

***Paranomus* Salisb. 1807**
Scepters

Robert Brown named this genus *Nivenia*, but the name was already applied to a group of Iridaceae, and is thus invalid, even though it continued to be used until 1930.

Anything specific to go in here?

Paranomus abrotanifolius Salisb. ex Kn. 1809

Bredasdorp Scepter

Other Common Names: Southern-woodleaf
Paranomus.

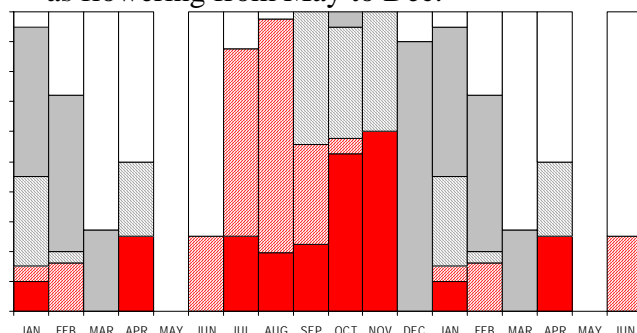
Other Scientific Names: *micranthus* (Schlt) 1900.

189 Records

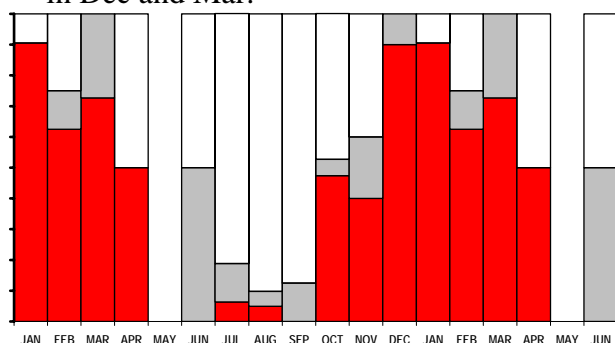
Population (184 records): 24% Common, 59% Frequent, 16% Rare.

Dispersion (153 records): 65% variable, 33% clumped, 3% widespread.

Flowering (164 records with: Jan 20, Feb 25, Mar 11, Apr 4, May 0, Jun 4, Jul 16, Aug 41, Sep 9, Oct 19, Nov 5, Dec 10): Buds from Jun to Sep; Flowering from Apr and Jul to Nov; Peak Flowering not recorded; Over from Jan, Apr and Sep to Nov; Fruit from Dec to Mar; Nothing from Feb to Jun. Peak levels at 100% in Nov. Historically recorded as flowering from May to Dec.



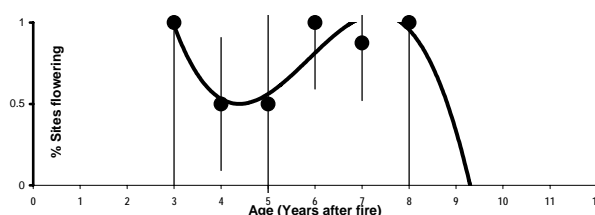
Growth (163 records with: Jan 21, Feb 24, Mar 11, Apr 4, May 0, Jun 4, Jul 16, Aug 41, Sep 8, Oct 19, Nov 5, Dec 10): Much from Oct to Apr; Rare from Mar, Jun and Nov; None from Feb, Apr to Nov. Peak levels at 100% in Dec and Mar.



Seedlings (92 records): Absent in 91%; fewer seedlings than prefire adults in 2 cases, and more in 2 cases. Seedlings found in Aug, Oct and Nov (2).

Fire Survival (3 records): 67% survived by seedlings only, 33% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 1 year, 50% estimated at 4-5 years, and 100% recorded at 6 years.



Height (163 records): 4% 0-0.2 m tall, 93% 0.2-1 m tall, 2% 1-2 m tall.

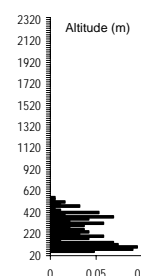
Pollinators (6 records): 67% bees or wasps, 33% beetles.

Detailed Pollinators (4 records): Honey Bee.

Habitat:

Distance to Ocean (189 records): 100% inland - further than 2 km from coast.

Altitude (189 records): 40 - 560 m; 100_{lq} - 180_{med} - 300_{uq}m.

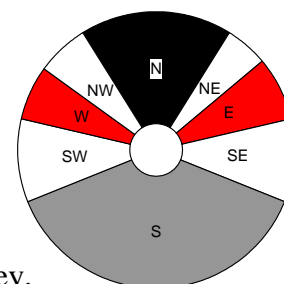


Landform (165 records): 76% deep soil, 19% shallow soil, 5% rocky outcrops.

Slope (166 records): 51% gentle incline, 32% steep incline, 11% platform, 5% hill top, 1% valley bottom.

Aspect (145 records):

49% South,
24% North,
13% West,
13% East.



Soil Type (167 records):

41% sandy,
39% loamy,
7% rocky, 6% clayey,
6% gravelly, 1% peaty.

Soil Colour (166 records): 52% grey, 37% brown, 4% black, 4% white, 2% orange, 1% red, 0.6% yellow.

Geology (185 records): 71% sandstone, 15% shale, 14% silcrete or ferricrete.

Vegetation (188 records): 99% shrubland.

Conservation Status and Threat:

Red Data List Status: Vulnerable A2c+4c.

Occurrence (Fynbos): 1 347 km² with 33% conserved and 28% lost; **Occupancy:** 212 km² with 27% conserved and 25% lost. **Fragmentation index:** 11%.

Nature Reserves (189 records): 54% in nature reserves - well conserved.

Habitat destruction (164 records): 90% extensive natural habitat, 7% islands, 2% naturally linear habitats, 1% naturally fragmented habitats.

Alien Invasive Species (155 records): 41% none, 37% Fabaceae (chiefly alien *Acacia*), 15% *Pinus*, 5% Myrtaceae, 2% *Hakea*.

Alien Density (155 records): 41% alien-free, 45% sparse, 11% abundant, 3% dense.

Cultivation & Utilization:

Picking (126 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: Confused with many species (*P. adiantifolius*, *P. bolusii*, *P. centauroides*, and *Serruria acrocarpa*), but only casually.

Records of identification queries = 9

Records of corrected identification queries = 7.

Variation and Taxonomy: No variation noted. The Potberg populations are more robust and erect than the Agulhas populations, but this variation has never been detailed.

Distribution: Add.

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Paranomus bolusii (Gand.) Levyns 1901, 1970 Overberg Scepter

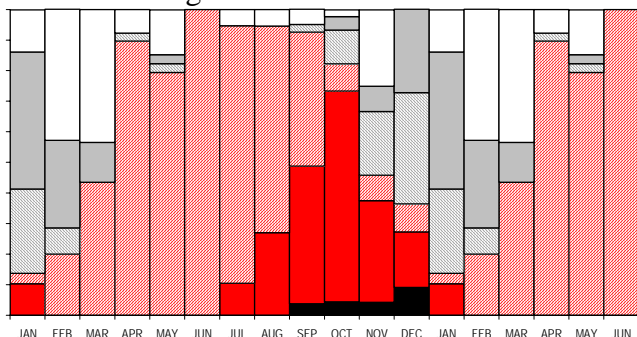
Other Common Names: Viking Scepter.
Other Scientific Names: *caledonensis* Levyns 1968, *crithmifolia* (R.Br.) 1810.

436 Records

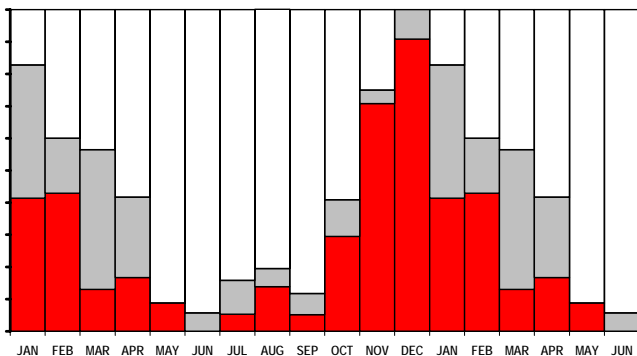
Population (433 records): 26% Common, 58% Frequent, 15% Rare.

Dispersion (400 records): 82% variable, 15% clumped, 3% widespread.

Flowering (434 records with: Jan 29, Feb 35, Mar 46, Apr 39, May 34, Jun 35, Jul 19, Aug 37, Sep 80, Oct 45, Nov 24, Dec 11): Buds from Feb to Sep; Flowering from Aug to Nov; Peak Flowering not significant; Over from Nov to Jan; Fruit from Dec to Jan; Nothing from Feb to Mar and Nov. Peak levels at 100% in Jun. Historically recorded as flowering from Jun to Nov.



Growth (426 records with: Jan 29, Feb 35, Mar 46, Apr 36, May 34, Jun 35, Jul 19, Aug 36, Sep 77, Oct 44, Nov 24, Dec 11): Much from Oct to Feb; Rare from Jan, Mar to Apr; None from Feb to Nov. Peak levels at 100% in Dec.



Seedlings (171 records): All without any seedlings present.

Fire Survival (17 records): 100% survived by seedlings only.

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



Height (435 records): 5% 0-0.2 m tall, 94% 0.2-1 m tall, 1% 1-2 m tall.

Pollinators (11 records): 82% bees or wasps, 18% beetles.

Detailed Pollinators (3 records): Honey Bee (2), Carpenter Bee.

Habitat:

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

Altitude (427 records): 20 - 840 m; 260_{lq} - 360_{med} - 400_{uq}m.

Landform (424 records):

86% deep soil, 12% shallow soil, 2% rocky outcrops.

Slope (425 records): 72% gentle incline, 16% steep incline, 8% hill top, 4% platform.

Aspect (384 records): 33% North, 30% South, 24% West, 13% East.

Soil Type (424 records):

61% sandy, 21% loamy, 10% gravelly,

6% clayey, 3% rocky.

Soil Colour (424 records):

58% grey, 29% brown, 6% white, 4% orange, 2% yellow, 1% black.

Geology (400 records): 81% sandstone,

13% shale, 6% silcrete or ferricrete.

Vegetation (424 records): 97% shrubland, 2% plantations.

Conservation Status and Threat:

Red Data List Status: Vulnerable A2c.

Occurrence (Fynbos): 703 km² with 17%

conserved and 30% lost; **Occupancy:**

290 km² with 19% conserved and 33% lost.

Fragmentation index: 21%.

Nature Reserves (427 records): 30% in nature reserves.

Habitat destruction (421 records):

89% extensive natural habitat, 8% islands, 1% road verges, 1.0% naturally linear habitats.

Alien Invasive Species (420 records):

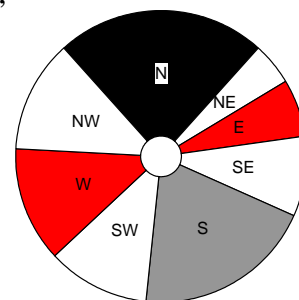
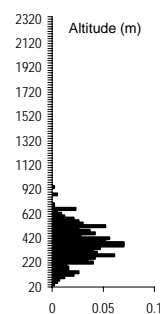
49% *Pinus*, 22% *Hakea*, 17% Fabaceae (chiefly alien *Acacia*), 7% none, 4% Myrtaceae.

Alien Density (420 records): 7% alien-free, 59% sparse, 27% abundant, 6% dense.

Cultivation & Utilization:

Picking (312 records): 100% no sign of picking, 0.3% lightly picked.

Cultivation Status: No noted cultivation.



Atlassers Notes:

Buds parasitised by insects (PVR93041804);
Galls which look like buds (CHE98030501);
Visited by a shiny black and brown bee
(SMR99102902);

Confusing Species: Casually mistaken for
Paranomus bracteolaris and *Serruria species*
– no serious errors.
Records of identification queries = 7
Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted.
The species name *crithmifolia* cannot be
used as Salisbury earlier used it for *P.*
spicatus.

Distribution: Add.

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***Paranomus bracteolaris* Salisb. ex Kn. 1809**
Smooth-leaf Tree Sceptre
Haakbos

Other Common Names: Bokkeveld Poppiesbos, Glabrous-leaf Scepter, Hairless Scepter, Narrow-bract Paranomus, *Afveebos*, *Balbyterbos*, *Balbyterbos*, *Heuningbos*, *Kakbos*, *Kloofbesem*, *Perdebos*, *Sandblom*, *Sousbos*, *Trosbos*.

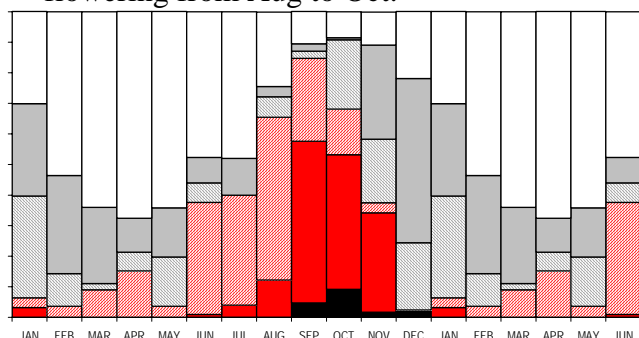
Other Scientific Names: *medius* (RBr) 1810.

968 Records

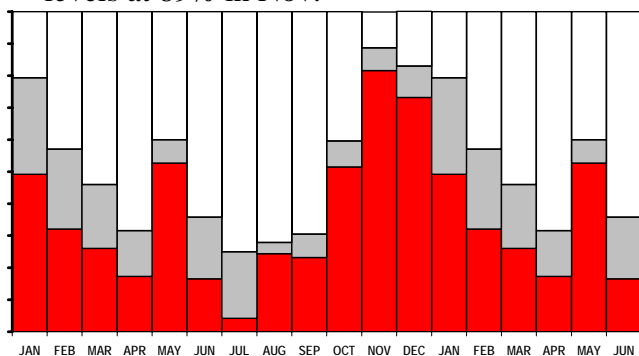
Population (961 records): 25% Common, 53% Frequent, 21% Rare.

Dispersion (854 records): 70% variable, 23% clumped, 6% widespread, 2% evenly distributed.

Flowering (957 records with: Jan 63, Feb 28, Mar 100, Apr 99, May 56, Jun 109, Jul 25, Aug 90, Sep 85, Oct 141, Nov 120, Dec 41): Buds from Jun to Sep; Flowering from Sep to Nov; Peak Flowering not significant; Over from Oct to Jan and May; Fruit from Nov to Mar; Nothing from Dec to Aug. Peak levels at 91% in Oct. Historically recorded as flowering from Aug to Oct.



Growth (920 records with: Jan 63, Feb 28, Mar 100, Apr 98, May 55, Jun 109, Jul 24, Aug 86, Sep 82, Oct 136, Nov 98, Dec 41): Much from Aug to Mar and May; Rare from Jan to Mar and Jul; None from Jan to Oct. Peak levels at 89% in Nov.

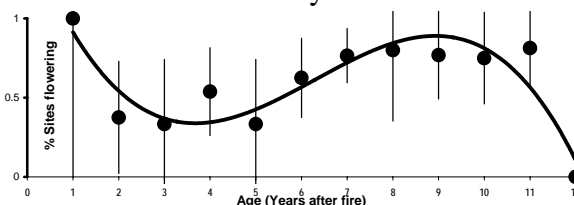


Seedlings (393 records): Absent in 84%: fewer seedlings than prefire adults in 25 cases, and more in 7 cases. Seedlings found in Jan (18), Feb, Mar (2), Jun (4), Jul, Aug (2), Nov (3) and Dec.

Fire Survival (51 records): 76% survived by seedlings only, 18% escaped fires in fire-safe

areas, 6% resprouted from underground boles.

Age to first flowering: First flowers recorded at 1 year, 50% estimated at 3-5 years, and 100% recorded at 13 years.



Height (955 records): 3% 0-0.2 m tall, 44% 0.2-1 m tall, 46% 1-2 m tall, 7% 2-5 m tall.

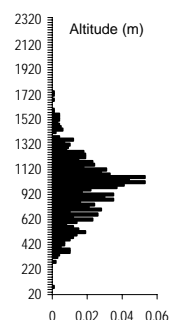
Pollinators (28 records): 50% bees or wasps, 29% beetles, 11% butterflies or moths, 7% birds, 4% flies.

Detailed Pollinators (15 records): Carpenter Bee (7), Moth (unspecified) (3), Monkey Beetle (3), Malachite Sunbird, Honey Bee.

Habitat:

Distance to Ocean (961 records): 100% inland - further than 2 km from coast.

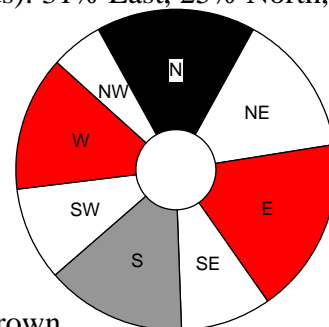
Altitude (961 records): 60 - 1640 m; 680_{lq} - 880_{med} - 980_{uq}m.



Landform (948 records): 58% deep soil, 32% shallow soil, 10% rocky outcrops, 0.3% riverine, 0.3% swamp.

Slope (950 records): 54% gentle incline, 23% steep incline, 10% hill top, 10% platform, 1% valley bottom, 1% cliff.

Aspect (813 records): 31% East, 25% North, 24% South, 21% West.



Soil Type (949 records): 60% sandy, 19% gravelly, 11% rocky, 9% loamy, 1% clayey.

Soil Colour (944 records): 48% brown, 22% grey, 10% yellow, 10% orange, 5% red, 4% white.

Geology (938 records): 90% sandstone, 6% shale, 3% silcrete or ferricrete, 1.0% Tertiary sands.

Vegetation (951 records): 99% shrubland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 4 532 km² with 18% conserved and 12% lost; **Occupancy:** 1 022 km² with 31% conserved and 6% lost. **Fragmentation index:** 15%.

Nature Reserves (961 records): 32% in nature reserves.

Habitat destruction (932 records):
86% extensive natural habitat, 9% islands,
2% naturally linear habitats, 1% road verges,
1% naturally fragmented habitats.

Alien Invasive Species (911 records):
90% none, 6% *Pinus*, 3% Fabaceae (chiefly
alien *Acacia*).

Alien Density (906 records): 91% alien-free,
8% sparse, 1% abundant.

Cultivation & Utilization:

Picking (621 records): 100% no sign of
picking, 0.3% severely picked.

Cultivation Status: No noted cultivation.

Atlasers Notes:

Two huge plants - gnarled and broken for
firewood - 2 X 3 m tall (AGR97040613);
Some to over 5 m tall! (AGR98120610);
Over 4 m tall! (AGRY0093035); One plant
was about 6 m in diameter! (COJ96083101);
Half plants dead (AGRY1022505); Many plants
brown or dead (JAT93112801); One live and
also dead plants (WIJ99013003); New
growth dead! (AGR93071706);

Many coppicing at base probably due to grazing
by sheep (NAH94032702);

More common in old fields (AGR98062712);

Lots of moths at midday bumbling around
flowers (AGRY0102817);

Confusing Species: Considerable confusion
exists in the zone between *P. lagopus* and
this species, where it is uncertain as to which
species the plants are - primarily as there is
an intermediate zone and the diagnostic
features for the species are (style 12 mm
long) inadequately described. Occasionally
misidentified as *Paranomus dispersus* and
less frequently as *P. tomentosus*.

Records of identification queries = 64

Records of corrected identification queries = 39.

Variation and Taxonomy: No variation noted.

Distribution: Add.

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***Paranomus candicans* (Thunb.) Kuntze 1794, 1891**
Powder Scepter

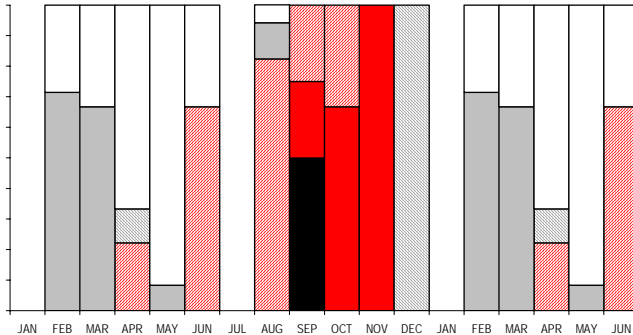
Other Common Names: Silvery Paranomus.
Other Scientific Names: *argenteus* Salisb. ex Knight 1809, *laxus* (Schle) 1897, *mollissima* (RBr) 1810.

69 Records

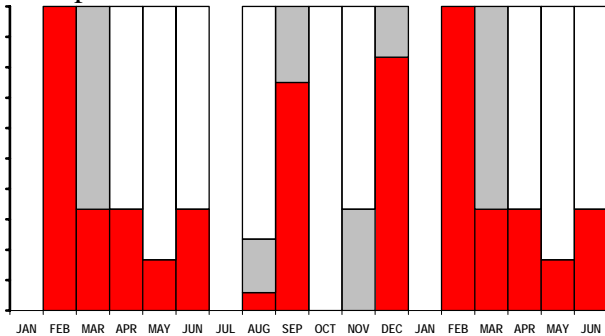
Population (68 records): 38% Common, 46% Frequent, 16% Rare.

Dispersion (66 records): 52% variable, 47% clumped, 2% widespread.

Flowering (67 records with: Jan 0, Feb 7, Mar 3, Apr 9, May 12, Jun 3, Jul 0, Aug 17, Sep 4, Oct 3, Nov 3, Dec 6): Buds from Apr, Jun to Oct; Flowering from Sep to Nov; Peak Flowering from Sep; Over from Dec; Fruit from Feb to Mar; Nothing from Feb to Jun. Peak levels at 100% in Sep to Dec. Historically recorded as flowering from Jun to Nov.



Growth (67 records with: Jan 0, Feb 7, Mar 3, Apr 9, May 12, Jun 3, Jul 0, Aug 17, Sep 4, Oct 3, Nov 3, Dec 6): Much from Feb to Apr and Jun, Sep and Dec; Rare from Mar, Sep and Nov; None from Apr to Aug and Oct to Nov. Peak levels at 100% in Dec to Mar and Sep.



Seedlings (38 records): Absent in 95%; fewer seedlings than prefire adults in 1 case. Seedlings found in Sep.

Fire Survival (13 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 5 years.



Height (68 records): 68% 0.2-1 m tall, 32% 1-2 m tall.

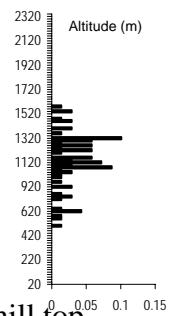
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (69 records): 100% inland - further than 2 km from coast.

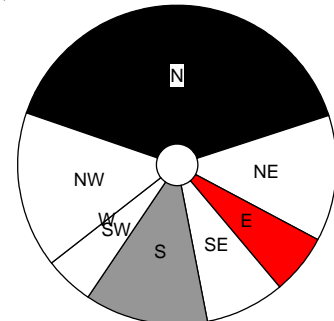
Altitude (69 records): 480 - 1480 m; 920_{lq} - 1040_{med} - 1160_{uq}m.



Landform (68 records): 53% shallow soil, 46% deep soil, 1% rocky outcrops.

Slope (68 records): 54% steep incline, 32% gentle incline, 9% hill top, 3% platform, 1% cliff.

Aspect (63 records): 58% North, 20% South, 16% East, 6% West.



Soil Type (67 records): 36% sandy, 31% rocky, 28% loamy, 4% gravelly.

Soil Colour (68 records): 59% grey, 34% brown, 3% black, 3% yellow, 1% orange.

Geology (68 records): 96% sandstone, 4% shale.

Vegetation (68 records): 99% shrubland, 1% grassland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 655 km² with 14% conserved and 4% lost; Occupancy: 86 km² with 15% conserved and 5% lost. Fragmentation index: 6%.

Nature Reserves (69 records): 7% in nature reserves - inadequately conserved.

Habitat destruction (67 records): 99% extensive natural habitat, 1% naturally linear habitats.

Alien Invasive Species (66 records): 91% none, 6% *Pinus*, 3% *Hakea*.

Alien Density (66 records): 91% alien-free, 8% sparse, 2% impenetrable.

Cultivation & Utilization:

Picking (58 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: One instance of *P. dispersus*.

Records of identification queries = 4.

Records of corrected identification queries = 1.

Variation and Taxonomy: A northern form with leaves that lose their silvery appearance and with bristly hairs on the floral bracts and perianth limbs, was

formerly regarded as *P. laxus*. An eastern form is also distinct – but details of its features are not given. These were not upheld by Levyns as they integrate with the central typical form.

Distribution: Add.

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Paranomus dispersus Levyns Long-head Scepter

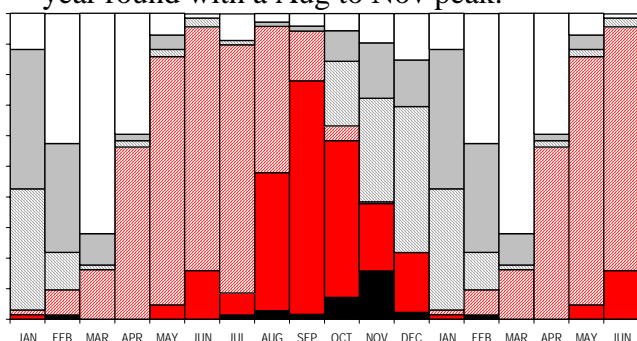
Other Common Names: None known.
Other Scientific Names: *None*.

1162 Records

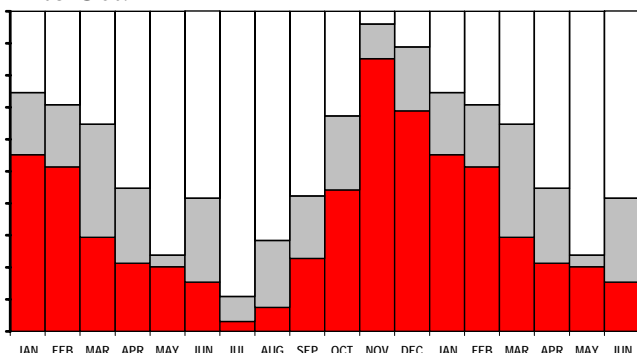
Population (1153 records): 27% Common, 59% Frequent, 13% Rare.

Dispersion (1076 records): 64% variable, 29% clumped, 6% widespread, 2% evenly distributed.

Flowering (1147 records with: Jan 68, Feb 73, Mar 68, Apr 48, May 85, Jun 69, Jul 69, Aug 71, Sep 123, Oct 250, Nov 177, Dec 46): Buds from Apr to Aug; Flowering from Aug to Dec; Peak Flowering from Nov; Over from Oct to Jan; Fruit from Jan to; Nothing from Feb to Apr. Peak levels at 99% in Jun. Historically recorded as flowering from all year round with a Aug to Nov peak.



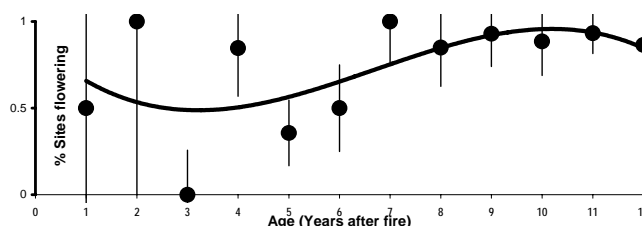
Growth (1129 records with: Jan 67, Feb 72, Mar 68, Apr 47, May 84, Jun 65, Jul 64, Aug 67, Sep 123, Oct 251, Nov 176, Dec 45): Much from Sep to May; Rare from Mar to Apr and Jun and Aug to Oct; None from Jan to Oct.



Seedlings (359 records): Absent in 86%: fewer seedlings than prefire adults in 18 cases, and more in 8 cases. Seedlings found in Jan (4), Feb (2), Apr (2), May (4), Jun (4), Sep (5), Oct, Nov (2) and Dec (2).

Fire Survival (42 records): 76% survived by seedlings only, 12% eliminated from the area by fires, 12% escaped fires in fire-safe areas.

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



Height (1152 records): 2% 0-0.2 m tall, 81% 0.2-1 m tall, 16% 1-2 m tall.

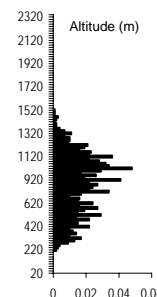
Pollinators (25 records): 48% bees or wasps, 20% flies, 20% beetles, 8% birds, 4% butterflies or moths.

Detailed Pollinators (15 records): Honey Bee (6), Carpenter Bee (5), Monkey Beetle (2), Solitary Bee, Orange-breasted Sunbird.

Habitat:

Distance to Ocean (1157 records): 100% inland - further than 2 km from coast.

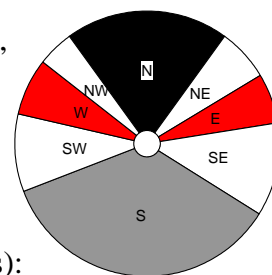
Altitude (1157 records): 200 - 1420 m; 560 *lq* - 780 *med* - 940 *uq*m.



Landform (1155 records): 58% shallow soil, 37% deep soil, 5% rocky outcrops.

Slope (1155 records): 52% steep incline, 38% gentle incline, 6% hill top, 2% platform, 2% cliff.

Aspect (1075 records): 46% South, 26% North, 15% East, 14% West.



Soil Type (1151 records): 60% sandy, 20% loamy, 9% gravelly, 9% rocky, 1% clayey.

Soil Colour (1150 records): 48% brown, 44% grey, 2% black, 2% orange, 1% white, 1% yellow.

Geology (1143 records): 97% sandstone, 2% shale.

Vegetation (1156 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 4 371 km² with 28% conserved and 7% lost; Occupancy: 1 039 km² with 30% conserved and 4% lost. Fragmentation index: 8%.

Nature Reserves (1157 records): 31% in nature reserves.

Habitat destruction (1146 records): 98% extensive natural habitat, 1% islands,.

Alien Invasive Species (1131 records): 78% none, 11% *Hakea*, 7% *Pinus*, 3% Fabaceae (chiefly alien *Acacia*).

Alien Density (1128 records): 78% alien-free, 20% sparse, 1% abundant.

Cultivation & Utilization:

Picking (952 records): 100% no sign of picking, 0.1% severely picked.
Cultivation Status: No noted cultivation.

Atlassers Notes:

The biggest shrub we have ever seen: 3 m in diameter and 2 m tall - covered in buds about to open - what a sight spectacular!
(VJK98080102);

Heads full of seed, but much of it eaten by something leaving hole in centre of seeds
(OUT93111309);

Skeletons frequent - some huge, most dead within this fire cycle of very old age
(AGRY2052715);

Confusing Species: Mistaken for *P. bolusii* and *P. bracteolaris*, and rarely for *P. candicans*, *P. dregei*, *P. lagopus* and *Serruria*.

Records of identification queries = 64

Records of corrected identification queries = 37.

Variation and Taxonomy: No variation noted. *P. candicans* from Cloetes Pass (Muir 1015) is a silvery form of *P. dispersus*.

Distribution: Add.

INCLUDEPICTURE

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Paranomus lagopus (Thunb.) Salisb. 1781, 1807
Rabbit-paw Scepter

Other Common Names: Cluster-flower
Paranomus.

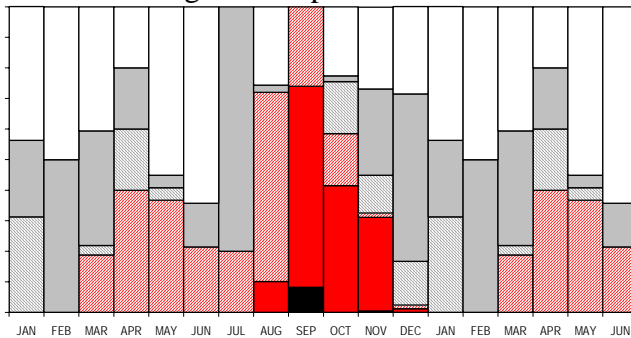
Other Scientific Names: *cumuliflorus* Salisb.
ex Knight 1809.

743 Records

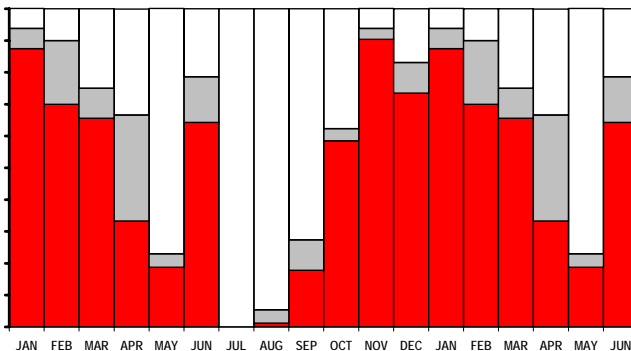
Population (743 records): 43% Common,
43% Frequent, 13% Rare.

Dispersion (692 records): 74% variable,
22% clumped, 2% widespread, 1% evenly
distributed.

Flowering (738 records with: Jan 16, Feb 30,
Mar 32, Apr 5, May 49, Jun 14, Jul 5, Aug
168, Sep 73, Oct 53, Nov 209, Dec 84): Buds
from Apr to Sep; Flowering from Sep to
Nov; Peak Flowering not significant; Over
from Jan and Apr; Fruit from Nov to Apr and
Jul; Nothing from Oct to Jun and Aug. Peak
levels at 100% in Sep. Historically recorded
as flowering from Sep to Nov.



Growth (734 records with: Jan 16, Feb 30, Mar
32, Apr 6, May 48, Jun 14, Jul 5, Aug 166,
Sep 73, Oct 53, Nov 208, Dec 83): Much
from Oct to Apr and Jun; Rare from Apr 33;
None from Mar to Oct. Peak levels at 94%
in Nov and Jan.



Seedlings (319 records): Absent in 96%; fewer
seedlings than prefire adults in 1 cases, and
more in 6 cases. Seedlings found in Oct and
Dec (6).

Fire Survival (97 records): 92% survived by
seedlings only, 8% 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 6 years.



Height (740 records): 6% 0-0.2 m tall,
67% 0.2-1 m tall, 26% 1-2 m tall.

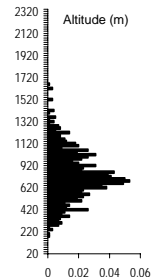
Pollinators (45 records): 53% beetles,
24% bees or wasps, 13% butterflies or
moths, 7% flies, 2% birds.

Detailed Pollinators (31 records): Monkey
Beetle (13), Carpenter Bee (6), Honey Bee
(5), African Monarch Butterfly (3), Skipper
Butterfly, Scarab Beetle, Orange-breasted
Sunbird, Moth (unspecified).

Habitat:

Distance to Ocean (737 records):
100% inland - further than 2
km from coast.

Altitude (737 records): 160 -
1560 m; 580 *lq* - 700 *med* - 820
*uq*m.



Landform (732 records):
73% deep soil, 24% shallow
soil, 3% rocky outcrops.

Slope (730 records): 56% gentle incline,
30% steep incline, 7% hill top, 6% platform.

Aspect (650 records): 34% East, 26% West,
22% North, 17% South.

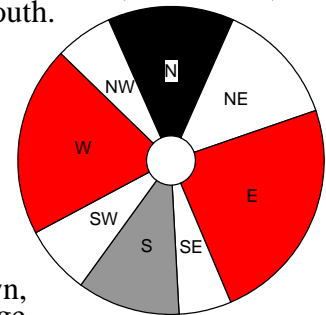
Soil Type (731

records): 54% sandy,
21% gravelly,
17% loamy,
6% rocky,
3% clayey.

Soil Colour (731
records): 57% brown,
20% grey, 8% orange,
6% yellow, 5% red, 2% white.

Geology (724 records): 80% sandstone,
18% shale.

Vegetation (734 records): 99% shrubland.



Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 2 365 km² with 15%
conserved and 16% lost; Occupancy:
632 km² with 8% conserved and 10% lost.
Fragmentation index: 20%.

Nature Reserves (737 records): 8% in nature
reserves - inadequately conserved.

Habitat destruction (723 records):
86% extensive natural habitat, 10% islands,
3% naturally linear habitats.

Alien Invasive Species (705 records):
75% none, 17% *Pinus*, 5% Fabaceae (chiefly
alien *Acacia*), 2% Myrtaceae.

Alien Density (703 records): 75% alien-free, 22% sparse, 2% abundant.

