7 records):

86% deep soil,  
 14% shallow soil.

**Slope** (7 records): 57% gentle incline, 43% steep incline.

**Aspect** (7 records):  
 79% North, 21% East.



**Soil Type** (7 records): 57% loamy, 14% sandy, 14% gravelly, 14% rocky.

**Soil Colour** (7 records): 71% brown, 29% grey.

**Geology** (7 records): 71% granite, 29% shale.

**Vegetation** (7 records): 100% shrubland.

**Conservation Status and Threat:**

**Red Data List Status:** Critically Endangered

B1a(i)b(i,ii,iii,iv,v)c(iv) +  
 2a(i)b(i,ii,iii,iv,v)c(iv), D<sub>2</sub>

**Occurrence (Fynbos):** 33 km<sup>2</sup> with 100% conserved and 1% lost; **Occupancy:** 6 km<sup>2</sup> with 100% conserved and 6% lost.

**Fragmentation index:** 18%.

**Nature Reserves** (7 records): 14% in Nature Reserves - inadequately conserved.

**Habitat destruction** (7 records): 86% extensive natural habitat, 14% naturally linear habitats.

**Alien Invasive Species** (7 records):

71% Fabaceae (chiefly alien *Acacia*),  
 29% *Pinus*.

**Alien Density** (7 records): 100% sparse.

**Cultivation & Utilization:**

**Picking** (5 records): 40% lightly picked, 40% severely picked, 20% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

Only one remaining 'demonstration' female cone observed, buds observed on couple of male plants (SHR98090605);

Only one plant had a cone - others appeared younger than surrounding bush (WIJ99031307);

Malblokskloof! Last recorded 1824! (AGR98082003);

**Confusing Species:** None noted.

**Variation and Taxonomy:** No variation known.

**Distribution:** Add.

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***Leucadendron immoderatum* Rourke 2005**  
**Lollipop Conebush**

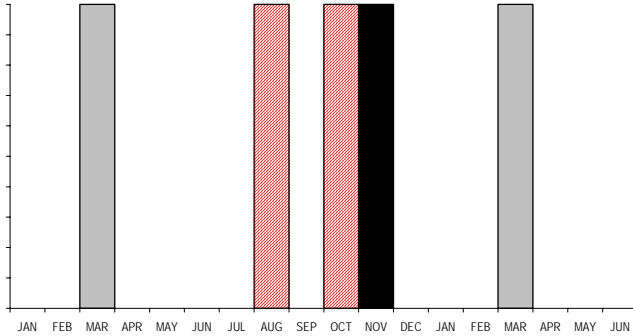
**Other Common Names:** None.  
**Other Scientific Names:** None.

**5 Records**

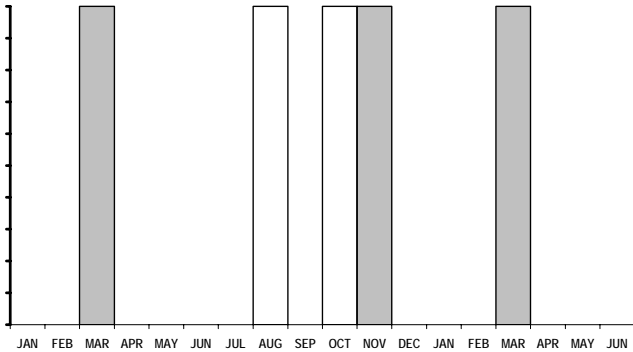
**Population** (5 records): 0% Common, 100% Frequent.

**Dispersion** (5 records): 100% clumped.

**Flowering** (5 records with: Jan 0, Feb 0, Mar 1, Apr 0, May 0, Jun 0, Jul 0, Aug 1, Sep 0, Oct 2, Nov 1, Dec 0): Buds from Aug to Oct; Flowering not recorded; Peak Flowering from Nov; Over not recorded; Fruit from Mar; Nothing not recorded. Peak levels unreliable at 100% in Nov. Historically not known.



**Growth** (5 records with: Jan 0, Feb 0, Mar 1, Apr 0, May 0, Jun 0, Jul 0, Aug 1, Sep 0, Oct 2, Nov 1, Dec 0): Much not recorded; Rare from Nov to Mar; None from Aug to Oct. Peak levels unreliable at 100% from Nov and Mar.



**Seedlings** (3 records): All without any seedlings present.

**Fire Survival** : No data.

**Age to first flowering:** No data: all data from mature veld.

**Height** (5 records): 100% 1-2 m tall.

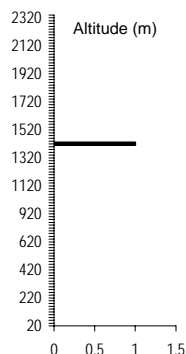
**Pollinators** (2 records): 50% flies, 50% beetles.

**Detailed Pollinators** (1 record): Scarab Beetle.

**Habitat:**

**Distance to Ocean** (3 records): 100% inland - further than 2 km from coast.

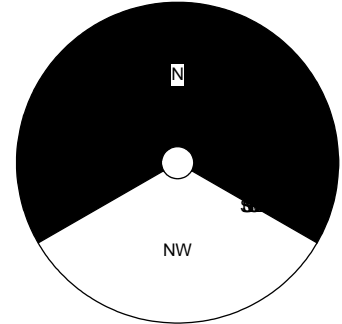
**Altitude** (3 records): 1300 - 1320 m; 1300<sub>lq</sub> - 1320<sub>med</sub> - 1320<sub>uq</sub> m.



**Landform** (3 records): 100% deep soil.

**Slope** (3 records): 100% gentle incline.

**Aspect** (3 records): 83% North, 17% West.



**Soil Type** (3 records): 33% sandy, 33% loamy, 33% gravelly.

**Soil Colour** (3 records): 67% grey, 33% brown.

**Geology** (3 records): 67% sandstone, 33% shale.

**Vegetation** (3 records): 100% shrubland.

**Conservation Status and Threat:**

**Red Data List Status:** Critically Endangered B1a(ii)c(iv) + 2a(ii)c(iv), D.

**Occurrence** (Fynbos): 1 km<sup>2</sup> with 100% conserved and 0% lost; **Occupancy:** 3 km<sup>2</sup> with 100% conserved and 0% lost. **Fragmentation index:** meaningless.

