The PolyGone Project: How you can help in the development of a Biocontrol for Polygala myrtifolia

April 2026 Update

This document seeks support for The PolyGone Project: the development of one or more biocontrol agents to reduce the harm done to our environment by Polygala myrtifolia (Polygala). It describes the environmental damage that Polygala does and the risk that it will continue to spread unchecked in Australia. The document outlines the three phases of the project which is now underway to legally allow the introduction into Australia of one or more biological control agents (insects or fungi in this case) and gives an outline of the planning that has been done to date and the works that are currently underway. This document is a 'living' document that will be regularly updated.

A range of groups, agencies and individuals within the geographical areas most affected by Polygala spread are being approached for their support with the hope that all groups will provide a letter of support for the PolyGone project. These letters will be used to emphasise to decision makers that the PolyGone project is well developed, addresses a serious environmental problem and warrants strong consideration for funding.

Polygala as a weed and as a native plant

Polygala[1] is the name of a plant genus of numerous species, most of which were introduced into Australia as garden plants, but some of which are native to Australia. Some of the garden types have escaped from cultivated conditions and one species in particular, Polygala myrtifolia has become a substantial weed problem. It is especially damaging in both natural and cultivated situations in southern Australia. It is now considered a threat to many natural ecosystems through its ability to spread rapidly from seed, to germinate readily and to persist in a wide range of conditions. It can be found in forests, roadsides and amenity areas where it can form full ground coverage that is virtually impossible to penetrate on foot. It can lay waste to what were previously valuable pastures. It grows to around 3 metres tall and, due to its profuse germination and vigorous growth habits, it becomes very dense.

[1] The name polygala comes from two ancient Greek words: 'poly,' meaning much and 'gala', meaning milk. The Middle English word 'milkwort', which has a similar derivation and meaning, is also sometimes used to describe the same genus of plants. Both polygala and milkwort refer to the erroneous belief in ancient times that ingestion of the plant, especially by milk-producing animals like cows, would increase their milk production. That is a myth (another ancient Greek word!).

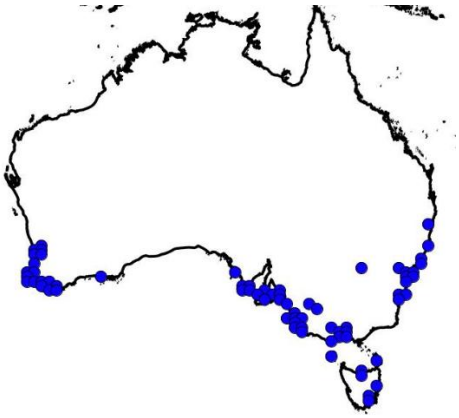
Polygala is in a pest condition on the Mornington Peninsula, the Bellarine Peninsula and the southwest coast of Victoria, as well as along the Limestone Coast and Eyre Peninsula of South Australia. It is present and expanding in southern Western Australia, Tasmania and in coastal New South Wales (especially around Port Stephens)., Polygala is absent from Queensland, the Northern Territory and northern Western Australia. Mechanical and chemical control techniques suppress this weed but are both expensive and generally only successful when applied to small and accessible areas where regular follow-up treatments can be implemented.

Polygala myrtifolia originates in South Africa and for that reason in Australia it does not have any natural predators or pests that would normally keep it in check. It is not eaten by any Australian animals (native or introduced) and it offers no useful nectar, timber or fodder.

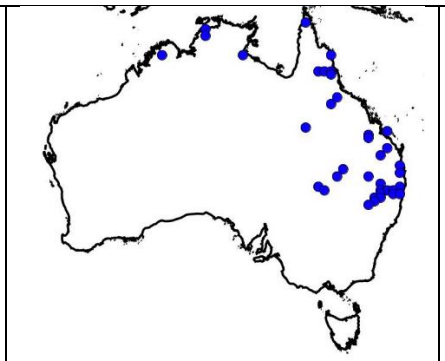
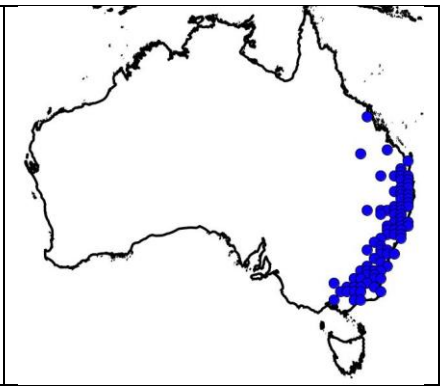
Scientific work to look for potential biocontrol agents was undertaken by the Victorian Government in the early 2000's, including several substantial surveys of South African Polygala occurrences. These studies were reported in the scientific literature and described 5 species of insect pests, and one fungal species, that were identified to feed on, or detrimentally affect, Polygala myrtifolia in South Africa. The PolyGone project looks to assess whether some of those agents could be safely introduced and become a successful biological control agent in Australia.

