

Serruria triternata (Thunb.) R.Br. 1781, 1810
Tulbagh Spiderhead

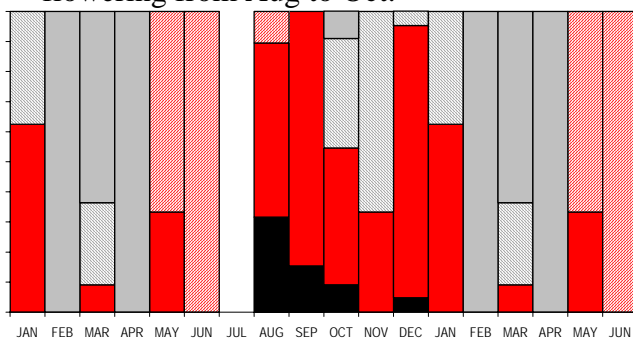
Other Common Names: Dill-leaf Serruria.
Other Scientific Names: *anethifolia* Salisb. ex Knight 1809, *argentiflora* (Andr) 1803, *glomerata* (Willd.) 1809, *tridentata* Dietr. 1839.

111 Records

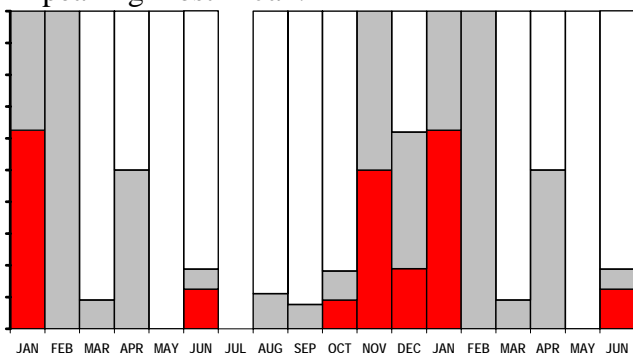
Population (111 records): 37% Common, 51% Frequent, 12% Rare.

Dispersion (105 records): 50% clumped, 46% variable, 3% widespread, 1.0% evenly distributed.

Flowering (111 records with: Jan 8, Feb 1, Mar 11, Apr 2, May 3, Jun 16, Jul 0, Aug 19, Sep 13, Oct 11, Nov 6, Dec 21): Buds from May to Jun; Flowering from Aug to Jan; Peak Flowering from Aug; Over from Jan, Mar and Oct to Nov; Fruit from Feb to Apr; Nothing not recorded. Peak levels at 100% from Aug to Sep. Historically recorded as flowering from Aug to Oct.



Growth (110 records with: Jan 8, Feb 1, Mar 11, Apr 2, May 3, Jun 16, Jul 0, Aug 18, Sep 13, Oct 11, Nov 6, Dec 21): Much from Nov and Jan; Rare from Nov to Feb and Apr; None from Mar to Oct and Dec. Peak levels at 100% from Nov, and Jan to Feb, but peaking most in Jan.



Seedlings (47 records): All without any seedlings present.

Fire Survival (8 records): 88% survived by seedlings only, 13% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 100% at 1 years.



Height (111 records): 83% 0.2-1 m tall, 17% 1-2 m tall.

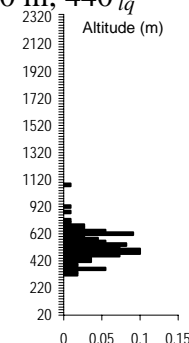
Pollinators (6 records): 83% beetles, 17% butterflies or moths.

Detailed Pollinators (4 records): Monkey Beetle (2), Moth (unspecified), Great Protea Beetle.

Habitat:

Distance to Ocean (110 records): 100% inland - further than 2 km from coast.

Altitude (110 records): 300 - 980 m; 440 *lq* - 500 *med* - 540 *uq*m.



Landform (110 records): 82% deep soil, 16% shallow soil, 0.9% swamp, 0.9% rocky outcrops.

Slope (110 records): 61% gentle incline, 15% steep incline, 15% platform, 6% hill top, 4% valley bottom.

Aspect (94 records): 37% East,

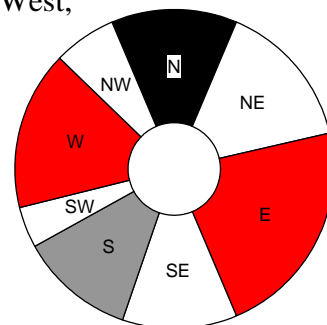
21% North, 21% West, 20% South.

Soil Type (110 records): 63% sandy, 22% gravelly, 5% loamy, 5% rocky, 4% clayey, 0.9% peaty.

Soil Colour (108 records): 57% grey, 20% brown, 16% white, 3% orange, 2% yellow, 0.9% black, 0.9% red.

Geology (109 records): 84% sandstone, 8% shale, 6% silcrete or ferricrete, 2% Tertiary sands.

Vegetation (110 records): 98% shrubland, 2% plantations.



Conservation Status and Threat:

Red Data List Status: Near Threatened D2(i). Occurrence (Fynbos): 107 km² with 51% conserved and 8% lost; Occupancy: 77 km² with 41% conserved and 12% lost. Fragmentation index: 67%.

Nature Reserves (110 records): 68% in nature reserves - well conserved.

Habitat destruction (110 records): 97% extensive natural habitat, 2% road verges, 0.9% islands.

Alien Invasive Species (109 records):
50% *Pinus*, 27% *Hakea*, 20% none,
3% Fabaceae (chiefly alien *Acacia*).
Alien Density (109 records): 20% alien-free,
69% sparse, 7% abundant, 4% dense.

Cultivation & Utilization:

Picking (82 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes:

1 bush apparently resprouting!
(AGR96121102); One plant appeared to be
resprouting (SMR96121106);
About 50 plants in ca 25 m diameter patch
adjacent to footprint of hut burnt out 3 - 5
years ago! (SHR98082301); About 150 plants
- half young (VCH98122701); New colony -

just 20 plants (VCH99010102); Jackpot ! a
couple of thousand plants (VCH99010104);
70% dead or dying very dry (VCH99040402);
Otomus damage seen (NGF96081005);
Clay outcrop - plants limited to outcrop and
wash off area about 50 m² (VCH98122701);
Pollinator: Protea Beetle - small brown
Tricostetha (AGRY4092401);

Confusing Species: None.

Records of identification queries = 3.

Variation and Taxonomy: No variation noted.

Distribution: Add.

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Serruria altiscapa Rourke 1994 Stately Spiderhead

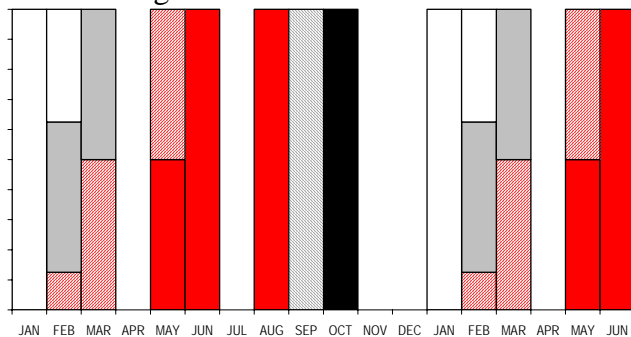
Other Common Names: None known.
Other Scientific Names: *amoena* nomen nudum - in Tansley, *nubicephala* nomen nudum (Protea Atlas).

22 Records

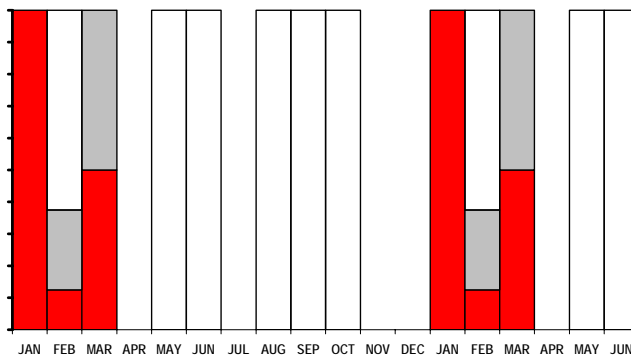
Population (22 records): 18% Common, 50% Frequent, 32% Rare.

Dispersion (17 records): 76% clumped, 24% variable.

Flowering (22 records with: Jan 2, Feb 8, Mar 2, Apr 0, May 2, Jun 1, Jul 0, Aug 5, Sep 1, Oct 1, Nov 0, Dec 0): Buds from Mar to May; Flowering from May to Aug; Peak Flowering from Oct; Over from Sep; Fruit from Feb to Mar; Nothing from Jan to Feb. Peak levels unreliable at 100% from Jun to Aug. Historically recorded as flowering from Aug to Oct.



Growth (22 records with: Jan 2, Feb 8, Mar 2, Apr 0, May 2, Jun 1, Jul 0, Aug 5, Sep 1, Oct 1, Nov 0, Dec 0): Much from Jan and Mar; Rare from Feb to Mar; None from Feb and May to Oct. Peak levels unreliable at 100% in Jan.



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

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

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



Height (22 records): 50% 0.2-1 m tall, 50% 1-2 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): 680 - 1220 m; 760_{lq} - 920_{med} - 1020_{uq} m.

Landform (22 records): 59% deep soil, 41% shallow soil.

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

Aspect (22 records):

52% East,
48% South.

Soil Type (22 records):

64% sandy,
14% gravelly,
9% loamy,
9% rocky,
5% clayey.

Soil Colour (22 records):

68% grey,
23% black, 5% brown, 5% white.

Geology (21 records): 90% sandstone, 10% shale.

Vegetation (22 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 77 km² with 78% conserved and 14% lost; Occupancy: 20 km² with 94% conserved and 4% lost.

Fragmentation index: 25%.

Nature Reserves (22 records): 86% in nature reserves - well conserved.

Habitat destruction (22 records):

100% extensive natural habitat.

Alien Invasive Species (22 records):

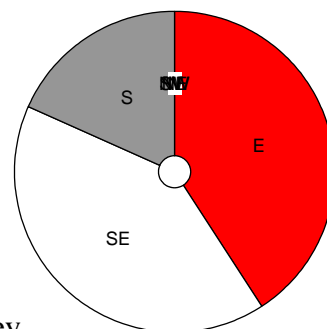
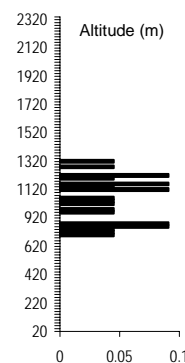
91% *Pinus*, 9% none.

Alien Density (22 records): 9% alien-free, 55% sparse, 32% abundant, 5% dense.

Cultivation & Utilization:

Picking (18 records): 94% no sign of picking, 6% lightly picked.

Cultivation Status: No noted cultivation.



Atlassers Notes:

Flower stalks reach head height amongst the pines (SHR94092501);

50% of plants "In Bud" and 50% with fruit "In Cone" (MAJ93032803);

Inflorescences chopped off by *Otomys*? (or some other large rodent!) - some sitting on rosette of leaves to chew based on droppings - a few heads gnawed (AGR96060305);

Picking of flowers evident: possibly in the name of science or even conservation! (MAJ93032803);

About 25 plants seen in this population (NAH97022304);

In locally deeper soils on platform (ASP93082207);

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

Variation and Taxonomy: No variation noted.

Distribution: Add.

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Serruria confragosa Rourke 1982 Wavy Spiderhead

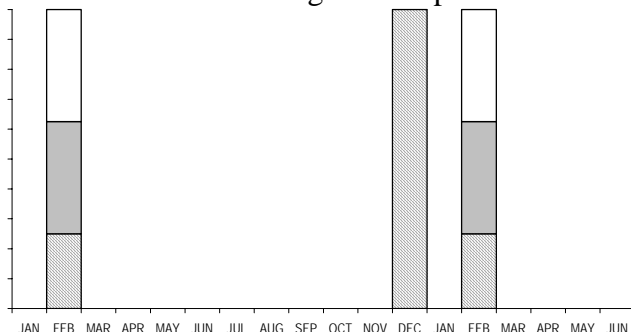
Other Common Names: None known.
Other Scientific Names: None.

9 Records

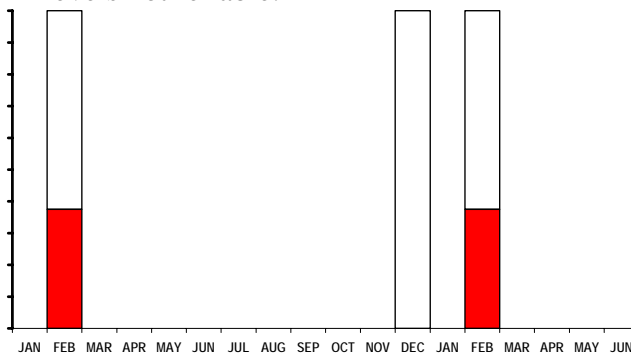
Population (9 records): 56% Common, 22% Frequent, 22% Rare.

Dispersion (9 records): 56% clumped, 22% evenly distributed, 22% variable.

Flowering (9 records with: Jan 0, Feb 8, Mar 0, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 0, Nov 0, Dec 1): Buds, Flowering and Peak Flowering not recorded; Over from Dec to Feb; Fruit from Feb; Nothing from Feb. Peak levels not recorded. Historically recorded as flowering from Sep to Nov.



Growth (9 records with: Jan 0, Feb 8, Mar 0, Apr 0, May 0, Jun 0, Jul 0, Aug 0, Sep 0, Oct 0, Nov 0, Dec 1): Much from Feb; Rare not recorded; None from Dec to Feb. Peak levels not reliable.



Seedlings (2 records): All without any seedlings present.

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

Age to first flowering: First flowers recorded at 8 years, no data from younger veld.



Height (9 records): 22% 0-0.2 m tall, 44% 0.2-1 m tall, 33% 1-2 m tall.

Pollinators: No data.

Detailed Pollinators: No additional data.

Habitat:

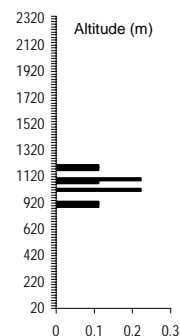
Distance to Ocean (9 records): 100% inland - further than 2 km from coast.

Altitude (9 records): 780 - 1100 m; 900_{lq} - 920_{med} - 920_{uq}m.

Landform (9 records): 67% deep soil, 33% shallow soil.

Slope (9 records): 56% steep incline, 22% gentle incline, 22% hill top.

Aspect (7 records): 50% East, 21% South, 21% West, 7% North.



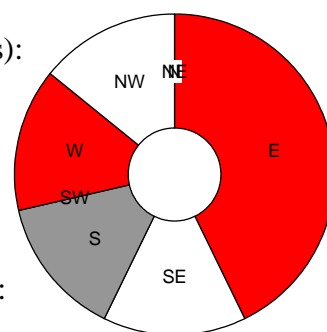
Soil Type (9 records):

44% loamy, 33% sandy, 22% gravelly.

Soil Colour (9 records): 44% brown, 33% grey, 22% yellow.

Geology (9 records): 67% shale, 33% sandstone.

Vegetation (9 records): 100% shrubland.



Conservation Status and Threat:

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

Occurrence (Fynbos): 11 km² with 57% conserved and 0% lost; **Occupancy:** 12 km² with 34% conserved and 2% lost. **Fragmentation index:** 92%.

Nature Reserves (9 records): 78% in nature reserves - well conserved.

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

Alien Invasive Species (8 records): 100% none. **Alien Density** (8 records): 100% alien-free.

Cultivation & Utilization:

Picking (6 records): 100% no sign of picking. **Cultivation Status:** No noted cultivation.

Atlassers Notes:

Looks like it has a bole - branching right at ground level - possibly a resprouter? (AGRY1021416);

About 140 plants (AGRY1021416); Adjacent to but not in the seep (JBB99122102);

Confusing Species: None noted.

Records of identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add.

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Serruria elongata (Bergius) R.Br. 1766, 1810 Long-stalk Spiderhead

Other Common Names: Stalked Spiderhead, *Spinnekopbos*.

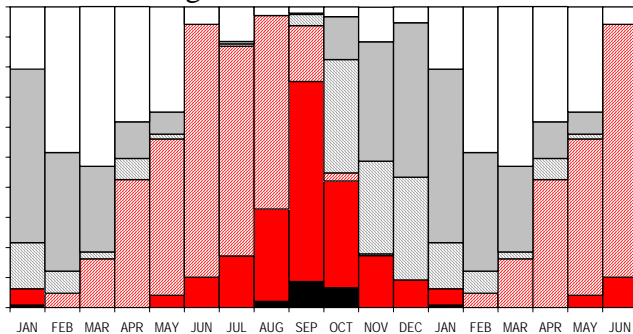
Other Scientific Names: *crithmifolia* Salisb. ex Knight 1809, *glomerata* (Thunb) 1781, *helvola* (Willd.) 1809, *thyrsoides* (Lam.) 1791.

1658 Records

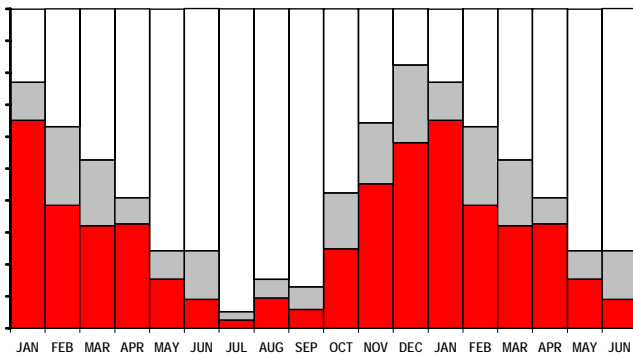
Population (1639 records): 0.4% Abundant, 29% Common, 59% Frequent, 11% Rare, 0.1% Extinct.

Dispersion (1489 records): 70% variable, 23% clumped, 6% widespread, 0.9% evenly distributed.

Flowering (1591 records with: Jan 111, Feb 124, Mar 130, Apr 115, May 123, Jun 69, Jul 122, Aug 140, Sep 242, Oct 183, Nov 156, Dec 76): Buds from Apr to Aug; Flowering from Aug to Oct; Peak Flowering not significant; Over from Oct to Dec; Fruit from Nov to Mar; Nothing from Jan to May. Peak levels at 98% in Sep. Historically recorded as flowering from Jul to Oct.



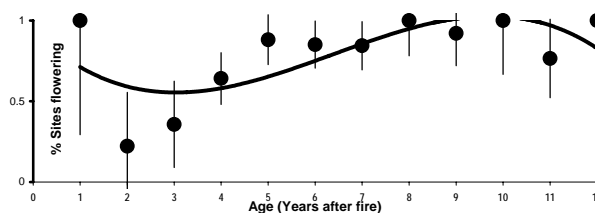
Growth (1561 records with: Jan 109, Feb 122, Mar 131, Apr 110, May 123, Jun 66, Jul 116, Aug 137, Sep 239, Oct 177, Nov 157, Dec 74): Much from Oct to Apr; Rare from Feb to Mar and Dec; None from Jan to Nov. Peak levels at 82% in Dec.



Seedlings (713 records): Absent in 95%; fewer seedlings than prefire adults in 14 cases, and more in 4 cases. Seedlings found in Jan (2), Feb (2), Aug (6), Sep (5), Oct and Dec (2).

Fire Survival (41 records): 83% survived by seedlings only, 15% eliminated from the area by fires, 2% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 1 years, 50% estimated at 3 years, and 100% recorded at 8 years.



Height (1589 records): 6% 0-0.2 m tall, 91% 0.2-1 m tall, 2% 1-2 m tall.

Pollinators (10 records): 60% bees or wasps, 40% beetles.

Detailed Pollinators (8 records): Monkey Beetle (4), Honey Bee (3), Carpenter Bee.

Habitat:

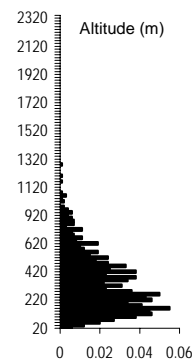
Distance to Ocean (1620 records): 86% inland - further than 2 km from coast.

