

Leucospermum cordatum Phill. 1923
Heart-leaf Pincushion

Other Common Names: Heart-leaf
Leucadendrum.

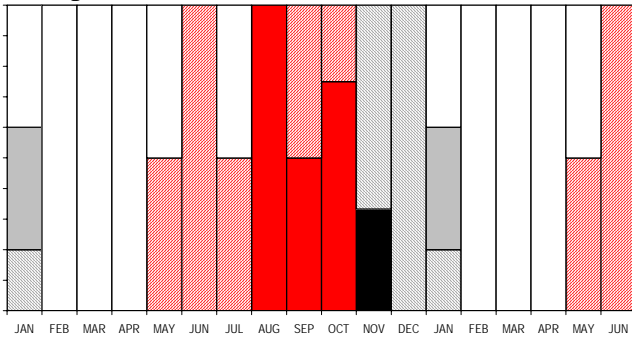
Other Scientific Names: *None.*

32 Records

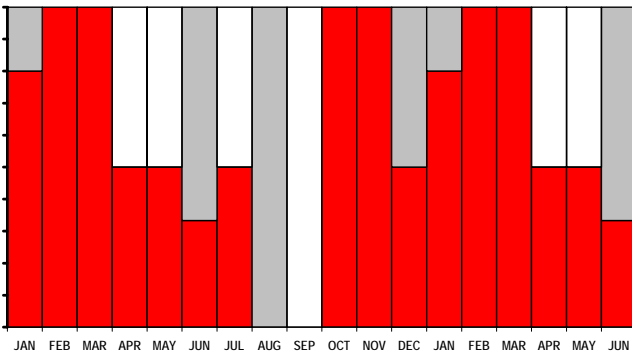
Population (32 records): 22% Common, 72% Frequent, 6% Rare.

Dispersion (30 records): 63% variable, 27% clumped, 10% widespread.

Flowering (32 records with: Jan 5, Feb 2, Mar 1, Apr 2, May 2, Jun 3, Jul 4, Aug 2, Sep 2, Oct 4, Nov 3, Dec 2): Buds from May to Jul and Sep to Oct; Flowering from Aug to Oct; Peak Flowering from Nov; Over from Nov to Jan; Fruit from Jan; Nothing from Jan to May and Jul. Peak levels at 100% from Jun and Aug to Dec. Historically recorded as flowering from Jul to Dec, but peaking in Sep to Nov.



Growth (32 records with: Jan 5, Feb 2, Mar 1, Apr 2, May 2, Jun 3, Jul 4, Aug 2, Sep 2, Oct 4, Nov 3, Dec 2): Much from Oct to Jul; Rare from Jun, Aug and Dec to Jan; None from Apr to May, Jul and Sep. Peak levels at 100% from Oct to Mar.



Seedlings (16 records): Absent in 88%: more seedlings than prefire adults in 1 case. Seedlings found in May.

Fire Survival (3 records): 100% survived by seedlings only.

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 4-5 years, and 100% recorded at 7 years.



Height (32 records): 69% 0-0.2 m tall, 31% 0.2-1 m tall.

Pollinators (1 record): 100% mammals.

Detailed Pollinators: No additional data.

Habitat:

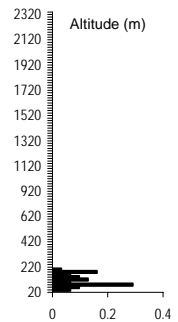
Distance to Ocean (31 records): 100% coastal - less than 2 km from coast.

Altitude (31 records): 20 - 200 m; 60_{lq} - 80_{med} - 80_{uq} m.

Landform (31 records): 45% deep soil, 45% shallow soil, 10% rocky outcrops.

Slope (31 records): 87% steep incline, 13% gentle incline.

Aspect (31 records): 69% West, 29% North, 2% South.



Soil Type (31 records): 39% sandy, 26% rocky, 23% gravelly, 13% loamy.

Soil Colour (30 records): 63% brown, 30% grey, 7% orange.

Geology (29 records): 86% sandstone, 7% conglomerate, 7% shale.

Vegetation (31 records): 97% shrubland, 3% thicket.

Conservation Status and Threat:

Red Data List Status: Endangered

B1a(i)c(iv)+2a(i)c(iv).

Occurrence (Fynbos): 6 km² with 34% conserved and 0% lost; Occupancy: 11 km² with 21% conserved and 0% lost.

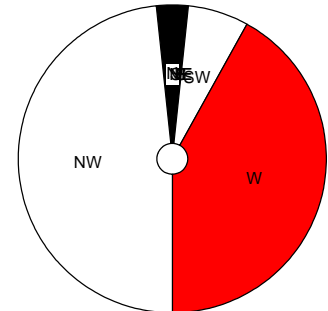
Fragmentation index meaningless.

Nature Reserves (31 records): 90% in nature reserves - well conserved.

Habitat destruction (31 records): 100% extensive natural habitat.

Alien Invasive Species (30 records): 47% Fabaceae (chiefly alien *Acacia*), 37% none, 10% *Pinus*, 7% *Hakea*.

Alien Density (30 records): 37% alien-free, 63% sparse.



Cultivation & Utilization:

Picking (26 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Interfire recruitment from inside dead plants (AGR98012203); Appears to be 3 different aged populations: old plants in protected areas, and others at about 6 and 3 years old. (MAJ92072401);

Seedlings showing prostrate growth, not erect stems (CBE92050305); A few older plants seen spreading over 1m in diam. (MAJ92072401);

It is possible that there are more than 100 plants (code C not F) but F used as a conservative estimate (MAJ92072401); The bulk of the population is above the old mine and higher

up the slope - the plants here look a lot 'healthier' than on any other location (CJL98062506);

Confusing Species: None.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum cordifolium (Salisb. ex Kn.) Fourc. 1809, 1932

The Pincushion

Bobbejaanklou

Other Common Names: Nodding Pincushion, Orange Pincushion, Ornamental Pincushion, Pincushion, Sunburst Pincushion, *Nadelkissenprotea*, *Luise*, *Luisiesboom*, *Luisiesbos*, *Speldekussing*, *Flamespike*, *Vlam*, *Yellow Bird*.

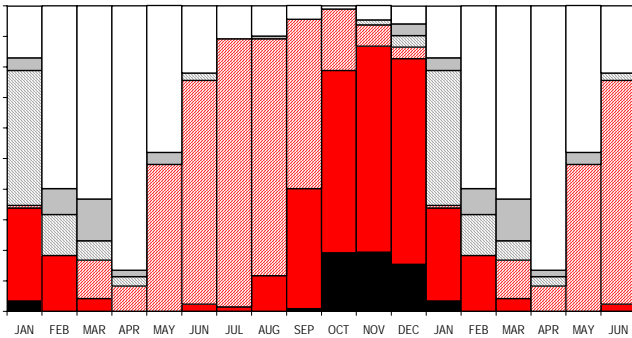
Other Scientific Names: *bolusii* Phill 1910, *integrifolium* Gand & Schin 1913, *meisneri* Gand 1913, *mixtum* Phill 1910, *nutans* R.Br. 1810.

1144 Records

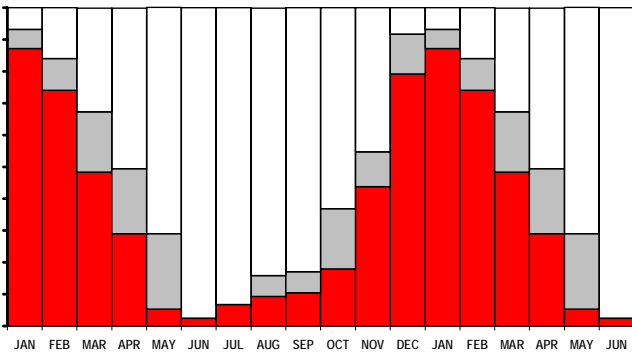
Population (941 records): 20% Common, 60% Frequent, 20% Rare, 0.3% Extinct.

Dispersion (801 records): 66% variable, 31% clumped, 3% widespread, 0.6% evenly distributed.

Flowering (1082 records with: Jan 118, Feb 82, Mar 95, Apr 96, May 77, Jun 41, Jul 65, Aug 111, Sep 112, Oct 104, Nov 129, Dec 52): Buds from May to Oct; Flowering from Sep to Jan; Peak Flowering from Oct to Nov; Over from Jan; Fruit not significant; Nothing from Feb to Jun. Peak levels at 99% in Oct. Historically recorded as flowering from Aug to Jan.



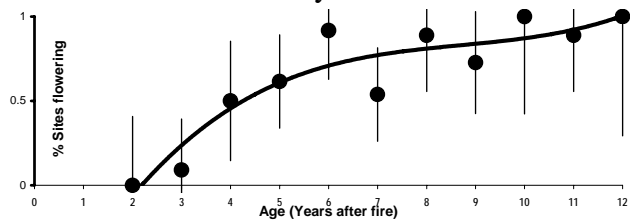
Growth (1047 records with: Jan 117, Feb 81, Mar 95, Apr 93, May 76, Jun 41, Jul 60, Aug 107, Sep 106, Oct 95, Nov 128, Dec 48): Much from Nov to Apr; Rare from Apr to May; None from Mar to Nov. Peak levels at 93% in Jan.



Seedlings (485 records): Absent in 96%: fewer seedlings than prefire adults in 6 cases, and more in 4 cases. Seedlings found in Feb (2), May, Jun, Aug (3) and Sep (3).

Fire Survival (40 records): 83% survived by seedlings only, 8% resprouted from underground boles, 5% eliminated from the area by fires, 5% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 1 years, 50% estimated at 4 years, and 100% recorded at 10 years.



Height (1078 records): 2% 0-0.2 m tall, 76% 0.2-1 m tall, 22% 1-2 m tall, 0.2% 2-5 m tall.

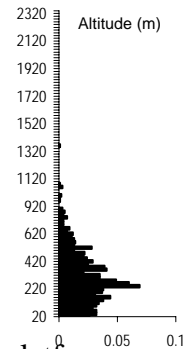
Pollinators (28 records): 89% birds, 7% bees or wasps, 4% beetles.

Detailed Pollinators (24 records): Cape Sugarbird (13), Orange-breasted Sunbird (9), Malachite Sunbird (2).

Habitat:

Distance to Ocean (937 records): 92% inland - further than 2 km from coast.

Altitude (937 records): 20 - 880 m; 140_{lq} - 240_{med} - 340_{uq}m.



Landform (887 records): 81% deep soil, 16% shallow soil, 3% rocky outcrops, 0.3% swamp, 0.2% riverine.

Slope (885 records): 56% gentle incline, 25% steep incline, 9% platform, 9% hill top, 1% valley bottom, 0.8% cliff.

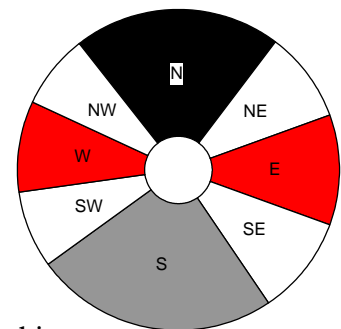
Aspect (771 records): 34% South, 31% North, 20% East, 16% West.

Soil Type (884 records):

64% sandy, 21% loamy, 8% gravelly, 3% clayey, 3% rocky, 0.5% peaty.

Soil Colour (879 records):

65% grey, 22% brown, 7% white, 3% black, 2% orange, 1% yellow, 0.2% red.



Geology (893 records): 84% sandstone, 9% shale, 5% silcrete or ferricrete, 1% Tertiary sands, 0.4% limestone, 0.1% conglomerate.

Vegetation (928 records): 98% shrubland, 0.4% plantations, 0.3% thicket, 0.3% agricultural lands, 0.2% forest, 0.1% grassland, 0.1% wooded grassland.

Conservation Status and Threat:

Red Data List Status: Near Threatened
A2c+4d.

Occurrence (Fynbos): 2 956 km² with 12% conserved and 34% lost; Occupancy: 850 km² with 14% conserved and 29% lost. Fragmentation index: 17%.

Nature Reserves (937 records): 30% in nature reserves.

Habitat destruction (863 records):

93% extensive natural habitat, 5% islands, 1% naturally linear habitats, 0.6% road verges, 0.6% naturally fragmented habitats, 0.1% corridors.

Alien Invasive Species (865 records):

34% *Pinus*, 23% none, 22% Fabaceae (chiefly alien *Acacia*), 18% *Hakea*, 3% Myrtaceae, 0.1% other aliens.

Alien Density (863 records): 23% alien-free, 54% sparse, 18% abundant, 4% dense, 0.5% impenetrable.

Cultivation & Utilization:

Picking (783 records): 96% no sign of picking, 3% lightly picked, 0.5% severely picked.

Cultivation Status: Plantings - 177 records (15%), Augmentations - 5 records (0.4%), Escapes - 10 records (0.9%).

Atlasers Notes:

Identification is tentative given the hairy character and silver-grey appearance of the leaves: based on two mature plants of this species in bud and with glabrous leaves which escaped the fire (SHR94081401);

Quite a lot of picking seen on this site and 10 pickers at work just to the north of it (PVR95010601);

All dead adjacent next plot which is a dense *Hakea* stand (AGRY0010809); Some 50% of

plants dead within last year - drought hit here too? Not so much evident higher up as down here (AGRY0011403); 50% plants dead (AGRY0011412); 3 dead plants (AGRY1022810); Lots dead (AGRY2030501); Most plants dead (AMMY1022803); One dead plant seen (LYM96092402);

About midday - pollinators very active: beetles, bees and birds (APE93103003); Cape Sugar Birds Collecting Nesting Material (FRI98101501);

Confusing Species: A few coding errors with *L. cordatum*. Odd errors by beginners with various pincushions, most when not in flower as the juvenile leaves are quite unlike the adult leaves, being both strap-shaped and densely woolly.

Records of identification queries = 18.

Records of corrected identification queries = 6.

Variation and Taxonomy: Two forms of variation have bedeviled taxonomy and identification of this species. Juvenile (pre-flowering) leaves are hairy and strap-shaped. Post flowering, on each branch there is a progression from oblong-ovate leaves with 3-6 teeth at the base to small heart-shaped leaves with a single tooth just below the flowerheads. Very old plants that produce short shoots only have the basal leaves, but generally the progression is diagnostic of the species.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum lineare R. Br. 1810

Needle-leaf Pincushion

Assegaaiibosspeldekussing

Other Common Names: Assegaaiibos Pincushion, Fallacious Leucadendrum, Galaxy Pincushion, Narrow-leaf Pincushion, Tangerine Pincushion, *Luisiesbos*, *Smalblaarspeldekussing*, *Tango*.

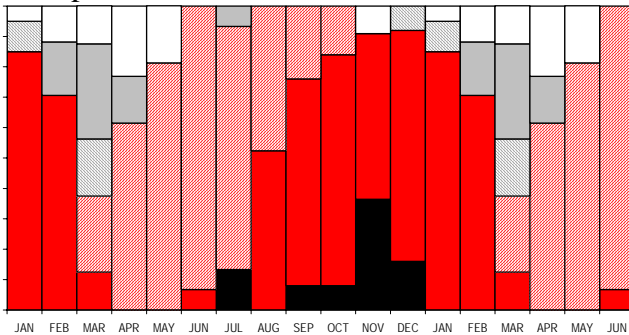
Other Scientific Names: *calocephalum* (Gand) Gand ex Schinz 1913, *fallax* Salisb. ex Knight 1809.

253 Records

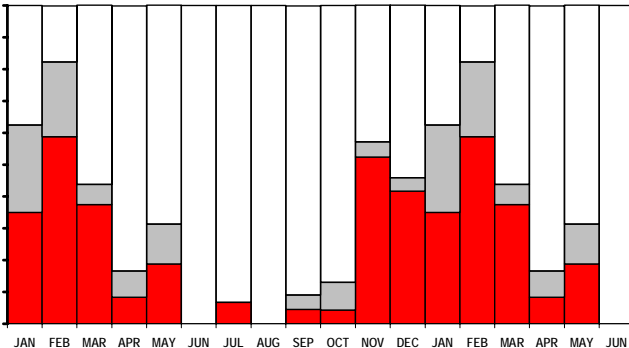
Population (247 records): 13% Common, 60% Frequent, 27% Rare, 0.4% Extinct.

Dispersion (215 records): 55% variable, 42% clumped, 3% widespread, 0.5% evenly distributed.

Flowering (250 records with: Jan 40, Feb 17, Mar 16, Apr 13, May 16, Jun 15, Jul 15, Aug 21, Sep 25, Oct 25, Nov 22, Dec 25): Buds from Mar to Sep; Flowering from Aug to Feb; Peak Flowering from Nov; Over from Mar; Fruit from Feb to Mar; Nothing from Apr to May. Peak levels at 100% from Jun, Aug to Oct and Dec. Historically recorded as flowering from Jul to Jan, but chiefly from Sep to Oct.