Cultivation & Utilization:

Picking (513 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Mostly grazed quite low and now sprouting again (SMR99050603);

One third of young dead (VCH98080804);

Confusing Species: In the north of its range it grades into *P. bracteolaris* and it is difficult to assign specimens to one or other species. Records of identification queries = 159.

Records of corrected identification queries = 131.

Variation and Taxonomy: No variation noted. Atlassers found that northern plants tended to *P. bracteolaris* and caused considerable confusion, partly because good diagnostic characters for the two species are not enumerated: most of the differences are qualitative, with *P. lagopus* effectively being gracile.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PALAGO_m.jpg" *

MERGEFORMAT \d

***Paranomus nova* (Nomen nudum) 1993**
Palmiet Sceptre

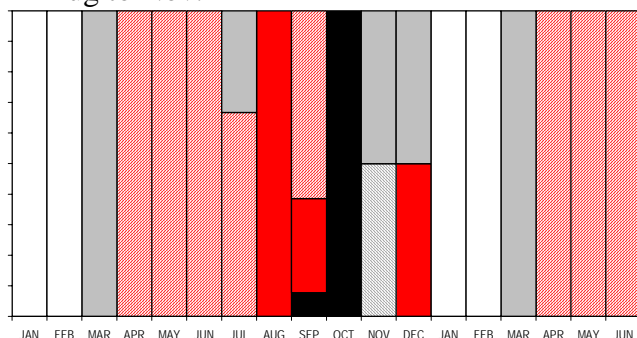
Other Common Names: None known.
Other Scientific Names: *None*.

30 Records

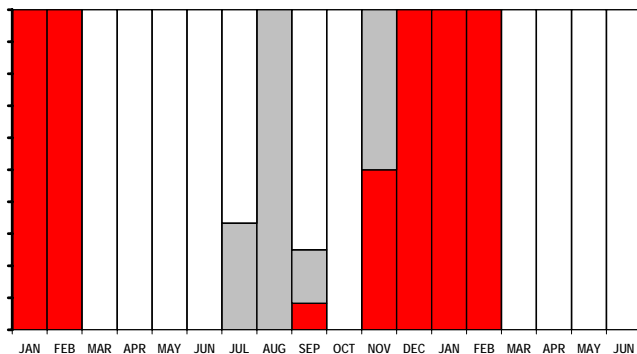
Population (29 records): 62% Common, 28% Frequent, 10% Rare.

Dispersion (28 records): 46% variable, 43% clumped, 11% evenly distributed.

Flowering (30 records with: Jan 1, Feb 1, Mar 1, Apr 2, May 1, Jun 1, Jul 3, Aug 1, Sep 13, Oct 2, Nov 2, Dec 2): Buds from Apr to Sep; Flowering from Aug to Sep snf Dec; Peak Flowering from Oct; Over from Nov; Fruit from Mar, Jul and Nov to Dec; Nothing from Jan to Feb. Peak levels at 100% in Apr to Oct. Historically recorded as flowering from Aug to Nov.



Growth (29 records with: Jan 1, Feb 1, Mar 1, Apr 2, May 1, Jun 1, Jul 3, Aug 1, Sep 12, Oct 2, Nov 2, Dec 2): Much from Nov to Feb; Rare from Jul to Aug and Nov; None from Mar to Jul and Sep to Oct. Peak levels at 100% in Nov to Feb.



Seedlings (19 records): Absent in 89%; fewer seedlings than prefire adults in 1 case. Seedlings found in Sep.

Fire Survival : No data.

Age to first flowering: Data inadequate: first flowers (100%) recorded at 16 years.

Height (30 records): 90% 0.2-1 m tall, 10% 1-2 m tall.

Pollinators : No data.

Detailed Pollinators (1 record): Anthochorid/Reduvivid Bug.

Habitat:

Distance to Ocean (30 records): 100% inland - further than 2 km from coast.

Altitude (30 records): 160 - 300 m; 240_{lq} - 260_{med} - 260_{uq}m.

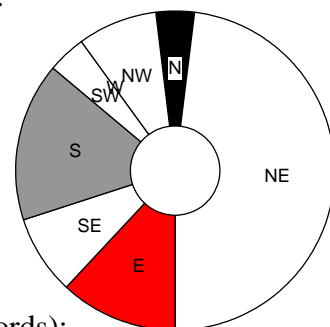
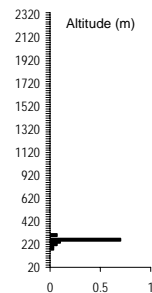
Landform (30 records):

100% deep soil.

Slope (30 records): 47% steep incline, 30% gentle incline, 23% hill top.

Aspect (25 records):

40% East, 32% North, 22% South, 6% West.



Soil Type (30 records):

80% clayey, 10% gravelly, 7% sandy, 3% loamy.

Soil Colour (30 records):

70% brown, 23% orange, 7% grey.

Geology (29 records): 93% shale, 3% sandstone, 3% silcrete or ferricrete.

Vegetation (30 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Critically Endangered B1b(i,ii)c(iv).

Occurrence (Fynbos): 8 km² with 0% conserved and 57% lost; Occupancy: 11 km² with 0% conserved and 58% lost. Fragmentation index: meaningless.

Nature Reserves (30 records): 3% in nature reserves - unconserved.

Habitat destruction (30 records): 87% extensive natural habitat, 10% islands, 3% corridors.

Alien Invasive Species (29 records):

59% *Pinus*, 24% none, 14% Fabaceae (chiefly alien *Acacia*), 3% *Hakea*.

Alien Density (29 records): 24% alien-free, 72% sparse, 3% dense.

Cultivation & Utilization:

Picking (23 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes:

These 2 plants occur within 3 m of edge of old orchards - now been removed and replaced with vineyards their future seems bleak. Natural vegetation exists on steep slope to south but no plants seen there. Plant closest to field damaged by earth-moving machines. (NAHY5031201);
 If a dam on arieskraal or the palmiet r is built they need a clay core - this hill is one of the best sites of suitable clay for dams in the area - as an engineer - any use of the area for a borrow pit will eradicate this species. (PVR92091204);

Confusing Species: None, although in bud resembles a *Serruria* - a herbarium specimen in the Compton herbarium was identified as a new *Serruria*.
Records of identification queries = 1

Variation and Taxonomy: Add.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PANOVA_m.jpg" *

MERGEFORMAT \d

Paranomus spicatus (Bergius) Kuntze 1766, 1891
Kogelberg Scepter

Other Common Names: Samphire-leaf
Paranomus, *Perdebos*.

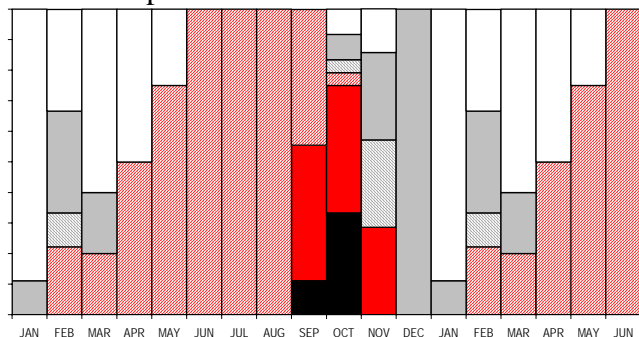
Other Scientific Names: *crithmifolius* Salisb.
ex Knight 1809.

87 Records

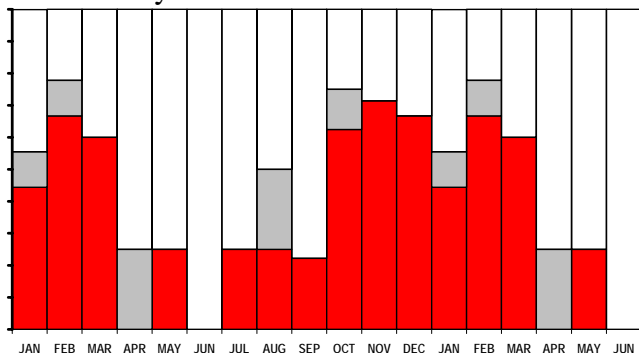
Population (87 records): 17% Common,
55% Frequent, 28% Rare.

Dispersion (75 records): 51% clumped,
48% variable, 1% widespread.

Flowering (87 records with: Jan 9, Feb 9, Mar 5, Apr 4, May 8, Jun 1, Jul 4, Aug 4, Sep 9, Oct 24, Nov 7, Dec 3): Buds from Feb to Sep; Flowering from Sep to Nov; Peak Flowering from Oct; Over from Nov; Fruit from Nov to Dec and Feb to Mar; Nothing from Jan to May. Peak levels at 100% in Jun to Sep. Historically recorded as flowering from Sep to Nov.



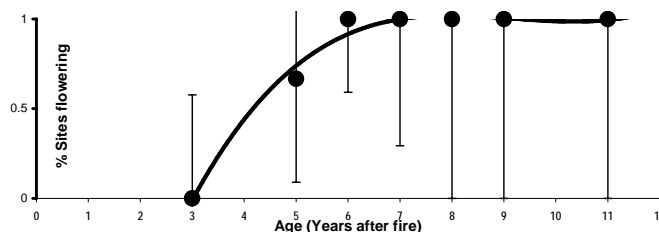
Growth (87 records with: Jan 9, Feb 9, Mar 5, Apr 4, May 8, Jun 1, Jul 4, Aug 4, Sep 9, Oct 24, Nov 7, Dec 3): Much from Jul to Mar and May; Rare from Apr and Aug.; None from all year. Peak levels at 78% in Feb.



Seedlings (30 records): All without any seedlings present.

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

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



Height (87 records): 5% 0-0.2 m tall, 94% 0.2-1 m tall, 1% 1-2 m tall.

Pollinators (2 records): 50% bees or wasps, 50% beetles.

Detailed Pollinators (2 records): Monkey Beetle, Honey Bee.

Habitat:

Distance to Ocean (86 records): 77% coastal - less than 2 km from coast.

Altitude (86 records): 20 - 720 m;
120 *lq* - 340 *med* - 480 *uq* m.

Landform (85 records): 81% deep soil, 14% shallow soil, 5% rocky outcrops.

Slope (85 records): 64% gentle incline, 35% steep incline, 1% hill top.

Aspect (81 records):

44% West,
25% North,
17% South,
14% East.

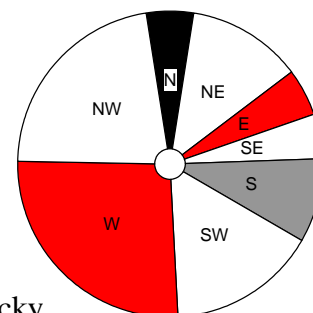
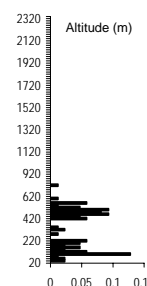
Soil Type (83 records):

55% sandy,
18% loamy,
16% clayey,
6% gravelly, 5% rocky.

Soil Colour (84 records): 56% brown, 33% grey, 8% orange, 1% white, 1% red.

Geology (83 records): 76% sandstone, 17% shale, 4% conglomerate, 4% granite.

Vegetation (85 records): 99% shrubland, 1% grassland.



Conservation Status and Threat:

Red Data List Status: Near Threatened
B1a(i)b(iv)c(iv).

Occurrence (Fynbos): 159 km² with 28% conserved and 13% lost; **Occupancy:** 74 km² with 17% conserved and 8% lost.
Fragmentation index: 39%.

Nature Reserves (86 records): 19% in nature reserves - inadequately conserved.

Habitat destruction (84 records): 96% extensive natural habitat, 2% road verges, 1% naturally fragmented habitats.

Alien Invasive Species (82 records): 35% *Pinus*, 27% Fabaceae (chiefly alien *Acacia*), 23% none, 11% Myrtaceae, 4% *Hakea*.

Alien Density (82 records): 23% alien-free, 63% sparse, 13% abundant.

Cultivation & Utilization:

Picking (60 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Pollinators: Beetles - ?*Diaplochelus* – shiney,
black, woolly legs - very active
(PAP92091f01).

Confusing Species: Quite distinct.

Records of identification queries = 6

Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PASPIC_m.jpg" *

MERGEFORMAT \d

Paranomus tomentosus (Phill. & Hutch.) N.E.Br. 1912, 1933
Hairy-leaf Scepter

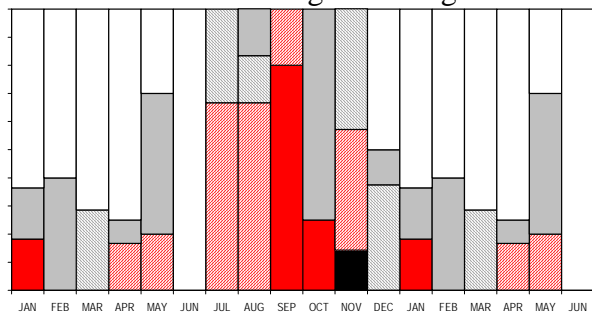
Other Common Names: None known.
Other Scientific Names: *None*.

86 Records

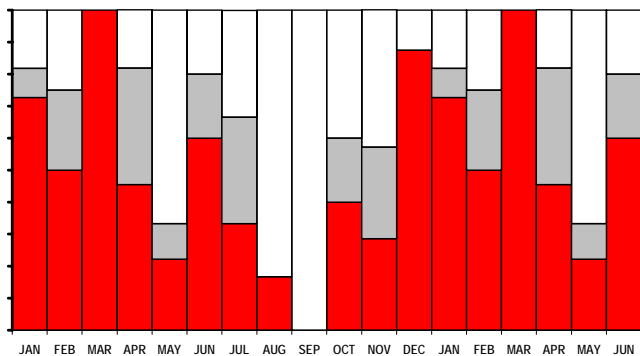
Population (86 records): 23% Common, 45% Frequent, 29% Rare, 2% Extinct.

Dispersion (70 records): 57% variable, 33% clumped, 9% widespread, 1% evenly distributed.

Flowering (83 records with: Jan 11, Feb 5, Mar 7, Apr 12, May 10, Jun 5, Jul 3, Aug 6, Sep 5, Oct 4, Nov 7, Dec 8): Buds from Jul to Sep and Nov; Flowering from Sep to Oct; Peak Flowering from Nov; Over from Mar, Jul, Nov to Dec; Fruit from Feb, May and Oct; Nothing from Dec to Jun. Peak levels at 100% in Jul, Sep and Nov. Historically recorded as flowering from Aug to Oct.



Growth (81 records with: Jan 11, Feb 4, Mar 7, Apr 11, May 9, Jun 5, Jul 3, Aug 6, Sep 5, Oct 5, Nov 7, Dec 8): Much from Oct to Jul; Rare from Feb, Apr, Jul, Oct and Nov; None from Feb, May to Nov. Peak levels at 100% in Mar.



Seedlings (38 records): Absent in 79%: fewer seedlings than prefire adults in 2 cases, and more in 2 cases. Seedlings found in Mar 2 - Apr 1 - Sep 1.

Fire Survival (7 records): 71% survived by seedlings only, 14% escaped fires in fire-safe areas, 14% resprouted from aerial trunks.

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



Height (84 records): 4% 0-0.2 m tall, 44% 0.2-1 m tall, 40% 1-2 m tall, 12% 2-5 m tall.

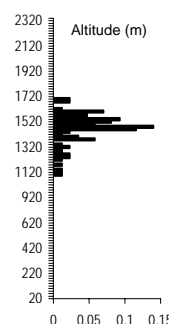
Pollinators (2 records): 100% bees or wasps.

Detailed Pollinators (2 records): Carpenter Bee.

Habitat:

Distance to Ocean (86 records): 100% inland - further than 2 km from coast.

Altitude (86 records): 980 - 1600 m; 1280 *lq* - 1380 *med* - 1400 *uq* m.



Landform (86 records): 55% shallow soil, 26% deep soil, 20% rocky outcrops.

Slope (86 records): 40% steep incline, 37% gentle incline, 15% hill top, 7% platform, 1% cliff.

Aspect (74 records): 33% East, 29% South, 23% West, 15% North.

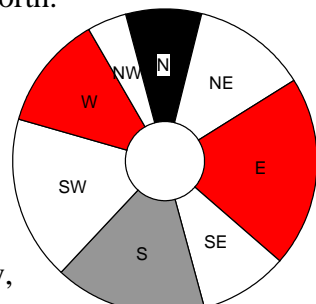
Soil Type (86 records):

53% sandy, 27% rocky, 14% gravelly, 5% loamy, 1% clayey.

Soil Colour (86 records): 49% grey, 35% brown, 8% yellow, 3% white, 3% orange, 1% black.

Geology (85 records): 95% sandstone, 2% shale, 1% conglomerate, 1% Tertiary sands.

Vegetation (85 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Near Threatened A3c.

Occurrence (Fynbos): 206 km² with 63% conserved and 3% lost; **Occupancy:** 84 km² with 70% conserved and 1% lost.

Fragmentation index: 37%.

Nature Reserves (86 records): 76% in nature reserves - well conserved.

Habitat destruction (86 records): 99% extensive natural habitat, 1% naturally fragmented habitats.

Alien Invasive Species (74 records): 96% none, 3% *Pinus*, 1% other aliens.

Alien Density (74 records): 96% alien-free, 3% sparse, 1% abundant.

Cultivation & Utilization:

Picking (48 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes:

Several dead plants in plot (JIDY0012804);

Confusing Species: One instance of *P. bracteolaris*, but brown hairs are quite distinct, even on juveniles.

Records of identification queries = 11

Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PATOME_m.jpg" *

MERGEFORMAT \d

Paranomus capitatus (R. Br.) Kuntze 1810, 1891
Fine-leaf Scepter

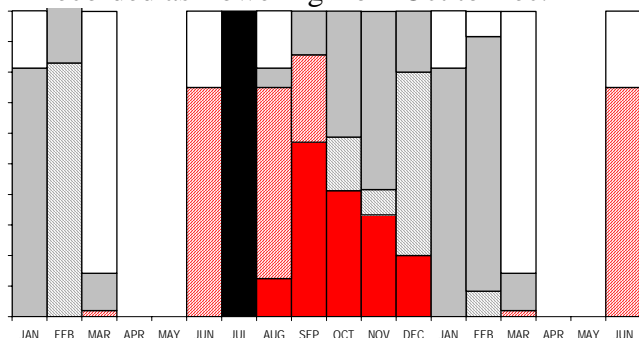
Other Common Names: None known.
Other Scientific Names: *None*.

148 Records

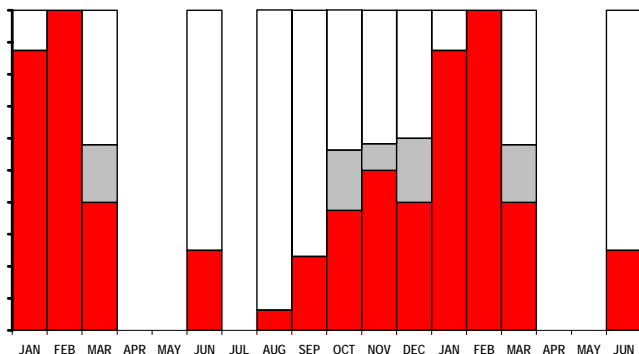
Population (147 records): 13% Common, 54% Frequent, 32% Rare.

Dispersion (127 records): 54% clumped, 45% variable, 2% widespread.

Flowering (146 records with: Jan 16, Feb 12, Mar 49, Apr 0, May 0, Jun 4, Jul 1, Aug 16, Sep 14, Oct 17, Nov 12, Dec 5): Buds from Jun to Sep; Flowering from Sep to Dec; Peak Flowering from Jul; Over from Dec; Fruit from Oct to Feb; Nothing from Mar and Jun. Peak levels at 82% in Sep. Historically recorded as flowering from Oct to Dec.



Growth (144 records with: Jan 16, Feb 12, Mar 50, Apr 0, May 0, Jun 4, Jul 0, Aug 16, Sep 13, Oct 16, Nov 12, Dec 5): Much from Sep to Jun; Rare from Dec; None from Mar to Dec. Peak levels at 100% in Feb.



Seedlings (51 records): Absent in 73%: fewer seedlings than prefire adults in 4 cases, and more in 3 cases. Seedlings found in Mar (7).

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

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



Height (147 records): 22% 0-0.2 m tall, 72% 0.2-1 m tall, 5% 1-2 m tall.

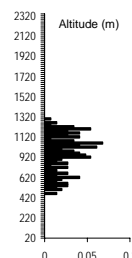
Pollinators (5 records): 100% beetles, .

Detailed Pollinators (7 records): Monkey Beetle (4), Thrip, Protea Itch Mite, Flower Beetle.

Habitat:

Distance to Ocean (147 records): 100% inland - further than 2 km from coast.

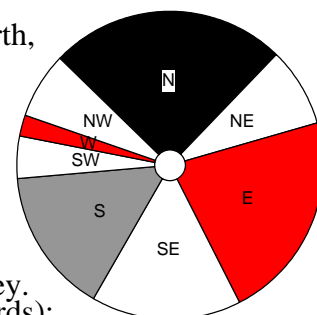
Altitude (147 records): 440 - 1200 m; 700_{lq} - 860_{med} - 960_{uq}m.



Landform (146 records): 73% deep soil, 21% shallow soil, 6% rocky outcrops, .

Slope (147 records): 50% gentle incline, 44% steep incline, 5% hill top, 1% platform.

Aspect (132 records): 36% East, 31% North, 26% South, 8% West.



Soil Type (145 records):

47% sandy, 28% loamy, 16% gravelly, 7% rocky, 3% clayey.

Soil Colour (145 records):

54% grey, 37% brown, 4% white, 2% yellow, 2% orange.

Geology (144 records): 77% sandstone, 22% shale, 1% silcrete or ferricrete, .

Vegetation (147 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 687 km² with 34% conserved and 4% lost; Occupancy: 142 km² with 21% conserved and 2% lost. Fragmentation index: 14%.

Nature Reserves (147 records): 18% in nature reserves - inadequately conserved.

Habitat destruction (145 records):

97% extensive natural habitat, 3% islands.

Alien Invasive Species (142 records):

53% *Hakea*, 26% none, 18% *Pinus*, 3% Fabaceae (chiefly alien *Acacia*).

Alien Density (141 records): 26% alien-free, 67% sparse, 6% abundant, 1% dense.

Cultivation & Utilization:

Picking (103 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: Confused with *Serruria* (*sp* and *dodii*) and *P. dispersus*.

Records of identification queries = 12.

Records of corrected identification queries = 6.

Variation and Taxonomy: An eastern and western race area known. A single stemmed, erect form.

Distribution: Add.

INCLUDEPICTURE
"C:\\temp\\atlas\\PACAPI_m.jpg" *
MERGEFORMAT \d

***Paranomus centaureoides* Levyns 1970**
Ladismith Scepter

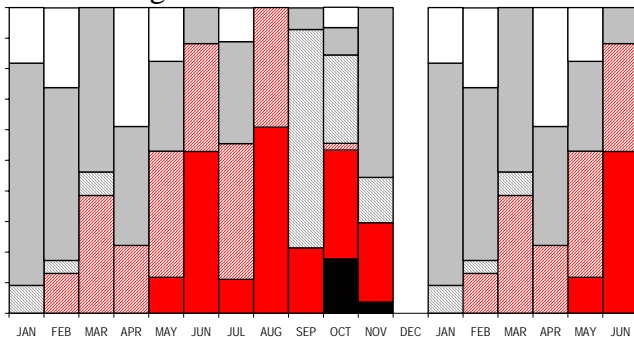
Other Common Names: None known.
Other Scientific Names: *None*.

223 Records

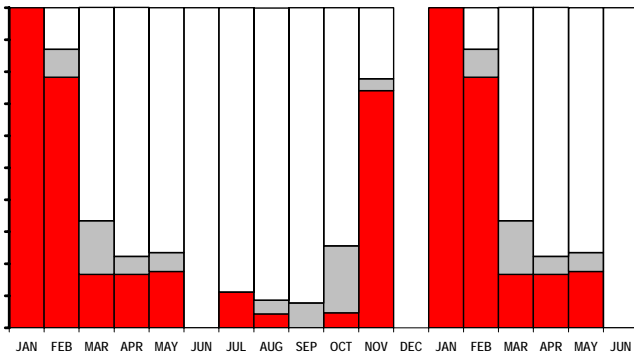
Population (216 records): 4% Common, 66% Frequent, 30% Rare.

Dispersion (181 records): 49% variable, 49% clumped, 2% widespread, 1% evenly distributed.

Flowering (217 records with: Jan 11, Feb 23, Mar 13, Apr 18, May 17, Jun 17, Jul 9, Aug 23, Sep 14, Oct 45, Nov 27, Dec 0): Buds from Mar to Aug; Flowering from Jun and Aug to Nov; Peak Flowering from Oct; Over from Sep to Oct; Fruit from Nov to May and Jul; Nothing from Feb and. Peak levels at 100% in Aug. Historically recorded as flowering from Jun to Nov.



Growth (213 records with: Jan 11, Feb 23, Mar 12, Apr 18, May 17, Jun 17, Jul 9, Aug 23, Sep 13, Oct 43, Nov 27, Dec 0): Much from Nov to Feb; Rare from Oct; None from Mar to Nov. Peak levels at 100% in Jan.



Seedlings (11 records): Absent in 82%; fewer seedlings than prefire adults in 1 case. Seedlings found in Jul.

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

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 5-6 years, and 100% recorded at 6 years.



Height (215 records): 4% 0-0.2 m tall, 71% 0.2-1 m tall, 25% 1-2 m tall.

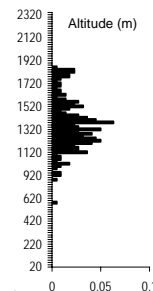
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (221 records): 100% inland - further than 2 km from coast.

Altitude (221 records): 560 - 1760 m; 1100 *lq* - 1220 *med* - 1320 *uq*m.



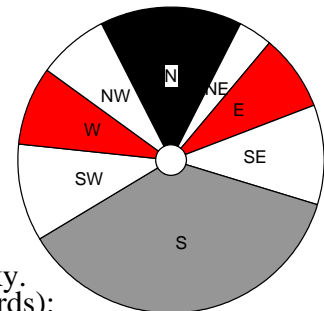
Landform (220 records):

82% shallow soil, 14% deep soil, 4% rocky outcrops.

Slope (220 records): 60% steep incline, 34% gentle incline, 3% cliff, 1% hill top, 1% platform.

Aspect (214 records):

47% South, 21% North, 17% West, 15% East.



Soil Type (219 records):

83% sandy, 21% gravelly, 6% loamy, 2% rocky.

Soil Colour (217 records):

59% brown, 31% grey, 4% black, 4% orange, 2% yellow.

Geology (218 records): 99% sandstone, 1% shale.

Vegetation (220 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Near Threatened A4c.

Occurrence (Fynbos): 405 km² with 45% conserved and 0% lost; Occupancy: 201 km² with 36% conserved and 1% lost. Fragmentation index: 45%.

Nature Reserves (221 records): 61% in nature reserves - well conserved.

Habitat destruction (210 records):

99% extensive natural habitat.

Alien Invasive Species (213 records):

98% none, 2% *Hakea*.

Alien Density (213 records): 98% alien-free, 2% sparse.

Cultivation & Utilization:

Picking (186 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: A few misidentifications
with *P. dregeii*.
Records of identification queries = 6.
Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PACENT_m.jpg" *

MERGEFORMAT \d

Paranomus dregei (Buek. ex Meisn.) Kuntze 1856, 1891
Scented Scepter

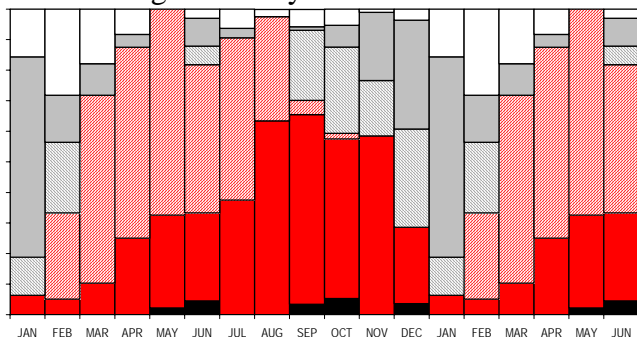
Other Common Names: None known.
Other Scientific Names: *marlothii* (Phill) 1915.

679 Records

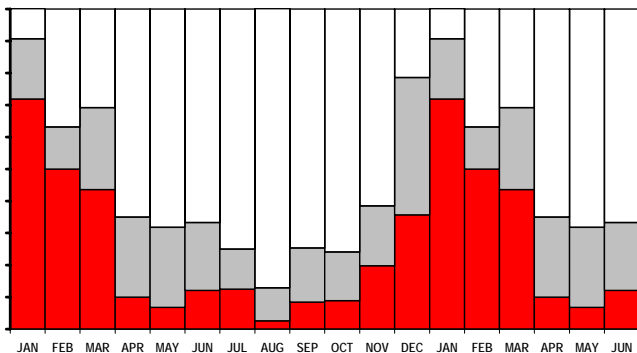
Population (676 records): 11% Common, 66% Frequent, 23% Rare.

Dispersion (610 records): 49% variable, 32% clumped, 12% widespread, 8% evenly distributed.

Flowering (665 records with: Jan 32, Feb 39, Mar 39, Apr 48, May 46, Jun 66, Jul 32, Aug 41, Sep 87, Oct 113, Nov 94, Dec 28): Buds from Feb to Aug; Flowering from Apr to Dec; Peak Flowering not significant; Over from Feb, Sep to Oct and Dec; Fruit from Nov to Jan; Nothing from Feb. Peak levels at 100% in May. Historically recorded as flowering from May to Oct.



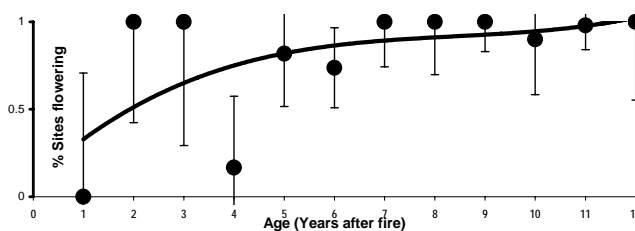
Growth (644 records with: Jan 32, Feb 38, Mar 39, Apr 40, May 44, Jun 66, Jul 32, Aug 39, Sep 83, Oct 112, Nov 91, Dec 28): Much from Nov to Mar; Rare from Mar to Jun and Dec; None from Feb to Dec 21. Peak levels at 91% in Jan.



Seedlings (278 records): Absent in 92%; fewer seedlings than prefire adults in 7 cases, and more in 4 cases. Seedlings found in Apr, May, Jun (3), Aug (2) and Sep (4).

Fire Survival (29 records): 59% survived by seedlings only, 34% escaped fires in fire-safe areas, 7% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 1 year, 50% estimated at 4-5 years, and 100% recorded at 8 years.



Height (674 records): 9% 0-0.2 m tall, 73% 0.2-1 m tall, 18% 1-2 m tall.

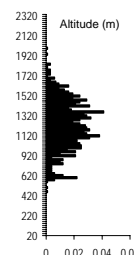
Pollinators (5 records): 60% beetles, 20% butterflies or moths, 20% bees or wasps.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (678 records): 100% inland - further than 2 km from coast.

Altitude (678 records): 440 - 1900 m; 940_{lq} - 1120_{med} - 1260_{uq}m.

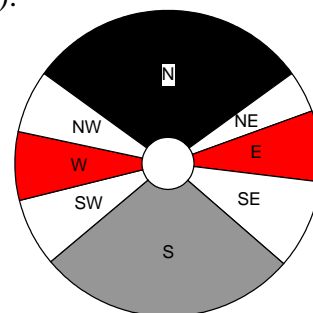


Landform (676 records): 63% shallow soil, 27% deep soil, 10% rocky outcrops.

Slope (677 records): 44% steep incline, 40% gentle incline, 12% hill top, 3% platform, 1% cliff.

Aspect (594 records):

37% South,
36% North,
14% West,
13% East.



Soil Type (673 records):

44% sandy,
26% loamy,
19% rocky,
11% gravelly.

Soil Colour (671 records):

46% grey, 41% brown, 7% black,
3% yellow, 3% orange.

Geology (672 records): 97% sandstone, 2% shale.

Vegetation (677 records): 98% shrubland, 1% wooded grassland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 4 305 km² with 43% conserved and 2% lost; Occupancy: 721 km² with 58% conserved and 1% lost. Fragmentation index: 6%.

Nature Reserves (678 records): 69% in nature reserves - well conserved.

Habitat destruction (654 records):

98% extensive natural habitat, 1% islands.

Alien Invasive Species (622 records):

78% none, 13% *Hakea*, 9% *Pinus*.

Alien Density (598 records): 81% alien-free, 17% sparse, 1% abundant.

Cultivation & Utilization:

Picking (462 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Stand with a very strong caramel-vanilla smell (AGRY3100805); Smells like caramel (AMMY3100801); Sweet scented flowers (OUTY0102801);

Also 2 dead specimens (AKS95111605); Many dead plants - only just over 10 left (AWA99032601); Looked very dead - could find no others (OUT97030810); Die back (OUT99061203);

Stem of one plant: 70-80 mm (DOA95101113);

Confusing Species: Considerable confusion arose from OUT (and associates, chiefly AWA) confusing this with *P. esterhuyseniae* and *P. dispersus*. One atlasser TDJ

consistently atlassed this as *Leucadendron dregei*.

Records of identification queries = 96.

Records of corrected identification queries = 69.

Variation and Taxonomy: Young plants have divided leaves, but older plants may be exclusively flat leaved. In the Swartberg Pass area the leaves are typically flat and undivided – this was named *P. marlothii*. Atlassers did not map the distribution of the flat-leaf form.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PADREG_m.jpg" *

MERGEFORMAT \d

***Paranomus esterhuyseniae* Levyns 1970**
Kouga Scepter

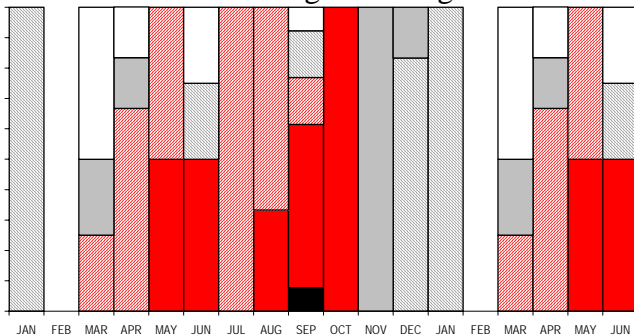
Other Common Names: None known.
Other Scientific Names: *None*.

61 Records

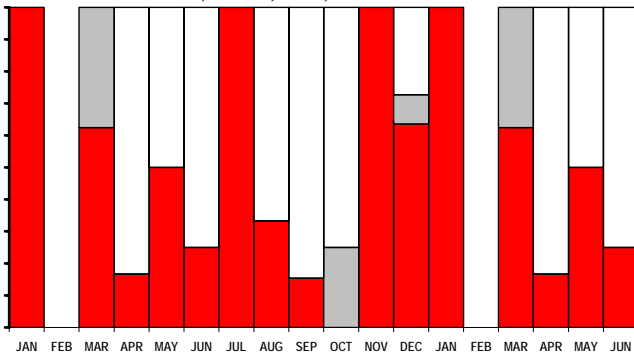
Population (60 records): 18% Common, 67% Frequent, 15% Rare.

Dispersion (58 records): 47% variable, 40% clumped, 7% evenly distributed, 7% widespread.

Flowering (60 records with: Jan 6, Feb 0, Mar 8, Apr 6, May 2, Jun 4, Jul 1, Aug 3, Sep 13, Oct 4, Nov 1, Dec 12): Buds from Mar to May and Jul to Aug; Flowering from May to Oct; Peak Flowering not significant; Over from Dec to Jan and Jun; Fruit from Mar and Nov; Nothing from Mar to Jun. Peak levels at 100% in Jul to Aug and Oct. Historically recorded as flowering from Aug to Nov.



Growth (59 records with: Jan 6, Feb 0, Mar 8, Apr 6, May 2, Jun 4, Jul 1, Aug 3, Sep 13, Oct 4, Nov 1, Dec 11): Much from Nov to Mar and May to Aug; Rare from Mar and Oct; None from Apr to Dec. Peak levels at 100% in Jan, Mar, Jul, and Nov.