Altitude (1620 records): 20 - 1180 m; 160_{iq} - 260_{med} - 400_{uq}m.

Landform (1556 records): 79% deep soil, 16% shallow soil, 4% rocky outcrops, 0.3% swamp, 0.1% riverine.

Slope (1559 records): 56% gentle incline, 31% steep incline, 7% hill top, 6% platform, 0.6% valley bottom, 0.3% cliff.

Aspect (1403 records): 35% South, 27% North, 20% East, 17% West.



Soil Type (1555 records):

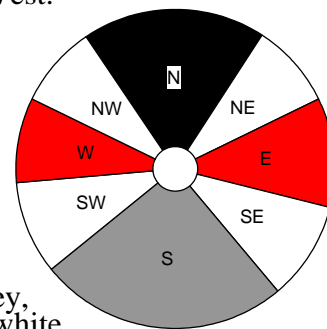
66% sandy, 17% loamy, 8% gravelly, 4% rocky, 2% peaty, 2% clayey.

Soil Colour (1551 records):

68% grey, 18% brown, 5% white, 5% black, 2% orange, 2% yellow, 0.2% red.

Geology (1559 records): 88% sandstone, 7% shale, 3% silcrete or ferricrete, 0.5% Tertiary sands, 0.4% conglomerate, 0.4% limestone, 0.1% granite.

Vegetation (1613 records): 99% shrubland, 0.6% plantations, 0.4% grassland, 0.2% thicket, 0.1% agricultural lands, 0.1% forest.



Conservation Status and Threat:

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

Occurrence (Fynbos): 3 942 km² with 18% conserved and 30% lost; **Occupancy:** 1 184 km² with 20% conserved and 23% lost. **Fragmentation index:** 17%.

Nature Reserves (1620 records): 37% in nature reserves.

Habitat destruction (1529 records):
94% extensive natural habitat, 3% islands,
1.0% naturally linear habitats, 0.6% naturally
fragmented habitats, 0.4% road verges,
0.2% corridors.

Alien Invasive Species (1518 records):
40% *Pinus*, 33% none, 15% Fabaceae
(chiefly alien *Acacia*), 9% *Hakea*,
3% Myrtaceae, 0.1% other aliens.

Alien Density (1515 records): 33% alien-free,
53% sparse, 11% abundant, 3% dense,
0.3% impenetrable.

Cultivation & Utilization:

Picking (1118 records): 99% no sign of
picking, 0.4% lightly picked, 0.2% severely
picked.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Looks like a squat, mildly prostrate, cream
flowered, sweet smelling, single stem *S.*
elongata - but not quite right
(MAJ96080601); Silver Form
(TLE96100601); Had exceptionally long
flower stalk -maximum length found was
420mm (WEL96031707);

New growth only on non-flowering branches at
present (MAJ99110302);

Rodents had nipped off many flowerheads
(NGF97121102);

Signs on almost all plants of picking
(PAP93080601+2);

Lots dead (33%) within last year - drought hit
here too? Not so much evident higher up as
down here. (AGRY0011403);

Producing a very strong, sickly-sweet smell at
16h50 - a jasmine-sweet smell. Not noticed
earlier in day although seen throughout day:
all plants were producing odour!
(AGR91092111);

Most dense on patch of white sand
(APE93011616);

Confusing Species: Confused with *S. altiscapa*
(which has a similar growth form, but much
longer flowerstalks and a different
inflorescence architecture. A single instance
of confusion with *S. rubricaulis* which is a
resprouter with kinked florets.

Records of identification queries = 27.

Records of corrected identification queries = 5.

Variation and Taxonomy: Around Steenbras
Dam a squatter form with short flowerstalks
and silver flowerheads occurs. Locally some
forms produce very long flowerstalks, but
this is very variable between populations and
no geographic trends were noted.

Distribution: Add.

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Serruria lacunosa Rourke 1996 Matsikamma Spiderhead

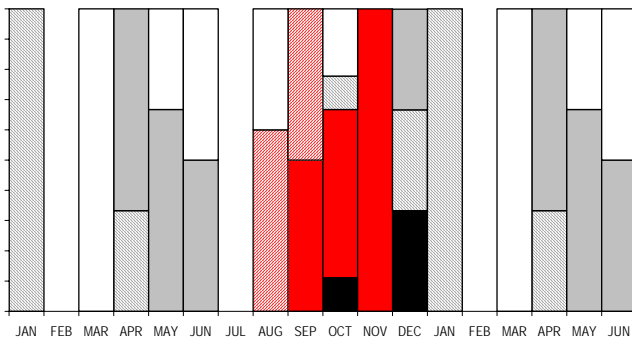
Other Common Names: None known.
Other Scientific Names: None.

30 Records

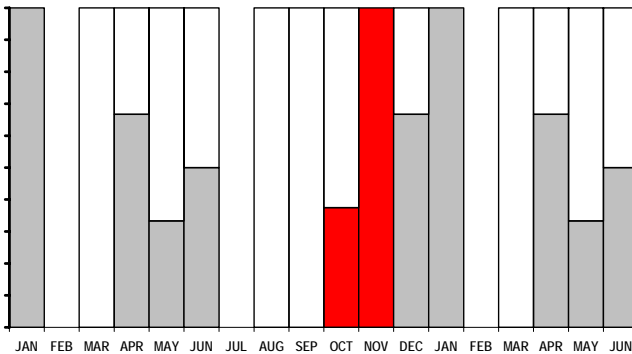
Population (30 records): 0% Common, 67% Frequent, 33% Rare.

Dispersion (26 records): 88% clumped, 8% variable, 4% evenly distributed.

Flowering (30 records with: Jan 1, Feb 0, Mar 1, Apr 3, May 3, Jun 2, Jul 0, Aug 5, Sep 2, Oct 9, Nov 1, Dec 3): Buds from Aug to Sep; Flowering from Sep to Nov; Peak Flowering from Dec; Over from Dec to Jan and Apr; Fruit from Apr to Jun and Dec; Nothing from Mar and May to Aug and Oct. Peak levels unreliable at 100% in Nov. Historically not recorded.



Growth (29 records with: Jan 1, Feb 0, Mar 1, Apr 3, May 3, Jun 2, Jul 0, Aug 5, Sep 2, Oct 8, Nov 1, Dec 3): Much from Oct to Nov; Rare from Dec to Jan and Apr to Jun; None from Mar to Oct and Dec. Peak levels unreliable at 100% in Nov.



Seedlings (3 records): Absent in 33%; fewer seedlings than prefire adults in 1 case. Seedlings found in Apr.

Fire Survival: No data.

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



Height (28 records): 11% 0-0.2 m tall, 82% 0.2-1 m tall, 7% 1-2 m tall.

Pollinators (1 record): 100% flies.
Detailed Pollinators: No additional data.

Habitat:

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

Altitude (27 records): 640 - 800 m; 660_{lq} - 680_{med} - 680_{uq} m.

Landform (26 records): 92% deep soil, 8% shallow soil.

Slope (27 records): 81% gentle incline, 11% hill top, 4% valley bottom, 4% platform.

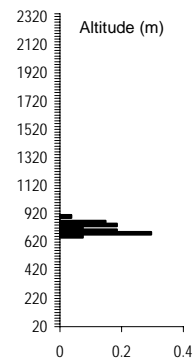
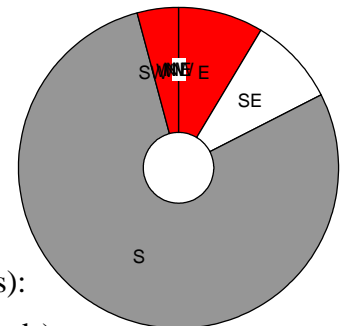
Aspect (23 records): 83% South, 13% East, 4% West.

Soil Type (27 records): 85% sandy, 15% loamy.

Soil Colour (27 records): 56% brown, 22% grey, 22% white.

Geology (27 records): 100% sandstone.

Vegetation (27 records): 100% shrubland.



Conservation Status and Threat:

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

Occurrence (Fynbos): 12 km² with 0% conserved and 0% lost; **Occupancy:** 15 km² with 5% conserved and 0% lost. Fragmentation index meaningless.

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

Habitat destruction (27 records): 59% extensive natural habitat, 37% naturally fragmented habitats, 4% islands.

Alien Invasive Species (27 records): 93% none, 7% *Pinus*.

Alien Density (27 records): 93% alien-free, 7% sparse.

Cultivation & Utilization:

Picking (13 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

14 plants left: two babies also died one bush looks sick (AWA98082805); It looked like one plant branched at ground level - Dave maintains there are two plants: dead plants all around (AWA99091701); Either I miscounted or plants are down from 13 last year to eleven this year (AWA99091806); Dave Schlebush phoned on 16/10/99 to say he has found another 16 plants to the east of the one (2?) atlassed on 990917 01 (he was looking for two wayward cows!) some young plants yellowing (AWA99101601); 14 plants and some dead plants (AWAY0101201); Only 1 plant left - the Schlebushes are considering burning the site to rejuvenate the plants (AWAY0101202); 8 plants 3.06 km from 7fontein turnoff 43 plants 2.80 km (at quarry) from Sewefontein turnoff = 61 plants (AWAY0101404); 31 plants in wet patch old veld a number of dead plants as in normal with this species (AWAY0101405); 30 plants - 16 with flowers (AWAY0101406); Down to 9 plants from 11 last year - one plant stressed with no flowers (AWAY0101501); 12 plants (AWAY0101602); 15 plants (NAH96120101); These 3 are apparently a previously unknown population alongside road (NAH96120201); About 25 plants in this new population threatened by a road less than 2 m away: new population right along rd; in a ditch about 10 x 7m; discovered by Bets Schelebush in Oct '96 (NAH96120202); This population atlassed in early Dec '96 then healthy is now entirely dead - all 24

plants! no seeds were set so one can assume that this pop (60% of world total!) is now extinct - possible reasons include: disease to wet summer (NAH97033001); Total population size here is less than 15 plants - cuttings and seeds taken - being grown by Kirstenbosch (NAH97042202); Only 17 plants in an area of 10 m² - a previously unrecorded population seasonally damp with *Berzelia* nearby all plants currently healthy; some bigger than others (NAHY0040101); 3 plants dead in this population: now 14 alive (NAHY1012702); Although there were 4 plants there were 3 dead plants as well (NGF97061404); Plant in poor condition S of koppie in main valley (TLEY0052104); A new species? It has also not been seen elsewhere on the farm (WIJ94041306); 16 plants exist they have single stems according to the farmers wife who was requested to check this specifically from Sewefontein farm (WIJ94102511); Schlebushes say there were 13 plants recently - now 6 left (WIJY0052010);

Confusing Species: Originally atlassed as *S. leipoldtii*, but noted as a non-resprouter and distinct.

Records of identification queries = 5.

Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria leipoldtii Phill. & Hutch. 1912
Louis Leipoldt's Spiderhead

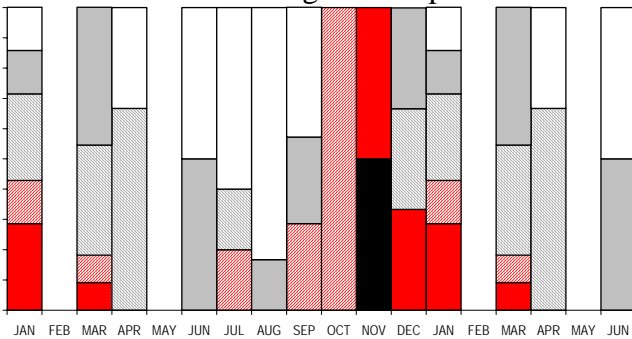
Other Common Names: None known.
Other Scientific Names: *elongata* Drege 1844.

48 Records

Population (46 records): 2% Common, 50% Frequent, 48% Rare.

Dispersion (40 records): 55% variable, 38% clumped, 5% evenly distributed, 3% widespread.

Flowering (47 records with: Jan 7, Feb 0, Mar 11, Apr 3, May 0, Jun 2, Jul 5, Aug 6, Sep 7, Oct 1, Nov 2, Dec 3): Buds from Jul 20 and Sep to Oct; Flowering from Nov to Jan; Peak Flowering from Nov; Over from Dec to Apr and Jul; Fruit from Mar, Jun, Sep and Dec; Nothing from Apr to Sep. Peak levels unreliable at 100% in Nov. Historically recorded as flowering from Sep to Dec..



Height (46 records): 11% 0-0.2 m tall, 89% 0.2-1 m tall.

Pollinators: No data.

Detailed Pollinators: No additional data.

Habitat:

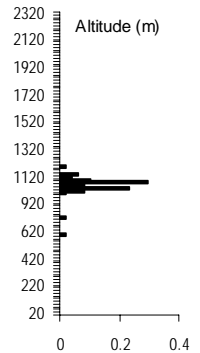
Distance to Ocean (47 records): 100% inland - further than 2 km from coast.

Altitude (47 records): 580 - 1100 m; 920_{lq} - 940_{med} - 940_{uq}m.

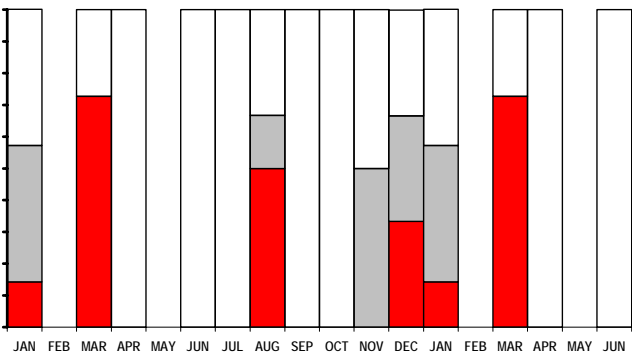
Landform (46 records): 78% deep soil, 17% shallow soil, 4% rocky outcrops.

Slope (46 records): 52% gentle incline, 26% platform, 15% hill top, 7% valley bottom.

Aspect (31 records): 47% East, 24% North, 18% West, 11% South.



Growth (47 records with: Jan 7, Feb 0, Mar 11, Apr 3, May 0, Jun 2, Jul 5, Aug 6, Sep 7, Oct 1, Nov 2, Dec 3): Much from Dec to Mar and Aug; Rare from Nov to Jan and Aug; None from all year round. Peak levels unreliable at 73% in Mar.

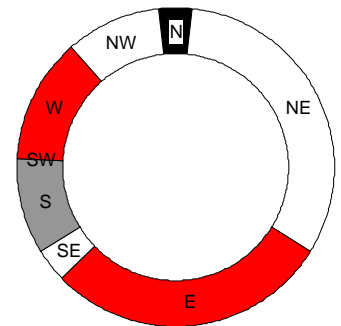


Soil Type (46 records): 83% sandy, 11% gravelly, 4% loamy, 2% clayey.

Soil Colour (46 records): 37% grey, 33% brown, 15% white, 9% orange, 4% yellow, 2% red.

Geology (46 records): 93% sandstone, 7% shale.

Vegetation (46 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Near Threatened D2(i).

Occurrence (Fynbos): 161 km² with 64% conserved and 1% lost; **Occupancy:** 58 km² with 48% conserved and 2% lost.

Fragmentation index: 33%.

Nature Reserves (47 records): 64% in nature reserves - well conserved.

Habitat destruction (44 records): 93% extensive natural habitat, 2% islands, 2% naturally linear habitats, 2% naturally fragmented habitats.

Alien Invasive Species (44 records): 93% none, 7% *Pinus*.

Alien Density (44 records): 93% alien-free, 5% sparse, 2% abundant.

Cultivation & Utilization:

Seedlings (27 records): All without any seedlings present.

Fire Survival (14 records): 86% resprouted from underground boles, 14% survived by seedlings only.

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

Picking (37 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes:

Suspect the 'M growth' are flower buds coming out as leaves (AWA95081901);
Most abundant (half plants) on erosion scar! (AGRY5122805); Growing next to or near rocks [13 plants] (AWA95081901);

Confusing Species: Atlassed as *S. cygnea* which has capitula and forms a flat mat.

Records of identification queries = 4.
Records of corrected identification queries = 2.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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

MERGEFORMAT \d

Serruria meisneriana Schltr. 1900
Dainty Spiderhead

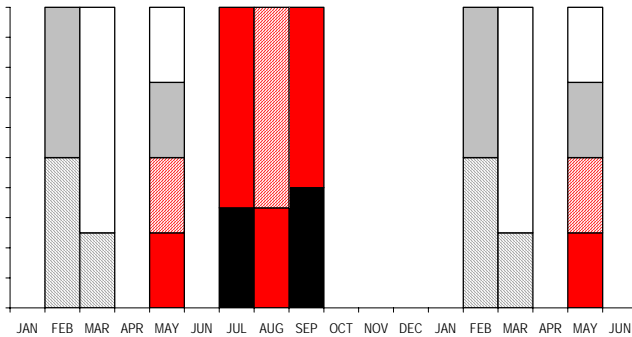
Other Common Names: None known.
Other Scientific Names: *glaberrima* var. *pinnata* Meisn. 1856.

26 Records

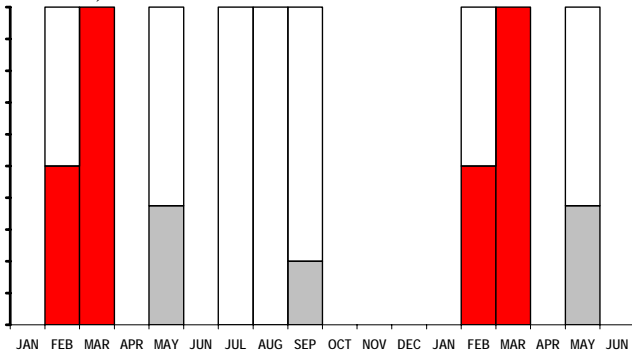
Population (25 records): 20% Common, 68% Frequent, 12% Rare.

Dispersion (25 records): 72% variable, 28% clumped.

Flowering (25 records with: Jan 0, Feb 2, Mar 4, Apr 0, May 8, Jun 0, Jul 3, Aug 3, Sep 5, Oct 0, Nov 0, Dec 0): Buds from May and Aug; Flowering from May to Sep; Peak Flowering from Jul and Sep; Over from Feb to Mar; Fruit from Feb and May; Nothing from Mar to May. Peak levels unreliable (no summer data) at 100% from Jul to Sep. Historically recorded as flowering from Jul to Oct.



Growth (25 records with: Jan 0, Feb 2, Mar 4, Apr 0, May 8, Jun 0, Jul 3, Aug 3, Sep 5, Oct 0, Nov 0, Dec 0): Much from Feb to Mar; Rare from May and Sep; None from May to Oct. Peak levels unreliable (no summer data) at 100% in Mar.



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

Fire Survival : No data.

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

Height (25 records): 8% 0-0.2 m tall, 92% 0.2-1 m tall.

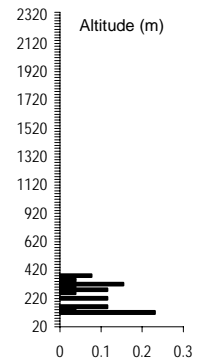
Pollinators (1 record): 100% beetles.

Detailed Pollinators (1 record): Monkey Beetle.

Habitat:

Distance to Ocean (26 records): 100% inland - further than 2 km from coast.

Altitude (26 records): 100 - 380 m; 120_{lq} - 220_{med} - 280_{uq}m.



Landform (25 records): 68% deep soil, 24% shallow soil, 8% rocky outcrops.

Slope (25 records): 72% gentle incline, 20% steep incline, 4% hill top, 4% platform.

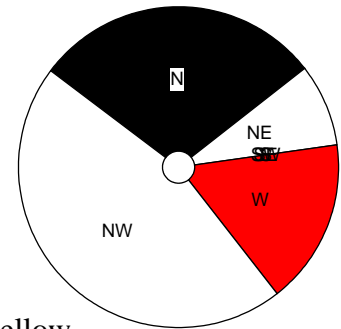
Aspect (24 records): 60% North, 35% West, 4% East.

