Photo by P. Ollerenshaw (APII, ANBG)

Swainsona recta

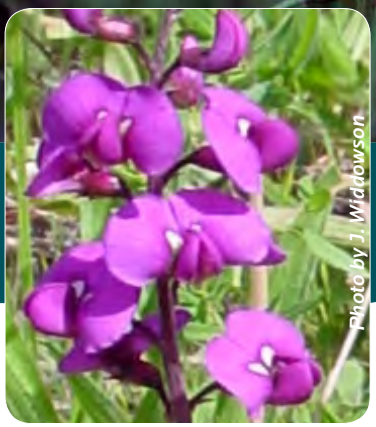


Photo by J. Widowson

Synonyms: None

Common names: Mountain Swainson-pea, Small Purple Pea

Family: Fabaceae

Similar species: *Swainsona galegifolia* (Smooth Darling Pea), *Swainsona greyana* (Hairy Darling Pea)

Conservation status: listed as **Endangered** under the Commonwealth Environment Protection and Biodiversity Conservation Act (1999), the ACT Nature Conservation Act (1980) and the NSW Threatened Species Conservation Act (1995), as **Threatened** in the Victorian Flora and Fauna Guarantee Act (1988) and classified as **Endangered** by the Victorian Department of Sustainability and Environment (2005).

Description

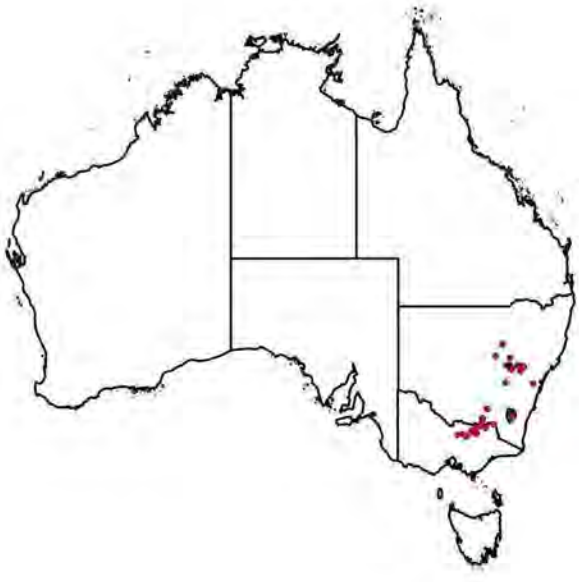
Swainsona recta is a rigidly erect, slender forb, up to 35 cm tall.

Roots: thickened taproot that can extend to at least 60 cm below the soil surface.

Stems: few to many flowering stems, sparsely hairy.

Leaves: pinnate, 3-9 cm long, almost hairless, comprised of 5 to 13 narrow leaflets (1-2.5 cm long); the terminal leaflet being larger than the lateral leaflets, each with a pointed tip.

Distribution



Map from Australia's Virtual Herbarium: http://avh.chah.org.au/

Ecology

Habit	Perennial forb.
Growth period	In autumn and winter, plants resprout from their underground taproots. After flowering and seeding, the plants die back to the perennial rootstock until they resprout again. In a poor season, taproots may not produce foliage and flowers.
Life expectancy	Approximately 50 years (based on the size of the rootstock and monitoring observation).
Habitat	Grasslands, open woodlands, grassy-open forests.
Soil tolerance	Grey sandy or stony loams, often on stony hillsides, always on undulating terrain.
Site tolerance	Warm, dry areas.
Drought tolerance	Unknown.
Frost tolerance	Unknown.
Fire tolerance	Generally favoured by periodic burning which reduces competition from other species and enhances germination by breaking the seed dormancy.
Grazing tolerance	Despite its capacity to resprout from damaged rootstock, the species will not persist when the shoot growth is periodically removed by domestic stock grazing.
Pests	Slugs and snails.

Reproduction

Flowers

Each flower stem bears 10-21 purple bluish to bright purple pea flowers. Each flower is borne on a recurved stalk (1-3 mm long). The flower is composed of the broad standard petal, with two distinctive white spots or short stripes at its base, two lateral wing petals and the central keel petal.

Flowering occurs from spring to early summer, peaking in a 2-3 week period in mid-spring.

The plant is pollinated by insects (e.g. native bees) and can also self-pollinate.

Fruit: pods

Globular to oblong, hairless (except along the suture and base), 5-10 mm long and 4-6 mm in diameter. It contains 1 to 8 seeds.

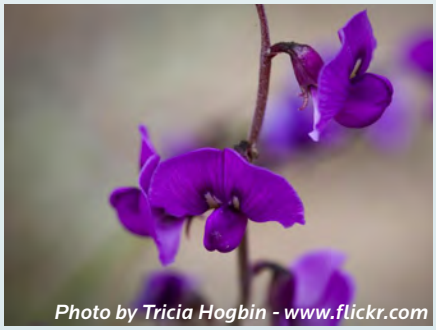


Photo by Tricia Hogbin - www.flickr.com

Photo by F. Kavouta Manasse (ANBG)

Seeds

Small, hard-coated, flattened kidney-shaped, fawn-brown and about 2 mm long. The dormancy of the seeds is broken by fire.

Germination requirements

The seeds need to be scarified before propagation and plunged into hot water for 3 minutes. The species germinates easily.

Genetic seed viability

Swainsona recta is a tetraploid species which means it has four sets of chromosomes rather than the two sets found in many other species. No chromosomal differences between *S. recta* populations are known, suggesting that mixing of polyploid races in a Seed Production Area is unlikely to be a problem.