Despite the fact that it is a declared weed, it is disturbing to know that Polygala myrtifolia and some of its hybrids are still being sold commercially by nurseries. At last count there were 19 different cultivars available for purchase.

In southern Australia there are also two species of Polygala that are considered to be native – Polygala linariifolia and Polygala japonica. They share some of their distribution through Australia with Polygala myrtifolia (see attached distribution maps). Additionally, there are 45 species of Polygala that are present in northern Australia, 44 of which are native, and 36 of those species are only found in Australia. There are also a large number of species within the Comesperma genus which is quite closely related to Polygala. Any biological control agent that is to be introduced into Australia would need to be evaluated for its effect on those other native species and the closely related Comosperma species, as well as a wide range of other native plant species.



The weedy Polygala myrtifolia distribution across (mostly) southern Australia

The native species Polygala linarifolia (left) and Polygala japonica (right). Both species show overlap with the weedy P. myrtifolia.		

Consideration has been given to the need for the introduction of a biological control agent for Polygala, and a funding proposal was put to the Glenelg Hopkins Catchment Management Authority (GHCMA) by Dr. Robin Adair in the mid 2010's. This funding request followed on from small funding allocations from the City of Greater Geelong and the Victorian Coastal Council. The GHCMA decided against funding this proposal, which involves many of the same recommended activities as the PolyGone project, as the scale of the problem was not well understood and the funding amount exceeded its budget. Since that time the problem of Polygala has expanded considerably beyond the GHCMA region and the need for immediate action has reached a crescendo. For those on the ground who are battling Polygala it is clear that physical and chemical means are insufficient to control this weed and that more long-term and effective solutions are needed urgently.

Polygala myrtifolia is expanding in its range each year and projections are that it could become a serious weed of many parts of coastal and near-coastal areas of all southern States of Australia.

Biological Control

The principle of biological control is very simple - bring into Australia an agent that is known to live on the weed and allow it to feed on, or act on, its preferred target, thereby hindering the growth or reproduction of the target species. This practice will not eliminate the weed, rather it will reduce its ability to spread uncontrolled and make it a much more manageable issue.

But the practice of biological control has been prone to error, with the classic case being that of the Cane Toad which was introduced into Australia more than 90 years ago to control cane beetles which were a pest on sugar cane. They were ineffective at the control of cane beetles and instead became a serious pest in their own right. Current practices differ from those in place previously and provide a high degree of certainty that the introduced agent will detrimentally affect the target species alone and not the surrounding Australian plant or animal populations.

In order to do this, all Australian biological control agents need to be thoroughly screened to ensure that they will not become a pest on their own, by testing their efficiency in controlling the weed and how they are likely to impact other similar species (all of native, naturalised and commercially cultivated).

The management of this process, and ultimately the permission to import into Australia any biocontrol agent, is through the Commonwealth Department of Agriculture, Fisheries and Forestry (DAFF). The steps, or phases in the assessment/approval, process are well established.

The first phase is to assess potential agents against the weed pest and a relatively narrow range of closely related species and commercial cultivars to determine if the agent has sufficient selectivity in its activity. This is usually carried out in the country of origin of the agent (in this case South Africa) but utilising plants collected in Australia, so as to not to risk any impact on the Australian environment. If the agent is selective in operation it is likely to be able to enter into Phase 2, subject to approval by DAFF.

Phase 2, which could be carried out in Quarantine in Australia or in South Africa, is where a wide array of related species, and other species from the Australian environment are tested against the agent/s to assess selectivity in operation as well as efficiency in damaging the pest weed. This Phase can only be conducted in registered quarantine facilities and are usually conducted by a State Government organisation such as the Vic Dept of Agriculture. Once again DAFF is unlikely to approve any biological agent which is not proven to be selective and efficient in operation.

Phase 3 is the documentation phase. Approval for release in Australia of biological control agents is tightly regulated and requires consensual approval from all State agriculture and environment departments, as well as potential stakeholder industries. The process is co-ordinated through DAFF. The application requires detailed documentation of justification for biological control, the methods and results of host specificity testing, risk analysis, and potential for suppression of the host. Evidence of consultation with stakeholder industries where potential conflict of interest could occur is mandatory.

