

Seeds from the Streets: a program for environmental groups



Manual

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Introduction

Grassland of the Victorian Volcanic Plains

The grasslands of the Victorian Volcanic Plains in south eastern Australia are a treeless ecosystem on flat fertile plains of basalt derived from the newer Volcanic upper Cenozoic (quaternary) formation (Foreman and Walsh 1993, Kirkpatrick et al. 1995). When found by European settlers, most of the grasslands were dominated by *Themeda triandra*, *Rytidosperma spp.*, and *Stipa spp.*, with herbaceous daisies, peas, lilies, and orchids interspersed between the tussocks (Kirkpatrick et al. 1995). This area was productive with rainfall between 500-800mm per annum during the months April to November, (Joyce 2003) making the grasslands a highly desirable agricultural land.

European Settlement

Soon after European settlement the native temperate grasslands and grassy woodlands were transformed into agricultural land (Kirkpatrick et al. 1995). In most areas by 1964 the native plants in the grasslands of Victoria had been completely replaced by alien pasture grasses, clovers, crop plants and weeds (Foreman and Walsh 1993). In 1992 it was estimated that 99.5% of the original grassland vegetation had been destroyed (Kirkpatrick et al. 1995, Williams 2007), the past two decades has shown an intensified decline and destruction of grasslands (Williams et al. 2005). Between 1985-2000 there has been a 44% reduction of remnant grassland area, there has also been an increase in distance between patches (Williams et al. 2005). Many factors contribute to this decline, however around Melbourne, the most destructive is subdivisions and destruction for urban development (Williams et al. 2005). These factors may lead to local extinction, decrease in dispersion of species and decrease in wildlife corridors. Over two decades, on average 26% of the populations of native grassland species became locally extinct (Williams et al. 2006).

Degraded Remnants

All grassland remnants are threatened by some form of degrading disturbance (Kirkpatrick et al. 1995), and therefore require active and ongoing management. In addition to the threat of urban development, native grasslands in Melbourne also face the threat of weed invasion of agricultural and non-agricultural weeds (Williams et al. 2005). Grassland remnants are a mix of high quality and highly degraded patches. In some cases, certain species have become locally extinct, or remnant patches have become slowly infested with weeds like *Nassella trichotoma* (Serrated Tussock). Yet, there are also good quality remnants in cemeteries, aerodromes, roadsides and rail reserves (Foreman and Walsh 1993, Kirkpatrick et al. 1995), including a few remnant patches in Melbourne protected by public reserves (Williams and Cary 2001). Good quality remnants are often small in area (less than 10ha) but have had relatively low levels of degrading disturbances (Kirkpatrick et al. 1995). Importantly, these small high quality remnants have been found to support an extremely high species diversity (Tremont and McIntyre 1994) and represent an efficient means for protecting the diversity of grassland plant species (McCarthy et al. 2006). The persistence of grassland remnants amidst a

The need for a

Seeds from the Streets program.

- 1) Grasslands are becoming extinct through urbanization.
- 2) Remnant grasslands are often degraded, have lost many species, and represent only a subset of their former diversity.
- 3) To protect grasslands as an ecosystem there is a need for community support and education.
- 4) The Seeds from the Streets presents an opportunity to increase the diversity of species in grasslands.



Although Iramoo Wildlife Reserve in urban St Albans, Victoria supports high quality stands of Kangaroo Grass, there is a limited diversity of native species.

Picture: Jessica Harman



Degraded areas at Iramoo Wildlife Reserve are dominated by weeds such as Serrated Tussock. Sometimes native forbs such as Blushing Bindweed are dispersed amongst the tussocks.

Picture: Jessica Harman

fragmented and degraded landscape relies on reservation, sympathetic management and restoration (McDougall and Morgan 2005).

Building Biodiversity

It is considered an important goal in restoring an ecosystem that the desirable plant community is restored as this allows both resistance and resilience to future disturbances (Lake 2013). Resistance is the capacity to survive a disturbance, whereas resilience is the capacity to recover from a disturbance (Lake 2013). Building the complete plant community is important as it provides both resistance and resilience against invasive species. If a growth form is poorly represented in the ecosystem providing a gap, an invasive species will be able to invade (Morgan 1998).

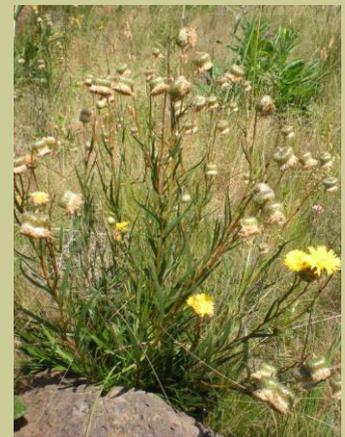
Grassland quality is divided into states, from 'high-quality native grassland' to 'not grassland' (DSE 2011). Transitions between these states can be positive, moving towards 'high-quality native grasslands' or negative, moving towards the 'not grassland' state. The 'high-quality native grassland' state is resilient and resistant to certain disturbances. The pressing question for managers of grasslands is how do we make a positive transition? (DSE 2011). Observing a grassland can prove that there is minimal effort required for the grasslands to move in a negative transition direction between the states, however, it takes a considerable effort to move in a positive transition direction. A positive transition direction requires overcoming a negative pressure as well as starting restoration efforts. If only positive pressure is applied the transition will become static and hover at a state (DSE 2011). Many remnant grasslands (including Iramoo) have been subjected to negative transition pressures such as; heavy grazing, senescence, or local disturbances. These pressures have resulted in remnant grasslands falling into a state with less diversity such as; *Themeda* grassland or *Austrostipa* grassland (DSE 2011). To provide resilience (move in a positive transition direction) in a grassland ecosystem it has been found that establishing native forbs is crucial (Sheley and Half 2006). A range of native forb species will occupy more niches and growth forms, which will facilitate a greater survival and resistance to invasive species (Sheley and Half 2006). As revegetation is a long term investment it is important to start correctly at the beginning (Mortlock 2000).

The Seed Problem

A highly effective revegetation method is direct seeding (Mortlock 2000), it has long been used for trees and shrub revegetation work (Gibson-Roy et al. 2007b). Traditionally, grasslands have been restored using tube-stock a labor-intensive and potentially expensive method for reinstating native forb species (Gibson-Roy et al. 2007b). More recently direct seeding has been used as a method of revegetation in native grasslands with herbaceous species (Gibson-Roy et al. 2007b). Apart from a decrease in labor and cost, direct seeding enables the establishment of large numbers of plants, creates a naturalistic *in situ* distribution and has been found to lead to successful establishment and expansion of grassy vegetation (Gibson-Roy et al. 2007b).

Despite the benefits, direct seeding has the potential to create a new threat for grassland communities. The direct-seeding method requires high quantities of high quality seed to be successful and has generated an increased demand for

At Iramoo, areas infested with Serrated Tussock have been cleaned up and replaced with *Podolepis* sp., producing thick swaths of yellow flowers. The Seeds from the Streets program will provide volumes of native seed for ongoing restoration projects. In the future species rich pockets of forbs will grow between the serrated tussock areas and the remnant Kangaroo grass patches.



Picture: Jessica Harman

When purchasing seeds it is worth considering how many seeds per gram a species produces. Here are some examples of grassland species:

-  Running Postman (*Kennedia prostrata*) 20 seeds per gram,
-  Lemon Beauty Heads (*Calocephalus citreus*) 1200 seeds per gram,
-  Bulbine Lily (*Bulbine bulbosa*) 500 seeds per gram.

local seed (Mortlock 2000). With the degraded state of many grassland sites, locating and harvesting large quantities is difficult. It is predicted that limited availability of large volumes of quality seed will restrict the extent to which restoration goals can be met (Gibson-Roy et al. 2007a). Already there are signs that the current demand may be outstripping supply (Mortlock 2000).

Collecting seed from remnant patches can impact on: the flowering potential of plants; food sources for native fauna; the health of plants; and the soil seed bank. Overall, seed collection from the wild can limit the capacity for natural regeneration and there are concerns that extra pressure for increased seed quantities may lead to further degradation of remnant grasslands.

Not only is collection pressure a serious threat to remnant patches in the local area, the quantity of seed available in the local area is a an issue (Mortlock 2000). As using local seed is important for any revegetation work, methods to increase the quantity of seed available have been designed. Seed production areas in different forms are used to increase the quantity of seed over a short period of time. Establishing seed production areas secures species, ensures continuous supply and can increase the availability and genetic diversity of seed (Vanzella 2008).

The Human Landscape

Whilst protected grassland remnants are in private ownership, most are on public or crown land which is dependent on the public for funding, management and further protection (Williams and Cary 2001). Clearly, there is a need for the broader community to appreciate, understand and value these remnants to ensure that successful conservation strategies continue to be implemented. However, most people would never have seen a grassland of the Victorian Volcanic Plain, or not known that they had seen one (Kirkpatrick et al. 1995). Furthermore, research on the opinion of the public towards native grasslands of Victoria has shown a mixed result. Some respondents described the grasslands as interesting and beautiful, whilst others perceived the grasslands as barren, messy, winds wept, monotonous, and a haven for snakes and insects (Williams and Cary 2001). Education and community-based ecological restoration projects work to improve the aesthetic appreciation and understanding of the ecological values of grasslands. Many governments funding schemes support community-based ecological restoration which not only has the direct benefit of the improvement of natural environments but includes the benefits of education, community engagement, volunteering, exercise and friendship, leading to positive social outcomes such as the feeling of empowerment (Ewing et al. 2013).

Introducing Seeds from the Streets

The Seeds from the Streets program brings communities together to tackle some of the ongoing threats associated with grasslands of the Victorian Volcanic Plains. The program is designed to be run by the community, where friends' groups/community groups use nature strips, school grounds, or other publically accessible spaces to grow herbaceous grassland species for harvesting seed.

Through this program the nature strips will be converted into Seed Production Areas (SPA) in which, monocultures or mixed species crops are grown. The



Grassland in St Albans.

This grassland is divided by the train line, and flanked by a carpark, roads and houses.

The Seeds from the Streets program was designed to be run by Victorian University for the restoration of grasslands in the Brimbank City Council municipality. This manual can be used as a reference for other groups that would like to run a similar program. Comments made in this column provide reflections on the approaches that have been taken by Brimbank Council and Victorian University group.

seed that is harvested from these crops will be used for restoration purposes in nominated local grassland remnants.

The Seeds from the Streets program allocates participants (residents) to one of three models that allow for a variety of circumstances and skills. For each model, a relevant worksheet guides the participant and/ or coordinator through the steps selecting species, SPA preparation method, plant spacing and maintenance requirements. In some cases, to support the 'low input model' community groups may need to form 'working bees' or 'blitz groups' to implement the SPA preparation and planning activities. Once the SPA are set up, they are maintained by residents; duties include watering, weeding and pruning. After the plants flower and seeds are set, the seed is harvested by the resident or with assistance from the Seeds from the Streets group. The coordinator of the Seeds from the Streets project then organizes seed storage and seed preparation for use in the pre-nominated revegetation program.

Project benefits

- ✿ Reduced ecological impacts: The use of nature strips as SPA removes pressure for seed collection off remnant populations (Gibson-Roy et al. 2010). Currently if a group or company does habitat restoration works the seed must first be collected from nearby remnant populations (Mortlock 2000). The seed required for these restoration works in some cases already outstrips the supply, and the demand is continually increasing, potentially resulting in ecologically unsustainable collection practices (Mortlock 2000).
- ✿ Increased species diversity: Many species can be grown using the Seeds from the Streets program. Because the program can potentially access a large number of nature strips, a different species could be cultivated in each SPA. This provides land managers and community groups with a greater variety of species for their revegetation work. The flow on effect is that restored remnant and revegetation areas will have an increased biodiversity that supports a complexity of pollinators, invertebrates and foraging animals.
- ✿ Community education and engagement: The Seeds from the Streets program contributes to community education and understanding of native grassland communities. The program creates the capacity for local residents to positively participate in the conservation and management of nearby remnants, thereby engendering a sense of ownership of urban grasslands. This program can be used on nature-strips, schools, community centers and other publically accessible areas. Whole streets may become SPA, schools may add species to their grounds, or SPA can be cultivated in community gardens. Having close contact to grassland herb species by growing, walking past, or admiring them from the car will educate the community on the hidden treasures found in the grasslands, the large amount of diversity and the attractiveness of the species found in the grassland.
- ✿ Creation of urban habitat: The Seeds from the Streets program will produce small islands of native forbs within the urban sprawl. Each SPA with its respective species will become an urban habitat. These habitats will form links and refuges for pollinators and insects, allowing for easier movement between remnant populations.