Soil Type (25 records): 56% sandy, 28% gravelly, 12% loamy, 4% rocky.

Soil Colour (25 records): 52% grey, 28% brown, 12% white, 8% yellow.

Geology (21 records): 90% sandstone, 10% shale.

Vegetation (25 records): 100% shrubland.



Conservation Status and Threat:
Red Data List Status: Endangered A2c.

Occurrence (Fynbos): 43 km² with 0% conserved and 6% lost; Occupancy: 28 km² with 0% conserved and 20% lost. Fragmentation index: 50%.

Nature Reserves (26 records): 0% in nature reserves - unconserved.

Habitat destruction (25 records): 92% extensive natural habitat, 4% islands, 4% corridors.

Alien Invasive Species (25 records): 40% *Pinus*, 36% *Hakea*, 24% Fabaceae (chiefly alien *Acacia*).

Alien Density (25 records): 56% sparse, 44% abundant.

Cultivation & Utilization:

Picking (17 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes:

Very uncommon in veld older than about 8 years (NAH96031001);

Definitely on Table Mountain Sandstone soils and not shale (NAH96031001);

Confusing Species: None noted.

Records of identification queries = 1.

Variation and Taxonomy: No variation noted. This species is a link between the Stalked Spiderheads and the Whip-leaf Spiderheads.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria williamsii Rourke 1982
King Spiderhead

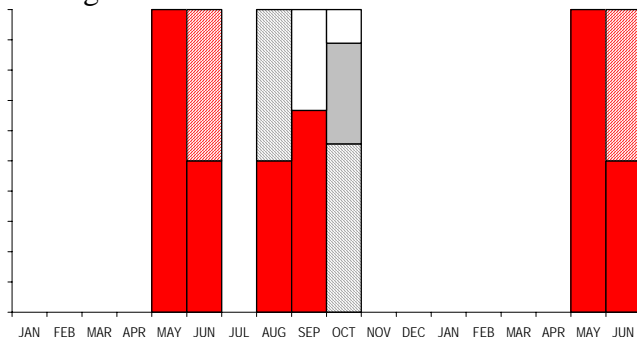
Other Common Names: None known.
Other Scientific Names: None.

17 Records

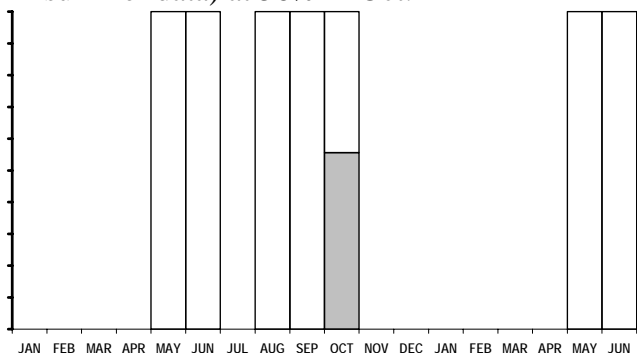
Population (16 records): 19% Common, 69% Frequent, 13% Rare.

Dispersion (15 records): 53% clumped, 47% variable.

Flowering (17 records with: Jan 0, Feb 0, Mar 0, Apr 0, May 1, Jun 2, Jul 0, Aug 2, Sep 3, Oct 9, Nov 0, Dec 0): Buds from Jun; Flowering from May to Sep; Peak Flowering not recorded; Over from Aug and Oct; Fruit from Oct; Nothing from Sep. Peak levels unreliable (no summer data) at 100% from May to Aug. Historically recorded as flowering from Feb to Dec, peaking from Aug to Nov.



Growth (17 records with: Jan 0, Feb 0, Mar 0, Apr 0, May 1, Jun 2, Jul 0, Aug 2, Sep 3, Oct 9, Nov 0, Dec 0): Much not recorded – no summer data!; Rare from Oct; None from May to Oct. Peak levels unreliable (no summer data) at 56% in Oct.



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

Fire Survival : No data.

Age to first flowering: No data.

Height (17 records): 88% 0.2-1 m tall, 12% 1-2 m tall.

Pollinators: No data.

Detailed Pollinators: No additional data.

Habitat:

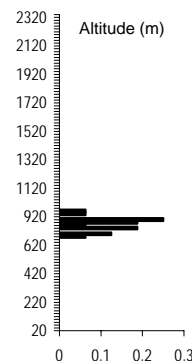
Distance to Ocean (16 records): 100% inland - further than 2 km from coast.

Altitude (16 records): 660 - 860 m; 720_{lq} - 740_{med} - 760_{uq}m.

Landform (16 records): 75% deep soil, 19% shallow soil, 6% rocky outcrops.

Slope (16 records): 88% gentle incline, 6% steep incline, 6% hill top.

Aspect (14 records): 68% North, 18% East, 14% West.



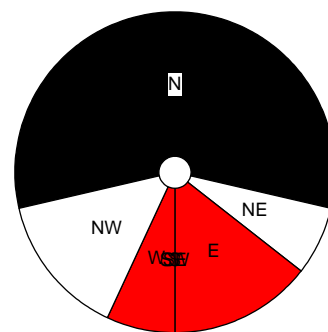
Soil Type (16 records):

44% sandy, 38% loamy, 13% gravelly, 6% rocky.

Soil Colour (16 records): 75% grey, 25% brown.

Geology (16 records): 100% sandstone.

Vegetation (16 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Endangered

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

Occurrence (Fynbos): 28 km² with 0% conserved and 0% lost; Occupancy: 14 km² with 5% conserved and 0% lost. Fragmentation index: 48%.

Nature Reserves (16 records): 0% in nature reserves - unconserved.

Habitat destruction (16 records):

94% extensive natural habitat, 6% islands.

Alien Invasive Species (16 records): 88% none, 13% *Pinus*.

Alien Density (16 records): 88% alien-free, 13% sparse.

Cultivation & Utilization:

Picking (15 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlasers Notes: None.

Confusing Species: None noted.

Records of identification queries = 1

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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

MERGEFORMAT \d

Serruria decumbens (Thunb.) R.Br. 1781, 1810
Peninsula Spiderhead

Other Common Names: Winter-flowering Serruria.

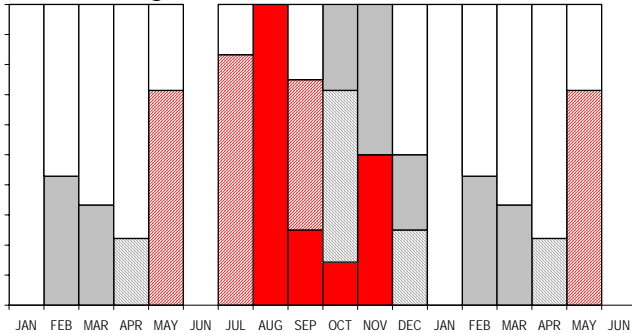
Other Scientific Names: *hyamalis* Salisb. ex Knight 1809, *procumbens* Lf. 1781.

56 Records

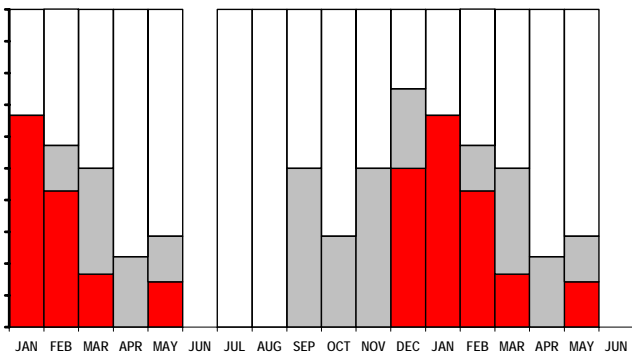
Population (56 records): 4% Common, 52% Frequent, 45% Rare.

Dispersion (46 records): 61% clumped, 28% variable, 9% evenly distributed, 2% widespread.

Flowering (56 records with: Jan 3, Feb 7, Mar 6, Apr 9, May 7, Jun 0, Jul 6, Aug 1, Sep 4, Oct 7, Nov 2, Dec 4): Buds from May to Jul and Sep; Flowering from Aug to Sep and Nov; Peak Flowering not recorded; Over from Apr, Oct and Dec; Fruit from Feb to Mar and Oct to Dec; Nothing from Dec to May and Sep. Peak levels unreliable at 100% in Aug. Historically recorded as flowering from Jul to Oct.



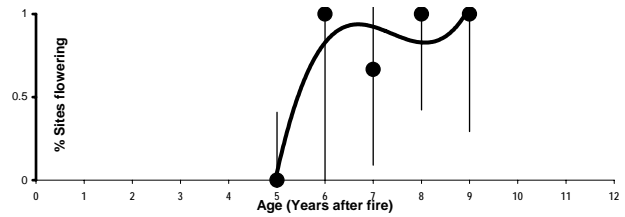
Growth (56 records with: Jan 3, Feb 7, Mar 6, Apr 9, May 7, Jun 0, Jul 6, Aug 1, Sep 4, Oct 7, Nov 2, Dec 4): Much from Dec to Feb; Rare from Mar to Apr and Sep to Dec; None from all year round. Peak levels unreliable at 75% in Dec.



Seedlings (16 records): Absent in 38%: fewer seedlings than prefire adults in 4 cases, and more in 1 case. Seedlings found in Feb, Mar, Apr and May (2).

Fire Survival (4 records): 100% survived by seedlings only.

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



Height (56 records): 96% 0-0.2 m tall, 4% 0.2-1 m tall.

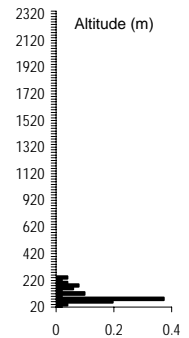
Pollinators: No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (51 records): 92% coastal - less than 2 km from coast.

Altitude (51 records): 20 - 240 m; 40 *lq* - 80 *med* - 80 *uq*m.



Landform (50 records): 42% shallow soil, 36% deep soil, 20% rocky outcrops, 2% riverine.

Slope (50 records): 48% gentle incline, 18% hill top, 16% platform, 14% steep incline, 2% dunes, 2% valley bottom.

Aspect (36 records): 33% West, 29% South, 28% North,

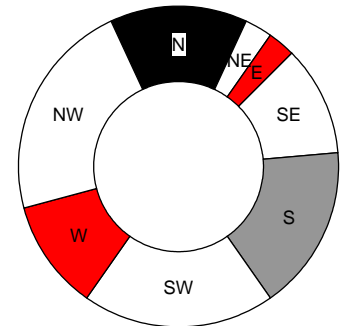
10% East.

Soil Type (50 records): 84% sandy, 12% loamy, 4% rocky.

Soil Colour (50 records): 84% grey, 12% white, 2% black, 2% brown.

Geology (50 records): 100% sandstone.

Vegetation (50 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Endangered

B1a(i,ii)c(iv)+2a(i,ii)c(iv)₂
 Occurrence (Fynbos): 23 km² with 100% conserved and 1% lost; Occupancy: 28 km² with 82% conserved and 4% lost.
 Fragmentation index meaningless

Nature Reserves (51 records): 96% in nature reserves - well conserved.

Habitat destruction (49 records): 98% extensive natural habitat, 2% naturally fragmented habitats.

Alien Invasive Species (49 records): 65% none, 35% Fabaceae (chiefly alien *Acacia*).

Alien Density (49 records): 65% alien-free, 35% sparse.

Cultivation & Utilization:

Picking (45 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Sprawling over big rocks 1-2 m in diameter (WIJ94101604); Large mats with lots of buds formed over the flat rocks (LYM97071303);

Shows centrifugal flowering behaviour (SHR96101301);

Nigel's plant is dead (was big - 2 m long) but a single very small plant 50 mm across and 50 mm high remains (AGRY4041101);

11 plants counted (AGRY5091007); About 30 plants - 99% young (CNR95032401); Population about 110 plants in an area about 8 x 17 m = 90-99% young plants (CNR95051401); Covers about 200 x 40 m:

about 600 plants 99% young plants - extends down to river bank! (CNR95051504);

Confusing Species: None noted. Potentially confusable with *S. collina*, but this is a resprouter with much larger heads with inconspicuous floral bracts.

Records of identification queries = 2.

Variation and Taxonomy: No variation noted, although Bonteberg population appears more robust.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria flagellifolia Salisb. ex Kn. 1809
Houwhoek Spiderhead

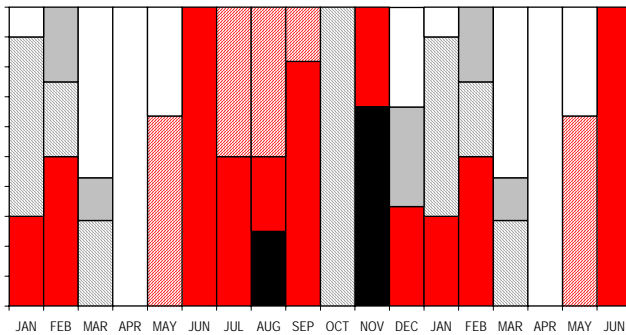
Other Common Names: Lash-leaf Serruria.
Other Scientific Names: *decumbens* Willd. ex Meisn 1856, *glaberrima* R. Br. 1810

70 Records

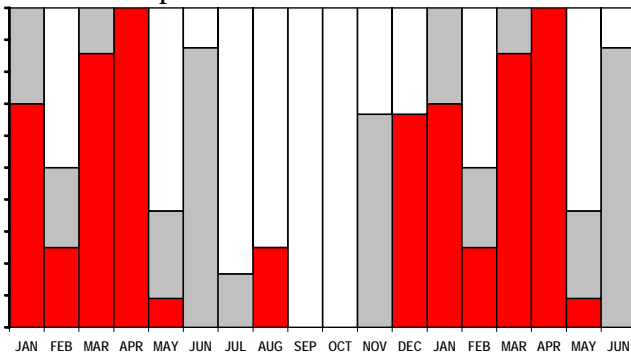
Population (69 records): 1% Abundant, 42% Common, 45% Frequent, 12% Rare.

Dispersion (65 records): 72% variable, 20% clumped, 8% widespread.

Flowering (69 records with: Jan 10, Feb 4, Mar 7, Apr 1, May 11, Jun 8, Jul 6, Aug 4, Sep 11, Oct 1, Nov 3, Dec 3): Buds from May and Jul to Aug; Flowering from Jun to Feb; Peak Flowering from Aug and Nov; Over from Jan to Mar; Fruit from Feb and Dec; Nothing from Mar to May and Dec. Peak levels at 100% from Jun to Nov, peaking in Nov. Historically recorded as flowering from Jun to Nov.



Growth (69 records with: Jan 10, Feb 4, Mar 7, Apr 1, May 11, Jun 8, Jul 6, Aug 4, Sep 11, Oct 1, Nov 3, Dec 3): Much from Dec to Apr and Aug; Rare from Jan to Feb, May to Jun and Nov; None from Feb, May and Jul to Dec. Peak levels unreliable at 100% from Mar to Apr.



Seedlings (33 records): All without any seedlings present.

Fire Survival (2 records): 50% eliminated from the area by fires, 50% survived by seedlings only.

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



Height (68 records): 84% 0-0.2 m tall, 16% 0.2-1 m tall.

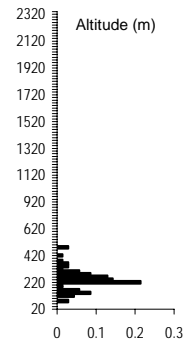
Pollinators: No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (70 records): 100% inland - further than 2 km from coast.

Altitude (70 records): 60 - 480 m; 200_{lq} - 220_{med} - 220_{uq}m.



Landform (69 records): 90% deep soil, 10% shallow soil.

Slope (69 records): 75% gentle incline, 12% steep incline, 10% platform, 1% hill top, 1% valley bottom.

Aspect (65 records): 28% East, 28% South, 24% North, 20% West.

Soil Type (69 records):

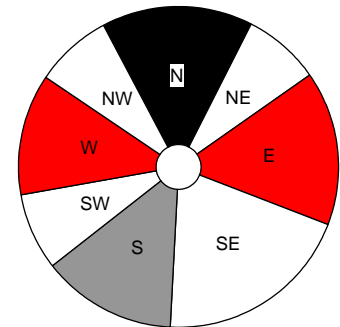
72% sandy, 19% loamy, 6% gravelly, 3% clayey.

Soil Colour (69 records):

54% grey, 23% brown, 12% yellow, 10% white, 1% orange.

Geology (64 records): 89% sandstone, 9% shale, 2% silcrete or ferricrete.

Vegetation (69 records): 100% shrubland.



Conservation Status and Threat:

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

Occurrence (Fynbos): 280 km² with 23% conserved and 39% lost; **Occupancy:** 68 km² with 29% conserved and 23% lost. **Fragmentation index:** 20%.

Nature Reserves (70 records): 27% in nature reserves.

Habitat destruction (69 records): 94% extensive natural habitat, 3% islands, 1% naturally linear habitats, 1% naturally fragmented habitats.

Alien Invasive Species (68 records): 57% *Pinus*, 26% Fabaceae (chiefly alien *Acacia*), 9% none, 4% Myrtaceae, 3% *Hakea*.

Alien Density (68 records): 9% alien-free, 71% sparse, 18% abundant, 3% dense.

Cultivation & Utilization:

Picking (59 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Probably more plants but hard to see especially when not flowering! (MAJ92031702);

Most of plants seen are in recently burnt veld (MAJ92031702);

Confusing Species: None noted.

Records of identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria acrocarpa R.Br. 1810

Hawekwas Spiderhead

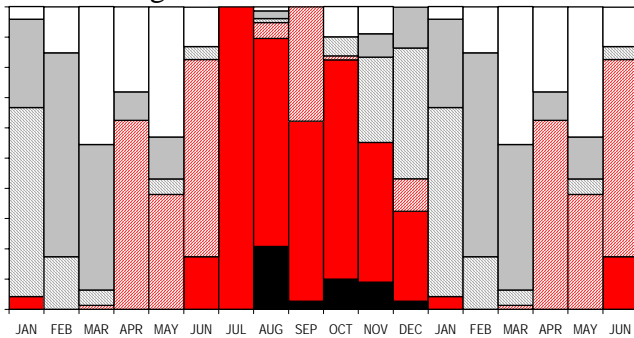
Other Common Names: None known.
Other Scientific Names: *adscendens* E.Mey. ex Drege 1844, *saxicola* Beuk ex E.Mey. ex Drege 1844.

601 Records

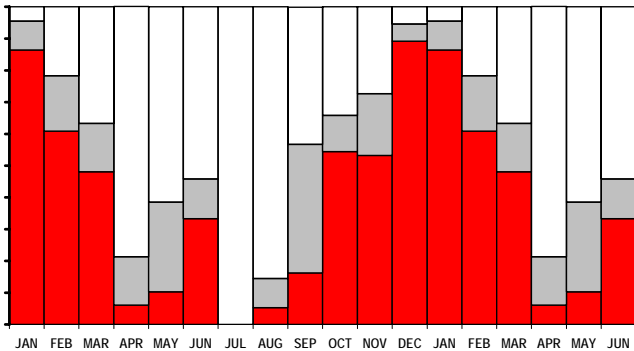
Population (598 records): 1% Abundant, 48% Common, 40% Frequent, 11% Rare.

Dispersion (567 records): 77% variable, 20% clumped, 3% widespread, 0.5% evenly distributed.

Flowering (593 records with: Jan 24, Feb 46, Mar 79, Apr 32, May 79, Jun 23, Jul 1, Aug 77, Sep 37, Oct 80, Nov 78, Dec 37): Buds from Apr to Jun and Sep; Flowering from Jul to Dec; Peak Flowering from Aug; Over from Nov to Jan; Fruit from Jan to Mar; Nothing from Mar to May. Peak levels at 100% in Jul. Historically recorded as flowering from Jul to Feb.



Growth (589 records with: Jan 22, Feb 46, Mar 79, Apr 33, May 78, Jun 24, Jul 1, Aug 76, Sep 37, Oct 79, Nov 77, Dec 37): Much from Oct to Mar and Jun; Rare from May and Sep; None from Feb to Nov. Peak levels at 96% in Jul.