Seedlings (26 records): Absent in 92%; more seedlings than prefire adults in 1 case. Seedlings found in Dec.

Fire Survival (3 records): 33% eliminated from the area by fires, 33% survived by seedlings only, 33% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 2 years, 50% estimated at 4-5 years, and 100% recorded at 6 years.



Height (60 records): 2% 0-0.2 m tall, 92% 0.2-1 m tall, 7% 1-2 m tall.

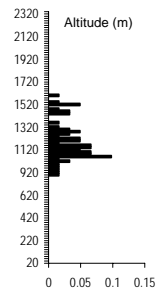
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (61 records): 100% inland - further than 2 km from coast.

Altitude (61 records): 780 - 1500 m; 960_{lq} - 1040_{med} - 1100_{uq}m.



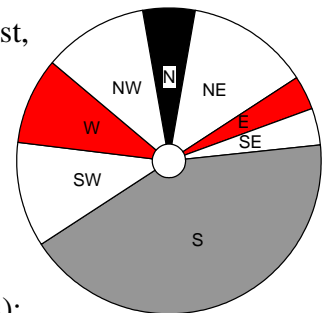
Landform (60 records):

60% shallow soil, 38% deep soil, 2% rocky outcrops.

Slope (60 records): 62% steep incline, 27% gentle incline, 8% hill top, 2% cliff, 2% valley bottom.

Aspect (54 records):

50% South, 19% West, 19% North, 12% East.



Soil Type (59 records):

58% sandy, 27% loamy, 12% rocky, 3% gravelly.

Soil Colour (59 records):

63% grey, 31% brown, 3% orange, 2% yellow, 2% red.

Geology (61 records): 97% sandstone, 3% shale.

Vegetation (61 records): 95% shrubland, 3% grassland, 2% thicket.

Conservation Status and Threat:

Red Data List Status: Near Threatened A4c.

Occurrence (Fynbos): 1 240 km² with 50% conserved and 3% lost; Occupancy: 109 km² with 69% conserved and 0% lost. Fragmentation index: 8%.

Nature Reserves (61 records): 75% in nature reserves - well conserved.

Habitat destruction (53 records):

89% extensive natural habitat, 11% naturally linear habitats.

Alien Invasive Species (56 records): 98% none, 2% *Hakea*.

Alien Density (56 records): 98% alien-free, 2% sparse.

Cultivation & Utilization:

Picking (34 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Paranomus I D by Jan Vlok: he says it has an unusually long neck - repeat visits could not relocate (OUT93051603);

Confusing Species: Confused occ. with *P. dregei*.

Records of identification queries = 6

Records of corrected identification queries = 3.

Variation and Taxonomy: A single record from the Outeniqua mountains has an unusually long stalk. No other variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PAESTE_m.jpg" *

MERGEFORMAT \d

***Paranomus longicaulis* Salisb. ex Kn. 1809**
Exploding Baked Apple
Poppiesbos

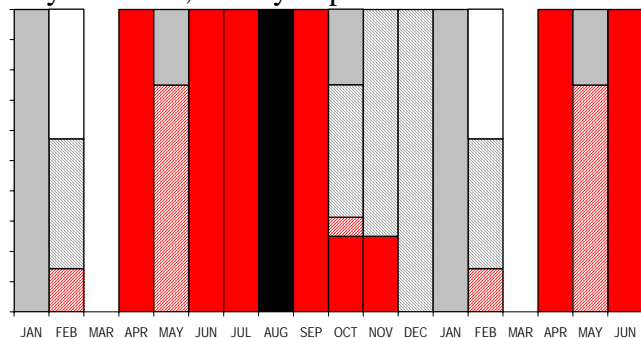
Other Common Names: Long-stem Paranomus, Woolly Scepter, *Poppies*.
Other Scientific Names: *diversifolius* RBr 1810.

47 Records

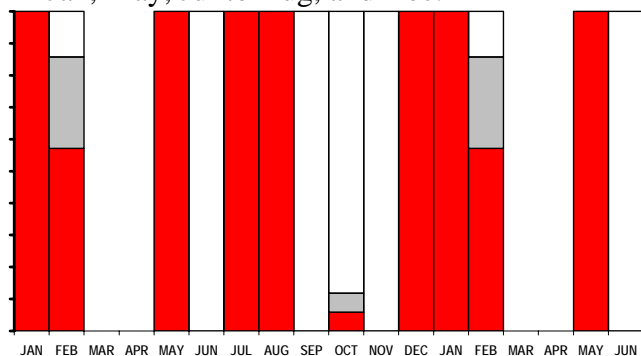
Population (47 records): 55% Common, 40% Frequent, 4% Rare.

Dispersion (47 records): 49% variable, 28% clumped, 19% evenly distributed, 4% widespread.

Flowering (46 records with: Jan 3, Feb 7, Mar 0, Apr 4, May 4, Jun 1, Jul 3, Aug 1, Sep 1, Oct 16, Nov 4, Dec 2): Buds from May; Flowering from Apr and Jun to Jul and Sep to Nov; Peak Flowering from Aug; Over from Feb and Oct to Dec; Fruit from Jan, May and Oct; Nothing from Feb. Peak levels at 100% in Apr and Jun to Sep. Historically recorded as flowering from all year round, mainly Sep to Dec.



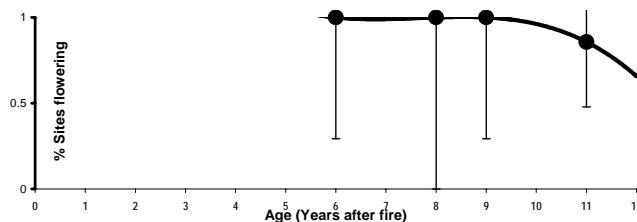
Growth (41 records with: Jan 3, Feb 7, Mar 0, Apr 0, May 4, Jun 1, Jul 1, Aug 1, Sep 1, Oct 17, Nov 4, Dec 2): Much from Dec to Feb, May, Jul to Aug; Rare from Feb; None from Jun and Sep to Nov. Peak levels at 100% in Jan, May, Jul to Aug, and Dec.



Seedlings (16 records): Absent in 63%: more seedlings than prefire adults in 3 cases. Seedlings found in Feb, Jul and Nov.

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

Age to first flowering: First flowers recorded at 6 years (the youngest with data), 50% estimated at 6 years, and 100% recorded at 6 years.



Height (47 records): 21% 0.2-1 m tall, 60% 1-2 m tall, 19% 2-5 m tall.

Pollinators (7 records): 43% bees or wasps, 43% beetles, 14% birds.

Detailed Pollinators (5 records): Monkey Beetle (2), Honey Bee (2), Orange-breasted Sunbird.

Habitat:

Distance to Ocean (47 records): 100% inland - further than 2 km from coast.

Altitude (47 records): 240 - 800 m; 400 *lq* - 460 *med* - 520 *uq* m.

Landform (47 records): 62% deep soil, 34% shallow soil, 4% rocky outcrops.

Slope (47 records): 51% gentle incline, 36% steep incline, 11% hill top, 2% platform.

Aspect (44 records): 82% North, 8% East, 8% West, 2% South.

Soil Type (46 records): 43% sandy, 35% gravelly, 15% loamy, 7% rocky.

Soil Colour (46 records): 74% grey, 22% brown, 4% white.

Geology (47 records): 98% sandstone, 2% silcrete or ferricrete.

Vegetation (47 records): 98% shrubland, 2% grassland.

Conservation Status and Threat:

Red Data List Status: Vulnerable

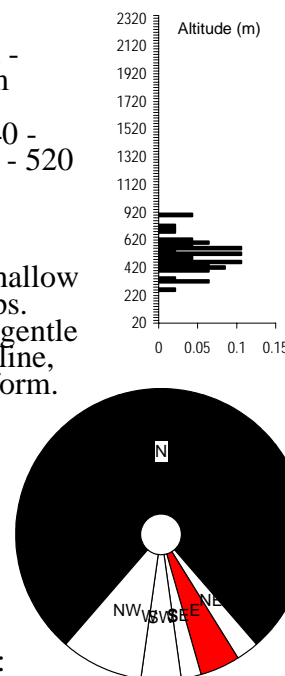
B1a(ii)b(v)+2a(ii)b(v).

Occurrence (Fynbos): 116 km² with 4% conserved and 8% lost; Occupancy: 43 km² with 0% conserved and 2% lost. Fragmentation index: 28%.

Nature Reserves (47 records): 0% in nature reserves - unconserved.

Habitat destruction (46 records): 100% extensive natural habitat.

Alien Invasive Species (44 records): 61% none, 34% *Hakea*, 5% Fabaceae (chiefly alien *Acacia*).



Alien Density (44 records): 61% alien-free,
30% sparse, 9% abundant.

Cultivation & Utilization:

Picking (31 records): 94% no sign of picking,
3% lightly picked, 3% severely picked.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Some heads eaten -bored in - by white
caterpillars of moth type (AGRY0101347);
A great deal of picking on this farm! But it is
not harmful to most species except *P.*
longicaulis because very few seeds are
dropped. We found 2 populations but the

one with 30 plants had no seedheads as the
flowerheads were picked for florist or export
(VJK99022704)

Confusing Species: None.

Records of identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PALONG_m.jpg" *

MERGEFORMAT \d

***Paranomus adiantifolius* Salisb. ex Kn.**
Hairy-style Scepter

Other Common Names: Maiden-hair-leaf
Paranomus.

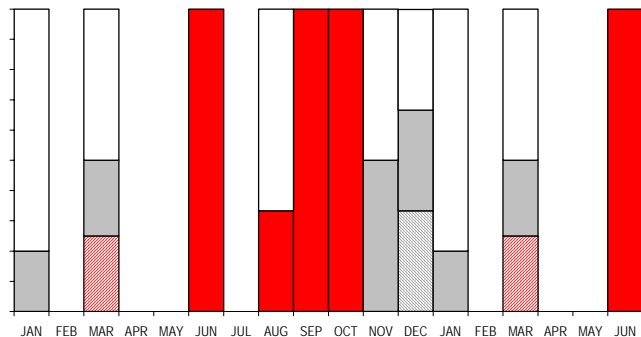
Other Scientific Names: *parvifolia* (RBr)
 1810, *spathulatus* NEBr 1933.

24 Records

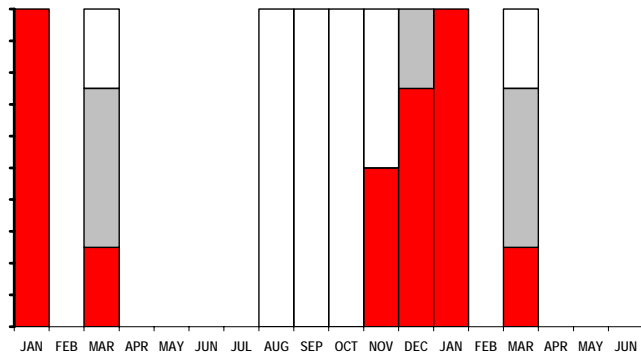
Population (24 records): 4% Common,
 50% Frequent, 46% Rare.

Dispersion (18 records): 67% clumped,
 33% variable.

Flowering (23 records with: Jan 5, Feb 0, Mar 4, Apr 0, May 0, Jun 1, Jul 0, Aug 3, Sep 4, Oct 1, Nov 2, Dec 3): Buds from Mar; Flowering from Jun to Oct; Peak Flowering not recorded; Over from Dec; Fruit from Nov to Mar; Nothing from Nov to Mar and Aug. Peak levels at 100% in Sep to Oct. Historically recorded as flowering from Sep to Nov.



Growth (23 records with: Jan 5, Feb 0, Mar 4, Apr 0, May 0, Jun 0, Jul 0, Aug 3, Sep 4, Oct 1, Nov 2, Dec 4): Much from Nov to Mar; Rare from Mar and Dec; None from Mar and Aug to Nov. Peak levels at 100% in Dec to Jan.



Seedlings (13 records): All without any seedlings present.

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

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



Height (24 records): 8% 0-0.2 m tall, 58% 0.2-1 m tall, 33% 1-2 m tall.

Pollinators (2 records): 100% beetles.

Detailed Pollinators (1 record): Monkey Beetle.

Habitat:

Distance to Ocean (23 records): 100% inland - further than 2 km from coast.

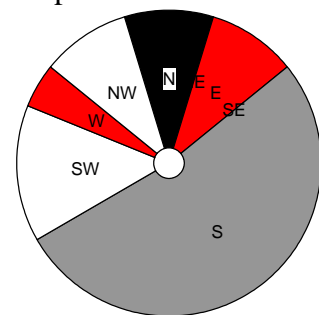
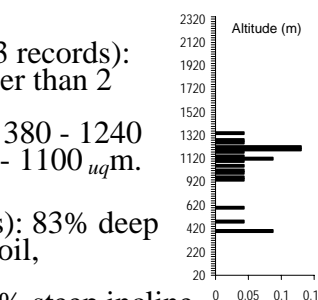
Altitude (23 records): 380 - 1240 m; 840_{lq} - 1020_{med} - 1100_{uq}m.

Landform (23 records): 83% deep soil, 13% shallow soil, 4% rocky outcrops.

Slope (23 records): 52% steep incline, 43% gentle incline, 4% platform.

Aspect (21 records):

60% South,
 17% North,
 14% West,
 10% East.



Soil Type (23 records):

65% sandy,
 22% loamy,
 9% gravelly,
 4% peaty.

Soil Colour (21 records): 81% grey, 10% brown, 5% black, 5% yellow.

Geology (23 records): 91% sandstone, 9% shale.

Vegetation (23 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 125 km² with 26% conserved and 14% lost; Occupancy: 20 km² with 28% conserved and 3% lost. Fragmentation index: 12%.

Nature Reserves (23 records): 9% in nature reserves - inadequately conserved.

Habitat destruction (23 records): 96% extensive natural habitat, 4% naturally linear habitats.

Alien Invasive Species (22 records): 41% *Hakea*, 32% none, 27% *Pinus*.

Alien Density (22 records): 32% alien-free, 68% sparse.

Cultivation & Utilization:

Picking (18 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Some with up to 35 heads per bush
(AGR99092008);
About one third of the plants dead! Some 1/3 of
all [dead and live] have flowered
(APE96012815); At least 3 plants in the
colony dead (PMRY0012302); Plants in 3
clumps were counted most of which
flowered for the first time in 1995 and some
of which were already dying of unknown
causes (SHR96012801);
Also crabspider on flowerheads
(AGRY1101908);

Confusing Species: None.
Records of identification queries = 2
Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PAADIA_m.jpg" *

MERGEFORMAT \d

Paranomus reflexus (Phill. & Hutch.) Fourc. 1912, 1933
Van Staden's Scepter

Other Common Names: Green Scepter,
Perdebos.

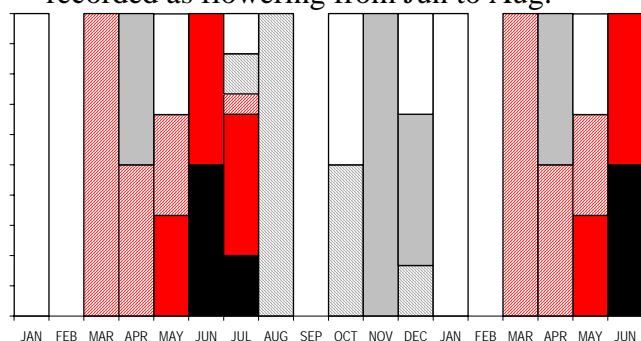
Other Scientific Names: *None*.

42 Records

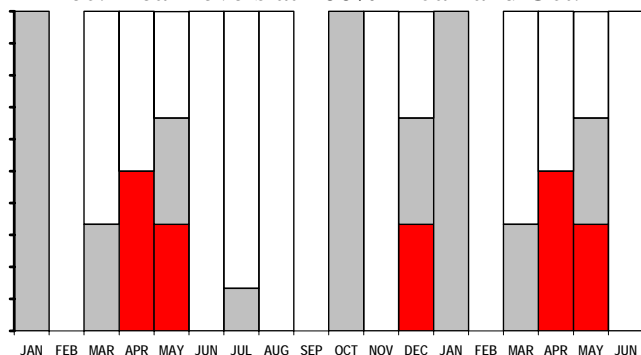
Population (40 records): 18% Common,
 50% Frequent, 33% Rare.

Dispersion (39 records): 51% variable,
 46% clumped, 3% evenly distributed.

Flowering (41 records with: Jan 1, Feb 0, Mar 3, Apr 2, May 6, Jun 2, Jul 15, Aug 2, Sep 0, Oct 2, Nov 2, Dec 6): Buds from Mar to May; Flowering from May to Jul; Peak Flowering from Jun to Jul; Over from Aug to Oct; Fruit from Apr and Nov to Dec; Nothing from Dec to Jan and May and Oct. Peak levels at 100% in Jun. Historically recorded as flowering from Jun to Aug.



Growth (41 records with: Jan 1, Feb 0, Mar 3, Apr 2, May 6, Jun 2, Jul 15, Aug 2, Sep 0, Oct 2, Nov 2, Dec 6): Much from Apr to May and Dec; Rare from Jan, Mar, May, Oct and Dec; None from Mar to Aug and Nov to Dec. Peak levels at 100% in Jan and Oct.



Seedlings (31 records): All without any seedlings present.

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

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



Height (41 records): 2% 0-0.2 m tall, 49% 0.2-1 m tall, 49% 1-2 m tall.

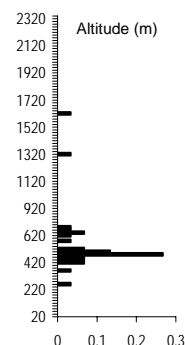
Pollinators (1 record): 100% bees or wasps.

Detailed Pollinators (1 record): Honey Bee.

Habitat:

Distance to Ocean (28 records): 100% inland - further than 2 km from coast.

Altitude (28 records): 240 - 1520 m; 460 *lq* - 480 *med* - 480 *uq*m.

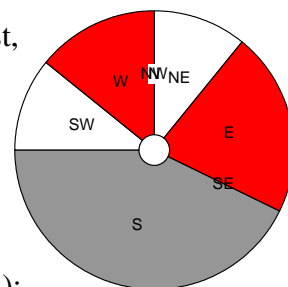


Landform (28 records):

79% deep soil, 18% shallow soil, 4% rocky outcrops.

Slope (28 records): 50% gentle incline, 39% steep incline, 7% platform, 4% hill top.

Aspect (26 records): 50% South, 27% East, 19% West, 4% North.



Soil Type (28 records):

75% loamy, 18% sandy, 7% rocky.

Soil Colour (28 records):

50% brown, 46% grey, 4% black.

Geology (28 records): 100% sandstone.

Vegetation (28 records): 71% shrubland, 21% plantations, 7% grassland.

Conservation Status and Threat:

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

Occurrence (Fynbos): 605 km² with 70% conserved and 21% lost; **Occupancy:** 34 km² with 78% conserved and 38% lost.

Fragmentation index: 5%.

Nature Reserves (28 records): 71% in nature reserves - well conserved.

Habitat destruction (28 records):

96% extensive natural habitat, 4% islands.

Alien Invasive Species (26 records):

50% *Pinus*, 23% *Hakea*, 15% none, 8% Fabaceae (chiefly alien *Acacia*), 4% Myrtaceae.

Alien Density (26 records): 15% alien-free, 62% sparse, 23% dense.

Cultivation & Utilization:

Picking (35 records): 100% no sign of picking.

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

Atlassers Notes:

Smaller than in guide (MCG97052501).

Confusing Species: None.

Records of identification queries = 3.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PAREFL_m.jpg" *

MERGEFORMAT \d

***Paranomus roodebergensis* (Compton) Levyns 1933, 1970**
Honey-scented Scepter
Rooihoud

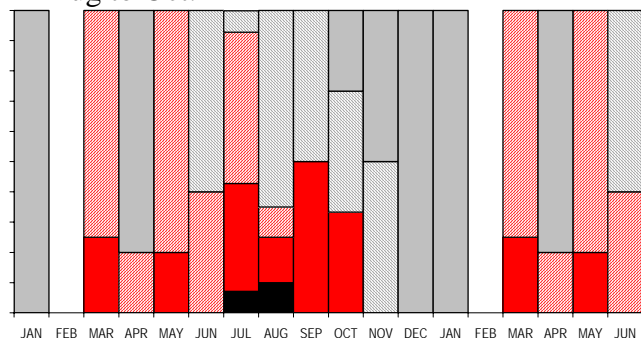
Other Common Names: *Rooihond*.
Other Scientific Names: *None*.

104 Records

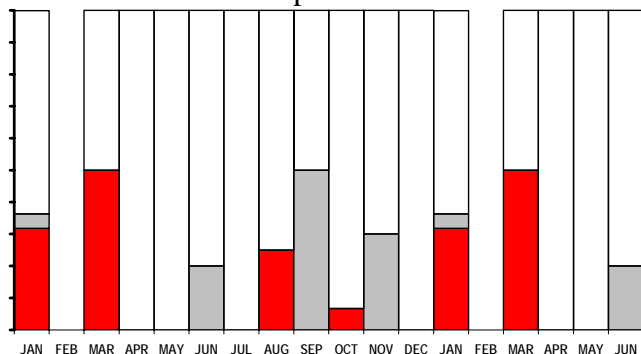
Population (104 records): 13% Common, 73% Frequent, 14% Rare.

Dispersion (99 records): 81% variable, 17% clumped, 2% evenly distributed.

Flowering (104 records with: Jan 22, Feb 0, Mar 4, Apr 5, May 5, Jun 5, Jul 14, Aug 20, Sep 2, Oct 15, Nov 10, Dec 2): Buds from Mar to Jul; Flowering from Mar, May, Jul and Sep to Oct; Peak Flowering not significant; Over from Jun and Aug to Nov; Fruit from Oct to Jan and Apr; Nothing not recorded. Peak levels at 100% in May to Sep. Historically recorded as flowering from Aug to Oct.



Growth (104 records with: Jan 22, Feb 0, Mar 4, Apr 5, May 5, Jun 5, Jul 14, Aug 20, Sep 2, Oct 15, Nov 10, Dec 2): Much from Jan to Mar and Aug; Rare from Jun, Sep and Nov; None from all year round. Peak levels at 50% in Mar and Sep.



Seedlings (14 records): All without any seedlings present.

Fire Survival : No data.

Age to first flowering: First flowers (100%) recorded at 6 years, no earlier data.



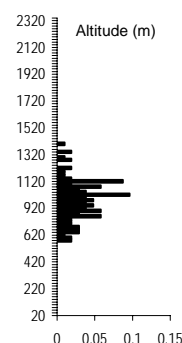
Height (104 records): 17% 0.2-1 m tall, 83% 1-2 m tall.

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

Habitat:

Distance to Ocean (104 records): 100% inland - further than 2 km from coast.

Altitude (104 records): 560 - 1300 m; 760 *lq* - 880 *med* - 940 *uq*m.

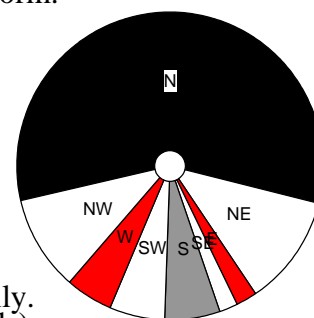


Landform (104 records): 81% shallow soil, 16% deep soil, 3% rocky outcrops.

Slope (104 records): 66% steep incline, 28% gentle incline, 3% hill top, 2% platform.

Aspect (101 records):

68% North,
 13% West,
 10% South,
 9% East.



Soil Type (104 records):

79% sandy,
 12% loamy,
 7% rocky, 3% gravelly.

Soil Colour (104 records):

49% grey, 42% brown, 4% orange,
 3% yellow, 2% red.

Geology (104 records): 95% sandstone,
 5% shale.

Vegetation (104 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 390 km² with 42% conserved and 0% lost; Occupancy: 129 km² with 33% conserved and 0% lost.
 Fragmentation index: 21%.

Nature Reserves (104 records): 56% in nature reserves - well conserved.

Habitat destruction (103 records): 100% extensive natural habitat.

Alien Invasive Species (104 records): 98% none, 2% *Hakea*.

Alien Density (104 records): 98% alien-free, 2% sparse.

Cultivation & Utilization:

Picking (101 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Flowering after good local rains

(NAH95033101);

Senescent (SHR98092702); Plants old and tatty
looking - very old dry veld
(WMP99031301).

Confusing Species: No confusing species.
Records of identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PAROOD_m.jpg" *

MERGEFORMAT \d

Paranomus sceptrum-gustavianus (Sparman) Hylander 1777, 1954
King-Gustav's Scepter
Septerpluimbos

Other Common Names: Bottlebrush, Scepter-like Paranomus, Sceptre, White Sceptre, *Perdebos*.

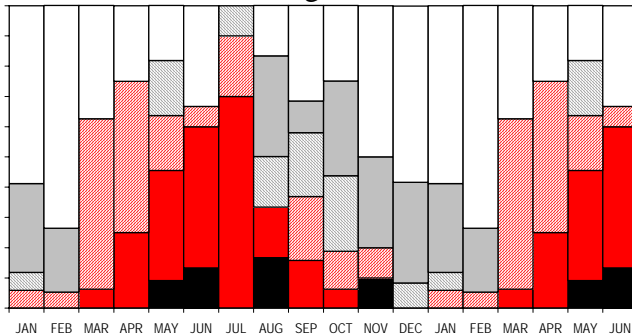
Other Scientific Names: *sceptriformis* Salisb. ex Knight 1809, *sceptrum* Salisb 1807.

180 Records

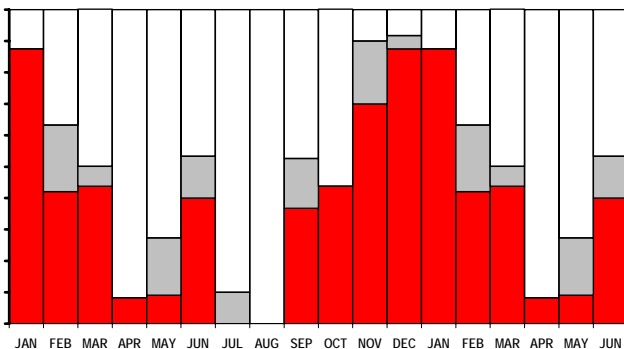
Population (178 records): 2% Common, 24% Frequent, 74% Rare.

Dispersion (117 records): 59% clumped, 39% variable.

Flowering (175 records with: Jan 17, Feb 19, Mar 16, Apr 12, May 11, Jun 15, Jul 10, Aug 6, Sep 19, Oct 16, Nov 10, Dec 24): Buds from Mar to Apr and Jul and Sep; Flowering from Apr to Jul; Peak Flowering from Aug; Over from Sep to Oct; Fruit from Oct to Feb and Aug; Nothing from Sep to Apr and Jun. Peak levels at 100% in Jul. Historically recorded as flowering from Jul to Mar!



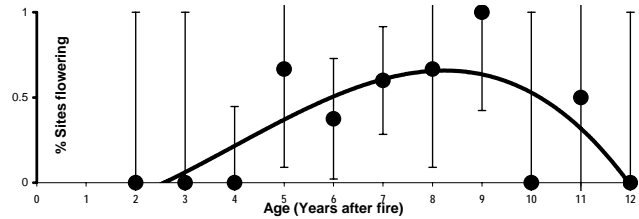
Growth (173 records with: Jan 16, Feb 19, Mar 16, Apr 12, May 11, Jun 15, Jul 10, Aug 5, Sep 19, Oct 16, Nov 10, Dec 24): Much from Sep to Mar and Jun; Rare from Feb and Nov; None from Feb to Oct. Peak levels at 92% in Dec.



Seedlings (88 records): All without any seedlings present.

Fire Survival: No data.

Age to first flowering: First flowers recorded at 5 years, 50% estimated at 5-7 years, and 100% recorded at 9 years.



Height (175 records): 2% 0-0.2 m tall, 74% 0.2-1 m tall, 23% 1-2 m tall.

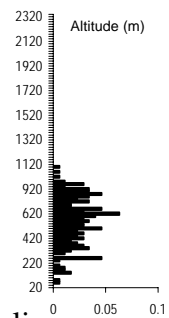
Pollinators (2 records): 50% bees or wasps, 50% beetles.

Detailed Pollinators (1 record): Solitary Bee.

Habitat:

Distance to Ocean (173 records): 84% inland - further than 2 km from coast.

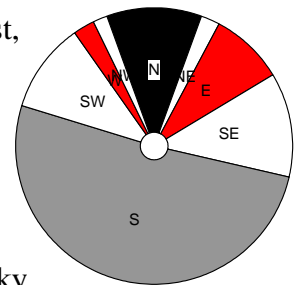
Altitude (173 records): 40 - 1000 m; 400 *lq* - 560 *med* - 660 *uq* m.



Landform (170 records): 68% deep soil, 27% shallow soil, 5% rocky outcrops.

Slope (170 records): 63% steep incline, 32% gentle incline, 4% hill top.

Aspect (163 records): 63% South, 14% East, 13% North, 9% West.



Soil Type (170 records): 61% sandy, 16% peaty, 12% loamy, 6% gravelly, 4% rocky, 1% clayey.

Soil Colour (169 records): 66% grey, 22% black, 10% brown, 1% white.

Geology (171 records): 97% sandstone, 2% shale.

Vegetation (172 records): 97% shrubland, 2% plantations, 1% grassland.

Conservation Status and Threat:

Red Data List Status: Near Threatened B1a(i)b(i,ii,iii,iv)c(iv).

Occurrence (Fynbos): 2 431 km² with 21% conserved and 31% lost; **Occupancy:** 224 km² with 41% conserved and 13% lost. **Fragmentation index:** 5%.

Nature Reserves (173 records): 40% in nature reserves.

Habitat destruction (168 records): 99% extensive natural habitat.

Alien Invasive Species (167 records): 49% none, 46% *Pinus*, 2% *Hakea*, 2% Fabaceae (chiefly alien *Acacia*).

Alien Density (167 records): 49% alien-free, 45% sparse, 4% abundant, 2% dense.

Cultivation & Utilization:

Picking (126 records): 100% no sign of picking.

Cultivation Status: Plantings - 1 record.

Atlassers Notes:

3 live plants and 3 dead plants (*Phytophthora* or drought?) (AGR91122606); 21 living and 13 dead (AGR91122607); Two totally dead bushes found - both fully grown and in flower when they died (LYM94061201); 2 out of 4 plants dead (SHR99032102); 4 out of 12 plants visible from path have died since 13/3/2000 (TLEY1010603); 1 of 4 plants is dead (TLEY1010605); And 1 dead (AGR99122602); Dead plant also (MHR1032203);

The plants looks very healthy - many seed heads on the ground but no seedlings (PAP92060802);

Confusing Species: A single instance of misidentification with *P. spicatus* as a young plant.

Records of identification queries = 6.

Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PASCEP_m.jpg" *

MERGEFORMAT \d

***Paranomus spathulatus* (Thunb.) Kuntze 1781, 1891**
Langeberg Scepter

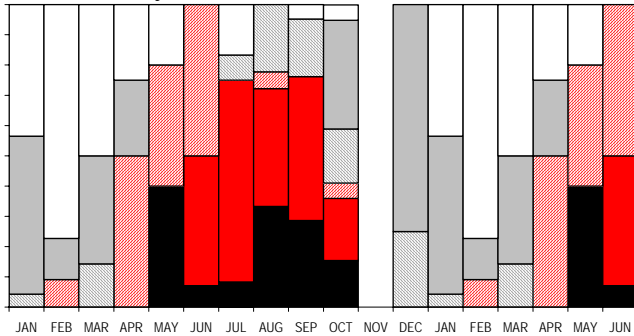
Other Common Names: Fan-leaf Paranomus.
Other Scientific Names: *flabellifer* Salish. ex Knight 1809, *marginata* RBr 1810, *muirii* (Phill & Hutch) 1912.

178 Records

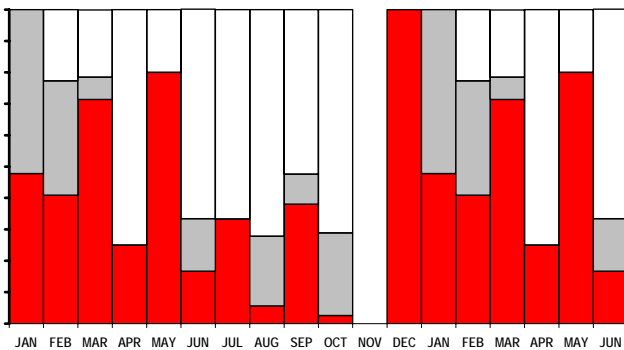
Population (175 records): 1% Abundant, 37% Common, 54% Frequent, 8% Rare.

Dispersion (171 records): 46% variable, 42% clumped, 9% widespread, 3% evenly distributed.

Flowering (176 records with: Jan 23, Feb 22, Mar 14, Apr 4, May 5, Jun 14, Jul 12, Aug 18, Sep 21, Oct 39, Nov 0, Dec 4): Buds from Apr to Jun; Flowering from Jun to Oct; Peak Flowering from May and Aug to Sep; Over from Aug and Dec; Fruit from Dec to Jan, Mar to Apr and Oct; Nothing from Jan to May. Peak levels at 100% in Jun and Aug. Historically recorded as flowering from May to Dec.



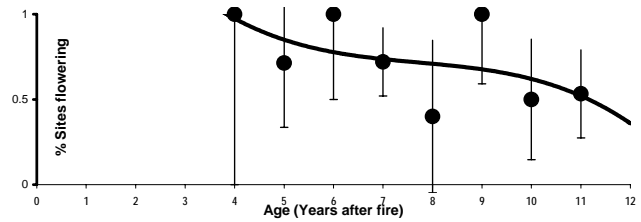
Growth (173 records with: Jan 23, Feb 22, Mar 14, Apr 4, May 5, Jun 12, Jul 12, Aug 18, Sep 21, Oct 38, Nov 0, Dec 4): Much from Dec to May and Jul and Sep; Rare from Jan to Feb and Aug and Oct; None from Feb to Oct. Peak levels at 100% in Dec to Jan.



Seedlings (93 records): Absent in 87%: fewer seedlings than prefire adults in 2 cases, and more in 4 cases. Seedlings found in Jul (3), Aug, Sep and Oct.

Fire Survival (9 records): 78% resprouted from underground boles, 11% eliminated from the area by fires, 11% survived by seedlings only.

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 4-9 years, and 100% recorded at 6 years, but only consistently after 13 years.



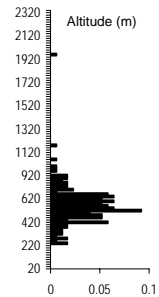
Height (175 records): 2% 0-0.2 m tall, 54% 0.2-1 m tall, 43% 1-2 m tall.

Pollinators (1 records): 100% bees or wasps.
Detailed Pollinators (1 record): Honey Bee.

Habitat:

Distance to Ocean (173 records): 100% inland - further than 2 km from coast.

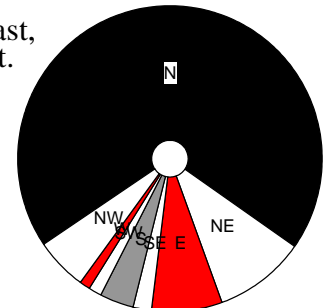
Altitude (173 records): 220 - 1860 m; 460 *lq* - 540 *med* - 600 *uq*m.



Landform (172 records): 52% deep soil, 26% rocky outcrops, 22% shallow soil.

Slope (173 records): 55% gentle incline, 34% steep incline, 6% hill top, 3% platform, 1% valley bottom.

Aspect (162 records): 78% North, 14% East, 5% South, 3% West.



Soil Type (171 records):

55% sandy, 18% loamy, 16% rocky, 11% gravelly.

Soil Colour (171 records):

66% grey, 18% brown, 9% yellow, 5% white, 1% black, 1% orange.

Geology (173 records): 95% sandstone, 2% conglomerate, 2% shale.

Vegetation (173 records): 97% shrubland, 3% grassland.

Conservation Status and Threat:

Red Data List Status: Near Threatened A4c.

Occurrence (Fynbos): 829 km² with 30% conserved and 3% lost; **Occupancy:** 211 km² with 23% conserved and 10% lost.
Fragmentation index: 7%.