Remnant native grasslands provides habitat for many different fauna. For example, Iramoo supports a large population of Striped Legless Lizards. Other wildlife includes;

- ✿ Striped Legless Lizards (*Delma impar*)
- ✿ Tussock Skinks (*Pseudemoia pagenstecheri*)
- ✿ Little Whip Snake (*Suta flagellum*)
- ✿ Brown Quail
- ✿ Black- Shouldered Kite
- ✿ Golden- Headed Cisticola
- ✿ Spotted Grass-frog (*Limnodynastes tasmaniensis*)
- ✿ Common Froglet (*Crinia signifera*)
- ✿ Pobblebonk (*Limnodynastes dumerilii*)
- ✿ Butterflies
- ✿ Spiders
- ✿ Insects



A nature strip covered in a cultivated Creeping Boobiella. The dense cover produces a habitat for insects, and a feeding place for birds.

Transforming the grass nature-strips into a SPA with native forbs increases the availability of pollination sites for pollinators, which will have a positive influence on their populations. Having these habitats will allow for the complex relationships between plants and animals to continue

This manual has been published to guide community groups through the Seeds from the Streets program for establishing and harvesting seed from SPA. It is intended that this manual will cover all aspects of the program, including information that ensures the establishment of successful seed production projects. It includes a manual, species list, worksheets, sign/database templates and appendixes. This program was initially intended to increase seed available for revegetation in the Iramoo Wildlife Reserve in St Albans, Victoria. The first SPA is currently being set up in the St Albans area in the municipality of the Brimbank City Council. However, this manual could be widely utilized by other community groups within the Victoria Volcanic Plains and possibly extended for use by environment groups working in other ecosystems.

Overview of Program

Identifying the need

When considering establishing a Seeds from the Streets project, it is important to identify the need for the seed that will be produced. This includes identifying the receptor site for the seed and meeting with land managers to ensure that the project fits in with any restoration plans that have been developed for the site. This information will help to guide species selection, where to source stock seed for the establishment of SPA, the amount of seed required and project time frames. This information can then be used to seek funding and participants for the project.

Compliance and support

Due to the many different local government by-laws and regulations, a conversation with the council will be needed to determine the feasibility and any compliance problems that might be encountered establishing SPA on nature strips (or other public areas). Often council have regulations about the type of plants and how they are planted on nature strips. For example, one regulation that many councils have is that foliage must not be more than 30cm high, however for most grassland forb species this will not be an issue. In some cases it may be necessary to locate SPA in other public areas such as; schools, community centres and churches.

Another regulation to clarify with the council is the use of signs to educate and promote the program; some council will allow stencil signs on the footpaths, or signs hanging from property fences.

Having a positive relationship with the council, may lead to other opportunities. These may include: collaboration, support, funding, and planning assistance, project promotion in newsletters and council fairs/community events. In some instances, the environment department within local councils might take on the role of coordinating the Seeds from the Streets project.

Organisation in the early stages

The Seeds from the Streets program is designed to be used by community groups to increase the amount of seed available for their revegetation work in local grasslands. It is intended that this program can stand on its own; either with funding, or donations from community group members.

The organization of the Seeds from the Streets program is of importance. For small groups a single member may be able to organize and coordinate the program. However for some groups a committee or even a paid coordinator maybe required. Some duties required by the coordinator would be: seeking funding, organizing source plant stock, determining suitable/required species, organised assistance for residents, keeping a database of records from the project, collecting harvested materials and organizing storage for the harvested material. Aspects such as seeking funding and organizing the source plant stock needs to be completed before preparation of the SPA begins.

For a start up step-by-step guide see Appendix 4.

The receptor site for our example is Iramoo Wildlife Reserve. This grassland is located on Crown Land in St Albans, Victoria.

This site is infested by Serrated Tussock, which also provides habitat for Stripped Legless Lizards.

The aim for Iramoo is to transform the infested areas into grassland herb-rich dominated by Kangaroo Grass. To add to the diversity and resilience of the grasslands herbs are an integral part of the ecosystem and are found in the inter-tussock spaces.

We talked to the Brimbank City Council, and found that we could use nature-strips for SPA areas but the vegetation had to be less than 50cm and no vegetation within 10m of an intersection.

The council was in support of the program and communicated it to other groups and interested people. The positive relationship held with the council allowed us to go to expo's and BBQs held by the council to engage the community.

It is estimated Seeds from the Streets project would run in one year cycles, depending on the end purpose and species selected. Figure 1 illustrates the typical cycle of the program, beginning in the New Year with site preparation, and finishing near Christmas with the seed harvest. During autumn the SPA is planted out with selected species, and during spring the SPA will be bright with flowers. For the rest of the year general maintenance is required.

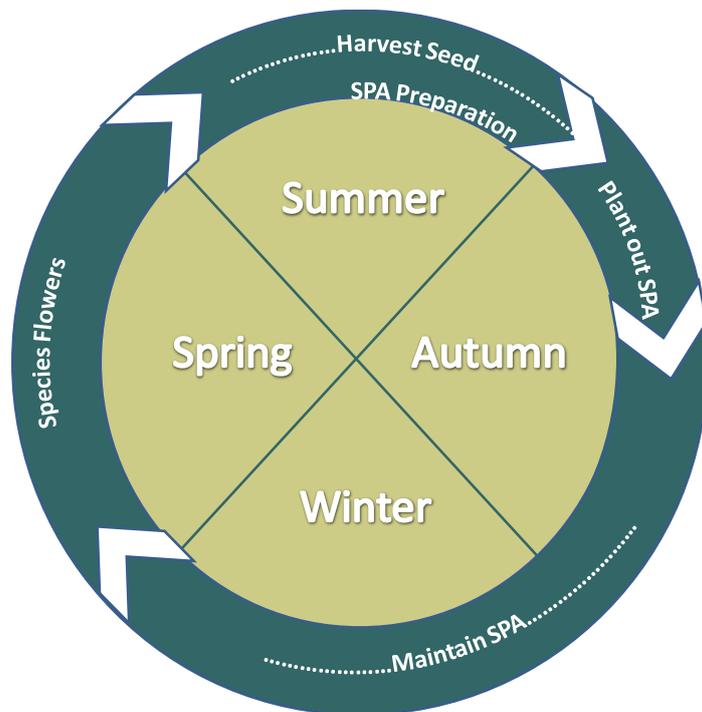


Figure 1: Year cycle of Seeds from the Streets Program

Engaging participants in a Seeds from the Streets project

Seeds from the Streets program relies on local residents volunteering their nature strips and time to the project. Therefore considerable effort must be made in seeking participants for the program. Communicating with and recruiting participants from within an environmental community group/organization is likely to be straightforward. However engaging participants from the general public may be more difficult. Some approaches that could be considered include;

- 🌱 information sessions at local libraries/festivals/markets/shopping centers,
- 🌱 signs and posters in public areas,
- 🌱 newspaper articles,
- 🌱 social media,
- 🌱 developing incentives schemes with the council,
- 🌱 communicating with like-minded groups(e.g. Seed Savers, gardening groups),
- 🌱 using local media outlets (e.g. council newsletters, local radio stations, school newsletters)

Our group went to the Brimbank Sustainability Expo to engage with the community and sign up participants.

At the expo we had a large sign and flyers, as well as a sign up sheet and a link to an online survey.

Our group has also made use of the Friends of Iramoo network to spruik the Seeds from the Streets program for Iramoo.

📄 See Appendix 8 for copies of some of these types of documents

How many participants? This is an important question to consider at the funding stage of the Seeds from the Streets program, to ensure sufficient resources are available to complete the cycle from site establishment to harvest. The number of participants is likely to be guided by the size of the grassland restoration project and also by the capacity of the group to coordinate multiple SPA- a few well-managed SPA will result in a better seed harvest return than numerous poorly managed SPA. If there are more participants than funding, a waiting list for the following year and encourage participants to assist with the establishment, maintenance and harvest of other SPA involved in the project. Participants on the waiting list may also be able to assist with coordination and funding applications for the next SPA cycle.

Communication is important throughout the program. Not only does the initial setup of SPA require coordination and communication but it is important to provide support and encouragement in the following months until the harvest as well. During these months there may be questions from participants, updates from the coordinator, updated information, and photos of the SPA. Of course, don't forget to celebrate the success of harvest with program participants. Therefore setting up a communication pathway is important. Using a website, social media or email group may be a useful method of keeping participants informed.

Selecting a participant model

Participants will bring a variety of attributes to the Seeds from the Streets project. For example, some participants may have previous experience growing native plants, whereas others may have time limitations or physical limitations. To cater for these differences and ensure that the program can be accessed by a broad cross-section of the community, three models have been developed.

Before developing an SPA a model must be selected for each participant. This will enable the group/coordinator to estimate how much assistance the participant requires and plan accordingly. A survey has been developed as a tool to help determine which model will best suit each participant (Appendix 8, survey). Additionally, the species selected for each SPA must be considered in regard to the model, as some species will require more maintenance or specialized seed harvesting skills than others (see Species List Appendix 1 for the recommended models for species).

Once the model is selected the worksheet (Appendix 6) can be drawn up for each participant and their SPA. The worksheet provides a step-by-step schedule of tasks and indicates which activities the participant will need to complete by themselves and activities where assistance will be provided by the group/coordinator. The worksheet also determines how many initial plant stock are required and the method of site preparation and planting arrangements. It would be useful for the worksheet to be copied, with copies going to both the coordinator and resident.

An initial funding application submitted to the Thiess Community Grants program.

10 nature strips seemed an appropriate starting point, in that it would produce a good volume of seed whilst not being an overwhelming challenge in terms of organisation and coordination.

Finding participants for 10 nature strips seemed an easy task with our large network of contacts.

Matching participants and models:

Bob: Bob has not much experience in gardening, and he is not confident with technical aspects. Bob is assigned the **Low input model**, where the group sets up Bob's SPA and harvests the seed. So Bob can water, weed, and watch it grow during the year.

Jane: Jane has experience growing, and cropping her garden, she is confident in building her garden and using different species. Jane is assigned the **High input model**. Once Jane is given her materials she is ready to start, and is happy to work without assistance. Of course Jane can ask advice and help at anytime.

Mary: Mary loves her garden and can work in it, but she has never built a garden and doesn't know much about native plants. Mary is assigned the **Medium input model**. Her SPA is built and she gets advice from the group on how to look after her species, and how to harvest the seed.



Model 1: High Input

The high input model expects a competent gardener in the participant. They are able to follow instructions and complete tasks themselves. The participant in this model is in control of the SPA from beginning to end. The group/coordinator provides source plants and set-up materials.

Model 2: Medium Input

The medium input model caters for a gardener that is able to maintain plants and harvest seeds (after being provided information) but needs help setting up and getting started. The group/coordinator provides source plants and set-up materials.

Model 3: Low Input

The low input model is for interested participants that have limited capacity to implement Models 1 or 2. In this model the SPA is established for the participant. The participant is shown how to maintain the SPA by watering, weeding and pruning. The seed is harvested by the group/coordinator.

Figure 2: Participant models

Method of Program

Species selection and sourcing stock

There are several aspects to consider when choosing species for your groups program, or for your own nature strip.