**Nature Reserves** (3 records): 100% in Nature Reserves - well conserved.

**Habitat destruction** (3 records): 100% extensive natural habitat.

**Alien Invasive Species** (3 records): 67% *Pinus*, 33% none.

**Alien Density** (3 records): 33% alien-free, 67% sparse.

**Cultivation & Utilization:**

**Picking** (4 records): 100% no sign of picking. **Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

Spectacular ivory yellow involucral leaves (SHRY1101901);

As a new species on our last AGM! Suggested atlassing name of *climacticum* (AGRY1032106);

AGRY1032106 PN About 16 Plants Seen;

There are about 20 young plants. It was interesting that although the plants had not burnt there was recruitment - a few adult plants had died and released their seed so this surely explains the recruitment. There were 20 adult plants (NGFY1081101);

Tons and tons of pollinators - more like a Sugarbush than a Conebush - thousands of stripy-elytra beetles, lots of Scarab Beetle *Trichotetha fascicularis* and also butterflies. Also lots on female cones. Very unlike other Conebushes! (AGRY1111204);

**Confusing Species:** No confusion, this is a very distinct species.

Records of identification queries = 1.

**Variation and Taxonomy:** Add.

**Distribution:** Add.

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*Leucadendron muirii* Phill. 1915  
**Silver-ball Conebush**  
*Kruiphout*

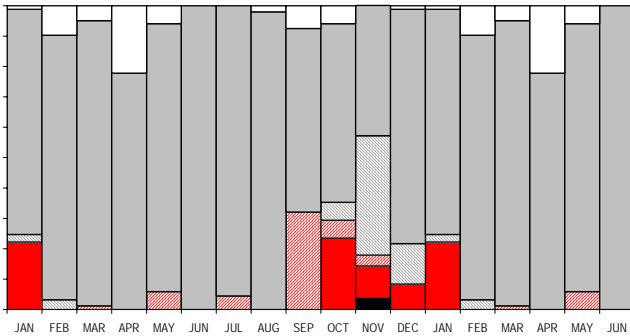
**Other Common Names:** Silver-cone Conebush, Silvercone, *Asbos*, *Astolbos*, *Kalkranttolbos*, *Luisiesbos*.  
**Other Scientific Names:** None.

**608 Records**

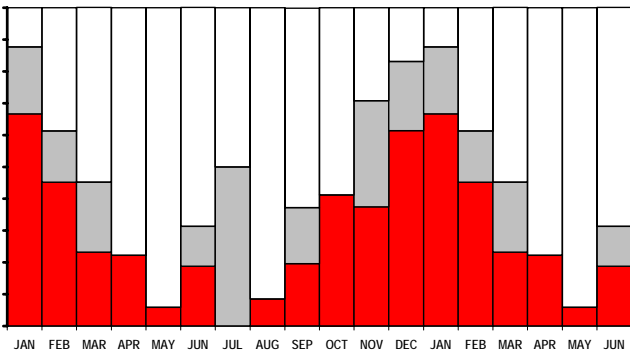
**Population** (597 records): 0.5% Abundant, 47% Common, 46% Frequent, 7% Rare.

**Dispersion** (573 records): 84% variable, 12% clumped, 3% widespread, 0.7% evenly distributed.

**Flowering** (571 records with: Jan 81, Feb 31, Mar 82, Apr 9, May 17, Jun 16, Jul 22, Aug 49, Sep 53, Oct 17, Nov 28, Dec 166): Buds from Sep; Flowering from Jan and Oct; Peak Flowering not significant; Over from Nov; Fruit from all year round; Nothing from Apr. Peak levels at 57% in Nov. Historically recorded as flowering from Nov to Dec, fruit retained.



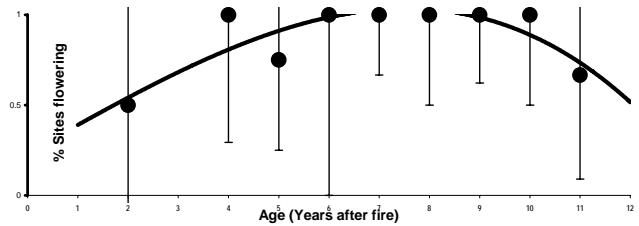
**Growth** (563 records with: Jan 81, Feb 31, Mar 82, Apr 9, May 17, Jun 16, Jul 22, Aug 47, Sep 51, Oct 17, Nov 24, Dec 166): Much from Sep to Apr; Rare from Nov to Jan, Mar, and Jul; None from Feb to Nov. Peak levels at 88% in Jan.



**Seedlings** (332 records): Absent in 91%; fewer seedlings than prefire adults in 4 cases, and more in 11 cases. Seedlings found in Jan (3), Feb, Mar, Apr, Nov and Dec (8).

**Fire Survival** (17 records): 76% survived by seedlings only, 12% escaped fires in fire-safe areas, 6% eliminated from the area by fires, 6% resprouted from underground boles.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 2 years, and 100% recorded at 1 years.



**Height** (574 records): 1% 0-0.2 m tall, 53% 0.2-1 m tall, 45% 1-2 m tall, 2% 2-5 m tall.

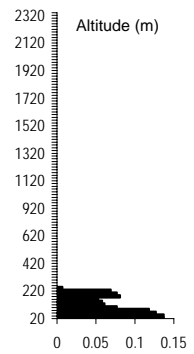
**Pollinators** (8 records): 75% flies, 13% bees or wasps, 13% beetles.

**Detailed Pollinators** (1 record): Ladybird Beetle.

**Habitat:**

**Distance to Ocean** (603 records): 85% inland - further than 2 km from coast.

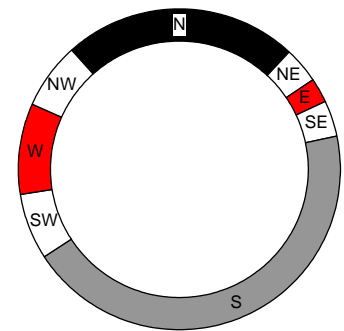
**Altitude** (603 records): 20 - 240 m; 20<sub>lq</sub> - 60<sub>med</sub> - 80<sub>uq</sub>m.