Growth (242 records with: Jan 40, Feb 17, Mar 16, Apr 12, May 16, Jun 15, Jul 15, Aug 21, Sep 22, Oct 23, Nov 21, Dec 24): Much from Nov to Mar; Rare from Jan to Feb; None from Mar to Jan. Peak levels at 82% in Feb.



Seedlings (105 records): Absent in 94%; fewer seedlings than prefire adults in 2 cases, and more in 1 case. Seedlings found in Oct and Nov (2).

Fire Survival (10 records): 80% survived by seedlings only, 20% eliminated from the area by fires.

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



Height (249 records): 2% 0-0.2 m tall, 77% 0.2-1 m tall, 21% 1-2 m tall.

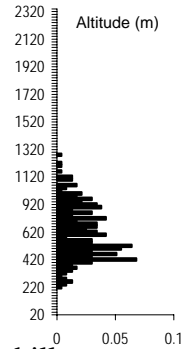
Pollinators (6 records): 50% birds, 50% bees or wasps.

Detailed Pollinators (4 records): Orange-breasted Sunbird (2), Honey Bee, Cape Sugarbird.

Habitat:

Distance to Ocean (234 records): 100% inland - further than 2 km from coast.

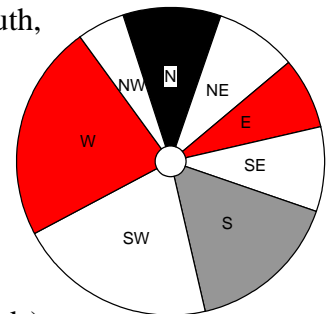
Altitude (234 records): 200 - 1180 m; 440 *lq* - 560 *med* - 720 *uq*m.



Landform (234 records): 88% deep soil, 8% shallow soil, 3% rocky outcrops, 0.4% riverine.

Slope (234 records): 55% steep incline, 39% gentle incline, 3% hill top, 2% platform, 0.9% cliff, 0.9% valley bottom.

Aspect (223 records): 36% West, 31% South, 16% North, 16% East.



Soil Type (231 records):

49% loamy, 35% sandy, 8% gravelly, 6% clayey, 2% rocky.

Soil Colour (232 records): 69% brown, 15% grey, 11% orange, 4% yellow, 2% red.

Geology (223 records): 44% sandstone, 43% granite, 11% shale, 2% silcrete or ferricrete.

Vegetation (234 records): 92% shrubland, 7% plantations, 0.9% thicket, 0.4% forest.

Conservation Status and Threat:

Red Data List Status: Endangered A2c. Occurrence (Fynbos): 910 km² with 62% conserved and 20% lost; Occupancy: 197 km² with 52% conserved and 21% lost. Fragmentation index: 20%.

Nature Reserves (234 records): 47% in nature reserves.

Habitat destruction (224 records): 96% extensive natural habitat, 2% road

verges, 1% naturally linear habitats, 0.4% islands.

Alien Invasive Species (232 records): 42% *Pinus*, 22% none, 19% *Hakea*, 16% Fabaceae (chiefly alien *Acacia*), 1% Myrtaceae.

Alien Density (231 records): 23% alien-free, 52% sparse, 21% abundant, 4% dense, 0.4% impenetrable.

Cultivation & Utilization:

Picking (181 records): 100% no sign of picking.

Cultivation Status: Plantings - 2 records.

Atlassers Notes:

It seems that on the granite the plants grow more vigorously - up to 1.5 m tall with a darker colour and leaves all grooved. On sandstone it reaches 0.5 m with paler flowers and some leaves flat - could the Assegaaibos form could be an extreme example of vigorous growth? (OGM95120104); Healthy plants - the sprawling, yellow flower form - approaching 1 m tall on shale-derived soils (as distinct from the granite-derived soils specified in Vogts) (SHR93011305); M Vogts says this grows in weathered granite but we did not notice the difference between sandstone and she is correct in saying they are sprawling, unremarkable plants - nevertheless unique and beautiful (VJK95072702);

Appears to be a resprouter here: needs checking as to fire survival! (AGR91111602); Definitely single-stemmed at base for 100-200 mm (AGR92020401); Some flowerheads damaged by baboons (LYM98011802); Lower flowers frequently snapped (bitten) off (SMR97011607);

Confusing Species: Rarely misidentified as linear leaves distinctive. Young plants misidentified as immature *Aulax cancellata*. Records of identification queries = 9. Records of corrected identification queries = 3.

Variation and Taxonomy: Thunberg's name *Protea linearis* from 1781 cannot be used as this genus and species combination was previously used by Houtt. in 1775 for what is now *Leucadendron brunioides*. Two forms are known: the erect form with orange flowerheads is treated separately () from the sprawling and yellow form dealt with here.

Distribution: Add.

Leucospermum lineare var *calocephalum* - accepted as *L. lineare* by Rourke is from Mitchell's Pass and outside of the range of all other herbarium or atlas records!

INCLUDEPICTURE

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Leucospermum lineare subsp. nova (undescribed)

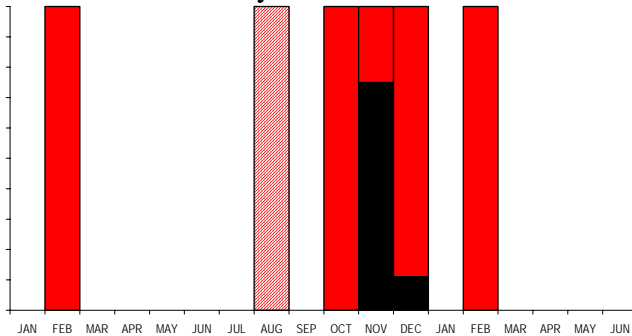
Other Common Names: None known.
Other Scientific Names: *None*.

27 Records

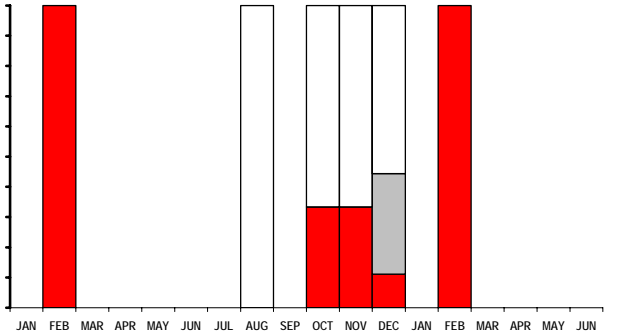
Population (27 records): 7% Common, 67% Frequent, 26% Rare.

Dispersion (24 records): 79% variable, 21% clumped.

Flowering (27 records with: Jan 0, Feb 1, Mar 0, Apr 0, May 0, Jun 0, Jul 0, Aug 1, Sep 0, Oct 4, Nov 12, Dec 9): Buds from Aug; Flowering from Oct to Feb; Peak Flowering from Nov; Over, Fruit and Nothing not recorded. Peak levels unreliable at 100% in Nov. Historically flower season not noted.



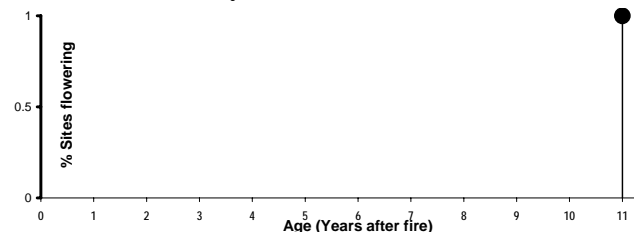
Growth (26 records with: Jan 0, Feb 1, Mar 0, Apr 0, May 0, Jun 0, Jul 0, Aug 1, Sep 0, Oct 3, Nov 12, Dec 9): Much from Feb and Oct to Nov; Rare from Dec; None from Aug to Dec. Peak levels unreliable at 100% in Feb.



Seedlings (5 records): All without any seedlings present.

Fire Survival : No data.

Age to first flowering: First flowers recorded at 100% at 11 years.



Height (27 records): 48% 0.2-1 m tall, 52% 1-2 m tall.

Pollinators (4 records): 100% birds.

Detailed Pollinators (4 records): Cape Sugarbird (2), Orange-breasted Sunbird, Malachite Sunbird.

Habitat:

Distance to Ocean (27 records): 100% inland - further than 2 km from coast.

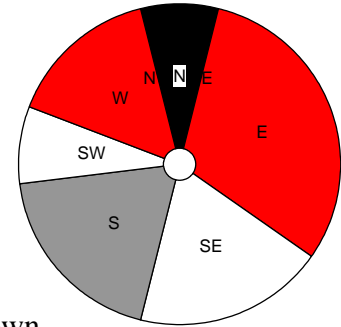
Altitude (27 records): 220 - 680 m; 280_{lq} - 380_{med} - 380_{uq}m.

Landform (27 records): 93% deep soil, 7% shallow soil.

Slope (27 records): 59% steep incline, 37% gentle incline, 4% platform.

Aspect (26 records):

37% South, 35% East, 21% West, 8% North.



Soil Type (27 records):

67% loamy, 26% gravelly, 7% sandy.

Soil Colour (27 records): 74% brown,

11% orange, 7% grey, 4% yellow, 4% red.

Geology (26 records): 73% granite, 15% shale, 12% sandstone.

Vegetation (27 records): 52% shrubland, 48% plantations.

Conservation Status and Threat:

Red Data List Status: Critically Endangered

B1b(i,ii,iii,v)c(iv). Occurrence (Fynbos): 32 km² with 24% conserved and 50% lost; Occupancy: 20 km² with 28% conserved and 40% lost. Fragmentation index: 63%.

Nature Reserves (27 records): 0% in nature reserves - unconserved.

Habitat destruction (27 records): 96% extensive natural habitat, 4% islands.

Alien Invasive Species (27 records): 93% *Pinus*, 4% Fabaceae (chiefly alien *Acacia*), 4% none.

Alien Density (27 records): 4% alien-free, 15% sparse, 78% abundant, 4% dense.

Cultivation & Utilization:

Picking (25 records): 76% no sign of picking, 20% lightly picked, 4% severely picked.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: None.

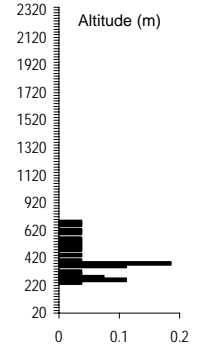
Records of identification queries = 3

Variation and Taxonomy: None noted.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum patersonii Phill. 1928

Silver-edge Pincushion

Basterkreupelhout

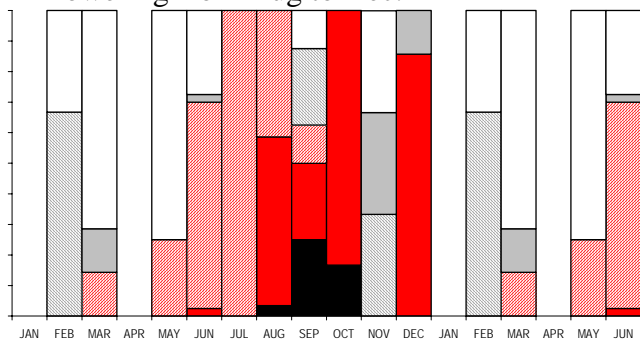
Other Common Names: Bastard Pincushion, False-tree Pincushion, Paterson's Pincushion.
Other Scientific Names: *None*.

129 Records

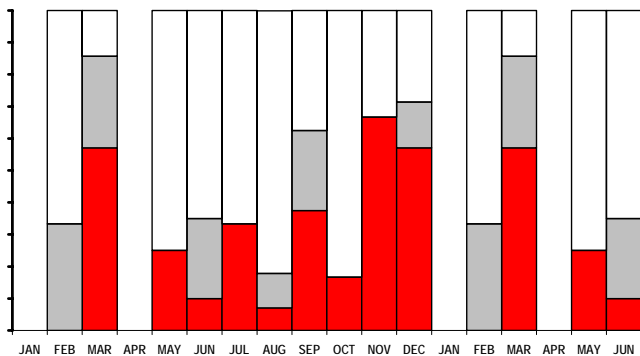
Population (120 records): 18% Common, 63% Frequent, 19% Rare.

Dispersion (94 records): 59% variable, 39% clumped, 2% evenly distributed.

Flowering (110 records with: Jan 0, Feb 3, Mar 7, Apr 0, May 4, Jun 40, Jul 3, Aug 29, Sep 8, Oct 6, Nov 3, Dec 7): Buds from May to Aug; Flowering from Aug to Oct and Dec; Peak Flowering from Sep; Over from Feb, Sep and Nov; Fruit from Nov; Nothing from Feb to Jun and Nov. Peak levels at 100% in Jul to Aug and Oct. Historically recorded as flowering from Aug to Dec.



Growth (109 records with: Jan 0, Feb 3, Mar 7, Apr 0, May 4, Jun 40, Jul 3, Aug 28, Sep 8, Oct 6, Nov 3, Dec 7): Much from Mar to May, Jul, Sep and Nov to Dec; Rare from Feb to Mar, Jun and Sep; None from May to Feb. Peak levels at 86% in Mar.



Seedlings (34 records): Absent in 94%; more seedlings than prefire adults in 1 case. Seedlings found in Sep.

Fire Survival (1 record): 100% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 2 years, 50% estimated at 4-5 years, and 100% recorded at 8 years.



Height (109 records): 38% 0.2-1 m tall, 59% 1-2 m tall, 4% 2-5 m tall.

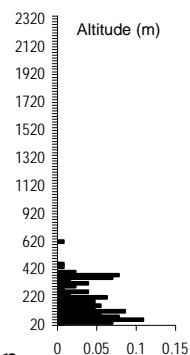
Pollinators (7 records): 100% birds.

Detailed Pollinators (7 records): Orange-breasted Sunbird (4), Cape Sugarbird (3).

Habitat:

Distance to Ocean (121 records): 93% inland - further than 2 km from coast.

Altitude (121 records): 20 - 460 m; 60 *lq* - 140 *med* - 220 *uq*m.

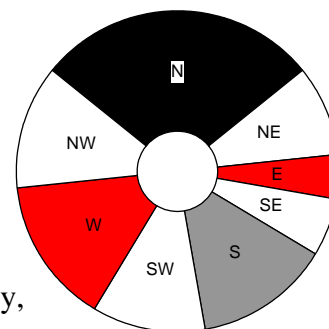


Landform (103 records): 72% deep soil, 24% shallow soil, 4% rocky outcrops.

Slope (103 records): 67% gentle incline, 13% steep incline, 10% hill top, 7% platform, 4% dunes.

Aspect (81 records):

38% North,
28% West,
21% South,
14% East.



Soil Type (100 records): 64% sandy, 27% loamy, 7% rocky, 1% clayey, 1% gravelly.

Soil Colour (100 records): 57% grey, 22% brown, 12% white, 7% black, 1% orange, 1% red.

Geology (115 records): 57% limestone, 28% sandstone, 13% Tertiary sands, 0.9% shale, 0.9% silcrete or ferricrete.

Vegetation (120 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Vulnerable A4c.

Occurrence (Fynbos): 709 km² with 9% conserved and 29% lost; Occupancy: 119 km² with 13% conserved and 24% lost. Fragmentation index: 14%.

Nature Reserves (121 records): 40% in nature reserves.

Habitat destruction (102 records): 81% extensive natural habitat, 9% road verges, 6% islands, 2% naturally fragmented habitats, 1.0% corridors, 1.0% naturally linear habitats.

Alien Invasive Species (99 records):

58% Fabaceae (chiefly alien *Acacia*),
35% none, 4% Myrtaceae, 3% *Pinus*.

Alien Density (97 records): 36% alien-free,
39% sparse, 18% abundant, 7% dense.

Cultivation & Utilization:

Picking (85 records): 94% no sign of picking,
5% lightly picked, 1% severely picked.

Cultivation Status: Plantings - 5 records (4%),
Escapes - 2 records (2%).

Atlasers Notes:

About 20% of plants senescent
(NAH97062001);

Certainly planted originally, but now growing
on their own - looks healthy in spite of not
being on limestone (NAH94021904);

Confusing Species: Occasionally confused
with *L. cordifolium*, but leaves do not get
smaller along the stem to below the

flowerheads, and *L. conocarpodendron* when
not in flower.

Records of identification queries = 7.

Records of corrected identification queries = 1.

Variation and Taxonomy: Although
discovered in 1697 this was only described
in 1928: specimens collected by Oldenhand –
the Dutch East India Company's master
gardener – having been filed in the Burman
and Schreber Herbaria as *L.*
conocarpodendron.

Distribution: Add.