- ✿ Species required in your grassland. These are the desired species which were determined in consultation with the land managers.
- ✿ Species for which source seed stock is available in order to produce plants for the SPA
- ✿ Species that are suited to growing in a nature strip and comply with any local government regulations.
- ✿ Species that match the model of program that has been selected for the participant.
- ✿ Species that match the level of experience of the participant.
- ✿ Species that can be grown in a monoculture or mixed with one or two other species. When choosing species consider the growth habit of the plant, does it die off after winter? Does it have foliage all year? It is suggested that the lily species be planted with a species that has continuous cover as lilies die back after flowering. For example, Blue Grass Lilies *Caesia calliantha* can be grown with Common Everlasting *Chrysocephalum apiculatum*, or Wallaby Grass *Rytidosperma* sp.

A list of plant species specific to the Kelior Plains area that would be suitable for use in SPA can be found in Appendix 1. These species were chosen to fit with council guidelines, requirements for local grassland communities and also for their seed producing habit and feasibility. Some of the species can be planted out as monocultures (single species) or as a mix of species.

Sourcing Seed Stock

To start a SPA the initial seed stock of the species required for the receptor grassland site must be acquired.

These seeds need to be sourced from plants that are of a provenance that is suitable for introduction to the grassland receptor site. Provenance is important in that it ensures that the genetic makeup of the plants is suited to local conditions, resulting in higher survival rates and robust growth habits (Mortlock 2000). Whilst distance of source seed from the receptor site may provide a guide to provenance (locally sourced seed is more likely to be of appropriate provenance), conditions such as local climate patterns and geology should also be considered. It has been found that seed with high genetic diversity has a greater revegetation success than low genetic diversity (Broadhurst 2007). Reports show that two-thirds of respondents involved in native seed company sectors consider that seed should be of local origin (Mortlock 2000). The reasons respondents gave for using local seed are that: local populations often show a home-site advantage and non-local genotypes

The species required in the receptor grassland is an important consideration.

What is the purpose of your groups completing the Seeds from the Streets program?

What species does your receptor site require?

Initially the group will purchase speedlings from a local nursery, who has local seeds.

In the following years we will hopefully collect our own seeds and grow up speedlings for more SPA.

Speedlings were chosen for the first year to enable a start when funding is received.

may be maladapted to local environmental conditions (Vander Mijnsbrugge et al. 2010), also using local plants complements other native plants and animals in the area (Mortlock 2000).

Once provenance is determined and parent plants from which seed can be collected are identified the collection process must be considered. To collect seed permits need to be acquired from the local government, and permission gained from the land owners. Appendix 3: on Collecting and Storing Seed, provides information on collection practices, laws and regulations.

It may be possible for the Seeds from the Streets group to collect the seed, or employ a professional seed collector. Collecting seed is not an easy operation; it needs to be timed in advance of the establishment of an SPA for the Seeds from the Streets program. In some cases, seed may need to be collected up to a year prior to the establishment of the SPA, in order to allow time for propagation of stock for planting. Collection pressure on remnant vegetation needs to be considered and this may restrict quantities available for the Seeds from the Streets program. For small remnant patches collections from multiple sites may need to be pooled to increase the quantity and genetic diversity of seed.

Appendix 1 (Species List) provides some harvesting information for various grassland species and Appendix 3 provides further information and links to other documents on collecting seed.

Plant establishment options

There are three options for planting out the SPA, these options are designed for optimum growth and seed production.

Tube stock.

Tube stock are well developed young plants. They can be purchased from many local indigenous nurseries at wholesale prices for community groups (Appendix 2). As each species varies in growth size please consult the Species List (Appendix 1) or ask your nursery for the required amount of tube-stock to plant out your nature-strip. When planting tube stock, dig deep into the SPA, to ensure sufficient room for root growth.

NOTE: More than three months is required to grow up tube stock that is ready for planting.

Direct Seeding.

For some species direct seeding maybe a feasible option. However this may require large inputs of time and effort, to collect a sufficient volume of seed. The purchase of seed may be costly (Appendix 2). Another issue with direct seeding the nature strip is that there is wastage of the valuable initial seed stock, this is especially important to consider for rare or difficult to obtain seeds.

Speedlings.

Another option for groups is to either grow their own speedlings or buy them from a nursery. Speedlings are grown in trays or jiffy pots (egg cartons) and then planted out after the first true leaves have emerged. These can be grown on the veranda or in the backyard. Using speedlings reduces the risk of directly sown seed not growing on the nature strip, and also allows the plants to get started where they will not be trod on or eaten by birds. When planted into the SPA speedlings allow for good root development. The hole required to plant speedlings is smaller, which reduces disturbance to the soil and subsequent weed growth. It is important to remember during establishment that speedlings have a high water requirement. As with tube stock, speedlings need to be organized around 3 months before planting out date.

Using speedlings creates a great opportunity for another community group or organisation to be involved. For example: schools, aged care homes, scouts and other groups.

Nature-strips.

This program is designed for a SPA to be set up on nature-strips. In general urban nature strips are 8-11m long and 2m wide, this area is located between the footpath and the road.

Transformation of nature-strip.

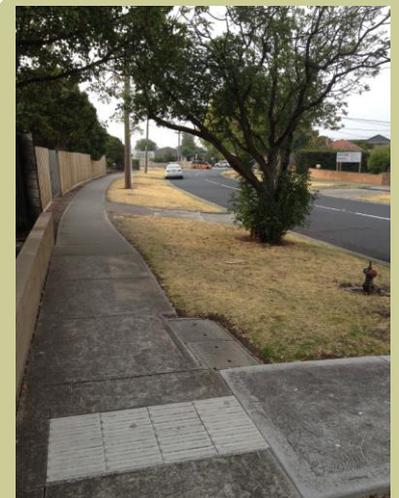
There are several methods to transform a grass nature-strip into a SPA. These different methods allow flexibility in determining which method best suits your nature-strip. Factors that may influence the decision are: council local laws, size of nature strip and funding available for the work. (Please note that these methods are not inclusive of all methods available.)

Transformation of nature-strips must occur over summer (Figure 1), in preparation for autumn planting, to produce a harvest in the first year.

In order to have a successful SPA weed species must be destroyed or at least kept at bay. Initially the difficult part is transforming a grass nature-strip into a grass free nature-strip. Once the grass is removed, seed or re-sprouting material may still be present in the soil. However, these will be at a controllable level that can be regularly managed as part of the maintenance of the SPA. This is the benefit of the using nature-strip areas as SPA, as usually nature strips are surrounded by concrete and asphalt decreasing the problem of incoming weeds. Most nature strips are relatively small manageable areas that can be regularly maintained- most people would pass their nature strip on a daily basis, enabling a rapid response to any emerging weeds.

The methods of transformation are:

Herbicide application.



Use a glyphosate-based herbicide (Roundup™) to kill the grass. The nature-strip needs to be sprayed in a consistent and thorough manner. After two weeks re-spray any grass or weeds that have been missed or have grown. Wait another week for the grass to die.

BENEFITS: Because nature strips cover a small area this method requires minimal time and resources. Does not require removing soil or sod.

PROBLEM: Participants may not be comfortable with the use of herbicides on their nature strip. May require soil or a mulch to be applied to plant into.

NOTE: Ensure all safety regulations for the use of herbicide are followed. It is also best not to spray on rainy or windy days.

🌿 Physical removal of lawn.

Remove the sod (grass) by cutting with a sod cutter. This leaves strips of sod that can either be taken away or moved away as compost.

BENEFITS: The weed material is completely removed.

PROBLEMS: Requires soil and mulch to be brought in to replace sod and soil removed. Residents require somewhere to dispose of the sod. Need to hire a sod cutter.

NOTE: Ensure safety regulations of the sod cutter are followed. Also determine if your local council tip will accept sod.

🌿 Sheet Composting.

This method is derived from permaculture gardening where a layering technique is used to form a soil structure on top of the grass until it dies. This method allows for plants to be planted out immediately.

To begin the grass must be cut as short as possible, then cardboard or newspaper is used to cover the entire area ensuring there are no holes. This layer is watered and covered with a layer of compost and then covered with mulch. To plant out tube stock an X must be cut into the paper when planting to allow for root growth.

If weeds begin to come through the sheet composting, spray or pull the weeds out by hand.

BENEFITS: Able to plant out directly.

Our first nature strip to be transformed to a SPA was a trial that combined some of these methods.

- 🌿 Firstly roundup was applied to the grass, which took 15 minutes to apply and used approximately 100ml in 15L of water.
- 🌿 Overhanging grass was cleared away.
- 🌿 After one week vegetation was yellowing, so a layer of black plastic was laid to start the solarisation process.



- 🌿 The black plastic was pegged down and covered with sugar cane mulch to look aesthetically pleasing.



- 🌿 After 8 weeks the plastic will be removed and a layer of newspaper will be layered with mulch on top. The plants will then be planted through the newspaper.
- 🌿 Cost of the solarisation process was;
 - 20m black plastic = \$23.94
 - 20 Pegs=\$7.97
 - Sugar cane mulch = \$15
 - Twine to hold down mulch= \$6.98

PROBLEM: Requires a lot of materials. The height of sheet composting could be above the footpath.

NOTE: This method involves a lot of compost and mulch, the cost of this method should be considered when applying for funding.

🌱 **Solarization.**

This method uses solar heat to kill seed in the top 12-18 inches of soil.

Using black plastic or sheet metal cover the lawn and hold down with rocks/bricks or pegs. Leave in place for at least 8 weeks to ensure that the grass is dead. This method works best in summer weather and may need to be applied for a longer period during other seasons of the year. Remove the plastic when finished and leave the dead grass to compost in place.

BENEFITS: Kills weed seed and plant material. Does not require much time or effort.

PROBLEMS: Some residents may not like the appearance of the black plastic. The black plastic or sheet metal may present a trip, litter or flying debris hazard. Ideally, this method would be done in summer, when the temperature is hot enough.

Planting out the SPA

After the SPA has been transformed from the grass nature-strip then it is ready to be planted out with the selected species. Planting out occurs in autumn, as this is when most species would be germinating and growing with the wetter/cooler weather.

As designed on the worksheet for each nature strip the plant spacing will already be defined for the species selected. To determine plant spacing; a plant should be spaced so that when fully grown it only just overlaps with its neighbor. Once calculated how many plants are required for the length and width of the nature-strip, the total plants required is the two values multiplied together.

As discussed earlier, some species die back after flowering, or have minimal foliage and are recommended to be planted with a companion to form a mixed species SPA. Some species that could act as companions are grasses such as *Themeda triandra*, *Rytidiosperma* sp, or daisies such as *Calocephalus citreus*, or *Leptorhynchos squamatus*. Using companion plants to form a mixed SPA allows for continuous foliage cover over the SPA. Continuous cover is important for growth of the plants, as well as restricting weed growth.



Evans St Grassland, Sunbury
Picture: Jessica Harman

Maintenance of SPA

In order for the SPA to produce seed each year some care and love must be given throughout the year. The maintenance for the SPA is not unlike normal gardening duties conducted inside the property.

- ✂ Weeding: To maintain the SPA as the desired species.
- 💧 Watering: During periods of extreme heat or when settling the SPA in.
- ✂ Pruning: Ensure no parts of the plants are obstructing footpaths, driveways or the road. It is also important to prune some species after flowering has finished allowing for re-growth.
- 🌱 Replanting: any plants that do not survive.
- 🐛 Pest control: Species such as *Bulbine bulbosa* and other lilies and peas are heavily predated on by slugs and snails. Control measures of bait or physical removal will need to be considered when growing these species.

Harvest

Harvest time is an important step for the program. It is important to remember at this point that labeling all seed is extremely important, it could be beneficial to use a database to keep track of all the nature-strips involved and the seed produced. However, at a minimum the seed must be labeled with species, date, amount of seed, place of origin and SPA location.

Knowing when to collect seed is critical to the harvest. The specific time to collect seed depends on when seed becomes mature and changes colour. This could vary each year depending on rainfall and temperatures. It is also important to understand if species retain seed after maturity or drop seed immediately. The peak seed collection periods occur over the drier, warmer months.

