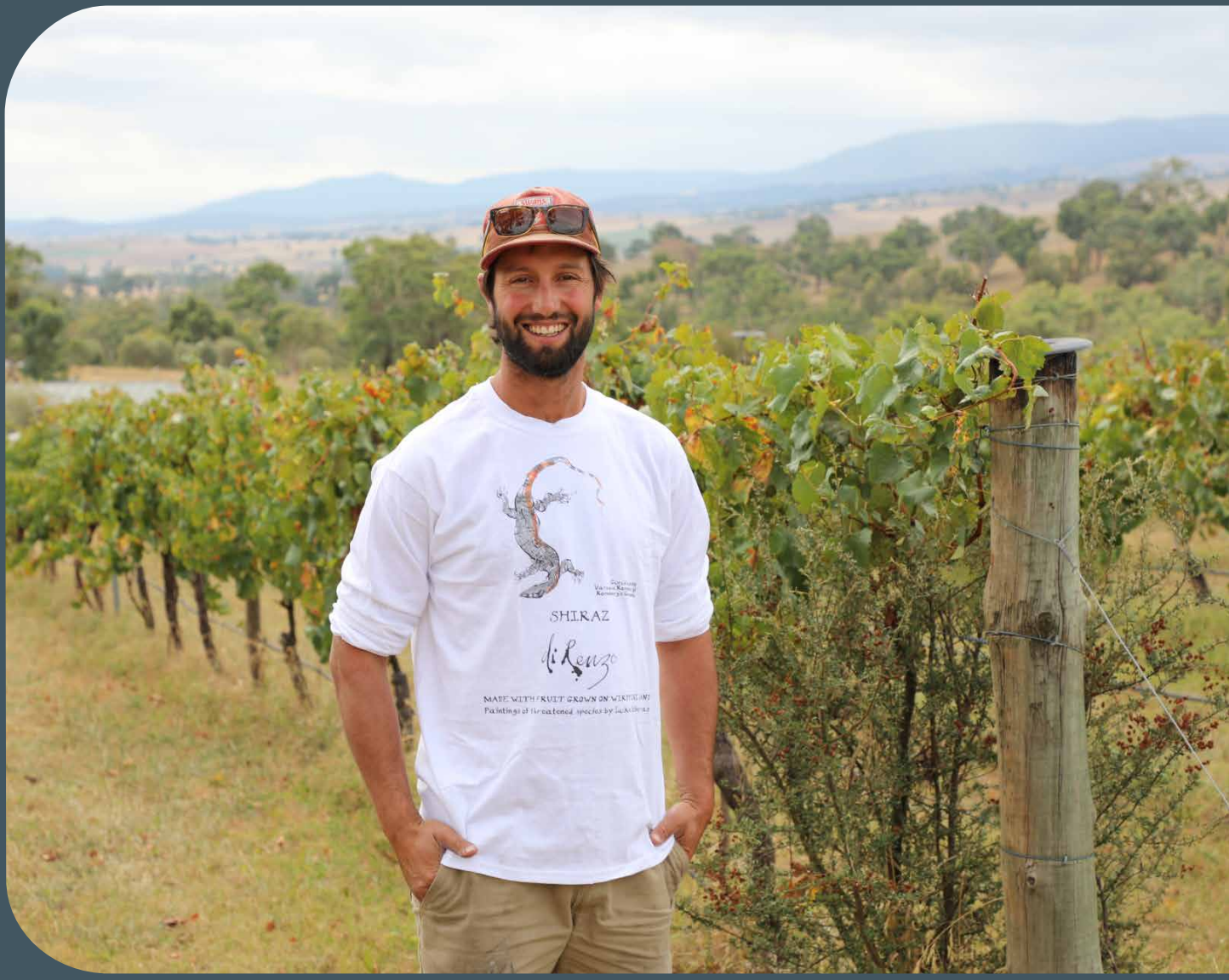
ECO VINEYARDS
GROWING RESILIENCE NATURALLY

CASE STUDY

ENHANCING FUNCTIONAL BIODIVERSITY BY INCORPORATING NATIVE INSECTARY PLANTS AT RENZAGLIA WINES, O'CONNELL, NSW

By Sam Renzaglia, Renzaglia Wines and Dr Mary Retallack, Retallack Viticulture Pty Ltd



Wine Australia

retallack viticulture

ENHANCING FUNCTIONAL BIODIVERSITY BENEFITS

Background

The property is located at 38 Bosworth Falls Road, O'Connell NSW and consists of a total of 12 hectares, with 2 hectares planted to Shiraz, Viognier, Chardonnay, Sangiovese, Tempranillo, Cabernet Sauvignon and Grenache.

The vineyard sits within a remnant grassy box woodland comprising *Eucalyptus blakleii,* Blakely's red gum and *E. meliodora,* yellow box sitting above a dam with some scattered, self-seeded trees around the perimeter.

There is gully at the bottom of the property with several remnant gums including *E. bridgesiana*, apple gum; *E. rubida,* candlebark and *E. viminalis*, manna gum; native shrubs and forbs populating the banks.