Hermanus populations are exterminated. A
single stand at Honingklipkloof at
Kleinmond was not atlased.

INCLUDEPICTURE

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MERGEFORMAT \d

Leucospermum tottum (L.) R.Br. 1771, 1810

Ribbon Pincushion
Oranjerooispeldekussing

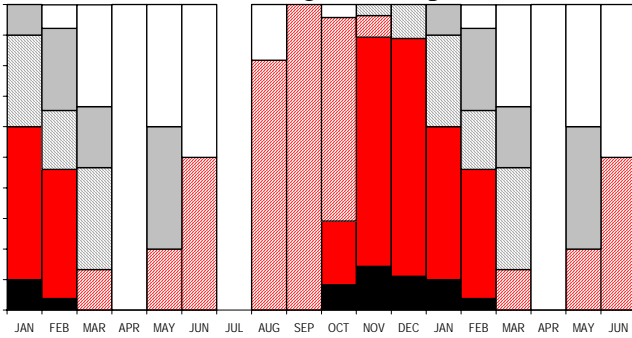
Other Common Names: Cinnamon Pincushion, Elegant Pincushion, Firewheel Pincushion, Horizontal Leucadendrum, Pinkstar Pincushion, Spreading Pincushion, Waterfall Pincushion, Worcester Ribbon Pincushion, *Kruppelluisie*, *Pienkspeldekussing*, *Tiny Tot*.
Other Scientific Names: *horizontale* Salisb. ex Knight 1809.

139 Records

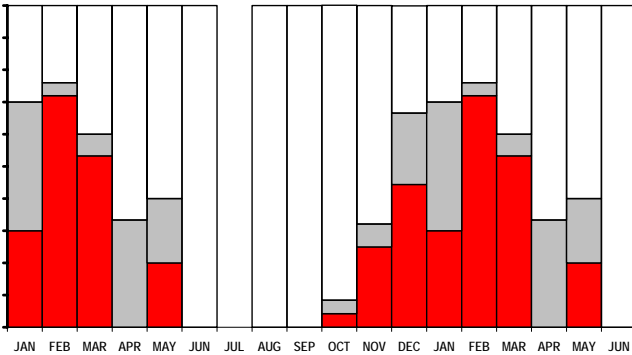
Population (130 records): 8% Common, 60% Frequent, 32% Rare.

Dispersion (115 records): 57% clumped, 43% variable, 0.9% widespread.

Flowering (138 records with: Jan 10, Feb 26, Mar 15, Apr 3, May 5, Jun 2, Jul 0, Aug 11, Sep 5, Oct 24, Nov 28, Dec 9): Buds from May to Oct; Flowering from Oct to Feb; Peak Flowering not significant; Over from Jan and Mar; Fruit from Feb to May; Nothing from Mar to Jun. Peak levels at 100% in Sep and Nov to Dec. Historically recorded as flowering from Sep to Jan.



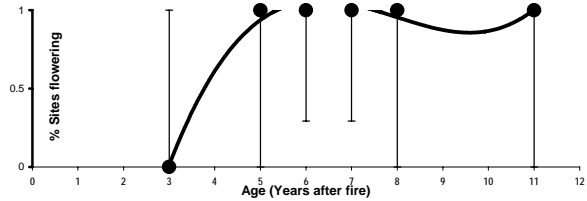
Growth (137 records with: Jan 10, Feb 25, Mar 15, Apr 3, May 5, Jun 2, Jul 0, Aug 11, Sep 5, Oct 24, Nov 28, Dec 9): Much from Nov to Mar and May; Rare from Dec to Jan and Apr to May; None from all year round. Peak levels at 76% in Feb.



Seedlings (51 records): Absent in 92%; fewer seedlings than prefire adults in 2 cases. Seedlings found in Jan and Nov.

Fire Survival (2 records): 100% survived by seedlings only.

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



Height (138 records): 1% 0-0.2 m tall, 79% 0.2-1 m tall, 20% 1-2 m tall.

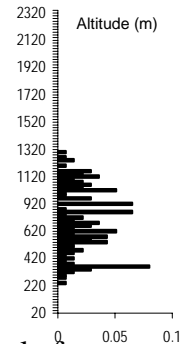
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (130 records): 100% inland - further than 2 km from coast.

Altitude (130 records): 260 - 1200 m; 520 *lq* - 680 *med* - 820 *uq*m.

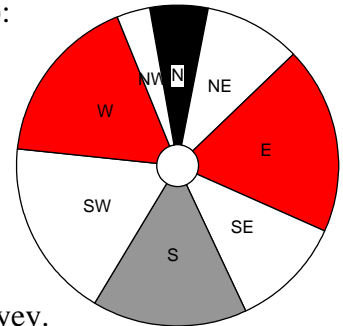


Landform (129 records): 73% deep soil, 22% shallow soil, 5% rocky outcrops.

Slope (128 records): 48% gentle incline, 39% steep incline, 7% platform, 5% hill top.

Aspect (115 records):

30% East,
30% West,
29% South,
11% North.



Soil Type (128 records):

48% sandy,
23% gravelly,
20% loamy,
7% rocky, 2% clayey.

Soil Colour (127 records): 50% brown, 31% grey, 6% yellow, 5% white, 5% orange, 4% red, 0.8% black.

Geology (126 records): 71% sandstone, 17% shale, 8% granite, 2% silcrete or ferricrete, 0.8% Tertiary sands.

Vegetation (130 records): 98% shrubland, 2% plantations, 0.8% forest.

Conservation Status and Threat:

Red Data List Status: Near Threatened A2c.

Occurrence (Fynbos): 3 660 km² with 27% conserved and 17% lost; Occupancy: 224 km² with 36% conserved and 10% lost. Fragmentation index: 5%.

Nature Reserves (130 records): 35% in nature reserves.

Habitat destruction (129 records): 95% extensive natural habitat, 2% islands, 2% road verges, 2% naturally fragmented habitats.

Alien Invasive Species (128 records): 38% *Hakea*, 34% none, 22% *Pinus*,

5% Fabaceae (chiefly alien *Acacia*),
2% Myrtaceae.

Alien Density (128 records): 34% alien-free,
51% sparse, 13% abundant, 2% dense.

Cultivation & Utilization:

Picking (84 records): 100% no sign of picking.
Cultivation Status: Plantings - 8 records (6%).

Atlassers Notes:

Low sprawling plants one creeping over &
between rocks (JAT92102903); Unusual
trellised effect of plants sprawling over rocks
(MHGY5012002);

L. tottum! - whereas up to here it was definitely
L. vestitum, suddenly these look like *L.*
tottum, but not pure and somewhat
intermediate! (AGRY3112609);

About 1/6 dead recently (AGRY4031010);
Previously many more plants - about 12 dead
(APE92101707);

Confusing Species: Often mistaken for
sprawling form of *L. vestitum* when not in
flower.

Records of identification queries = 12.

Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

***Leucospermum tottum* var. *glabrum* Phillips 1922**
DuToits Ribbon Pincushion

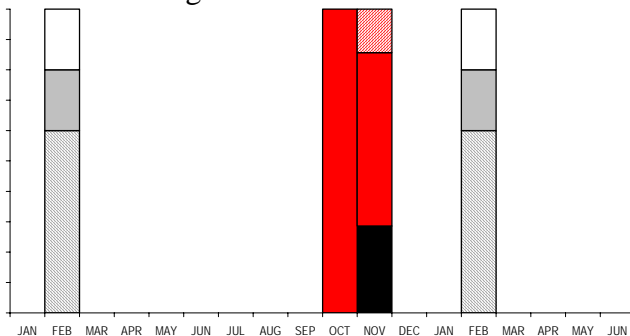
Other Common Names: None known.
Other Scientific Names: *None*.

14 Records

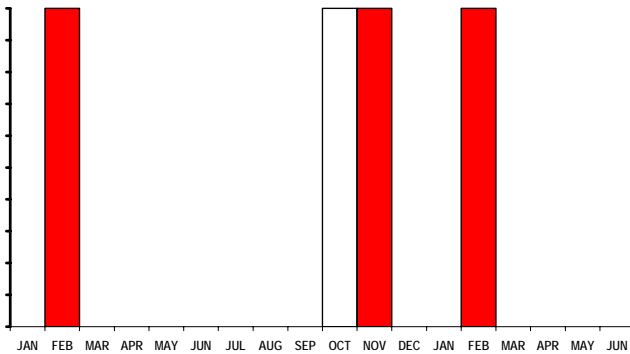
Population (13 records): 0% Common, 38% Frequent, 62% Rare.

Dispersion (11 records): 82% clumped, 18% variable.

Flowering (13 records with: Jan 0, Feb 5, Mar 0, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 1, Nov 7, Dec 0): Buds not significant; Flowering from Oct to Nov; Peak Flowering from Nov; Over from Feb; Fruit from Feb; Nothing from Feb. Peak levels unreliable at 100% in Oct to Nov. Historically recorded as flowering in Oct.



Growth (12 records with: Jan 0, Feb 5, Mar 0, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 1, Nov 6, Dec 0): Much from Nov to Feb; Rare not recorded; None from Oct. Peak levels unreliable at 100% in Nov and Feb.



Seedlings (6 records): All without any seedlings present.

Fire Survival (6 records): 100% survived by seedlings only.

Age to first flowering: First flowers recorded at 100% at 4 years.



Height (13 records): 77% 0.2-1 m tall, 23% 1-2 m tall.

Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

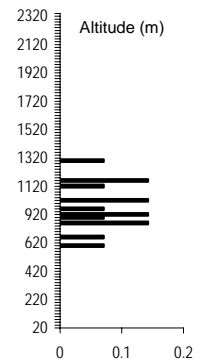
Distance to Ocean (14 records): 100% inland - further than 2 km from coast.

Altitude (14 records): 580 - 1200 m; 740_{lq} - 820_{med} - 820_{uq} m.

Landform (12 records): 100% deep soil.

Slope (13 records): 69% steep incline, 31% gentle incline.

Aspect (14 records): 64% East, 32% South, 4% West.

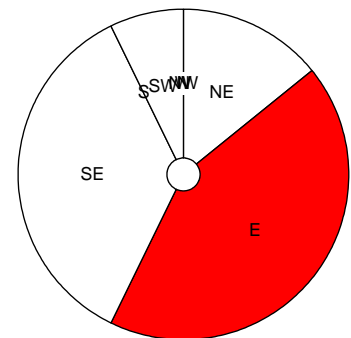


Soil Type (12 records): 50% loamy, 42% sandy, 8% gravelly.

Soil Colour (12 records): 67% brown, 33% grey.

Geology (14 records): 64% sandstone, 36% shale.

Vegetation (14 records): 100% shrubland.



Conservation Status and Threat:

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

Occurrence (Fynbos): 10 km² with 19% conserved and 1% lost; **Occupancy:** 17 km² with 27% conserved and 2% lost. **Fragmentation index:** meaningless.

Nature Reserves (14 records): 29% in nature reserves.

Habitat destruction (14 records): 100% extensive natural habitat.

Alien Invasive Species (12 records): 58% none, 25% *Hakea*, 17% *Pinus*.

Alien Density (12 records): 58% alien-free, 42% sparse.

Cultivation & Utilization:

Picking (7 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlasers Notes:

About 35 plants, all in one patch of 10 x 5m area, with about 12 in flower for the first time (ASP92112612); At least 45 plants (SGAY1022008).

Confusing Species: None: quite distinct!
 Records of identification queries = 2.

Variation and Taxonomy: Considered by J. Rourke as a hybrid, but several populations have been discovered by atlasers, so that it deserves full recognition as either a species or subspecies.

Distribution: Add.

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Leucospermum vestitum (Lam.) Rourke 1792, 1967

Silky-hair Pincushion

Bergluisie

Other Common Names: Elliptic Leucadendrum, Meteor Pincushion, Notched Pincushion, Orange-flame Pincushion, Upright Pincushion, *Vlambos*.

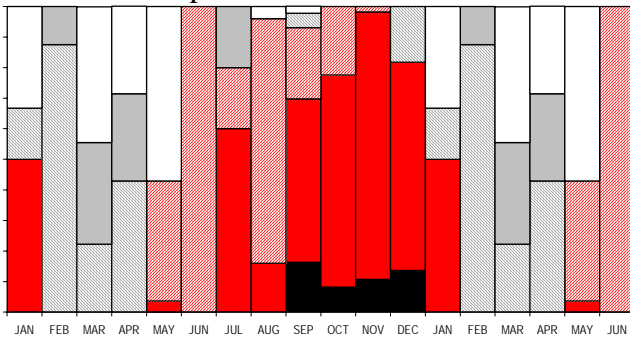
Other Scientific Names: *ellipticum* (Thunb) *Salisb. ex Knight* 1781, 1809, *incisum* Phill 1910, *medium* R. Br. 1810.

272 Records

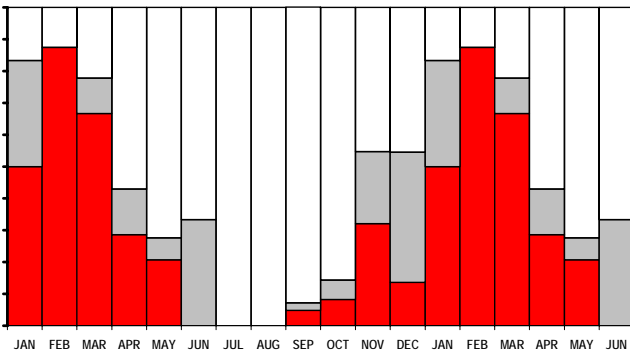
Population (271 records): 14% Common, 51% Frequent, 35% Rare, 0.4% Extinct.

Dispersion (228 records): 53% variable, 43% clumped, 3% widespread, 2% evenly distributed.

Flowering (270 records with: Jan 6, Feb 8, Mar 9, Apr 7, May 28, Jun 12, Jul 5, Aug 25, Sep 43, Oct 49, Nov 56, Dec 22): Buds from May to Oct; Flowering from Sep to Jan and Jul; Peak Flowering not significant; Over from Feb to Apr; Fruit from Mar to Apr; Nothing from Jan, and Mar to May. Peak levels at 100% from Oct to Dec. Historically recorded as flowering from Jul to Jan with a Oct to Nov peak.



Growth (267 records with: Jan 6, Feb 8, Mar 9, Apr 7, May 29, Jun 12, Jul 5, Aug 25, Sep 42, Oct 49, Nov 53, Dec 22): Much from Jan to May; Rare from Nov to Jan and Jun; None from Mar to Dec. Peak levels at 88% in Feb.



Seedlings (126 records): Absent in 97%; fewer seedlings than prefire adults in 1 case, and more in 1 case. Seedlings found in Jan and Nov.

Fire Survival (10 records): 60% survived by seedlings only, 30% escaped fires in fire-safe

areas, 10% resprouted from underground boles.

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



Height (269 records): 0.4% 0-0.2 m tall, 30% 0.2-1 m tall, 63% 1-2 m tall, 7% 2-5 m tall.

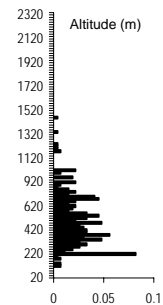
Pollinators (17 records): 88% birds, 6% flies, 6% beetles.

Detailed Pollinators (15 records): Cape Sugarbird (8), Malachite Sunbird (4), Southern Double-collared Sunbird (2), Orange-breasted Sunbird.

Habitat:

Distance to Ocean (269 records): 100% inland - further than 2 km from coast.

Altitude (269 records): 100 - 1360 m; 320 *lq* - 440 *med* - 580 *uq* m.



Landform (268 records): 73% deep soil, 23% shallow soil, 4% rocky outcrops, 0.4% swamp.

Slope (269 records): 53% gentle incline, 28% steep incline, 7% platform, 7% hill top, 4% valley bottom, 1% cliff.

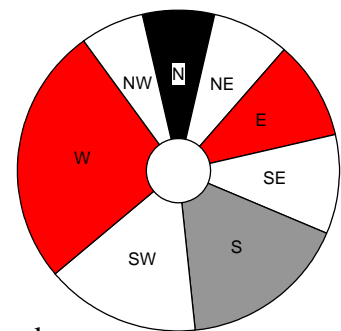
Aspect (235 records): 37% West, 30% South, 21% East, 13% North.

Soil Type (264 records):

55% sandy, 22% loamy, 10% gravelly, 8% rocky, 5% clayey.

Soil Colour (266 records):

63% brown, 21% grey, 10% orange, 3% red, 2% white, 2% yellow.



Geology (254 records): 81% sandstone, 11% shale, 5% conglomerate, 1% silcrete or ferricrete, 0.8% Tertiary sands.

Vegetation (269 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Vulnerable A2c, EX on Peninsula.