How to grow the species in a Seed Production Area (SPA)

Seed collection and storage

The seeds ripen between early and late December.

As the seeds are shed quite quickly, bag the entire plants before the fruit open to catch seed as it falls. When the seeds have shed, cut the stems; thresh lightly and sieve clean. The seeds can also be cleaned with aspirated blower because the species has good-sized seeds with bulk material to be removed.

The results of germination tests done at the National Seed Bank were very variable. When stored in the appropriate conditions, the seeds seem to retain viability for at least 16 years, however the germination percentage decreases as the age of the seed increases.

The seeds should be dried down to 5-6% moisture content. They must be stored at very low temperatures (such as -16°C) to preserve them for a long period.

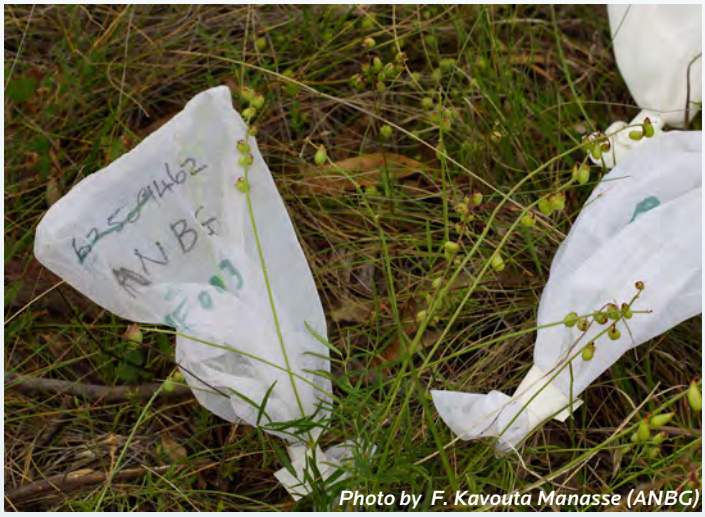


Photo by F. Kavouta Manasse (ANBG)

Propagation

S.recta can be propagated from seed: sow seeds in cell trays then transplant to the SPA site when ready.

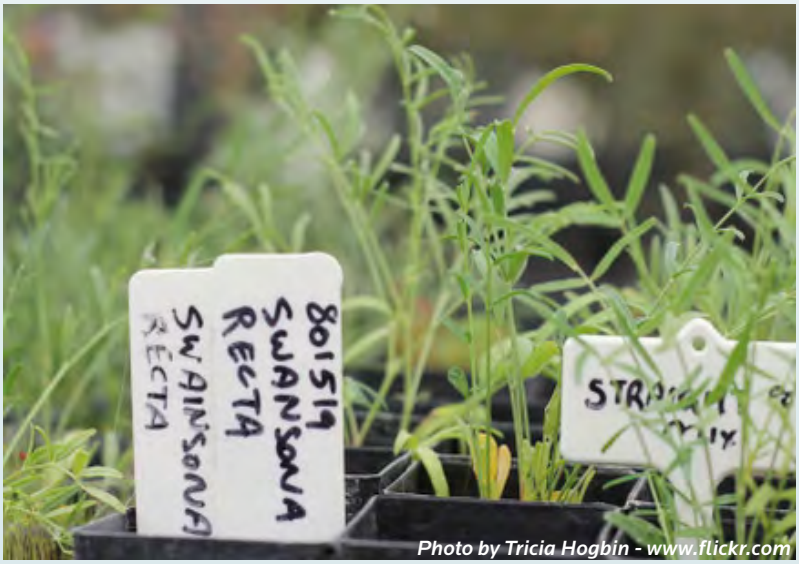


Photo by Tricia Hogbin - www.flickr.com

Growth at the SPA

To encourage growth, the plants can be fertilised with slow-release fertiliser and seaweed fertiliser in spring. Seaweed fertiliser can also be combined with a water-soluble fertiliser and applied during establishment.

Cut back to ground level each winter to make way for a new flush of spring growth and the best display of flowers.

Uses

No uses have been registered for *S. recta*.

Conservation

Only 9500 plants of *S. recta* remain across a total of 26 sites in NSW, the ACT and Victoria. However historic collections show that the species was once widespread in south-eastern Australia. The decline in the population is thought to be due to adult mortality and low recruitment.

The appropriate protection and management of the habitat of *S.recta* will contribute to the conservation of the White Box- Yellow Box- Blakely's Red Gum grassy woodland, which is an Endangered Ecological Community.

ACTEW Water supported the protection and rehabilitation of *S.recta* in the Murrumbidgee to Googong Water Transfer project, in association with the Australian National Botanic Gardens. To learn more about this project, follow the links below:

http://www.youtube.com/watch?v=lSqzgDsg0UQ
http://www.youtube.com/watch?v=L0c0ZUO_t0s
http://www.youtube.com/watch?v=u4ymwwcF0dw

References

ACT Government. (1997). *Small Purple Pea (Swainsona recta): An endangered species. Action Plan No. 9.* Environment ACT, Canberra.

Wilson, S. (1997). *Some plants are poisonous – detailed information on hundreds of dangerous species in Australia*. Reed, Victoria

Internet links

Ecology and genetics of Remnant Vegetation –Centre for Australian National Biodiversity Research: http://www.cpbr.gov.au/cpbr/program/sc/eco_gen.htm

Environment and Heritage – NSW government: http://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10782

International Union for Conservation of Nature Red List of Threatened Species: http://www.iucnredlist.org/details/19891538/0

PlantNET- National Herbarium of New South Wales: http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Swainsona~recta

Photo source

Australian Plant Image Index (APII): http://www.anbg.gov.au/photo/

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