



Case study

What worked well

Deep ripping and spraying out the rip line prior to planting were effective in reducing weed competition (spraying could be done with an organic contact herbicide such as Beloukha).

Having a team of three planting – one on the shovel, one planting and one guarding also worked well.

Species which grew well included:

- *Acacia acinacea*, gold dust wattle
- *Acacia paradoxa*, prickly wattle
- *Hardenbergia violacea*, native lilac
- *Melaleuca lanceolata*, black paperbark
- *Olearia ramulosa*, twiggie daisy-bush
- *Pultanea largiflorens*, twiggie bush pea

Species that are growing well undervine:

- *Kennedia prostrata*, running postman
- *Lomandra* sp., iron grass
- *Scaevola* sp., fan flower
- *Vittadinia* sp., New Holland daisy

Species growing well at end of rows:

- *Bursaria spinosa*, Christmas bush
- *Eremophila maculata*, spotted emu bush
- *Eutaxia microphylla*, common eutaxia

A family of white-winged choughs moved in in the trees closest to our EcoVineyards site.

Lastly, we also planted earlier in the year in winter to ensure seedling establishment before the soil started to dry out in summer.

While this ran the risk of susceptibility to frost, we chose frost-tolerant varieties in frost prone areas, along with guarding.

Progress (June 2019 to 2021):

Morella Farm is a fourth generation viticulture, pasture and broad acre business located close to the town of Watervale in the Clare Valley, South Australia. It consists of 37 hectares of vines, 239 hectares of grazing and 143 hectares of cropping land.

We planted our first grapes in 1997 and have occasionally had challenges with pest insects such as light brown apple moth.

We have a passion for sustainable agriculture including viticulture, as we feel that the changing climate will greatly affect those properties that are not addressing these threats now.

Adapting to these changes, together with reducing our chemical (e.g., pesticide, herbicide, and fungicides) and environmental impact (i.e., efficient water usage), were our main goals of the EcoVineyards project - to ensure that our property is viable and sustainable for future generations.

We were hoping that the project would also be a great opportunity to gain knowledge in integrated pest management and sustainable viticulture practices from experts in the field such as Dr Mary Retallack and her team.

We also hoped to establish practices that could be implemented and easily adapted by other growers around the region.

What did you do and when?

We started planning for the project mid-2019 with a biodiversity action plan, identifying several potential planting sites.

We ordered our first plants in September 2019. As it was very dry in the summer of 2019-20, we didn't plant until June 2020. Prior to this, we deep ripped rows of planting sites to allow easy penetration of root systems

Our first plantings were situated around a Riesling vineyard in Site B in June 2020. Then planted site E and F in July 2020.



Photo above: Ben Castine taking his first photo point photos (Photo: Mary Retallack).

Photo left: Rose and Ben Castine reviewing the native insectary plant species list prepared for the Clare Valley (Photo: Mary Retallack).





Case study

Pitfalls to avoid

The last four years have been very dry in the Clare Valley. As a result, some of our plantings in 2020 did not survive. We will monitor our future plantings more closely and water them more often if we have future dry years.

Our initial planting plan was too ambitious, covering too large of an area. With the guidance of Mary, we subsequently focused to plant in only two main areas. With any future plantings, we'll focus on planting smaller, more manageable areas at a time, and expanding year on year.

What are you more aware of now?

Which varieties grow well in and around our vineyard. We have a core of about 10 plant varieties which have grown well, and we'll favour planting a good mix of these in the future. To increase biodiversity, we'll also trial other suggested native species that we didn't plant during the EcoVineyards project.

Where to from here?

We plan to continue planting insectary plants and expand on the sites outlined in our initial biodiversity action plan. We have recently become involved in another project aimed at increasing biodiversity in the vineyard and are excited to continue the work started with the EcoVineyards project.

Are there any outstanding knowledge gaps you would like filled?

As part of the project, we planted some natives under vine, it'd be great to learn from other EcoGrowers about their experiences establishing and maintaining under vine plantings.

We are in discussions with Hydroseeding Australia to trial their technology to sow some areas in the undervine area with native seeds.



What has been the most valuable aspect of the program for you personally?

Understanding more about native species in the Clare Valley and how they can be integrated in vineyards to increase biodiversity.

The pre-European species list and other resources provided by Mary will form a great basis for future plantings

Has your level of knowledge increased significantly?

Yes, our native species knowledge has increased a lot, together with our knowledge of beneficial insects.