**Landform** (589 records): 60% shallow soil, 36% deep soil, 4% rocky outcrops.

**Slope** (590 records): 40% gentle incline, 24% platform, 14% hill top, 13% dunes, 7% steep incline, 2% valley bottom, 0.5% cliff.

**Aspect** (388 records): 49% South, 29% North, 15% West, 6% East.



**Soil Type** (582 records): 60% sandy, 24% loamy, 12% rocky, 3% gravelly, 1% clayey, 0.5% peaty.

**Soil Colour** (574 records): 50% grey, 32% brown, 8% black, 3% white, 3% yellow, 3% red, 0.5% orange.

**Geology** (596 records): 98% limestone, 0.8% sandstone, 0.5% shale, 0.5% silcrete or ferricrete, 0.3% Tertiary sands.

**Vegetation** (602 records): 98% shrubland, 2% thicket, 0.2% grassland.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.  
**Occurrence** (Fynbos): 2 158 km<sup>2</sup> with 25% conserved and 22% lost; **Occupancy:** 552 km<sup>2</sup> with 45% conserved and 16% lost.  
**Fragmentation index:** 14%.

**Nature Reserves** (603 records): 51% in Nature Reserves - well conserved.

**Habitat destruction** (580 records): 91% extensive natural habitat, 7% islands, 1% naturally fragmented habitats, 0.7% naturally linear habitats, 0.5% road verges.

**Alien Invasive Species** (576 records): 64% Fabaceae (chiefly alien *Acacia*), 33% none, 1% other aliens, 1% Myrtaceae, 0.5% *Pinus*.

**Alien Density** (575 records): 33% alien-free, 37% sparse, 16% abundant, 13% dense, 1% impenetrable.

**Cultivation & Utilization:**

**Picking** (446 records): 98% no sign of picking, 2% lightly picked.

**Cultivation Status:** Plantings - 1 record (0.2%), Escapes - 4 records (0.7%).

**Atlassers Notes:**

One plant. A low spreading form (LYM97113017);

Almost all plants look very 'young', according to farmer grows very slowly on 'harde duine' and much older than they look (AWA95092607); Some very tall plants in this area of deeper soil (TLE92080103);

Had some difficulty obtaining seed as serotinous cones had been bored out by insects: had to cut open a fresh cone (grey) to obtain seed (CAE93100601);

More males in new growth - almost 3x more than female (AGR95122711); Far more females than males (JAT94120901);

Piles of burned cones = 1 and piles of cones unburned = 2. Purpose unknown! (AGR96010101); Piles of cones - 7 seen along road - some with string (AGR96010102); 7 piles of stems and cones seen! Mainly cones (AGR96010103); Some piles of cones seen (AGR96010104); 5 piles of cones seen: plucked but not tied up into bunches of cones! Why? Cut off, not plucked! (AGR96010106);

All growing in gravel brought in for the road - confined to road margin and doing very well (AGRY1022801); Growing on road gravel only (AMMY1022801);

Strong semen-like odour at this site (typical, but normally much fainter) (AGR97010122);

**Confusing Species:** A very distinct species not easily confused with any other species in the field. Nevertheless it is has been occasionally confused with *L. coniferum* and *meridianum*.

Records of identification queries = 7.

Records of corrected identification queries = 3.

**Variation and Taxonomy:** No known variation.

**Distribution:** Add.

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*Leucadendron nobile* Williams 1967

**Karoo Conebush**

*Naaldblaartolbos*

**Other Common Names:** Needle-leaf Conebush.

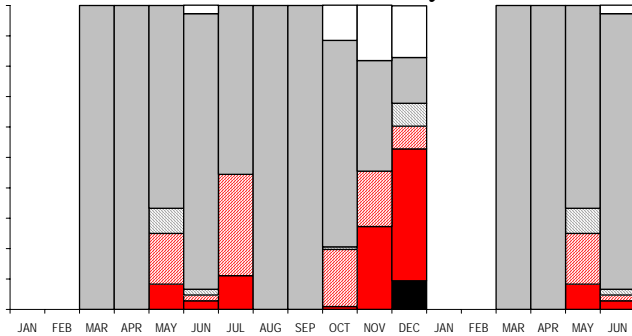
**Other Scientific Names:** *None*.

**374 Records**

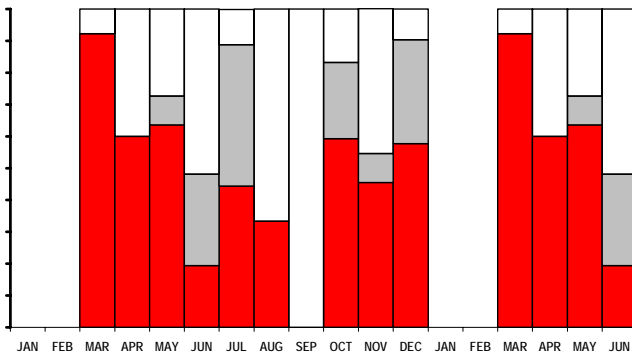
**Population** (369 records): 0.5% Abundant, 31% Common, 54% Frequent, 14% Rare, 0.8% Extinct.

**Dispersion** (342 records): 64% variable, 34% clumped, 2% evenly distributed, 0.3% widespread.

**Flowering** (345 records with: Jan 0, Feb 0, Mar 13, Apr 10, May 12, Jun 108, Jul 9, Aug 15, Sep 2, Oct 112, Nov 11, Dec 53): Buds from Jul and Oct to Nov; Flowering from Nov to Dec; Peak Flowering and Over not significant;; Fruit from Mar to Nov; Nothing not significant. Peak levels unreliable at 68% in Dec. Historically recorded as flowering from Oct to Mar, but mainly in Dec, fruit retained for several years.



**Growth** (344 records with: Jan 0, Feb 0, Mar 13, Apr 10, May 11, Jun 108, Jul 9, Aug 15, Sep 2, Oct 113, Nov 11, Dec 52): Much from Oct to May and Jul to Aug; Rare from Jun to Jul, Oct and Dec; None from Apr to Jun and Aug to Sep and Nov. Peak levels unreliable at 92% in Mar.