Nature Reserves (173 records): 13% in nature reserves - inadequately conserved.

Habitat destruction (172 records): 97% extensive natural habitat, 2% islands, 1% road verges.

Alien Invasive Species (171 records): 75% none, 12% *Pinus*, 11% Fabaceae (chiefly alien *Acacia*), 1% Myrtaceae.

Alien Density (171 records): 75% alien-free, 22% sparse, 2% abundant.

Cultivation & Utilization:

Picking (132 records): 93% no sign of picking,
7% lightly picked.

Cultivation Status: No noted cultivation.

Atlassers Notes: Many notes on single
stemmed versus resprouters: see distribution.

Confusing Species: None, except as juveniles
with *P. dispersus*.

Records of identification queries = 17.

Records of corrected identification queries = 1.

Variation and Taxonomy: This is the only
Protea known to have two regeneration
modes. Eastern forms are single-stemmed
and killed by fire. Western forms are
multistemmed and resprout after fires.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PASPAT_m.jpg" *

MERGEFORMAT \d

***Paranomus 'gamkaensis'* nomen nudum 1994**
Gamkaberg Scepter

Other Common Names: Atlased as "*P. spathulatus gamkaensis*". No other common names known.

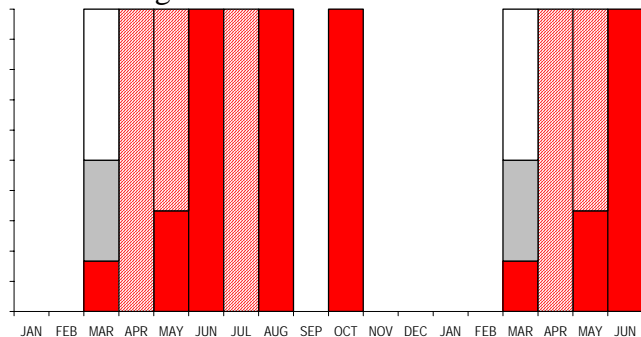
Other Scientific Names: *None*.

27 Records

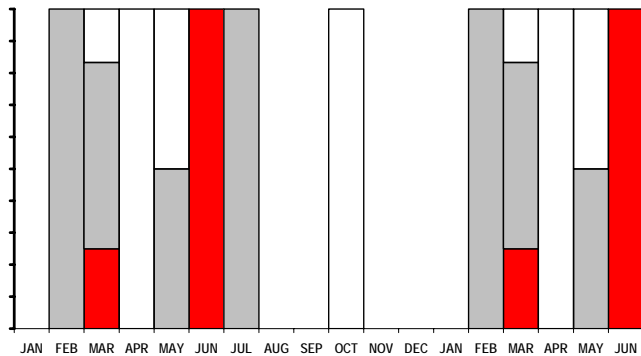
Population (27 records): 26% Common, 67% Frequent, 4% Rare, 4% Extinct.

Dispersion (26 records): 50% variable, 46% clumped, 4% evenly distributed.

Flowering (25 records with: Jan 0, Feb 0, Mar 12, Apr 3, May 6, Jun 1, Jul 1, Aug 1, Sep 0, Oct 1, Nov 0, Dec 0): Buds from Apr to May and Jul; Flowering from May to Jun and Aug to Oct; Peak Flowering and Over not recorded; Fruit from Mar; Nothing from Mar. Peak levels unreliable: at 100% in Apr to Oct. Historically not recorded as flowering.



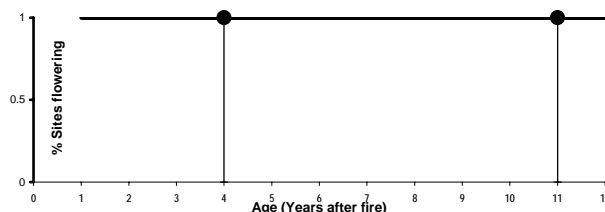
Growth (25 records with: Jan 0, Feb 1, Mar 12, Apr 3, May 6, Jun 1, Jul 1, Aug 0, Sep 0, Oct 1, Nov 0, Dec 0): Much from Mar and Jun; Rare from Feb to Mar, May and Jul; None from Apr to May and Oct. Peak levels unreliable: at 100% in Jun.



Seedlings (12 records): All without any seedlings present.

Fire Survival (4 records): 75% eliminated from the area by fires, 25% escaped fires in fire-safe areas.

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



Height (26 records): 4% 0-0.2 m tall, 58% 0.2-1 m tall, 38% 1-2 m tall.

Pollinators (1 record): 100% bees or wasps.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (27 records):

100% inland - further than 2 km from coast.

Altitude (27 records): 480 - 1020 m; 720_{lq} - 800_{med} - 920_{uq}m.

Landform (27 records):

48% deep soil, 48% shallow soil, 4% rocky outcrops.

Slope (26 records): 50% gentle incline, 46% steep incline, 4% hill top.

Aspect (25 records): 62% North, 24% West, 8% South, 6% East.

Soil Type (26 records):

62% sandy, 15% loamy, 12% rocky, 8% gravelly, 4% clayey.

Soil Colour (27 records):

59% brown, 26% grey, 15% red.

Geology (27 records): 96% sandstone, 4% shale.

Vegetation (27 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Vulnerable D2(ii).

Occurrence (Fynbos): 42 km² with 72% conserved and 0% lost; Occupancy: 37 km² with 54% conserved and 0% lost. Fragmentation index: 79%.

Nature Reserves (27 records): 52% in nature reserves - well conserved.

Habitat destruction (27 records): 100% extensive natural habitat.

Alien Invasive Species (25 records): 96% none, 4% Myrtaceae.

Alien Density (25 records): 96% alien-free, 4% sparse.

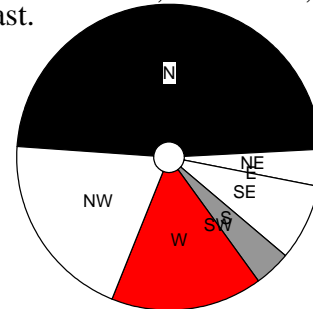
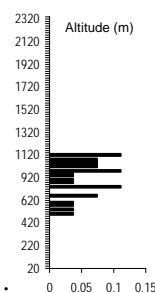
Cultivation & Utilization:

Picking (22 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: *None*.

Confusing Species: Misidentified as *P. roodebergensis* and *P. longicaulis*. It is somewhat intermediate between *P.*



spathulatus (growth habit) and *P. longicaulis* (bracts).

Records of identification queries = 8.

Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted. This species was discovered at the same time as *Mimetes chrysanthus*, but has not been

described. Like the eastern forms of *P. spathulatus*, this is a reseeder.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\PASPATG_m.jpg" *

MERGEFORMAT \d

***Sorocephalus* R.Br. 1810**
Powderpuffs

Anything specific to go in here?

Richard Salisbury (1809) published this as *Soranthæ*., but Robert Brown's name is conserved. Salisbury's concept of the genus is used today, as Brown included several *Spatalla* within this concept of the genus.

The type is *S. imbricatus*. *Sorocephalus* means "heaped head"

There are three sections in the genus. etc

Sorocephalus tenuifolius R.Br. 1810

Diminutive Powderpuff

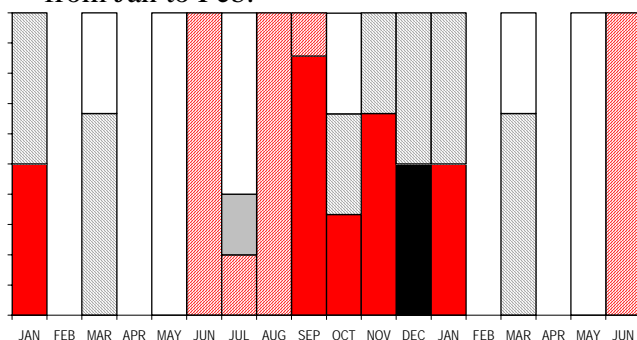
Other Common Names: Fine-leaf Soranthe.
Other Scientific Names: *None*.

31 Records

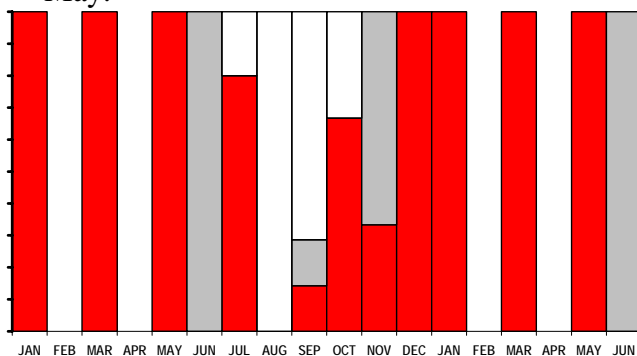
Population (31 records): 48% Common, 48% Frequent, 3% Extinct.

Dispersion (30 records): 73% variable, 23% clumped, 3% evenly distributed.

Flowering (30 records with: Jan 2, Feb 0, Mar 3, Apr 0, May 2, Jun 1, Jul 5, Aug 2, Sep 7, Oct 3, Nov 3, Dec 2): Buds from Jun to Aug; Flowering from Jan and Sep to Nov; Peak Flowering from Dec; Over from Oct to Mar; Fruit from Jul; Nothing from Mar to May and Jul and Oct. Peak levels at 100% in Aug to Sep. Historically recorded as flowering from Jan to Feb.



Growth (30 records with: Jan 2, Feb 0, Mar 3, Apr 0, May 2, Jun 1, Jul 5, Aug 2, Sep 7, Oct 3, Nov 3, Dec 2): Much from Oct to May and Jul; Rare from Jun and Nov; None from Jul to Oct. Peak levels at 100% from Dec to May.



Seedlings (26 records): Absent in 92%: more seedlings than prefire adults in 1 case. Seedlings found in Oct.

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

Age to first flowering: First flowers recorded at 2 years <check does not tally with graph>, 50% estimated at 4-5 years, and 100% recorded at 7 years.



Height (30 records): 23% 0-0.2 m tall, 77% 0.2-1 m tall.

Pollinators (4 records): 75% bees or wasps, 25% beetles.

Detailed Pollinators (2 records): Monkey Beetle, Honey Bee.

Habitat:

Distance to Ocean (29 records): 100% inland - further than 2 km from coast.

Altitude (29 records): 100 - 280 m; 180_{lq} - 200_{med} - 220_{uq}m.

Landform (29 records): 52% shallow soil, 48% deep soil.

Slope (29 records): 59% steep incline, 41% gentle incline.

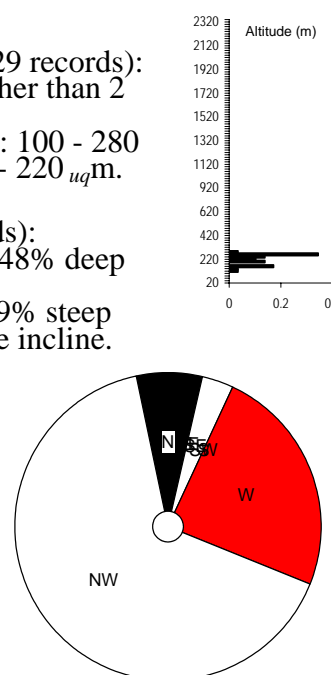
Aspect (29 records): 55% West, 41% North, 2% East, 2% South.

Soil Type (29 records): 69% loamy, 14% clayey, 10% sandy, 3% gravelly, 3% rocky.

Soil Colour (29 records): 79% grey, 14% brown, 3% white, 3% yellow.

Geology (28 records): 57% sandstone, 43% shale.

Vegetation (29 records): 97% shrubland, 3% plantations.



Conservation Status and Threat:

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

Occurrence (Fynbos): 22 km² with 50% conserved and 8% lost; **Occupancy:** 20 km² with 56% conserved and 14% lost.

Fragmentation index: 91%.

Nature Reserves (29 records): 93% in nature reserves - well conserved.

Habitat destruction (29 records): 97% extensive natural habitat, 3% islands.

Alien Invasive Species (29 records): 76% none, 21% *Pinus*, 3% Fabaceae (chiefly alien *Acacia*).

Alien Density (29 records): 76% alien-free, 21% sparse, 3% abundant.

Cultivation & Utilization:

Picking (30 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Checked up following information from Emilia Rode and there it was (MAJ96070201); Apple orchard: site of extinct population - ploughed up in the 1980s (ASP92092204).

Approx 18 plants growing on bank of small stream (LYM96092202); About 50 plants in 10m X 10m area (MAJ96070201); 400 - 500 plants (MAJ96070202); About 80 - 100 plants (MAJ96070203); About 600 plants (MAJ96070601);

Grows in sparsely vegetated areas not the typical habitat (MAJ96070203).

Confusing Species: None noted.

Records of identification queries = 1

Variation and Taxonomy: No variation noted.

Should the correct citation for this species not be *S. tenuifolius* (Salisb. ex. Knight) R.Br?

Distribution: Add. Seems to prefer degraded habitat – often occurs on erosion lines where few other plants survive.

INCLUDEPICTURE

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MERGEFORMAT \d

Sorocephalus alopecurus Rourke 1969

Woolly-stalk Powderpuff

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

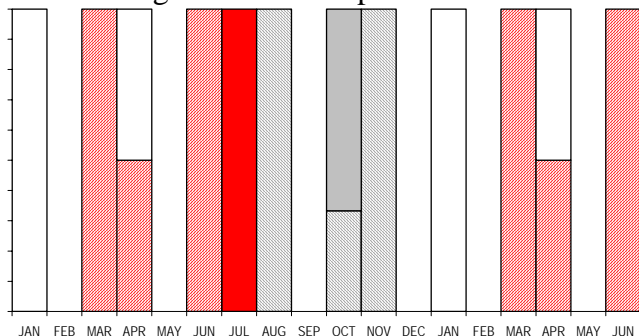
Altitude (12 records): 580 - 920 m; 600 *l_q* - 640 *med* - 700 *uq*m.

12 Records

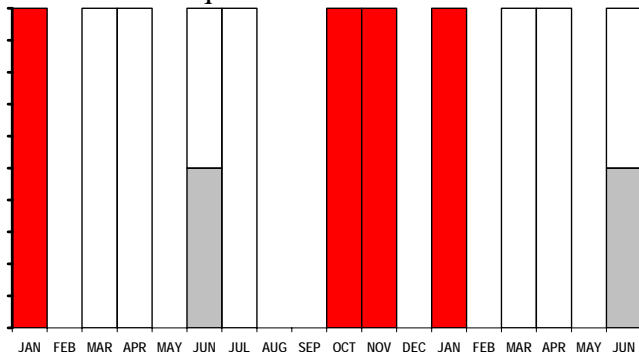
Population (12 records): 17% Common, 67% Frequent, 17% Rare.

Dispersion (12 records): 92% clumped, 8% variable.

Flowering (12 records with: Jan 1, Feb 0, Mar 1, Apr 2, May 0, Jun 2, Jul 1, Aug 1, Sep 0, Oct 3, Nov 1, Dec 0): Buds from Mar to Jun; Flowering from Jul; Peak Flowering not recorded; Over from Aug to Nov; Fruit from Oct; Nothing from Jan and Apr. Peak levels at 100% in Jul. Historically recorded as flowering from Jul to Sep.



Growth (11 records with: Jan 1, Feb 0, Mar 1, Apr 2, May 0, Jun 2, Jul 1, Aug 0, Sep 0, Oct 3, Nov 1, Dec 0): Much from Oct to Jan; Rare from Jun; None from Mar to Jul. Peak levels inadequate: at 100% in Oct to Jan.



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

Fire Survival : No data.

Age to first flowering: First flowers recorded at 100% at 6 years.

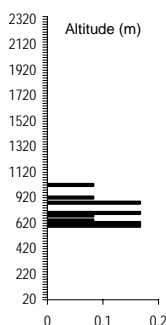
Height (12 records): 92% 0.2-1 m tall, 8% 1-2 m tall.

Pollinators (1 record): 100% bees or wasps.

Detailed Pollinators: No additional data.

Habitat:

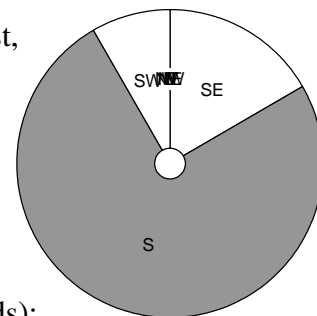
Distance to Ocean (12 records): 100% inland - further than 2 km from coast.



Landform (12 records): 67% deep soil, 17% rocky outcrops, 17% shallow soil.

Slope (12 records): 100% steep incline.

Aspect (12 records): 88% South, 8% East, 4% West.



Soil Type (12 records): 33% sandy, 25% peaty, 17% gravelly, 17% rocky, 8% loamy.

Soil Colour (12 records): 58% grey, 33% black, 8% white.

Geology (12 records): 100% sandstone.

Vegetation (12 records): 92% shrubland, 8% grassland.

Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 18 km² with 92% conserved and 0% lost; **Occupancy:** 14 km² with 78% conserved and 11% lost. **Fragmentation index:** 78%.

Nature Reserves (12 records): 33% in nature reserves.

Habitat destruction (12 records): 100% extensive natural habitat.

Alien Invasive Species (12 records): 83% *Pinus*, 8% *Hakea*, 8% Fabaceae (chiefly alien *Acacia*).

Alien Density (12 records): 92% sparse, 8% abundant.

Cultivation & Utilization:

Picking (9 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Flowered extensively for first time this year after fire some 5-7 years ago (SHR93102302);

Heads gnawed off by mice (VAL96103001); About half of plants dead - about 15 in one small clump - signs that plot was a much denser: pine stand cleared one or two fire cycles back (AGRY0072609);

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

Variation and Taxonomy: No variation noted. Closely related to *S. pinifolius*.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOALOP_m.jpg" *

MERGEFORMAT \d

***Sorocephalus clavigerus* (Salisb. ex Kn.) Hutch. 1809, 1912**
Erect Powderpuff

Other Common Names: Club-bearing Soranthe, Mountain Soranthe, Rock Soranthe.

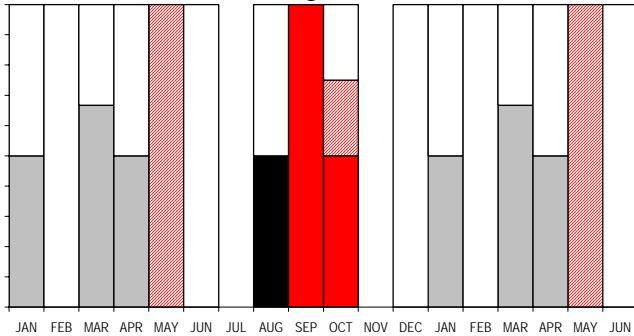
Other Scientific Names: *montana* (Salisb. ex Knight) 1809, *rupestris* (Salisb. ex Knight) Phill 1809.

22 Records

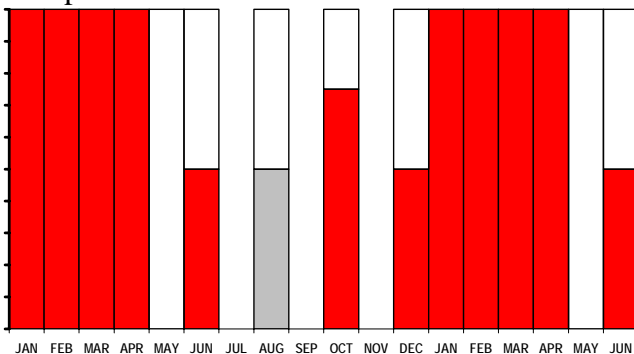
Population (22 records): 32% Frequent, 64% Rare, 5% Extinct.

Dispersion (16 records): 81% clumped, 19% variable.

Flowering (21 records with: Jan 2, Feb 2, Mar 3, Apr 2, May 1, Jun 2, Jul 0, Aug 2, Sep 1, Oct 4, Nov 0, Dec 2): Buds from May and Oct; Flowering from Sep to Oct; Peak Flowering from Aug; Over not recorded; Fruit from Jan and Mar to Apr; Nothing from Jan to Apr and Jun to Oct to Dec. Peak levels at 100% in Sep. Historically recorded as flowering from Jul to Dec.



Growth (20 records with: Jan 2, Feb 2, Mar 3, Apr 2, May 1, Jun 2, Jul 0, Aug 2, Sep 0, Oct 4, Nov 0, Dec 2): Much from Oct to Apr and Jun; Rare from Aug; None from May to Dec. Peak levels inadequate: at 100% in Jan to Apr.



Seedlings (12 records): All without any seedlings present.

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

Age to first flowering: First flowers recorded at 9 years, 50% estimated at 7-8 years, and 100% recorded at 9 years.



Height (21 records): 29% 0-0.2 m tall, 71% 0.2-1 m tall.

Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (21 records): 100% inland - further than 2 km from coast.

Altitude (21 records): 480 - 1440 m; 540_{lq} - 580_{med} - 860_{uq}m.

Landform (21 records): 67% deep soil, 33% shallow soil.

Slope (21 records): 43% steep incline, 24% gentle incline, 19% platform, 14% hill top.

Aspect (14 records): 75% South, 14% East, 7% North, 4% West.

Soil Type (21 records): 52% sandy, 33% peaty, 10% loamy, 5% gravelly.

Soil Colour (21 records): 67% grey, 29% black, 5% brown.

Geology (21 records): 100% sandstone.

Vegetation (21 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Endangered

B1b(i,ii,iii,iv,v)c(iv)+2b(i,ii,iii,iv,v)c(iv), D

Occurrence (Fynbos): 265 km² with 52% conserved and 25% lost; Occupancy: 23 km² with 71% conserved and 0% lost.

Fragmentation index: 8%.

Nature Reserves (21 records): 100% in nature reserves - well conserved.

Habitat destruction (21 records):

100% extensive natural habitat.

Alien Invasive Species (21 records): 76% none, 24% *Pinus*.

Alien Density (21 records): 76% alien-free, 24% sparse.

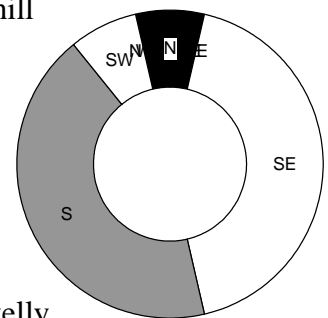
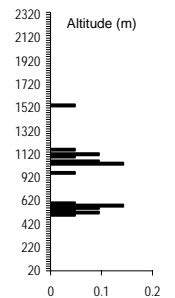
Cultivation & Utilization:

Picking (16 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlasers Notes:

Has been atlased as *S. palustris* but is erect not creeping : looks very bushy for *S. clavigerus*



but otherwise ok for this latter species! *S. palustris* still not found! (ASP94102905);
Grazed on by herbivore (MAJ92060802);
Four plants were found but all dead and
clumped in old veld (NGF98041008);

Confusing Species: *S. palustris*: either its
description is incorrect or else *S. palustris* is
not a creeper.

Records of identification queries = 9.

Records of corrected identification queries = 7.

Variation and Taxonomy: Dimensions of
flowers (7 to 15 mm) and leaves (12 to 25

mm) tends to be larger from the southern
localities. Bract dimensions vary from 1-3
mm wide and 5 to 15 mm long, presumably
bigger in the south. Bract pubescence also
varies between populations from completely
hairy, to only the base hairy to hairless, but
showing no recorded geographical trends.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOCLAV_m.jpg" *

MERGEFORMAT \d

***Sorocephalus crassifolius* Hutch. 1912**
Flowerless Powderpuff

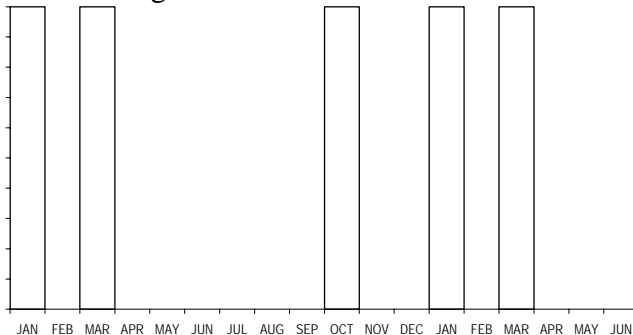
Other Common Names: None known.
Other Scientific Names: *None*.

8 Records

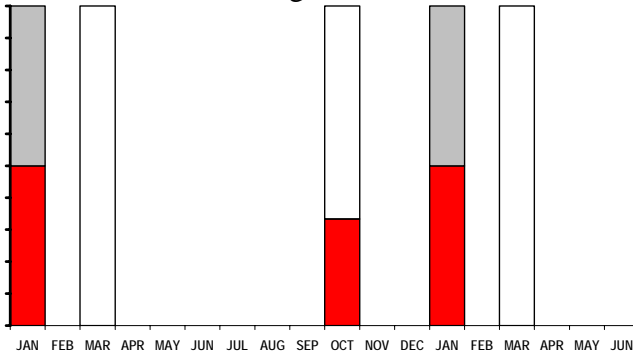
Population (8 records): 75% Rare, 25% Extinct.

Dispersion (4 records): 100% clumped.

Flowering (6 records with: Jan 2, Feb 0, Mar 1, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 3, Nov 0, Dec 0): Buds, Flowering, Peak Flowering, Over and Fruit not recorded. Nothing from Jan, Mar and Oct. Peak levels meaningless. Historically recorded as flowering from Dec to Feb.



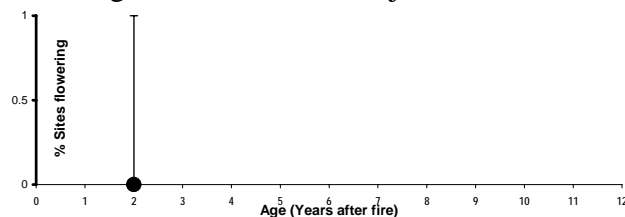
Growth (6 records with: Jan 2, Feb 0, Mar 1, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 3, Nov 0, Dec 0): Much from Jan and Oct; Rare from Jan; None from Mar and Oct. Peak levels meaningless.



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

Fire Survival : No data.

Age to first flowering: Flowering not recorded during the Protea Atlas Project.



Height (6 records): 100% 0-0.2 m tall.

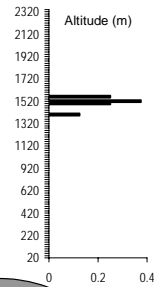
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (8 records): 100% inland - further than 2 km from coast.

Altitude (8 records): 1280 - 1460 m; 1380_{lq} - 1400_{med} - 1400_{uq} m.



Landform (8 records): 100% deep soil.

Slope (8 records): 50% steep incline, 38% gentle incline, 13% hill top.

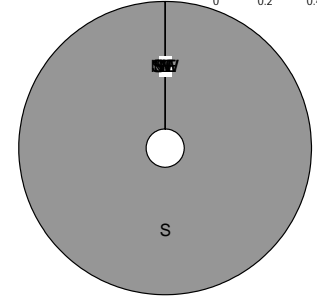
Aspect (8 records): 100% South.

Soil Type (8 records): 63% peaty, 38% sandy.

Soil Colour (8 records): 88% black, 13% grey.

Geology (8 records): 100% sandstone.

Vegetation (8 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Critically Endangered D.

Occurrence (Fynbos): 8 km² with 96% conserved and 2% lost; **Occupancy:** 9 km² with 85% conserved and 3% lost. **Fragmentation index** meaningless.

Nature Reserves (8 records): 100% in nature reserves - well conserved.

Habitat destruction (8 records): 100% extensive natural habitat.

Alien Invasive Species (8 records): 88% *Pinus*, 13% none.

Alien Density (8 records): 13% alien-free, 88% sparse.

Cultivation & Utilization:

Picking (6 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

None found! Looked! (AGR98022406);
 Some 3 big, 2 medium and 4 small in veld more than 20 year old? (ASP93012022);
 Some 2 adult and 3 small seen (ASP93012028);
 Despite a one hour search at this previously known site of 4-5 plants they could not be located. Could it be that the plants are just unreconizable so soon after the previous fire of 1 year ago? (NGFY1021001);
 We did an extensive search of one small area (60sq m) where there had previously been 4 known plants before the fire in 2000. This is a very difficult protea to see and there are probably very few plants - less than 10? (NGFY1032501);

Confusing Species: None.

Variation and Taxonomy: No variation known.

Distribution: Add.

INCLUDEPICTURE
"C:\\temp\\atlas\\SOCRAS_m.jpg" *
MERGEFORMAT \d

***Sorocephalus palustris* Rourke 1969**
Mat Powderpuff

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

1 Record

Population (1 record): 100% Extinct.
Dispersion (0 records).
Flowering (0 records). Historically recorded as flowering from Feb.
Growth (0 records).
Seedlings: No data.
Fire Survival : No data.
Age to first flowering: No data.
Height (0 records).
Pollinators : No data.
Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (1 record):
 100% inland - further than 2 km from coast.

Altitude (1 record): 1200 - 1220 m; 1200_{lq} - 1220_{med} - 1220_{uq} m.

Landform (1 record):
 100% deep soil.

Slope (1 records): 100% steep incline.

Aspect (1 record): 50% South, 50% West.

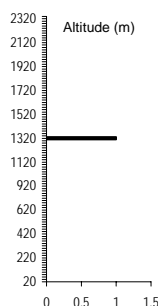
Soil Type (1 record): 100% peaty.

Soil Colour (1 record): 100% black.

Geology (1 record): 100% sandstone.

Vegetation (1 record): 100% shrubland.

Conservation Status and Threat:



Red Data List Status: Extinct.
Occurrence (Fynbos): No data – 0 km²;
Occupancy: 0 km².

Nature Reserves (1 record): 100% in nature reserves - well conserved.

Habitat destruction (1 record):
 100% extensive natural habitat.

Alien Invasive Species (1 record): 100% none.

Alien Density (1 record): 100% alien-free.

Cultivation & Utilization:

Picking: No data.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Extensive searching of type locality yielded nothing - presumed extinct!
 (AGRY1102405);

Confusing Species: *S. palustris* is recorded as a decumbent shrub forming mats – no such plants were found. Some erect rounded bushes were identified on 5 Beacon Ridge as this species, but based on available data are probably *S. clavigerus*.

Variation and Taxonomy: No variation known. At present only known from two specimens and photograph.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOPALU_m.jpg" *

MERGEFORMAT \d

Sorocephalus pinifolius (Salisb. ex Kn.) Rourke 1809, 1969
Long-leaf Powderpuff

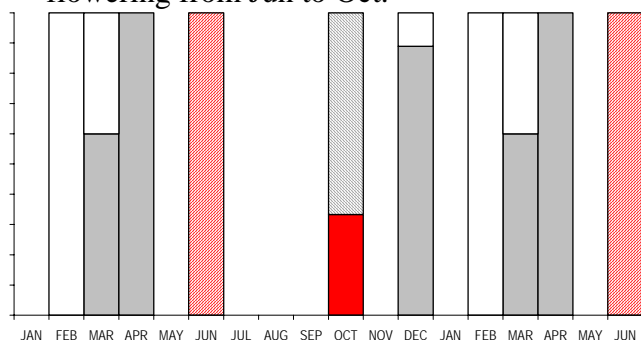
Other Common Names: Pine-leaf Soranthe.
Other Scientific Names: *imberbis* RBr 1810,
longifolius (Meisn.) Phil. 1856.

24 Records

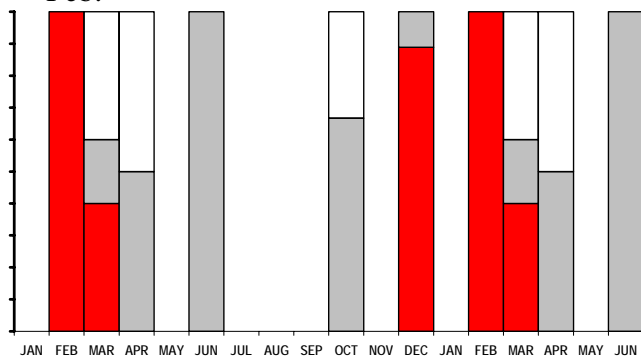
Population (24 records): 8% Common,
 54% Frequent, 33% Rare, 4% Extinct.

Dispersion (20 records): 60% clumped,
 40% variable.

Flowering (23 records with: Jan 0, Feb 2, Mar 5, Apr 2, May 0, Jun 2, Jul 0, Aug 0, Sep 0, Oct 3, Nov 0, Dec 9): Buds from Jun; Flowering from Oct; Peak Flowering not noted; Over from Oct; Fruit from Mar to Apr and Dec; Nothing from Feb to Mar. Peak levels meaningless. Historically recorded as flowering from Jun to Oct.



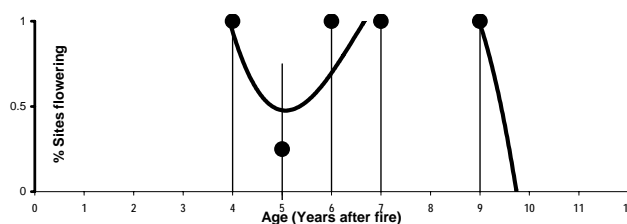
Growth (23 records with: Jan 0, Feb 2, Mar 5, Apr 2, May 0, Jun 2, Jul 0, Aug 0, Sep 0, Oct 3, Nov 0, Dec 9): Much from Dec to Mar; Rare from Mar to Jun and Oct; None from Mar to Apr and Oct. Peak levels at 100% in Feb.



Seedlings (7 records): All without any seedlings present.

Fire Survival : No data.

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



Height (23 records): 100% 0.2-1 m tall.

Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (24 records): 100% inland - further than 2 km from coast.

Altitude (24 records): 400 - 820 m;
 560_{lq} - 580_{med} - 600_{uq} m.

Landform (23 records): 74% deep soil, 17% shallow soil, 9% rocky outcrops.

Slope (23 records): 48% steep incline, 48% gentle incline, 4% platform.

Aspect (23 records): 87% South, 9% West, 4% East.

Soil Type (23 records):

39% sandy,
 22% gravelly,
 17% peaty,
 13% loamy,
 9% rocky.

Soil Colour (23 records): 61% grey, 26% brown, 13% black.

Geology (23 records): 100% sandstone.

Vegetation (23 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Critically Endangered D.

Occurrence (Fynbos): 30 km² with 52% conserved and 0% lost; **Occupancy**: 17 km² with 52% conserved and 4% lost. **Fragmentation index**: 55%.

Nature Reserves (24 records): 17% in nature reserves - inadequately conserved.

Habitat destruction (22 records): 91% extensive natural habitat, 5% naturally linear habitats, 5% naturally fragmented habitats.

Alien Invasive Species (22 records):

64% *Pinus*, 36% none.

Alien Density (22 records): 36% alien-free, 64% sparse.

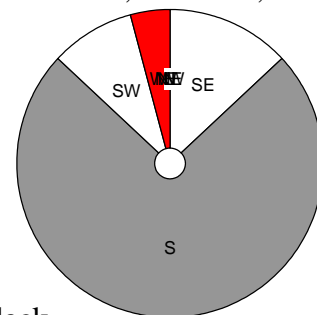
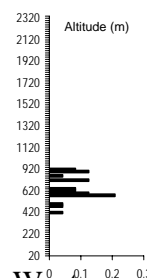
Cultivation & Utilization:

Picking (16 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlasers Notes:

Some 17 plants of which 13 dead, 3 have flowered, and 1 in flower (ACU96101501);



About 50 Plants With 1 Or 2 Already Having
Flowered For First Time (NAH96022402);
Only a few scattered plants perhaps 20 -30 in
all. Not yet reproductive (NAH96022403);
One dead specimen (TLEY1032201);
Previous records from this area are frequent!
(WIJY0120405);

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

Variation and Taxonomy: No variation
recorded.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOPINI_m.jpg" *

MERGEFORMAT \d

***Sorocephalus teretifolius* (Meisn.) Phill. 1856, 1911**
Pin-head Powderpuff

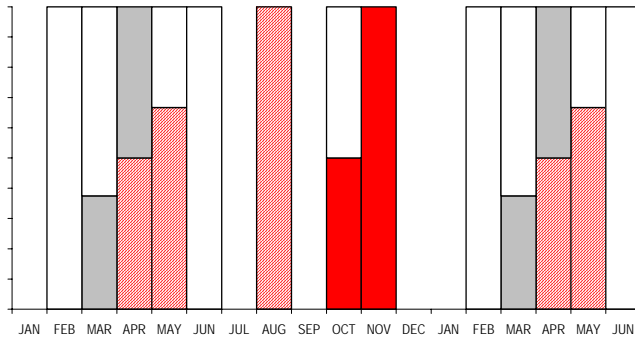
Other Common Names: Capitulate Powderpuff.
Other Scientific Names: *None*.