The Species list (Appendix 1) shows times and methods for collection of seed. For more details and other species, there are recommended texts in the bibliography.

For most species within this program seed is collected by hand or removed by secateurs. Only mature seed should be collected and several collections may be required over a couple of days to maximize the amount of seed harvested. There are some species that are easier to harvest before maturity, for example species from the pea family, as they are difficult to collect from. If collecting from many nature strips (e.g. for low input model nature-strips) seed collecting pouches may be a useful investment. Otherwise place collected material into large envelopes or paper bags. For short term storage of seed or whilst waiting for the seed to dry, spray the inside of a storage paper bag with household fly/insect spray to kill any insects in the seed. To avoid fungal problems do not collect seed in wet or humid conditions.



Wahlenbergia communis Tufted Blue Bell
Picture: Jessica Harman

During December one member of the group helped a volunteer from Friends of Iramoo harvest Showy podopis. Over an area around the size of 4 nature strips, they collected seed heads that were fluffy and where the seed fell off the head easily. The seed was collected into pouches that were worn like an apron. In around 1hr they collected around 100g of seed. The member commented on how easy collecting seed was; on a nature strip it would take no time at all.



Seed Extraction

After harvesting seed many species require an extraction process to remove the seed from the fruit or seed head.

See the Species List (Appendix 1) for specific instruction or further reference in the bibliography. Generally the seed heads or fruit need to be dried. Drying can be done in small allotments in paper bags or large envelopes. Once dry the seed needs to be removed from the seed head or fruit. In some cases the seed will fall out; however threshing may be required for some species. There are other methods to extract seed such as, soaking, breaking, grinding against mesh. The method required is dependent entirely on the species and type of fruit produced.

Seed Storage

Seed storage is an important factor of a SPA as seed stored poorly can have decreased germination. It is important for all seed to be labeled correctly with as much information as possible. Once handed back to the Seeds from the Streets coordinator the seed should be stored in airtight containers (e.g. Screw top jars) until needed for work. The database discussed above would also be beneficial in the seed storage stage as it would help keep track of collection and use-by dates of the seeds. Some species have different storage requirements, for information on specific species check the Species List (Appendix 1) and the references provided in the bibliography.

Data management

Recording data is important when dealing with provenance, species and many people. Information of each species, and each set of SPA is important when using the seed in the receptor sites.

There are many ways to record data, from a simple spreadsheet to complex database systems. However whichever method is chosen as long as the information is recorded, saved and accessible is all that matters. Keeping the data organized is a task for the coordinator.

Some important information that should be recorded;

- 🌿 **Initial Seed stock**
 - 🌿 Species
 - 🌿 Provenance
 - 🌿 Date of collection
 - 🌿 Amount collected
 - 🌿 Size of population
- 🌿 **SPA**
 - 🌿 Name of resident
 - 🌿 Address of SPA
 - 🌿 Contact details for resident
 - 🌿 Model selected
 - 🌿 Transformation method
 - 🌿 Plant out date
 - 🌿 Funding amount required
- **Species**

Victoria University is providing the storage facilities for the Seeds from the Streets program in Brimbank. Consider contacting your local University or Tafe to see if they can help with storage.

A database was made by the group using Microsoft Access. Microsoft Access is an easily available program included in most Microsoft suits. Using YouTube and online forums a group member was easily able to produce a database.

- 🌱 Harvest date
- 🌱 Harvest amount
- 🌱 Storage process
- 🌱 Amount taken for restoration work
- 🌱 Location of receptor site
- 🌱 Date of seeding
- 🌱 Amount taken for SPA
- 🌱 Location of SPA
- 🌱 Date of planting out

NOTE: there may be other information that needs to be included.

Project funding and costs

Funding is of major importance for this project, however after initial setup costs of each SPA there will be minimal costs afterwards. Funding should be considered well in advance to the calendar time of the Seeds from the Streets programs some aspects may need extra planning and initial plant stock need to be grown before commencing.

Appendix 5 has links to websites on how to write funding applications and where to find funding.

Funding is required for Seeds from the Streets program from the beginning. Depending on how many nature strips your program will do will affect the funding required, here are some guides to the costs involved in Seeds from the Streets. This guide is based on a program with 10 nature-strips. With one set of tools shared between the 10 nature strips as it is assumed residents have their own tools. This guide is based using sheet composting method to transform the nature strip. Two values are produced for the total this is for each method of initial plant stock. The coordinator is based on a half day per week. Once set up there will be minimal work, except answering questions. During harvest time there will be more work collecting seed from residents. It is difficult to judge how many hours would be needed per week. In some groups the coordinator would be a volunteer position; it is recommended for bigger programs that someone is employed.

Description	Cost	Total cost
Coordination part-time ½ day/week	\$20/h = \$80 ½ day/week	\$4160
Cost to grow seeds to seedlings		
Initial seed if purchased	~\$2 /g	
Viable seed per gram for e.g. <i>Chrysocephalum apiculatum</i>	2000/g	
Plants required for 1 nature strip of <i>Chrysocephalum apiculatum</i>	140	
Trays	5trays of 48 holes=\$20	
Potting mix	50 L= \$24	
		\$48
	10 nature strips	\$480
Plants for 1 nature-strip		\$210

if purchased			
Initial plants if purchased	~\$1.50 per plant		
	10 nature trips	\$2100	
Transformation of 1 nature strip			
Sheet composting method			
newspaper	free		
compost	\$100m3		
Mulch (straw)	\$54/21m2		
		\$154	
	10 nature strips	\$1540	
Harvesting 10 nature strip			
Paper bags lunch size	\$2.60		
Storage jars	100~\$20		
		\$22.6	
Tools			
Secateurs	\$20		
Shovel	\$30		
Trowel	\$20		
		\$70	
		=\$6272.6	Total for growing speedlings
		=\$7892.6	Total for buying plants

Table 1: Costs

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Appendix 1: Species List:

Please note: This list is not a complete list of all species possible to grow for this program. Use this list as a guide. Availability and receptor site requirements need to be considered for each species.

Photo Credits.

B.S- Bill Strong (Nature Share Website- <http://natureshare.org.au/>)
C.C- Chris Clarke (Nature Share Website)
C.F – Chris Findlay (Flora Victoria)
G.DN- Giorgio De Nola. (Nature Share Website)
J.H- Jessica Harman (Author)
R.B-Russell Best (Nature Share Website)

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Species	<i>Arthropodium strictum</i>	<i>Bossiaea prostrata</i>	<i>Brachyscome basaltica</i>
Common Name	Chocolate lily	Creeping bossiaea	Basalt daisy
Height/Form	H:60 cm	Prostrate W: to 1m	H:30-60cm
Description	Erect perennial lily with grass like leaves and purple flowers with a chocolate scent. In summer, plants die back to tubers and re-sprout in autumn.	Sprawling plant with small, oval, dark green-grey leaves.	Small perennial herb with narrow linear leaves spread along stems.
Collection Method	Harvest stalks when papery capsules turn brown and brittle. Place upside down in paper bags, dry until capsules have opened. Thresh lightly to release seed.	Pods can be collected close to maturity, as they turn brown. Then left to fully dry.	Collect heads by hand into a paper bag. Allow to dry. Extract any unreleased seeds by hand. Florets fall off, leaving mature seeds.
Collection time	Dec-Jan	Sept-Dec	Dec-Feb
Seed Treatment	Store 2-3 months before sowing	Treat with hot water and soak before sowing. May be stored for a few years.	Store seeds below 15°C.
Model Suited	1	1	3
Monoculture or Mixed SPA	Mixed	Monoculture	Monoculture
Survivability	Susceptible to slug and snail damage.		Susceptible to slug and snail damage.

			
Species	<i>Brachyscome dentata</i>	<i>Brunonia australis</i>	<i>Bulbine bulbosa</i>
Common Name	Lobe-seed daisy	Blue pincushion	Yellow bulbine lily
Height/Form	H: 30cm W:30cm	H: 20-30cm W:15cm	H: 40cm
Description	An erect or spreading perennial herb, with narrow leaves.	A rosette of silky grey-green leaves and striking blue pincushion like flowers. Producers suckers.	A tufted perennial herb with green, succulent, onion-like leaves and yellow flowers on tall flower stems. Plants die back in summer to tubers.
Collection Method	Collect heads by hand into a paper bag. Allow to dry. Extract any unreleased seeds by hand. Florets fall off, leaving mature seeds.	Cut stalks containing seed head with secateurs. Extract seeds by breaking up the seed-heads.	Harvest stalks by hand or with secateurs when papery capsules turn brown and brittle. Place stems upside down in paper bags. Dry until capsules have opened. Thresh lightly to release seed.
Collection time	Dec-Feb	Dec-March	Dec-Feb
Seed Treatment	Store seeds below 15°C.	Place seeds in refrigerator to stratify 2 weeks before sowing.	Store seeds 2-3 months before sowing.
Model Suited	3	1	1
Monoculture or Mixed SPA	Monoculture	Monoculture	Mixed
Survivability	Protect from slugs and snails		Susceptible to slug and snail damage.

Species	 C.F	 J.H	 J.H
	<i>Burchardia umbellata</i>	<i>Caesia calliantha</i>	<i>Calocephalus citreus</i>
Common Name	Milkmaids	Blue grass lily	Lemon Beauty Heads
Height/Form	H: 40cm	H:30cm W:20cm	H:10-30cm W:30cm-1m
Description	Inconspicuous grass-like leaves. Plant will die back in summer to a rootstock.	Forms a compact leafy tussock, with numerous spikes of blue-purple flowers. Dies back to root stock in summer.	A perennial forming a tuft of narrow silver-grey leaves. Very hardy. Dies off after flowering. Old flower stems need to be removed before reshooting in winter.
Collection Method	Hand pick capsules when red-brown and brittle. Dry in paper bag. Thresh lightly to release seed.	Harvest stalks by hand or with secateurs when papery capsules turn brown and brittle. Place stems upside down in paper bags. Dry until capsules have opened. Capsules may need to be broken to release seed.	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.
Collection time	Nov-Feb	Oct-Jan	Oct-March
Seed Treatment	Smoking seeds enhances germination. Store 2-3 months and sow in autumn.	NA	NA
Model Suited	1	1	3
Monoculture or Mixed SPA	Mixed	Mixed	Monoculture
Survivability			

Species Common Name Height/Form Description Collection Method Collection time Seed Treatment Model Suited Monoculture or Mixed SPA Survivability			
	<i>Calotis scapigera</i>	<i>Chrysocephalum apiculatum</i>	<i>Chrysocephalum semipapposum</i>
	Tufted Burr-Daisy	Common everlasting	Clustered everlasting
	H:10-20cm Spreading	H:10-30cm W:50cm-1m	H:30cm-1m Spreading
	A vigorous groundcover plant spreads by runners which root. Fruit is burr like.	A dense everlasting daisy with woolly, grey foliage. Sever pruning rejuvenates plants and encourages new growth. Frost hardy.	Numerous erect stems with soft, narrow, woolly, grey-greenish foliage. Cut back in winter to allow for new growth.
	Hand pick capsules when red-brown and brittle. Dry in paper bag. Break up the seed head by hand.	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.
	Sept-Feb	Sept-Feb	Oct-Feb
	NA	NA	NA
	3	3	3
Monoculture	Monoculture	Monoculture	
		Drought tolerant	

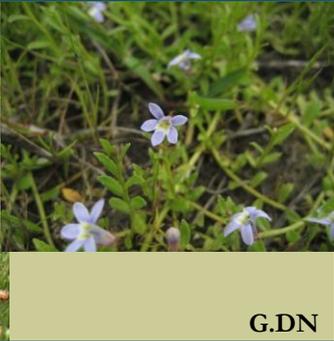
	 C.F	 J.H	 C.F
Species	<i>Comesperma polygaloides</i>	<i>Convolvulus angustissimus</i>	<i>Coronidium rutidolepis</i>
Common Name	Small milkwort	Pink bindweed	Pale swamp everlasting
Height/Form	H:35cm	Prostrate	H:40cm Spreading to 1m
Description	An erect slender perennial herb with narrow blue-green leaves. Fast growing.	A delicate groundcover with narrow, hairy, grey-green leaves. Leaves lanceolate to heart-shaped	Hardy perennial plants with grey, linear to oblanceolate leaves. Cut back in winter.
Collection Method	Collect seed, allow to dry. Sheds seed quickly. Store at room temperature.	Hand pick the pods. To extract the seed, dry and crush pod.	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.
Collection time	Nov-Feb	Oct-Feb	Sept-March
Seed Treatment	NA	Nick the thick seed coat with razor or dry heat at 60-70°C for 30min before sowing.	NA
Model Suited	3	3	3
Monoculture or Mixed SPA	Mixed	Mixed or Monoculture	Monoculture
Survivability		Plant at 60cm apart.	