**Seedlings** (214 records): Absent in 93%: more seedlings than prefire adults in 8 cases. Seedlings found in Oct (7) and Dec.

**Fire Survival** (37 records): 78% survived by seedlings only, 11% escaped fires in fire-safe areas, 8% eliminated from the area by fires, 3% resprouted from underground boles.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 4-6 years, and 100% recorded at 7 years.



**Height** (355 records): 3% 0-0.2 m tall, 11% 0.2-1 m tall, 54% 1-2 m tall, 31% 2-5 m tall, 0.3% taller than 5 m.

**Pollinators** (3 records): 67% flies, 33% beetles.  
**Detailed Pollinators:** No additional data.

**Habitat:**

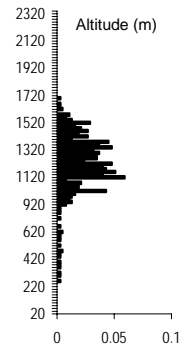
**Distance to Ocean** (374 records): 100% inland - further than 2 km from coast.

**Altitude** (374 records): 240 - 1600 m; 1000 *lq* - 1100 *med* - 1220 *uq*m.

**Landform** (371 records): 67% shallow soil, 31% deep soil, 2% rocky outcrops, 0.3% riverine.

**Slope** (370 records): 47% steep incline, 36% gentle incline, 11% hill top, 5% cliff, 1% platform, 0.3% valley bottom.

**Aspect** (336 records): 69% South, 14% North, 10% East, 7% West.

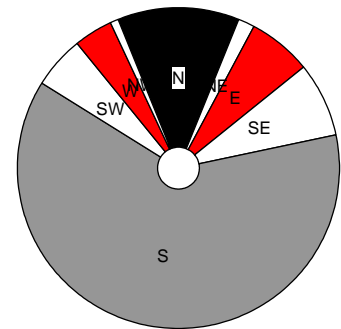


**Soil Type** (364 records): 51% loamy, 26% rocky, 13% sandy, 6% gravelly, 4% clayey.

**Soil Colour** (362 records): 65% brown, 26% grey, 6% orange, 2% red, 1% yellow, 0.3% black.

**Geology** (267 records): 96% sandstone, 4% shale, 0.4% conglomerate.

**Vegetation** (372 records): 95% shrubland, 4% grassland, 0.3% wooded grassland, 0.3% thicket.



**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.

Occurrence (Fynbos): 2 145 km<sup>2</sup> with 57% conserved and 0% lost; Occupancy: 442 km<sup>2</sup> with 32% conserved and 1% lost. Fragmentation index: 7%.

**Nature Reserves** (374 records): 29% in Nature Reserves.

**Habitat destruction** (366 records):  
96% extensive natural habitat, 2% naturally linear habitats, 2% islands, 0.3% naturally fragmented habitats.

**Alien Invasive Species** (364 records):  
91% none, 8% other aliens, 0.8% *Pinus*, 0.5% Fabaceae (chiefly alien *Acacia*), 0.3% Myrtaceae.

**Alien Density** (364 records): 91% alien-free, 9% sparse.

**Cultivation & Utilization:**

**Picking** (279 records): 100% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

Cones on one plant red (WMP98061905); They also appear to be long-lived and can tolerate (or are adopted to) a fire frequency of over 40 years (DEB92102401);

Lots dead (AGRY0100516); 6 dead skeletons seen (AGRY0123001); 1 young per 5 skeletons (AGRY0123003); A few dead (IVM98061904); 5 dead on plot (WMP98061903);

Well established and very healthy (DFJ98040402); Very good healthy stands not "rare" in these parts it seems (DFJ98040403);

Both male (AGRY2112020); 1 plant (SGAY0123010);

Also small flying beetles less than 10 mm long (WIJY0122307);

Only in south-facing ridges on north slopes (AGRY0100328); Appears to tolerate hotter, dryer condition found at lower altitudes - although usually restricted to steep south slopes when low down (300 - 600 m). This is the lowest (altitude) population I've seen (DEB92102401);

**Confusing Species:** None noted.

Records of identification queries = 2.

**Variation and Taxonomy:** No variation noted.

**Distribution:** Add.

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*Leucadendron osbornei* Rourke 1997  
**Laingsburg Conebush**  
*Astol*

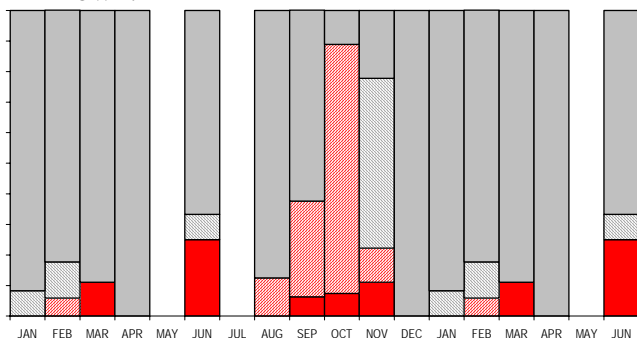
**Other Common Names:** *Asbos, Klein Comosum.*  
**Other Scientific Names:** None.

**141 Records**

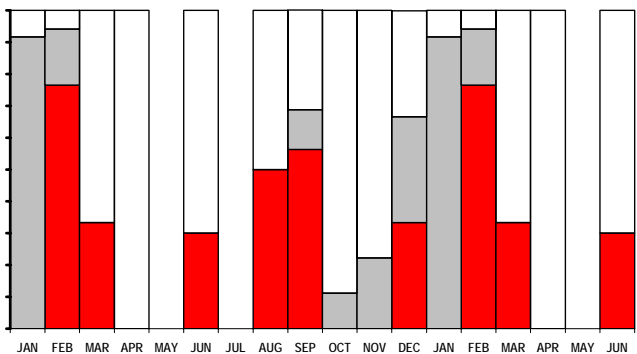
**Population** (141 records): 0.7% Abundant, 21% Common, 57% Frequent, 21% Rare.

**Dispersion** (129 records): 50% variable, 37% clumped, 11% widespread, 2% evenly distributed.

**Flowering** (139 records with: Jan 12, Feb 17, Mar 9, Apr 26, May 0, Jun 12, Jul 0, Aug 8, Sep 16, Oct 27, Nov 9, Dec 3): Buds from Sep to Oct; Flowering from Jun!; Peak Flowering not recorded; Over from Nov; Fruit from Nov to Sep; Nothing not recorded. Peak levels at 89% in Oct. Historically not known.



