

Silene conica L. Sand Catchfly

GB Red List Status: Vulnerable

Silene conica (family Caryophyllaceae) is an overwintering annual which grows on dry, sandy grassland and shingle and arable field margins. The UK stronghold is in the Breckland area of East Anglia, but it can also be found scattered in Southern England and rarely in Wales. Changes in land management and habitat disturbance have caused this plant to be Red Listed in Great Britain as Vulnerable.

Seed harvest

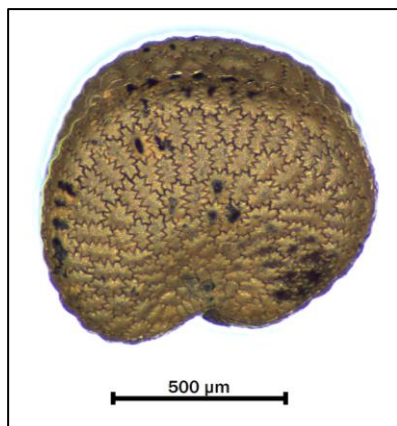
S. conica flowers May and June and seeds develop and disperse July and August. Good seed production may be linked to hot summers. Seeds are <0.4mm in diameter and encased in a capsule within an urn-shaped calyx with sticky glandular hairs, c. 30 raised veins and strongly ovoid when fruiting. The approximate dry weight of 1000 seeds is 0.32g. Collections conserved at the Millennium Seed Bank were collected between late June and early August.



S. conica in flower

Propagation

This species was straightforward to propagate in trials. Seeds were imbibed in a water bath for 24 hours (may not be necessary) before being sown into a 2:1 mix of Petersfield Peat-Free Supreme compost and Sinclair Special Seed perlite with a layer of Sinclair Medium vermiculite on top. Seeds germinated in the glasshouse when temperatures were between 12-18°C. Seedlings were pricked out around two months later in late May and grown outside in a sunny spot.



S. conica seed

We did not observe the high seedling mortality rate noted by Salisbury (1930) in the nursery sows. Over 90% of the seeds sown went on to flower in June and set seed in September.

Although the nursery trials were conducted in spring, this species naturally germinates in late summer so replicating this timing would be recommended if sowing directly on site.

Ex situ conservation

As of November 2023, the Millennium Seed Bank conserves 14 wild collections of *S. conica* from 11 hectads. These collections together hold nearly 160,000 seed. Collections are maintaining viability in conventional seed bank conditions (15%RH/-20°C) with one collection achieving 100% germination after 38 years of storage.

The map (right) shows the distribution of *S. conica* records since 2000 (BSBI) in yellow and MSB conserved wild collections in black.



Propagation trials for S. conica took place at Wakehurst, West Sussex in spring 2023 to investigate the effects of indoor/outdoor sowing. A maximum conversion rate of 90% (seed sown to adult plant) was achieved with a spring sow in a glasshouse. See reverse for methodology and results of the best tests in the laboratory and nursery.

Germination and Propagation: best tests in laboratory and nursery

The seeds tested were stored in the Millennium Seed Bank since collection in Suffolk in 1979

	Laboratory method	Nursery method
Date sown:	October 2017	March 2023
Pre-treatments:	None	Water bath for first 24 hours
Germination media:	1% Agar	Petersfield Peat-Free Supreme compost and Sinclair Special Seed perlite (2:1) with a top layer of Sinclair Medium vermiculite
Germination conditions:	20°C (12 hrs light / 12 hrs dark)	Glasshouse with grow lights (~12-18°C)
Days until germination:	7 days	11 days
Germination duration:	7 days	11 days (peak 11 days)
Germination percentage:	100% (100% viable)	93%
Growing conditions:	N/A	Pricked out approx. 2 months after germination and grown outside
Growing media:	N/A	Petersfield Peat-Free Supreme compost and Sinclair Standard perlite (2:1) with a top layer of Sinclair Medium vermiculite
Seedling survival:	N/A	90% of seeds sown (97% of seeds germinated)
Replicates:	1 x 50 seed	3 x 50 seed



Images from l-r: *S. conica* seedlings (15 days after sow) with toothpick markers for scale; *S. conica* seedling (3 months after sow)

References and Resources

- Stroth, P.A. 2015. *Silene conica* L.. Sand Catchfly. Species Account. Botanical Society of Britain and Ireland.
- Salisbury, E.J. 1930. Mortality amongst Plants and its Bearing on Natural Selection. *Nature* 3161: 817
- The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough (Revised 2021)
- *Silene conica* L. in BSBI Online Plant Atlas 2020, eds P.A. Stroth, T. A. Humphrey, R.J. Burkmar, O.L. Pescott, D.B. Roy, & K.J. Walker. <https://plantatlas2020.org/atlas/2cd4p9h.216> [Accessed 12/12/2023]

Please note: Anyone collecting seeds must do so legally and sustainably. Site conditions and management should be suitable for the sustainability of the population prior to any (re)introduction of seed or plants.

For more information on data, protocols and standards at the Millennium Seed Bank, see our website: www.brahmsonline.kew.org/msbp

Follow the UK Team on Twitter: @Kew_MSBUK