Occurrence (Fynbos): 5 516 km² with 12% conserved and 26% lost; Occupancy: 323 km² with 11% conserved and 21% lost. Fragmentation index: 4%.

Nature Reserves (269 records): 20% in nature reserves.

Habitat destruction (267 records): 82% extensive natural habitat, 12% islands, 3% road verges, 2% naturally fragmented habitats, 1% naturally linear habitats.

Alien Invasive Species (257 records): 65% none, 18% *Pinus*, 9% Fabaceae (chiefly alien *Acacia*), 4% Myrtaceae, 3% *Hakea*, 1% other aliens.

Alien Density (256 records): 65% alien-free, 30% sparse, 5% abundant.

Cultivation & Utilization:

Picking (197 records): 97% no sign of picking, 2% lightly picked, 1% severely picked.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Three teeth to leaves but these reflex like *L. tottum* only with dark purple perianth - very intermediate with *L. tottum*! (AGRY3112544); Field guide diagnostic feature: leaves hairless however at record locality distinctly with erect straight hairs on leaves (EAH96010301);

Lots dead over last few months because of drought (AGR99101706); More than 5 dead bushes (MHR Y0030501); Also 2 dead older

plants - veld is old and probably not burnt since April '94 (WIJY0052010);

A very good demographic distribution: plants 200mm to 4m tall (AGR92051501); Definite recruitment despite absence of fire for long period - veg cover is not 100% what could cause seedling recruitment? (APE93110601);

Before 1989 only 2 large (3m) bushes occurred - between 1990 and 1993 no seedlings were found - burnt 1989 (MHR98031003);

These are the only 2 plants on this large farm extending to Ouberg and Waterfall in the east (data thanks to observant farmer's wife) - previous farmer grew rooibos on this area (WIJ94041306);

Confusing Species: Confused with *L. cordifolium* before the field guide was released. Without flowers was frequently confused with *L. tottum* and once with *L. catherinae*.

Records of identification queries = 21.

Records of corrected identification queries = 8.

Variation and Taxonomy: Plants from the flats at Tulbagh Valley at at Honinberg have an erect, tree-like growth habit. On the mountains it is typically a sprawling shrub.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum catherinae Compton 1933
Catherine-wheel Pincushion
Wielblom

Other Common Names: Catherine's Pincushion, Comb-flower Pincushion, Firewheel, Wheel-flower Pincushion, *Waterluisie, Catherine.*

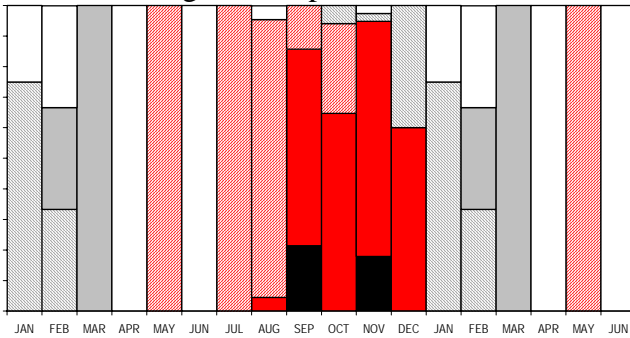
Other Scientific Names: *None.*

114 Records

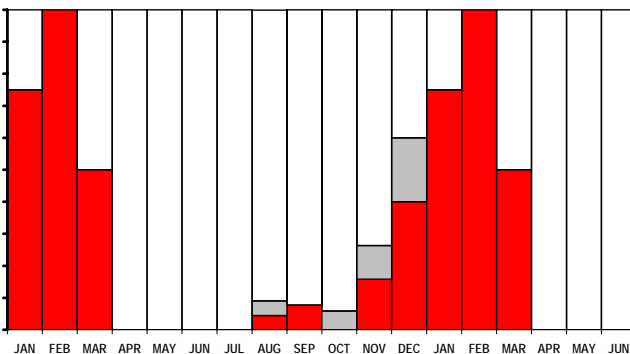
Population (102 records): 20% Common, 49% Frequent, 31% Rare.

Dispersion (88 records): 74% clumped, 22% variable, 2% evenly distributed, 2% widespread.

Flowering (113 records with: Jan 4, Feb 3, Mar 2, Apr 1, May 3, Jun 2, Jul 1, Aug 22, Sep 14, Oct 17, Nov 39, Dec 5): Buds from May to Aug and Oct; Flowering from Sep to Dec; Peak Flowering from Sep; Over from Dec to Feb; Fruit from Feb to Mar; Nothing from Jan to Feb, Apr and Jun. Peak levels at 100% from Sep to Oct. Historically recorded as flowering from Sep to Dec.



Growth (111 records with: Jan 4, Feb 3, Mar 2, Apr 1, May 3, Jun 2, Jul 1, Aug 22, Sep 13, Oct 17, Nov 38, Dec 5): Much from Dec to Mar; Rare from Dec; None from Mar to Jan. Peak levels at 100% in Feb.



Seedlings (41 records): Absent in 90%: fewer seedlings than prefire adults in 2 cases. Seedlings found in Feb and Nov.

Fire Survival (4 records): 75% survived by seedlings only, 25% escaped fires in fire-safe areas.

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



Height (113 records): 0.9% 0-0.2 m tall, 37% 0.2-1 m tall, 61% 1-2 m tall, 0.9% 2-5 m tall.

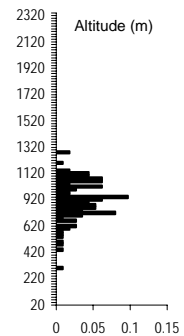
Pollinators (12 records): 92% birds, 8% bees or wasps.

Detailed Pollinators (9 records): Cape Sugarbird.

Habitat:

Distance to Ocean (101 records): 100% inland - further than 2 km from coast.

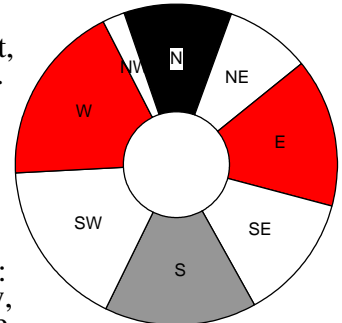
Altitude (101 records): 460 - 1180 m; 720 *lq* - 820 *med* - 900 *uq*m.



Landform (101 records): 92% deep soil, 5% shallow soil, 1.0% riverine, 1.0% swamp, 1.0% rocky outcrops.

Slope (101 records): 55% gentle incline, 18% steep incline, 15% platform, 12% valley bottom.

Aspect (83 records): 31% South, 28% West, 23% East, 17% North.



Soil Type (99 records): 66% sandy, 20% loamy, 11% gravelly, 3% rocky.

Soil Colour (99 records): 60% brown, 15% grey, 12% white, 7% orange, 4% yellow, 2% red.

Geology (95 records): 77% sandstone, 21% shale, 1% silcrete or ferricrete, 1% Tertiary sands.

Vegetation (101 records): 98% shrubland, 2% agricultural lands.

Conservation Status and Threat:

Red Data List Status: Endangered B1a(i)c(iv)+2a(i)c(iv).

Occurrence (Fynbos): 3 472km² with 9% conserved and 11% lost; **Occupancy:** 153 km² with 25% conserved and 6% lost. **Fragmentation index:** 4%.

Nature Reserves (101 records): 15% in nature reserves - inadequately conserved.

Habitat destruction (97 records): 79% extensive natural habitat, 15% islands,

3% naturally linear habitats, 1% road verges,
1% naturally fragmented habitats.

Alien Invasive Species (99 records): 66% none,
22% *Pinus*, 6% other aliens, 4% Fabaceae
(chiefly alien *Acacia*), 2% Myrtaceae.

Alien Density (98 records): 66% alien-free,
28% sparse, 6% abundant.

Cultivation & Utilization:

Picking (71 records): 100% no sign of picking.

Cultivation Status: Plantings - 12 records
(11%).

Atlasers Notes:

Previously many more plants: about 20-50 dead
- needs a fire (APE92101707); Not healthy
looking - plus one dead (VCH98080902);

Many young plants along firebreak path
(AWA96101604);

Confusing Species: Young plants confused
with *L. vestitum*.

Records of identification queries = 8.

Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum formosum (Andrews) Sweet 1798, 1818
Silver-leaf Wheel Pincushion

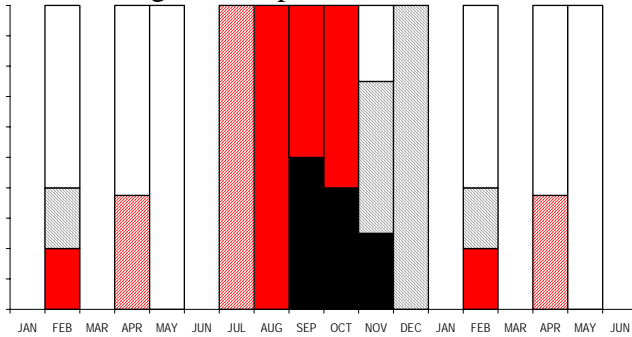
Other Common Names: Handsome Leucadendrum, Roman-candle Pincushion.
Other Scientific Names: *None*.

35 Records

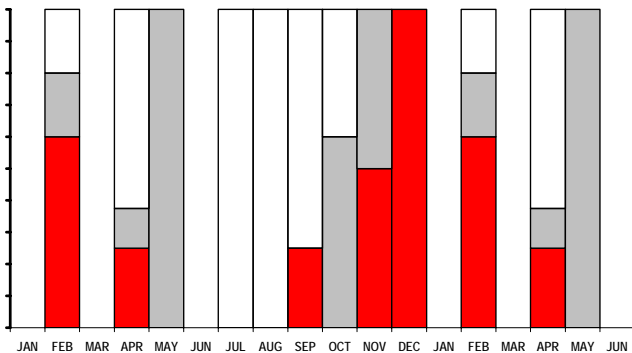
Population (34 records): 12% Common, 32% Frequent, 44% Rare, 12% Extinct.

Dispersion (26 records): 69% clumped, 23% variable, 8% evenly distributed.

Flowering (31 records with: Jan 0, Feb 5, Mar 0, Apr 8, May 1, Jun 0, Jul 1, Aug 2, Sep 4, Oct 5, Nov 4, Dec 1): Buds from Apr and Jul; Flowering from Aug to Oct; Peak Flowering from Sep to Nov; Over from Nov to Feb; Fruit not recorded; Nothing from Feb to May and Nov. Peak levels at 100% from Jul to Oct. Historically recorded as flowering from Sep to Oct.



Growth (31 records with: Jan 0, Feb 5, Mar 0, Apr 8, May 1, Jun 0, Jul 1, Aug 2, Sep 4, Oct 5, Nov 4, Dec 1): Much from Nov to Apr and Sep; Rare from Feb, May and Oct to Nov; None from Feb to Oct. Peak levels at 100% from Nov to Dec.



Seedlings (19 records): All without any seedlings present.

Fire Survival (1 record): 100% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 4-5 years, and 100% recorded at 9 years.



Height (31 records): 32% 0.2-1 m tall, 61% 1-2 m tall, 6% 2-5 m tall.

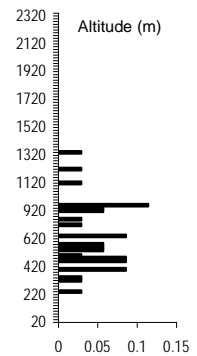
Pollinators (2 records): 100% birds.

Detailed Pollinators (3 records): Cape Sugarbird (2), Orange-breasted Sunbird.

Habitat:

Distance to Ocean (34 records): 100% inland - further than 2 km from coast.

Altitude (34 records): 300 - 1240 m; 460 *lq* - 560 *med* - 640 *uq*m.

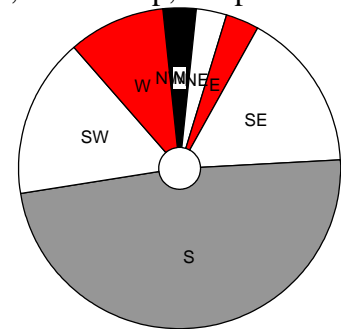


Landform (34 records): 79% deep soil, 15% shallow soil, 3% riverine, 3% rocky outcrops.

Slope (34 records): 56% steep incline, 32% gentle incline, 6% hill top, 6% platform.

Aspect (30 records):

68% South,
 17% West,
 10% East,
 5% North.



Soil Type (34 records): 65% loamy, 21% sandy, 12% clayey, 3% rocky.

Soil Colour (34 records): 59% brown, 35% grey, 6% black.

Geology (30 records): 73% sandstone, 27% shale.

Vegetation (34 records): 94% shrubland, 6% plantations.

Conservation Status and Threat:

Red Data List Status: Endangered A4c, B1a(i)b(ii,iii,v)c(iv)+2a(i)b(ii,iii,v)c(iv).

Occurrence (Fynbos): 2 689 km² with 23% conserved and 10% lost; Occupancy: 57km² with 24% conserved and 16% lost. Fragmentation index: 1%.

Nature Reserves (34 records): 47% in nature reserves.

Habitat destruction (31 records): 97% extensive natural habitat, 3% corridors.

Alien Invasive Species (33 records): 48% *Pinus*, 36% none, 12% *Hakea*, 3% Fabaceae (chiefly alien *Acacia*).

Alien Density (33 records): 36% alien-free, 58% sparse, 6% abundant.

Cultivation & Utilization:

Picking (28 records): 93% no sign of picking, 7% lightly picked.

Cultivation Status: Plantings - 1 record (3%).

Atlassers Notes:

Only 1 adult but it is dead (ACU96101601);

Only 2 plants with signs of cutting of which 1 is dead (ACU96101701); Population Of 10 Plants Of Which 1 Is Dead (ACU96101702); Also 2 dead (AGRY2042103+4); Another 10 dead plants noted (WMS96100701); Only 1 dead plant (died 1 year ago) prior to 1987 there were many plants (WMS96100901); Numbers dropped over past 4 years (WMS96100902); Population does not exist any longer: there were seedlings (200 mm) in 1983 Feb. Burned again in 1987 Feb. After this second fire no seedlings or plants were found (WMS96100903);

This colony of about 300 plants is in a Dept of Forestry plantation of about 4 years old - we will try to persuade forestry to exclude this area from the plantation (DOA92111003);

About 500 plants in firebelt belonging to Eight Bells Hotel - this section of belt is not burnt and is cleared by clearing around the plants. Owner is aware that it is not common (DOA92111004); We also found 1 plant in a garden near 8 Bells Hotel - they had got seedlings from a nearby farm after a fire - will follow this up! (OUT97092004);

Confusing Species: One instance of confusion with *L. cuneiforme* when not in flower. Records of identification queries = 2. Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted, but the Riviersonderend plants are more gracile than the Langeberg plants.

Distribution: Add. Garcia's Pass is extinct

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Leucospermum grandiflorum (Salisb.) R.Br. 1808, 1810

Grey-leaf Fountain Pincushion

Luisiesboom

Other Common Names: Great-flower Leucadendrum, Rainbow Pincushion, *Luisiesbos*.

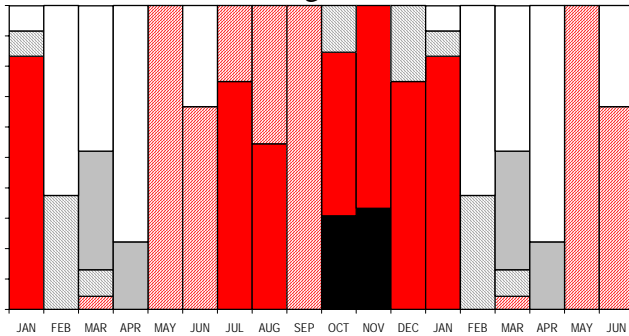
Other Scientific Names: *erosa* Licht ex Spreng. 1825, *villosa* Poir 1816, *villosiuscula* Banks ex R.Br. 1810.

101 Records

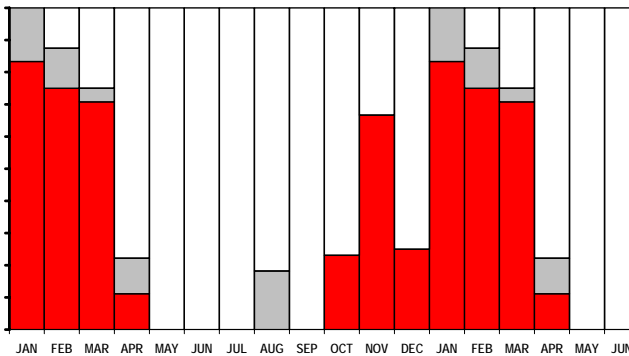
Population (96 records): 18% Common, 56% Frequent, 26% Rare.

Dispersion (88 records): 55% variable, 44% clumped, 1% evenly distributed.