	 C.F	 C.F	 C.F
Species	<i>Coronidium scorpioides</i>	<i>Craspedia variabilis</i>	<i>Cullen parvum</i>
Common Name	Button everlasting	Common billy button	Small scurf-pea
Height/Form	H:30cm W:15-20cm	H:30-50cm	H:15cm W:50cm
Description	A perennial everlasting daisy with soft green leaves.	A perennial with a basal rosette of broad soft grey-green leaves.	Prostrate plant with numerous stems growing from a central rosette.
Collection Method	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Pods can be collected close to maturity, as they turn brown. Then left to fully dry.
Collection time	Oct-Feb	Sept-Dec	Oct-Feb
Seed Treatment	NA	NA	NA
Model Suited	3	3	3
Monoculture or Mixed SPA	Monoculture	Monoculture	Monoculture
Survivability			

			
	L. von Richter ©The Royal Botanic Gardens & Domain Trust	C.F	J.H
Species	<i>Cymbonotus lawsonianus</i>	<i>Desmodium varians</i>	<i>Eryngium ovinum</i>
Common Name	Bears ear	Variable Tick-trefoil	Blue Devil
Height/Form	H:5cm rosette	Prostrate	H:50cm W:50cm-1m
Description	A flat rosette perennial herb. Fast growing plant.	A trailing plant with trifoliate leaves. A hardy plant when grown in sheltered position.	An open perennial, with stiff prickly leaves and globular, spiky, steel-blue flower heads in summer.
Collection Method	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Pods can be harvested close to maturity (when they turn brown) and fully dried in a warm area.	When seed heads are ripe, harvest entire stalks by secateurs, wearing gloves. Dry fully, then extract seeds by beating dried stems against hard surface.
Collection time	Most of the year	Oct-April	Nov-Feb
Seed Treatment	NA	NA	NA
Model Suited	2	2	1
Monoculture or Mixed SPA	Monoculture	Monoculture	Mixed/Monoculture
Survivability			

			
Species	<i>Eutaxia microphylla</i>	<i>Geranium retrorsum</i>	<i>Goodenia geniculata</i>
Common Name	Small-leaved eutaxia	Grassland Crane's Bill	Bent goodenia
Height/Form	Prostrate W:1m	H:30cm W:1m	H:10cm W:50cm
Description	A prostrate plant with small, fine, grey-green foliage. Responds well to pruning.	A prostrate perennial herb with round to kidney shaped leaves, deeply divided.	Rosettes of glossy leaves. A low growing plant with upright stems. Spreads by suckering.
Collection Method	Pods can be collected close to maturity, as they turn brown. Then left to fully dry.	Hand pick the well developed fruits and allow to dry in a warm spot.	Observe the base of the dried flowers if they look mature and swollen at the base, nip off and fully dry.
Collection time	Sept-Nov	Sept-May	Aug-Dec
Seed Treatment	NA	NA	NA
Model Suited	1	1	2
Monoculture or Mixed SPA	Monoculture	Monoculture	Monoculture
Survivability	Tolerates water logging and drought.		

	 C.F	 C.F	 J.H
Species	<i>Hardenbergia violacea</i>	<i>Kennedia prostrata</i>	<i>Leptorhynchos squamatus</i>
Common Name	Purple coral-pea	Running postman	Scaly buttons
Height/Form	Prostrate	Prostrate W:1-5m	H:15cm W:30cm
Description	Stems may spread to 2m. a sprawling plant with narrow-lanceolate leaves are up to 10cm long	A prostrate trailing groundcover with soft green clover-like leaves.	A perennial with low, slightly woolly, deep green leaves.
Collection Method	Pods can be harvested close to maturity (when they turn brown) and fully dried in a warm area.	Pods can be collected close to maturity, as they turn brown. Then left to fully dry.	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.
Collection time	Oct-Feb	Aug-Nov	Sept-Jan
Seed Treatment	NA	NA	NA
Model Suited	1	1	3
Monoculture or Mixed SPA	Monoculture	Monoculture	Monoculture
Survivability		Drought tolerant	Summer watering is beneficial

	 C.F	 J.H	 G.DN
Species	<i>Leucochrysum albicans</i>	<i>Linum marginale</i>	<i>Lobelia pratensis</i>
Common Name	Hoary Sunray	Native Flax	Poison Lobelia
Height/Form	H:50cm W:60cm	H:50cm W:30cm	Prostrate
Description	Perennial herb with grey linear, hairy leaves. Prune hard after flowering.	Erect slender plant with linear leaves.	A prostrate spreading herb with small, green leaves.
Collection Method	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Hand pick tan brown capsules. Remove seeds by rubbing capsules against a fine wire screen.	Dry capsule to extract seed.
Collection time	Nov-March	Sept-March	Nov-May
Seed Treatment	NA	NA	NA
Model Suited	3	3	3
Monoculture or Mixed SPA	Monoculture	Monoculture	Monoculture
Survivability	Plant 30cm apart		Suitable for moist lawn areas with low traffic.

			
Species	<i>Minuria leptophylla</i>	<i>Myoporum parvifolium</i>	<i>Pelargonium australe</i>
Common Name	Minnie Daisy	Creeping boobialla	Australe storks-bill
Height/Form	H:10-30cm W:20-50cm	H:10cm W:1m	H:50cm W:30-60cm
Description	A small rounded plant with fine, light green leaves.	A vigorous groundcover with dense green foliage.	A fast growing, perennial plant. Round velvet leaves. May die back after summer to rootstock.
Collection Method	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Collect seed by hand when shrivelled and black/brown. Dry the fruits for several weeks in a warm dry position.	Hand pick the well developed fruits and allow to dry in a warm spot.
Collection time	June-March	Oct-Feb	Oct-Feb
Seed Treatment	NA	Store in the dark, before sowing seed soak overnight in water.	NA
Model Suited	3	3	2
Monoculture or Mixed SPA	Monoculture	Monoculture	Monoculture
Survivability	Drought tolerant		

			
Species	<i>Podolepis sp.</i>	<i>Ptilotus macrocephalus</i>	<i>Pultenaea pedunculata</i>
Common Name	Showy podolepis	Pussy-Tails	Matted Bush-Pea
Height/Form	H:30-60cm	Prostrate W:10-40cm	Prostrate W:1-2m
Description	A basal rosette of dark green broad and hairy leaves, slender stems raise up bright yellow daisy flower heads.	A perennial herb with a basal rosette of dark green leaves. Another species that is prostrate is also attractive, <i>Ptilotus spathulatus</i> .	An attractive groundcover with small dark green leaves.
Collection Method	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Cut off mature head, allow to fully dry in a warm area. Remove the bristly outer covering to expose the small hard seed.	Pods can be harvested close to maturity (when they turn brown) and fully dried in a warm area.
Collection time	Oct-Feb	Aug-Jan	Oct-Dec
Seed Treatment	NA	NA	NA
Model Suited	2	1	1
Monoculture or Mixed SPA	Monoculture	Mixed	Monoculture
Survivability	Flower longer with summer watering.		Tolerates dry periods

			
Species	<i>Rhodanthe anthemoides</i>	<i>Rutidosia leptorrhynchoides</i>	<i>Stellaria pungens</i>
Common Name	Chamomile sunray	Button Wrinklewort	Prickly starwort
Height/Form	H:30cm W:30-60cm	H:30cm W:30cm	H:20-30cm Spreading
Description	A perennial herb with numerous slender stems with grey-green foliage and papery white daisy flowers.	A low erect herbaceous plant with small yellow flowers. Plants respond to light pruning.	A suckering, prostrate herb, with bright green, prickly foliage with numerous white daisy like flowers. Rejuvenates by pruning.
Collection Method	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Collect entire seed heads by hand into large paper bag. Allow to dry and then break up the seed head by hand.	Produces a woody capsule. Collect capsules and dry to release seed.
Collection time	Oct-Feb	Oct-Feb	Oct-Feb
Seed Treatment	NA	NA	NA
Model Suited	3	3	2
Monoculture or Mixed SPA	Monoculture	Monoculture	Monoculture
Survivability			

			
Species	<i>Stylidium graminifolium</i>	<i>Tricoryne elatior</i>	<i>Velleia paradoxa</i>
Common Name	Grass trigger plant	Yellow rush lily	Spur velleia
Height/Form	H:30-60cm W:20-30cm	H:30-50cmW:30-50cm	H:30cm
Description	A perennial plant forming a small tussock of grass- like grey- green leaves.	A sprawling plant with wiry stems.	A herbaceous plant with a basal rosette of leaves.
Collection Method	Tan brown and brittle capsules when ripe. Seed tends to ripen progressively up the flower stem.	Collect capsules by hand and put upside down in a paper bag. Thresh lightly once capsules are dry.	Papery capsules are tan brown and brittle when mature. Dry capsules to extract seed.
Collection time	Sept-Jan	Oct-Feb	March-May Oct-Dec
Seed Treatment	NA	May be difficult to grow from seed.	NA
Model Suited	1	1	2
Monoculture or Mixed SPA	Mixed	Mixed	Mixed
Survivability			

			
Species	<i>Veronica gracilis</i>	<i>Viola hederacea</i>	<i>Vittadinia gracilis</i>
Common Name	Slender speedwell	Ivy-leaved violet	New-Holland daisy
Height/Form	H:5-20cm Spreading	Prostrate W:1-2m	H:30cm W:30cm
Description	A small dainty plant that spreads by rhizomes to form colonies.	A spreading groundcover with small, ivy-like leaves. Spreads by stolons to form patches.	A hardy herbaceous species with fine upright branches and woolly grey hairs.
Collection Method	Collect capsules and dry to release numerous seeds.	Allow pods to dry on plant, or cut off and dry. Break open to collect seeds.	Hand collect entire seed heads in paper bag. Allow to dry. Break up seed heads by hand. Store with fluffy pappus attached.
Collection time	Sept-Nov	Sept-Feb	Sept-Jan
Seed Treatment	No treatment	Cold stratify for 2 weeks before sowing.	NA
Model Suited	3	3	3
Monoculture or Mixed SPA	Monoculture	Monoculture	Monoculture
Survivability		Requires moist soils.	

<p>Species</p> <p>Common Name</p> <p>Height/Form</p> <p>Description</p> <p>Collection Method</p> <p>Collection time</p> <p>Seed Treatment</p> <p>Model Suited</p> <p>Monoculture or Mixed SPA</p> <p>Survivability</p>	 <p>C.F</p>	 <p>R.B</p>	 <p>C.F</p>
	<i>Wahlenbergia communis</i>	<i>Wahlenbergia luteola</i>	<i>Wurmbea dioica</i>
	Tufted Blue Bell	Bronze bluebell	Early Nancy
	H:15-50cm W:15-60cm	H:15-40cm W:15cm	H:30cm
	A spreading, perennial herb, with narrow, bright green leaves on erect stems. Can sucker. Rejuvenates by pruning in winter.	Similar to <i>Wahlenbergia communis</i> except for yellow-brown colour on the back of the flower petals.	Dies back to a fleshy tuber in summer and reshoots in autumn.
	Cut stalks with capsules and place upside down in paper bags. Allow to dry in a warm spot. Lightly beat or crush capsules to release the fine red-brown seed.	Cut stalks with capsules and place upside down in paper bags. Allow to dry in a warm spot. Lightly beat or crush capsules to release the fine red-brown seed.	Harvest entire flower stalk and place upside down in a large bag. Dry until capsules are fully open.
	Oct-May	Oct-Feb	Nov-Dec
	Stratification at 3-5°C for 3 months.	Stratification at 3-5°C for 3 months.	NA
	3	3	1
Monoculture	Monoculture	Mixed	

Appendix 2: Local Nursery and Seed Suppliers.