**Growth** (137 records with: Jan 12, Feb 17, Mar 9, Apr 26, May 0, Jun 10, Jul 0, Aug 8, Sep 16, Oct 27, Nov 9, Dec 3): Much from Feb to Mar, Jun, Aug to Sep and Dec; Rare from Nov to Jan; None from Mar to Dec. Peak levels at 94% in Feb.



**Seedlings** (50 records): All without any seedlings present.

**Fire Survival** (2 records): 50% survived by seedlings only, 50% escaped fires in fire-safe areas.

**Age to first flowering:** First flowers recorded at 100% at 7 years, no data for younger veld.



**Height** (140 records): 14% 0.2-1 m tall, 75% 1-2 m tall, 11% 2-5 m tall.

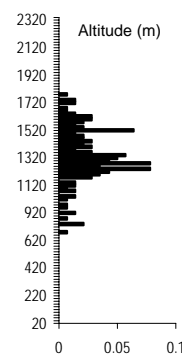
**Pollinators** : No data.

**Detailed Pollinators:** No additional data.

**Habitat:**

**Distance to Ocean** (141 records): 100% inland - further than 2 km from coast.

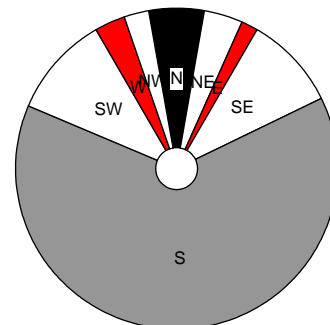
**Altitude** (141 records): 660 - 1680 m; 1120 *lq* - 1180 *med* - 1260 *uq*m.



**Landform** (141 records): 84% shallow soil, 11% rocky outcrops, 5% deep soil.

**Slope** (141 records): 58% steep incline, 26% gentle incline, 8% hill top, 4% cliff, 3% platform, 1% valley bottom.

**Aspect** (127 records): 73% South, 10% West, 9% North, 8% East.



**Soil Type** (140 records): 34% rocky, 31% sandy, 24% loamy, 9% gravelly, 1% clayey.

**Soil Colour** (140 records): 45% brown, 36% grey, 14% orange, 4% black, 0.7% yellow.

**Geology** (134 records): 99% sandstone, 1% shale.

**Vegetation** (141 records): 100% shrubland.

**Conservation Status and Threat:**

**Red Data List Status:** Least Concern.

**Occurrence** (Fynbos): 595 km<sup>2</sup> with 32% conserved and 0% lost; **Occupancy:** 140 km<sup>2</sup> with 37% conserved and 0% lost. **Fragmentation index:** 9%.

**Nature Reserves** (141 records): 37% in Nature Reserves.

**Habitat destruction** (139 records): 93% extensive natural habitat, 6% naturally linear habitats, 0.7% islands.

**Alien Invasive Species** (139 records): 100% none.

**Alien Density** (139 records): 100% alien-free.

**Cultivation & Utilization:**

**Picking** (131 records): 100% no sign of picking.

**Cultivation Status:** No noted cultivation.

**Atlassers Notes:**

Plants higher up the slope were mostly over, but most of the plants on the lower part of the slope were still in flowers - mostly males (LYM96121601);

5 skeletons found - but older than last fire cycle - a bigger population thrived here in the past (AGRY0032011);

Ants on some of the flowerheads. Orange Breasted Sunbirds visiting as well (LYM96121601);

**Confusing Species:** Before it was recognized as a new species was misidentified as: *L. comosum* (48% of corrected queries, but has distinctively ridged cones), *nobile* (44%, which is very similar, but has longer leaves and cones) and *teretifolium* (7%, bt has

shorter cones and leaves). However, it is possible that some misidentifications with *L. teretifolium* – with which it is most similar, have not been detected as the two species ranges overlap and both sometimes co-occur, so that errors are not obvious. In fact, the major obstacle to getting this species recognized as distinct was proving that it was different from *L. teretifolium*, an effort for which David Osborne, justly deserves having this species named in his honour.

Records of identification queries = 33.

Records of corrected identification queries = 27.

**Variation and Taxonomy:** No variation noted.

**Distribution:** Add.

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***Leucadendron platyspermum* R.Br. 1810**  
**Plate-seed Conebush**  
*Knobkerrie*

**Other Common Names:** Flat-seed Conebush, Platty, Platystar, *Geelbos*, *Kerriebos*, *Knopkerriestolbos*, *Kraaltolbos*, *Kraaltolgeelbos*, *Platy*, *Swartbal*.

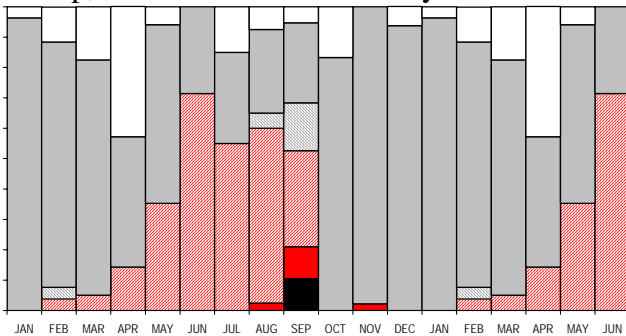
**Other Scientific Names:** *comosa* (Thunb) 1781, *comosum* (Salisb. ex Knight) 1809, *polysperma* Poir 1816.

**320 Records**

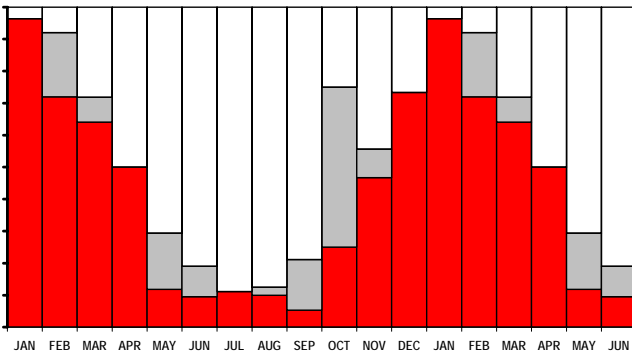
**Population** (256 records): 2% Abundant, 41% Common, 41% Frequent, 16% Rare, 0.4% Extinct.