Flowering (100 records with: Jan 12, Feb 8, Mar 23, Apr 9, May 3, Jun 3, Jul 4, Aug 11, Sep 7, Oct 13, Nov 3, Dec 4): Buds from May to Sep; Flowering from Oct to Jan and Jul to Aug; Peak Flowering from Oct to Nov; Over from Feb and Dec; Fruit from Mar to Apr; Nothing from Feb to Apr and Jun. Peak levels at 100% from Jul to Dec. Historically recorded as flowering from Jul to Nov.



Growth (101 records with: Jan 12, Feb 8, Mar 24, Apr 9, May 3, Jun 3, Jul 4, Aug 11, Sep 7, Oct 13, Nov 3, Dec 4): Much from Oct to Mar; Rare from Aug; None from Mar to Dec. Peak levels at 100% in Jan.



Seedlings (48 records): Absent in 92%: fewer seedlings than prefire adults in 2 cases. Seedlings found in Aug and Nov.

Fire Survival (6 records): 50% escaped fires in fire-safe areas, 33% survived by seedlings only, 17% eliminated from the area by fires.

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



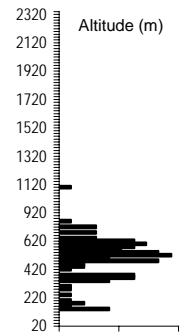
Height (101 records): 2% 0-0.2 m tall, 40% 0.2-1 m tall, 57% 1-2 m tall, 1.0% 2-5 m tall.

Pollinators (4 records): 75% birds, 25% flies.
Detailed Pollinators (2 records): Cape Sugarbird.

Habitat:

Distance to Ocean (92 records): 100% inland - further than 2 km from coast.

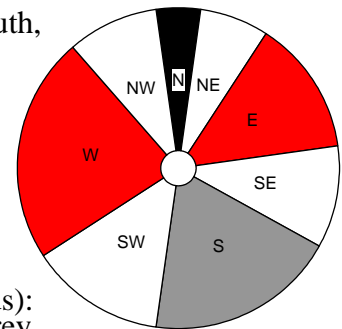
Altitude (92 records): 120 - 720 m; 360_{lq} - 500_{med} - 560_{uq} m.



Landform (90 records): 89% deep soil, 10% shallow soil, 1% riverine.

Slope (89 records): 66% gentle incline, 22% steep incline, 4% hill top, 4% platform, 2% valley bottom.

Aspect (84 records): 35% West, 30% South, 21% East, 13% North.



Soil Type (91 records): 55% loamy, 29% clayey, 15% sandy, 1% gravelly.

Soil Colour (91 records): 79% brown, 13% grey, 4% orange, 2% white, 1% yellow.

Geology (89 records): 93% granite, 4% sandstone, 1% shale, 1% silcrete or ferricrete.

Vegetation (91 records): 99% shrubland, 1% grassland.

Conservation Status and Threat:

Red Data List Status: Endangered A2c, B1a(i,ii)b(i,ii,iii,iv,v)+2a(i,ii)b(i,ii,iii,iv,v).

Occurrence (Fynbos): 221 km² with 10% conserved and 61% lost; **Occupancy:** 66 km² with 28% conserved and 25% lost. **Fragmentation index:** 12%.

Nature Reserves (92 records): 40% in nature reserves.

Habitat destruction (84 records): 86% extensive natural habitat, 10% islands, 2% road verges, 2% naturally linear habitats.

Alien Invasive Species (89 records):

43% Fabaceae (chiefly alien *Acacia*),
31% none, 16% *Pinus*, 9% *Hakea*,
1% annual alien grasses.

Alien Density (88 records): 32% alien-free,
51% sparse, 10% abundant, 3% dense,
3% impenetrable.

Cultivation & Utilization:

Picking (75 records): 97% no sign of picking,
3% lightly picked.

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

Atlassers Notes:

Seedheads were visited for seeds by Bully
Canary - tore heads apart (AGRY0010801);

Confusing Species: Easily confused with *L.*
gueinzii, but geographically distinct.

Variation and Taxonomy: No variation
noted..

Distribution: Add.

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***Leucospermum gueinzii* Meisn. 1856**
Kloof Fountain Pincushion

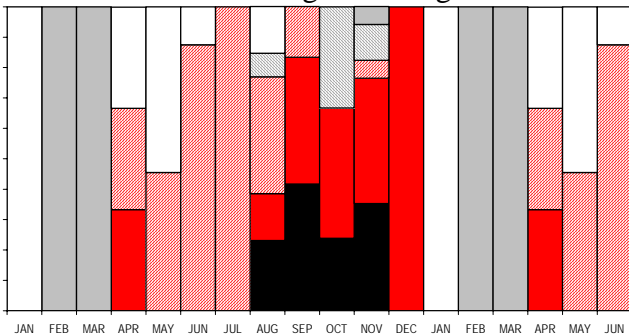
Other Common Names: None known.
Other Scientific Names: *None*.

101 Records

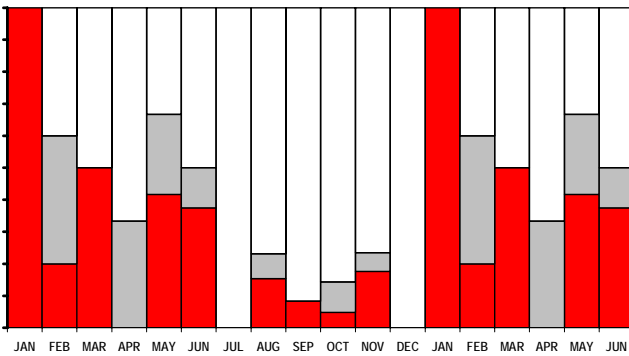
Population (100 records): 11% Common, 60% Frequent, 28% Rare, 1% Extinct.

Dispersion (80 records): 58% variable, 41% clumped, 1% evenly distributed.

Flowering (99 records with: Jan 1, Feb 5, Mar 2, Apr 3, May 11, Jun 8, Jul 4, Aug 13, Sep 12, Oct 21, Nov 17, Dec 2): Buds from Apr to Aug; Flowering from Apr and Sep to Dec; Peak Flowering from Aug to Nov; Over from Oct; Fruit from Feb to Mar; Nothing from Jan and Apr to May. Peak levels at 100% from Aug to Sep and Dec. Historically recorded as flowering from Aug to Dec.



Growth (100 records with: Jan 1, Feb 5, Mar 2, Apr 3, May 12, Jun 8, Jul 4, Aug 13, Sep 12, Oct 21, Nov 17, Dec 2): Much from Jan to Mar and May to Jun; Rare from Feb to May; None from Feb to Dec. Peak levels unreliable at 100% in Jan.



Seedlings (26 records): All without any seedlings present.

Fire Survival (10 records): 100% survived by seedlings only.

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



Height (100 records): 50% 0.2-1 m tall, 49% 1-2 m tall, 1% 2-5 m tall.

Pollinators (2 records): 100% birds.

Detailed Pollinators (2 records): Cape Sugarbird.

Habitat:

Distance to Ocean (97 records): 100% inland - further than 2 km from coast.

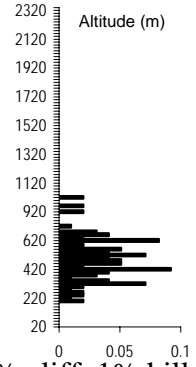
Altitude (97 records): 180 - 920 m; 380_{lq} - 480_{med} - 540_{uq} m.

Landform (97 records):

93% deep soil, 6% shallow soil, 1% rocky outcrops.

Slope (97 records): 51% gentle incline, 47% steep incline, 1% cliff, 1% hill top.

Aspect (96 records): 68% South, 17% West, 14% East, 1% North.



Soil Type (96 records):

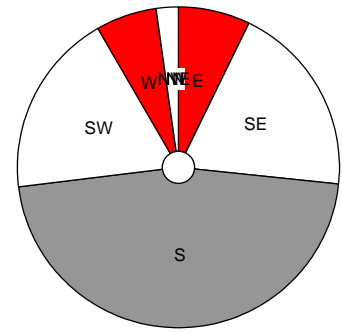
46% loamy, 31% clayey, 15% sandy, 8% gravelly.

Soil Colour (97 records):

86% brown, 9% orange, 4% grey, 1% yellow.

Geology (90 records): 37% shale, 34% sandstone, 29% granite.

Vegetation (97 records): 89% shrubland, 9% plantations, 1% thicket, 1% forest.



Conservation Status and Threat:

Red Data List Status: Endangered

B1a(ii)b(i,ii,iii,iv,v)+2a(ii)b(i,ii,iii,iv,v).

Occurrence (Fynbos): km² with % conserved and % lost; Occupancy: km² with % conserved and % lost. Fragmentation index: %.

Nature Reserves (97 records): 71% in nature reserves - well conserved.

Habitat destruction (96 records):

97% extensive natural habitat, 3% islands.

Alien Invasive Species (90 records):

40% *Pinus*, 39% none, 17% *Hakea*, 3% Myrtaceae, 1% Fabaceae (chiefly alien *Acacia*).

Alien Density (90 records): 39% alien-free, 46% sparse, 14% abundant, 1% dense.

Cultivation & Utilization:

Picking (52 records): 100% no sign of picking.
Cultivation Status: Plantings - 1 record (1.0%).

Atlassers Notes: None.

Confusing Species: Easily confused with *L. grandiflorum* but geographically distinct.
Records of identification queries = 5.
Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.
Records from Houwhoek not relocated.

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Leucospermum praemorsum (Meisn.) Phill. 1856, 1912

Nardouw Fountain Pincushion

Nardouwluisiesbos

Other Common Names: *Karkaaitjie, Kreupelhout, Luisiesboom, Luisiesbos, Tolbos.*

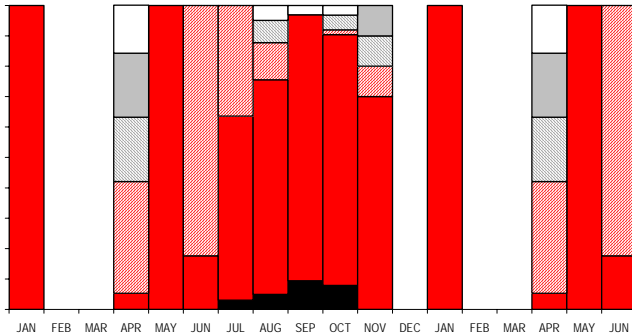
Other Scientific Names: *L. attenuatum* var. *praemorsum* Meisn. 1856.

233 Records

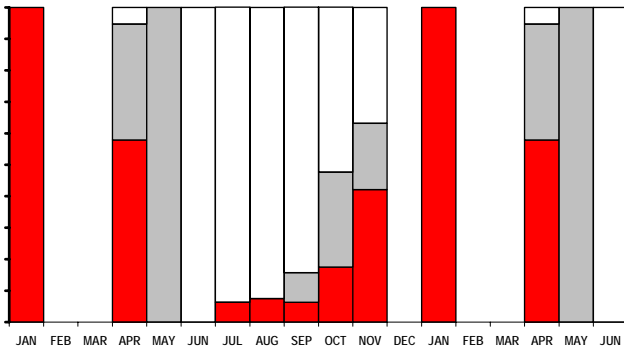
Population (233 records): 31% Common, 52% Frequent, 17% Rare.

Dispersion (210 records): 76% variable, 23% clumped, 1.0% evenly distributed.

Flowering (229 records with: Jan 2, Feb 0, Mar 0, Apr 19, May 2, Jun 17, Jul 33, Aug 41, Sep 32, Oct 63, Nov 20, Dec 0): Buds from Apr to Jul; Flowering from May to Jan; Peak Flowering not significant; Over from Apr; Fruit from Apr; Nothing not significant. Peak levels at 97% from Sep to Oct. Historically recorded as flowering erratically throughout the year with a peak from Jul to Dec.



Growth (226 records with: Jan 2, Feb 0, Mar 0, Apr 19, May 2, Jun 17, Jul 32, Aug 40, Sep 32, Oct 63, Nov 19, Dec 0): Much from Nov to Apr; Rare from Apr to May and Oct to Nov; None from Jun to Nov. Peak levels unreliable at 100% in Jan.



Seedlings (85 records): Absent in 98%; fewer seedlings than prefire adults in 1 case. Seedlings found in Aug.

Fire Survival (7 records): 43% survived by seedlings only, 43% escaped fires in fire-safe areas, 14% eliminated from the area by fires.

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



Height (232 records): 8% 0.2-1 m tall, 58% 1-2 m tall, 34% 2-5 m tall, 0.9% taller than 5 m.

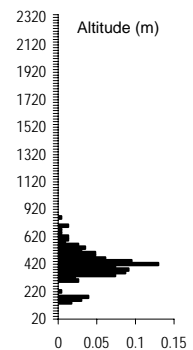
Pollinators (13 records): 69% birds, 15% bees or wasps, 15% beetles.

Detailed Pollinators (9 records): Cape Sugarbird (4), Malachite Sunbird (3), Honey Bee, Cape Weaver.

Habitat:

Distance to Ocean (231 records): 100% inland - further than 2 km from coast.

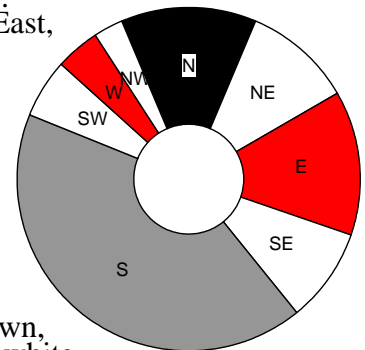
Altitude (231 records): 120 - 760 m; 340 *lq* - 400 *med* - 420 *uq*m.



Landform (231 records): 97% deep soil, 2% shallow soil, 0.4% rocky outcrops.

Slope (231 records): 73% gentle incline, 11% platform, 8% dunes, 6% hill top, 1% steep incline, 0.4% valley bottom.

Aspect (186 records): 49% South, 23% East, 19% North, 8% West.



Soil Type (231 records): 98% sandy, 0.9% loamy, 0.9% rocky, 0.4% gravelly.

Soil Colour (228 records): 28% brown, 25% yellow, 17% white, 12% red, 10% grey, 7% orange.

Geology (230 records): 88% sandstone, 10% Tertiary sands, 2% silcrete or ferricrete.

Vegetation (230 records): 99% shrubland, 0.9% agricultural lands.

Conservation Status and Threat:

Red Data List Status: Vulnerable A2c.

Occurrence (Fynbos): 1 430 km² with 0% conserved and 20% lost; Occupancy: 243 km² with 0% conserved and 31% lost. Fragmentation index: 2%.

Nature Reserves (231 records): 0% in nature reserves - unconserved.

Habitat destruction (228 records): 54% extensive natural habitat, 43% islands, 1% naturally fragmented habitats, 0.9% road verges, 0.4% naturally linear habitats.

Alien Invasive Species (226 records):

73% none, 20% Fabaceae (chiefly alien *Acacia*), 7% *Pinus*, 0.4% Myrtaceae.

Alien Density (225 records): 73% alien-free, 26% sparse, 1% abundant.

Cultivation & Utilization:

Picking (143 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Witch's Broom Infestation: 4 records (2%).

Atlassers Notes:

A giant plant 11 m across (AWA98083104); Sprawling - some 6 m diameter (WIJ93082101); Some sprawling old trees similar to those seen in NW Namaqualand, younger trees are upright (WIJ94041203);

Yellow form (DOAY0102204); Yellow variety also found (OUTY0092406);

Some young - most of these in dune deflations and windblown areas where seeds are likely to be exposed and no competition from adults (AGRY3102136); Plants appear to be recruiting without fire as there are variously aged young plants in the population and there has not been a fire in the area for over twenty yrs (NAHY1052701);

Invading Rooibos fields! Lots of young with Witches Broom-like growth (AGR97040305); Most abundant in ploughed fields - seems to like it! (AGRY0102826); Seems resilient - coming up in fields (NAHY0050604);

Plants and flowers appear smaller than this species further south on the Nadouwsberg (NAHY1052701); Many have flat flowerheads (WIJ93082201);

Some 2/3 of plants dead (AGRY3102131); 1/2 of plants dead (AGRY3102136); About 50 plants some dead (WIJ93082101); Several hundred plants in this site - none in neighbouring areas. A healthier population than those near Hondeklip Bay (WIJ93082201);

Confined to dune tops (AGRY3102131, 34, 36, 40-43); On dune ridges (AGRY3102201); On a dune with very sparse vegetation on it - local farmer says several other groups exist always on dunes (WIJ93082101);

known to grow elsewhere in these hills SW of Komaggas - a healthier population than these near Hondeklip Bay. They grow on sparsely covered sand dunes on side of mountain, but not at all on nearby rocky areas that are well covered with vegetation (WIJ93082201);

Dense, woody 'cups' of dead leaves - Witches Broom? (AGR95070605); Lots of young with Witches Broom-like growth (AGR97040305);

Confusing Species: None noted. Records of identification queries = 7.