Seedlings (268 records): Absent in 89%: fewer seedlings than prefire adults in 4 cases, and more in 11 cases. Seedlings found in Mar (2), Jun (2), Oct (5) and Nov (6).

Fire Survival (57 records): 88% survived by seedlings only, 7% escaped fires in fire-safe areas, 4% resprouted from underground boles, 2% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 1 years, 50% estimated at 4-5 years, and 100% recorded at 7 years.



Height (595 records): 5% 0-0.2 m tall, 82% 0.2-1 m tall, 13% 1-2 m tall.

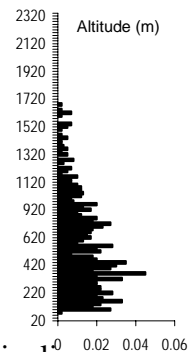
Pollinators (43 records): 37% bees or wasps, 28% beetles, 23% butterflies or moths, 12% flies.

Detailed Pollinators (23 records): Monkey Beetle (7), Honey Bee (7), Moth (unspecified) (5), Carpenter Bee (2), Wasp (unspecified), African Monarch Butterfly.

Habitat:

Distance to Ocean (601 records): 100% inland - further than 2 km from coast.

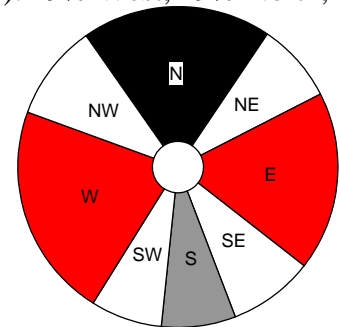
Altitude (601 records): 60 - 1580 m; 280 *lq* - 460 *med* - 720 *uq*m.



Landform (600 records): 74% deep soil, 23% shallow soil, 3% rocky outcrops, 0.5% riverine.

Slope (599 records): 57% gentle incline, 28% steep incline, 11% platform, 3% hill top, 1% valley bottom, 0.3% cliff.

Aspect (553 records): 29% West, 29% North, 27% East, 15% South.



Soil Type (596 records): 52% sandy, 22% loamy, 16% gravelly, 8% rocky, 2% clayey, 0.2% peaty.

Soil Colour (598 records): 45% brown, 33% grey, 8% orange, 7% white, 3% yellow, 3% red, 0.3% black.

Geology (560 records): 68% sandstone, 27% shale, 3% conglomerate, 1% Tertiary sands, 0.9% granite, 0.5% silcrete or ferricrete.

Vegetation (601 records): 100% shrubland, 0.2% thicket, 0.2% agricultural lands.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 3 130 km² with 28% conserved and 18% lost; Occupancy: 550 km² with 23% conserved and 11% lost. Fragmentation index: 14%.

Nature Reserves (601 records): 24% in nature reserves.

Habitat destruction (594 records):

91% extensive natural habitat, 5% islands, 2% naturally linear habitats, 1% naturally fragmented habitats, 0.3% corridors, 0.2% road verges.

Alien Invasive Species (586 records):

41% none, 31% *Hakea*, 13% Fabaceae (chiefly alien *Acacia*), 13% *Pinus*, 2% Myrtaceae, 0.2% other aliens.

Alien Density (586 records): 41% alien-free, 48% sparse, 9% abundant, 2% dense.**Cultivation & Utilization:**

Picking (457 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Highest up population of *S. acrocarpa* (neat rounded bushes). Further east is *S. pedunculata* (scraggly and untidy) - A nice contact point between the two species (AGR96042805); At transition zone - *S. acrocarpa* lower down and *S. pedunculata* higher up and East (GEH98080901); *S. acrocarpa* at last! So it is here - not only *S. reflexa* - strange! By now I was convinced that *S. reflexa* had expanded its niche in the absence of this species and that I would not find it until Dasklip Pass - so this is the northernmost record on 24 River Mountains (AGRY3112556); *S. acrocarpa* and *S. reflexa* ranges do not overlap in this plot (SHR95031801);

Plants very dry - nearly dead (LYMY1032404); Stressed (LYMY1032405);

Moths - Millions Of Moths on flowerheads (LYMY1032405); African Monarch Butterflies on flowerheads (PMRY0111104, WMPY0111102);

Confusing Species: Atlassers quickly recognized this as a new undescribed species, and it was assigned the name *S. dodii* on the basis that it most resembled this species, but confusion could be avoided as they did not overlap in ranges (and the perianth is pink not yellow). However, in the north and at odd localities it was difficult to distinguish from *S. pedunculata* (which is a straggly plant, with spreading hairs on the tepals and longer flowerhead stalks, 53% of corrected queries), especially when the features of the plants suggested *S. acrocarpa* but the perianth hairs were spreading. It was also confused with *S. aitonii* (19%, which has much more silvery, neater leaves, and straighter flowers with spreading hairs), *S. fucifolia* (12%, which has straighter styles and much longer leaves). The fact that the name *acrocarpa* was used for another species really confused atlassers, and this fact was downplayed, although some atlassers who had identifications by John Rourke were consequently confused.

Records of identification queries = 585.

Records of corrected identification queries = 43.

Variation and Taxonomy: Very little variation, although in the north (north of Groot Winterhoek Mountain) populations start to resemble *S. pedunculata*.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria aitonii R.Br. 1810
Marshmallow Spiderhead
Sousie

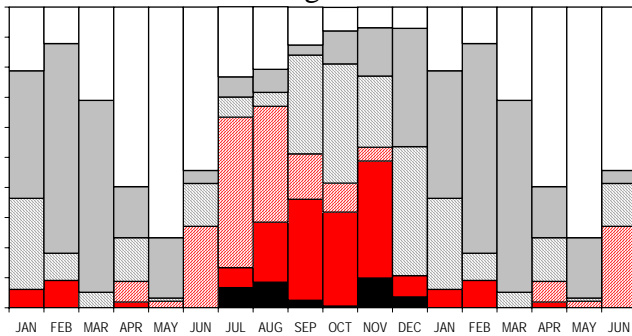
Other Common Names: None known.
Other Scientific Names: *argentifolia* Phill & Hutch 1912, *multifida* E.Mey. ex Drege 1844, *subumbellata* E.Mey. ex Drege 1844, *tomentosa* Meisn 1856.

1046 Records

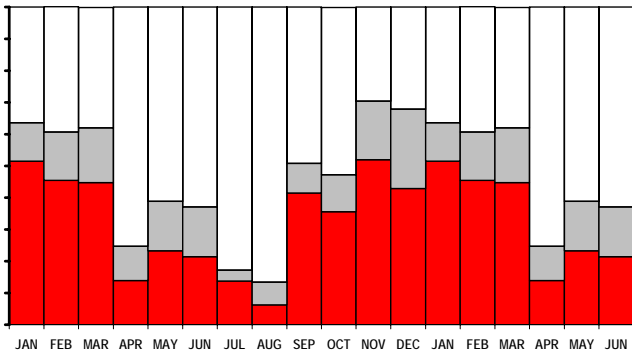
Population (1044 records): 1% Abundant, 30% Common, 50% Frequent, 18% Rare, 0.6% Extinct.

Dispersion (949 records): 72% variable, 23% clumped, 4% widespread, 1% evenly distributed.

Flowering (1035 records with: Jan 33, Feb 33, Mar 58, Apr 159, May 90, Jun 70, Jul 30, Aug 130, Sep 119, Oct 154, Nov 131, Dec 28): Buds from Jun to Aug; Flowering from Aug to Nov; Peak Flowering not significant; Over from Sep to Jan; Fruit from Dec to Mar and May; Nothing from Jan and Mar to Aug. Peak levels at 84% in Sep. Historically recorded as flowering from Jul to Nov.



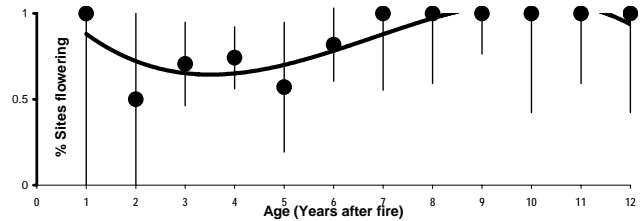
Growth (1015 records with: Jan 33, Feb 33, Mar 58, Apr 158, May 90, Jun 70, Jul 29, Aug 127, Sep 118, Oct 146, Nov 125, Dec 28): Much from Sep to Mar and May to Jun; Rare from Dec; None from all year round. Peak levels at 70% in Nov.



Seedlings (383 records): Absent in 94%: fewer seedlings than prefire adults in 3 cases, and more in 8 cases. Seedlings found in Jan (4), Jun, Sep (2), Nov (3) and Dec.

Fire Survival (58 records): 78% survived by seedlings only, 14% escaped fires in fire-safe areas, 9% eliminated from the area by fires.

Age to first flowering: First flowers recorded at 1 years, 50% estimated at 1-2 years, and 100% recorded at 7 years.



Height (1036 records): 8% 0-0.2 m tall, 81% 0.2-1 m tall, 12% 1-2 m tall, 0.1% 2-5 m tall.

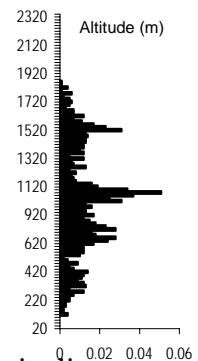
Pollinators (32 records): 59% beetles, 25% bees or wasps, 9% flies, 6% butterflies or moths.

Detailed Pollinators (8 records): Monkey Beetle (4), Honey Bee (3), Green Beetle.

Habitat:

Distance to Ocean (1040 records): 100% inland - further than 2 km from coast.

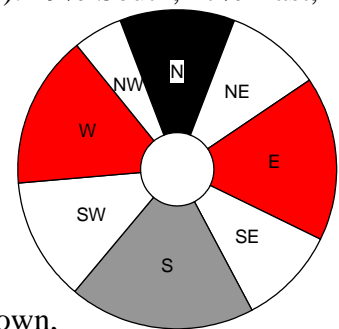
Altitude (1040 records): 100 - 1760 m; 640 *lq* - 920 *med* - 1100 *uq*m.



Landform (1036 records): 70% deep soil, 24% shallow soil, 6% rocky outcrops, 0.3% swamp, 0.1% riverine.

Slope (1033 records): 55% gentle incline, 24% steep incline, 10% platform, 7% hill top, 3% valley bottom, 0.7% cliff, 0.2% dunes.

Aspect (890 records): 29% South, 27% East, 25% West, 18% North.



Soil Type (1037 records): 64% sandy, 17% loamy, 9% gravelly, 9% rocky, 0.9% clayey.

Soil Colour (1032 records): 49% brown, 32% grey, 7% yellow, 5% white, 5% orange, 3% red.

Geology (1006 records): 87% sandstone, 11% shale, 1% silcrete or ferricrete, 0.9% Tertiary sands.

Vegetation (1035 records): 99% shrubland, 0.7% grassland, 0.4% agricultural lands, 0.2% plantations.

Conservation Status and Threat:

Red Data List Status: Least Concern. Occurrence (Fynbos): 6 183 km² with 14% conserved and 17% lost; Occupancy:

835 km² with 24% conserved and 7% lost.
Fragmentation index: 11%.

Nature Reserves (1040 records): 30% in nature reserves.

Habitat destruction (1021 records):
90% extensive natural habitat, 5% islands,
2% naturally fragmented habitats,
2% naturally linear habitats, 0.9% road
verges, 0.1% corridors.

Alien Invasive Species (1008 records):
83% none, 12% *Pinus*, 3% Fabaceae (chiefly
alien *Acacia*), 1% Myrtaceae, 0.8% other
aliens, 0.1% annual alien grasses.

Alien Density (1004 records): 83% alien-free,
14% sparse, 2% abundant, 0.6% dense,
0.2% impenetrable.

Cultivation & Utilization:

Picking (722 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Witch's Broom Infestation: 2 records (0.2%).

Atlassers Notes:

Plus 1 dead (AGR98080807); One dead
skeleton seen (AGRY0042821); 3 dead
plants (AWA99100402); Many plants dead
(AWAY0102305); A lot of the young plants
had died (LYM99060905); Many dead plants
(OUTY0092504); Shows significant
mortality (SHRY0052801);

Thousands more in young veld
(AGR99051509), but almost none left in
mature veld (AGR99051510);

Spreading into old lands (AGR99051512); Most
abundant on erosion scar! (AGRY5122805);
Pollinator is an iridescent blue beetle
(TLE95101403);

Plate-like growth on one plant coded as Witches
Broom (NGF96111705);

Confusing Species: Quite distinct with its neat
leaves and spreading hairs, but sometimes
difficult to identify when in new growth
without flowerheads. Confused with *S.*
pedunculata (32% of corrected queries,
which has spreading hairs on the perianth
and untidier leaves), *acrocarpa* (16%, which
is more similar, but lacks the neat, square
leaves), *decipiens* (12%), *fucifolia* (8%, with
much longer leaves), and once each with
aemula (a resprouter with straight flowers),
cygnea (a prostrate resprouter) and *leipoldtii*
(a course-leaved resprouter).

Records of identification queries = 69.

Records of corrected identification queries = 25.

Variation and Taxonomy: Atlassers noted a
small flowered form at: check up in records
wij!

Distribution: Add.

INCLUDEPICTURE

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Serruria banocephala Rourke 1994.
Acorn Spiderhead

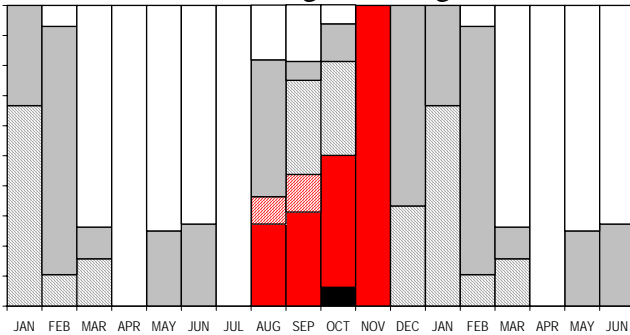
Other Common Names: None known.
Other Scientific Names: None.

172 Records

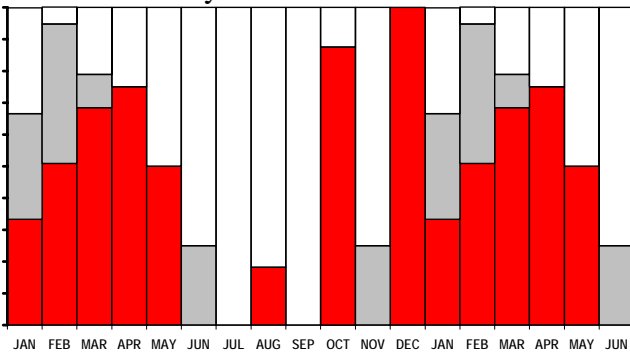
Population (168 records): 1% Abundant, 45% Common, 45% Frequent, 9% Rare.

Dispersion (159 records): 52% variable, 40% clumped, 7% widespread, 0.6% evenly distributed.

Flowering (166 records with: Jan 6, Feb 57, Mar 19, Apr 8, May 8, Jun 11, Jul 4, Aug 11, Sep 16, Oct 16, Nov 4, Dec 6): Buds not significant; Flowering from Aug to Nov; Peak Flowering not significant; Over from Sep to Jan; Fruit from Dec to Feb and May to Aug; Nothing from Mar to Jul. Peak levels unreliable at 100% in Nov. Historically recorded as flowering from Aug to Nov.



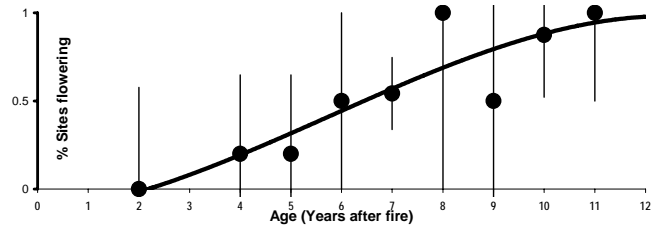
Growth (167 records with: Jan 6, Feb 57, Mar 19, Apr 8, May 8, Jun 12, Jul 4, Aug 11, Sep 16, Oct 16, Nov 4, Dec 6): Much from Oct to May; Rare from Jan to Feb, Jun and Nov; None from Jan, Mar to Sep and Nov. Peak levels reliably at 95% in Feb.



Seedlings (96 records): All without any seedlings present.

Fire Survival (9 records): 100% survived by seedlings only.

Age to first flowering: First flowers recorded at 4 years, 50% estimated at 6 years, and 100% consistently recorded at 11 years.



Height (168 records): 5% 0-0.2 m tall, 76% 0.2-1 m tall, 19% 1-2 m tall.

Pollinators (1 records): 100% beetles.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (171 records): 100% inland - further than 2 km from coast.

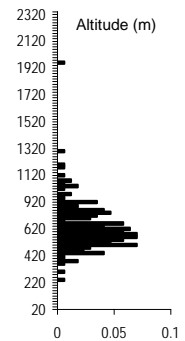
Altitude (171 records): 220 - 1860 m; 500 *lq* - 580 *med* - 660 *uq*m.

Landform (170 records):

62% deep soil, 24% rocky outcrops, 14% shallow soil, 0.6% riverine.

Slope (170 records): 46% gentle incline, 46% steep incline, 5% hill top, 2% valley bottom, 0.6% cliff, 0.6% platform.

Aspect (160 records): 57% North, 18% South, 17% East, 8% West.



Soil Type (169 records):

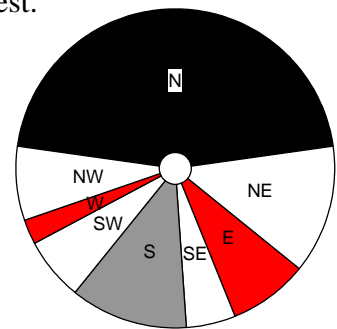
48% sandy, 29% loamy, 14% gravelly, 8% rocky, 0.6% clayey.

Soil Colour (169 records):

53% grey, 31% brown, 12% yellow, 2% white, 1% orange, 0.6% black.

Geology (168 records): 99% sandstone, 0.6% shale.

Vegetation (169 records): 98% shrubland, 2% grassland.



Conservation Status and Threat:

Red Data List Status: Near Threatened A4c.

Occurrence (Fynbos): 335 km² with 40% conserved and 3% lost; **Occupancy:** 162 km² with 34% conserved and 5% lost. **Fragmentation index:** 16%.

Nature Reserves (171 records): 30% in nature reserves.

Habitat destruction (166 records): 96% extensive natural habitat, 1% islands, 1% naturally linear habitats, 1% naturally fragmented habitats.

Alien Invasive Species (157 records):

80% none, 9% *Hakea*, 7% Fabaceae (chiefly

alien *Acacia*), 2% Myrtaceae, 1% *Pinus*,
0.6% other aliens.

Alien Density (157 records): 80% alien-free,
18% sparse, 0.6% abundant, 0.6% dense.

Cultivation & Utilization:

Picking (118 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Heavily grazed by farm animals
(SHRY1020201);

Confusing Species: Occasionally confused
with *S. ludwigii* – but this is a resprouter.

Records of identification queries = 14.
Records of corrected identification queries = 4.

Variation and Taxonomy: No variation
known.

Distribution: Add.

INCLUDEPICTURE

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Serruria cygnea R.Br. 1810
Swan Spiderhead

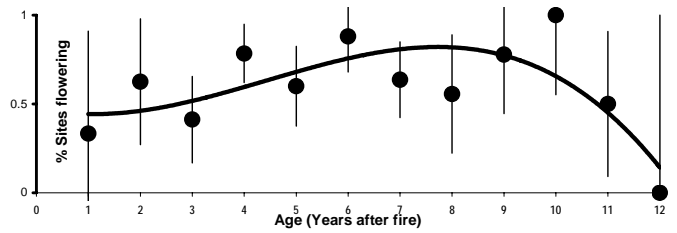
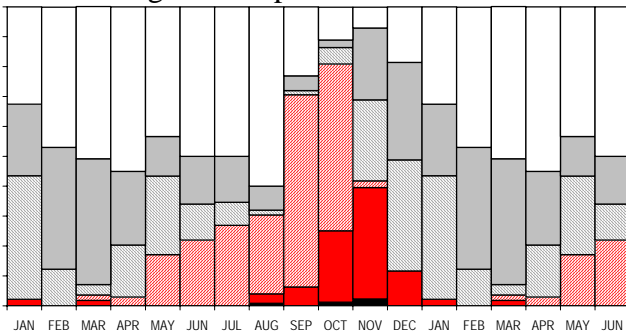
Other Common Names: None known.
Other Scientific Names: *colorata* Zeyh ex Meisn 1856, *cyanea* E.Mey. ex Drege 1844, *helvola* Steud 1841.