"The EcoVineyards program was an invaluable platform to align our farming practices with our core values of land stewardship and sustainability. It reaffirmed our commitment to the ecosystem of our property and gave us the tools and support to act with confidence and purpose."

Sam Renzaglia, Renzaglia Wines

Project description

Our goal was to establish a demonstration site within a new vineyard/nursery area, with a strong focus on integrating ground cover and biodiversity before vines are planted.

This approach reflects our long-term philosophy of working with the land rather than against it, fostering a self-sustaining and ecologically functional vineyard system.

The project aimed to trial and refine practices that enhance biodiversity and soil health from the very beginning of the vineyard lifecycle. Ground covers were sown in advance of vine establishment to create a living, protective layer that would support soil structure, encourage beneficial insects, and suppress weeds.

In addition, we planted out a dedicated insectary area, installed sedges along the dam's boundary, and added beneficial insect habitats at the ends of vine rows.

Figure 1: *Vittadinia* sp., New Holland daisy seed collected on the property [Photo: Mary Retallack].

What did you do?

Fencing and insectary establishment

The first task was to fence the insectary area to protect new plantings from grazing pressure, particularly from kangaroos and livestock. Once secured, the site was planted with a selection of native shrubs and grasses suited to the region and intended to attract beneficial insects.

Habitat enhancement in key zones:

After the insectary was established, additional plantings were carried out:

- At the vine row ends, with carefully selected shrubs to offer year-round ecological support
- Around the dam's perimeter, where sedges were introduced to stabilise soil and provide habitat diversity
- In the new nursery area, where forb species were planted to test their establishment in a ground cover-first approach.

Soil preparation and sowing

The nursery area was aerated and seeded, providing an opportunity to evaluate how direct seeding compares to tube stock planting under our specific climatic conditions.

What worked well?

The fencing was crucial in ensuring young plants weren't damaged by wildlife, particularly during winter.

Specific planting at vine row ends has proven to be effective, where targeted species selection delivers high ecological value.

Establishing some tubestock under controlled conditions resulted in a reasonable survival rate, showing that success is possible with proper protection and placement.

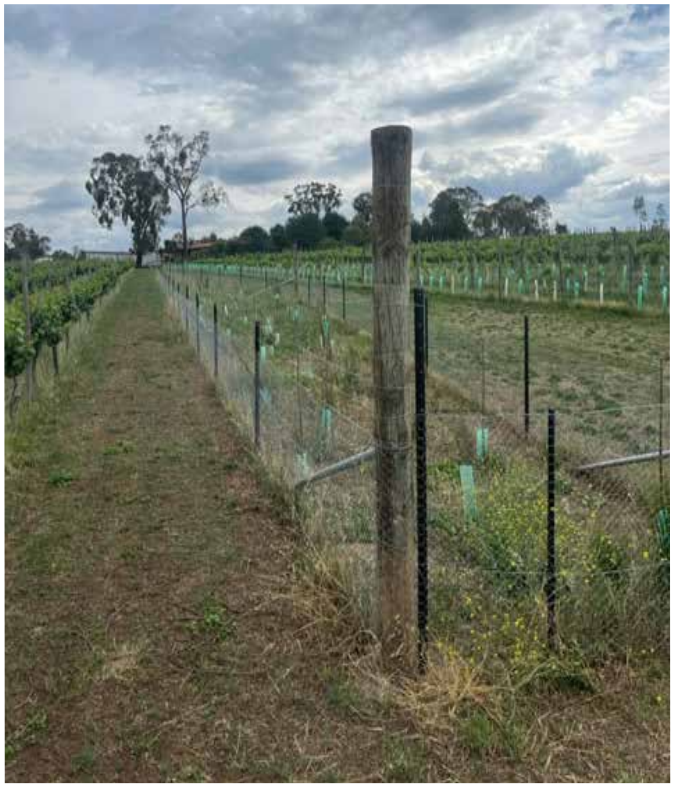


Figure 2: Bio bed planted, April 2024 [Photo: Sam Renzaglia].