Variation and Taxonomy: Older plants tend to sprawl more than younger plants, which might account for some populations having been noted as particularly erect or sprawling. Yellow colour forms were noted. First described in 1844 by Buek., but invalidly, and then described as a variety of *L. cuneiforme* by Meisner.

Distribution: Add.

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Leucospermum reflexum Buek. ex Meisn. 1856

Rocket Pincushion

Perdekop

Other Common Names: Cedarberg Pincushion, Rocket, Sky Rocket Pincushion, *Raketspeldekussing*.

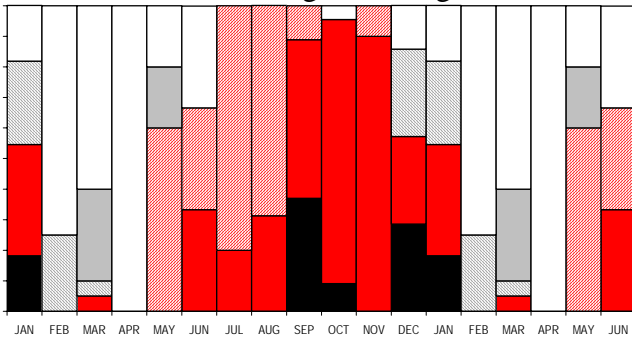
Other Scientific Names: *None*.

140 Records

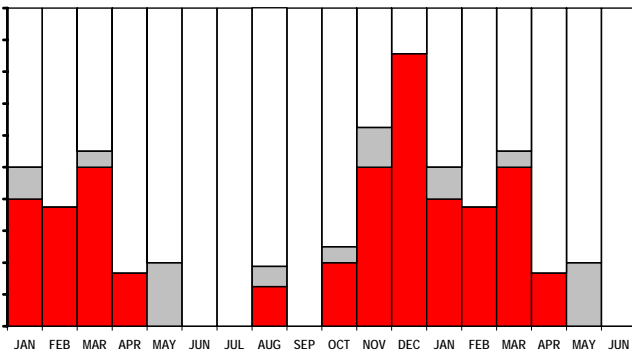
Population (57 records): 9% Common, 67% Frequent, 25% Rare.

Dispersion (51 records): 61% clumped, 31% variable, 6% widespread, 2% evenly distributed.

Flowering (140 records with: Jan 11, Feb 8, Mar 20, Apr 6, May 5, Jun 3, Jul 5, Aug 16, Sep 27, Oct 22, Nov 10, Dec 7): Buds from May to Aug; Flowering from Jun to Jan; Peak Flowering from Sep and Dec; Over from Dec to Feb; Fruit from Mar to May; Nothing from Feb to Jun. Peak levels at 100% from Jun to Sep and Nov. Historically recorded as flowering from Aug to Dec.



Growth (132 records with: Jan 10, Feb 8, Mar 20, Apr 6, May 5, Jun 3, Jul 4, Aug 16, Sep 25, Oct 20, Nov 8, Dec 7): Much from Oct to Mar; Rare from May; None from Jan to Nov. Peak levels at 86% in Dec.



Seedlings (52 records): Absent in 88%; fewer seedlings than prefire adults in 2 cases, and more in 1 case. Seedlings found in Jan and Aug (2).

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

Age to first flowering: First flowers recorded at 2 years, 50% estimated at 5-6 years, and 100% recorded at 7 years.



Height (138 records): 7% 0.2-1 m tall, 57% 1-2 m tall, 35% 2-5 m tall, 0.7% taller than 5 m.

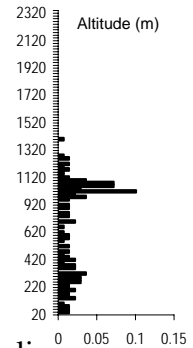
Pollinators (9 records): 89% birds, 11% bees or wasps.

Detailed Pollinators (8 records): Cape Sugarbird.

Habitat:

Distance to Ocean (57 records): 100% inland - further than 2 km from coast.

Altitude (57 records): 460 - 1300 m; 900 *lq* - 940 *med* - 980 *uq* m.



Landform (57 records): 60% deep soil, 28% shallow soil, 5% riverine, 5% swamp, 2% rocky outcrops.

Slope (57 records): 60% gentle incline, 21% platform, 11% steep incline, 9% valley bottom.

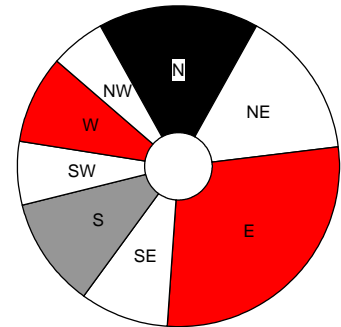
Aspect (48 records): 63% East, 33% North, 2% South, 2% West.

Soil Type (57 records): 82% sandy, 9% loamy, 5% rocky, 4% gravelly.

Soil Colour (56 records): 46% grey, 23% brown, 23% white, 5% yellow, 2% orange.

Geology (57 records): 98% sandstone, 2% shale.

Vegetation (57 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Near Threatened D2(i). Occurrence (Fynbos): 232 km² with 45% conserved and 3% lost; Occupancy: 67 km² with 61% conserved and 3% lost. Fragmentation index: 27%.

Nature Reserves (57 records): 79% in nature reserves - well conserved.

Habitat destruction (53 records): 79% extensive natural habitat, 9% naturally linear habitats, 8% islands, 4% naturally fragmented habitats.

Alien Invasive Species (50 records): 88% none, 6% Fabaceae (chiefly alien *Acacia*), 6% *Pinus*.

Alien Density (50 records): 88% alien-free, 10% sparse, 2% abundant.

Cultivation & Utilization:

Picking (95 records): 95% no sign of picking, 4% lightly picked, 1% severely picked.

Cultivation Status: Plantings - 80 records (57%), Escapes - 3 records (2%).

Atlasers Notes:

Many adults burnt - many seedlings but only seem to have germinated in very wet areas (NGW94081101);

About 15 plants and some dead (AGRY5122908); Some dead from clearing and disturbance of roots for Rooibos tea

plantations and a few cut off and removed (for firewood?) (AGRY5122908);

Confusing Species: Non flowering young plants have been mistaken for *L. calligerum* and *L. catherinae*.

Records of identification queries = 6.

Records of corrected identification queries = 2.

Variation and Taxonomy: A pale yellow form is known from Heuningylei and extensively grown in cultivation as var. *lutea*, but this does not appear to have been formally described as a variety.

Distribution: Add.

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Leucospermum arenarium Rycroft 1959
Redelinghuis Pincushion

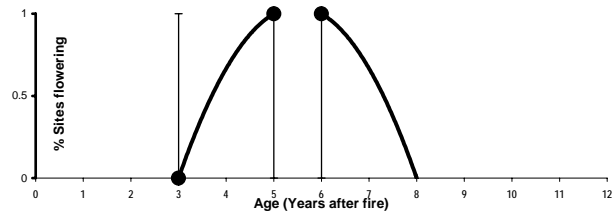
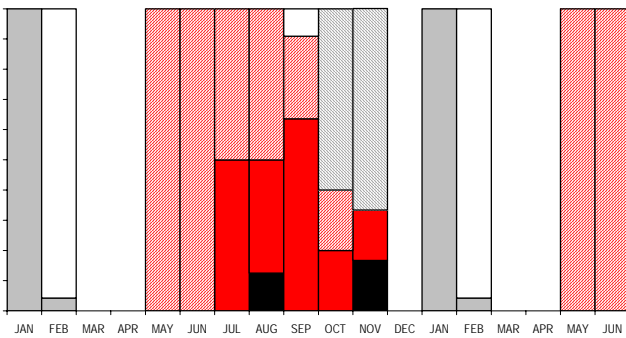
Other Common Names: None known.
Other Scientific Names: *None*.

62 Records

Population (61 records): 23% Common, 61% Frequent, 16% Rare.

Dispersion (55 records): 80% variable, 15% clumped, 5% widespread.

Flowering (62 records with: Jan 1, Feb 24, Mar 0, Apr 0, May 4, Jun 1, Jul 2, Aug 8, Sep 11, Oct 5, Nov 6, Dec 0): Buds from May to Oct; Flowering from Jul to Oct; Peak Flowering not significant; Over from Oct to Nov; Fruit from Jan; Nothing from Feb. Peak levels unreliable at 100% from May to Nov. Historically recorded as flowering from Jul to Oct.



Height (62 records): 8% 0-0.2 m tall, 90% 0.2-1 m tall, 2% 1-2 m tall.

Pollinators (3 records): 33% birds, 33% bees or wasps, 33% beetles.

Detailed Pollinators (2 records): Southern Double-collared Sunbird, Honey Bee.

Habitat:

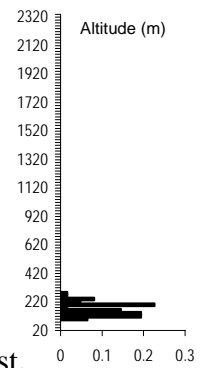
Distance to Ocean (62 records): 100% inland - further than 2 km from coast.

Altitude (62 records): 80 - 280 m; 100_{lq} - 140_{med} - 140_{uq}m.

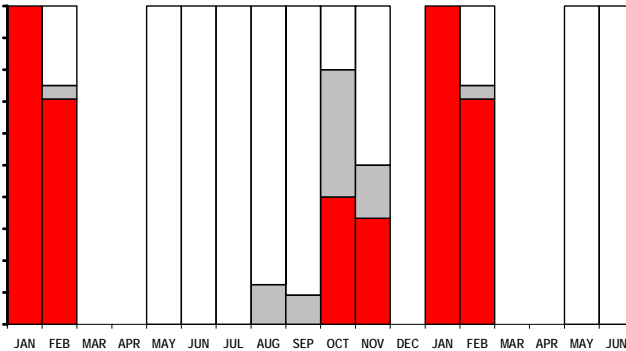
Landform (62 records): 100% deep soil.

Slope (62 records): 56% gentle incline, 35% platform, 6% valley bottom, 2% dunes.

Aspect (49 records): 37% North, 33% East, 21% South, 9% West.



Growth (62 records with: Jan 1, Feb 24, Mar 0, Apr 0, May 4, Jun 1, Jul 2, Aug 8, Sep 11, Oct 5, Nov 6, Dec 0): Much from Oct to Feb; Rare from Oct; None from Feb to Nov. Peak levels unreliable at 100% in Jan.

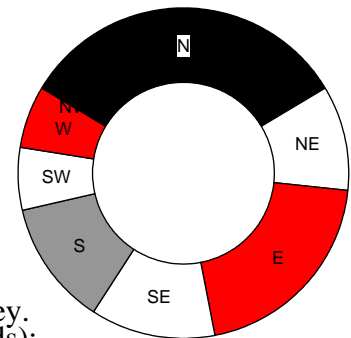


Soil Type (62 records): 98% sandy, 2% loamy.

Soil Colour (61 records): 33% yellow, 18% brown, 16% white, 13% orange, 11% red, 8% grey.

Geology (60 records): 63% Tertiary sands, 37% sandstone.

Vegetation (62 records): 97% shrubland, 3% agricultural lands.



Conservation Status and Threat:

Red Data List Status: Critically Endangered A4c.

Occurrence (Fynbos): 159 km² with 0% conserved and 48% lost; Occupancy: 75 km² with 0% conserved and 52% lost.

Fragmentation index: 47%.

Nature Reserves (62 records): 0% in nature reserves - unconserved.

Habitat destruction (62 records): 53% extensive natural habitat, 39% islands, 5% road verges, 2% corridors, 2% naturally fragmented habitats.

Alien Invasive Species (61 records): 62% Fabaceae (chiefly alien *Acacia*), 36% none, 2% Myrtaceae.

Alien Density (61 records): 36% alien-free, 61% sparse, 3% abundant.

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

Fire Survival (2 records): 50% survived by seedlings only, 50% resprouted from underground boles.

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

Cultivation & Utilization:

Picking (57 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.
Witch's Broom Infestation: 1 record (2%).

Atlassers Notes:

Bushes up to 2 m in diam. (NAH92081503);
Strip farming in area potentially hazardous for
the species although it appears to enjoy
cleared areas and expands into them readily
(NAH92081501);
Appears to reach maturity quickly after fire -
the profusion of flowers on most of the
bushes would support this (NGW96110602);
Faciation present on plants – coded as Witches
Broom (LYM96050107);

Confusing Species: On instance of
misidentification with *L.*
hypophyllocarpodendron subsp.
canaliculatum.

Records of identification queries = 2.

Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum hypophyllocarpodendron subsp. *hypophyllocarpodendron* (L.)

Druce 1753, 1914

Green-snake-stem Pincushion

Groenslangbossie

Other Common Names: Hypophyllous
Leucadendrum, Snake-stem Pincushion,
Luisie, *Slangbossie*.

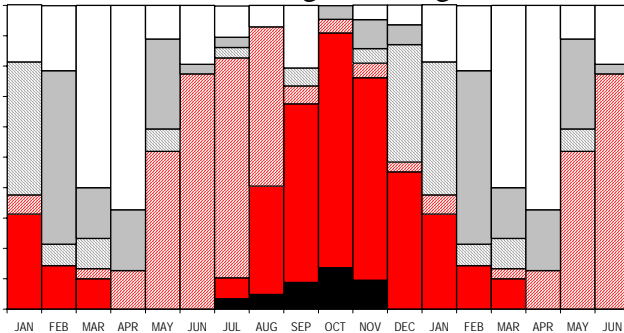
Other Scientific Names: *hypophyllum* (Thunb)
1781.

363 Records

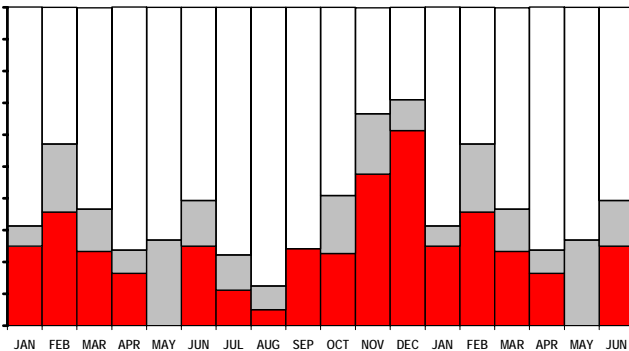
Population (360 records): 7% Common,
54% Frequent, 39% Rare.

Dispersion (297 records): 63% variable,
33% clumped, 2% widespread, 2% evenly
distributed.

Flowering (352 records with: Jan 16, Feb 14,
Mar 30, Apr 55, May 27, Jun 31, Jul 29, Aug
42, Sep 34, Oct 22, Nov 21, Dec 31): Buds
from May to Aug; Flowering from Aug to
Jan; Peak Flowering not significant; Over
from Dec to Jan; Fruit from Feb and Apr to
May; Nothing from Feb to Apr and Sep.
Peak levels at 95% in Oct. Historically
recorded as flowering from Aug to Jan.



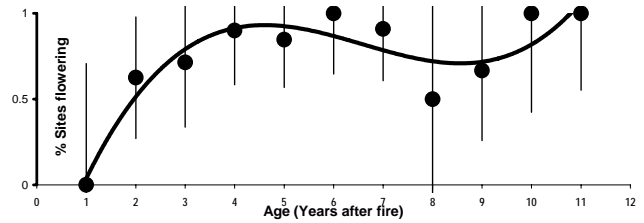
Growth (343 records with: Jan 16, Feb 14, Mar
30, Apr 55, May 26, Jun 28, Jul 27, Aug 40,
Sep 33, Oct 22, Nov 21, Dec 31): Much from
Sep to Mar and Jun; Rare from Feb and May;
None from all year round. Peak levels at
71% in Dec.



Seedlings (136 records): Absent in 97%: fewer
seedlings than prefire adults in 1 case, and
more in 1 case. Seedlings found in Apr and
Nov.

Fire Survival (38 records): 76% resprouted
from underground boles, 18% escaped fires
in fire-safe areas, 3% survived by seedlings
only, 3% resprouted from aerial trunks.

Age to first flowering: First flowers recorded
at 2 years, 50% estimated at 2 years, and
100% recorded at 6 years.



Height (352 records): 98% 0-0.2 m tall,
2% 0.2-1 m tall.

Pollinators (2 records): 50% beetles,
50% other.

Detailed Pollinators (2 records): Monkey
Beetle, Earwig.

Habitat:

Distance to Ocean (356
records): 59% inland - further
than 2 km from coast.