985 Records

Population (981 records): 0.2% Abundant, 16% Common, 60% Frequent, 23% Rare.

Dispersion (867 records): 66% variable, 25% clumped, 6% widespread, 2% evenly distributed.

Flowering (976 records with: Jan 46, Feb 49, Mar 57, Apr 69, May 76, Jun 50, Jul 26, Aug 125, Sep 143, Oct 163, Nov 129, Dec 43): Buds from Jun to Oct; Flowering from Oct to Nov; Peak Flowering not significant; Over from Nov to Jan and May; Fruit from Nov to Apr; Nothing from Jan to Sep. Peak levels at 86% in Oct. Historically recorded as flowering from Sep to Nov.



Height (980 records): 93% 0-0.2 m tall, 7% 0.2-1 m tall.

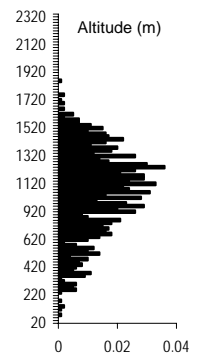
Pollinators: No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (979 records): 100% inland - further than 2 km from coast.

Altitude (979 records): 60 - 1760 m; 740_{lq} - 980_{med} - 1140_{uq}m.

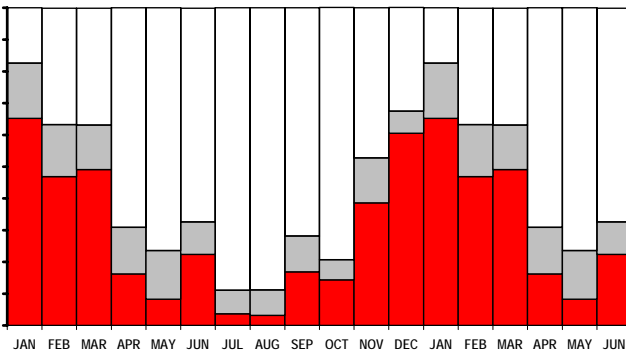


Landform (975 records): 71% deep soil, 24% shallow soil, 5% rocky outcrops, 0.1% riverine, 0.1% swamp.

Slope (970 records): 49% gentle incline, 27% steep incline, 14% platform, 5% hill top, 5% valley bottom, 0.3% cliff.

Aspect (820 records): 29% East, 29% West, 24% South, 18% North.

Growth (965 records with: Jan 46, Feb 49, Mar 57, Apr 68, May 72, Jun 49, Jul 27, Aug 125, Sep 142, Oct 160, Nov 127, Dec 43): Much from Nov to Mar and Jun; Rare not significant; None from Feb to Dec. Peak levels at 83% in Jan.

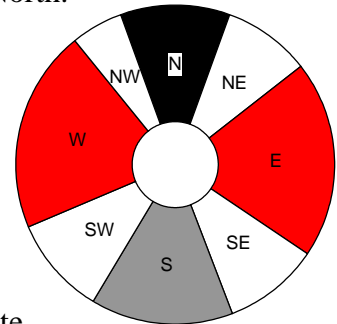


Soil Type (969 records): 53% sandy, 21% gravelly, 15% loamy, 8% rocky, 2% clayey.

Soil Colour (968 records): 52% brown, 30% grey, 7% white, 5% orange, 4% yellow, 1% red, 0.5% black.

Geology (961 records): 85% sandstone, 13% shale, 1% Tertiary sands, 0.5% silcrete or ferricrete, 0.2% conglomerate.

Vegetation (976 records): 98% shrubland, 0.8% plantations, 0.4% grassland, 0.4% agricultural lands, 0.1% wooded grassland.



Seedlings (357 records): Absent in 94%: fewer seedlings than prefire adults in 7 cases, and more in 3 cases. Seedlings found in Jan (4), Sep, Oct (2), Nov (2) and Dec.

Fire Survival (101 records): 91% resprouted from underground boles, 6% survived by seedlings only, 3% escaped fires in fire-safe areas.

Age to first flowering: First flowers recorded at 1 years, 50% estimated at 3-4 years, and 100% first recorded at 10 years.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 4 464 km² with 23% conserved and 14% lost; **Occupancy:** 917 km² with 33% conserved and 9% lost. **Fragmentation index:** 17%.

Nature Reserves (979 records): 43% in nature reserves.

Habitat destruction (958 records): 93% extensive natural habitat, 4% islands, 2% naturally linear habitats, 0.5% naturally fragmented habitats, 0.2% road verges.

Alien Invasive Species (926 records):

77% none, 18% *Pinus*, 2% Fabaceae (chiefly alien *Acacia*), 2% *Hakea*, 0.4% Myrtaceae, 0.1% other aliens.

Alien Density (925 records): 77% alien-free, 19% sparse, 3% abundant, 0.8% dense.

Cultivation & Utilization:

Picking (622 records): 100% no sign of picking.

Cultivation Status: Plantings - 1 record (0.1%).

Atlassers Notes:

Very hairy! (AGR96052405); We had a problem whole day with *S. cygnea* - *effusa* having resprouting mode & hairy stems gizz more like *effusa* but resprouting supposed to be diagnostic, leaves grey not green, persistently sparse hairy & branches diffuse - not forming dense mat; but branches - except some central and young are flat on the ground - like *S. cygnea*! (AGRY0030101); Bole present! (AGRY0030103); More like *S. cygnea* than *S. effusa* - but not clear cut at all! (AGRY0030104-7); Not clear cut at all! About half the plants apparently with bole, some creeping some ranking, no difference between them in stem and leaves (AGRY0030115); Very hairy but definitely resprouting from a bole! ! (AGRY1022110); Very hairy but definitely a resprouter forming flat mats - despite the hairs this is not *S. effusa* in giss (AGRY2121511); At last a pure form which undoubtedly is *S. cygnea* - in a patch with *S. effusa*-like ones atlassed

under that species - still not sure how good the difference is however (AGRY3112616); Young growth is sparsely hairy and rapidly fugatious (JAT96041903-7); Some hairs are evident on this population (MAJ99092401); Slightly hairy but giss like *S. cygnea* and resprouting (WMPY1111704, WMPY1111801);

Leaf much smaller than typical. (JAT94040101);

At least 2 m across! (AKS94091403); Second flowering for the season - old heads on plants (AGR99092415);

Lots of young in an open patch of old field - an early recruiter into Slangbos veld in wasteland (AGR99092403);

Numerous Dead (GEDY0112309);

Confusing Species: Not very easy to distinguish from *S. effusa*, especially in the Dasklip Pass to Groot Winterhoek area - possibly confounded by hybridization noted in the area between *S. acrocarpa* and *S. cygnea*. A few typographical errors (*S. cyanooides*) noted.

Records of identification queries = 74.

Records of corrected identification queries = 34.

Variation and Taxonomy: Add.

Distribution: Add.

INCLUDEPICTURE

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Serruria dodii Phill. & Hutch. 1912
Hex River Spiderhead

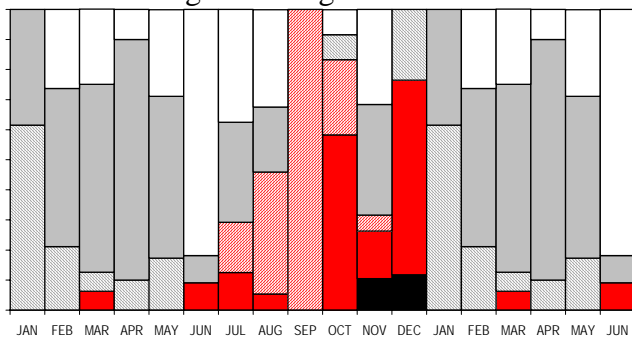
Other Common Names: None known.
Other Scientific Names: None.

237 Records

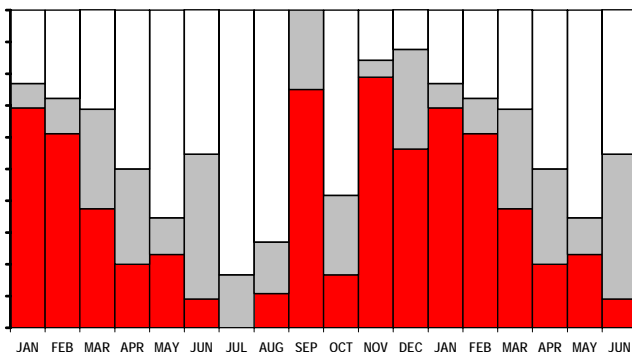
Population (236 records): 0.8% Abundant, 32% Common, 52% Frequent, 15% Rare.

Dispersion (226 records): 67% variable, 31% clumped, 2% widespread.

Flowering (234 records with: Jan 13, Feb 19, Mar 16, Apr 10, May 52, Jun 11, Jul 24, Aug 37, Sep 4, Oct 12, Nov 19, Dec 17): Buds from Aug to Oct; Flowering from Oct and Dec; Peak Flowering not significant; Over from Dec to Feb; Fruit from Jan to May and Jul to Aug and Nov; Nothing from Feb to Mar and May to Aug and Nov 32. Peak levels at 100% in Dec. Historically recorded as flowering from Aug to Nov.



Growth (232 records with: Jan 13, Feb 18, Mar 16, Apr 10, May 52, Jun 11, Jul 24, Aug 37, Sep 4, Oct 12, Nov 19, Dec 16): Much from Nov to May; Rare from Mar to Apr, Jun, Sep to Oct and Dec; None from Jan to Aug and Oct. Peak levels unreliable: probably at 88% in Dec.



Seedlings (100 records): Absent in 94%; fewer seedlings than prefire adults in 1 case, and more in 2 cases. Seedlings found in Jan and Sep (2).

Fire Survival (40 records): 98% survived by seedlings only, 3% eliminated from the area by fires.

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



Height (237 records): 3% 0-0.2 m tall, 89% 0.2-1 m tall, 8% 1-2 m tall.

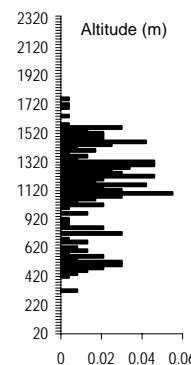
Pollinators (3 records): 33% bees or wasps, 33% flies, 33% beetles.

Detailed Pollinators (2 records): Wasp (unspecified), Monkey Beetle.

Habitat:

Distance to Ocean (237 records): 100% inland - further than 2 km from coast.

Altitude (237 records): 300 - 1660 m; 840_{lq} - 1060_{med} - 1200_{uq}m.



Landform (236 records): 54% deep soil, 44% shallow soil, 1% rocky outcrops, 0.4% riverine, 0.4% swamp.

Slope (235 records): 51% gentle incline, 37% steep incline, 6% platform, 4% hill top, 0.9% cliff, 0.9% valley bottom.

Aspect (211 records): 47% North, 21% East, 17% South, 15% West.

Soil Type (229 records):

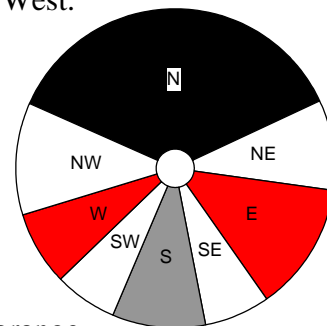
45% sandy, 19% rocky, 18% loamy, 17% gravelly, 0.9% clayey.

Soil Colour (233 records):

57% grey, 33% brown, 4% orange, 3% yellow, 3% red, 0.9% white.

Geology (232 records): 93% sandstone, 6% shale, 0.9% silcrete or ferricrete.

Vegetation (233 records): 100% shrubland, 0.4% grassland.



Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 1 066 km² with 17% conserved and 6% lost; Occupancy: 249 km² with 24% conserved and 3% lost. Fragmentation index: 16%.

Nature Reserves (237 records): 20% in nature reserves.

Habitat destruction (232 records): 96% extensive natural habitat, 3% islands, 0.9% naturally fragmented habitats, 0.4% naturally linear habitats.

Alien Invasive Species (228 records): 84% none, 7% *Pinus*, 5% *Hakea*, 4% Fabaceae (chiefly alien *Acacia*).

Alien Density (228 records): 84% alien-free, 15% sparse, 0.4% abundant, 0.4% dense, 0.4% impenetrable.

Cultivation & Utilization:

Picking (180 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Witch's Broom Infestation: 1 records (0.4%).

Atlassers Notes:

Most are single - stemmed but several are resprouting from rootstock - look the same! (WIJ97042607);

Up to 1800 m - single stemmed plants (NAH92051601);

I maintain that these were resprouting which is of course not what they should be doing - but the giss is definitely this species (NGF99060605);

Very stressed (WMP99032002);

Confusing Species: Mainly confused with *S. pedunculata* which has spreading hairs. Also single misidentifications with *S. acrocarpa* (= *S. "ludwigii"* - a resprouter) and *S. fasciflora* (with multiple headlets).

Records of identification queries = 20.

Records of corrected identification queries = 6. = 0.4%.

Variation and Taxonomy: Add.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria effusa Rourke 1990 Candelabra Spiderhead

Other Common Names: Spreading Spiderhead.

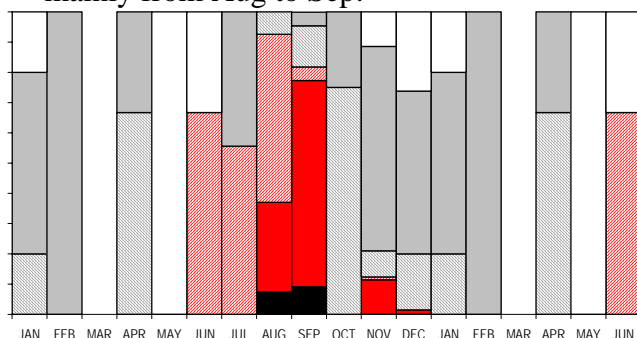
Other Scientific Names: None.

255 Records

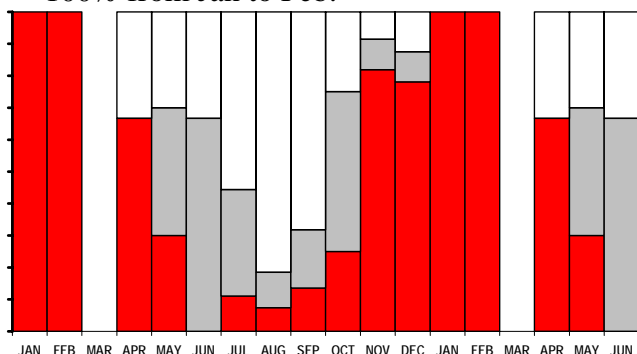
Population (254 records): 24% Common, 48% Frequent, 28% Rare, 0.4% Extinct.

Dispersion (218 records): 76% variable, 21% clumped, 2% widespread, 0.5% evenly distributed.

Flowering (254 records with: Jan 5, Feb 1, Mar 0, Apr 3, May 10, Jun 3, Jul 9, Aug 27, Sep 22, Oct 4, Nov 105, Dec 65): Buds from Jun to Aug; Flowering from Aug to Sep; Peak Flowering not significant; Over from Jan, Apr and Oct; Fruit from Oct to Apr and Jul; Nothing from Dec to Jan and May to Jun. Peak levels at 100% in Aug. Historically recorded as flowering from Jul to Oct, mainly from Aug to Sep.



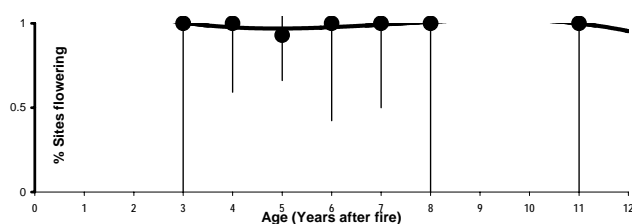
Growth (253 records with: Jan 5, Feb 1, Mar 0, Apr 3, May 10, Jun 3, Jul 9, Aug 27, Sep 22, Oct 4, Nov 105, Dec 64): Much from Oct to May; Rare from May to Jul and Oct; None from Apr to Oct. Peak levels unreliable at 100% from Jan to Feb.



Seedlings (95 records): All without any seedlings present.

Fire Survival (39 records): 90% resprouted from underground boles, 10% survived by seedlings only.

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



Height (254 records): 34% 0-0.2 m tall, 64% 0.2-1 m tall, 2% 1-2 m tall.

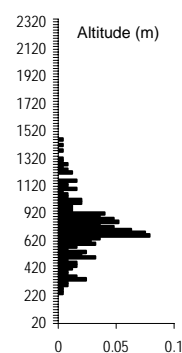
Pollinators (4 records): 50% bees or wasps, 50% beetles.

Detailed Pollinators (1 record): Monkey Beetle.

Habitat:

Distance to Ocean (251 records): 100% inland - further than 2 km from coast.

Altitude (251 records): 220 - 1360 m; 580_{lq} - 680_{med} - 760_{uq} m.

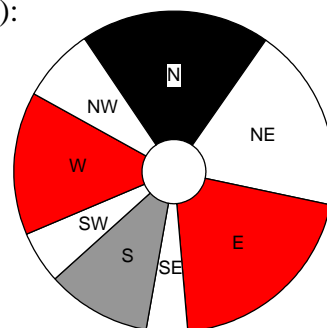


Landform (250 records): 76% deep soil, 22% shallow soil, 2% rocky outcrops.

Slope (250 records): 68% gentle incline, 14% steep incline, 11% hill top, 5% platform, 0.8% valley bottom, 0.4% cliff.

Aspect (214 records):

35% East,
30% North,
20% West,
15% South.



Soil Type (249 records): 74% sandy, 18% loamy, 6% gravelly, 1% rocky.

Soil Colour (250 records): 62% brown, 17% grey, 8% yellow, 8% orange, 3% white, 2% red.

Geology (246 records): 89% sandstone, 10% shale, 0.4% conglomerate, 0.4% silcrete or ferricrete.

Vegetation (250 records): 98% shrubland, 2% agricultural lands.

Conservation Status and Threat:

Red Data List Status: Near Threatened A3c.

Occurrence (Fynbos): 2 610 km² with 15% conserved and 18% lost; **Occupancy:** 289 km² with 12% conserved and 9% lost. **Fragmentation index:** 9%.

Nature Reserves (251 records): 12% in nature reserves - inadequately conserved.

Habitat destruction (249 records): 85% extensive natural habitat, 14% islands, 1% naturally fragmented habitats, 0.4% naturally linear habitats.

Alien Invasive Species (238 records): 84% none, 8% Fabaceae (chiefly alien

Acacia), 7% *Pinus*, 1% Myrtaceae,
0.4% annual alien grasses.
Alien Density (238 records): 84% alien-free,
16% sparse, 0.4% abundant.