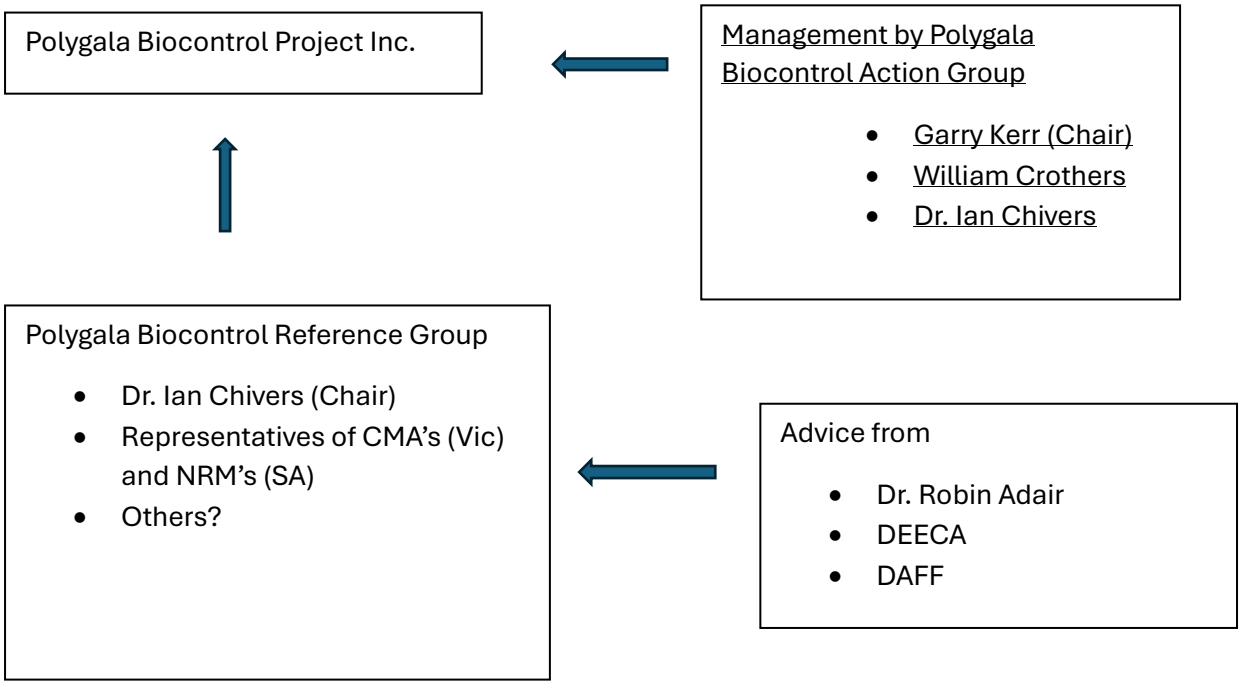
In order to progress this process, an Incorporated Association called Polygala Biocontrol Project Inc. has been formed. It is comprised of people with both an interest in advancing the control of Polygala and management/governance expertise. The group comprises:

- Garry Kerr OAM, Chairman, a Portland Vic - based fisherman and entrepreneur who has lived locally for decades and has established the South West Woody Weeds Action Team. He has dealt with many woody weeds over the decades and is particularly focussed on Polygala, Italian Buckthorn and Sweet Pittosporum as pernicious weeds.
- William Crothers, a Mornington Peninsula–based philanthropist and retired businessman, who supports numerous environmental causes and who battles each week with Polygala in his efforts to restore natural environments.
- Dr. Ian Chivers is the CEO of the Polygala Biocontrol Project and comes with decades of commercial experience in the native grass seed industry where he established and operated successful businesses. He brings scientific rigour, company governance experience and commercial expertise to the Project.

The Project Group will be responsible for governance, financial management, contact with DAFF and stakeholder contact.

It is also proposed to establish a Polygala Reference Group which would provide a wide array of on-ground and scientific expertise to the Project and act as the advisory body to the Project. It is expected that all the relevant Catchment Management Authorities would be part of the Reference Group, that it would meet regularly and that its advice would be relied upon by the Project. It is also expected that the relevant CMA's would contribute financially to the Project. The Reference Group will not have financial responsibilities.

At various times additional expertise would be sought by the Reference Group in order to frame its recommendations. In particular it is expected that Dr. Robin Adair will be consulted regularly, along with representatives of DAFF and the relevant State Departments.



Timeframes Involved

Undertaking a complex task such as this will take several years to complete, some of the time is driven by seasonal factors and the need to expose plants to agents at appropriate times of year for their activity. Likely timeframes for activities in Phase 1 have been developed and can be summarised as follows:

Phase 1 only

Activity	Spr/Su 2025/26	Aut/Win 2026	Spr/Su 2026/27	Aut/Win 2027	Spr/ Su 2027/28	Aut/Win 2028	Spr/Su 2028/29	Aut/Win 2029
Project establishment	Yes							
Australian plant collection etc	Yes	Yes						
South African plant and agent collection etc	Yes	Yes	Yes					
Impact assessment of agent(s)			Yes					
Exposure of agents 1 and 2 to plants			Yes	Yes				
Reporting to DAFF				Yes				
Exposure of Agents 3 and 4 to plants					Yes	Yes		

Reporting to DAFF						Yes		
Exposure of agents 5 and 6 to plants							Yes	Yes
Reporting to DAFF								Yes
Phase 1 completion								Yes

This chart assumes that neither of the two most obvious candidates as agents which will be assessed initially prove to be suitable. In the event that this is not the case then the period of agent collection, multiplication and exposure to target plants will need to continue until a satisfactory agent is determined (or otherwise).