**Dispersion** (208 records): 62% variable, 36% clumped, 2% evenly distributed.

**Flowering** (285 records with: Jan 28, Feb 26, Mar 40, Apr 7, May 17, Jun 21, Jul 20, Aug 40, Sep 19, Oct 6, Nov 45, Dec 16): Buds from May to Sep; Flowering and Peak Flowering not significant from Sep; Over not significant; Fruit from all year round; Nothing from Apr. Peak levels at 68% in Sep. Historically recorded as flowering from Sep, fruit retained for several years.



**Growth** (277 records with: Jan 28, Feb 25, Mar 39, Apr 6, May 17, Jun 21, Jul 18, Aug 40, Sep 19, Oct 4, Nov 45, Dec 15): Much from Oct to Apr; Rare from Feb and Oct; None from Mar to Dec. Peak levels at 96% in Jan.



**Seedlings** (115 records): Absent in 91%; more seedlings than prefire adults in 5 cases. Seedlings found in Feb, Apr, Aug, Oct and Dec.

**Fire Survival** (6 records): 83% survived by seedlings only, 17% eliminated from the area by fires.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 3-5 years, and 100% recorded at 6 years.



**Height** (286 records): 2% 0-0.2 m tall, 47% 0.2-1 m tall, 49% 1-2 m tall, 2% 2-5 m tall.

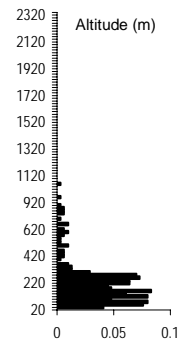
**Pollinators** : No data.

**Detailed Pollinators:** No additional data.

**Habitat:**

**Distance to Ocean** (253 records): 100% inland - further than 2 km from coast.

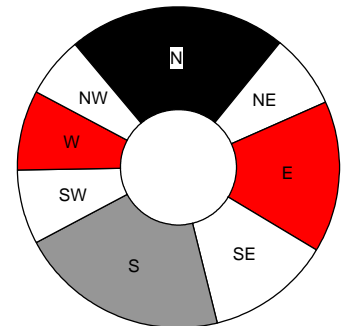
**Altitude** (253 records): 20 - 620 m; 80<sub>lq</sub> - 160<sub>med</sub> - 220<sub>uq</sub> m.



**Landform** (225 records): 95% deep soil, 2% rocky outcrops, 2% shallow soil, 0.9% swamp.

**Slope** (224 records): 63% gentle incline, 20% platform, 10% hill top, 5% steep incline, 1% valley bottom.

**Aspect** (178 records): 30% North, 28% South, 26% East, 15% West.



**Soil Type** (224 records): 64% sandy, 19% loamy, 8% clayey, 7% gravelly, 0.9% peaty, 0.4% rocky.

**Soil Colour** (222 records): 54% grey, 22% brown, 8% white, 8% yellow, 6% orange, 1% red, 0.5% black.

**Geology** (233 records): 67% sandstone, 18% silcrete or ferricrete, 12% shale, 1% Tertiary sands, 0.9% limestone, 0.4% granite.

**Vegetation** (251 records): 99% shrubland, 0.8% plantations.

**Conservation Status and Threat:**

**Red Data List Status:** Vulnerable A2c + 4d. Occurrence (Fynbos): 2 068 km<sup>2</sup> with 8% conserved and 34% lost; Occupancy: 334 km<sup>2</sup> with 9% conserved and 31% lost. Fragmentation index: 10%.

**Nature Reserves** (253 records): 11% in Nature Reserves - inadequately conserved.

**Habitat destruction** (219 records): 80% extensive natural habitat, 11% islands, 7% road verges, 0.9% corridors, 0.5% naturally linear habitats.

**Alien Invasive Species** (219 records): 43% Fabaceae (chiefly alien *Acacia*), 30% *Pinus*, 13% none, 8% *Hakea*, 6% Myrtaceae, 0.5% other aliens.

**Alien Density** (217 records): 13% alien-free, 63% sparse, 19% abundant, 4% dense, 0.5% impenetrable.

**Cultivation & Utilization:**

**Picking** (218 records): 83% no sign of picking, 10% lightly picked, 7% severely picked.

**Cultivation Status:** Plantings - 54 records (17%), Augmentations - 23 records (7%), Escapes - 9 records (3%).

**Witch's Broom Infestation:** 1 record (0.3%).

**Atlassers Notes:**

Planted for flower harvesting (CSS97112909); Planted in orchard – picked (MAJY1031404); Introduced 10 years ago (MJDY0100801); Certainly planted originally but now regrowing on their own -

both spp look healthy (NAH94021904); Broad strips cultivated in between veld (OGM97031506); Road verge next to *L. platyspermum*-planted field (PVR93041708); Planted and looking very healthy (PVR95010605+09); Cultivated (SAS98060609); In straight lines - all rather small for pickings (SMR99052009); Escaped or from seed broadcast after fires (SMR99092902); Partially planted for commercial protea farming perhaps (WIJ99050106);

Many dead plants (OGM96022405); Lone female on road verge (SHR95120202);

**Confusing Species:** Remarkably distinct. Records of identification queries = 3.

**Variation and Taxonomy:** Remarkably free from variation (Williams 1972), no variation noted by atlassers.

**Distribution:** Add.

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*Leucadendron spirale* (Salisb. ex Kn.) Williams 1809, 1967  
**Wolseley Conebush**

**Other Common Names:** Spiral Chasme.  
**Other Scientific Names:** *scabrum* R.Br. 1810.

**0 Records: Extinct**

**Conservation Status and Threat:**

**Red Data List Status:** Extinct, both in the wild and *ex situ*, last seen in 1933.  
Occurrence (Fynbos): 0 km<sup>2</sup> with 0% conserved and 100% lost; Occupancy: 0 km<sup>2</sup> with 0% conserved and 100% lost. Fragmentation index: meaningless. Original occupancy about 23 km<sup>2</sup>.