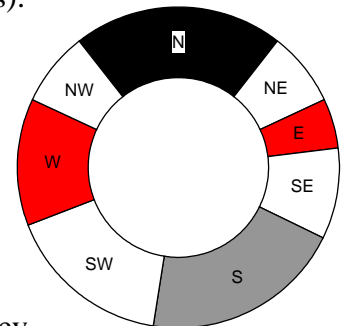
Altitude (356 records): 20 - 420
m; 40_{lq} - 80_{med} - 120_{uq}m.

Landform (346 records):
90% deep soil, 6% shallow
soil, 3% rocky outcrops,
0.3% riverine, 0.3% swamp,
0.3% lake edge.

Slope (346 records): 55% gentle
incline, 30% platform, 5% hill top, 5% valley
bottom, 4% steep incline, 0.6% dunes.

Aspect (252 records):

33% South,
29% North,
24% West,
14% East.



Soil Type (346
records):
95% sandy,
5% loamy,
0.6% gravelly.

Soil Colour (346
records): 62% grey,
27% white, 6% brown, 3% yellow,
1% black, 0.6% orange, 0.3% red.

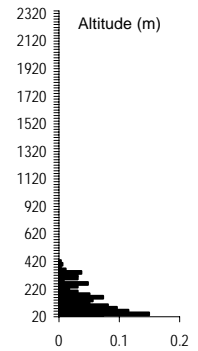
Geology (333 records): 77% sandstone,
17% Tertiary sands, 5% limestone,
0.9% shale, 0.3% conglomerate,
0.3% silcrete or ferricrete.

Vegetation (352 records): 98% shrubland,
1% plantations, 0.3% grassland,
0.3% suburban.

Conservation Status and Threat:

Red Data List Status: Vulnerable A2c.

Occurrence (Fynbos): 5 233 km² with 27%
conserved and 37% lost; Occupancy:
224 km² with 43% conserved and 20% lost.
Fragmentation index: 2%.



Nature Reserves (356 records): 65% in nature reserves - well conserved.

Habitat destruction (339 records):
92% extensive natural habitat, 4% islands,
1% naturally linear habitats, 0.9% road
verges, 0.6% corridors, 0.3% patches,
0.3% naturally fragmented habitats.

Alien Invasive Species (336 records):
48% Fabaceae (chiefly alien *Acacia*),
34% none, 16% *Pinus*, 2% Myrtaceae,
0.3% *Hakea*.

Alien Density (335 records): 34% alien-free,
49% sparse, 12% abundant, 5% dense.

Cultivation & Utilization:

Picking (257 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

A small population of about 6 spreading mature
plants with buds small and medium to open
full flowers, bright yellow and sweetly
scented (like Frangipani!) seemed to be
crawling with little insects with "pincers" on
back (BAW96072901); Flowers have a very
heavy sweet smell (PGD93101002);

Specimens glabrous no hairs at all - therefore
subspecies *hypophyllocarpodendron* under
present classification (AGRY0072706,
NAH96081103, NGFY1101802,
SMRY0072702+5, VDW97021701);
Identification queried: Atlassed as subspecies
hypophyllocarpodendron - but according to

Rourke is *canaliculatum* - but is hairless and
thus not this subspecies as per diagnostics!
(VDW97021701);

Plants covered with Dodder *Cassytha*
(JAT95120801);

Some plants have been dug out! Cuttings being
propagated for planting into Rondevlei
Nature Reserve about 150 m away
(DAG95020601);

Confusing Species: The hairless form at
Hermon to Saron posed problems as it was
not clear if it should be treated as
canaliculatum - a logical choice, or strictly
as per diagnostics as the type subspecies. A
single confusion with *L. prostratum*, which
has totally different leaves. The latter
approach was adopted here.

Records of identification queries = 14.

Records of corrected identification queries = 9.

Variation and Taxonomy: The population at
Hermon to Saron is hairless, but this is
probably a secondary loss and should
perhaps be considered a hairless form of
subspecies *canaliculatum*.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum hypophyllocarpodendron subsp. *canaliculatum* (Buek ex Meisn.)

Rourke 1856, 1972

Grey-snake-stem Pincushion

Gruisslangbossie

Other Common Names: *Platluisiebos*.

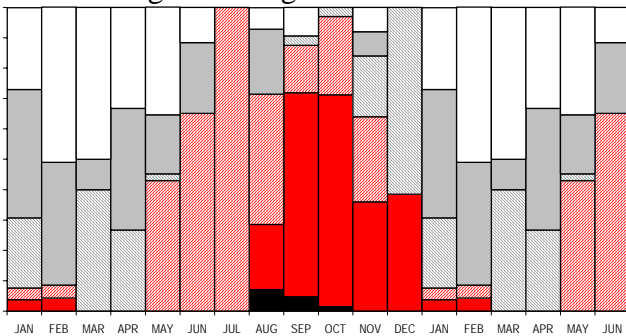
Other Scientific Names: *canaliculatum* Buek. 1843, *hypophyllum* var. *angustifolium* Klotzsch in Krauss 1845, *hypophyllum* var. *caanaliculatum* Beuk. ex Meisn. 1856, *hypophyllum* var. *stenophyllum* Meisn. 1856.

432 Records

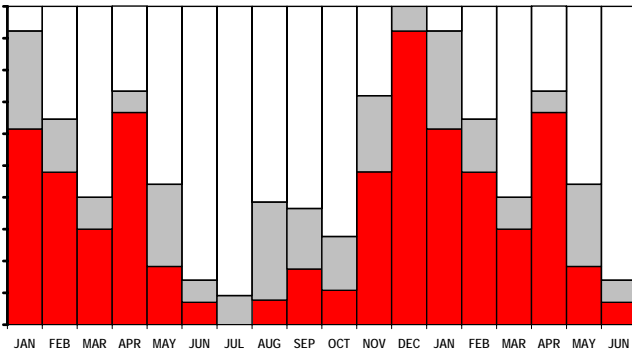
Population (429 records): 0.2% Abundant, 20% Common, 52% Frequent, 28% Rare, 0.2% Extinct.

Dispersion (372 records): 80% variable, 16% clumped, 4% widespread, 0.5% evenly distributed.

Flowering (428 records with: Jan 26, Feb 47, Mar 10, Apr 15, May 93, Jun 43, Jul 12, Aug 14, Sep 64, Oct 66, Nov 25, Dec 13): Buds from May to Aug and Oct to Nov; Flowering from Aug to Dec; Peak Flowering not significant; Over from Nov to Jan and Mar to Apr; Fruit from Jan to Feb, Apr, June and Aug; Nothing from Jan to May. Peak levels at 100% in Oct. Historically recorded as flowering from Aug to Jan.



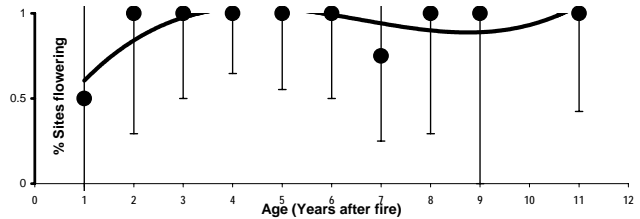
Growth (425 records with: Jan 26, Feb 48, Mar 10, Apr 15, May 93, Jun 43, Jul 11, Aug 13, Sep 63, Oct 65, Nov 25, Dec 13): Much from Nov to Apr; Rare from Jan, May, Aug and Nov; None from Feb to Nov. Peak levels at 100% in Dec.



Seedlings (166 records): Absent in 98%; fewer seedlings than prefire adults in 2 cases. Seedlings found in Jul and Aug.

Fire Survival (36 records): 97% resprouted from underground boles, 3% escaped fires in fire-safe areas.

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



Height (430 records): 76% 0-0.2 m tall, 24% 0.2-1 m tall, 0.2% 1-2 m tall.

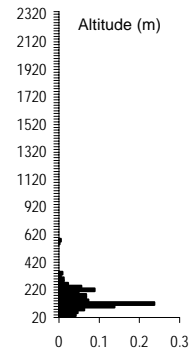
Pollinators (1 record): 100% beetles.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (427 records): 100% inland - further than 2 km from coast.

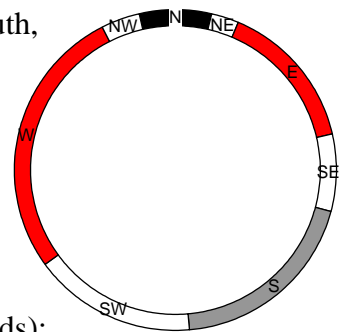
Altitude (427 records): 20 - 580 m; 80_{lq} - 120_{med} - 120_{uq}m.



Landform (427 records): 100% deep soil, 0.2% swamp, 0.2% shallow soil.

Slope (422 records): 60% platform, 26% gentle incline, 9% valley bottom, 3% dunes, 2% hill top, 0.2% steep incline.

Aspect (211 records): 38% West, 31% South, 20% East, 11% North.



Soil Type (426 records): 95% sandy, 4% loamy, 0.5% clayey, 0.2% gravelly, 0.2% rocky.

Soil Colour (424 records): 38% grey, 29% white, 17% brown, 8% yellow, 7% orange, 1% red.

Geology (407 records): 81% Tertiary sands, 12% sandstone, 3% shale, 2% silcrete or ferricrete, 1.0% granite, 0.7% conglomerate, 0.5% limestone.

Vegetation (427 records): 98% shrubland, 0.9% agricultural lands, 0.7% suburban, 0.5% thicket.

Conservation Status and Threat:

Red Data List Status: Vulnerable A2c. Occurrence (Fynbos): 4 365 km² with 12% conserved and 40% lost; Occupancy:

426 km² with 4% conserved and 40% lost.
Fragmentation index: 5%.

Nature Reserves (427 records): 19% in nature reserves - inadequately conserved.

Habitat destruction (424 records):
66% extensive natural habitat, 23% islands, 5% road verges, 4% naturally linear habitats, 0.7% corridors, 0.5% patches, 0.5% naturally fragmented habitats.

Alien Invasive Species (421 records):
84% Fabaceae (chiefly alien *Acacia*), 8% none, 4% *Hakea*, 3% *Pinus*, 1% Myrtaceae, 0.2% annual alien grasses.

Alien Density (420 records): 8% alien-free, 42% sparse, 26% abundant, 20% dense, 4% impenetrable.

Cultivation & Utilization:

Picking (350 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Witch's Broom Infestation: 15 records (3%).

Atlassers Notes:

One individual plant was 5 m in diameter! (AKS92101401); Larger plants are 3 m across (AKS94083101);

Second flowering this season (VCH99091706);

Young plants grow upwards then after a fire resprouts from base and creeps (AGR91092902, AGR91121203); Had burnt round the outside but centre of plants unburnt (SMRY0101907);

These plants had 3x bigger florets than in the previous plot (AGR91092902); Exceptionally big flowerheads (LYM95090303); Leaves were 6-12 mm wide by 100mm long and not obviously canaliculate (WIJ95042001);

Grazed (AGR96100206);

More dead plants seen than living - perhaps the dry summer? (AGR99091703);

Good regeneration in some disturbed areas (AGR92012301);

Collected fasciated material for Witches Broom test - no mites found (AGR96051010);
Curious growth 'defect' On Several Plants - a Woody Proliferation Of Short Flat Leaves -

Very Hairy (AGR92012303); Congested Witches Broom-type growth on several plants (SMR97051401);

Confusing Species: Mostly confused with the type subspecies which is hairless on stems and leaves, although in subsp. *canaliculata* the leaves may lose their hairs when mature. Also intermediates and confusion with some forms of *L. tomentosum*, especially in post-fire plants with erect stems that only creep when too heavy to be supported, or only after a few years of growth.

Records of identification queries = 48.

Records of corrected identification queries = 18.

Variation and Taxonomy: Buek did not describe *L. canaliculatum* adequately in 1843, so it is *nomen nudum*.

Rourke informally recognized four forms of this species, of which 3 were assigned to this subspecies. These are:

- Pubescent stems with grey-pubescent, linear-canaliculate leaves;
- Pubescent stems becoming hairless, with grey-pubescent becoming hairless, linear-canaliculate leaves; and,
- Pubescent stems with pubescent, oblanceolate to narrowly-cuneate leaves.

Rourke noted that these occurred in constant patches, but tended to merge into one another and that all three forms grew in close proximity at Katsenberg. Atlassers suggested that at Riverlands-Dassenberg the linear forms grew preferentially on granite soils and oblanceolate forms on deep sand, with intermediates in shallower sand. This should be studied more carefully.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum parile (Salisb. ex Kn.) Sweet 1809, 1912
Malmesbury Pincushion
Malmesburyluisie

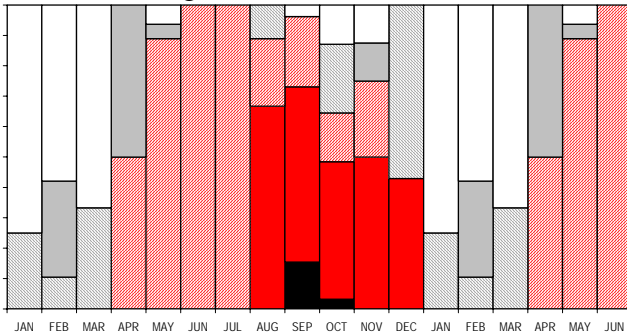
Other Common Names: Matched
 Leucadendrum.
Other Scientific Names: *dregei* Phill 1910.

197 Records

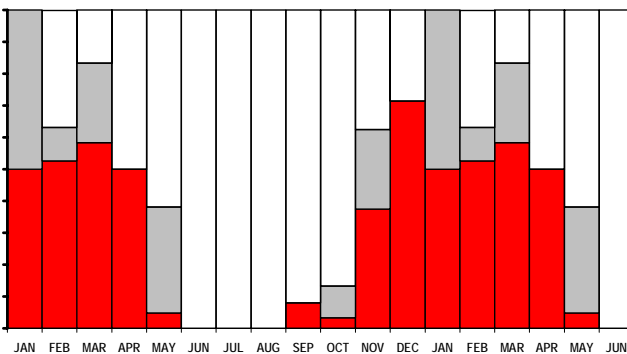
Population (194 records): 0.5% Abundant, 37% Common, 48% Frequent, 14% Rare.

Dispersion (175 records): 79% variable, 14% clumped, 5% widespread, 2% evenly distributed.

Flowering (196 records with: Jan 4, Feb 19, Mar 12, Apr 2, May 63, Jun 8, Jul 7, Aug 9, Sep 26, Oct 31, Nov 8, Dec 7): Buds from Apr to Sep and Nov; Flowering from Aug to Dec; Peak Flowering not significant; Over from Dec to Jan, Mar and Oct; Fruit from Feb and Apr; Nothing from Jan to Mar. Peak levels at 100% in Aug. Historically recorded as flowering from Jul to Nov.



Growth (193 records with: Jan 4, Feb 19, Mar 12, Apr 2, May 63, Jun 8, Jul 7, Aug 8, Sep 25, Oct 30, Nov 8, Dec 7): Much from Nov to Apr; Rare from Jan, Mar, May and Nov; None from Feb and Apr to Dec. Peak levels at 100% in Jan.



Seedlings (91 records): Absent in 98%; fewer seedlings than prefire adults in 1 case. Seedlings found in Dec.

Fire Survival (15 records): 80% survived by seedlings only, 13% escaped fires in fire-safe areas, 7% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 2 years, 50% estimated at 3 years, and 100% recorded at 6 years.



Height (196 records): 0.5% 0-0.2 m tall, 44% 0.2-1 m tall, 55% 1-2 m tall.

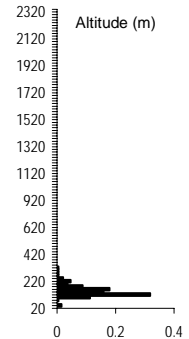
Pollinators (7 records): 43% butterflies or moths, 29% bees or wasps, 29% beetles.

Detailed Pollinators (5 records): Painted Lady Butterfly (3), Honey Bee, Carpenter Bee.

Habitat:

Distance to Ocean (192 records): 100% inland - further than 2 km from coast.

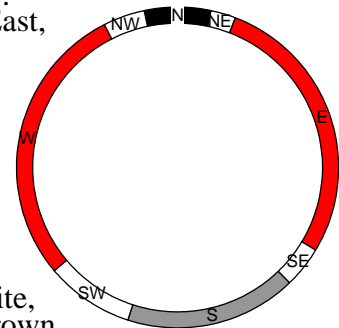
Altitude (192 records): 60 - 320 m; 100_{lq} - 120_{med} - 120_{uq}m.



Landform (192 records): 99% deep soil, 1% swamp.

Slope (189 records): 57% platform, 26% gentle incline, 9% valley bottom, 5% hill top, 2% dunes.

