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Myrtle-leaf Milkwort, Butterfly Bush, Parrot Bush, Bellarine Pea, Sweet-pea Shrub (NZ), September Bush (South Africa)

Polygala myrtifolia L.

Linnaeus, C. (1753), Species Plantarum 2 1753

Created: March 2019 Last updated: January 2024

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Quick Facts

- Originally from South Africa, Myrtle-leaf Milkwort (*Polygala myrtifolia*) is a highly invasive evergreen shrub to 3 metres tall.
- A weed in southern Australia and eastern New South Wales that grows in sandy to calcareous soils, particularly in coastal areas in back (or rear) dunes and near-coastal shrub-lands.
- Capable of invading intact vegetation forming dense stands and prevents or limits the establishment of other species, eventfully completely dominating the shrub layer.
- Grows year round but most growth occurs over the cooler, moist winter period, slowing when limited by water availability at the height of summer.
- Spreads by seed and establishes large soil-stored seed-banks that remain viable for up to 3 -10 years, maybe more.
- Control methods include hand pulling young plants and chemical treatments, however long term follow-up is required as seeds continue to germinate over several years.

What Does It Look Like?

What is it?

Myrtle-leaf Milkwort (*Polygala myrtifolia*) is an erect or spreading evergreen bushy to sparse shrub, about 3m high. The young stems are covered with numerous short, fine, curled hairs that are lost with age, with older branches hairless, greyish to brown in colour, and mostly without leaves towards the centre of the bush. Leaves are crowded close together along the stem and are arranged alternately (one leaf per stem joint or node), hairless with some hairs present on developing or very young soon lost. Leaves are more or less oval or to broadly elliptic (broadest in the middle and equally

narrow at both ends) to obovate (egg-shaped with the widest part nearer the tip of the leaf), with the leaf edges (margins) smooth (without teeth or lobes), and a leaf tip with a small point to bluntly rounded or flat to notched. Leaves are 15-40 mm long and 5-20 mm wide.

The **flowers** occur in clusters mostly 1.5 to 4 cm long at the tips of younger stems and are white, pink and mauve. Individual flowers are pea-like with spreading 'wings' that are 12 to18 mm long, 7 to 13 mm wide, purple or mauve on their inner surface and green outside. The central 'keel' of the flower is slightly shorter than the wings, white or pale mauve with a maroon blotch and a tuft of pale hair-like outgrowths at the tip.

The **fruit** is a capsule, flattened and more or circular with a notch at the tip, 8 to10 mm long and wide, green at first but when ripe turning a dry brown-straw colour. Each fruit produces (capsule) two hairy black **seeds** about 4.5 mm long (Walsh 1999; Harden 1992; Muyt 2001). Seeds seeds remain viable in the soil for 2 to 3 years but are reported to be long lived (up to 10 years or more) but no Australian studies have confirmed this.

Recognition: This species can normally be recognised by the combination of the following characters; Shrub to 3 metres tall with alternate green leaves clustered on the outer branches; White pink and mauve pea-like flowers, normally growing in sandy soil and coastal areas.

For further information and assistance with identification of Myrtle-leaf Milkwort contact the herbarium in your state or territory.

Flower colour

Purple, Mauve and Pink. Also multi-coloured

Growth form (weed type/habit)

Shrub

Where it currently grows? Preferred habitat

Most occurrences of Myrtle-leaf Milkwort are from coastal and near-coastal situations, including on siliceous or calcareous sands, alluvium and soils derived from granite, basalt or sandstone. It is also known from a few inland occurrences, up to about 300 km from the coast, and sometimes in slightly saline situations, but rarely dominating vegetation in these areas.

It is very drought-tolerant, but has also become established in areas of relatively high (e.g. more than 650 mm per year) annual rainfall (AVH 2007; National Herbarium of Victoria 2007; Walsh 2007, pers. comm.). It forms dense stands in sandy soils.

Are there similar species?