**Population:** Probably Common and Frequent, but now extinct.

**Dispersion:** Probably Clumped and Variable.

**Flowering:** Probably Buds from May to Oct; Flowering from Nov; Peak Flowering and Over not significant; Fruit from all year round; Nothing not significant. Historically recorded as flowering from Nov.

**Growth:** Probably Much from Nov to Apr; None from May to Oct.

**Seedlings:** Probably No data.

**Fire Survival:** Probably surviving as seeds only.

**Age to first flowering:** Probably flowering young: first flowers at 1 year, 50% at 2 years, and 100% at 4 years.

**Height:** Probably 80% 0.2-1 m tall, 20% 1-2 m tall.

**Pollinators :** Probably a few records of Wind pollination.

**Habitat:**

**Distance to Ocean:** All 100% inland - more than 2 km from coast.

**Altitude:** Probably 220 - 400 m; 240<sub>lq</sub> - 260<sub>med</sub> - 300<sub>uq</sub> m.

**Landform:** Probably 80% deep soil, 20% swamp

**Slope:** Probably 60% valley bottom, 40% gentle incline.

**Aspect:** Probably 30% South, 25% East, 25% West, 20% north.

**Soil Type:** Probably 60% loamy, 20% gravelly, 15% clay, 5% sandy.

**Soil Colour:** Probably 60% brown, 40% grey.

**Geology:** Probably 40% shale, 20% sandstone, 20% silcrete or ferricrete, 20% Tertiary sands.

**Vegetation:** Probably 100% shrubland.

**Conservation Status and Threat:**

**Nature Reserves:** Probably 0% in Nature Reserves.

**Habitat destruction:** Probably 100% islands.

**Alien Invasive Species:** Probably 50% Fabaceae (chiefly alien *Acacia*), 40% *Pinus*, 10% *Hakea*.

**Alien Density:** Probably 50% sparse, 40% abundant, 10% dense.

**Cultivation & Utilization:**

**Picking:** Probably no sign of picking.

**Cultivation Status:** Probably No noted cultivation.

**Witch's Broom Infestation:** Possibly 1 or 2 records.

**Atlassers Notes:** Probably

What a let down: how can something this non-descript be allowed in the Protea Family.

Walked through the patch for hours before noticed this species: what a whimper.

If this species goes extinct, no one will care!

**Confusing Species:** Not in the Proteaceae.

Although closely related to *L. teretifolium*, the flowerheads and cones are so small that it would more likely be overlooked as a *Passerina* or *Erica*. It is not known if they would have been colourful (yellow) in flower, but given their features suggesting wind pollination, this is unlikely.

**Variation and Taxonomy:** No variation known.

**Ecology:** Evidence suggests that it occurred in wet habitats, in dense stands and was wind pollinated. Being serotinous it is extremely unlikely that there are soil-stored seed banks, and therefore the absence of adults suggests extinction. This was grown at Clapham in the early 1800s. It grew readily from cuttings, but according to Salisbury: "possessing little beauty, it should only be admitted in extensive collections" (Knight, 1809).

**Distribution:** Collected in 1801 and 1819 and last seen in 1933 in the Worcester Valley near Wolseley. Occurred from Wolseley to Breede River Station, a 14 km-long range.

Extensive searches, in the 1960s and 1990s, the latter accompanied by a reward of SAR 1000 (= \$ 170), have yielded no sign of the species.

Bowie's locality of "swamps at Soetmelksrivier and Langkloof" is considered incorrect (as are many of his localities for other species).

**INCLUDEPICTURE**

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*Leucadendron teretifolium* (Andrews) Williams 1807, 1967

**Needle-leaf Conebush**

*Silvertops*

**Other Common Names:** Abietinum, Comosum, Round-leaf Chasme, Strawberry Conebush, Terete Conebush.

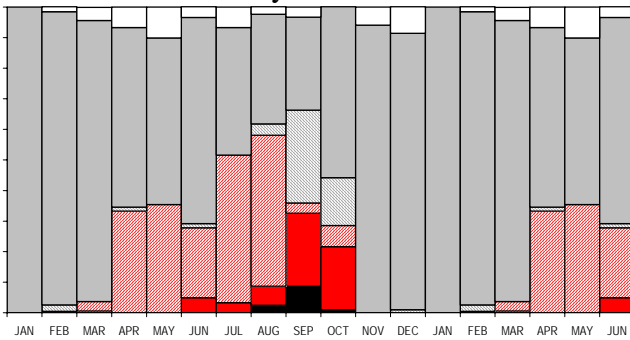
**Other Scientific Names:** *abietinum* R.Br. 1810.

**1269 Records**

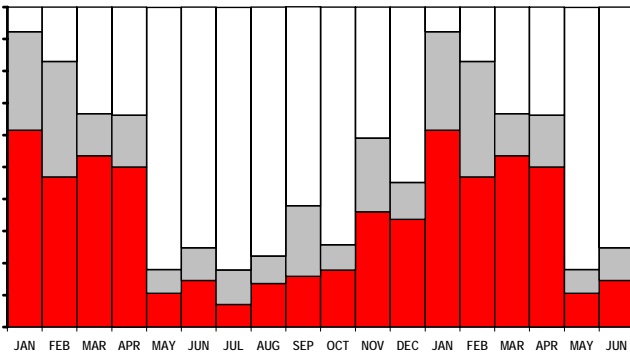
**Population** (1257 records): 2% Abundant, 39% Common, 48% Frequent, 11% Rare, 0.4% Extinct.

**Dispersion** (1185 records): 63% variable, 31% clumped, 5% widespread, 2% evenly distributed.

**Flowering** (1225 records with: Jan 13, Feb 193, Mar 161, Apr 75, May 99, Jun 144, Jul 60, Aug 81, Sep 92, Oct 102, Nov 101, Dec 104): Buds from Apr to Aug; Flowering from Sep to Oct; Peak Flowering not significant; Over from Sep; Fruit from all year round; Nothing not significant. Peak levels at 67% in Sep. Historically recorded as flowering from late Aug to early Sep, fruit retained for some years.