Cultivation & Utilization:

Picking (167 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

All resprouting 0.2 m tall (NAHY1071401+3);
This is *S. effusa* (hairy stems), but some plants
are resprouting! (AGRY3112508); Definitely
not creeping like *S. cygnea* - also hairy, but
many plants resprouting from indistinct boles
(AGRY3112510); Like *S. cygnea* but
definitely hairy (AGRY3112612); Like *S.*
cygnea but leaves very hairy and plant too
rambly (AGRY3112613); Still not happy
with I.D. but too hairy for *S. cygnea*
(AGRY3112615); Only the iffy form
present: hairy leaves and resprouting
(AGRY3112617); 1 m tall looping but
resprouting! No persistent hairs but looping
and grey! (AGRY3112716);
Atlassed as *S. "piketbergensis"* but atlasser
changed to *S. effusa*: rootstock; Herbarium
Specimen collected plus sample for genetic
analysis (Helme 2005) (NAHY1071501);
Looked diseased ['scorched' but no fire] saw the
same thing elsewhere (AWA97090503); Not
found in this repeat - result of severe
drought? (EAH99092501);

Occurs on pocket of deeper sand
(PMR98120610);

Confusing Species: Most readily confused
(70% of cases) with *S. cygnea*, from which it
differs primarily in being single stemmed
and having hairy stems, and being a grey-
leaved sprawler, not a bright green mat.
However, in areas these characters were
inconsistent and plants with an obvious *S.*
effusa giss were found to be resprouting – in
most cases hybridization was not probably.
A few cases between Dasklip Pass and
Porterville may have been hybrids between
S. cygnea and *S. acrocarpa*, but these
generally had spreading perianth hairs. Less
frequently confused with *S. "piketbergensis"*
which has a compound flowerhead and
resprouts. A single instance of mistaken
with *S. confragosa*.

Records of identification queries = 34.

Records of corrected identification queries = 23.

Variation and Taxonomy: Variable with
some specimens retaining hairs on leaves and
stems and others shedding them shortly after
hardening. Plants may ramble over a large
area in old veld, and look quite different to
young plants.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria flava Meisn. 1856
Wuppertal Spiderhead

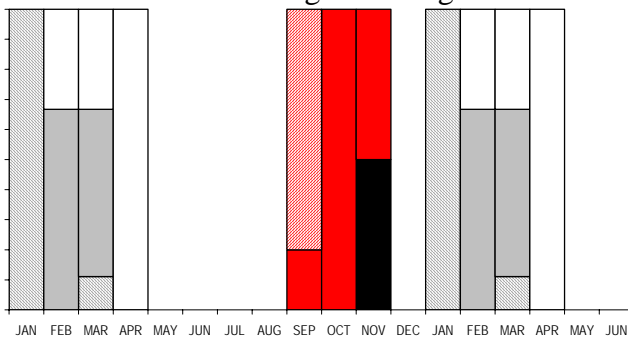
Other Common Names: Yellow Spiderhead.
Other Scientific Names: None.

22 Records

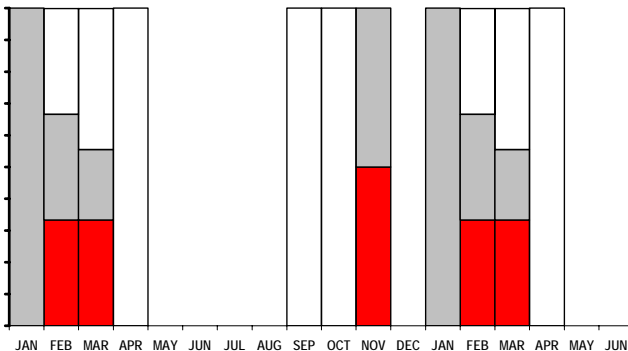
Population (22 records): 14% Common, 50% Frequent, 36% Rare.

Dispersion (21 records): 57% variable, 43% clumped.

Flowering (22 records with: Jan 1, Feb 3, Mar 9, Apr 1, May 0, Jun 0, Jul 0, Aug 0, Sep 5, Oct 1, Nov 2, Dec 0): Buds from Sep; Flowering from Sep to Nov; Peak Flowering from Nov; Over from Jan; Fruit from Feb to Mar; Nothing from Feb to Apr. Peak levels unreliable at 100% from Nov. Historically recorded as flowering from Aug to Dec.



Growth (22 records with: Jan 1, Feb 3, Mar 9, Apr 1, May 0, Jun 0, Jul 0, Aug 0, Sep 5, Oct 1, Nov 2, Dec 0): Much from Feb to Mar and Nov; Rare from Nov to Mar; None from Feb to Oct. Peak levels unreliable at 100% from Nov to Jan.



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

Fire Survival (2 records): 100% resprouted from underground boles.

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



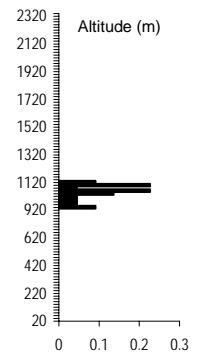
Height (22 records): 5% 0-0.2 m tall, 95% 0.2-1 m tall.

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

Habitat:

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

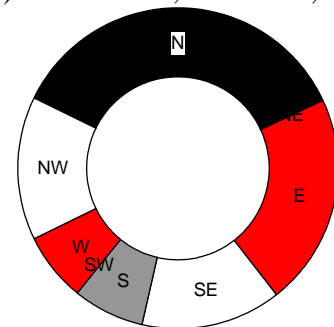
Altitude (22 records): 820 - 1020 m; 900_{lq} - 960_{med} - 960_{uq} m.



Landform (21 records): 67% deep soil, 29% shallow soil, 5% rocky outcrops.

Slope (22 records): 59% gentle incline, 23% hill top, 14% platform, 5% steep incline.

Aspect (14 records): 43% North, 29% East, 14% South, 14% West.



Soil Type (21 records): 57% sandy, 19% gravelly, 14% rocky, 10% loamy.

Soil Colour (21 records): 38% brown, 33% grey, 24% white, 5% yellow.

Geology (21 records): 90% sandstone, 10% shale.

Vegetation (22 records): 100% shrubland.

Conservation Status and Threat:

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

Occurrence (Fynbos): 9 km² with 2% conserved and 2% lost; Occupancy: 12 km² with 2% conserved and 2% lost. Fragmentation index meaningless.

Nature Reserves (22 records): 0% in nature reserves - unconserved.

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

Alien Invasive Species (21 records): 100% none.

Alien Density (21 records): 100% alien-free.

Cultivation & Utilization:

Picking (19 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes:

Buds on lower stems like *L. salignum* – could this be a resprouter? (AGR97032202); Multistemmed from ground level - a resprouter? (AGR97032203); Some plants killed by fire others seem to resprout from bole (NAH94011403);

Confusing Species: None noted.

Variation and Taxonomy: No variation known. However, the resprouting habit should be investigated.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria fucifolia Salisb. ex Kn. 1809
Northern Spiderhead
Sandveldspinnekopbos

Other Common Names: Fucus-leaf Serruria, *Kleinspinnekopbos*.

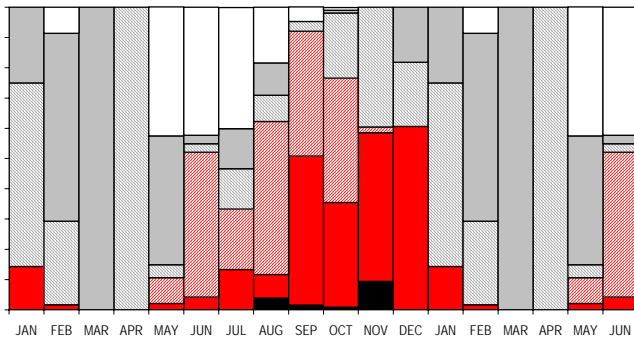
Other Scientific Names: *elevata* R.Br 1810, *hirsuta* Buek ex Drege 1844, *subumbellata* Buek ex Drege 1844, *vestita* Buek ex Drege 1844.

583 Records

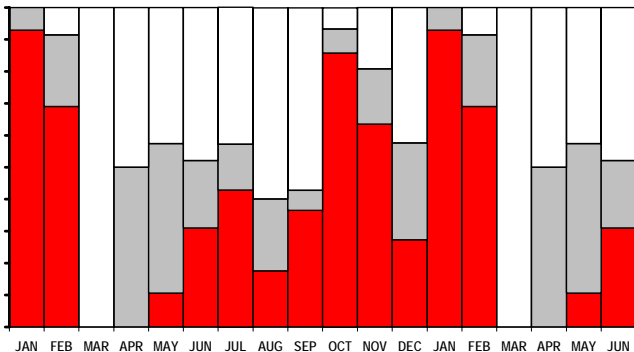
Population (583 records): 23% Common, 56% Frequent, 21% Rare.

Dispersion (526 records): 85% variable, 11% clumped, 4% widespread, 0.4% evenly distributed.

Flowering (581 records with: Jan 28, Feb 58, Mar 1, Apr 2, May 47, Jun 71, Jul 15, Aug 103, Sep 63, Oct 107, Nov 53, Dec 33): Buds from Jun to Oct; Flowering from Sep to Dec; Peak Flowering not significant; Over from Oct to Apr; Fruit from Jan to May; Nothing from May to Jul. Peak levels at 100% in Nov. Historically recorded as flowering from Jul to Oct.



Growth (5577 records with: Jan 28, Feb 58, Mar 1, Apr 2, May 47, Jun 71, Jul 14, Aug 102, Sep 63, Oct 106, Nov 52, Dec 33): Much from Sep to Feb and Jun to Jul; Rare from Feb, Apr to Jun, Aug and Dec; None from Mar to Sep and Dec. Peak levels at 100% in Jan, but with a secondary peak at 93% in Oct.



Seedlings (263 records): Absent in 99%; fewer seedlings than prefire adults in 1 case. Seedlings found in Jun.

Fire Survival (16 records): 94% survived by seedlings only, 6% resprouted from aerial trunks.

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



Height (579 records): 0.9% 0-0.2 m tall, 45% 0.2-1 m tall, 54% 1-2 m tall, 0.5% 2-5 m tall.

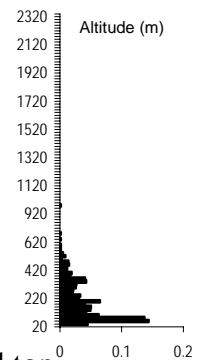
Pollinators (8 records): 50% bees or wasps, 38% butterflies or moths, 13% flies.

Detailed Pollinators (4 records): Wasp (unspecified), Honey Bee, Butterfly (unspecified), Blues Butterfly.

Habitat:

Distance to Ocean (582 records): 100% inland - further than 2 km from coast.

Altitude (583 records): 20 - 880 m; 60_{lq} - 100_{med} - 180_{uqm}.



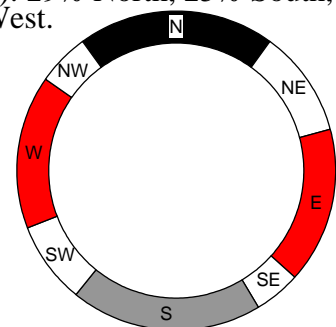
Landform (582 records): 100% deep soil, 0.2% rocky outcrops.

Slope (579 records): 47% gentle incline, 43% platform, 6% hill top, 2% dunes, 1% valley bottom, 0.9% steep incline.

Aspect (373 records): 29% North, 25% South, 23% East, 23% West.

Soil Type (580 records): 95% sandy, 5% loamy, 0.2% clayey.

Soil Colour (579 records): 26% brown, 24% white, 17% yellow, 13% grey, 12% orange, 8% red.



Geology (559 records): 51% Tertiary sands, 46% sandstone, 3% shale.

Vegetation (580 records): 99% shrubland, 0.9% agricultural lands.

Conservation Status and Threat:

Red Data List Status: Endangered A4c.

Occurrence (Fynbos): 4 825 km² with 0% conserved and 41% lost; Occupancy: 689 km² with 0% conserved and 45% lost. Fragmentation index: 13%.

Nature Reserves (583 records): 1% in nature reserves - unconserved.

Habitat destruction (577 records):
57% extensive natural habitat, 34% islands,
7% road verges, 2% naturally fragmented
habitats, 0.3% naturally linear habitats,
0.2% corridors.

Alien Invasive Species (575 records):
72% Fabaceae (chiefly alien *Acacia*),
24% none, 2% *Pinus*, 1% Myrtaceae,
0.2% annual alien grasses, 0.2% other aliens.

Alien Density (574 records): 24% alien-free,
58% sparse, 14% abundant, 4% dense.

Cultivation & Utilization:

Picking (492 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Atlasers Notes:

Many even of over 2 m tall (SMRY0062211);
According to Vogts it flowers in spring - these
flowers were very dead (JAT95082401);
Many buds and flowers as well as in cone -
very attractive large bushes. They should

have been in cone in Dec – a dry autumn or
wet spring ? (SMR98120201);
Some were resprouting from base
(WIJ95082407, WIJ95101505);
One plant had galls on it (NGFY0062216);
Restricted to road verge; not in surrounding
farmland perhaps due to grazing?
(NAH92081505);

Confusing Species: Rarely confused, but odd
records with *S. aitonii* (much shorter, neater
leaves) and *S. decipiens*.

Records of identification queries = 12.

Records of corrected identification queries = 3.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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

MERGEFORMAT \d

Serruria gremialis Rourke 1994 Riviersonderend Spiderhead

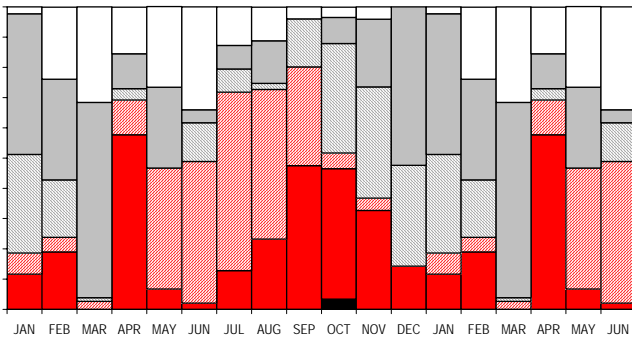
Other Common Names: None known.
Other Scientific Names: *jonaskopii* nomen nudum (Protea Atlas).

620 Records

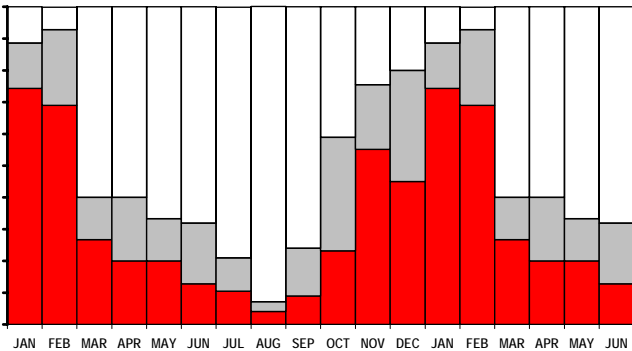
Population (615 records): 0.2% Abundant, 30% Common, 55% Frequent, 14% Rare.

Dispersion (570 records): 78% variable, 19% clumped, 2% widespread, 0.2% evenly distributed.

Flowering (616 records with: Jan 43, Feb 42, Mar 76, Apr 26, May 15, Jun 47, Jul 39, Aug 99, Sep 101, Oct 58, Nov 49, Dec 21): Buds from May to Sep; Flowering from Apr and Aug to Nov; Peak Flowering not significant; Over from Oct to Jan; Fruit from Nov to Mar and May; Nothing from Feb to Mar and May to Jun. Peak levels at 96% in Sep. Historically recorded as flowering from Jul to Feb.



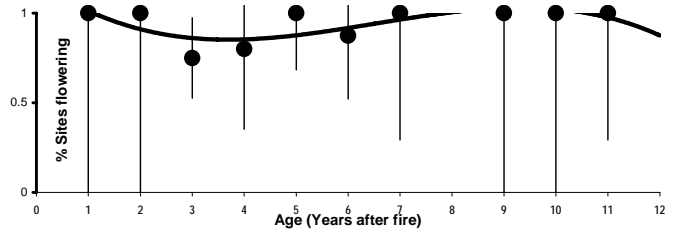
Growth (600 records with: Jan 35, Feb 42, Mar 75, Apr 25, May 15, Jun 47, Jul 38, Aug 98, Sep 100, Oct 56, Nov 49, Dec 20): Much from Oct to May; Rare from Feb, Apr, and Oct to Dec; None from Mar to Dec. Peak levels at 93% in Feb.



Seedlings (205 records): All without any seedlings present.

Fire Survival (42 records): 100% resprouted from underground boles.

Age to first flowering: First flowers recorded at 1 years, 50% estimated at 1 years, and 100% consistently recorded after 7 years.



Height (617 records): 21% 0-0.2 m tall, 78% 0.2-1 m tall, 0.5% 1-2 m tall.

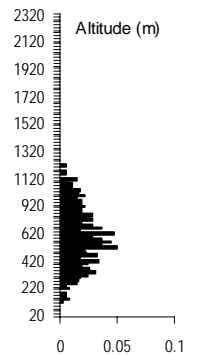
Pollinators (4 records): 50% beetles, 25% bees or wasps, 25% flies.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (618 records): 100% inland - further than 2 km from coast.

Altitude (618 records): 60 - 1140 m; 420_{lq} - 580_{med} - 720_{uq}m.



Landform (615 records): 82% deep soil, 16% shallow soil, 2% rocky outcrops.

Slope (615 records): 62% gentle incline, 29% steep incline, 5% hill top, 3% platform, 0.5% valley bottom, 0.3% cliff.

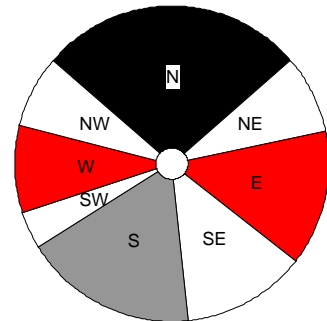
Aspect (565 records): 35% North, 27% South, 24% East, 14% West.

Soil Type (611 records): 47% sandy, 32% loamy, 13% gravelly, 5% rocky, 3% clayey.

Soil Colour (605 records): 45% grey, 42% brown, 5% white, 4% orange, 1% yellow, 1.0% red, 0.7% black.

Geology (586 records): 82% sandstone, 17% shale, 1% silcrete or ferricrete.

Vegetation (617 records): 98% shrubland, 1% plantations, 0.3% agricultural lands, 0.2% grassland, 0.2% forest.



Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 1 800 km² with 26% conserved and 16% lost; **Occupancy:** 589 km² with 17% conserved and 23% lost. **Fragmentation index:** 14%.

Nature Reserves (618 records): 16% in nature reserves - inadequately conserved.

Habitat destruction (611 records): 92% extensive natural habitat, 7% islands, 0.7% road verges, 0.5% naturally linear habitats, 0.2% corridors, 0.2% naturally fragmented habitats.

Alien Invasive Species (605 records): 35% *Pinus*, 32% none, 25% *Hakea*, 6% Fabaceae (chiefly alien *Acacia*), 2% Myrtaceae, 0.3% other aliens.

Alien Density (603 records): 32% alien-free, 56% sparse, 11% abundant, 1% dense, 0.2% impenetrable.

Cultivation & Utilization:

Picking (473 records): 100% no sign of picking, 0.4% lightly picked.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Carpets of *S. gremialis* (AWA97100704); Occasional non-resprouting plants (WIJ94021904);

Style Not Hairy! - Strange! (GED99102401); The Single plant Was Dying (NGFY0080912); Only 2 Plants Were Found On South Verge Of Jeeptrack Where Vegetation Is Taller Than Adjacent Patches (SHR93100302);

Confusing Species: Confused with *S. "ludwigii"* (73% of corrected errors), there being no official key or diagnostic differences. Officially atlassers were supposed to note the colour (yellow

ludwigii, vs silver *gremialis*), stigma shape (capitate vs spindle-shaped), and branch orientation (semi-erect *ludwigii* vs sprawling *gremialis*). Other errors were with *S. acrocarpa* (single stemmed, with adnate hairs on the tepals, 13%) and *S. pedunculata* (single stemmed, with spreading hairs on the tepals; 8%), and with *S. fasciflora* (with straight styles and single stemmed).

Records of identification queries = 79.

Records of corrected identification queries = 40.