Native plant list:

- *Acacia acinacea*, gold dust wattle
- *Acacia notabilis*, noble wattle
- *Acacia paradoxa*, prickly wattle
- *Acacia pycnantha*, golden wattle
- *Allocasuarina verticillata*, drooping sheoak
- *Bursaria spinosa*, Christmas bush or sweet bursaria
- *Callistemon rugulosus*, scarlet bottlebrush
- *Correa glabra*, rock correa
- *Eremophila maculata*, spotted emu bush
- *Eucalyptus camaldulensis*, river red gum
- *Eucalyptus incrassata*, ridge-fruited mallee
- *Eucalyptus leucoxylon* subsp. *pruinosa*, inland blue gum
- *Eucalyptus porosa*, mallee box
- *Eucalyptus socialis*, summer red mallee
- *Eutaxia microphylla*, common eutaxia
- *Goodenia albiflora*, white goodenia
- *Grevillea lavandulacea*, lavender grevillea
- *Hakea carinata*, erect hakea
- *Hakea rugosa*, dwarf hakea
- *Hardenbergia violacea*, native lilac
- *Kennedia prostrata*, running postman
- *Leptospermum continentale*, prickly tea-tree
- *Leptospermum lanigerum*, woolly tea-tree
- *Lomandra* sp. iron grass
- *Melaleuca lanceolata*, dryland tea-tree
- *Olearia pannosa*, velvet daisy bush
- *Olearia ramulosa*, twiggly daisy-bush
- *Ozothamnus retusus*, rough everlasting
- *Pultenaea largiflorens*, twiggly bush pea
- *Rhagodia parabolica*, fragrant saltbush
- *Senna artemisioides*, silver cassia
- *Vittadinia* sp., New Holland daisy

Photo above: Velvet daisy bush, *Olearia pannosa* flowers (Photo: Ben Castine).

Photos left: Rose Castine tending the common eutaxia, *Eutaxia microphylla* planted adjacent to the strainer post (Photo: Mary Retallack).



Native insectary plants in establishment to form a windbreak: 26 June 2020 (Photo: Mary Retallack)



Twiggy daisy-bush, *Olearia ramulosa* and various other native insectary plants: 16 September 2021 (Photo: Mary Retallack)



Eremophila maculata, spotted emu bush (yellow flower): 16 September 2021 (Photo: Mary Retallack)



Eremophila maculata, spotted emu bush (pink flower): 16 September 2021 (Photo: Mary Retallack)



Common eutaxia, *Eutaxia microphylla* planted adjacent to the strainer: 16 September 2021 (Photo: Mary Retallack)



Christmas bush, *Bursaria spinosa* planted adjacent to the strainer post: 16 September 2021 (Photo: Mary Retallack)



New Holland daisy, *Vittadinia* sp. planted in the undervine area: 16 September 2021 (Photo: Mary Retallack)



Fan flower, *Scaevola* sp. planted in the undervine area: 16 September 2021 (Photo: Mary Retallack)



Running postman, *Kennedia prostrata* planted in the undervine area: 16 September 2021 (Photo: Mary Retallack)



Native insectary ground cover establishing in the undervine area: 16 September 2021 (Photo: Mary Retallack)

Expenses (cash and in-kind)

Name: Castine/Morella Vineyards		Region: Clare Valley			
Date	Activity	Number of plants	Grant cash expenses	Additional cash co-contribution	In-kind time captured
Sept - Dec 2019	BAP Planning (2 people x 5 hours)				10 hrs
28/04/2020	Medika Gallery plant purchase	103	\$ 314		
28/04/2020	Medika Gallery plant purchase	21	\$ 126		
29/04/2020	Arboregreen: 500 guards and stakes		\$ 805		
4/05/2020	Herbicide spraying planting areas (Sites B and F)			\$ 240	4 hrs
3/06/2020	Ripping planting areas (Sites B and F)			\$ 200	3 hrs
4/06/2020	Planting site B (3 people x 2 hrs)				6 hrs
5/06/2020	Planting site B & F (3 people x 2 hrs)				6 hrs
24/06/2020	Ripping planting areas (Site E)			\$ 120	2 hrs
30/06/2020	Planting site E (3 people X 1 hr)				3 hrs
3/08/2020	Kersbrook Landcare nursery: 235 tubes and 63 variable price plants	298	\$ 690		
7/08/2020	Kersbrook Landcare nursery	60	\$ 45		
28/08/2020	Trees for life: 7 boxes of plants	168	\$ 245		
10/09/2020	Planting site F (3 people x 2 hrs)				6 hrs
11/09/2020	Planting site F (3 people x 2 hrs)				6 hrs
15/03/2021	Tree popper (recommended by Mary) for removal of woody weeds at EcoVineyards sites		\$ 363		
30/03/2021	Removing woody weeds in the vineyard				3 hrs
5/05/2021	Herbicide spraying planting areas (F)			\$ 120	2 hrs
8/05/2021	David Pritchard trees for life	110	\$ 165		
25/05/2021	Kersbrook	190	\$ 349		
11/06/2021	Kersbrook	166	\$ 360		
11/06/2021	Fencing		\$ 583		
TOTAL		1,116	\$ 4,045	\$ 680	51 hrs

Thank you to our project partners!



Wine Grape Council
South Australia



COONAWARRA



This project is supported by the Northern and Yorke Landscape Board which is funded by the landscape levy.

Acknowledgement of country

The EcoVineyards project acknowledges Aboriginal people as the First Peoples and Nations of the lands and waters we live and work upon and we pay our respects to their Elders past, present and emerging. We acknowledge and respect the deep spiritual connection and the relationship that Aboriginal and Torres Strait Islander people have to Country.

The Kurna and Ngadjuri people are the traditional custodians of the Clare Valley region and have an ongoing connection to the land.

Disclaimer

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For more info about the EcoVineyards project see <https://www.wgcsa.com.au/ecovineyards.html>