

Ecological Management & Restoration Top 20

Grassy Groundcover Restoration Project Photos

The Grassy Groundcover Restoration Project focused on the reconstruction of species-rich grassland or grassy understorey on lands with an agricultural history by direct seeding. Below are examples of agricultural sites (cropped or grazed) where we later seeded grassland.



Here are just a few of the 150 (plus) magnificent participants who made the GGRP possible.



Sowing 13 ha of species-rich grassland required large quantities of seed from many species (approx. 200).



Some of this seed was collected from remnants which occurred in proximity to each sowing site. We used a combination of hand and mechanical harvest.



However, a large part of the seed required for our sowings was produced in seed production areas.



Liz Fenton:
Hamilton



Marlene & Co:
Stawell



Julie and Phil:
Geelong Botanic
Gardens



David Franklin:
Chatsworth

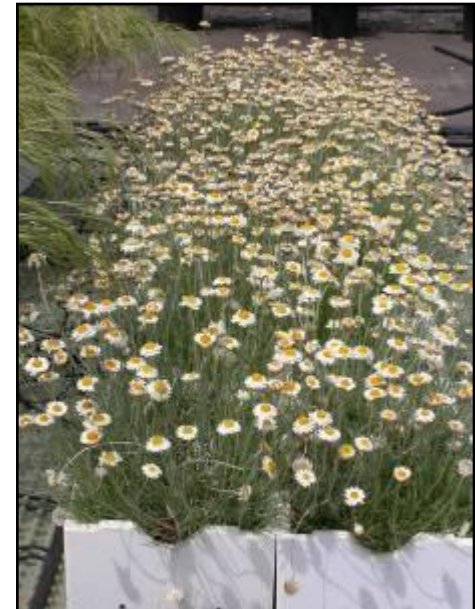


Kerrin & Sascha:
Burnley



Steve & Rhonda: Narri Seeds
Horsham

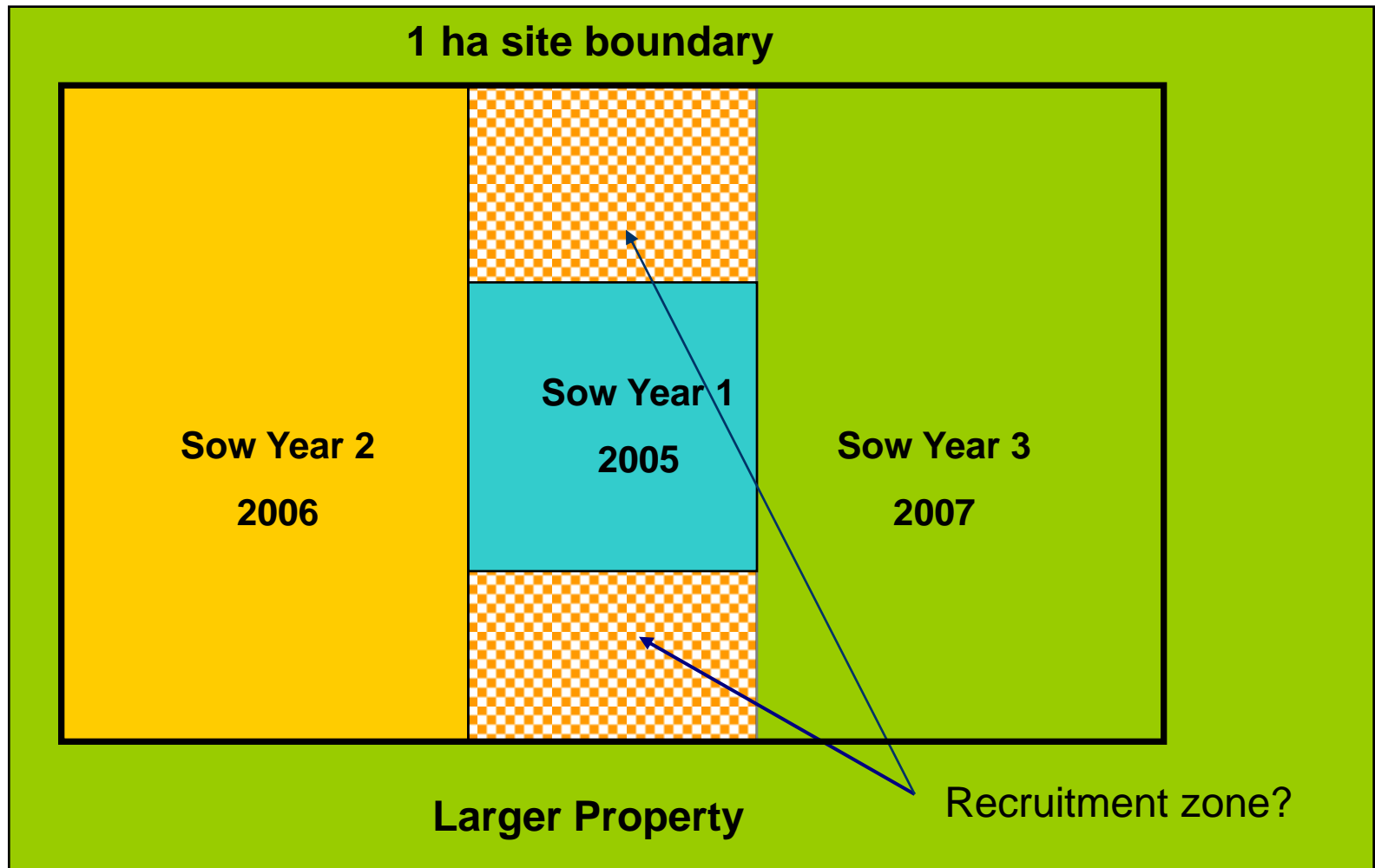
Seed Production allowed us to grow large amounts of high quality seed from species including those that were rare, threatened or difficult to collect in the field.