Aspect (121 records): 36% West, 31% East, 23% South, 10% North.



Soil Type (191 records): 95% sandy, 4% loamy, 1% clayey.

Soil Colour (188 records): 23% white, 22% grey, 20% brown, 17% yellow, 13% orange, 5% red.

Geology (185 records): 82% Tertiary sands, 11% sandstone, 3% shale, 3% silcrete or ferricrete, 2% granite.

Vegetation (192 records): 93% shrubland, 6% agricultural lands, 0.5% grassland, 0.5% plantations.

Conservation Status and Threat:

Red Data List Status: Endangered A2c+4c.

Occurrence (Fynbos): 231 km² with 7% conserved and 46% lost; Occupancy: 157 km² with 11% conserved and 50% lost. Fragmentation index: 40%.

Nature Reserves (192 records): 16% in nature reserves - inadequately conserved.

Habitat destruction (187 records): 55% extensive natural habitat, 24% islands, 17% road verges, 4% naturally linear habitats, 1% corridors, 0.5% naturally fragmented habitats.

Alien Invasive Species (186 records): 91% Fabaceae (chiefly alien *Acacia*),

4% none, 2% *Pinus*, 2% annual alien grasses,
1% Myrtaceae.

Alien Density (186 records): 4% alien-free,
40% sparse, 34% abundant, 19% dense,
3% impenetrable.

Cultivation & Utilization:

Picking (157 records): 100% no sign of
picking.

Cultivation Status: Plantings - 3 records (2%).

Witch's Broom Infestation: 1 record (0.5%).

Atlassers Notes:

Some plants grazed! (ASP95030204); Young
shoots much browsed - cattle present
(SMR97112602);

Half as many again are dead (AGRY0091402);

Lots of dead senescent plants in patches of
very old veld (>15 years) (AGRY4102705);
Lots of old plants died in flower last year -
no small plants but big plants many coming

into flower for their first time!
(APE93060504);

Collected fasciated material for Witches Broom
test – no mites found (AGR96051010);

Confusing Species: Was mistaken for *L.*
rodolentum when not in flower, no problems
when in flower as the red pointed bracts are
distinctive.

Records of identification queries = 12.

Records of corrected identification queries = 6.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum rodolentum (Salisb. ex Kn.) Rourke 1809, 1969

Sandveld Pincushion

Sandveldluisiesbos

Other Common Names: Rose-scented Leucadendrum, Rose-scented Pincushion, *Beesbos*, *Klipboom*, *Knopbos*, *Kreupelbos*, *Sandluisie*, *Sandluisie*, *Vaalluisbos*.

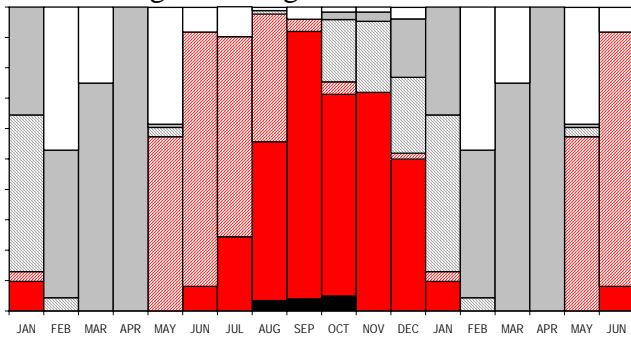
Other Scientific Names: *candicans* (Andr) 1803.

830 Records

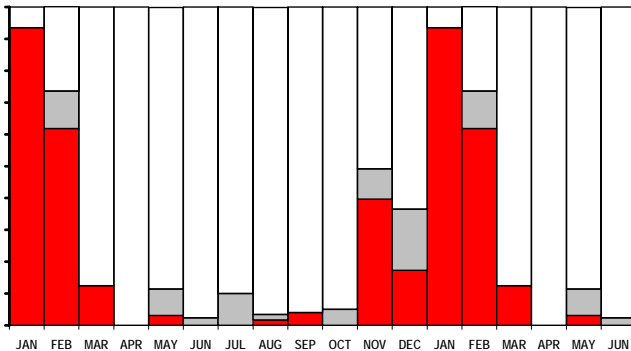
Population (826 records): 0.6% Abundant, 31% Common, 52% Frequent, 17% Rare.

Dispersion (763 records): 78% variable, 17% clumped, 5% widespread, 0.4% evenly distributed.

Flowering (820 records with: Jan 31, Feb 68, Mar 8, Apr 1, May 96, Jun 86, Jul 41, Aug 176, Sep 75, Oct 122, Nov 64, Dec 52): Buds from May to Aug; Flowering from Jul to Dec; Peak Flowering not significant; Over from Oct to Jan; Fruit from Jan to Apr; Nothing from Feb to May. Peak levels at 99% in Aug. Historically recorded as flowering from Aug to Nov.



Growth (813 records with: Jan 31, Feb 68, Mar 8, Apr 1, May 96, Jun 87, Jul 40, Aug 172, Sep 75, Oct 120, Nov 63, Dec 52): Much from Jan to Feb and Nov; Rare from Dec; None from Feb to Dec. Peak levels at 94% in Jan.



Seedlings (324 records): Absent in 98%; fewer seedlings than prefire adults in 1 case, and more in 2 cases. Seedlings found in Jun, Aug and Oct.

Fire Survival (14 records): 86% survived by seedlings only, 14% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 3 years, 50% estimated at 4 years, and 100% recorded at 6 years.



Height (821 records): 0.7% 0-0.2 m tall, 12% 0.2-1 m tall, 78% 1-2 m tall, 9% 2-5 m tall, 0.4% taller than 5 m.

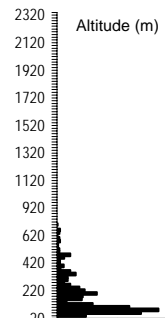
Pollinators (27 records): 33% bees or wasps, 26% flies, 22% beetles, 11% birds, 7% butterflies or moths.

Detailed Pollinators (11 records): Honey Bee (4), Monkey Beetle (3), Skipper Butterfly, Orange-breasted Sunbird, Cape Weaver, Cape Sugarbird.

Habitat:

Distance to Ocean (824 records): 100% inland - further than 2 km from coast.

Altitude (825 records): 20 - 700 m; 60_{lq} - 80_{med} - 100_{uq}m.

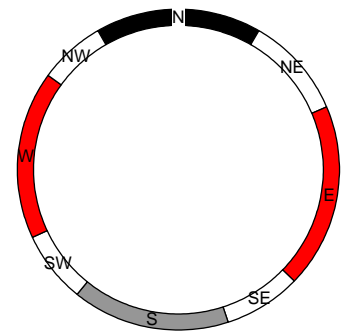


Landform (823 records): 100% deep soil, 0.2% rocky outcrops, 0.2% shallow soil.

Slope (820 records): 51% platform, 37% gentle incline, 4% dunes, 3% valley bottom, 2% hill top, 2% steep incline.

Aspect (454 records):

28% East, 25% North, 24% West, 23% South.



Soil Type (820 records): 96% sandy, 4% loamy, 0.4% clayey, 0.4% gravelly.

Soil Colour (817 records): 26% white, 25% brown, 15% grey, 15% yellow, 12% orange, 7% red.

Geology (788 records): 60% Tertiary sands, 37% sandstone, 3% shale, 0.3% granite.

Vegetation (819 records): 99% shrubland, 0.4% agricultural lands, 0.1% grassland, 0.1% thicket.

Conservation Status and Threat:

Red Data List Status: Vulnerable A2c. Occurrence (Fynbos): 11 440 km² with 8% conserved and 34% lost; Occupancy: 973 km² with 1% conserved and 43% lost. Fragmentation index: 4%.

Nature Reserves (825 records): 1% in nature reserves - unconserved.

Habitat destruction (816 records): 59% extensive natural habitat, 30% islands, 9% road verges, 1% naturally fragmented habitats, 0.7% naturally linear habitats, 0.5% corridors.

Alien Invasive Species (812 records): 67% Fabaceae (chiefly alien *Acacia*), 25% none, 4% *Pinus*, 4% Myrtaceae, 0.6% *Hakea*, 0.1% annual alien grasses, 0.1% other aliens.

Alien Density (811 records): 25% alien-free, 57% sparse, 13% abundant, 5% dense, 0.1% impenetrable.

Cultivation & Utilization:

Picking (679 records): 100% no sign of picking.

Cultivation Status: Plantings - 3 records (0.4%).

Witch's Broom Infestation: 1 record (0.1%).

Atlassers Notes:

Second flowering of year! (AGR96102504); Were all in bud and flowering when they should have been in fruit in Dec - Dry autumn and wet spring? (SMR98120202); Some old plants over 3 m with on many the bottom 20-30cm of trunk black and charred - the surrounding vegetation was below knee height so it looks as though the top of the plants had survived one or more fires (SMRY0022401);

With a very short leaf - although variable between individuals (AGRY0072717); Had been grazed (DJLY0020906); Eaten (VCH98052007);

Over 4 dead plants of various ages (AGRY0091404); 2 dead also seen (LYMY0082402); In very poor condition (dwarfed) and appear to be dieing (NAHY3041601); Plants stressed (SHR98120513); Many dead also (SMR99112405);

On sand dunes only (AMMY0022401); Often were associated with ant - mounds according to our physiological data neither seedlings nor adults show any signs of water stress. Seedlings of this species seem to send a root to this water source to ensure their survival - seedlings were abundant at the site (GUY88102501); In windbreaks and roadside (MHG97072703); Confined to vicinity of river course by wheat fields (SHR93081501); All over the dunes (WIJY0081203);

Confusing Species: None noted.
Records of identification queries = 12.

Variation and Taxonomy: Some short-leaved forms noted by atlassers.

Distribution: Add.

INCLUDEPICTURE

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Leucospermum tomentosum (Thunb.) R.Br. 1781, 1810

Saldanha Pincushion

Saldanhaluisie

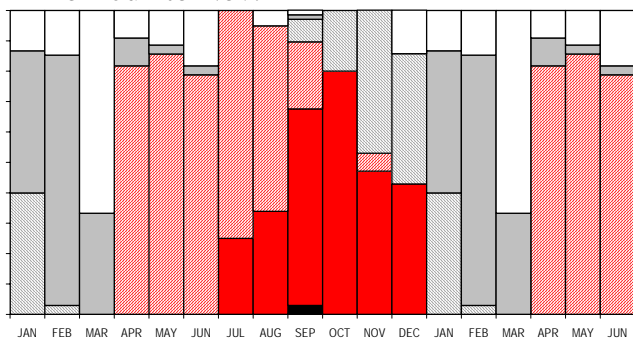
Other Common Names: Cottony
 Leucadendrum, Vaalluisiesbos.
Other Scientific Names: *ecklonii* Buek 1844.

311 Records

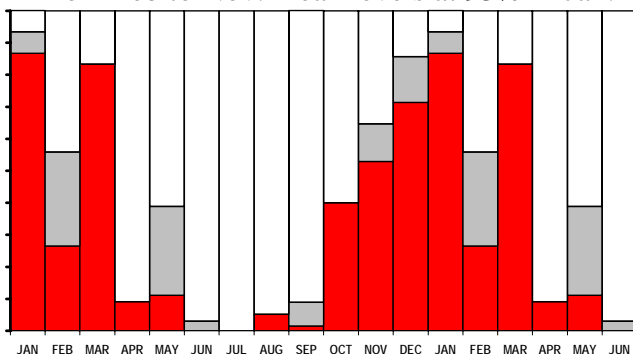
Population (309 records): 0.3% Abundant, 32% Common, 54% Frequent, 14% Rare.

Dispersion (287 records): 89% variable, 10% clumped, 1% widespread.

Flowering (309 records with: Jan 30, Feb 34, Mar 6, Apr 11, May 35, Jun 33, Jul 4, Aug 59, Sep 68, Oct 5, Nov 17, Dec 7): Buds from Apr to Sep; Flowering from Jul to Dec; Peak Flowering not significant; Over from Oct to Jan; Fruit from Jan to Mar; Nothing from Mar. Peak levels at 100% from Oct to Nov. Historically recorded as flowering from Jun to Nov.



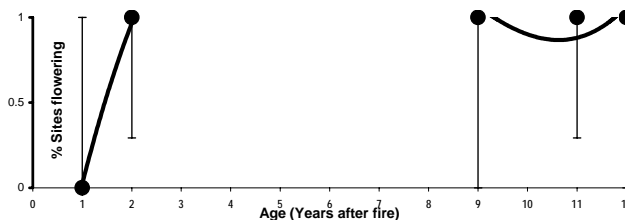
Growth (309 records with: Jan 30, Feb 34, Mar 6, Apr 11, May 36, Jun 33, Jul 4, Aug 58, Sep 68, Oct 5, Nov 17, Dec 7): Much from Oct to Mar; Rare from Feb and May; None from Feb to Nov. Peak levels at 93% in Jan.



Seedlings (152 records): All without any seedlings present.

Fire Survival (19 records): 100% resprouted from underground boles.

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



Height (309 records): 1% 0-0.2 m tall, 90% 0.2-1 m tall, 9% 1-2 m tall, 0.3% 2-5 m tall.

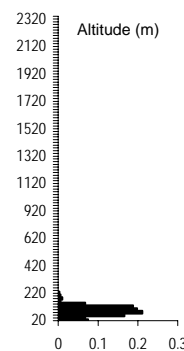
Pollinators (5 records): 80% beetles, 20% birds.

Detailed Pollinators (2 records): Monkey Beetle, Dusky Sunbird.

Habitat:

Distance to Ocean (308 records): 95% inland - further than 2 km from coast.

Altitude (308 records): 20 - 220 m; 40_{lq} - 80_{med} - 80_{uq}m.

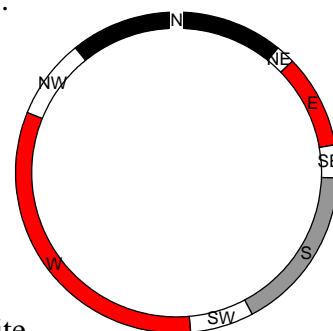


Landform (308 records): 99% deep soil, 0.3% riverine, 0.3% lake edge.

Slope (308 records): 63% platform, 27% gentle incline, 4% hill top, 3% dunes, 3% valley bottom, 0.3% steep incline.

Aspect (170 records):

41% West,
 27% North,
 21% South,
 12% East.



Soil Type (308 records): 98% sandy, 2% loamy, 0.3% gravelly.

Soil Colour (308 records): 58% white, 31% grey, 5% yellow, 3% brown, 2% orange, 0.3% red.

Geology (298 records): 90% Tertiary sands, 6% sandstone, 2% limestone, 1% shale, 1% granite.

Vegetation (308 records): 97% shrubland, 1% thicket, 0.6% agricultural lands, 0.3% wooded grassland, 0.3% forest.

Conservation Status and Threat:

Red Data List Status: Vulnerable A4c.

Occurrence (Fynbos): 924 km² with 6% conserved and 25% lost; **Occupancy:** 321 km² with 12% conserved and 22% lost. **Fragmentation index:** 16%.

Nature Reserves (308 records): 12% in nature reserves - inadequately conserved.

Habitat destruction (304 records): 81% extensive natural habitat, 10% islands,

8% road verges, 1.0% naturally linear habitats, 0.7% naturally fragmented habitats.

Alien Invasive Species (305 records):

81% Fabaceae (chiefly alien *Acacia*),
16% none, 3% *Pinus*, 0.3% other aliens.

Alien Density (305 records): 16% alien-free,
56% sparse, 18% abundant, 9% dense,
0.3% impenetrable.

Cultivation & Utilization:

Picking (269 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

A small proportion about 1 in 30 are single stems not resprouters (AGRY0082504); A resprouter: on Tygerfontein there has been no fire over 50yrs according to the farmer, but bordering farms have been burnt and cultivated (ASP94121502); Quite upright bushes - several were single stemmed (SMR99112409);

Mat to 3 m wide (OUT97071001); Perfect habit, but bracts a little rounder than normal (AGRY0082504);

Browsing (SMR97012903);

Flowers very heavily scented - very sweet (PGD93101401);

Confusing Species: Confused with *L. rodolentum* which has a single basal stem, *L. parile* which has a single basal stem and pointed involucre bracts and *L. hypophyllocarpodendron* subsp. *canaliculatum* which is also multiple-stemmed, but has rounded involucre bracts. Much of the confusion is because of hybrids and the note in Rourke that this species is confined to within 5 km of the coast.

Records of identification queries = 33.

Records of corrected identification queries = 10.

Variation and Taxonomy: Buek did not validly publish his name *ecklonii*. Intermediates with *L. rodolentum* occur whenever the two species co-occur.

Distribution: Add.

INCLUDEPICTURE

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