24 Records

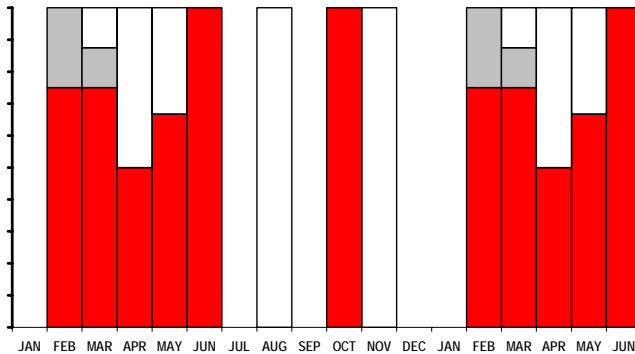
Population (23 records): 4% Common, 57% Frequent, 39% Rare.

Dispersion (19 records): 74% clumped, 26% variable.

Flowering (24 records with: Jan 0, Feb 4, Mar 8, Apr 2, May 3, Jun 1, Jul 0, Aug 1, Sep 0, Oct 4, Nov 1, Dec 0): Buds from Apr to May and Aug; Flowering from Oct to Nov; Peak Flowering and Over not recorded; Fruit from Mar to Apr; Nothing from Feb to Mar and May to Jun and Oct. Peak levels at 100% in Nov. Historically recorded as flowering from Nov to Dec.



Growth (24 records with: Jan 0, Feb 4, Mar 8, Apr 2, May 3, Jun 1, Jul 0, Aug 1, Sep 0, Oct 4, Nov 1, Dec 0): Much from Feb to Jun and Oct; Rare from Feb; None from Mar to May and Aug and Nov. Peak levels meaningless at 100% in Jun and Oct.



Seedlings (10 records): All without any seedlings present.

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

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



Height (24 records): 25% 0-0.2 m tall, 75% 0.2-1 m tall.

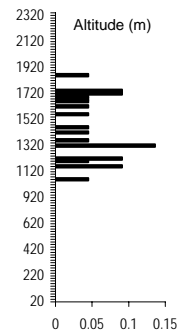
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (22 records): 100% inland - further than 2 km from coast.

Altitude (22 records): 940 - 1760 m; 1100 *lq* - 1260 *med* - 1520 *uq*m.



Landform (22 records): 68% shallow soil, 32% deep soil.

Slope (22 records): 64% steep incline, 36% gentle incline.

Aspect (21 records): 52% South, 40% East, 7% West.

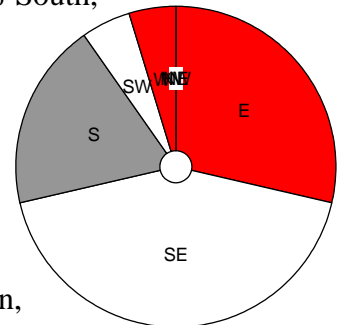
Soil Type (22 records):

68% sandy,
 18% loamy,
 5% peaty,
 5% gravelly,
 5% rocky.

Soil Colour (22 records): 64% grey, 14% black, 14% brown, 9% white.

Geology (22 records): 100% sandstone.

Vegetation (22 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 118 km² with 96% conserved and 1% lost; **Occupancy:** 26 km² with 98% conserved and 0% lost. **Fragmentation index:** 21%.

Nature Reserves (22 records): 95% in nature reserves - well conserved.

Habitat destruction (22 records): 95% extensive natural habitat, 5% corridors.

Alien Invasive Species (21 records): 90% *Pinus*, 10% none.

Alien Density (21 records): 10% alien-free, 67% sparse, 19% abundant, 5% dense.

Cultivation & Utilization:

Picking (14 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlasers Notes:

About 30 plants of this rare species on a very moist slope but all specimens smaller and less vigorous than specimens from Blokkop (NAH94043001).

<Add: centripetal flowering SHR>

Confusing Species: None noted.
Records of identification queries = 5.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOTERE_m.jpg" *

MERGEFORMAT \d

Sorocephalus capitatus Rourke 1969

Woolly Powderpuff

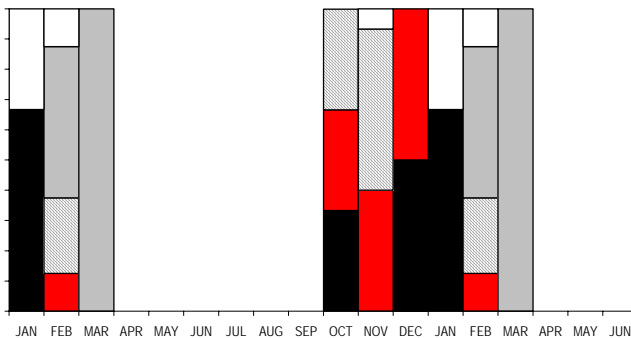
Other Common Names: None known.
Other Scientific Names: *None*.

34 Records

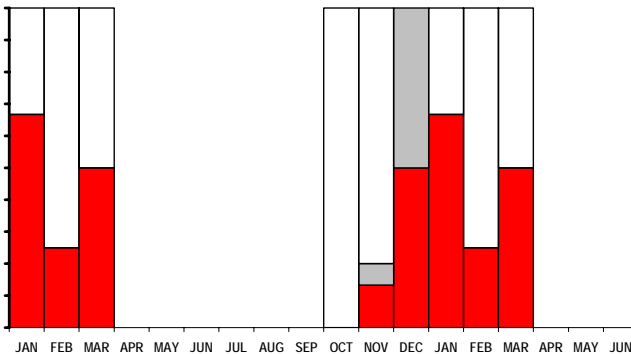
Population (34 records): 21% Common, 62% Frequent, 15% Rare, 3% Extinct.

Dispersion (32 records): 81% clumped, 19% variable.

Flowering (33 records with: Jan 3, Feb 8, Mar 2, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 3, Nov 15, Dec 2): Buds not recorded; Flowering from Oct to Dec; Peak Flowering from Dec to Jan and Oct; Over from Feb and Oct to Nov; Fruit from Feb to Mar; Nothing from Jan. Peak levels at 100% in Dec. Historically recorded as flowering from Oct to Feb.



Growth (33 records with: Jan 3, Feb 8, Mar 2, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 3, Nov 15, Dec 2): Much from Dec to Mar; Rare from Dec; None from Jan to Mar and Oct to Nov. Peak levels at 100% in Dec.



Seedlings (19 records): Absent in 89%; more seedlings than prefire adults in 1 case. Seedlings found in Jan.

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

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



Height (33 records): 6% 0-0.2 m tall, 73% 0.2-1 m tall, 21% 1-2 m tall.

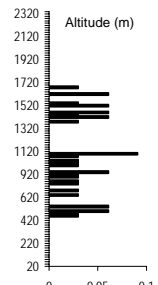
Pollinators (8 records): 50% beetles, 38% butterflies or moths, 13% bees or wasps.

Detailed Pollinators (3 records): Solitary Bee, Scarab Beetle, Ladybird Beetle.

Habitat:

Distance to Ocean (33 records): 100% inland - further than 2 km from coast.

Altitude (33 records): 440 - 1580 m; 720_{lq} - 920_{med} - 1320_{uq}m.

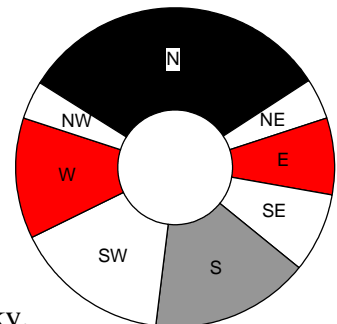


Landform (33 records): 58% deep soil, 33% shallow soil, 6% rocky outcrops, 3% swamp.

Slope (33 records): 61% gentle incline, 21% platform, 12% steep incline, 6% hill top.

Aspect (25 records):

36% North, 30% South, 22% West, 12% East.



Soil Type (33 records):

76% sandy, 12% loamy, 6% gravelly, 3% peaty, 3% rocky.

Soil Colour (33 records): 45% grey, 21% brown, 18% white, 9% yellow, 3% black, 3% orange.

Geology (33 records): 88% sandstone, 12% shale.

Vegetation (33 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Near Threatened D2(i), with Onderbos form as Near Threatened D2(i) and Piketberg form as Vulnerable D2(i).

Occurrence (Fynbos): 470 km² (165 km² - Onderbos, 35 km² - Piketberg) with 13 (12, 2)% conserved and 12 (4, 1)% lost; Occupancy: 52 (40, 11) km² with 9 (12, 1)% conserved and 0% lost. Fragmentation index: 7 (23, 32)%.

Nature Reserves (33 records): 21% in nature reserves.

Habitat destruction (32 records):

94% extensive natural habitat, 6% islands.

Alien Invasive Species (29 records): 90% none, 10% *Pinus*.

Alien Density (29 records): 90% alien-free, 10% sparse.

Cultivation & Utilization:

Picking (25 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

One dead (AGRY4110608); In 3 clumps: 3 plus 1 dead; 9 plus 1 dead; 11 plus 1 dead (AGRY4110609); Two patches (AGRY4110612); Almost 100 plants (AGRY4110701); Two patches: 10 and 100 plants (AGRY4110702); About 30-40 plants (AGRY4110703); Two patches - each just over 100 plants (AGRY4110704); Some 18 Plants (JBB99122202);

The pollinators are: scarab beetle (large protea but brown and yellow with red edges) and

typical protea beetle (hairy tufts on abdomen) and solitary bee (AGRY4110702);

Confusing Species: *S. lanatus*.

Records of identification queries = 8.

Records of corrected identification queries = 2.

Variation and Taxonomy: Piketberg

populations have lanceolate bracts.

Onderboskloof populations have ovate bracts.

Distribution: Add.

The lack of records outside of flowering suggests that the plants are not visible when not flowering.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOCAPI_m.jpg" *

MERGEFORMAT \d

***Sorocephalus imbricatus* (Thunb.) R.Br. 1781, 1810**
Tile-leaf Powderpuff

Other Common Names: Gland-bearing Soranthe.

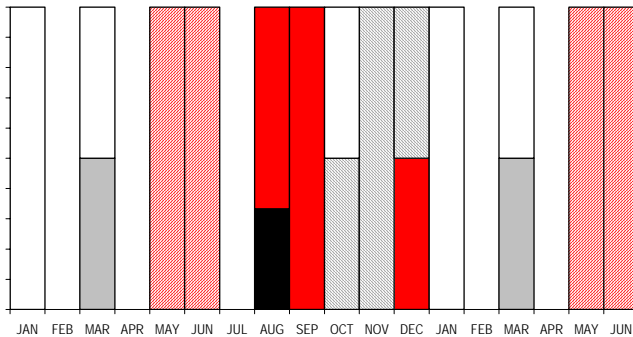
Other Scientific Names: *glanduligera* Salisb. ex Knight 1809.

24 Records

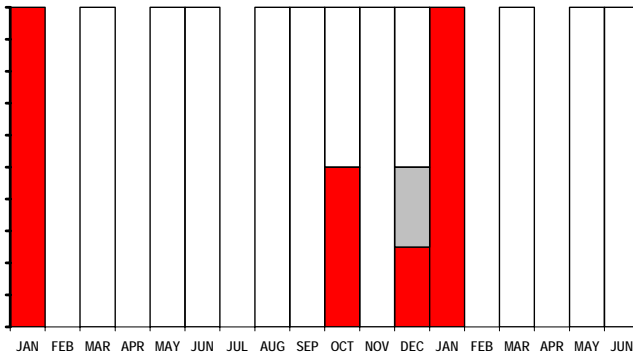
Population (24 records): 29% Frequent, 58% Rare, 13% Extinct.

Dispersion (17 records): 71% clumped, 24% variable, 6% evenly distributed.

Flowering (20 records with: Jan 2, Feb 0, Mar 2, Apr 0, May 1, Jun 3, Jul 0, Aug 3, Sep 2, Oct 2, Nov 1, Dec 4): Buds from May to Jun; Flowering from Aug to Sep and Dec; Peak Flowering from Aug; Over from Oct to Dec; Fruit from Mar; Nothing from Jan to Mar and Oct. Peak levels at 100% in Aug to Sep. Historically recorded as flowering from Sep to Dec.



Growth (20 records with: Jan 2, Feb 0, Mar 2, Apr 0, May 1, Jun 3, Jul 0, Aug 3, Sep 2, Oct 2, Nov 1, Dec 4): Much from Jan, Oct and Dec; Rare from Dec 25; None from Mar to Dec. Peak levels at 100% in Jan.



Seedlings (10 records): All without any seedlings present.

Fire Survival (3 records): 67% eliminated from the area by fires, 33% survived by seedlings only.

Age to first flowering: First flowers recorded at 8 years, 50% estimated at 5-7 years, and 100% recorded at 8 years.



Height (20 records): 65% 0.2-1 m tall, 35% 1-2 m tall.

Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

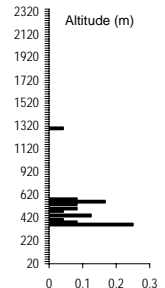
Distance to Ocean (24 records): 100% inland - further than 2 km from coast.

Altitude (24 records): 340 - 1200 m; 360_{lq} - 440_{med} - 500_{uq}m.

Landform (23 records): 83% deep soil, 13% shallow soil, 4% swamp.

Slope (23 records): 52% gentle incline, 35% platform, 9% valley bottom, 4% hill top.

Aspect (17 records): 44% East, 35% South, 15% West, 6% North.

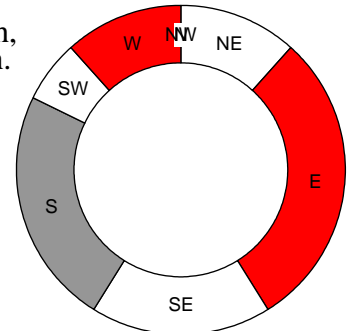


Soil Type (23 records): 96% sandy, 4% rocky.

Soil Colour (22 records): 68% grey, 27% white, 5% yellow.

Geology (22 records): 100% sandstone.

Vegetation (23 records): 96% shrubland, 4% plantations.



Conservation Status and Threat:

Red Data List Status: Critically Endangered B1a(i)b(i,ii,iii,iv,v)c(iv), C2b.

Occurrence (Fynbos): 85 km² with 19% conserved and 44% lost; **Occupancy:** 20 km² with 46% conserved and 14% lost.

Fragmentation index: 11%.

Nature Reserves (24 records): 79% in nature reserves - well conserved.

Habitat destruction (23 records): 96% extensive natural habitat, 4% islands.

Alien Invasive Species (23 records): 39% *Pinus*, 39% none, 22% *Hakea*.

Alien Density (23 records): 39% alien-free, 48% sparse, 13% abundant.

Cultivation & Utilization:

Picking (16 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlasers Notes:

No plants found despite presence in previous fire cycle – looked hard (SMRY2061303 and 04); None seen where 2 plants were before the fire (DJL98032501);
Some 50 plants - according to G Hansford a new population (COWY4112601); Riaan Van Der Walt (CN Ranger) counted about 50 plants on this site (LYM98032503); Some 2 plants dead and 7 alive (NAH96081003); Some 18 plants recorded (RPN96091003); Plants with numbered tags (roughly #23 to #41) seen alive: about 10 dead (SMRY2061306);

Plants very old and broken by wind (VDW96122301);

Confusing Species: None.
Records of identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add. Piketberg popu not found.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOIMBR_m.jpg" *

MERGEFORMAT \d

***Sorocephalus lanatus* (Thunb.) R.Br. 1781, 1810**
Common Powderpuff

Other Common Names: Common Clusterhead, Shaggy Soranthe.

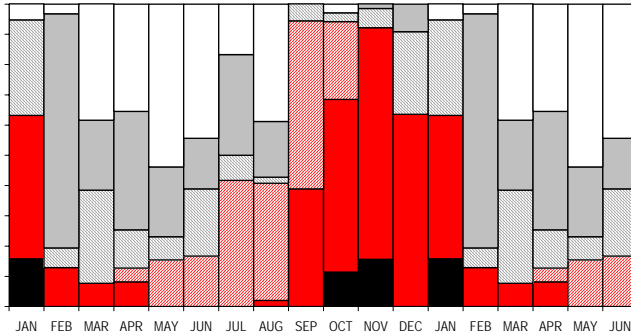
Other Scientific Names: *ciliciflora* Salisb. ex. Knight 1809, *phylicoides* Meisn. 1856, *schlechteri* Phill. 1911.

395 Records

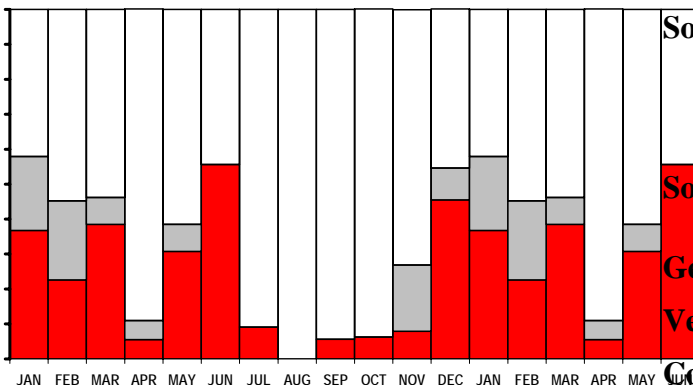
Population (393 records): 17% Common, 57% Frequent, 25% Rare.

Dispersion (344 records): 60% variable, 35% clumped, 4% widespread, 1% evenly distributed.

Flowering (393 records with: Jan 19, Feb 31, Mar 13, Apr 110, May 13, Jun 18, Jul 12, Aug 49, Sep 18, Oct 35, Nov 64, Dec 11): Buds from Jul to Oct; Flowering from Sep to Jan; Peak Flowering not prominent; Over from Dec to Jan and Mar and Jun; Fruit from Feb to May and Jul; Nothing from Mar to Jun and Aug. Peak levels at 100% in Sep. Historically recorded as flowering from early spring to late autumn with a peak in Dec.



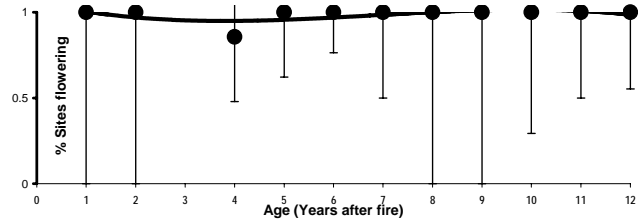
Growth (388 records with: Jan 19, Feb 31, Mar 13, Apr 110, May 13, Jun 18, Jul 11, Aug 49, Sep 18, Oct 32, Nov 63, Dec 11): Much from Dec to Mar and May to Jun; Rare from Jan to Feb; None from all year with a peak in Jul to Oct. Peak levels bimodal: at 58% in Jan and 56% in Jun.



Seedlings (131 records): Absent in 98%; more seedlings than prefire adults in 1 case. Seedlings found in Jan.

Fire Survival (35 records): 49% resprouted from underground boles, 37% survived by seedlings only, 9% escaped fires in fire-safe areas, 6% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 1 year, 50% estimated at 2-3 years, and 100% recorded at 6 years. <check graph not agrees>



Height (391 records): 19% 0-0.2 m tall, 80% 0.2-1 m tall, 1% 1-2 m tall.

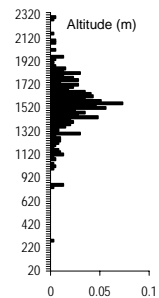
Pollinators (7 records): 43% bees or wasps, 29% none observed, 14% flies, 14% beetles.

Detailed Pollinators (4 records): Honey Bee (2), Solitary Bee, Monkey Beetle.

Habitat:

Distance to Ocean (395 records): 100% inland - further than 2 km from coast.

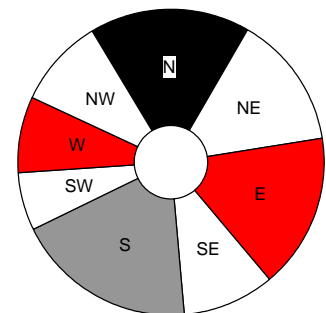
Altitude (395 records): 260 - 2200 m; 1320 *lq* - 1440 *med* - 1520 *uq*m.



Landform (392 records): 53% deep soil, 43% shallow soil, 3% rocky outcrops, 1% swamp.

Slope (392 records): 51% gentle incline, 28% steep incline, 10% hill top, 9% platform, 2% valley bottom.

Aspect (341 records): 29% East, 28% South, 27% North, 16% West.



Soil Type (393 records): 49% sandy, 21% rocky, 17% loamy, 12% gravelly.

Soil Colour (392 records): 50% grey, 30% brown, 10% white, 6% yellow, 3% orange.

Geology (385 records): 83% sandstone, 17% shale.

Vegetation (392 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 3 900 km² with 11% conserved and 13% lost; Occupancy: 455 km² with 15% conserved and 2% lost. Fragmentation index: 10%.

Nature Reserves (395 records): 19% in nature reserves - inadequately conserved.

Habitat destruction (387 records): 95% extensive natural habitat, 3% islands,

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

Alien Invasive Species (382 records):

82% none, 17% *Pinus*.

Alien Density (382 records): 82% alien-free, 16% sparse, 1% abundant.

Cultivation & Utilization:

Picking (237 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlasers Notes:

The fire could not have been too severe as plants resprouting after fire (JAT93112001); Plants were multi-stemmed (NGF99042402); With a single basal stem and ca 3 set of branchings! In three colonies (AGR95020402); Definitely multi-stemmed = rootstock? (APE92101709); Multi-stemmed plants (APE92101711); Creeper no resprouting hairy leaves (AGR95052413); Growth habit - slim single-stemmed plant, leaf length 15-18 mm; involucre bract length and width: 9 x 2 mm; densely hairy bracts; flowers per involucre varies: 6-8 but hard to be sure - only old flower heads present! (NAH94051401); Is multi-stemmed at base; leaf length: 10mm; involucre bract length: 5 mm; width: 2mm; hairs: few; number of flowers per involucre: 7 (SHR95010201); Two dead plants (CBE93042401); Honeybee caught by spider on flowerhead (AGR95020402);

Confusing Species: None noted, but many atlasers uncertain of identification or uncertain due to variation.

Records of identification queries = 19.

Records of corrected identification queries = 1.

Variation and Taxonomy:

Habit: Rourke states that single-stemmed, sparsely branched plants occur in the north (Cederberg and northern KoueBokkeveld), and in the south (southern KoueBokkeveld and Ceres area) the plants have a denser, branched and interlocking branch system. Atlas data suggest that these latter are resprouters. Leaf length: Leaves in the Cederberg are 4-9 mm long, 8-12mm long for the KoueBokkeveld. Leaves from the Swartuggens are 5-10 mm long, and from Ceres and the Winterhoek are 12-18mm long. Bracts: bract size and hairiness (from hairy to hairless) varies at random throughout the range. Flowers per involucre are usually 4, but on bigger flowerheads 8 flowers may be present usually on basal heads. Flower colour varies from white to pale pink, but some colonies have deep pink perianths.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOLANA_m.jpg" *

MERGEFORMAT \\d

***Sorocephalus scabridus* Meisn. 1856**
Tulbagh Powderpuff

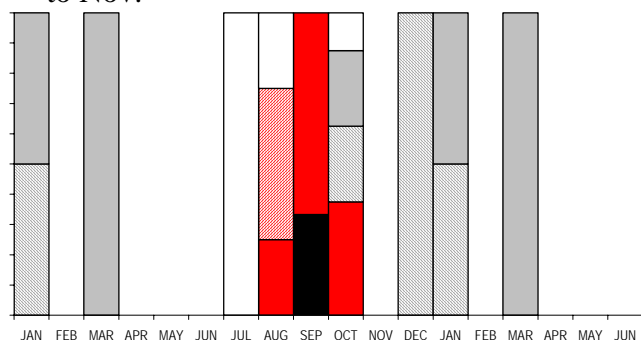
Other Common Names: None known.
Other Scientific Names: *None*.

24 Records

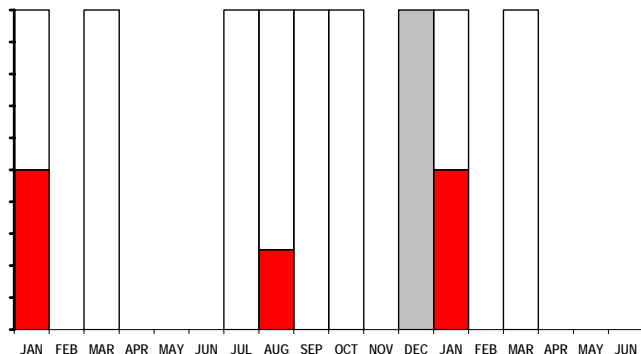
Population (24 records): 29% Common, 67% Frequent, 4% Rare.

Dispersion (24 records): 71% clumped, 25% variable, 4% evenly distributed.

Flowering (24 records with: Jan 2, Feb 0, Mar 2, Apr 0, May 0, Jun 0, Jul 1, Aug 4, Sep 6, Oct 8, Nov 0, Dec 1): Buds from Aug; Flowering from Aug to Oct; Peak Flowering from Sep; Over from Jan, Oct and Dec; Fruit from Jan, Mar and Oct; Nothing from Jul to Aug. Peak levels at 100% in Sep. Historically recorded as flowering from Oct to Nov.



Growth (22 records with: Jan 2, Feb 0, Mar 2, Apr 0, May 0, Jun 0, Jul 1, Aug 4, Sep 5, Oct 7, Nov 0, Dec 1): Much from Jan and Aug; Rare from Dec; None from Jan to Oct. Peak levels at 100% in Dec.



Seedlings (7 records): Absent in 71%: more seedlings than prefire adults in 1 case. Seedlings found in Oct.

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

Age to first flowering: First flowers recorded at 6 years, 50% estimated at 4-5 years, and 100% recorded at 6 years.



Height (24 records): 17% 0-0.2 m tall, 83% 0.2-1 m tall.

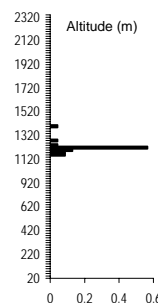
Pollinators (3 records): 33% bees or wasps, 33% flies, 33% beetles.

Detailed Pollinators (2 records): Scarab Beetle, Honey Bee.

Habitat:

Distance to Ocean (23 records): 100% inland - further than 2 km from coast.

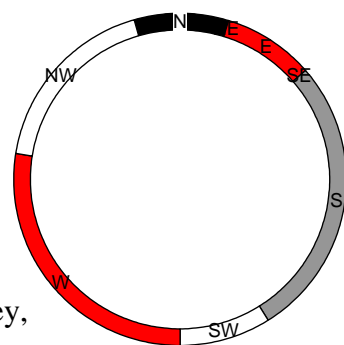
Altitude (23 records): 1040 - 1300 m; 1080 *lq* - 1120 *med* - 1120 *uq* m.



Landform (23 records): 91% deep soil, 9% shallow soil.

Slope (20 records): 45% platform, 30% gentle incline, 20% valley bottom, 5% hill top.

Aspect (11 records): 41% West, 32% South, 18% North, 9% East.



Soil Type (23 records): 96% sandy, 4% loamy.

Soil Colour (23 records): 70% grey, 30% white.

Geology (23 records): 100% sandstone.

Vegetation (23 records): 96% shrubland, 4% grassland.

Conservation Status and Threat:

Red Data List Status: Critically Endangered B1a(i,ii)c(iv).

Occurrence (Fynbos): 20 km² with 91% conserved and 0% lost; **Occupancy:** 17 km² with 93% conserved and 0% lost. **Fragmentation index:** 77%.

Nature Reserves (23 records): 91% in nature reserves - well conserved.

Habitat destruction (23 records): 96% extensive natural habitat, 4% naturally fragmented habitats.

Alien Invasive Species (22 records): 100% none.

Alien Density (22 records): 100% alien-free.

Cultivation & Utilization:

Picking (16 records): 100% no sign of picking. **Cultivation Status:** No noted cultivation.

Atlassers Notes:

We counted exactly 98 plants: 86 in this plot & 12 in 02 (AWA99092703); We think this is all along this plateau - we found 35 plants here (AWA99092905); Some 13 plants (AWA99092906); Appears to be a new population - consists of about 12 plants along track (NAHY1031706); A few dead bushes - drought-related? (WIJY0103010+11);

Seedlings clustered around skeletons of adult plants (NAH96081901);

Confusing Species: None noted.
Records of identification queries = 2.

Variation and Taxonomy: No variation known.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SOSCAB_m.jpg" *

MERGEFORMAT \d

***Spatalla* Salisb. 1807**
Spoons

From the Greek “wantonness” apparently “with more wit than decency” (Louden 1829) an allusion to the large pollen presenter on so small a flower. Type: *S. racemosa*.

The genus *Spatallopsis* Phillips 1910 was created for those species with a regular calyx and conical stigma (*versus* hollow, bend pollen presenter and one of the perianth segments large to accommodate this). This includes all the 3-flowered species and some of the 1 flowered species (*S. salsoloides* and *S. setaceae*)

There are two natural sections in the genus with 1 or 3 flowers per involucre, respectively.

Spatalla argentea Rourke 1969

Silver-leaf Spoon

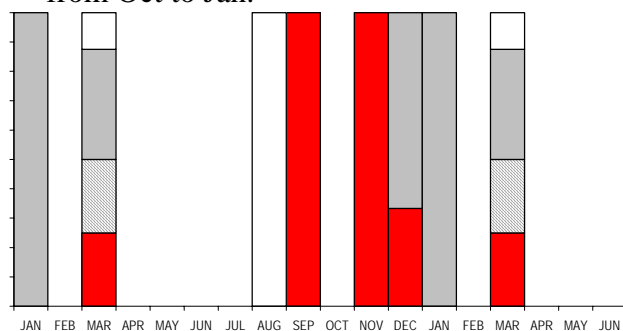
Other Common Names: None known.
Other Scientific Names: *None*.

18 Records

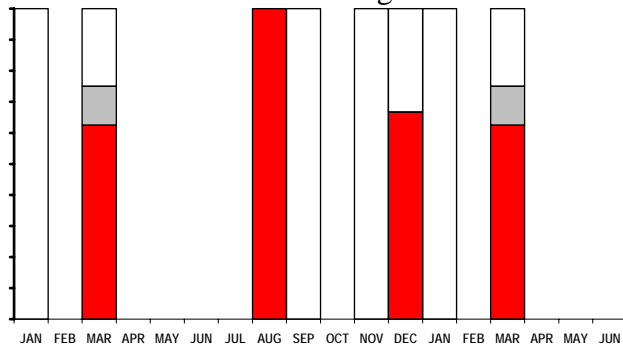
Population (18 records): 11% Common, 56% Frequent, 33% Rare.

Dispersion (17 records): 71% clumped, 29% variable.

Flowering (18 records with: Jan 2, Feb 0, Mar 8, Apr 0, May 0, Jun 0, Jul 0, Aug 1, Sep 3, Oct 0, Nov 1, Dec 3): Buds not recorded; Flowering from Mar and Sep to Dec; Peak Flowering not recorded; Over from Mar; Fruit from Dec to Mar; Nothing from Mar and Aug. Peak levels at 100% in Sep and Nov. Historically recorded as flowering from Oct to Jan.



Growth (18 records with: Jan 2, Feb 0, Mar 8, Apr 0, May 0, Jun 0, Jul 0, Aug 1, Sep 3, Oct 0, Nov 1, Dec 3): Much from Mar and Aug and Dec; Rare not significant; None from Nov to Jan, Mar and Sep. Peak levels unreliable: at 100% in Aug.



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

Fire Survival : No data.

Age to first flowering: First flowers recorded at 100% at 6 years.



Height (18 records): 100% 0.2-1 m tall.

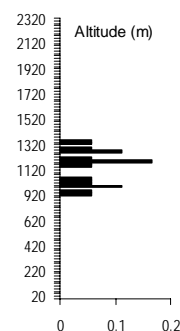
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (18 records): 100% inland - further than 2 km from coast.

Altitude (18 records): 820 - 1260 m; 900_{lq} - 1080_{med} - 1100_{uq}m.

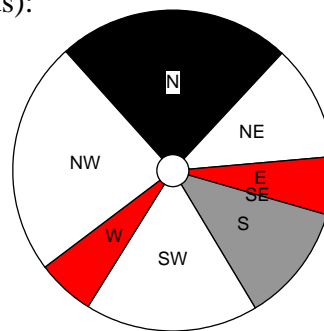


Landform (18 records): 61% deep soil, 39% shallow soil.

Slope (18 records): 61% gentle incline, 33% steep incline, 6% hill top.

Aspect (17 records):

44% North,
 26% West,
 18% South,
 12% East.



Soil Type (18 records): 56% sandy, 33% loamy, 6% gravelly, 6% rocky.

Soil Colour (17 records): 76% grey, 12% brown, 12% yellow.

Geology (18 records): 100% sandstone.

Vegetation (18 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 19 km² with 16% conserved and 1% lost; Occupancy: 14km² with 27% conserved and 1% lost. Fragmentation index: 70%.

Nature Reserves (18 records): 6% in nature reserves - inadequately conserved.

Habitat destruction (18 records):

100% extensive natural habitat.

Alien Invasive Species (18 records):

44% *Hakea*, 33% none, 22% *Pinus*.

Alien Density (18 records): 33% alien-free, 67% sparse.

Cultivation & Utilization:

Picking (14 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: None noted.

Records of identification queries = 3

Variation and Taxonomy: No variation known.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPARGE_m.jpg" *

MERGEFORMAT \d

Spatalla caudata (Thunb.) R.Br. 1781, 1810

Woolly-hair Spoon

Wolbos

Other Common Names: Heath-leaf Spatalla, Tail-flower Spatalla.

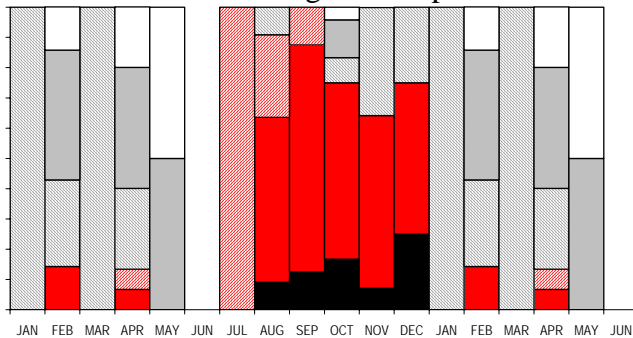
Other Scientific Names: *australis* (Poir) 1816, *brevifolia* R.Br. 1810, *caudaeiflora* Salisb. ex Knight 1809, *ericifolia* Salisb. ex Knight 1809, *thunbergii* R.Br. 1810.

95 Records

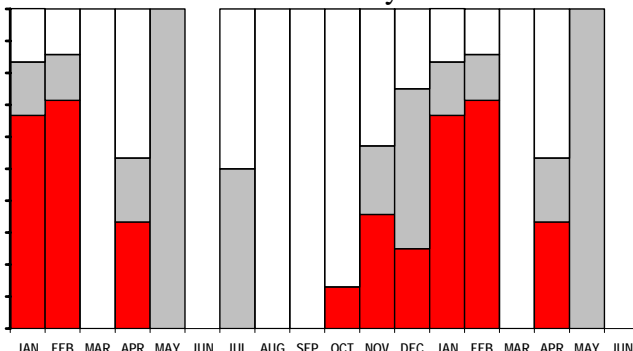
Population (94 records): 43% Common, 43% Frequent, 15% Rare.

Dispersion (84 records): 51% clumped, 45% variable, 2% evenly distributed, 1% widespread.

Flowering (95 records with: Jan 6, Feb 7, Mar 2, Apr 15, May 2, Jun 0, Jul 2, Aug 11, Sep 8, Oct 24, Nov 14, Dec 4): Buds from Jul to Aug; Flowering from Aug to Dec; Peak Flowering from Dec; Over from Nov to Apr; Fruit from Feb and Apr to May; Nothing from Apr to May. Peak levels at 100% in Dec, Jan, Mar and Jul to Sep. Historically recorded as flowering from Sep to Oct.