The seed production facilities used a combination of containerized and in-ground systems to produce seed.



We conducted annual sowings for 3 years at each of our 13 x 1 ha sites. The diagram below indicates how this was undertaken.



The GGRP undertook experiments at each site to help answer questions relating to reducing weed impacts and improving seedling establishment. These were:

The use of soil removal (or scraping) to limit weed emergence and competitiveness (**scrape vs non-scrape**);

The effect of **period** of weed control (**1, 2 or 3** seasons soil stimulation + herbicide) on weeds;

If the addition of **organic matter** (coarse pine chips) improved plant **establishment**.



At most sites, 1,2, and 3 years of weed control through herbicide application (prior to sowing), have failed to reduce weed loads to the same extent that scrape plots have. This is illustrated by the pictures below which show our Laharum site 2 years following sowing. Here the soil scrape plot (left) contains an open native grassy sward with many gaps present in which a range of wildflowers occur. The plot on the right had been sprayed out for two years prior to sowing. It is dominated by exotic grass with almost no inter-tussock spaces or wildflower growth.



The GGRP adapted a piece of machinery commonly used in the turf industry to allow it to sow the seed of any number of grassland species in a single pass with great success.



We have observed that many sown grassland wildflowers have established well under field conditions.



Over time, many species have recruited into adjoining areas.
At these two sites, original walkways are covered in wildflowers that
spread from plants established in original sowings.



Each GGRP sowing site started as a bare paddock. In a few short years these sites have been returned to native grassland or open woodland (trees have recruited naturally at woodland sites).



This site is in the central west of Victoria near Minyip.
Here a lovely sward of *Austrostipa* covers the site with many
wildflowers occurring within gaps.



At this site near Laharum to the west of the Grampians a wonderful sward of grasses have established following sowing, with *Austrostipa mollis*, dominant at this time.



Having reassembled species-rich vegetation we have observed natural colonisation at all sites by a range of organisms from other trophic levels.



Findings to-date from this project include:

1. **Seed resources:**

- Seed Production supplied critical seed resources; particularly during drought conditions when field supplies where limited;

2. **Site Preparation:**

- The soil scrape treatments had a significant impact on reducing weed re-emergence and nutrient levels;
- The organic matter treatment did not enhance plant survival;
- Results from longer-term weed control programs are still being assessed;

3. **General:**

- A large number of grassland species established successfully from our field-sown seed mixtures;
- A large number of species have established and expanded their range over time through recruitment;
- We have successfully developed methods that allow for sowing complex seed-mixtures at field scales.

Through Greening Australia, the GGRP publishes an electronic newsletter the Grassy Gazette. This newsletter has stories and contributions from many of the people involved in the project, including landholders, SPA managers, students and others. All back issues can be found at: <http://www.greeningaustralia.org.au/our-solutions/biodiversity/restoring-grassy-groundcover>.



Grassy Groundcover Gazette

News, updates and on ground action

May 06



Note from the editor

Welcome to the first edition of The Grassy Groundcover Research Project's e-newsletter the Grassy Gazette. This newsletter will be posted on a bi-to-tri monthly basis and aims to bring those interested in the progress of this unique and ground-breaking restoration project up-to-date in formation about progress, news of field or technical days and stories from the many fabulous people involved across the south-west of the state.

This edition will feature some of our regular article sections. In addition to these sections we invite you to contribute to the content of the gazette. If you have a story, tips, hints or advice from your experience in the grassy groundcover research project we would love to hear from you! Please forward your short (max 200 word) article or tip to Rebecca Passlow rpaslow@gavic.org.au and we will do our best to include it in the next edition. Happy reading!



Paul's Piece

Since this is our first edition, I'll take the time to set the scene. The GGRP is a three-year experimental project funded by the National Heritage Trust and sponsored by several southwestern Victorian Catchment Management Authorities. It is managed in partnership by Greening Australia (Victoria) and the University of Melbourne. As a quick background, the main goal of the GGRP is to demonstrate that direct sown seed mixtures are a practical way to reintroduce complex grassland communities to agricultural lands. The GGRP is also investigating containerized seed production systems in order to supplement field seed supplies.



Germination of *Kennedia prostrata*

We are now entering our second year. Excitingly, almost every site has a diverse number of species germinated and establishing since the spring sowing. We were hit quite hard at 9 sites by grasshoppers which have kept them mown low, but not to worry, hopefully they'll soon grow on. At three sites, in the absence of grasshoppers, individual plants from a number of locally threatened species have flowered and set seed. These will hopefully recruit on the sites. This is very exciting, considering these sites where canola or wheat paddocks just six months ago.

We are now gearing up for our second sowing at each field site and have increased the quantities of seed collected in the field this season by ten fold. This again is due to the skill and commitment of our collectors, and by the use of mechanized methods where appropriate. Seed collection from the seed production areas has also

growing the future together

Grassy Groundcover Gazette

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