Polygala myrtifolia var. *grandiflora*, and its horticulturally-derived hybrid *P.* x *dalmaisiana* (with other parent *P. fruticosa*) are both cultivated and are apparently less-invasive the Myrtle-leaf Milkwort (*P. myrtifolia*).

However, although *P. myrtifolia* var. *grandiflora* was initially promoted as being a non-invasive alternative to the typical variety, it has shown an ability to set seed and invade to some extent (Spencer 2002). The former differs in having larger (1.5–2 cm long) rich purple flowers, while the hybrid has at least some leaves opposite (Walsh 1999).

There are few native shrubs that are likely to be confused with Myrtle-leaf Milkwort when in flower, but it is vegetatively similar to some native peas (e.g. *Templetonia*, *Podolobium*, *Pultenaea*, *Mirbelia* etc.). Austral Indigo (*Indigofera australis*) has flowers of similar colour and shape, but the leaves are composed of several leaflets attached to a central stalk, immediately distinguishing it from the simple-leaved milkworts (Walsh 2007, pers. comm.).

Why Is It A Weed?

What are its impacts?

Myrtle-leaf Milkwort (*Polygala myrtifolia)* was included in the list of 71 species that were nominated by state and territory governments for assessment as Weeds of National Significance (WONS). Following an assessment process, Myrtle-leaf Milkwort was not included as a WONS. However, it remains a weed of potential national significance.

Agriculture: Myrtle-leaf Milkwort is not a known weed of agriculture or other primary production activities.

Native ecosystems: Myrtle-leaf Milkwort commonly forms very dense shrub-lands and reduces botanical diversity through shading in areas of heavy infestation in open and sandy areas. It can form dense monocultures (stand of only one plant in this case, Myrtle-leaf Milkwort) eventually becoming the dominate shrub layer that excludes the ability of

other desirable plants to establish and survive. Seedlings grow preferably on disturbed, somewhat exposed sites, but can also grow in the low light conditions under established shrub-lands. Mass germination commonly occurs following fire or mechanical removal of vegetation (Muyt 2001; Walsh 2007, pers.comm.).

Urban areas: Myrtle-leaf Milkwort is (or has) been used as a cultivated garden plant, and if not managed, it can self seed. It can often escape the garden and spread beyond property boundaries.

How does it spread?

Myrtle-leaf Milkwort is spread by seeds and are not suited to long-distance dispersal by wind or water. The hairy seeds might allow for short-distance wind dispersal or for some short-to medium-distance dispersal by animals through entanglement in fur or feathers. The seeds are potentially dispersed long-distances by birds and certainly over large areas via in dumped garden waste or movement of contaminated soil.

The presence of a distinct elaiosome (a short, waxy, swollen attachment stalk) on the seed suggests that ants or other invertebrates probably harvest the seeds to remove these and in doing so move the seeds over short distances. Seeds are also dispersed in soil and garden refuse (Thorp & Wilson 1998; Muyt 2001).

What is its history in Australia?

Myrtle-leaf Milkwort was probably introduced into Australia before 1860, presumably as a garden plant (but possibly accidentally with cargo from South Africa) (Walsh 2007, pers. comm.). It is known to have been established near the Melbourne bayside suburbs of Brighton and Mentone in Victoria since 1886, presumably from garden-grown plants (National Herbarium of Victoria 2007).

It was collected from near the Hastings River in northern New South Wales, around 1860, but there is no indication whether the specimen was from a garden-grown or escaped plant (National Herbarium of Victoria 2007). A collection from Perth, Western Australia, from 1911 similarly has no indication whether it was of wild or horticultural origin, but it was well established in areas of south-western Western Australia by the early 1980s (National Herbarium of Victoria 2007).

How To Manage It?

Best practice management

Any control of Myrtle-leaf Milkwort (*Polygala myrtifolia)* should occur over several years with follow up required to remove the seedling that normally germinate on mass when parent plants and other disturbance. Manual and chemical methods have been successful used.

Chemical control: Control can be achieved using herbicides. Foliar spray is effective on seedlings and mature plants. The cut and swab method (where herbicide is applied to the stump of a felled plant) is also effective if not labour intensive (.