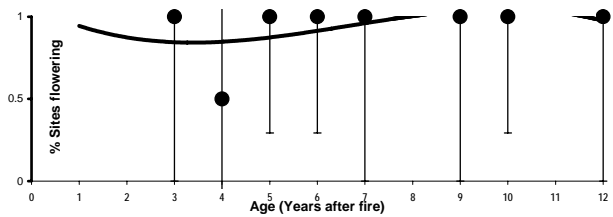
Growth (93 records with: Jan 6, Feb 7, Mar 2, Apr 15, May 2, Jun 0, Jul 2, Aug 11, Sep 7, Oct 23, Nov 14, Dec 4): Much from Nov to Feb and Apr; Rare from Apr to Jul and Nov to Dec; None from Mar to Apr and to Dec. Peak levels at 100% in May.



Seedlings (40 records): Absent in 95%; more seedlings than prefire adults in 1 case. Seedlings found in Apr.

Fire Survival (4 records): 75% survived by seedlings only, 25% eliminated from the area by fires.

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



Height (94 records): 3% 0-0.2 m tall, 94% 0.2-1 m tall, 3% 1-2 m tall.

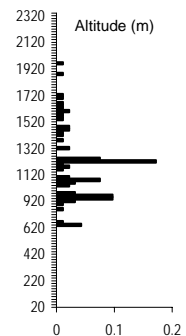
Pollinators (4 records): 75% bees or wasps, 25% flies.

Detailed Pollinators (5 records): Solitary Bee (2), Honey Bee (2), Wasp (unspecified).

Habitat:

Distance to Ocean (93 records): 100% inland - further than 2 km from coast.

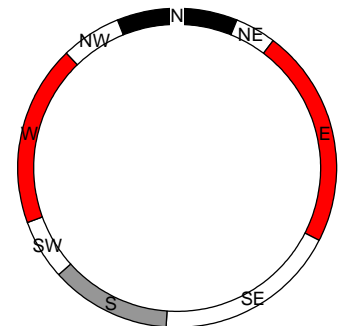
Altitude (93 records): 620 - 1860 m; 840 *lq* - 980 *med* - 1120 *uq*m.



Landform (90 records): 88% deep soil, 10% shallow soil, 1% swamp, 1% rocky outcrops.

Slope (87 records): 39% platform, 34% gentle incline, 23% valley bottom, 3% steep incline.

Aspect (49 records): 34% East, 26% West, 23% South, 17% North.



Soil Type (89 records): 76% sandy, 17% loamy, 3% gravelly, 3% rocky.

Soil Colour (90 records): 56% grey, 20% brown, 14% white, 10% yellow.

Geology (83 records): 89% sandstone, 6% shale, 4% Tertiary sands, 1% silcrete or ferricrete.

Vegetation (89 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Endangered A4c, the Groot Winterhoek form as Endangered B1a(ii)c(iv)+2a(ii)c(iv).

Occurrence (Fynbos): 3 466 km² with 16% conserved and 8% lost; **Occupancy:** 133 km² with 25% conserved and 8% lost. **Fragmentation index:** 3%.

Nature Reserves (93 records): 42% in nature reserves.

Habitat destruction (90 records): 87% extensive natural habitat, 10% islands, 1% road verges, 1% naturally linear habitats, 1% naturally fragmented habitats.

Alien Invasive Species (88 records): 75% none, 22% *Pinus*, 2% Fabaceae (chiefly alien *Acacia*), 1% Myrtaceae.

Alien Density (88 records): 75% alien-free, 20% sparse, 3% abundant, 1% dense.

Cultivation & Utilization:

Picking (69 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

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

Atlassers Notes:

Identified as *S. tulbaghensis* - same identification found for same population by Peter Linder at the Bolus Herbarium: this is a funny short-leaved form of *S. caudata*! (DEB94080705); Herbarium specimen with note: Is this *S. tulbaghensis*? No this is a curious form of *S. caudata* - based on this sample John Rourke considered this a possible new species, worth investigating further (VDW97073002); Atlassed as *S. tulbaghensis* - but with notes: long flowerhead and habit like *S. caudata*, but shorter leaves than described. John Rourke subsequently visited the site and decided that it was just a form of *S. caudata*, different as so isolated from other populations! (AGRY0081208+9)

Some 30% mortality before first flowering due to drought (NAH94040203); Most plants in middle of site appear dead, those on edges and especially the top are thriving (SGAY1022414).

Confusing Species: *Spatalla tulbaghensis* has been confused with the Groot Winterhoek population both in the herbarium and by atlassers. It has also been misidentified as *Sorocephalus scabridus*, probably in error as both co-occur at site.

Records of identification queries = 11

Records of corrected identification queries = 6.

Variation and Taxonomy: No variation noted in the literature other than occasional white flowers. The Groot Winterhoek population is distinct in having shorter leaves and more hairy flowerheads and being somewhat intermediate with *Spatalla tulbaghensis*.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPCAUD_m.jpg" *

MERGEFORMAT \d

Spatalla confusa (Phill.) Rourke 1910, 1969
Long-tube Spoon
Slangkoppie

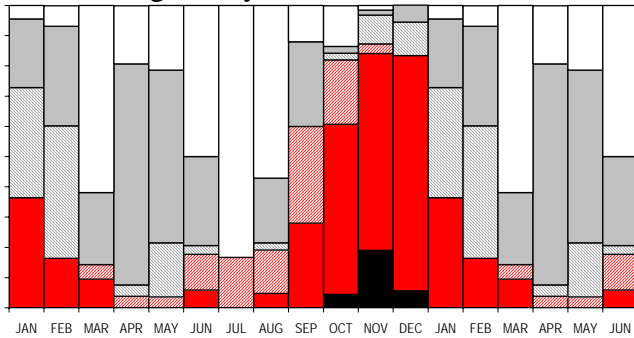
Other Common Names: *Wolbos*.
Other Scientific Names: *None*.

467 Records

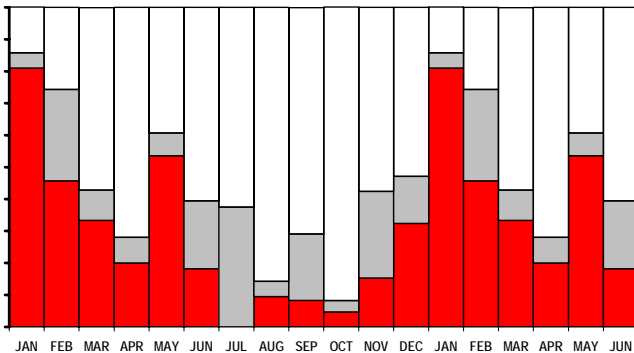
Population (465 records): 18% Common, 59% Frequent, 23% Rare.

Dispersion (418 records): 56% variable, 39% clumped, 3% evenly distributed, 2% widespread.

Flowering (465 records with: Jan 22, Feb 73, Mar 21, Apr 26, May 28, Jun 34, Jul 6, Aug 42, Sep 25, Oct 89, Nov 63, Dec 36): Buds from Sep to Oct; Flowering from Sep to Jan; Peak Flowering from Nov; Over from Jan to Feb; Fruit from Jan to Jun 29 and Aug to Sep; Nothing from Mar to Aug. Peak levels at 97% in Nov. Historically recorded as flowering briefly from Nov to Dec.



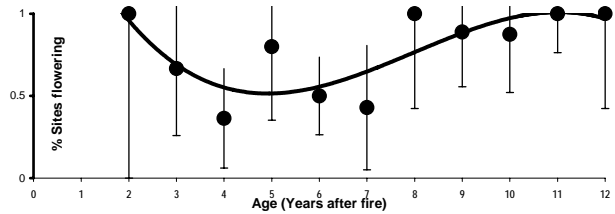
Growth (451 records with: Jan 21, Feb 70, Mar 21, Apr 25, May 28, Jun 33, Jul 8, Aug 42, Sep 24, Oct 86, Nov 59, Dec 34): Much from Dec to May; Rare from Feb, Jun to Jul, Sep and Nov; None from Feb to Dec. Peak levels at 86% in Jan.



Seedlings (128 records): Absent in 97%; fewer seedlings than prefire adults in 1 case, and more in 1 case. Seedlings found in Mar and May.

Fire Survival (15 records): 67% escaped fires in fire-safe areas, 13% survived by seedlings only, 13% resprouted from underground boles, 7% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 2 years, 50% estimated at 4-7 years, and 100% estimated at 11 years.



Height (465 records): 45% 0-0.2 m tall, 53% 0.2-1 m tall, 2% 1-2 m tall.

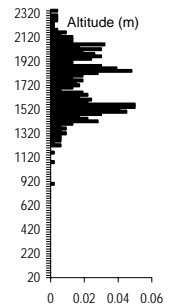
Pollinators (5 records): 60% butterflies or moths, 20% bees or wasps, 20% beetles.

Detailed Pollinators (3 records): Heady Maiden Moth.

Habitat:

Distance to Ocean (463 records): 100% inland - further than 2 km from coast.

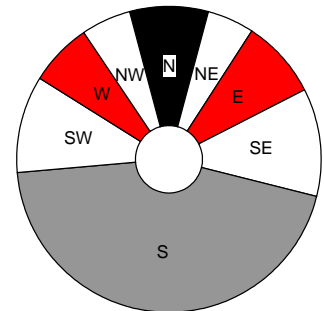
Altitude (463 records): 780 - 2260 m; 1400 *lq* - 1560 *med* - 1780 *uq*m.



Landform (460 records): 61% shallow soil, 33% deep soil, 7% rocky outcrops.

Slope (463 records): 49% steep incline, 30% gentle incline, 13% hill top, 5% platform, 3% cliff.

Aspect (386 records): 56% South, 17% East, 14% West, 13% North.



Soil Type (461 records): 46% sandy, 26% loamy, 18% rocky, 8% gravelly, 1% peaty.

Soil Colour (455 records): 51% grey, 32% brown, 10% black, 4% white, 1% yellow, 1% orange.

Geology (436 records): 94% sandstone, 6% shale.

Vegetation (457 records): 98% shrubland, 2% grassland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 11 550 km² with 23% conserved and 7% lost; **Occupancy:** 628 km² with 41% conserved and 0% lost.

Fragmentation index: 2%.

Nature Reserves (463 records): 49% in nature reserves.

Habitat destruction (451 records): 96% extensive natural habitat, 2% naturally linear habitats, 2% islands.

Alien Invasive Species (437 records): 96% none, 3% *Pinus*.

Alien Density (437 records): 96% alien-free, 3% sparse.

Cultivation & Utilization:

Picking (321 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Found odd plants 1.2-1.3 m tall (DOA93072404); Found one plant to 1.45 m tall - up to my chin (DOA93110202); Plants also in Height Class 3 – over 2 m tall (TOW94092204).

Creeping form *versus* erect form at Trig. Beacon 1.5 km to the north! (AGR96060512); Growing like a mat (WMP93103007, WMP94123003).

Fire resistant - not resprouting but protected in rocks (APE94051401).

S. confusa replaces *Sorcephalus lanatus* up slope (APE92061404);

Quite unusual to see it growing on an exposed East-facing slope (DOA94022703);

Pollinated by ted/black moth (VCH98102202);

Confusing Species: Often confused with *S. incurva*, especially when not in flower.

Rarely with *S. barbiger*.

Records of identification queries = 22.

Records of corrected identification queries = 6.

Variation and Taxonomy: Plant growth habit varies from creeping cushion plants in alpine conditions – these are usually carmine tinted, to erect, green plants at lower altitudes and where rocks afford protection from wind and cold. The name “*confusa*” reflects Phillips interpretation of the species, which muddled up *S. confusa* and *S. caudata*.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPCONF_m.jpg" *

MERGEFORMAT \d

Spatalla incurva (Thunb.) R.Br. 1781, 1810 Swanhead Spoon

Other Common Names: Dwarf Spatalla, Tall Spatalla, *Wolbos*.

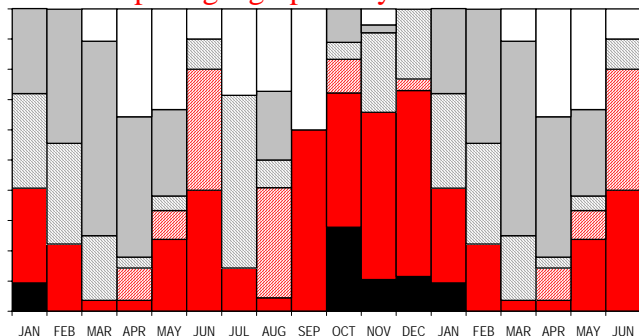
Other Scientific Names: *mucronifolia* Phill. 1910, *nana* Salisb. ex Knight 1809, *procera* Salisb. ex Knight 1809, *wallichii* Phill. 1910.

246 Records

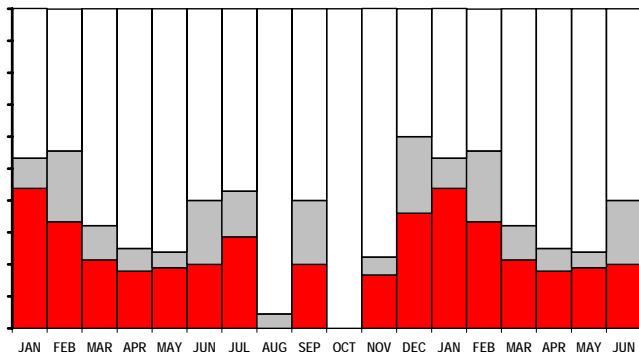
Population (245 records): 14% Common, 57% Frequent, 29% Rare.

Dispersion (213 records): 51% variable, 42% clumped, 4% widespread, 3% evenly distributed.

Flowering (244 records with: Jan 32, Feb 9, Mar 28, Apr 28, May 21, Jun 10, Jul 7, Aug 22, Sep 5, Oct 18, Nov 38, Dec 26): Buds from Jun and Aug; Flowering from Sep to Feb and May to Jun; Peak Flowering from Oct; Over from Nov to Mar and Jul; Fruit from Jan to May and Aug; Nothing from Apr to May and Jul to Sep. Peak levels at 100% in Dec. Historically recorded as flowering from Sep to Mar. <follow up – this this winter peak geographically distinct>



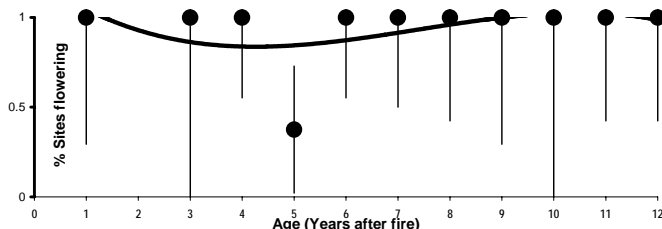
Growth (240 records with: Jan 32, Feb 9, Mar 28, Apr 28, May 21, Jun 10, Jul 7, Aug 22, Sep 5, Oct 17, Nov 36, Dec 25): Much from Dec to Feb and Jul; Rare from Feb, Jun, Sep and Dec; None from all year, lowest in Dec to Feb. Peak levels at 60% in Dec.



Seedlings (104 records): Absent in 88%; fewer seedlings than prefire adults in 1 case, and more in 5 cases. Seedlings found in Jan, Mar, Apr, Jul and Nov (2).

Fire Survival (16 records): 88% survived by seedlings only, 6% eliminated from the area by fires, 6% resprouted from underground boles.

Age to first flowering: First flowers recorded at 1 year, 50% estimated at 2-3 years, and 100% estimated recorded at 4 years, but some populations taking over 15 years to flower.



Height (243 records): 14% 0-0.2 m tall, 80% 0.2-1 m tall, 7% 1-2 m tall.

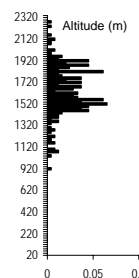
Pollinators (4 records): 75% bees or wasps, 25% flies.

Detailed Pollinators (3 records): Wasp (unspecified), Honey Bee, Carpenter Bee.

Habitat:

Distance to Ocean (246 records): 100% inland - further than 2 km from coast.

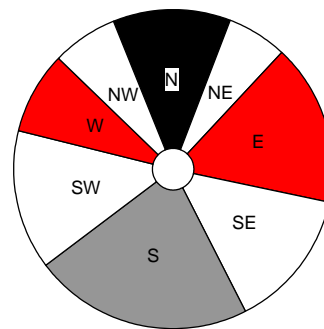
Altitude (246 records): 800 - 2180 m; 1380_{lq} - 1500_{med} - 1660_{uq}m.



Landform (244 records): 57% shallow soil, 31% deep soil, 11% rocky outcrops.

Slope (244 records): 45% steep incline, 41% gentle incline, 7% hill top, 4% platform, 2% cliff, 1% valley bottom.

Aspect (226 records): 36% South, 27% East, 19% West, 18% North.



Soil Type (246 records): 43% sandy, 35% rocky, 15% gravelly, 5% loamy, 1% clayey.

Soil Colour (243 records): 68% grey, 23% brown, 3% white, 3% yellow, 2% orange.

Geology (242 records): 93% sandstone, 6% shale, 1% Tertiary sands.

Vegetation (244 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 5 565 km² with 19% conserved and 13% lost; Occupancy: 323 km² with 47% conserved and 1% lost. Fragmentation index: 5%.

Nature Reserves (246 records): 61% in nature reserves - well conserved.

Habitat destruction (236 records): 93% extensive natural habitat, 3% islands, 3% naturally linear habitats.

Alien Invasive Species (224 records):
95% none, 5% *Pinus*.

Alien Density (224 records): 95% alien-free,
5% sparse.

Cultivation & Utilization:

Picking (128 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Almost half dead! (AGR99032814); Half plants
are dead lower down - too dry?
(AGR99032815);

Confusing Species: Mostly confused with *S.*
caudata and *Sorocephalus lanatus*, but
mainly when not in flower.

Records of identification queries = 21.

Records of corrected identification queries = 4.

Variation and Taxonomy: Short-leaf forms
occur, but were not noted by atlassers.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Spatalla propinqua R.Br. 1810

Lax Spoon

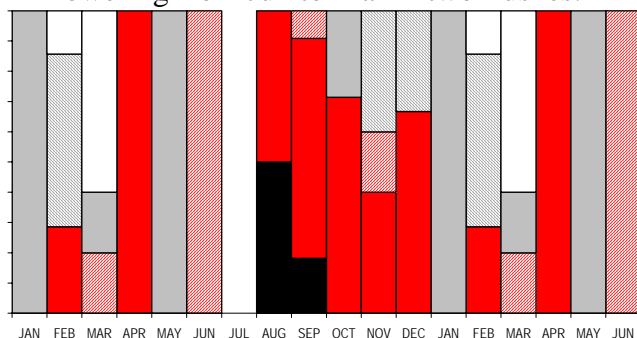
Other Common Names: None known.
Other Scientific Names: *None*.

45 Records

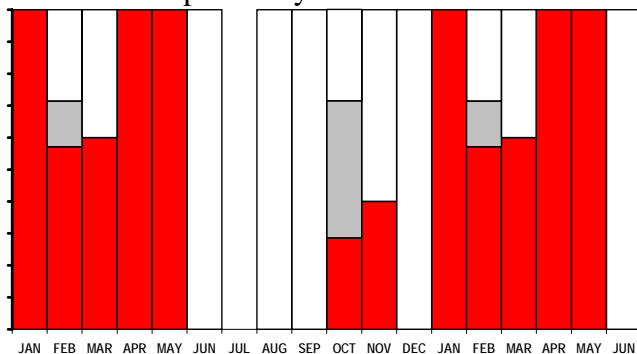
Population (45 records): 29% Common, 51% Frequent, 20% Rare.

Dispersion (39 records): 64% clumped, 31% variable, 5% evenly distributed.

Flowering (44 records with: Jan 1, Feb 7, Mar 5, Apr 1, May 1, Jun 1, Jul 0, Aug 2, Sep 11, Oct 7, Nov 5, Dec 3): Buds from Mar, Jun and Nov; Flowering from Aug to Feb; Peak Flowering from Aug to Sep; Over from Nov to Feb; Fruit from Jan, May and Oct; Nothing from Mar. Peak levels at 100% in Aug to Sep. Historically recorded as flowering from Jun to Mar in two flushes.



Growth (43 records with: Jan 1, Feb 7, Mar 5, Apr 1, May 1, Jun 1, Jul 0, Aug 2, Sep 10, Oct 7, Nov 5, Dec 3): Much from Jan to May and Oct to Nov; Rare from Oct; None from Feb to Mar and Jun to Dec. Peak levels at 100% in Apr to May.



Seedlings (15 records): All without any seedlings present.

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

Age to first flowering: First flowers recorded at 6 years, 50% estimated at 4-5 years, and 100% recorded at 6 years.



Height (44 records): 5% 0-0.2 m tall, 86% 0.2-1 m tall, 9% 1-2 m tall.

Pollinators (4 records): 50% bees or wasps, 50% beetles.

Detailed Pollinators (2 records): Monkey Beetle, Honey Bee.

Habitat:

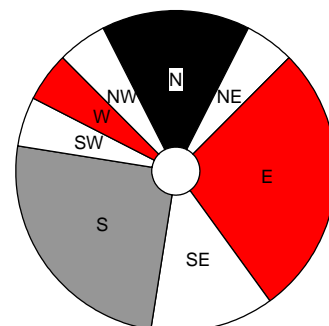
Distance to Ocean (45 records): 100% inland - further than 2 km from coast.

Altitude (45 records): 280 - 1620 m; 540 *lq* - 720 *med* - 780 *uq* m.

Landform (44 records): 77% deep soil, 11% shallow soil, 7% swamp, 5% rocky outcrops.

Slope (45 records): 44% gentle incline, 40% steep incline, 13% hill top, 2% cliff.

Aspect (40 records): 36% East, 34% South, 21% North, 9% West.



Soil Type (43 records): 56% sandy, 19% loamy, 14% gravelly, 7% rocky, 5% peaty.

Soil Colour (42 records): 55% grey, 29% brown, 10% black, 7% white.

Geology (45 records): 93% sandstone, 4% shale, 2% silcrete or ferricrete.

Vegetation (44 records): 98% shrubland, 2% thicket.

Conservation Status and Threat:

Red Data List Status: Endangered A4c.

Occurrence (Fynbos): 1 256 km² with 31% conserved and 10% lost; **Occupancy:** 60km² with 31% conserved and 2% lost. **Fragmentation index:** 3%.

Nature Reserves (45 records): 22% in nature reserves.

Habitat destruction (44 records): 89% extensive natural habitat, 11% islands.

Alien Invasive Species (42 records): 40% *Pinus*, 40% none, 14% *Hakea*, 2% Fabaceae (chiefly alien *Acacia*), 2% Myrtaceae.

Alien Density (42 records): 40% alien-free,
48% sparse, 7% abundant, 2% dense,
2% impenetrable.

Cultivation & Utilization:

Picking (37 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Heavily chiseled by *Otomys* Vlei Rat? Almost
every plant chopped down to half size
(ASP94102612).

Confusing Species: Rarely confused with *S.*
confusa.

Records of identification queries = 4.

Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Spatalla thyrsiflora Salisb. ex Kn. 1809
Swan-neck Spoon

Other Common Names: Thyrse-flower
Spatalla.

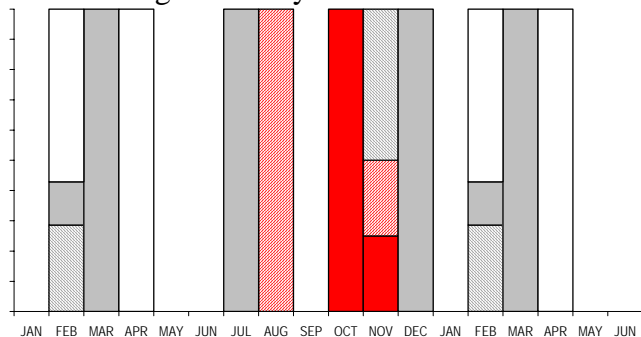
Other Scientific Names: *spatalloides* RBr
1810.

23 Records

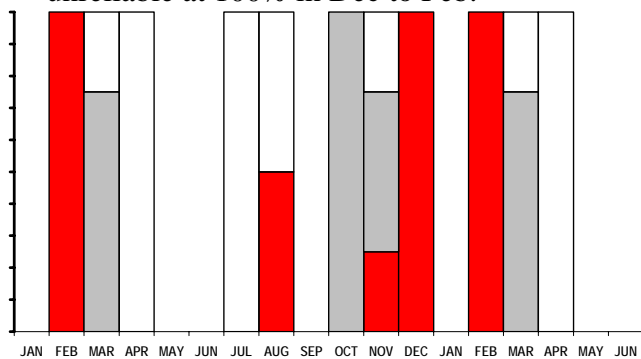
Population (23 records): 22% Common,
35% Frequent, 43% Rare.

Dispersion (19 records): 63% clumped,
37% variable.

Flowering (23 records with: Jan 0, Feb 7, Mar 4, Apr 1, May 0, Jun 0, Jul 2, Aug 2, Sep 0, Oct 1, Nov 4, Dec 2): Buds from Aug and Nov; Flowering from Oct to Nov; Peak Flowering not noted; Over from Feb and Nov; Fruit from Mar, Jul and Dec; Nothing from Feb and Apr. Peak levels unreliable at 100% in Oct-Nov. Historically recorded as flowering erratically from Oct to Dec.



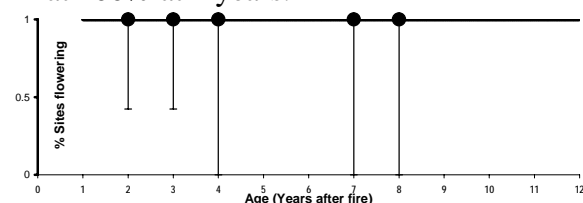
Growth (23 records with: Jan 0, Feb 7, Mar 4, Apr 1, May 0, Jun 0, Jul 2, Aug 2, Sep 0, Oct 1, Nov 4, Dec 2): Much from Nov to Feb, and Aug; Rare from Mar and Oct to Nov; None from Mar to Aug and Nov. Peak levels unreliable at 100% in Dec to Feb.



Seedlings (10 records): All without any seedlings present.

Fire Survival (3 records): 100% resprouted from underground boles.

Age to first flowering: First flowers recorded at 100% at 2 years.



Height (23 records): 22% 0-0.2 m tall,
78% 0.2-1 m tall.

Pollinators (1 record): 100% beetles.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (22 records):
100% inland - further than 2 km from coast.

Altitude (22 records): 740 - 1760 m;
940_{lq} - 1000_{med} - 1040_{uq}m.

Landform (22 records):

77% deep soil, 23% shallow soil.

Slope (22 records): 45% gentle incline,
32% steep incline, 23% hill top.

Aspect (18 records):
33% West,
31% South,
19% East,
17% North.

Soil Type (21 records):

48% loamy,
33% sandy,
14% clayey,
5% gravelly.

Soil Colour (22 records): 55% brown,
27% grey, 14% yellow, 5% red.

Geology (22 records): 36% sandstone,
36% granite, 27% shale.

Vegetation (21 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Vulnerable D2(ii).

Occurrence (Fynbos): 159 km² with 95% conserved and 1% lost; Occupancy: 23 km² with 71% conserved and 8% lost.
Fragmentation index: 14%.

Nature Reserves (22 records): 50% in nature reserves.

Habitat destruction (22 records):
95% extensive natural habitat, 5% naturally linear habitats.

Alien Invasive Species (22 records):
50% *Pinus*, 36% *Hakea*, 14% none.

Alien Density (22 records): 14% alien-free,
82% sparse, 5% abundant.

Cultivation & Utilization:

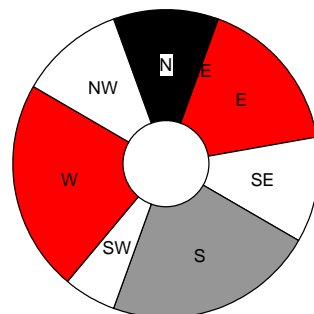
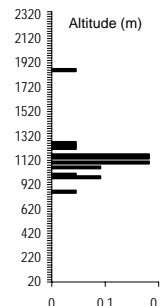
Picking (15 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlasers Notes:

Probably about 20 plants (NAH98071102);
Seems to favour the granite-sandstone contact zone; About 200 plants in vicinity of path (NAH96110304).

Confusing Species: None, especially as it is a resprouter. More likely to be overlooked than misidentified..

Records of identification queries = 2.



Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Populations on Caledon
Swartberg not found. Recorded there by
Niven about 1800 and Mund in the 1820s.

Add.

INCLUDEPICTURE

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MERGEFORMAT \d

***Spatalla tulbaghensis* (Phill.) Rourke 1911, 1969**
Shaggy-hair Spoon

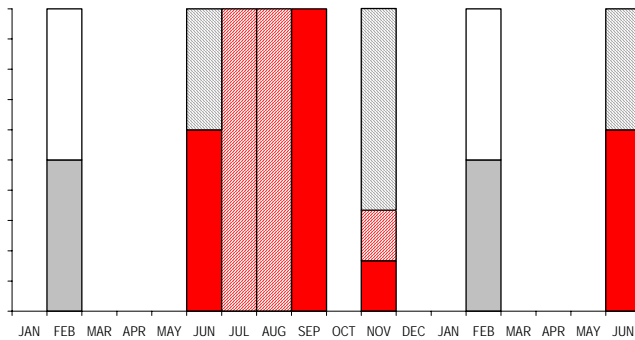
Other Common Names: None known.
Other Scientific Names: *None*.

23 Records

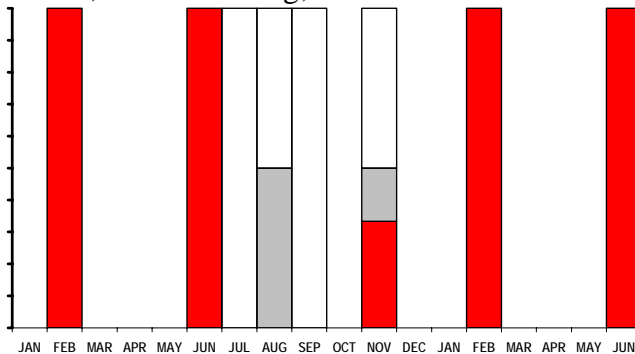
Population (23 records): 35% Common, 65% Frequent.

Dispersion (23 records): 70% clumped, 22% variable, 9% evenly distributed.

Flowering (23 records with: Jan 0, Feb 2, Mar 0, Apr 0, May 0, Jun 10, Jul 1, Aug 2, Sep 2, Oct 0, Nov 6, Dec 0): Buds from Jul to Aug and Nov; Flowering from Jun and Sep; Peak Flowering not recorded; Over from Jun and Nov; Fruit from Feb; Nothing from Feb. Peak levels unreliable at 100% in Sep. Historically recorded as flowering from Sep to Dec.



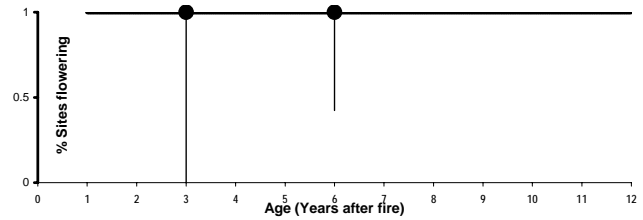
Growth (23 records with: Jan 0, Feb 2, Mar 0, Apr 0, May 0, Jun 10, Jul 1, Aug 2, Sep 2, Oct 0, Nov 6, Dec 0): Much from Nov to Jun; Rare from Aug; None from Jul to Nov.



Seedlings (17 records): Absent in 6%: fewer seedlings than prefire adults in 6 cases, and more in 3 cases. Seedlings found in Jun (9).

Fire Survival (10 records): 70% escaped fires in fire-safe areas, 30% survived by seedlings only.

Age to first flowering: First flowers recorded, at 100% at 3 years.



Height (23 records): 17% 0-0.2 m tall, 83% 0.2-1 m tall.

Pollinators (13 records): 77% none observed, 15% bees or wasps, 8% butterflies or moths.

Detailed Pollinators (4 records): Solitary Bee (2), Wasp (unspecified), Moth (unspecified).

Habitat:

Distance to Ocean (23 records): 100% inland - further than 2 km from coast.

Altitude (23 records): 800 - 1680 m; 900 *lq* - 920 *med* - 920 *uq* m.

Landform (23 records):

57% deep soil, 35% swamp, 9% riverine.

Slope (23 records): 43% gentle incline, 26% hill top, 22% platform, 9% valley bottom.

Aspect (19 records): 47% West, 37% East, 11% South, 5% North.

Soil Type (23 records):

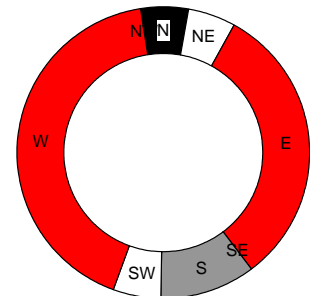
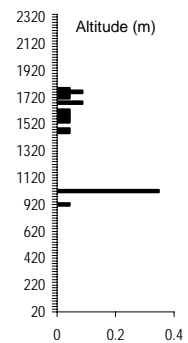
87% sandy, 9% loamy, 4% peaty.

Soil Colour (23 records):

57% white, 35% grey, 4% black, 4% brown.

Geology (23 records): 78% sandstone, 22% Tertiary sands.

Vegetation (23 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 40 km² with 0% conserved and 3% lost; **Occupancy:** 17 km² with 0% conserved and 7% lost. **Fragmentation index:** 40%.

Nature Reserves (23 records): 0% in nature reserves - unconserved.

Habitat destruction (23 records):

74% extensive natural habitat, 26% islands.

Alien Invasive Species (23 records): 61% none, 35% *Pinus*, 4% Fabaceae (chiefly alien *Acacia*).

Alien Density (23 records): 61% alien-free, 35% sparse, 4% abundant.

Cultivation & Utilization:

Picking (20 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Disturbed land: some bush has been cut short and is grazed by cattle - *Spatallas* appear untouched (WIJY0091708); Most of the plants are growing right on the edge of a trench which is collapsing (NGFY0072904); In the more northern plot most of plants are growing on disturbed soil at edge of a deep furrow (WIJY0091708);

There were 12 plants and 3 dead ones (NGFY0072904); Some 15 live and 1 dead (JIDY1021401); Several plants at head of steep mountain stream showing signs of drought-stress (RTUY4061001)

About 50 plants in area of 30 X 225 m (RTUY4061002); About 90 plants in area of 15 X 70 m (RTUY4061003); About 91 plants in area of 25 X 60 m (RTUY4061004); About 350 plants in area of 40 X 70 m (RTUY4061005); About 22 plants in area of 15 X 80 m

(RTUY4061006); About 1000 plants in area of 70 X 100 m (RTUY4061101); About 500 plants in area of 25 X 80 m (RTUY4061801); About 250 plants in area of 30 X 30 m (RTUY4061802); About 160 plants in area of 20 X 45 m (RTUY4061803); There were only about 20 floriferous plants in one patch - see mention of 50 plants in 1991 CNC species report! (SHR94090401); About 13 plants seen (WIJY0091708);

Confusing Species: None..

Records of identification queries = 1.

Variation and Taxonomy: Described by Phillips as a *Sorocephalus*, on account of its short, rounded head.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Spatalla barbiger Salisb. ex Kn. 1809

Fine-leaf Spoon

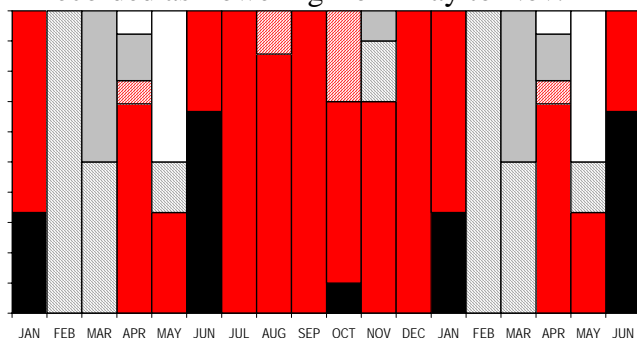
Other Common Names: Bearded *Spatalla*.
Other Scientific Names: *burchellii* Phill 1910,
sericea R.Br. 1810, *sericifolia* (Poir.) 1816.