Nursery:

- VINC - Victorian Indigenous Nurseries Co-operative
<http://www.vinc.net.au/>
- SKINC - St. Kilda Indigenous Nursery Co-operative
<http://www.skinc.com.au/index.php>
- Newport Lakes Native Nursery
<https://www.facebook.com/NewportLakesNativeNursery>
- Iramoo Indigenous Wildflower Nursery
http://www.iramoo.org.au/plant_nursery
- Geelong Indigenous Nursery
<http://www.geelongindigenousnursery.com.au/>
- **Western Plains Flora**
Supplying indigenous plants from the northern and western regions of Melbourne including the Macedon Ranges.
Retail now open
Hours: M - F 8am – 4pm
Sat 8am – 1pm (March to November)
Address: 628 Wildwood Rd, Wildwood 3429
Ph: 03 9740 3178
Fax: 03 9740 3179
E: admin@wpflora.com.au

Seed Suppliers:

- Flora Victoria
<http://www.floravictoria.com.au/>
- Seeding Victoria Inc.
<http://www.seedingvictoria.com.au/index.php>
- Victorian Native Seed
<http://www.victoriannativeseed.com.au/about/>
- Website with Seed Collectors
<http://www.greeningaustralia.org.au/our-services/seed-and-nursery/victoria-seed>

Appendix 3: Collecting and Storing seed.

There are many resources regarding collecting and storing seed material.

General advice has been given on the species list (Appendix 1), however this is limited to the species selected. For further information on species or information on different species please utilize the following resources.

Broadhurst, L. M. 2007. Managing Genetic Diversity in Remnant Vegetation: Implications for Local Provenance Seed Selection and Landscape Restoration., Land and Water Australia, ACT.

Murray R (2003) Growing Australian Native Plants from Seed - for revegetation, tree planting and direct seeding. Murray Ralph / Bushland Horticulture.

Murry R (2006) Seed Collection of Australian Native Plants: for revegetation, tree planting and direct seeding. Murry Ralph/ Bushland Horticulture.

Florabank website has many useful documents including; Guidelines for native seed storage for revegetation.

http://www.florabank.org.au/default.asp?V_DOC_ID=1

Collecting seed from remnant patches

There are laws and regulations to collect seed from wild (not grown in SPA) each state has different regulations. For Victoria a permit must be acquired before collecting any material.

The following website has information regarding the laws and regulations and how to apply for a permit.

<http://www.depi.vic.gov.au/environment-and-wildlife/forms-for-wildlife-national-parks-and-the-flora-and-fauna-guarantee-act>

Appendix 4: Getting Started guide

Getting Started Guide:

For groups

1. Contact your local council environment department and land manager and start a conversation with them.
2. Form a committee with a coordinator, may need to form a working bee group.
3. Start applying for funding.
4. Decide on species required for the receptor site
5. Determine the availability of seed for these species.
6. Confirm with council the laws and regulations for using nature strips and signs.
7. Find storage facilities for harvested seed.
8. Gauge community interest, determine how many nature strips will be involved. Organise residents and their models to determine the species and required quantities for the initial plant out.
9. Determine how species will be grown and start this process.
10. Start the SPA by transforming nature-strips.(working bee groups maybe required here)
11. Plant out nature-strips.
12. Allow for monitoring/ assistance during growing season.
13. Coordinate harvest, important if the working bee group is harvesting for residents.
14. Store seed until receptor site is ready or seed is ready for restoration works.

Getting Started Guide:

For a resident.

1. Contact the Seeds from the Street coordinator.
2. Determine with the help of the coordinator which model suits you and which species suits your model.
3. Obtain funds to transform your nature strip from the Seeds from the Streets group.
4. Transform nature strip into SPA
5. Plant out species selected.
6. Maintain SPA
7. Harvest mature seed from species.
8. Return seed to Seeds from the Streets Coordinator.

Appendix 5: Seeking Funding for Seeds from the Streets

Helpful hints for writing fundraising proposal.

<http://www.grantnet.com/HelpfulReports/securingfunding.pdf>

<http://www.fundraisingbuddy.com.au/html/grants/csr/Environment%20Grants.htm>

Some funding that may be available.

- 🌱 [Envirofund.](#)
- 🌱 The [Sustainable Energy Program \(SEP\)](#). The Shell Foundation (International Australian Bird Environment Foundation Grants Scheme.
- 🌱 [Grants to Voluntary Environment & Heritage Organizations \(GVEHO\)](#).
- 🌱 [Greenhouse Partners Program](#).
- 🌱 [B.H.P. Billiton Community Support Programs](#).
- 🌱 [Community Garden Grants](#).
- 🌱 [Society for Conservation Geographic Information Systems \(SCGIS\)](#).
- 🌱 [Renewable Energy Commercialisation Program](#). [Australian Bush Heritage Fund](#).
- 🌱 [Threatened Species Network Community Grants](#). [World Wide Fund for Nature](#) and the [Natural Heritage Trust](#)
- 🌱 [Riverprize](#). [Thiess Services Pty. Ltd.](#)
- 🌱 [The Norman Wettenhall Foundation](#)
- 🌱 [Government grants](#)
- 🌱 [Caring for our country](#)
- 🌱 [World Wildlife fund](#)
- 🌱 [Fauna and flora international](#).
- 🌱 [And many more....](#)

The following 7 pages include a funding application submitted to Thiess.

COMMUNITY GRANTS

Application Form for Maribyrnong and Brimbank, Melbourne

The Thiess Community Grants program is offering funding to community organisations that provide services in the Maribyrnong and Brimbank municipalities of Melbourne.

Grants of up to \$10,000 per organisation are available.

Applications close on Friday **20 December, 2013** and successful applicants will be notified during August 2013.

CRITERIA

Successful applications must meet the following criteria:

1. Funding must be used for a program/initiative delivered in the Maribyrnong and Brimbank municipalities.
2. The initiative should address an issue or meet a community need that is of particular importance in the area.
3. The program/initiative must provide an environmental, educational or health benefit to the community.
4. Ideally, the program/initiative provides opportunities for Thiess to participate (examples include volunteering and pro-bono work). (Optional)

.....

When you have completed this application please email it by the application closing date to Thiess at ThiessCareProgram@thiess.com.au or post it to:

Thiess Pty Ltd
Attn: Care Community Grants - Strategic Communication
Locked Bag 2009
South Brisbane Qld 4101

For further information visit: www.thiess.com.au/sustainability/community

COMMUNITY GRANTS

BACKGROUND INFORMATION

Charity/not-for-profit organisation:	Victoria University
Contact person:	Dr Megan O'Shea
Phone (mobile and landline if possible):	9919 2129
Email:	Megan.oshea@vu.edu.au
Address:	College of Engineering & Science Victoria University PO Box 14428 Melbourne City MC Melbourne 8001
ABN:	83 776 954 731
GST status:	Registered
DGR status (yes/no):	Yes DGR 1
Program name (if applicable):	Seeds from the Streets (stage 1)
Initiative start and end dates:	1 April 2014 – 31 March 2015
Which concern does your initiative address – an environmental, health or education need?	Environmental, education
Amount of funding required: (up to \$10,000)	\$9,500
Will this amount fully fund, or partially fund your initiative?	Fully funded

COMMUNITY GRANTS

How did you hear about the Thies Community Grants (please 'check' all that apply)?

- | | |
|--|---|
| <input type="checkbox"/> Advertisement in local paper | <input checked="" type="checkbox"/> Word-of-mouth |
| <input type="checkbox"/> Story in local media | <input type="checkbox"/> Other – please specify: |
| <input type="checkbox"/> Email from Thies | _____ |
| <input checked="" type="checkbox"/> Email from Third Party | |

ABOUT YOUR ORGANISATION AND INIATIVE

Tell us about your charity/not for profit organisation in 100 words or less, what is does, who it helps, where it operates and why it exists. Please provide a sense of your organisation's greatest challenge/s.

Victoria University is a tertiary education institution, with over 50,000 students enrolled at campuses primarily located in the western region of Melbourne, including the Brimbank and Maribyrnong municipalities. Our teaching, training, research, scholarship and partnerships are locally relevant and globally significant. One of our visions is to be excellent and accessible by engaging with industry and community to make the world a better place, through the creation, sharing and use of new knowledge. We work to find creative and evidence-based solutions to important contemporary challenges, including environmental sustainability, with 'sustainability and innovation' being one of our 10 research focus areas.

In 400 words or less, tell us how you will use the Thies Community Grant money should you be awarded funding. Provide an overview and describe the program. Focus on the specific outcomes and benefits your initiative will deliver within the community. Be very clear about how many people will benefit and who those people are. Explain how your program/initiative will be structured. Look at how Thies might be involved in helping you deliver your initiative.

Please be concise and consider using bullet points. Avoid jargon, clichés, abbreviations or technical language. Provide any necessary background information for contextual purposes.

- Although remnant native grasslands within the Brimbank municipality are of important environmental significance, they support only a low diversity of plant species as a result of past land management practices. The re-introduction of wildflowers is required to improve the biodiversity in these grasslands. Recent developments suggest that the best method for establishing robust and long-lived wildflower populations is to sow large volumes of seed, rather than planting tube-stock. The problem is that there is no readily available source of wildflower seed.
- This project will implement a community-based program to produce the seed required to return a diversity of wildflowers to Iramoo Wildlife Reserve in St Albans. Victoria University

COMMUNITY GRANTS

is currently conducting a scoping study for the implementation of a project that engages the local residents of Brimbank to grow crops of native wildflowers in their nature strips, so that large volumes of seed can be harvested for revegetation projects at Iramoo Wildlife Reserve.

- Funding from the Thiess Community Grant would be used for Stage 1 of the implementation of this project, including the employment of a project coordinator.
 - In Stage 1, a minimum of 10 residential nature strips would be identified for voluntary inclusion in the project.
 - A team of at least 20 volunteers (potentially including Thiess employees) and students with learning disabilities from the VU Work Education program would be engaged to perform site preparation, nature strip planting and seed harvesting works.
 - Initial plant stock for the project would be sourced from a local native nursery, using funding from the Thiess Community Grant.
 - A database to track nature strip location, seed source and seed production information would be developed, potentially utilising the expertise of Thiess employees.
 - A temperature controlled seed-bank would be established for the temporary storage of seed lots, utilising facilities at Victoria University.
 - Nature strip signage would be installed to promote the program and provide interpretation/education to the local community.
 - The program would be evaluated, documented and published in a scientific peer reviewed journal, as well through the local media.
- There is the potential to expand the project into other municipalities and other ecosystems. Apart from the volunteer participants in this program, the project will promote the value of native grasslands to the broader community. As a result of this project, native grasslands in Brimbank will be better managed, more aesthetically appealing, and support a greater diversity of native plants.

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KEY MILESTONES AND DATES

Include the key action items and dates (exactly what will be delivered by when). This information will be used to track your initiative's progress.

Key Action Items

- Engage part-time project coordinator
- Enlist a minimum of 10 participating nature strips
- Development of tracking database
- Enlist a minimum of 20 project participants
- Nature strip preparation works completed
- Source plants acquired
- Nature strips planted
- Promotional/interpretive signage installed
- Seed harvested from nature strips
- Seed bank established at Victoria University
- Project evaluation, reporting & publication

Dates

- 31 March 2014
- 30 April 2014
- 30 April 2014
- 30 April 2014
- 31 July 2014
- 31 July 2014
- 31 August 2014
- 31 August 2014
- 31 January 2015
- 31 January 2015
- 31 March 2015

OTHER INFORMATION

Other supporters – outline below any other organisations/individuals involved in delivering your initiative:

- Brimbank City Council; Friends of Iramoo; Cairnlea Conservation Management Committee

Any other relevant information you would like to provide:

COMMUNITY GRANTS

PICTURES

Please attach and include two jpg format scanned photographs or pictures we can use to promote your organisation should your application be successful.