Please see the Australian Pesticides and Veterinary Medicines Authority for chemical information http://www.apvma.gov.au .

Non-chemical control: Physical control: Young plants of Myrtle-leaf Milkwort may be removed by pulling or shallow digging, but this is unlikely to be practicable in heavy infestations where burning or chemical control is preferable as initial control . Follow up removal of seedlings will be required (again, either by hand-pulling, chemical control or through the

use of fire for at least 3 years as seeds remain viable in the soil for 2 to 3 years with other reports indicating seed viability to 10 or more years. Myrtle-leaf Milkwort germinate on-mass with 100s of plant a square metre. Its advisable plants to leave small seedlings as competition between plants reduce plant numbers leaving fewer but larger seedlings or small plants to remove. Plant to 50cm can be reasonably easily hand pulled from sandy soils.

Fire: If fire is used as a control measure, some or most plants in a population will need to be killed sometime before the fire as green plants do not burn well (Muyt 2001).

Biological control: No biological control agent is available in Australia.

Does it have a biological control agent?

NO

When does it grow? (lifecycle/growth calendar)

Plants of Myrtle-leaf Milkwort may flower through much of the year (Roy *et al,* 1998). , but the main flowering period is in spring to summer from August to December in most areas where it is grown, (Meerow and Ayala-Silva, 2005; Carter *et al,* 1990, Muyt 2001).
Fruits ripen mostly between November and March (Thorp & Wilson 1998; Muyt 2001; National Herbarium of Victoria 2007; Walsh 2007, pers. comm.) and seeds germinate in May to June (Carter *et al*, 1990).

Where Is It Found?

Which states and territories is it found?

NSW, SA, TAS, VIC, WA

What areas within states and territories is it found?

In Western Australia, Myrtle-leaf Milkwort occurs in an arc along the coastal plain from the Perth area to near Albany (FloraBase 1998 –).

In South Australia it occurs along the coast from the tip of the Eyre Peninsula to the Victorian border (AVH 2020).

In Victoria it extends as far east as Western Port, with a concentration around the Bellarine and Mornington Peninsulas and eastern shore of Western Port, and inland occurrences in the west near Dimboola and Lake Hindmarsh (National Herbarium of Victoria 2007).

In New South Wales it occurs mainly near the coast, from near Jervis Bay to the Coffs Harbour area (PlantNet 2007).

In Tasmania it has scattered occurrences on the northern and eastern coast from near Burnie to Hobart (AVH 2007; Florabase 1998 – ; National Herbarium of Victoria 2007).

Myrtle-leaf Milkwort is also a weed on islands in the Pacific Ocean including Norfolk Island, New Zealand and Hawaii (Orchard 1994; Owens 1997, 1998).

Where does it originate?

Myrtle-leaf Milkwort is native to South Africa, occurring naturally from the Bokkeveld Mountains near Clanwilliam in the

Western Cape to Kwazulu-Natal (Van der Walt 2003).

National And State Weed Listings

Is it a Weed of National Significance (WONS)?

NO

Where is it a declared weed?

SA

Government weed strategies and lists – Weeds Australia

Is it on the National Alert List for Environmental Weeds?

NO

Government weed strategies and lists – Weeds Australia

Is it on the Agricultural Sleeper List?

NO

Government weed strategies and lists – Weeds Australia

Names And Taxonomy

Main scientific name

Polygala myrtifolia

Other scientific names (synonyms)?

Polygala myrtifolia L. var. *myrtifolia*

Does it have other known common name(s)?

Butterfly Bush, Parrot Bush, Bellarine Pea, Sweet-pea Shrub (New Zealand), September Bush (South Africa)

Blackberry – a community-driven approach in Victoria

Blackberry the weed (Rubus fruticosus aggregate) was first introduced to Australia by European settlers in the mid-1800s as a fruit. It was recognised as a weed by mid-1880s. Blackberry is a serious issue across Australia. It is estimated that blackberry infests approximately 8.8 million hectares of land at an estimated cost of $103 million in annual control and production losses.

Read Case Study