Without detailing the exact steps involved, by the end of Phase 1, the Project will have achieved the following:

- an initial screening (tier 1 host plants) of agents against a range of species of relevance
- a living collection of *Polygala* species and examples of related genera in both Australia and South Africa
- A strong understanding of the genetic similarities and differences between Australian and South African populations of Polygala myrtifolia
- knowledge of propagation and handling requirements for those plant species
- knowledge of propagation and multiplication requirements for the five agents identified as highest priority
- a first assessment of the impact of the agents on species tested to that time,
- an understanding of the Quarantine and other requirements for both plants and agents of both South Africa and Australia,
- a relationship between the Project and the regulators in DAFF, and
- a decision as to whether the Project can proceed to Phase 2

Phase 2 will be a successor to Phase 1, if a suitable agent is identified. This Phase is more complex and detailed but on a narrower range of agents under testing. Some of the work may be best carried out in Quarantine laboratories in Australia and other parts in laboratories in South Africa. No timeframes have been established for this Phase as it is not as yet known if one or more agents, or indeed any agents, will be considered as satisfactory for more detailed assessment. A possible timeframe would be two years for completion of this phase.

Phase 3 is relatively quick as it is essentially a documentation phase and is estimated to need 3 to 4 months to complete.

Progress to April 2026

Achievements so far include:

Collection of seed of Polygala myrtifolia, several other Polygala species and Comosperma species from Australia with samples taken from Victoria, South Australia, New South Wales, Western Australia and the Northern Territory.

Identification of extant populations of Polygala myrtifolia and other Polygala species in South Africa, particularly around Cape Town and sorting out sites that have evidence of the agents in question. The extent of damage on the Polygala types in South Africa caused by the various agents has been noted with damage differing substantially between agents.

Detailed discussions with relevant authorities regarding the program, such as CSIRO and Departments of Agriculture.

Letters of support received from numerous CMA's and other relevant authorities as well as the CSIRO and State Department of Agriculture Vic.

Forthcoming Actions over the next few months:

Tests are underway in Australia to learn the methods of plant propagation from seed of the various Polygala and Comosperma species that have been collected. The aim of this is principally to enable the South African collaborators to propagate plants when the seed is transferred to South Africa (subject to South African Quarantine).

Locations within the Cape Town region of South Africa will be further examined to determine where reliable collections of the various agents can be made.

Studies in South Africa will be undertaken to develop efficient methods of rearing the agents, so that they will be available for screening studies.

A website is to be established where up-to-date information will be provided, where background scientific documents will be stored, where images of the pest and the agents will be available and where donations to the project will be accepted. The very catchy URL will be https://polygoneproject.org

Estimated costs

It has been estimated that the cost of Phase 1 will be $590,325 inclusive of the costs involved in management of the project; staff, travel and laboratory costs in Australia and South Africa; legal costs in establishment and compliance; and contingencies.

There are two assumptions used in making this estimated cost:

1. That none of the initial 4 agents tested is efficient and suitable for use and that testing needs to proceed through to agent number 6. If one of the first-tested agents proves acceptable it may be possible to reduce the costs by not continuing to test further agents. This does imply a choice to accept the first agent that is suitable, without determining if it is indeed the most efficient or most damaging-to-Polygala agent, thus possibly consigning ourselves to a less substantial effect. It is highly likely that the synergistic effect of having at least two agents acting at one time will give greater control of the weed than relying on one agent alone.
2. That South African authorities will allow the importation into South Africa of some seed of Australian species and that the testing can be undertaken in field nurseries in South Africa. In the event that this agreement is not forthcoming, then the same work would be needed to be undertaken in Australia under Quarantine conditions, or possibly in South Africa but under Quarantine conditions. Either of these scenarios will be substantially more expensive than the current estimate, but the scale of increase in costs has not as yet been determined.

Since the project runs over several financial years the costing split between each year is given below:

Financial Year	Estimated cost
2025/26	287,375
2026/27	129,950
2027/28	84,500
2028/29	84,500
2029/30	4,000

Contact Information

Dr. Ian Chivers, CEO Polygala Biocontrol Project

0439 655 551 Email: ianchiversseeds@gmail.com

The PolyGone Project: https://polygoneproject.org

Email: polygoneproject26@gmail.com