Variation and Taxonomy: No variation noted, but in the east (of Stormvleipoort) intermediates with some *S. ludwigii* features occur.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria incrassata Meisn. 1856 Silver-paw Spiderhead

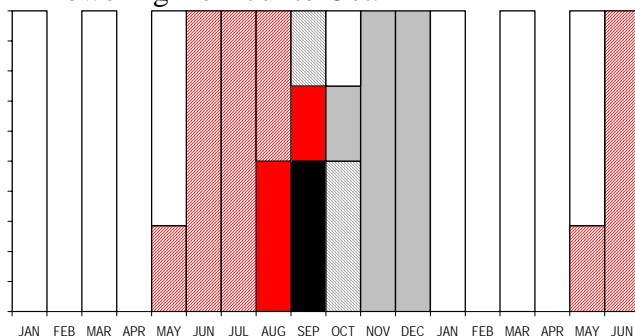
Other Common Names: None known.
Other Scientific Names: None.

30 Records

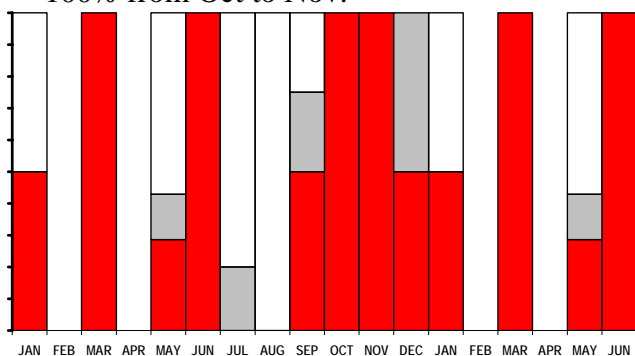
Population (30 records): 7% Common, 77% Frequent, 17% Rare.

Dispersion (30 records): 87% variable, 10% clumped, 3% evenly distributed.

Flowering (30 records with: Jan 2, Feb 0, Mar 1, Apr 0, May 7, Jun 2, Jul 5, Aug 2, Sep 4, Oct 4, Nov 1, Dec 2): Buds from May to Aug; Flowering from Aug to Sep; Peak Flowering from Sep; Over from Sep to Oct; Fruit from Oct to Dec; Nothing from Jan to May and Oct. Peak levels unreliable at 100% in Sep. Historically recorded as flowering from Jul to Oct.



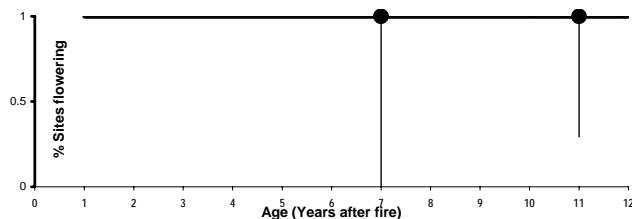
Growth (30 records with: Jan 2, Feb 0, Mar 1, Apr 0, May 7, Jun 2, Jul 5, Aug 2, Sep 4, Oct 4, Nov 1, Dec 2): Much from Sep to Jun; Rare from Jul, Sep and Dec; None from Jan, May and Jul to Sep. Peak levels unreliable at 100% from Oct to Nov.



Seedlings (14 records): Absent in 86%; fewer seedlings than prefire adults in 1 case. Seedlings found in Oct.

Fire Survival (3 records): 100% resprouted from underground boles.

Age to first flowering: First flowers recorded at 100% at 7 years, no records from younger veld.



Height (30 records): 60% 0-0.2 m tall, 40% 0.2-1 m tall.

Pollinators (2 records): 100% beetles.
Detailed Pollinators (1 record): Ladybird Beetle.

Habitat:

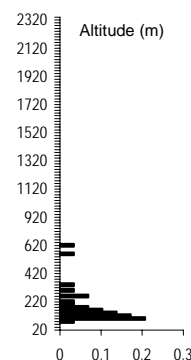
Distance to Ocean (29 records): 100% inland - further than 2 km from coast.

Altitude (29 records): 60 - 620 m; 100_{lq} - 120_{med} - 120_{uq}m.

Landform (29 records): 93% deep soil, 7% shallow soil.

Slope (29 records): 62% gentle incline, 31% platform, 3% steep incline, 3% hill top.

Aspect (25 records): 54% West, 16% North, 16% South, 14% East.

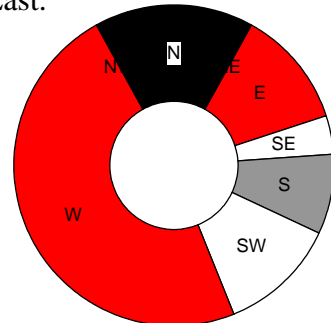


Soil Type (29 records): 45% loamy, 31% sandy, 21% clayey, 3% peaty.

Soil Colour (29 records): 69% brown, 28% grey, 3% red.

Geology (26 records): 46% shale, 27% sandstone, 23% granite, 4% silcrete or ferricrete.

Vegetation (29 records): 100% shrubland.



Conservation Status and Threat:

Red Data List Status: Endangered A2c. - **check why not CR?**

Occurrence (total): 422 km² with 0% conserved and 87% lost; Occupancy: 29 km² with 2% conserved and 79% lost. Fragmentation index: 7%.

Nature Reserves (29 records): 21% in nature reserves.

Habitat destruction (29 records): 59% extensive natural habitat, 34% islands, 7% corridors.

Alien Invasive Species (29 records): 66% Fabaceae (chiefly alien *Acacia*), 21% none, 7% *Pinus*, 3% Myrtaceae, 3% annual alien grasses.

Alien Density (29 records): 21% alien-free, 72% sparse, 7% abundant.

Cultivation & Utilization:

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

Cultivation Status: No noted cultivation.

Atlassers Notes:

The plants at this site were previously atlassed as *S. incrassata*, but Rourke says it is *S. scoparia*. This population has quite silvery leaves unlike the *S. Scoparia* population at Hermon (NGFY1092802); Identification based on habit and lack of diagnostics even though old heads present (SMR99102703);

Appears to have been nibbled: buds off especially along side gravel road (ASP94072704);

Grazed (AGR97061201, ASP94072711; LYM96051601);

About 200 plants very healthy – biggest population! (AGRY6010505); About 50

plants (DJL99102704); Almost 100 plants (DJL99102705);

Pollinator: Black Beetles (WIJ97090604);

Confusing Species: Confused with *S. scoparia*, especially when not in flower, but this has yellow not silver flowerheads, and occurs on sands not shales.

Records of identification queries = 6.

Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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

MERGEFORMAT \d

Serruria "ludwigii" Common Rootstock Spiderhead

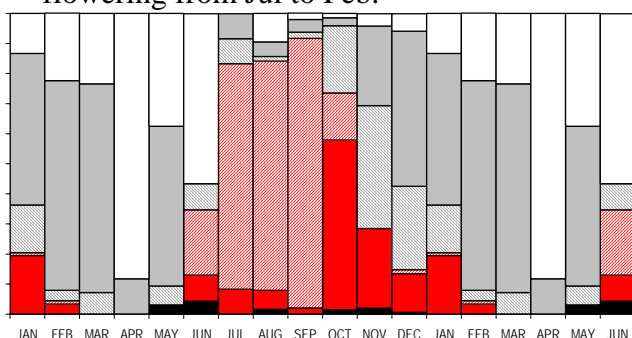
Other Common Names: *Spinnekopbos*.
Other Scientific Names: None.

879 Records

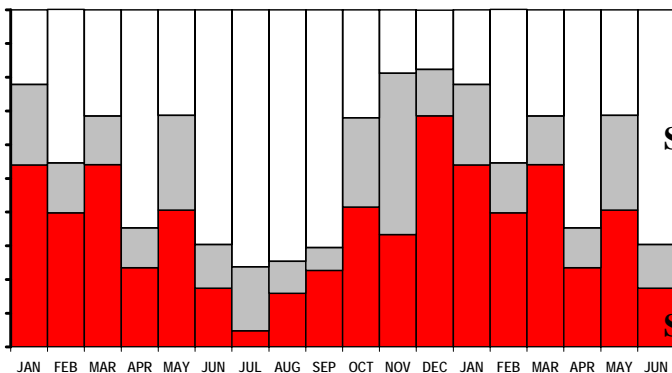
Population (874 records): 0.5% Abundant, 37% Common, 51% Frequent, 11% Rare.

Dispersion (830 records): 76% variable, 19% clumped, 4% widespread, 0.6% evenly distributed.

Flowering (871 records with: Jan 113, Feb 89, Mar 111, Apr 17, May 32, Jun 23, Jul 24, Aug 63, Sep 48, Oct 147, Nov 49, Dec 155): Buds from Jun to Sep; Flowering from Oct to Nov; Peak Flowering not significant; Over from Oct to Dec; Fruit from Nov to Mar and May; Nothing from Feb to Jun. Peak levels at 96% in Oct. Historically recorded as flowering from Jul to Feb.



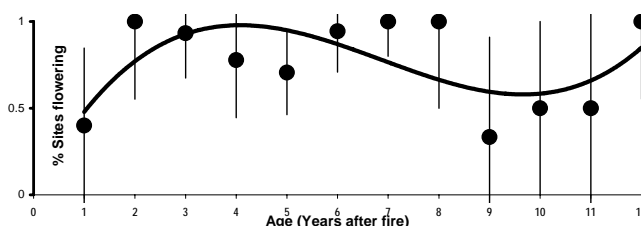
Growth (860 records with: Jan 113, Feb 88, Mar 111, Apr 17, May 32, Jun 23, Jul 21, Aug 63, Sep 44, Oct 147, Nov 48, Dec 153): Much from Sep to May; Rare from Jan, May, and Oct to Nov; None from Jan to Oct. Peak levels at 82% in Dec.



Seedlings (453 records): Absent in 98%: fewer seedlings than prefire adults in 2 cases, and more in 2 cases. Seedlings found in Feb, May (2) and Jun.

Fire Survival (77 records): 92% resprouted from underground boles, 4% escaped fires in fire-safe areas, 3% survived by seedlings only, 1% resprouted from aerial trunks.

Age to first flowering: First flowers recorded at 1 years, 50% estimated at 1-2 years, and 100% first recorded at 7 years and consistently after 12 years.



Height (873 records): 15% 0-0.2 m tall, 84% 0.2-1 m tall, 0.2% 1-2 m tall.

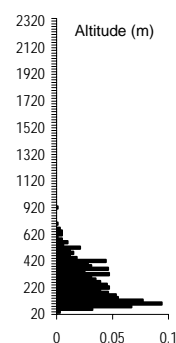
Pollinators (17 records): 35% bees or wasps, 29% butterflies or moths, 18% flies, 18% beetles.

Detailed Pollinators (7 records): Solitary Bee (2), Moth (unspecified) (2), Honey Bee (2), Monkey Beetle.

Habitat:

Distance to Ocean (868 records): 97% inland - further than 2 km from coast.

Altitude (868 records): 20 - 820 m; 100_{lq} - 180_{med} - 280_{uq}m.

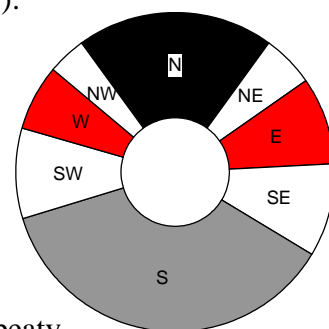


Landform (864 records): 86% deep soil, 12% shallow soil, 2% rocky outcrops, 0.1% lake edge.

Slope (867 records): 52% gentle incline, 20% steep incline, 20% platform, 6% hill top, 2% valley bottom, 0.7% cliff, 0.1% dunes.

Aspect (715 records):

47% South, 25% North, 16% East, 13% West.



Soil Type (862 records): 36% loamy, 36% sandy, 18% gravelly, 6% clayey, 3% rocky, 0.2% peaty.

Soil Colour (859 records): 45% brown, 44% grey, 3% white, 3% orange, 2% black, 2% red, 0.9% yellow.

Geology (811 records): 58% sandstone, 14% shale, 14% conglomerate, 7% silcrete or ferricrete, 5% Tertiary sands, 2% limestone.

Vegetation (867 records): 98% shrubland, 1% grassland, 0.5% thicket, 0.3% agricultural lands, 0.1% plantations.

Conservation Status and Threat:

Red Data List Status: Near Threatened A2c.

Occurrence (Fynbos): 4 643 km² with 22% conserved and 12% lost; **Occupancy:** 594 km² with 32% conserved and 25% lost. **Fragmentation index:** 5%.

Nature Reserves (868 records): 45% in nature reserves.

Habitat destruction (861 records):
85% extensive natural habitat, 10% islands,
3% naturally linear habitats, 1% road verges,
0.3% naturally fragmented habitats.

Alien Invasive Species (838 records):
39% none, 37% Fabaceae (chiefly alien
Acacia), 15% *Pinus*, 7% *Hakea*,
2% Myrtaceae, 0.4% other aliens.

Alien Density (836 records): 39% alien-free,
48% sparse, 9% abundant, 3% dense,
0.2% impenetrable.

Cultivation & Utilization:

Picking (694 records): 100% no sign of
picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Much more flowers adjacent swamp at bottom
of plot (APE92080323);

Heavily grazed (AGRY2052709); Signs of
grazing (LYM97052204);

Pollinator: green solitary bee (AGRY3102804);

Has vexing odor (see Pan 20: 6,
SHR93101703);

Confusing Species: Originally atlassed as *S.*
gremialis but separated after it was apparent
that there were two forms. The forms on
Potberg appear different again, but were not
further separated. Also confused with *S.*

acrocarpa (single stemmed), *S. rubricaulis*
(a resprouter, but with multiple flowerheads),
S. balanocephala (single stemmed) and *S.*
fasciflora (multiple heads and single
stemmed).

Records of identification queries = 877.

Records of corrected identification queries =
151.

Variation and Taxonomy: This species is
included under *S. acrocarpa* in Flora
Capensis and the lowland forms in the Ruens
are better known than the typical forms,
herein considered *S. acrocarpa*. J. Rourke
proposed the name *ludwigii*, after an
obscure synonym, and this was used for the
Protea Atlas.

The forms on Potberg and the flats south as well
as on the Silcretes around Potberg has more
silvery flowers and more lax growth habit
than the typical forms on the conglomerates
and silcretes in the northern Ruens, which
have an erect habit and yellow flowers.

Distribution: Add.

INCLUDEPICTURE

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

MERGEFORMAT \d

Serruria "ludwigii" - high altitude form

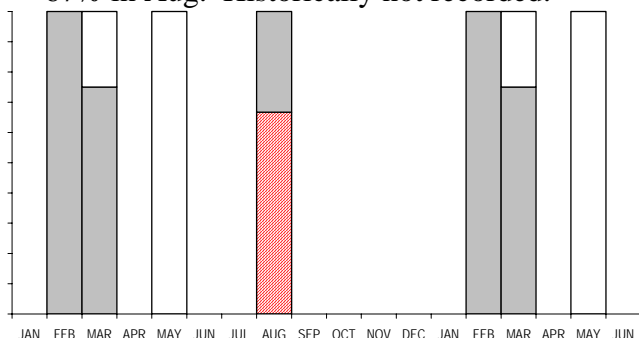
Other Common Names: None known.
Other Scientific Names: None.

20 Records

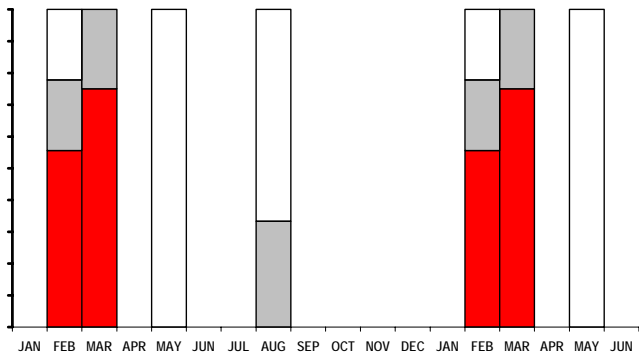
Population (20 records): 25% Common, 40% Frequent, 35% Rare.

Dispersion (15 records): 60% variable, 40% clumped.

Flowering (20 records with: Jan 0, Feb 9, Mar 4, Apr 0, May 4, Jun 0, Jul 0, Aug 3, Sep 0, Oct 0, Nov 0, Dec 0): Buds from Aug; Flowering, Peak Flowering, Over not recorded Fruit from Aug to Mar; Nothing from Mar to May. Peak levels unreliable at 67% in Aug. Historically not recorded.



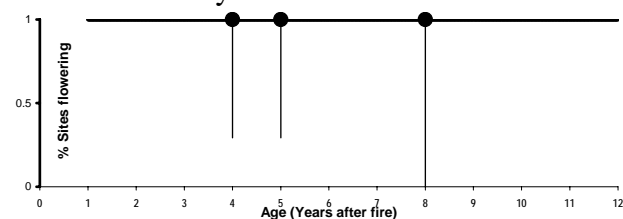
Growth (20 records with: Jan 0, Feb 9, Mar 4, Apr 0, May 4, Jun 0, Jul 0, Aug 3, Sep 0, Oct 0, Nov 0, Dec 0): Much from Feb to Mar; Rare from Feb to Mar and Aug; None from May to Feb. Peak levels unreliable at 100% in Mar.



Seedlings (15 records): Absent in 87%: fewer seedlings than prefire adults in 1 case. Seedlings found in Aug.

Fire Survival (11 records): 100% resprouted from underground boles.

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



Height (20 records): 5% 0-0.2 m tall, 95% 0.2-1 m tall.

Pollinators: No data.

Detailed Pollinators: No additional data.

Habitat:

Distance to Ocean (20 records): 100% inland - further than 2 km from coast.

Altitude (20 records): 520 - 1200 m; 820_{lq} - 920_{med} - 920_{uq} m.

Landform (20 records): 65% deep soil, 35% shallow soil.

Slope (20 records): 70% gentle incline, 15% steep incline, 10% platform, 5% hill top.

Aspect (16 records): 72% North, 19% East, 9% South.

Soil Type (20 records): 50% sandy, 30% loamy, 20% rocky.

Soil Colour (20 records): 60% grey, 40% brown.

Geology (20 records): 75% sandstone, 25% shale.

Vegetation (20 records): 100% shrubland.

Conservation Status and Threat:

Red Data List Status: Near Threatened A2c. Occurrence (Fynbos): 783 km² with 20% conserved and 20% lost; Occupancy: 364 km² with 13% conserved and 34% lost. Fragmentation index: 22%.

Nature Reserves (20 records): 10% in nature reserves - inadequately conserved.

Habitat destruction (20 records): 100% extensive natural habitat.

Alien Invasive Species (20 records): 60% none, 30% *Hakea*, 10% *Pinus*.

Alien Density (20 records): 60% alien-free, 40% sparse.

Cultivation & Utilization:

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

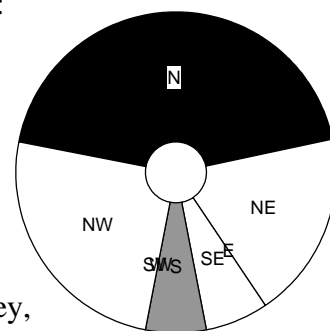
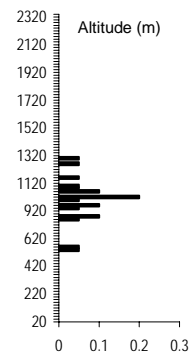
Cultivation Status: No noted cultivation.

Atlassers Notes:

Resprouting with very red stems : Leaves are *S. dodii* (AGR95052403, 04, 06, 07);

Resprouting high altitude form - otherwise indistinguishable from *S. balanocephala* (AGRY1020129, 31; AGRY2031206, 07, 10, 12; AMMY1020204, 07, 08); *S. balanocephala* but is a resprouter! - (AJT95080606; NAH92082910, 13); *S. balanocephala* but is multi-stemmed (SHRY1020103, 04, 09, 16);

On shaley bit at top of ridge on flat areas clear of rocks (AGRY1020129);



Confusing Species: This is resprouting in species that should not be resprouting. Records of identification queries = 20.