COMMUNITY GRANTS

YOUR APPLICATION CHECKLIST

So your entry complies with all Thies Community Grant guidelines, please ensure that you have:

- Addressed the four criteria outlined on page one of this form.
- Completed all *Background Information* details, including your organisation's ABN, GST and DGR status.
- 'Checked' the box outlining how you heard about the Thies Community Grants program.
- Used the information provided in the *About Your Organisation and Initiative* section to help you prepare your response.
- Provided an overview of no more than 100 words about your organisation.
- Provided no more than 400 words explaining your initiative, with a focus on its benefits and outcomes.
- Included your key action items and the approximately dates.
- Included a couple of photos (jpeg format).

When saving your application form, please use your charity or not-for-profit's name and your region as the document file name (e.g. OrganisationName.Melbourne.doc).

It may be helpful to have someone unrelated to your initiative read through your application, as they will be able to provide you with good feedback.

When you are happy with your submission, please email this form to the address outlined on page one before the due date. Alternatively, you can post it to the address provided.

Thank you for taking the time to apply for the Thies Community Grants program. We wish you the best of luck.

Appendix 6: Worksheet

These worksheets are designed to be completed at the beginning of the Seeds from the Streets program so that all involved understand what is happening.

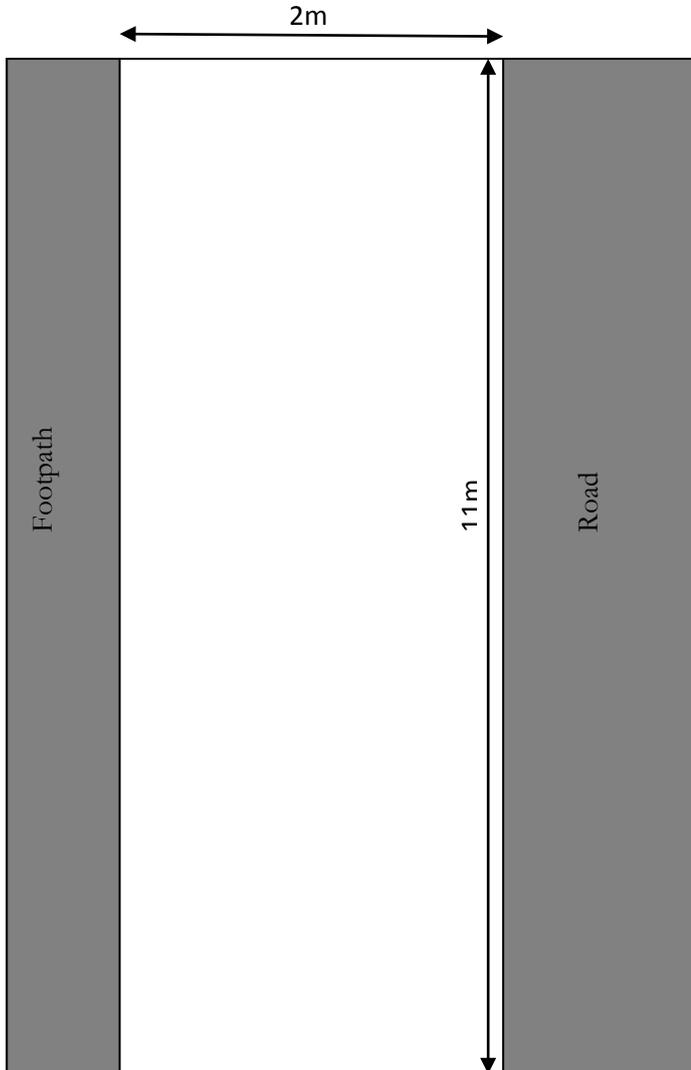
They can be drawn up at an information session or at a beginning function where funding and other requirements are handed out.

Worksheet:

Model:

Name:

Address:



Plant species:

Number of plants:

Level of care:

Harvest time:

Harvest method:

Plant notes:

Site preparation:

Task:

Requirements:

Calendar

J

F

M

A

M

J

J

A

S

O

N

D

Site Preparation

Maintenance

Flowering

Harvest

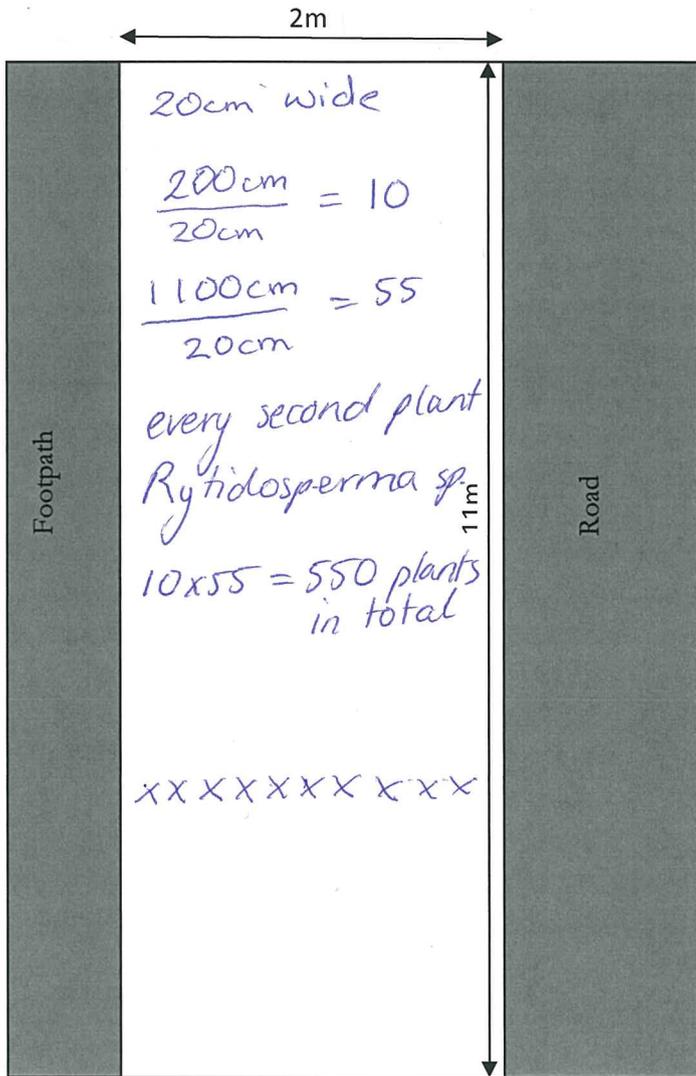
Notes

Worksheet:

Model: 1
High

Name: Example

Address: Example



Plant species: Caesia calliantha
companion Rytidosperma sp.

Number of plants:
550 plants in total

Level of care:
Protect from snails & slugs

Harvest time:
Oct - Jan

Harvest method:
by scythes when papery capsules turn brown and brittle

Plant notes:
Dies back to root stock in summer
Need Rytidosperma sp. or Thymelaea to cover during die off.

Site preparation:
Sheet composting

Task:

1. Cut grass back
2. cover with news paper
3. water
4. cover with compost then mulch
5. plant into

Requirements:

- newspaper
- compost
- mulch

Calendar	J	F	M	A	M	J	J	A	S	O	N	D
Site Preparation	=====		Plant out.									
Maintenance	-----											
Flowering	-----											
Harvest	-----		=====									

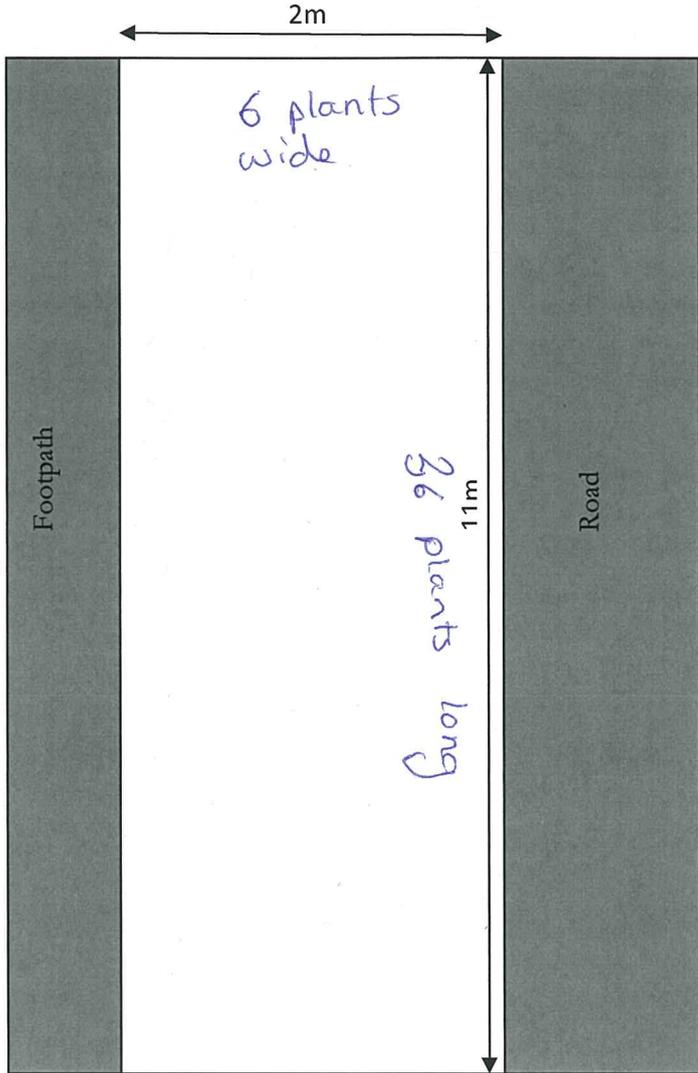
Notes

Pull out weeds regularly
Water in
Can mow grass species after Caesia calliantha has died back.
Caesia calliantha is Blue grass like flowers on a spike.
has blue-purple

Worksheet:

Model: 2
medium

Name: Example
Address: Example



Plant species: Vittadinia gracilis
New-Holland Daisy
W = 30cm H = 30cm

Number of plants:
 $6 \times 36 = 216 \approx 200$ plants.

Level of care:
Low, may need a prune after flowering

Harvest time: sept - Jan

Harvest method:
Hand collect entire seed heads in a paper bag.

Plant notes:
purple flowering daisy.