**Growth** (1195 records with: Jan 13, Feb 194, Mar 159, Apr 74, May 94, Jun 137, Jul 56, Aug 81, Sep 82, Oct 101, Nov 100, Dec 104): Much from Nov to Apr; Rare from Jan to Feb, Sep and Nov; None from Mar 33 to Dec. Peak levels at 92% in Jan.



**Seedlings** (488 records): Absent in 96%: fewer seedlings than prefire adults in 3 cases, and more in 6 cases. Seedlings found in Feb, Mar, May, Jun (2), Jul, Sep and Dec (2).

**Fire Survival** (39 records): 64% survived by seedlings only, 23% escaped fires in fire-safe areas, 10% eliminated from the area by fires, 3% resprouted from underground boles.

**Age to first flowering:** First flowers recorded at 1 years, 50% estimated at 3-4 years, and 100% recorded at 3 years and consistently after 10 years, with a hint of senescence after 21 years.



**Height** (1234 records): 0.8% 0-0.2 m tall, 62% 0.2-1 m tall, 37% 1-2 m tall, 0.4% 2-5 m tall.

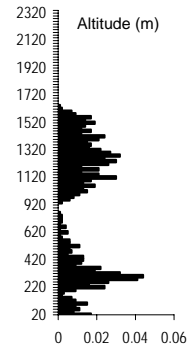
**Pollinators** (10 records): 60% wind, 30% butterflies or moths, 10% beetles.

**Detailed Pollinators** (1 record): Heady Maiden Moth.

**Habitat:**

**Distance to Ocean** (1264 records): 100% inland - further than 2 km from coast.

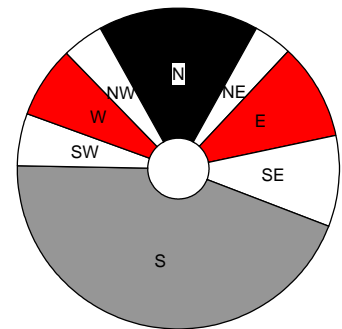
**Altitude** (1264 records): 20 - 1540 m; 300<sub>lq</sub> - 940<sub>med</sub> - 1180<sub>uq</sub>m.



**Landform** (1245 records): 65% deep soil, 34% shallow soil, 1% rocky outcrops, 0.1% riverine.

**Slope** (1247 records): 49% gentle incline, 33% steep incline, 10% hill top, 5% platform, 2% cliff, 1% valley bottom.

**Aspect** (1083 records): 52% South, 20% North, 16% East, 12% West.



**Soil Type** (1236 records): 41% loamy, 20% sandy, 15% gravelly, 14% rocky, 10% clayey.

**Soil Colour** (1226 records): 55% brown, 25% grey, 10% orange, 4% red, 3% yellow, 2% black, 0.7% white.

**Geology** (1098 records): 56% sandstone, 36% shale, 6% silcrete or ferricrete, 0.7% conglomerate, 0.7% Tertiary sands, 0.2% limestone.

**Vegetation** (1260 records): 99% shrubland, 0.6% grassland, 0.3% agricultural lands, 0.2% thicket.

**Conservation Status and Threat:**

**Red Data List Status:** Near Threatened  
B1a(i),b(ii) + 2a(i),b(ii).

Occurrence (Fynbos): 10 423 km<sup>2</sup> with 20% conserved and 16% lost; Occupancy: 1 254 km<sup>2</sup> with 9% conserved and 23% lost. Fragmentation index: 4%.

**Nature Reserves** (1264 records): 12% in Nature Reserves - inadequately conserved.

**Habitat destruction** (1238 records): 83% extensive natural habitat, 12% islands, 2% naturally linear habitats, 2% road verges, 0.6% naturally fragmented habitats, 0.4% corridors.

**Alien Invasive Species** (1216 records): 73% none, 13% Fabaceae (chiefly alien *Acacia*), 6% *Hakea*, 6% *Pinus*, 1% Myrtaceae, 0.2% other aliens, 0.1% annual alien grasses.

**Alien Density** (1216 records): 73% alien-free, 22% sparse, 3% abundant, 2% dense, 0.1% impenetrable.

**Cultivation & Utilization:**

**Picking** (910 records): 99% no sign of picking, 0.7% lightly picked, 0.1% severely picked.

**Cultivation Status:** Plantings - 3 records (0.2%).

**Witch's Broom Infestation:** 4 records (0.3%).

**Atlassers Notes:**

Is in cone not bud on lower slope (HCE96060701);

Has aborted its buds for this season - Drought? (AGRY0110805); Buds aborted (WMP99080901);

Some individuals survived on the lower side: reshooting! (AGR96121306);

Some plants moribund and falling over (EGH94090111); Many patches are approaching senescence (NGW98072402);

Also lots of chopped - bits lying around by *Otomys* (AGR96081502);

Some chopped up - for grazing ? Or firewood? Apparently not used! (AGR96060701); Huge bundle of cuttings found discarded - far exceeding output of plants in plot (AGRY0041207);

2 females only (AGR91121405);

1 male (AGR97081714, AGRY4031607); Both plant males and can't see any more along road (OUTY1020403); 2 males (SGAY1030813);

All have high mortality - more dead than living plants in portions of the plot (AGRY1012101); A lot of dead plants (AMMY2100912); Some 5% of plants dead (APE92080303); 1 dead plant observed (LYMY0041209); Severe drought related mortality - about 60% dead or dying (NAHY1092803); Many plants dead & dying (OUT96092808); 4 plants dead (SHRY0041202); Much dead also (SMR99090302); 1/4 dead - covered in Old Mans Beard (VCH99080903);

Was only found on the undeveloped plots in Fisherhaven (JES94012902);

One of a number of quite large patches of natural vegetation almost completely dominated by *L. teretifolium* (NGW98072402);

With peculiar thin stems and fasciation (small leaves but not much branching), a few badly stunted (but tall and thin) plants seen! (AGR96060507, 12, 13);

**Confusing Species:** Confused with *L. osbornei* (which is a much bigger plant all round, although the two are very similar in size in the Witteberg), and *L. pubescens* (which is a totally different plant).

Records of identification queries = 9.

Records of corrected identification queries = 2.

**Variation and Taxonomy:** Constant in its characters. No variation noted by atlassers.

**Distribution:** Add.

INCLUDEPICTURE

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