68 Records

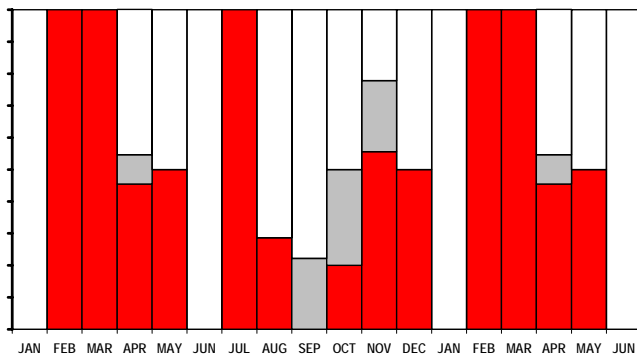
Population (68 records): 1% Abundant,
 18% Common, 57% Frequent, 24% Rare.

Dispersion (61 records): 64% clumped,
 18% evenly distributed, 18% variable.

Flowering (68 records with: Jan 3, Feb 1, Mar 2, Apr 13, May 6, Jun 3, Jul 2, Aug 7, Sep 9, Oct 10, Nov 10, Dec 2): Buds from Oct; Flowering from Apr to Jan; Peak Flowering from Jan and Jun; Over from Feb to Mar; Fruit from Mar; Nothing from May. Peak levels at 100% in Jun to Feb. Historically recorded as flowering from May to Nov.



Growth (62 records with: Jan 2, Feb 1, Mar 2, Apr 11, May 6, Jun 2, Jul 1, Aug 7, Sep 9, Oct 10, Nov 9, Dec 2): Much from Feb to May and Jul to Aug and Oct to Dec; Rare from Sep to Nov; None from Apr to Jan. Peak levels at 100% in Feb to Mar and Jun.



Seedlings (18 records): Absent in 67%: fewer seedlings than prefire adults in 1 case, and more in 2 cases. Seedlings found in May and Sep (2).

Fire Survival (4 records): 75% survived by seedlings only, 25% 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 5 years.



Height (68 records): 9% 0-0.2 m tall, 90% 0.2-1 m tall, 1% 1-2 m tall.

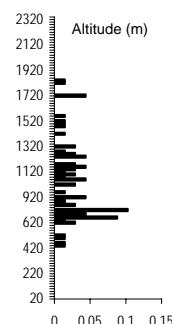
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (68 records): 100% inland - further than 2 km from coast.

Altitude (68 records): 420 - 1740 m; 680 *lq* - 820 *med* - 1060 *uq*m.



Landform (68 records): 66% deep soil, 28% shallow soil, 6% rocky outcrops.

Slope (68 records): 51% steep incline, 43% gentle incline, 6% hill top.

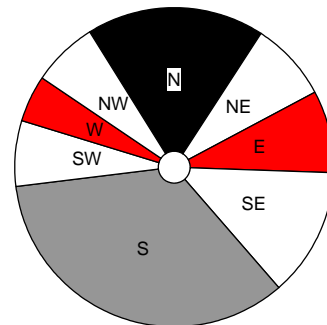
Aspect (61 records): 44% South, 29% North, 18% East, 9% West.

Soil Type (67 records): 60% sandy, 30% loamy, 6% gravelly, 3% clayey, 1% rocky.

Soil Colour (68 records): 43% grey, 26% brown, 18% black, 9% orange, 3% yellow, 1% white.

Geology (68 records): 91% sandstone, 9% shale.

Vegetation (68 records): 100% shrubland.



Conservation Status and Threat:

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

Occurrence (Fynbos): 1 936 km² with 35% conserved and 9% lost; Occupancy: 108 km² with 68% conserved and 6% lost. Fragmentation index: 3%.

Nature Reserves (68 records): 87% in nature reserves - well conserved.

Habitat destruction (65 records): 100% extensive natural habitat.

Alien Invasive Species (67 records): 54% *Hakea*, 33% none, 10% *Pinus*, 1% Fabaceae (chiefly alien *Acacia*), 1% Myrtaceae.

Alien Density (66 records): 33% alien-free, 64% sparse, 3% abundant.

Cultivation & Utilization:

Picking (36 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

On 941129 we atlassed slightly differently - then we saw young plants. Noticeable this time we really had to search up and down just to search for them: the plants are scrawny, with leaves and old flowerheads only at tips of tall, thin, crumpled stems (AWA98030904).

Confusing Species: None noted.

Records of identification queries = 11.

Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted, despite the separation on two mountain ranges.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Spatalla colorata Meisn. 1856
Shiny Spoon

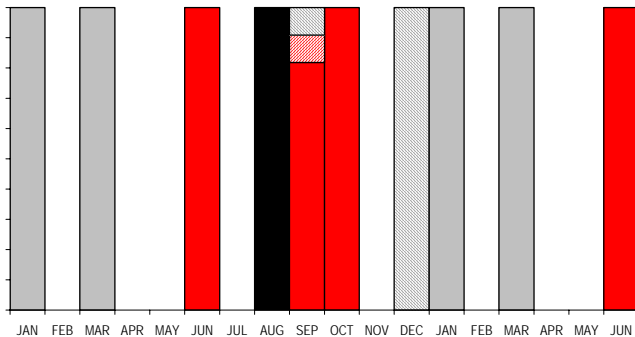
Other Common Names: None known.
Other Scientific Names: *None*.

23 Records

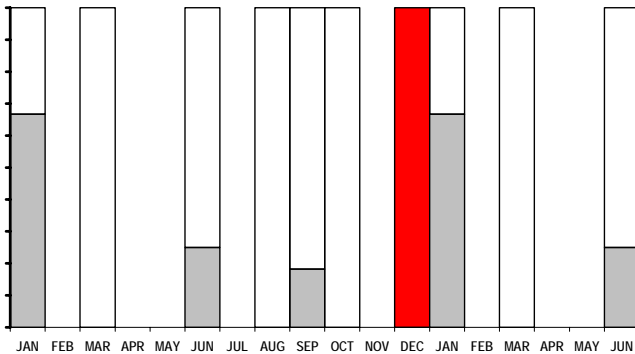
Population (23 records): 22% Common, 39% Frequent, 39% Rare.

Dispersion (19 records): 53% clumped, 32% variable, 11% evenly distributed, 5% widespread.

Flowering (23 records with: Jan 3, Feb 0, Mar 1, Apr 0, May 0, Jun 4, Jul 0, Aug 2, Sep 11, Oct 1, Nov 0, Dec 1): Buds not significant; Flowering from Jun and Sep to Oct; Peak Flowering from Aug; Over from Dec; Fruit from Jan to Mar; Nothing not recorded. Peak levels unreliable at 100% in June to Nov. Historically recorded as flowering from Jul to Nov.



Growth (23 records with: Jan 3, Feb 0, Mar 1, Apr 0, May 0, Jun 4, Jul 0, Aug 2, Sep 11, Oct 1, Nov 0, Dec 1): Much from Dec; Rare from Jan and Jun; None from Jan to Oct. Peak levels unreliable at 100% in Dec.



Seedlings (14 records): Absent in 71%: fewer seedlings than prefire adults in 1 case, and more in 1 case. Seedlings found in Jun.

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

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 2-3 years, and 100% recorded at 4 years.



Height (21 records): 19% 0-0.2 m tall, 81% 0.2-1 m tall.

Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

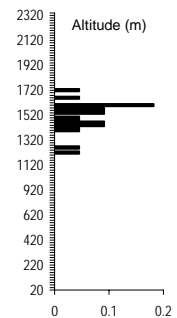
Distance to Ocean (22 records): 100% inland - further than 2 km from coast.

Altitude (22 records): 1100 - 1620 m; 1320 *lq* - 1400 *med* - 1460 *uq*m.

Landform (22 records): 82% deep soil, 9% rocky outcrops, 9% shallow soil.

Slope (22 records): 86% steep incline, 9% cliff, 5% gentle incline.

Aspect (22 records): 73% South, 18% East, 9% West.

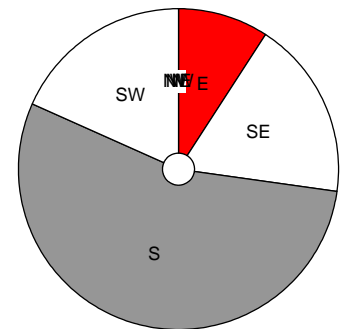


Soil Type (22 records): 41% peaty, 32% sandy, 23% loamy, 5% rocky.

Soil Colour (22 records): 64% black, 27% grey, 9% brown.

Geology (22 records): 91% sandstone, 9% shale.

Vegetation (22 records): 86% shrubland, 14% grassland.



Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos – excludes lost Riviersonderend population): 135 km² with 46% conserved and 2% lost; Occupancy: 31 km² with 94% conserved and 0% lost. Fragmentation index: 20%.

Nature Reserves (22 records): 100% in nature reserves - well conserved.

Habitat destruction (22 records): 100% extensive natural habitat.

Alien Invasive Species (22 records): 95% none, 5% *Pinus*.

Alien Density (22 records): 95% alien-free, 5% sparse.

Cultivation & Utilization:

Picking (21 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: Most easily confused with *S. parilis*, but has fused involucre and shorter leaves.

Records of identification queries = 3.

Variation and Taxonomy: No variation noted.

Distribution: Note populations on Riviersonderend Peak not found. Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Spatalla nubicola Rourke 1969 Medusa Spoon

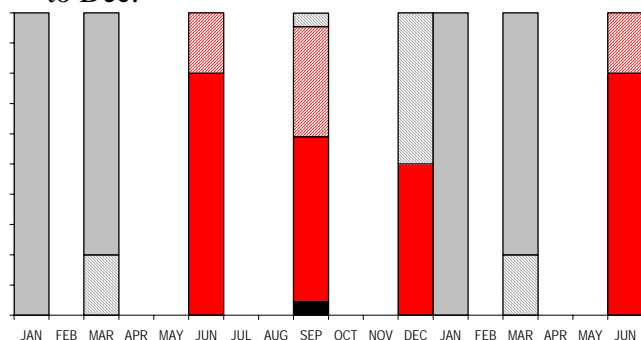
Other Common Names: None known.
Other Scientific Names: *None*.

43 Records

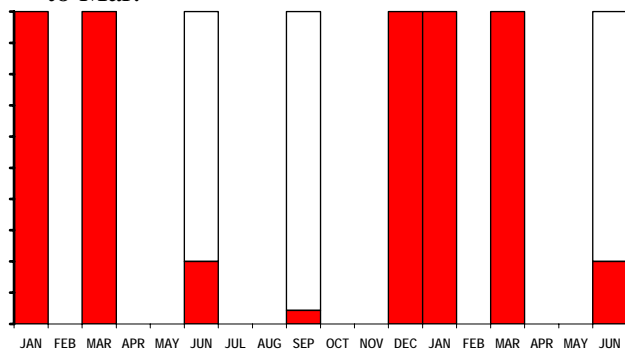
Population (43 records): 2% Abundant, 37% Common, 49% Frequent, 12% Rare.

Dispersion (41 records): 66% variable, 27% clumped, 7% widespread.

Flowering (42 records with: Jan 4, Feb 0, Mar 5, Apr 0, May 0, Jun 5, Jul 0, Aug 0, Sep 22, Oct 0, Nov 0, Dec 6): Buds from Jun to Sep; Flowering from Jun to Dec; Peak Flowering not significant; Over from Mar and Dec; Fruit from Jan to Mar; Nothing not recorded. Peak levels unreliable at 100% in Jun to Dec. Historically recorded as flowering from Sep to Dec.



Growth (43 records with: Jan 4, Feb 0, Mar 5, Apr 0, May 0, Jun 5, Jul 0, Aug 0, Sep 23, Oct 0, Nov 0, Dec 6): Much from Dec to Mar; Rare not recorded; None from Jun to Sep. Peak levels unreliable at 100% in Dec to Mar.



Seedlings (31 records): Absent in 87%; fewer seedlings than prefire adults in 2 cases. Seedlings found in Jun (2).

Fire Survival : No data.

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 2-3 years, and 100% recorded at 4 years.



Height (43 records): 7% 0-0.2 m tall, 79% 0.2-1 m tall, 14% 1-2 m tall.

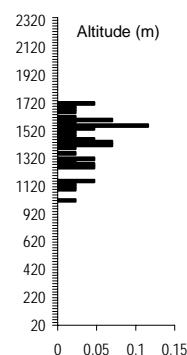
Pollinators (2 records): 100% flies.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (43 records): 100% inland - further than 2 km from coast.

Altitude (43 records): 900 - 1620 m; 1180 *lq* - 1340 *med* - 1460 *uq*m.



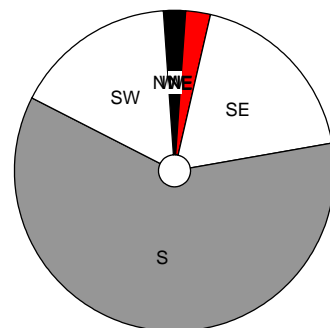
Landform (43 records): 70% deep soil, 26% shallow soil, 5% rocky outcrops.

Slope (43 records): 91% steep incline, 5% cliff, 2% gentle incline, 2% hill top.

Aspect (43 records): 78% South, 10% West, 9% East, 2% North.

Soil Type (43 records): 53% peaty, 23% sandy, 16% loamy, 5% rocky, 2% gravelly.

Soil Colour (43 records): 58% black, 30% grey, 12% brown.



Geology (43 records): 93% sandstone, 7% shale.

Vegetation (43 records): 93% shrubland, 7% grassland.

Conservation Status and Threat:

Red Data List Status: Near Threatened D2(i).

Occurrence (Fynbos): 35 km² with 93% conserved and 0% lost; **Occupancy**: 34 km² with 89% conserved and 0% lost. **Fragmentation index**: 85%.

Nature Reserves (43 records): 98% in nature reserves - well conserved.

Habitat destruction (43 records): 98% extensive natural habitat, 2% naturally fragmented habitats.

Alien Invasive Species (42 records): 100% none.

Alien Density (42 records): 100% alien-free.

Cultivation & Utilization:

Picking (35 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: None noted.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPNUBI_m.jpg" *

MERGEFORMAT \d

Spatalla parilis Salisb. ex Kn. 1809.

Spike Spoon

Other Common Names: Matched Spatalla.

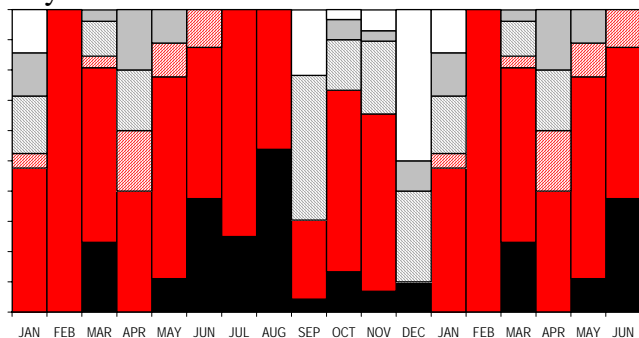
Other Scientific Names: *bolusii* (Phill.) 1910, *bombycina* Salisb. ex Kn. 1809, *polystachya* R.Br. 1810, *pyramidalis* R.Br. 1810.

186 Records

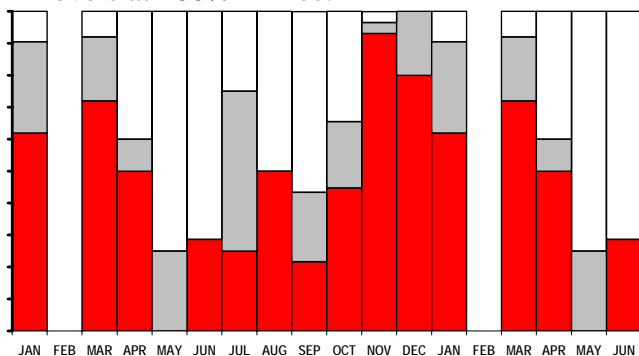
Population (186 records): 14% Common, 57% Frequent, 28% Rare.

Dispersion (162 records): 62% clumped, 33% variable, 3% evenly distributed, 2% widespread.

Flowering (185 records with: Jan 21, Feb 2, Mar 26, Apr 10, May 9, Jun 8, Jul 4, Aug 13, Sep 23, Oct 30, Nov 29, Dec 10): Buds from Apr; Flowering from Jan to Nov; Peak Flowering from Mar and Jun to Aug; Over from Sep and Nov to Dec; Fruit from Apr to May; Nothing from Sep and Dec 50. Peak levels at 100% in Jun to Aug. Historically recorded as flowering from throughout the year.



Growth (178 records with: Jan 21, Feb 0, Mar 25, Apr 10, May 8, Jun 7, Jul 4, Aug 12, Sep 23, Oct 29, Nov 29, Dec 10): Much from Jun to Apr; Rare from Dec to Mar and May, Jul and Sep to Oct; None from Apr to Oct. Peak levels at 100% in Dec.



Seedlings (77 records): Absent in 84%: fewer seedlings than prefire adults in 3 cases, and more in 3 cases. Seedlings found in Mar (2), Apr (3) and Jul.

Fire Survival (8 records): 100% survived by seedlings only.

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



Height (185 records): 5% 0-0.2 m tall, 81% 0.2-1 m tall, 14% 1-2 m tall.

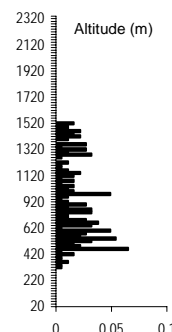
Pollinators (9 records): 67% bees or wasps, 11% wind, 11% flies, 11% beetles.

Detailed Pollinators (7 records): Solitary Bee (3), Honey Bee (2), Wasp (unspecified), Carpenter Bee.

Habitat:

Distance to Ocean (185 records): 100% inland - further than 2 km from coast.

Altitude (185 records): 300 - 1420 m; 540 *lq* - 740 *med* - 980 *uq*m.



Landform (185 records): 80% deep soil, 17% shallow soil, 2% swamp, 1% rocky outcrops.

Slope (185 records): 58% steep incline, 32% gentle incline, 5% hill top, 4% cliff.

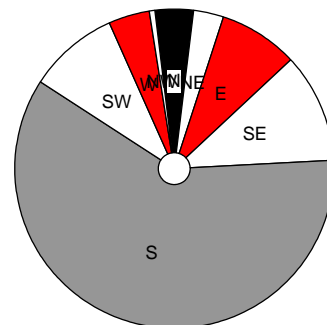
Aspect (173 records): 71% South, 14% East, 10% West, 5% North.

Soil Type (184 records): 43% loamy, 30% sandy, 20% peaty, 4% gravelly, 3% rocky.

Soil Colour (184 records): 39% grey, 37% black, 22% brown, 1% white.

Geology (184 records): 97% sandstone, 3% shale.

Vegetation (184 records): 99% shrubland.



Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 1 319 km² with 26% conserved and 14% lost; **Occupancy:** 182 km² with 53% conserved and 6% lost. **Fragmentation index:** 10%.

Nature Reserves (185 records): 71% in nature reserves - well conserved.

Habitat destruction (182 records): 99% extensive natural habitat, 1% naturally linear habitats.

Alien Invasive Species (179 records): 66% none, 32% *Pinus*, 1% *Hakea*.

Alien Density (179 records): 66% alien-free, 32% sparse, 1% abundant.

Cultivation & Utilization:

Picking (109 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Is probably a shorter than normal flowerhead form of *S. parilis* – lacking diagnostics of *S. colorata* - herbarium specimens desired (AMMY0101406-10).

A number of plants are dead - in other parts of the Riversdale mountains plants are in peak or over flowering - here seeds are fully formed (AWA97032407); From here to 1200 m altitude plants widespread up to 2 m tall and in competition with *Brunia* which stands 3 m tall (VJK94080703).

Large numbers of small solitary bees visiting flowers (AGRY0101416); Black Carpenter

Bee of about 10 mm length (WEL94030501).

Confusing Species: In the east high altitude forms of this species approach *S. colorata* in GISS and caused identification problems. Misidentification with *Diastella parilis* and *S. prolifera* are attributed to typological errors.

Records of identification queries = 20.

Records of corrected identification queries = 7.

Variation and Taxonomy: The stunted high altitude form was described as *S. bolusii*. Atlassers encountered this form east of the known locations for this species, were it was confused with *S. colorata*. This should be investigated further.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Spatalla prolifera (Thunb.) Salisb. ex Kn. 1781, 1809
Palmiet Spoon

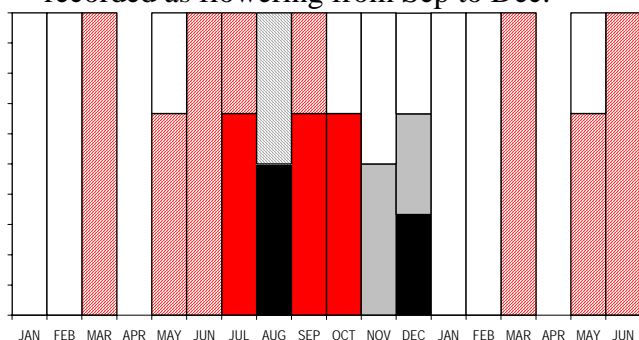
Other Common Names: Proliferous *Spatalla*.
Other Scientific Names: *None*.

32 Records

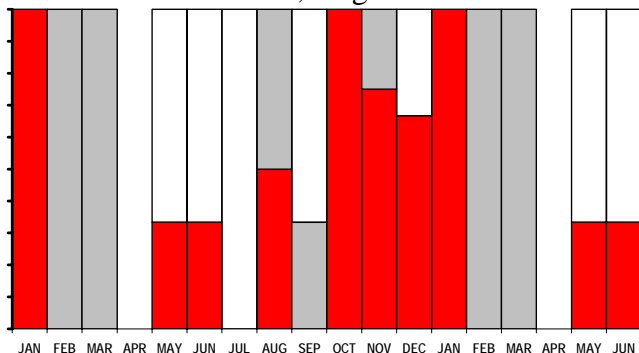
Population (32 records): 41% Common, 56% Frequent, 3% Rare.

Dispersion (32 records): 44% variable, 34% clumped, 22% evenly distributed.

Flowering (32 records with: Jan 2, Feb 2, Mar 1, Apr 0, May 3, Jun 3, Jul 6, Aug 2, Sep 3, Oct 3, Nov 4, Dec 3): Buds from Mar to Jul and Sep; Flowering from Jul and Sep to Oct; Peak Flowering from Aug and Dec; Over from Aug; Fruit from Nov to Dec; Nothing from Oct to Feb and May. Peak levels unreliable at 100% in Jul to Sep. Historically recorded as flowering from Sep to Dec.



Growth (31 records with: Jan 2, Feb 1, Mar 1, Apr 0, May 3, Jun 3, Jul 6, Aug 2, Sep 3, Oct 3, Nov 4, Dec 3): Much from Oct to Jan and May to Jun and Aug; Rare from Feb to Mar and Aug to Sep and Nov; None from May to Jul, Sep and Dec. Peak levels unreliable at 100% in Jan to Mar, Aug and Oct to Nov.



Seedlings (29 records): Absent in 93%; more seedlings than prefire adults in 1 case. Seedlings found in Oct.

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

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



Height (32 records): 13% 0-0.2 m tall, 88% 0.2-1 m tall.

Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (32 records): 100% inland - further than 2 km from coast.

Altitude (32 records): 40 - 460 m; 60_{lq} - 80_{med} - 80_{uq}m.

Landform (32 records):

56% swamp, 44% deep soil.

Slope (32 records): 69% gentle incline, 25% steep incline, 3% valley bottom, 3% platform.

Aspect (32 records): 33% South, 23% East, 22% North, 22% West.

Soil Type (32 records):

75% peaty,

13% sandy,

13% loamy.

Soil Colour (32 records):

63% black,

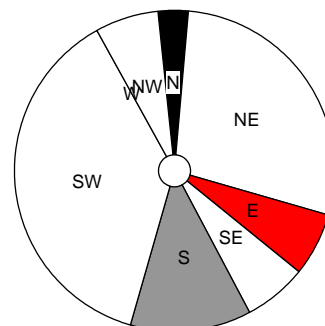
22% brown,

16% grey.

Geology (31 records):

87% sandstone, 13% shale.

Vegetation (32 records): 97% shrubland, 3% grassland.



Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 225 km² with 58% conserved and 11% lost; Occupancy: 26 km² with 71% conserved and 9% lost.

Fragmentation index: 11%.

Nature Reserves (32 records): 91% in nature reserves - well conserved.

Habitat destruction (32 records):

94% extensive natural habitat, 6% islands.

Alien Invasive Species (32 records): 78% none, 16% *Hakea*, 6% *Pinus*.

Alien Density (32 records): 78% alien-free, 22% sparse.

Cultivation & Utilization:

Picking (31 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Some 5-10 % plants dead (AGR96070902);
Many dead plants prior to burn
(MAJ95022701).

About 600 plants confined to a seepage area
about 25 m² (MAJ93060701); One clump in
one particular stream (HCE96070902).

Confusing Species: None.

Records of identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add. Indicator species for dams

INCLUDEPICTURE

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MERGEFORMAT \d

***Spatalla salsoloides* (R.Br.) Rourke 1810, 1969**
Kink-style Spoon

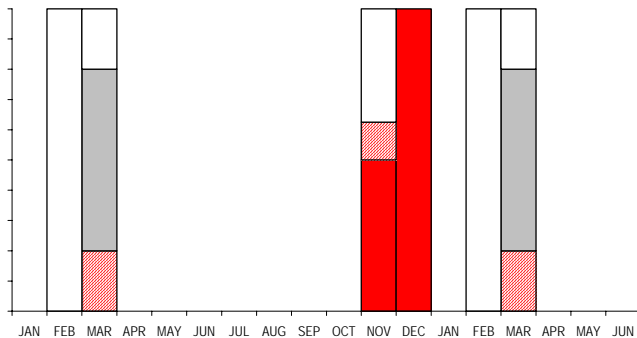
Other Common Names: None known.
Other Scientific Names: *None*.

16 Records

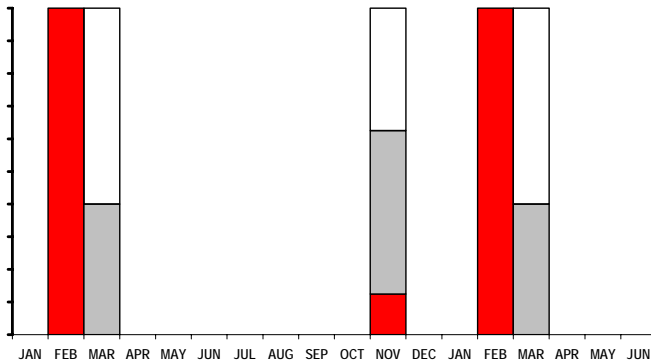
Population (16 records): 25% Frequent, 75% Rare.

Dispersion (11 records): 64% clumped, 27% variable, 9% evenly distributed.

Flowering (16 records with: Jan 0, Feb 2, Mar 5, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 0, Nov 8, Dec 1): Buds from Mar; Flowering from Nov to Dec; Peak Flowering and Over not recorded; Fruit from Mar; Nothing from Feb to Mar and Nov. Peak levels unreliable at 100% in Dec. Historically recorded as flowering from end of Oct to Dec.



Growth (15 records with: Jan 0, Feb 2, Mar 5, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 0, Nov 8, Dec 0): Much from Feb; Rare from Mar and Nov; None from Mar and Nov. Peak levels unreliable at 100% in Feb.



Seedlings (7 records): All without any seedlings present.

Fire Survival (2 records): 50% escaped fires in fire-safe areas, 50% resprouted from underground boles.

Age to first flowering: First flowers recorded at 100% at 3 years.



Height (16 records): 56% 0-0.2 m tall, 44% 0.2-1 m tall.

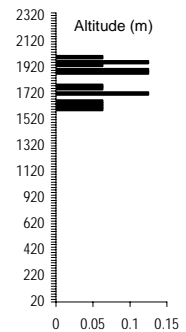
Pollinators (1 records): 100% flies.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (16 records): 100% inland - further than 2 km from coast.

Altitude (16 records): 1480 - 1900 m; 1600 *lq* - 1660 *med* - 1780 *uq*m.



Landform (16 records): 50% deep soil, 50% shallow soil.

Slope (16 records): 44% steep incline, 31% gentle incline, 19% hill top, 6% cliff.

Aspect (15 records): 73% South, 13% East, 13% West.

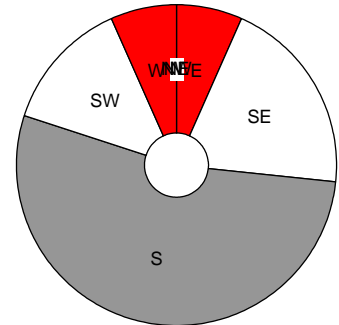
Soil Type (16 records): 50% sandy, 25% rocky, 13% loamy, 13% peaty.

Soil Colour (15 records): 67% grey, 20% black, 7% brown, 7% white.

Soil Colour (15 records): 67% grey, 20% black, 7% brown, 7% white.

Geology (16 records): 100% sandstone.

Vegetation (15 records): 93% shrubland, 7% grassland.



Conservation Status and Threat:

Red Data List Status: Endangered

B1a(ii)c(iv)+2a(ii)c(iv), D.
Occurrence (Fynbos): 76 km² with 89% conserved and 1% lost; **Occupancy:** 23 km² with 72% conserved and 0% lost.
Fragmentation index: 30%.

Nature Reserves (16 records): 75% in nature reserves - well conserved.

Habitat destruction (16 records): 94% extensive natural habitat, 6% naturally linear habitats.

Alien Invasive Species (16 records): 100% none.

Alien Density (16 records): 100% alien-free.

Cultivation & Utilization:

Picking (13 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Most flowerheads over but apparently another new crop in production (lots of buds) with still plenty of flowers (AGRY0112514).

No seedlings seen - only plants that escaped the fire in unburned patches noticed - so population probably an underestimate (AGRY1032310); Larger plants probably missed this fire (MAJ92112201).

About 60 plants on shale band (AGRY0112516); Seen: 3 dead and 1 alive (NAHY1030404).

Confusing Species: None noted.
Records of identification queries = 2.

Variation and Taxonomy: Robert Brown classified it as a *Sorocephalus*.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

***Spatalla setacea* (R.Br.) Rourke 1810, 1969**
Needle-leaf Spoon

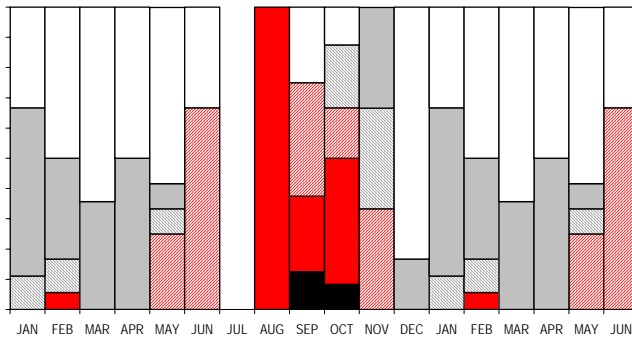
Other Common Names: None known.
Other Scientific Names: *begleyi* (Phill) 1915.

107 Records

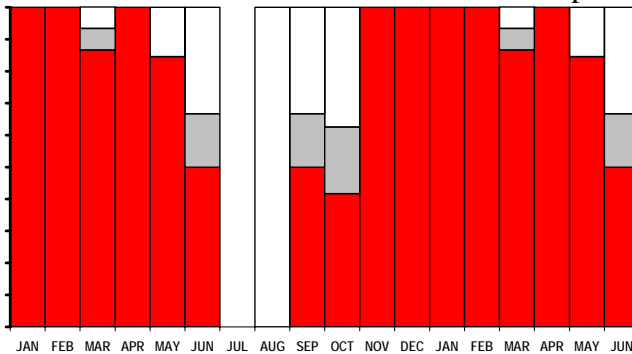
Population (107 records): 21% Common, 61% Frequent, 18% Rare.

Dispersion (99 records): 47% variable, 38% clumped, 13% widespread, 1% evenly distributed.

Flowering (105 records with: Jan 9, Feb 18, Mar 14, Apr 4, May 12, Jun 6, Jul 0, Aug 1, Sep 8, Oct 24, Nov 3, Dec 6): Buds from May to Jun, Sep and Nov; Flowering from Aug to Oct; Peak Flowering not significant; Over from Oct to Nov; Fruit from Jan to Apr and Nov; Nothing from Dec to Jun and Sep. Peak levels at 88% in Oct. Historically recorded as flowering from Oct to Dec with fruit from Jan to Feb.



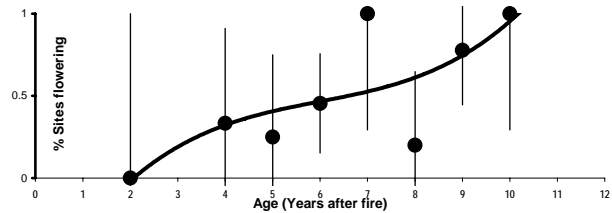
Growth (105 records with: Jan 9, Feb 18, Mar 15, Apr 4, May 13, Jun 6, Jul 0, Aug 1, Sep 6, Oct 24, Nov 3, Dec 6): Much from Sep to Jun; Rare from Oct; None from Jun to Oct. Peak levels at 100% in Nov to Feb and Apr.



Seedlings (60 records): All without any seedlings present.

Fire Survival (4 records): 100% survived by seedlings only.

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 5-6 years, and 100% recorded at 7 years.



Height (106 records): 9% 0-0.2 m tall, 84% 0.2-1 m tall, 7% 1-2 m tall.

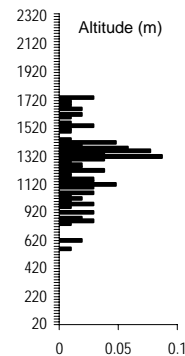
Pollinators (4 records): 75% bees or wasps, 25% flies.

Detailed Pollinators (3 records): Honey Bee.

Habitat:

Distance to Ocean (104 records): 100% inland - further than 2 km from coast.

Altitude (104 records): 540 - 1640 m; 1000 *lq* - 1180 *med* - 1260 *uq*m.



Landform (104 records): 78% deep soil, 20% shallow soil, 2% rocky outcrops.

Slope (104 records): 69% steep incline, 21% gentle incline, 5% hill top, 3% cliff, 2% valley bottom.

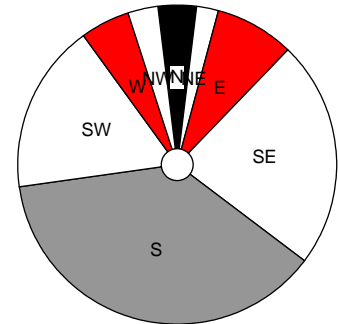
Aspect (99 records): 61% South, 17% West, 16% East, 7% North.

Soil Type (104 records): 51% peaty, 35% sandy, 10% loamy, 3% rocky, 2% gravelly.

Soil Colour (104 records): 44% black, 39% grey, 15% brown.

Geology (100 records): 97% sandstone, 3% shale.

Vegetation (104 records): 99% shrubland.



Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 877 km² with 65% conserved and 19% lost; **Occupancy:** 97 km² with 89% conserved and 0% lost. **Fragmentation index:** 11%.

Nature Reserves (104 records): 98% in nature reserves - well conserved.

Habitat destruction (104 records): 97% extensive natural habitat, 2% naturally linear habitats, 1% corridors.

Alien Invasive Species (104 records): 67% none, 33% *Pinus*.

Alien Density (104 records): 67% alien-free, 33% sparse.

Cultivation & Utilization:

Picking (81 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

With hairless bracts (AGR91111610);
Small clump of about a dozen plants by the path
(HCE96062910); Two 2 clumps of about 5/6
plants each by the path (HCE96062911);
Also several dead plants on a small local south-
facing slope (TLE97042010).

Confusing Species: None noted, although
many identifications of non-flowering plants
were not attempted below genus level. This
high incidence is probably due to the plant

being conspicuous in new leaf even when not
in flower.

Records of identification queries = 11.