Variation and Taxonomy: This is probably not a good species (or if so a very cryptic one), but a resprouting form of either *S. balanocephala* or *S. dodii*, or something closely related to these. These are often associated with shales and grow within metres of their normal species, but do not appear to have intermediates – plants either a low growing and resprout or tall and single-

stemmed. Although morphologically indistinguishable apart from their habit, they are not readily discernable from the otherwise distinct *S. "ludwigii"* in dried herbarium specimens. This phenomenon requires further research.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d

Serruria pedunculata (Lam.) R.Br. 1791, 1810

Fan-leaf Spiderhead

Silwergrysspinnekopbos

Other Common Names: Artemesia-leaf Serruria, Grey Spiderhead, Peduncled Serruria.

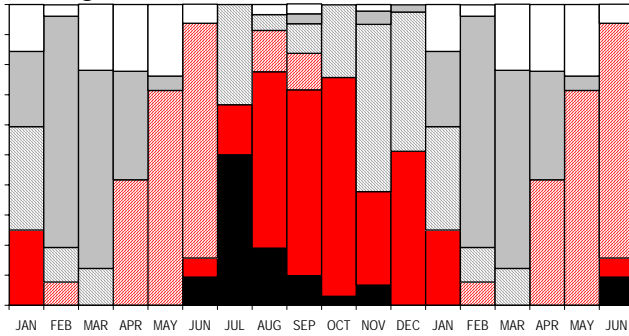
Other Scientific Names: *artemisiifolia* Salisb. ex Knight 1809, *glomerata* Andr. 1803, *longipes* Phill & Hutch 1912, *peduncularis* Salisb. ex Knight 1809, *sphaerocephala* (Houtt) ???.

539 Records

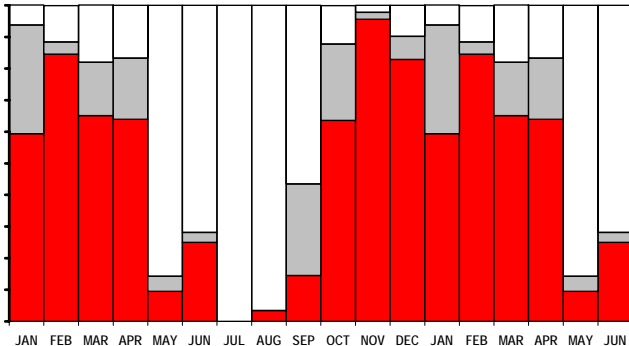
Population (538 records): 3% Abundant, 49% Common, 42% Frequent, 7% Rare.

Dispersion (513 records): 63% variable, 32% clumped, 3% widespread, 3% evenly distributed.

Flowering (535 records with: Jan 32, Feb 26, Mar 82, Apr 36, May 21, Jun 32, Jul 6, Aug 58, Sep 123, Oct 33, Nov 45, Dec 41): Buds from Apr to Jun; Flowering from Aug to Jan; Peak Flowering from Jul; Over from Oct to Jan and Jul; Fruit from Jan to Apr; Nothing from Mar to May. Peak levels at 100% in Oct. Historically recorded as flowering from Aug to Dec.



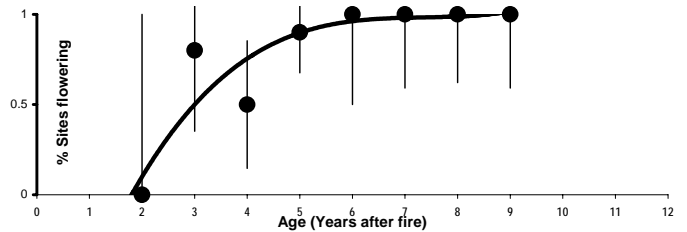
Growth (537 records with: Jan 32, Feb 26, Mar 83, Apr 36, May 21, Jun 32, Jul 6, Aug 58, Sep 124, Oct 33, Nov 45, Dec 41): Much from Oct to Apr and Jun; Rare from Jan and Sep to Oct; None from May to Sep. Peak levels at 98% in Nov.



Seedlings (285 records): Absent in 94%: fewer seedlings than prefire adults in 8 cases, and more in 1 case. Seedlings found in Jan, Jun (2), Sep (2), Nov (3) and Dec.

Fire Survival (46 records): 91% survived by seedlings only, 4% eliminated from the area by fires, 4% 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 6 years.



Height (536 records): 1% 0-0.2 m tall, 83% 0.2-1 m tall, 15% 1-2 m tall, 0.2% 2-5 m tall.

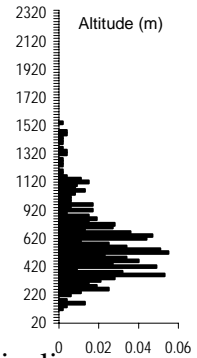
Pollinators (19 records): 53% beetles, 37% bees or wasps, 11% butterflies or moths.

Detailed Pollinators (12 records): Honey Bee (5), Monkey Beetle (3), Wasp (unspecified), Moth (unspecified), Carpenter Bee, Butterfly (unspecified).

Habitat:

Distance to Ocean (527 records): 100% inland - further than 2 km from coast.

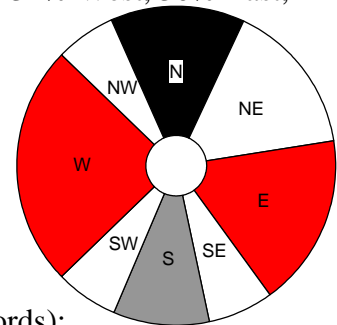
Altitude (527 records): 100 - 1440 m; 400 *lq* - 520 *med* - 640 *uq*m.



Landform (524 records): 64% deep soil, 32% shallow soil, 4% rocky outcrops, 0.2% swamp.

Slope (523 records): 51% gentle incline, 31% steep incline, 9% platform, 5% hill top, 4% valley bottom, 0.2% cliff.

Aspect (467 records): 32% West, 30% East, 23% North, 15% South.



Soil Type (524 records): 49% sandy, 23% gravelly, 17% loamy, 9% rocky, 2% clayey, 0.2% peaty.

Soil Colour (520 records): 46% grey, 33% brown, 10% white, 7% orange, 2% yellow, 1% black, 0.8% red.

Geology (521 records): 88% sandstone, 9% shale, 2% silcrete or ferricrete, 1% Tertiary sands.

Vegetation (525 records): 98% shrubland, 2% plantations, 0.2% wooded grassland, 0.2% thicket.

Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 1 264 km² with 40% conserved and 20% lost; Occupancy: 393 km² with 43% conserved and 10% lost. Fragmentation index: 26%.

Nature Reserves (527 records): 51% in nature reserves - well conserved.

Habitat destruction (516 records): 94% extensive natural habitat, 3% naturally linear habitats, 2% islands, 1% naturally fragmented habitats, 0.4% road verges.

Alien Invasive Species (518 records): 34% none, 28% *Hakea*, 25% *Pinus*, 14% Fabaceae (chiefly alien *Acacia*), 0.4% Myrtaceae, 0.2% other aliens.

Alien Density (517 records): 34% alien-free, 52% sparse, 10% abundant, 4% dense.

Cultivation & Utilization:

Picking (418 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Very much more like *S. acrocarpa* in habit unlike yesterdays which were far more scraggly in habit not so neatly rounded (AGRY4031102);

2 Protea Canaries observed eating seeds - even though seeds young? or are these an earlier crop of seeds? (AGRY4092610);

1/30 dead recently (AGRY4031002); 1/100 dead recently (AGRY4031003); 1/10 to 1/100 dead in patches (AGRY4031102); Looks very stressed (AWA99092801); Dying (VCH99040402); Very dry - dying (VCH99040403);

Pollinator: Protea Beetle - small brown *Tricostetha* (AGRY4092401);

Confusing Species: Readily confused with *S. acrocarpa*, but has spreading hairs on the tepals and more untidy (spindly) growth habit. Odd records of misidentification with *S. aitonii* (with much neater leaves and straighter styles) and *S. rosea* (with a large involucre of bracts and straight styles).

Records of identification queries = 44.

Records of corrected identification queries = 9.

Variation and Taxonomy: No variation noted, except that to the north the difference between *S. acrocarpa* and *S. pedunculata* becomes blurred, and atlassers had great difficulty in choosing between the two species.

Distribution: Add.

INCLUDEPICTURE

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

MERGEFORMAT \d

Serruria reflexa Rourke 1990 Milky Spiderhead

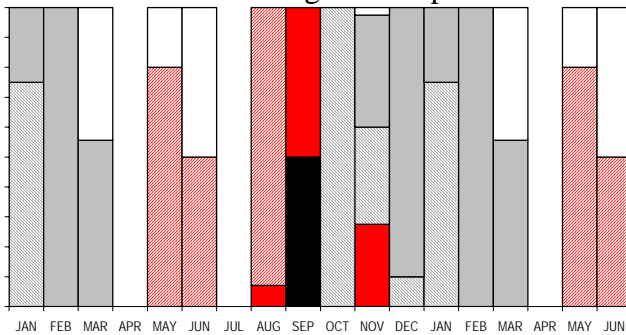
Other Common Names: None known.
Other Scientific Names: *onderbosensis* *nomen nudum* (Protea Atlas).

89 Records

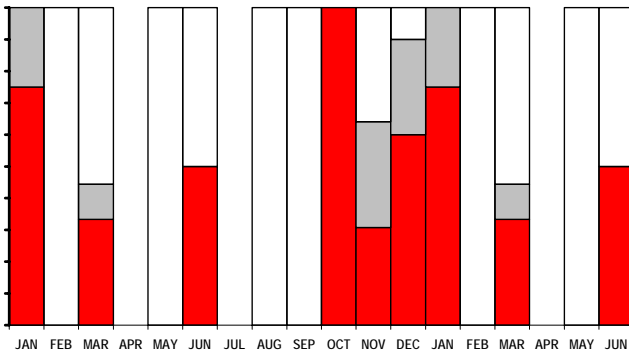
Population (89 records): 1% Abundant, 38% Common, 54% Frequent, 7% Rare.

Dispersion (88 records): 60% variable, 40% clumped.

Flowering (89 records with: Jan 4, Feb 2, Mar 9, Apr 0, May 5, Jun 2, Jul 0, Aug 14, Sep 2, Oct 1, Nov 40, Dec 10): Buds from May to Aug; Flowering from Sep to Nov; Peak Flowering from Sep; Over from Jan and Oct to Nov; Fruit from Nov to Mar; Nothing from Mar to Jun. Peak levels unreliable at 100% from Aug to Sep. Historically recorded as flowering from Sep to Nov.



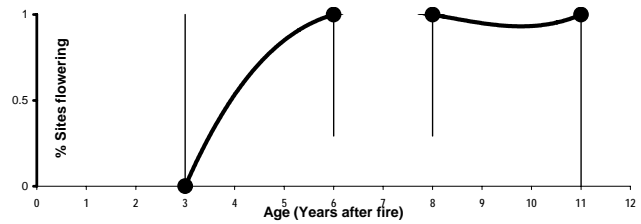
Growth (88 records with: Jan 4, Feb 2, Mar 9, Apr 0, May 5, Jun 2, Jul 0, Aug 14, Sep 2, Oct 1, Nov 39, Dec 10): Much from Oct to Mar and Jun; Rare from Nov to Jan; None from Feb to Nov. Peak levels unreliable at 100% in Jan.



Seedlings (58 records): All without any seedlings present.

Fire Survival (4 records): 100% survived by seedlings only.

Age to first flowering: First flowers recorded at 2 years, 50% estimated at 3-4 years, and 100% recorded at 6 years.



Height (89 records): 26% 0.2-1 m tall, 74% 1-2 m tall.

Pollinators (13 records): 62% beetles, 31% bees or wasps, 8% butterflies or moths.

Detailed Pollinators (12 records): Monkey Beetle (7), Carpenter Bee (4), Moth (unspecified).

Habitat:

Distance to Ocean (89 records): 100% inland - further than 2 km from coast.

Altitude (89 records): 360 - 1200 m; 480 *lq* - 620 *med* - 700 *uq* m.

Landform (88 records): 64% deep soil, 31% shallow soil, 6% rocky outcrops.

Slope (88 records): 51% gentle incline, 28% steep incline, 10% hill top, 10% platform.

Aspect (80 records): 34% East, 32% North, 18% West, 17% South.

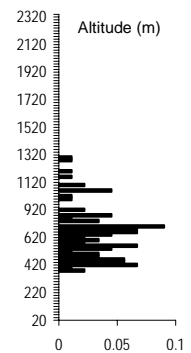
Soil Type

(89 records): 37% sandy, 37% gravelly, 13% rocky, 12% loamy.

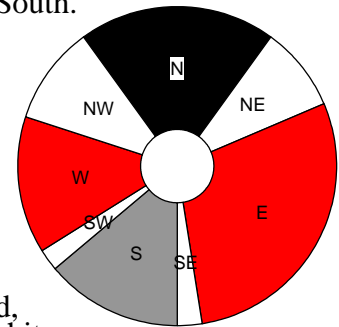
Soil Colour (88 records): 52% brown, 32% grey, 6% red, 5% yellow, 3% white, 2% orange.

Geology (89 records): 63% sandstone, 34% shale, 3% silcrete or ferricrete.

Vegetation (89 records): 100% shrubland.



Soil Type



Conservation Status and Threat:

Red Data List Status: Least Concern.

Occurrence (Fynbos): 269 km² with 1% conserved and 7% lost; **Occupancy:** 89 km² with 5% conserved and 3% lost. **Fragmentation index:** 31%.

Nature Reserves (89 records): 10% in nature reserves - inadequately conserved.

Habitat destruction (88 records): 94% extensive natural habitat, 5% naturally linear habitats, 1% corridors.

Alien Invasive Species (86 records): 71% none, 22% *Pinus*, 6% Fabaceae (chiefly alien *Acacia*), 1% other aliens.

Alien Density (86 records): 71% alien-free,
28% sparse, 1% abundant.

Cultivation & Utilization:

Picking (79 records): 100% no sign of picking.

Cultivation Status: No noted cultivation.

Atlassers Notes:

Some die-back (PMRY0111104);

A total surprise - all along this transect this species has expanded its niche to replace *S. acrocarpa*! (AGRY3112554); *S. reflexa* and *S. acrocarpa* ranges do not overlap here (SHR95031801);

Noticeably in swathes across the plot - could be alternation of sandstone and shale (SMRY0030110);

Confusing Species: Specimens not in flower require careful inspection to separate from *S. acrocarpa*. – in flower the flowerheads with their long stalks are quite distinct.

Records of identification queries = 21.

Records of corrected identification queries = 1.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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

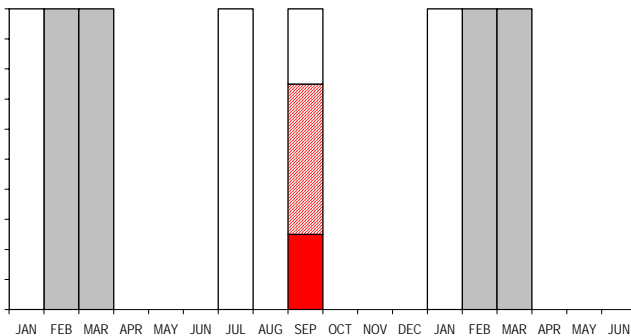
MERGEFORMAT \d

***Serruria scoparia* R.Br. 1810**
Castle Spiderhead

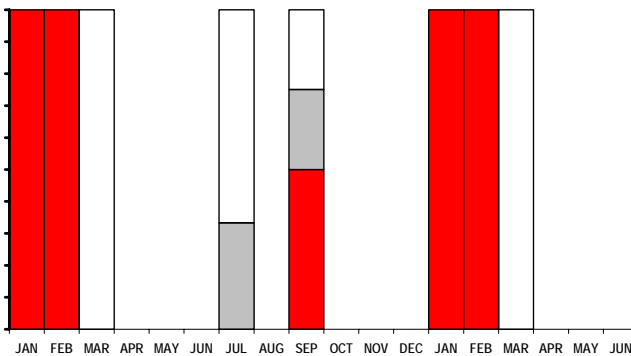
Other Common Names: None known.
Other Scientific Names: perhaps: *callosa* Salisb. ex Knight 1809, *dregei* Meisn. 1856.

13 Records

Population (13 records): 8% Common, 54% Frequent, 38% Rare.
Dispersion (10 records): 60% variable, 30% clumped, 10% evenly distributed.
Flowering (13 records with: Jan 1, Feb 1, Mar 1, Apr 0, May 0, Jun 0, Jul 6, Aug 0, Sep 4, Oct 0, Nov 0, Dec 0): Buds from Sep; Flowering from Sep; Peak Flowering and Over not recorded; Fruit from Feb to Mar; Nothing from Jul to Jan. Peak levels unreliable at 75% in Sep. Historically not recorded.



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



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

Fire Survival : No data.
Age to first flowering: No data.

Height (13 records): 8% 0-0.2 m tall, 92% 0.2-1 m tall.

Pollinators (1 record): 100% butterflies or moths.

Detailed Pollinators (1 record): Painted Lady Butterfly.

Habitat:

Distance to Ocean (13 records): 100% inland - further than 2 km from coast.

Altitude (13 records): 40 - 140 m; 60_{lq} - 80_{med} - 80_{uq}m.

Landform (13 records): 92% deep soil, 8% shallow soil.

Slope (13 records): 62% platform, 31% gentle incline, 8% hill top.

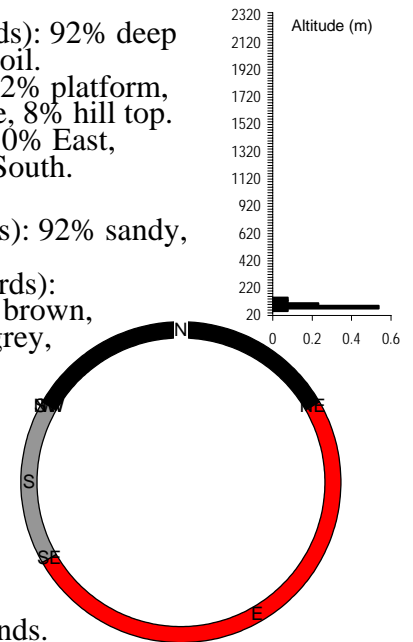
Aspect (6 records): 50% East, 33% North, 17% South.

Soil Type (13 records): 92% sandy, 8% clayey.

Soil Colour (13 records): 46% yellow, 23% brown, 15% orange, 8% grey, 8% white.

Geology (13 records): 62% Tertiary sands, 31% shale, 8% sandstone.

Vegetation (13 records): 92% shrubland, 8% agricultural lands.



Conservation Status and Threat:

Red Data List Status: Critically Endangered A2c.

Occurrence (Fynbos): 41 km² with 0% conserved and 87% lost; **Occupancy:** 23 km² with 0% conserved and 91% lost. **Fragmentation index:** %.

Nature Reserves (13 records): 0% in nature reserves - unconserved.

Habitat destruction (13 records): 46% islands, 38% extensive natural habitat, 15% road verges.

Alien Invasive Species (13 records): 92% Fabaceae (chiefly alien *Acacia*), 8% none.

Alien Density (13 records): 8% alien-free, 23% sparse, 62% abundant, 8% dense.

Cultivation & Utilization:

Picking (13 records): 100% no sign of picking.
Cultivation Status: No noted cultivation.

Atlassers Notes:

Originally atlassed as *S. incrassata* - no flowerheads - turned out to be a major find! Follow up on previous record! (AGR99031703; AGRY0072715, 18); Atlassed as *S. incrassata* as no flowers present (SMRY0072704, 10, 14; SMRY1091301); Atlassed As Se ??? (cf. *S. pedunculata*)- fax of specimen (with no flowerheads) accompanied specimen - identified as near *S. incrassata* - later confirmed as *S. scoparia*; (VDW97020301; VDW98011402); One plant dead and one not found from Ruths (SMR) original plot (AGRY1092801);

Confusing Species: Similar to *S. incrassata*,
but more erect, with shorter flowerhead stalk
and yellow, not silver, flowerheads.
Records of identification queries = 10.
Records of corrected identification queries = 9.

Variation and Taxonomy: No variation noted.

Distribution: Add.

INCLUDEPICTURE

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MERGEFORMAT \d