Site preparation:
Herbicide

Task:	Requirements:
1. spray lawn	- Roundup
2. wait 2 weeks	- mulch.
3. spray lawn	* Team will come and spray out and spread mulch
4. cover with mulch	

Calendar	J	F	M	A	M	J	J	A	S	O	N	D
Site Preparation	=====		Plant out									
Maintenance	-----											
Flowering	-		-----									
Harvest	-		=====									

Notes

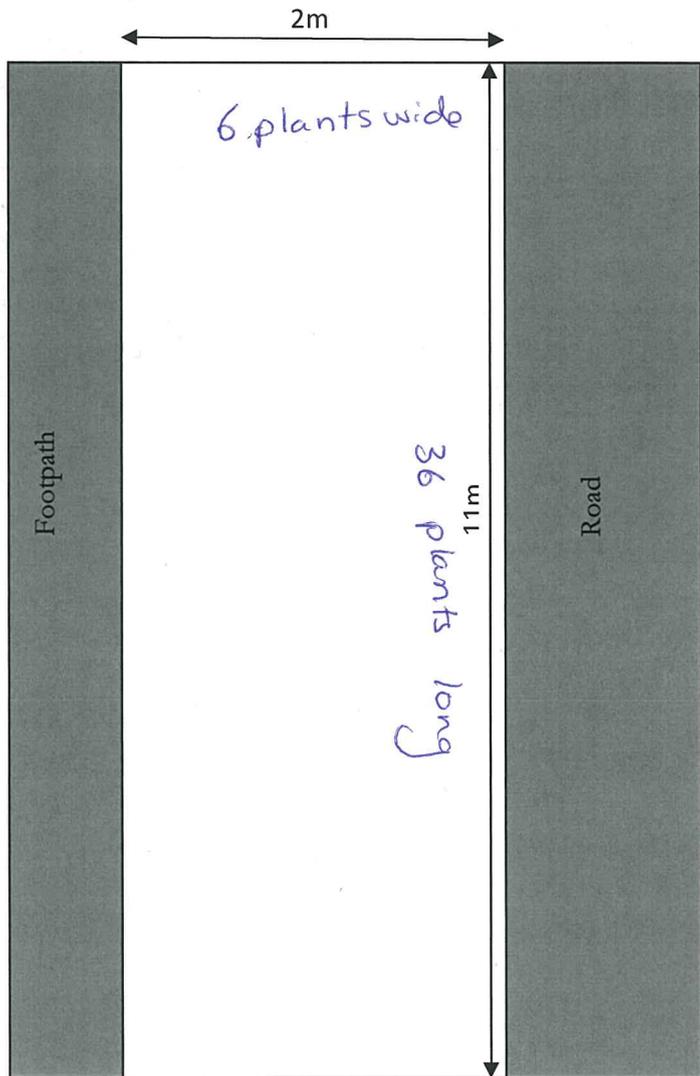
- Maintenance
- Prune
 - Water
 - Weed.

Worksheet:

Model: **3**
Low

Name: *Example*

Address: *Example*



Plant species: *Leptorhynchus squamatus*
Scaly Buttons
 $w = 30cm$

Number of plants:
 $6 \times 36 = 216 \approx 200$ plants

Level of care:
Low

Harvest time: *Sept - Jan*

Harvest method:
Collect entire seed heads by hand into a paper bag.

Plant notes:
Summer watering is beneficial

Site preparation:
Solarization

Task:	Requirements:
1. lay down plastic	- plastic
2. wait 4-8 weeks	- mulch
3. put down mulch	* Team will instal plastic and come and lay down mulch and plant out.

Calendar	J	F	M	A	M	J	J	A	S	O	N	D
Site Preparation												
Maintenance												
Flowering												
Harvest												

Plant out (under M)

Flowering (under J, A, S, O)

Harvest (under O, N, D)

Notes

Team will come and set up the SPA

Team will come and harvest seed

Need to water in summer

Need to weed

Need to cut back any sections that grow over footpath or road!

Appendix 7: Signs

These signs are designed to be placed at the SPA of nature strips.

The first sign is to be made into a stencil to be painted on the footpath. Provided is the colour and black and white option. The white section is to be cut out so the words can be sprayed.

The second sign is to be printed on a stiff flat product, (Chipboard, laminated card, plastic) and then hung from the resident's fence. There is an area to put the contact for the Seeds from the Streets program, this may be written on with permanent pen.



● ●

**THIS NATURESTRIP
IS PART OF**

SEEDS
FROM THE
STREETS

**FOR MORE INFORMATION
CONTACT.....**

PLEASE DO NOT PICK THE FLOWERS

Appendix 8: Documents for information sessions.

Information sessions were planned to be held at the local library to determine the amount of interest from residents and their capabilities.

Documents included:

-  Poster
-  Flyer page 1 and 2
-  Survey
-  Sign-up Sheet

Seeds from the Streets

Grasslands of Victoria are often degraded and lacking biodiversity. To increase biodiversity and community appeal, environmental groups are re-introducing a variety of plants. By involving the community a vast quantity of species may be grown in monocultures on nature strips, or common areas. These areas become Seed Production Areas (SPA) which will reduce the collection pressure on remnant populations, simplify seed harvest and produce quantities of weed-free seed.



Photo: Jessica Harman

Increasing floristic biodiversity of volcanic plains grasslands using urban nature strips.



Photo: Jessica Harman

Sign up for your nature strip to be part of the Seeds from the Streets program.

Attend an **information session** to determine the best program model and species for your nature strip.

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The Seeds from the Streets Program

By using residents nature strips as seed production areas, residents with the help of Seeds from the Streets would grow and harvest a monoculture or mixed-species crop. Nature strips would be transformed into strips of native grassland forbs (herbs) species. The program will have 3 models that will range from **'high input'** where the resident assists with the planting, maintenance and harvest, to **'low input'** where the program will complete the planting and harvest and the resident will carry out maintenance such as watering and weeding.

The program will provide all the materials required to get the nature strip to produce a bountiful harvest of seed.

Harvested seed will be used for revegetation projects at a nearby grassland reserve. There are many species suitable to be grown in the program, some of the species are; *Calophalus citreus* (Lemon Beuty Heads), *Leptorhynchos squamatus* (Scaly Buttons), *Caesia calliantha* (Blue grass lilly), *Pultenaea pedunculata* (Matted Bush Pea), *Minuria leptophylla* (Minnie Daisy).



Photo: Jessica Harman

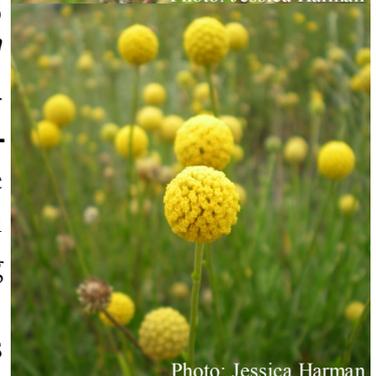


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Seeds from the Streets



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Grasslands of Victoria are often degraded and lacking biodiversity. To overcome destructive factors such as weed invasion, it has been found that establishing native forbs is crucial. Establishing native forbs is also important for restoring the desirable plant community in grasslands. It is considered an important goal in restoring grasslands that the desirable plant community is restored as this allows both resistance and resilience to future disturbances. To increase biodiversity and community appeal, environmental groups are re-introducing a variety of plants. However, groups are moving from planting out tube-stock to direct seeding.

Benefits of direct seeding include; reduction of labour, establishing large numbers of plants with a naturalistic in situ distribution, and leading to establishment and expansion.

Although direct seeding is effective it has created a need for a resource that is currently unavailable.

By involving the community a vast quantity of species may be grown in monocultures on nature strips, or common areas. These areas become Seed Production Areas (SPA) which will reduce the collection pressure on remnant populations, simplify seed harvest and produce quantities of weed-free seed.

To help us to determine community engagement and ability please complete a short survey.

<https://www.surveymonkey.com/s/V7B8857>

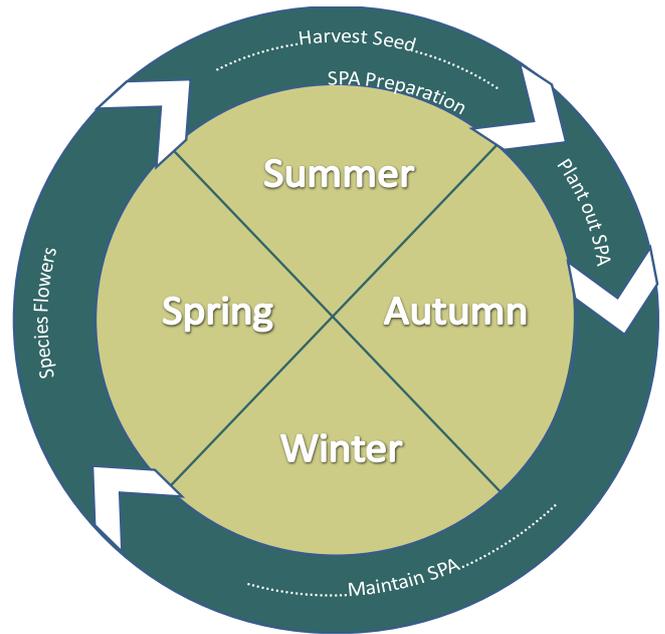


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Seeds from the Streets Program

The Seeds from the Streets program is a year long program, beginning with site preparation in the new year and finishing with seed harvesting at Christmas. After the site is prepared, forbs would be planted out in autumn. By spring the forbs will be flowering in bright yellow, blue or whites.

By using resident's nature-strips as seed production areas, residents with the help of Seeds from the Streets would grow and harvest a monoculture or mixed species crop of native grassland forbs.



Model 1: High Input

The high input model expects a competent gardener in the resident. They are able to follow instructions and complete tasks themselves. The resident in this model is in control of the SPA from beginning to end.

Model 2: Medium Input

The medium input model caters for a gardener that is capable to maintain and harvest (after being provided information) however needs help setting up and getting started. The manual is the information to be provided; this may be their own copy, or just selected sections. This information should also be recorded on the worksheet.

Model 3: Low Input

The low input model is for interested residents without confidence or skill in growing plants. In this model the SPA is set up and started for the resident. The resident is shown how to maintain the SPA by watering, weeding and pruning. Then the seed is harvested for the resident.

Models will range from **'high input'** where the resident completes the planting, maintenance and harvest, to **'low input'** where the program completes the planting and harvest and the resident maintains the SPA with activities such as watering and weeding.

The program will provide all the materials required to get the nature strip to produce a bountiful harvest of seed. Harvested seed will be used for revegetation projects at a nearby grassland reserve.

Grassland Species

- ☼ *Convolvulus erubescens* (Pink Bindweed)
- ☼ *Asperula conferta* (Common Woodruff)
- ☼ *Eryngium ovinum* (Blue Devil)
- ☼ *Calocephalus citreus* (Lemon Beauty Heads)
- ☼ *Leptorhynchos squamatus* (Scaly Buttons)
- ☼ *Caesia calliantha* (Blue grass lily)
- ☼ *Pultenaea pedunculata* (Matted Bush Pea)
- ☼ *Minuria leptophylla* (Minnie Daisy)

To help us to determine community engagement and ability please complete a short survey.

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Photos: Jessica Harman

Seeds from the Streets: A Quick Survey

Seeds from the Streets is a being developed as a free program. Where your nature strip will be turned into a seed production area (SPA). We are hoping to offer a range of models that will cater for all levels of experience. Please complete this quick survey, so that we may understand the level of involvement to be expected from community members. The Seeds from the Streets program will provide; a manual, seeds/tube stock to start the SPA, and storage for the seeds. This survey is also available at <https://www.surveymonkey.com/s/V7B8857>.

First Question:

Are you interested in including your nature strip as a SPA in the Seeds from the Streets program?

- Yes (please continue with following questions)
- No thank you

Third Question:

How much assistance would you require in setting up a SPA on your nature strip?

- I'm an apt gardener and believe I could follow the
- I'm a keen gardener but I might need a hand in setting it up.
- I'm interested in the program but don't have green thumbs.

Fifth Question:

Do you have the skill to maintain the SPA?
This includes; weeding, watering, pruning.

- I'm an apt gardener and I believe I could follow the program without assistance.
- I'm a keen gardener and once shown I can continue without help.
- I'm interested in the program but don't have green thumbs.

Second Question:

Would you attend an information session to learn about the options that are available for your nature strip?

OR

Would you prefer information to be sent via mail/email?

- Information session. (Leave details below)
- Sent via mail. (Leave details below)
- Sent via email. (Leave details below)

Forth Question:

Do you have the skill to harvest the seed?

- I'm an apt gardener and I believe I could follow the program without assistance.
- I'm a keen gardener and once shown I can continue without help.
- I'm interested in the program but don't have green thumbs.

Sixth Question:

Would you be willing to help out other SPA with setting up or harvesting if they needed assistance?

- I'm an apt gardener and happy to lend my knowledge and skill to other interested community members.
- I'm a keen gardener and am happy to help out in needed.
- I'm interested in the program, but have no skill. However; I able to help once guided.

Please feel free to leave any comments about the program:

Please feel free to leave your details if you would like to be contacted with details once the program begins

Name Friends Group/Community Group

Address

Phone