Records of corrected identification queries = 5.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Spatalla ericoides Phill. 1910
Erica-leaf Spoon

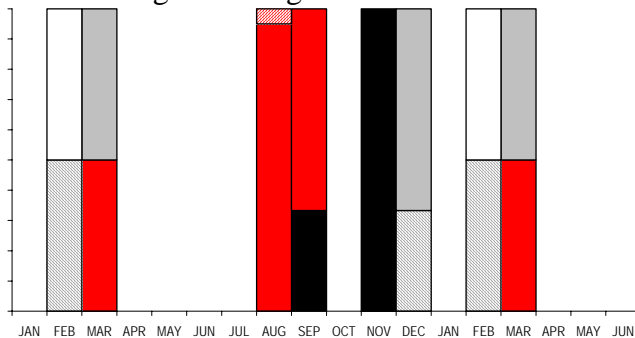
Other Common Names: Ericoid Spoon.
Other Scientific Names: *None*.

33 Records

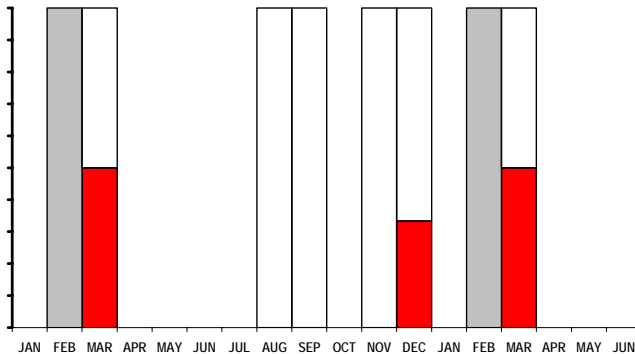
Population (33 records): 15% Common, 61% Frequent, 24% Rare.

Dispersion (28 records): 50% variable, 50% clumped.

Flowering (31 records with: Jan 0, Feb 2, Mar 2, Apr 0, May 0, Jun 0, Jul 0, Aug 20, Sep 3, Oct 0, Nov 1, Dec 3): Buds not significant; Flowering from Mar and Aug to Sep; Peak Flowering from Sep and Nov; Over from Feb and Dec; Fruit from Mar and Dec; Nothing from Feb. Peak levels unreliable at 100% in Aug to Nov. Historically recorded as flowering from Aug to Oct.



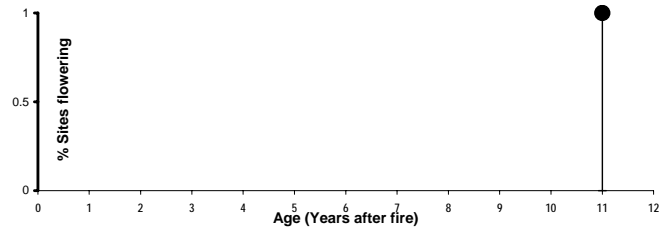
Growth (31 records with: Jan 0, Feb 2, Mar 2, Apr 0, May 0, Jun 0, Jul 0, Aug 20, Sep 3, Oct 0, Nov 1, Dec 3): Much from Mar and Dec; Rare from Feb; None from Mar to Dec. Peak levels unreliable at 100% in Feb.



Seedlings (12 records): All without any seedlings present.

Fire Survival : No data.

Age to first flowering: First flowers recorded at 11 years, but no data for younger veld exits and this is probably a gross overestimate.



Height (31 records): 13% 0-0.2 m tall, 87% 0.2-1 m tall.

Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (33 records): 97% inland - further than 2 km from coast.

Altitude (33 records): 20 - 200 m; 40_{lq} - 80_{med} - 80_{uq}m.

Landform (31 records): 100% deep soil.

Slope (30 records): 57% gentle incline, 30% platform, 10% valley bottom, 3% hill top.

Aspect (20 records): 38% South, 35% West, 15% North, 13% East.

Soil Type (31 records): 87% sandy, 13% loamy.

Soil Colour (31 records): 61% grey, 29% white, 10% brown.

Geology (26 records):

54% sandstone, 23% Tertiary sands, 19% limestone, 4% silcrete or ferricrete.

Vegetation (33 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Endangered

B1a(ii)b(iv)+2a(ii)b(iv), D2(ii)

Occurrence (Fynbos): 50 km² with 16% conserved and 9% lost; Occupancy: 37 km² with 19% conserved and 9% lost. Fragmentation index: 70%.

Nature Reserves (33 records): 24% in nature reserves.

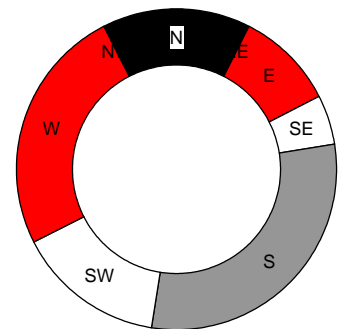
Habitat destruction (30 records): 97% extensive natural habitat, 3% naturally linear habitats.

Alien Invasive Species (31 records): 48% Fabaceae (chiefly alien *Acacia*), 29% none, 13% *Pinus*, 10% Myrtaceae.

Alien Density (31 records): 29% alien-free, 61% sparse, 6% abundant, 3% dense.

Cultivation & Utilization:

Picking (25 records): 100% no sign of picking.



Cultivation Status: No noted cultivation.

Atlassers Notes:

Found only 10 plants (HCA93112503); Several hundred plants (SMRY2082902).

Confusing Species: None, although the western forms of *S. squamata* approach *S. ericoides*, but the enlarging bracts are diagnostic of the former.

Records of identification queries = 1.

Variation and Taxonomy: No variation known.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPERIC_m.jpg" *

MERGEFORMAT \d

Spatalla squamata Meisn. 1856

Silky Spoon

Other Common Names: Red-shell Spoon, Silky Unispoon.

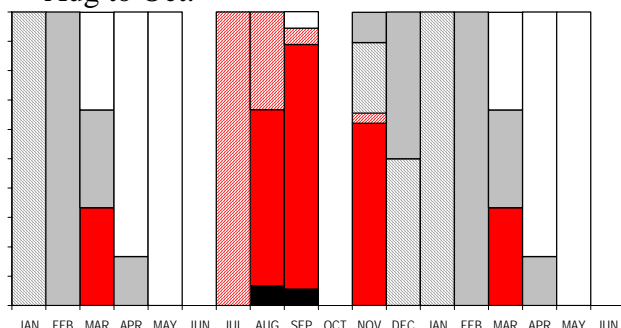
Other Scientific Names: *None*.

104 Records

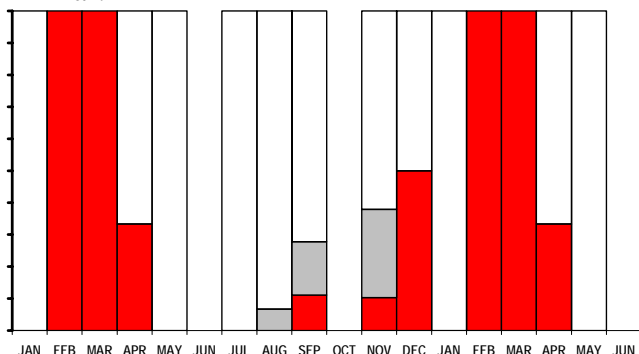
Population (100 records): 27% Common, 50% Frequent, 23% Rare.

Dispersion (80 records): 79% variable, 20% clumped, 1% widespread.

Flowering (92 records with: Jan 1, Feb 3, Mar 3, Apr 18, May 2, Jun 0, Jul 1, Aug 15, Sep 18, Oct 0, Nov 29, Dec 2): Buds from Jul to Aug; Flowering from Mar and Aug to Nov; Peak Flowering not significant; Over from Nov to Jan; Fruit from Feb to Mar and Dec; Nothing from Mar to May. Peak levels at 100% in Aug. Historically recorded as flowering from a well defined period from Aug to Oct.



Growth (91 records with: Jan 1, Feb 2, Mar 3, Apr 18, May 2, Jun 0, Jul 1, Aug 15, Sep 18, Oct 0, Nov 29, Dec 2): Much from Feb to Apr and Dec; Rare from Nov; None from Apr to Jan. Peak levels at 100% in Feb to Mar.



Seedlings (44 records): All without any seedlings present.

Fire Survival (11 records): 100% survived by seedlings only.

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



Height (90 records): 18% 0-0.2 m tall, 82% 0.2-1 m tall.

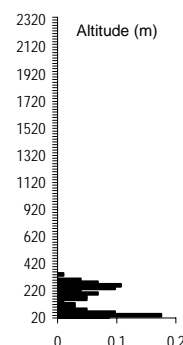
Pollinators : No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (103 records): 88% inland - further than 2 km from coast.

Altitude (103 records): 20 - 340 m; 20 *lq* - 60 *med* - 160 *uq*m.



Landform (91 records): 91% deep soil, 4% swamp, 2% lake edge, 1% rocky outcrops, 1% shallow soil.

Slope (91 records): 48% gentle incline, 31% platform, 16% hill top, 2% valley bottom, 1% steep incline, 1% dunes.

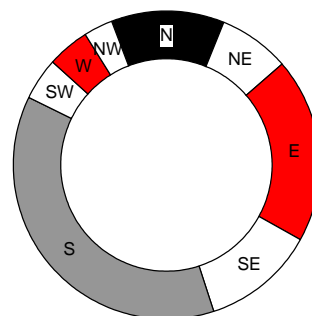
Aspect (67 records): 44% South, 29% East, 18% North, 9% West.

Soil Type (91 records): 93% sandy, 4% loamy, 2% peaty.

Soil Colour (90 records): 51% grey, 24% white, 13% brown, 8% yellow, 3% black.

Geology (86 records): 84% sandstone, 10% Tertiary sands, 2% limestone, 2% silcrete or ferricrete, 1% shale.

Vegetation (102 records): 98% shrubland, 1% agricultural lands, 1% plantations.



Conservation Status and Threat:

Red Data List Status: Near Threatened A2c.

Occurrence (Fynbos): 648 km² with 6% conserved and 40% lost; **Occupancy:** 119 km² with 14% conserved and 16% lost. **Fragmentation index:** 16%.

Nature Reserves (103 records): 23% in nature reserves.

Habitat destruction (88 records): 97% extensive natural habitat, 1% road verges, 1% islands, 1% naturally linear habitats.

Alien Invasive Species (89 records): 35% none, 27% Fabaceae (chiefly alien *Acacia*), 26% *Pinus*, 8% *Hakea*, 4% Myrtaceae.
Alien Density (89 records): 35% alien-free, 43% sparse, 16% abundant, 6% dense, 1% impenetrable.

Cultivation & Utilization:

Picking (65 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Invisible when no flower or seedheads in old veld, but obvious as very young plants in young veld! (AGR96040505);

Confusing Species: Short leaf forms in the west can be confused with *S. ericoides* before the diagnostic bracts begin to expand. Records of identification queries = 5. Records of corrected identification queries = 3.

Variation and Taxonomy: The extreme western forms have hairy bracts in the involucre which approach *S. ericoides* in character.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPSQUA_m.jpg" *

MERGEFORMAT \d

Spatalla curvifolia Salisb. ex Kn. 1809
White-stalked Spoon

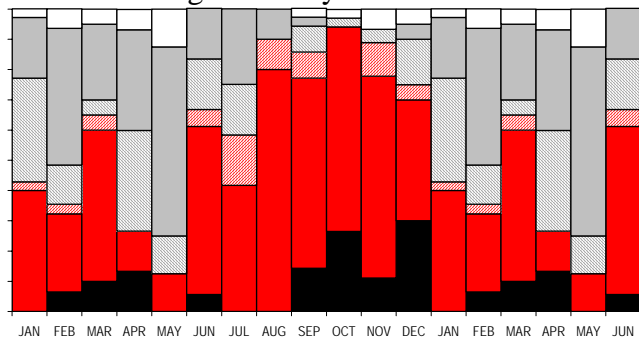
Other Common Names: Curve-leaf *Spatalla*.
Other Scientific Names: *galpini* Phill. 1910,
nivea R.Br. 1810, *pedunculata* R.Br. 1810.

310 Records

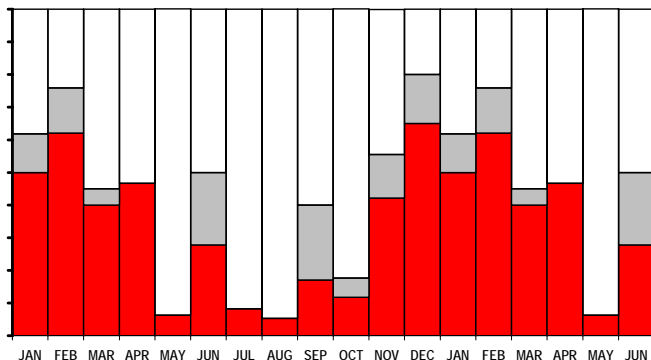
Population (307 records): 19% Common,
62% Frequent, 20% Rare.

Dispersion (273 records): 53% clumped,
41% variable, 4% widespread, 2% evenly
distributed.

Flowering (301 records with: Jan 35, Feb 31,
Mar 20, Apr 15, May 16, Jun 18, Jul 12, Aug
20, Sep 35, Oct 34, Nov 45, Dec 20): Buds
never prominent; Flowering from Jun to
Mar.; Peak Flowering from Oct and Dec;
Over from Jan and Apr; Fruit from Jan to
May and Jul; Nothing never prominent. Peak
levels at 97% in Oct. Historically recorded
as flowering from all year round.



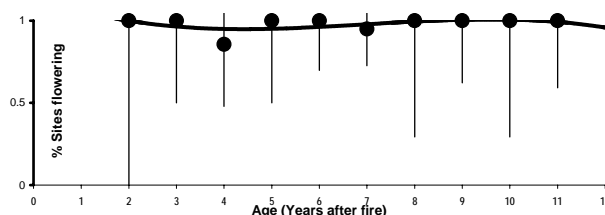
Growth (207 records with: Jan 34, Feb 29, Mar
20, Apr 15, May 16, Jun 18, Jul 12, Aug 19,
Sep 35, Oct 34, Nov 45, Dec 20): Much from
Nov to Apr and Jun; Rare from Jun and Sep;
None from all year round with a Dec to Feb
low. Peak levels at 80% in Dec.



Seedlings (131 records): Absent in 94%; fewer
seedlings than prefire adults in 3 cases, and
more in 1 case. Seedlings found in Jan, Jun,
Aug and Dec.

Fire Survival (9 records): 78% survived by
seedlings only, 11% eliminated from the area
by fires, 11% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded
at 2 years, 50% estimated at 2-3 years, and
100% estimated at 5 years.



Height (299 records): 14% 0-0.2 m tall,
85% 0.2-1 m tall.

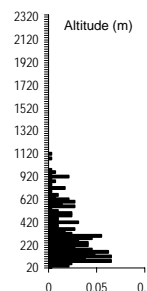
Pollinators (5 records): 60% bees or wasps,
40% beetles.

Detailed Pollinators (1 record): Honey Bee.

Habitat:

Distance to Ocean (292 records):
66% inland - further than 2 km
from coast.

Altitude (292 records): 20 - 1020
m; 120_{lq} - 240_{med} - 360_{uq}m.



Landform (284 records):
76% deep soil, 18% shallow
soil, 6% rocky outcrops.

Slope (284 records): 43% steep
incline, 42% gentle incline,
8% hill top, 6% platform.

Aspect (250 records): 59% South, 18% West,
14% East, 9% North.

Soil Type (284
records):

74% sandy,
10% loamy,
7% peaty,
4% gravelly,
4% rocky,
1% clayey.

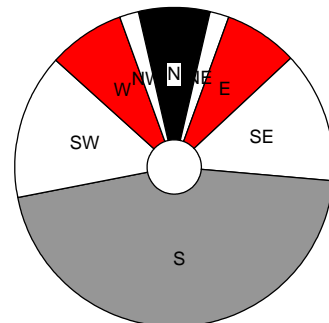
Soil Colour (281
records):

76% grey,
12% black,
6% white, 4% brown, 2% yellow.

Geology (288 records): 95% sandstone,

2% silcrete or ferricrete, 1% Tertiary sands.

Vegetation (291 records): 99% shrubland.



Conservation Status and Threat:

Red Data List Status: Near Threatened A2c

Occurrence (Fynbos): 2 239 km² with 11%
conserved and 33% lost; Occupancy:
329 km² with 24% conserved and 14% lost.
Fragmentation index: 9%.

Nature Reserves (292 records): 37% in nature
reserves.

Habitat destruction (278 records):
95% extensive natural habitat, 3% naturally
linear habitats, 2% islands.

Alien Invasive Species (279 records):
48% none, 33% *Pinus*, 10% Fabaceae
(chiefly alien *Acacia*), 7% *Hakea*,
2% Myrtaceae.

Alien Density (279 records): 48% alien-free,
46% sparse, 4% abundant, 1% dense.

Cultivation & Utilization:

Picking (197 records): 99% no sign of picking, 1% lightly picked.

Cultivation Status: No noted cultivation.

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

Atlassers Notes:

Both *S. racemosa* and *S. curvifolia* on site – unusual! (AGR95032605); Both *S. racemosa* and *S. curvifolia* seen in flower in this plot (PVR96081505); Interesting that *S. curvifolia* on upper slopes as *S. racemosa* is on plateau lower down (AGR98053105+10);

Heads and involucre bracts diagnostic but leaves 16 mm long (AGRY3111203); Small-leaf form (AJT94072306); Identification accepted - both species recorded in area but a long-stalked form of *S. racemosa*? Could it be hybridization? (APE96012809); Very robust specimen, but without swelling heads characteristic of *S. curvifolia* – in bud? (WIJ99050109).

Confusing Species: Considerable confusion with *S. racemosa* was recorded, despite the diagnostic feature of the swollen flowers in fruiting stage being present almost year round on the plants. Minor misidentifications with *S. longifolia* and *S. mollis* were also noted.

Records of identification queries = 46.

Records of corrected identification queries = 8.

Variation and Taxonomy: *Leaf curvature* varies from straight and erect to very strongly incurved. This is variable between (and even within a population in a few cases) populations and is apparently not confined to a geographical area or habitat. It was not remarked on by atlassers. *Flowerhead stalk length* varies considerably but there appears to be a geographical pattern. However, taxonomical recognition is apparently not warranted: East of the Bot River (including Caledon Swartberg) or Overberg Sandstone Fynbos: 5-30 mm (usually 10-20 mm) long. West of Bot River or Kogelberg Sandstone Fynbos: 20-70 mm (usually 40-60 mm) long. Given that flowerheads excluding the stalk are 30-70 mm long this difference is quite striking. It was not remarked on by atlassers.

Distribution: Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPCURV_m.jpg" *

MERGEFORMAT \d

Spatalla longifolia Salisb. ex Kn. 1809

Pink-stalked Spoon

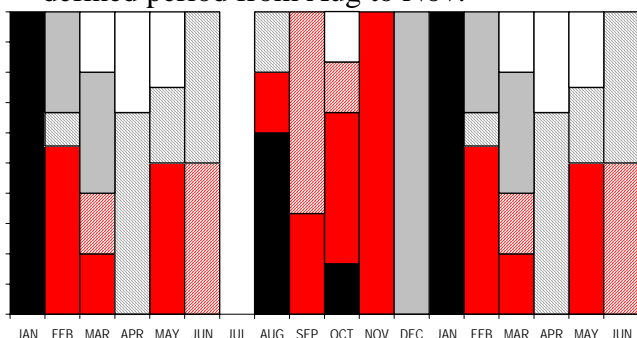
Other Common Names: Long-leaf *Spatalla*.
Other Scientific Names: *bracteata* R.Br. 1810,
bracteolaris Poir. 1816, *cylindrica* Phill.
 1910.

40 Records

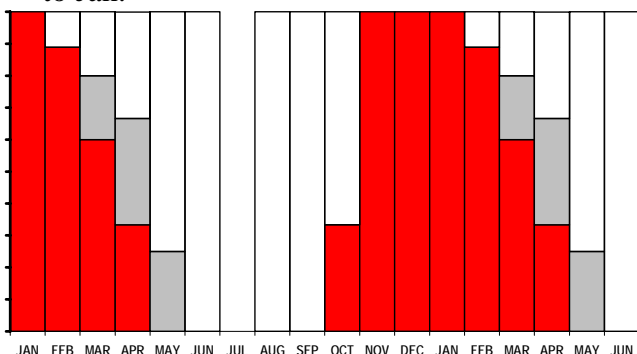
Population (39 records): 8% Common,
 56% Frequent, 36% Rare.

Dispersion (34 records): 65% clumped,
 35% variable.

Flowering (40 records with: Jan 1, Feb 9, Mar 5, Apr 3, May 4, Jun 2, Jul 0, Aug 5, Sep 3, Oct 6, Nov 1, Dec 1): Buds from Mar, Jun and Sep; Flowering from Feb to Mar, May, Aug to Nov; Peak Flowering from Jan and Aug; Over from Apr to Aug; Fruit from Feb to Mar and Dec; Nothing from Mar to May. Peak levels unreliable at 100% in Jun to Sep. Historically recorded as flowering in a well-defined period from Aug to Nov.



Growth (40 records with: Jan 1, Feb 9, Mar 5, Apr 3, May 4, Jun 2, Jul 0, Aug 5, Sep 3, Oct 6, Nov 1, Dec 1): Much from Oct to Apr; Rare from Mar to May; None from Mar to Oct. Peak levels unreliable at 100% in Nov to Jan.



Seedlings (22 records): Absent in 91%; fewer seedlings than prefire adults in 1 case. Seedlings found in Jun.

Fire Survival : No data.

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



Height (39 records): 18% 0-0.2 m tall,
 77% 0.2-1 m tall, 5% 1-2 m tall.

Pollinators (1 record): 100% bees or wasps.
Detailed Pollinators: No additional data.

Habitat:

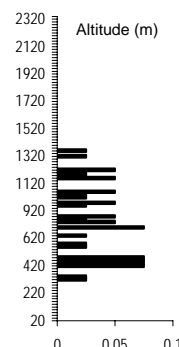
Distance to Ocean (40 records): 75% inland - further than 2 km from coast.

Altitude (40 records): 300 - 1260 m; 440 *lq* - 700 *med* - 780 *uq*m.

Landform (40 records): 63% deep soil, 38% shallow soil.

Slope (40 records): 52% steep incline, 48% gentle incline.

Aspect (40 records): 48% South, 36% East, 14% West, 3% North.

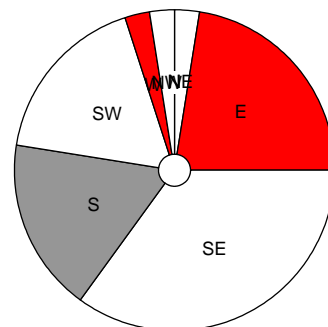


Soil Type (40 records): 65% sandy, 10% loamy, 10% clayey, 8% gravelly, 5% rocky, 3% peaty.

Soil Colour (40 records): 60% grey, 18% brown, 15% black, 5% orange, 3% white.

Geology (40 records): 88% sandstone, 13% shale.

Vegetation (40 records): 98% shrubland, 3% plantations.



Conservation Status and Threat:

Red Data List Status: Near Threatened
 B1a(i,ii)b(iv)+2a(i,ii)b(iv), D2.

Occurrence (Fynbos): 694 km² with 42% conserved and 31% lost; **Occupancy**: 54 km² with 61% conserved and 4% lost. **Fragmentation index**: 7%.

Nature Reserves (40 records): 63% in nature reserves - well conserved.

Habitat destruction (39 records): 100% extensive natural habitat.

Alien Invasive Species (40 records): 60% *Pinus*, 25% none, 13% Fabaceae (chiefly alien *Acacia*), 3% *Hakea*.

Alien Density (40 records): 25% alien-free, 45% sparse, 25% abundant, 5% dense.

Cultivation & Utilization:

Picking (36 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

About 150 plants – the largest single stand I have seen of this species in the Kogelberg area! (MAJ99102102).

Confusing Species: Both *S. curvifolia* and *S. racemosa* proved problematic in identifying this species. This was one species where a

magnifying glass is required to look at the involucral bracts.

Records of identification queries = 12.

Records of corrected identification queries = 8.

Variation and Taxonomy: No variation known.

Distribution: Found as scattered individuals not as dense stands .Add.

INCLUDEPICTURE

"C:\\temp\\atlas\\SPLONG_m.jpg" *

MERGEFORMAT \d

Spatalla mollis R.Br. 1810 Woolly Spoon

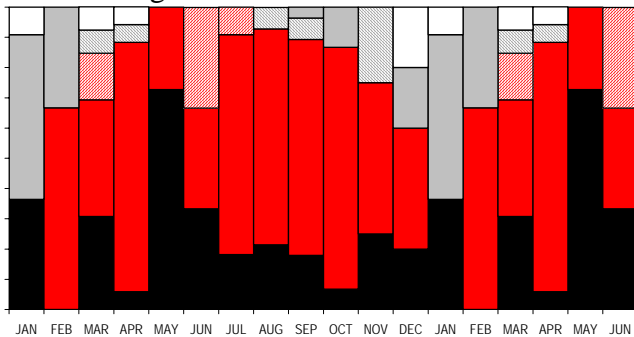
Other Common Names: None known.
Other Scientific Names: *brachyloba* Phill 1910, *pilosa* (Phill) 1910.

141 Records

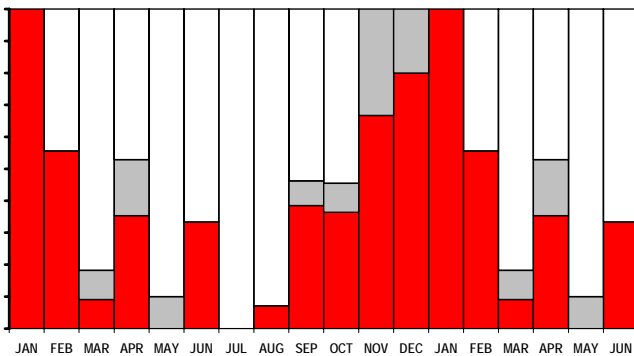
Population (141 records): 46% Common, 48% Frequent, 6% Rare.

Dispersion (137 records): 61% variable, 36% clumped, 3% widespread, 0.7% evenly distributed.

Flowering (141 records with: Jan 11, Feb 9, Mar 13, Apr 17, May 11, Jun 3, Jul 11, Aug 14, Sep 28, Oct 15, Nov 4, Dec 5): Buds from Jun; Flowering from Feb to Dec; Peak Flowering from Nov to Jan, Mar, May to Jun and Aug; Over from Nov; Fruit from Dec to Feb; Nothing from Dec. Peak levels at 100% in May to Sep. Historically recorded as flowering from Jul to Dec.



Growth (131 records with: Jan 11, Feb 9, Mar 11, Apr 17, May 10, Jun 3, Jul 11, Aug 14, Sep 26, Oct 11, Nov 3, Dec 5): Much from Sep to Feb, Apr, and Jun; Rare from Nov to Dec; None from Feb to Oct. Peak levels at 100% in Nov to Jan.



Seedlings (52 records): Absent in 81%: more seedlings than prefire adults in 5 cases. Seedlings found in May (4) and Dec.

Fire Survival (12 records): 92% survived by seedlings only, 8% eliminated from the area by fires.

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



Height (141 records): 26% 0-0.2 m tall, 74% 0.2-1 m tall.

Pollinators (7 records): 71% bees or wasps, 14% flies, 14% none observed.

Detailed Pollinators (1 record): Honey Bee.

Habitat:

Distance to Ocean (139 records): 94% inland - further than 2 km from coast.

Altitude (139 records): 60 - 1620 m; 240 *lq* - 500 *med* - 580 *uq*m.

Landform (138 records): 86% deep soil, 9% shallow soil, 4% swamp.

Slope (138 records): 65% gentle incline, 22% steep incline, 7% hill top, 6% platform.

Aspect (125 records): 40% South, 25% North, 20% West, 15% East.

Soil Type (137 records):

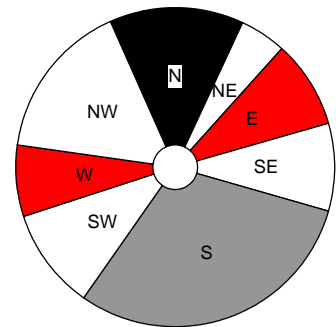
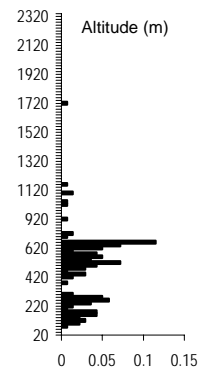
49% sandy, 28% loamy, 13% peaty, 5% gravelly, 3% rocky, 2% clayey.

Soil Colour (137 records):

56% grey, 22% black, 17% brown, 4% white.

Geology (137 records): 82% sandstone, 15% shale, 1% conglomerate.

Vegetation (138 records): 96% shrubland, 4% plantations.



Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 474 km² with 37% conserved and 41% lost; **Occupancy:** 99 km² with 66% conserved and 7% lost. **Fragmentation index:** 20%.

Nature Reserves (139 records): 88% in nature reserves - well conserved.

Habitat destruction (135 records): 99% extensive natural habitat, 1% islands.

Alien Invasive Species (137 records): 76% none, 19% *Pinus*, 4% Fabaceae (chiefly alien *Acacia*), 1% *Hakea*.

Alien Density (137 records): 76% alien-free,
18% sparse, 3% abundant, 4% dense.

Cultivation & Utilization:

Picking (77 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes: None.

Confusing Species: A few records of
confusion with *S. racemosa* in those
populations with hairless styles.

Records of identification queries = 15.

Records of corrected identification queries = 4.

Variation and Taxonomy: Some populations
on Paardeberg contain individuals with
hairless styles – hairy styles are a diagnostic
for this species.

Distribution: Add.

<Identification Queried: Sp Moll - Identified By
J Rourke - But This Is Way Out Of Range:
So Tere Would Be More Appropriate -
Accepted Tentatively Based On Jprs Id: Not
Found Since: Herbarium Specimen
Required (WIJ94061202); >

INCLUDEPICTURE

"C:\\temp\\atlas\\SPMOLL_m.jpg" *

MERGEFORMAT \d

***Spatalla racemosa* (L.) Druce 1753, 1913**
Lax-stalked Spoon

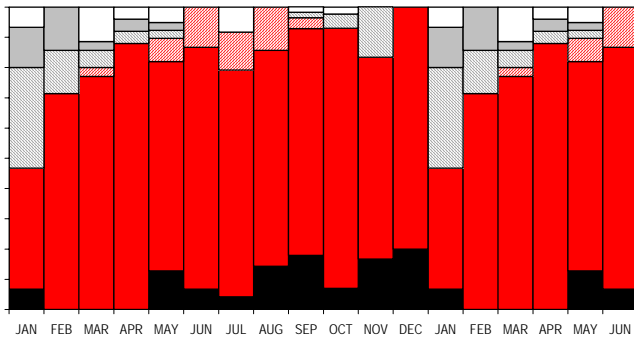
Other Common Names: Slender *Spatalla*.
Other Scientific Names: *gracilis* Salisb. ex Kn. 1809, *laxa* R.Br. 1810, *ramulosa* R.Br. 1810.

319 Records

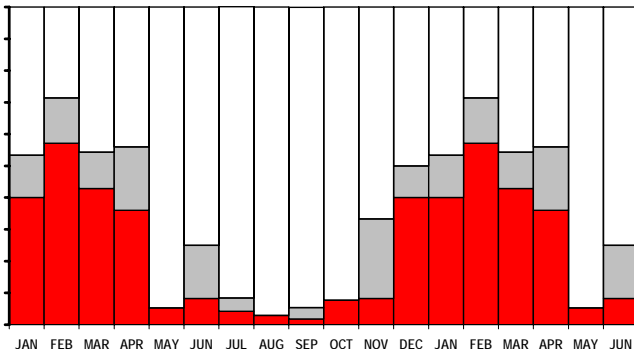
Population (313 records): 1% Abundant, 28% Common, 58% Frequent, 13% Rare.

Dispersion (295 records): 62% variable, 30% clumped, 5% widespread, 2% evenly distributed.

Flowering (316 records with: Jan 15, Feb 7, Mar 35, Apr 25, May 39, Jun 15, Jul 24, Aug 35, Sep 56, Oct 43, Nov 12, Dec 10): Buds not significant; Flowering from all year round; Peak Flowering from Dec; Over from Jan; Fruit and Nothing not significant. Peak levels at 100% in Jun, Aug and Nov to Dec. Historically recorded as flowering from Sep to Mar.



Growth (306 records with: Jan 15, Feb 7, Mar 35, Apr 25, May 38, Jun 12, Jul 24, Aug 34, Sep 55, Oct 39, Nov 12, Dec 10): Much from Dec to Apr; Rare from Apr and Nov; None from all year round. Peak levels at 71% in Feb.



Seedlings (161 records): Absent in 99%; more seedlings than prefire adults in 1 case. Seedlings found in Jul.

Fire Survival (12 records): 92% survived by seedlings only, 8% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 2 years, 50% estimated at 2-3 years, and 100% recorded at 4 years.



Height (315 records): 9% 0-0.2 m tall, 90% 0.2-1 m tall.

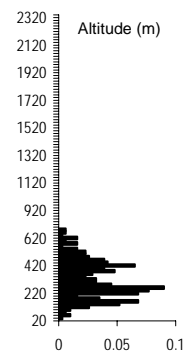
Pollinators (4 records): 75% bees or wasps, 25% beetles.

Detailed Pollinators (1 record): Solitary Bee.

Habitat:

Distance to Ocean (310 records): 85% inland - further than 2 km from coast.

Altitude (310 records): 20 - 680 m; 200 *lq* - 260 *med* - 340 *uq* m.



Landform (308 records): 80% deep soil, 14% shallow soil, 5% rocky outcrops.

Slope (308 records): 66% gentle incline, 25% steep incline, 4% hill top, 4% platform.

Aspect (289 records): 40% South, 24% West, 20% North, 16% East.

Soil Type (307 records):

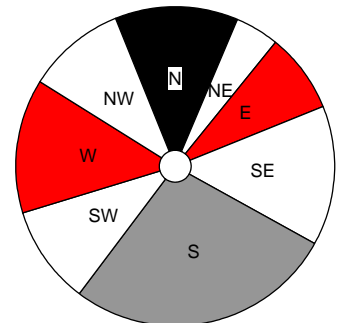
64% sandy, 16% loamy, 8% gravelly, 6% clayey, 4% rocky, 2% peaty.

Soil Colour (307 records):

63% grey, 21% brown, 5% orange, 4% white, 4% yellow, 3% black.

Geology (296 records): 82% sandstone, 15% shale, 1% silcrete or ferricrete, 1% conglomerate.

Vegetation (308 records): 99% shrubland, 1% plantations.



Conservation Status and Threat:

Red Data List Status: Near Threatened A2c.

Occurrence (Fynbos): 939 km² with 31% conserved and 34% lost; **Occupancy:** 233 km² with 30% conserved and 24% lost. **Fragmentation index:** 20%.

Nature Reserves (310 records): 45% in nature reserves.

Habitat destruction (305 records): 95% extensive natural habitat, 3% islands, 2% naturally linear habitats.

Alien Invasive Species (302 records): 47% *Pinus*, 22% none, 16% *Hakea*,

13% Fabaceae (chiefly alien *Acacia*),
2% Myrtaceae.

Alien Density (302 records): 22% alien-free,
62% sparse, 12% abundant, 4% dense.

Cultivation & Utilization:

Picking (223 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Both *S. racemosa* and *S. curvifolia* recorded in
area, but this is a long-stalked form of *S.*
racemosa - could it reflect hybridization?
(APE96012809, NGF98053103,
WIJ99102304).

Flies also seen (AGR91092101).

Confusing Species: Occasionally confused
with all other members of the group (in

order: *S. curvifolia*, *S. longifolia* and *S.*
mollis). The solitary fruits (narrow and
cylindrical) and involucre bracts (tridentate)
are diagnostic.

Records of identification queries = 30.

Records of corrected identification queries = 9.

Variation and Taxonomy: Populations with
long-stalked flowerheads noted. One
population with adpressed leaves noted
(SHR93103101).

Distribution: Isolated population at Steenbras
Dam. Add.

INCLUDEPICTURE

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