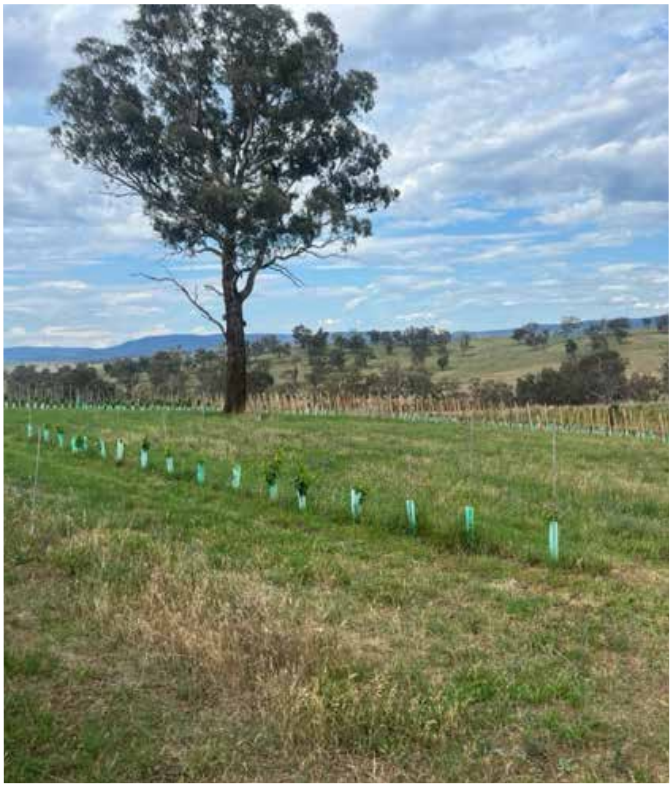


Figure 3: Native shrubs planted, April 2024 [Photo: Sam Renzaglia].

Pitfalls to avoid?

Establishing tube stock in our climate presents significant challenges. While we achieved modest success, the time and labour investment may not be justifiable in broader applications, unless planting for specific purposes in key locations.

Where broader vegetation outcomes are desired, direct seeding and management of the site conditions (soil, moisture, weed pressure) appears to offer a more practical, scalable alternative.

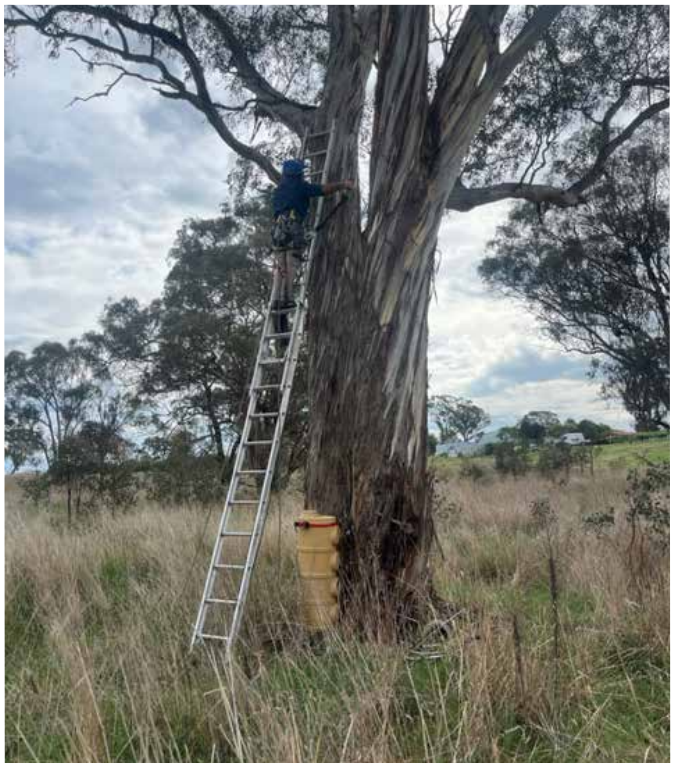


Figure 4: Microbat boxes installed, April 2024 [Photo: Sam Renzaglia].

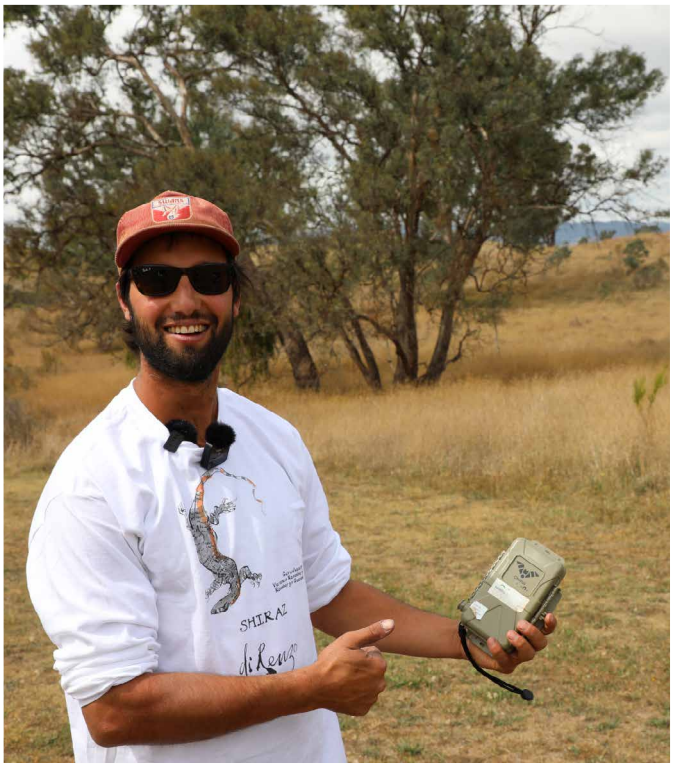


Figure 5: Sam installing a Chorus microbat recorder [Photo: Mary Retallack].

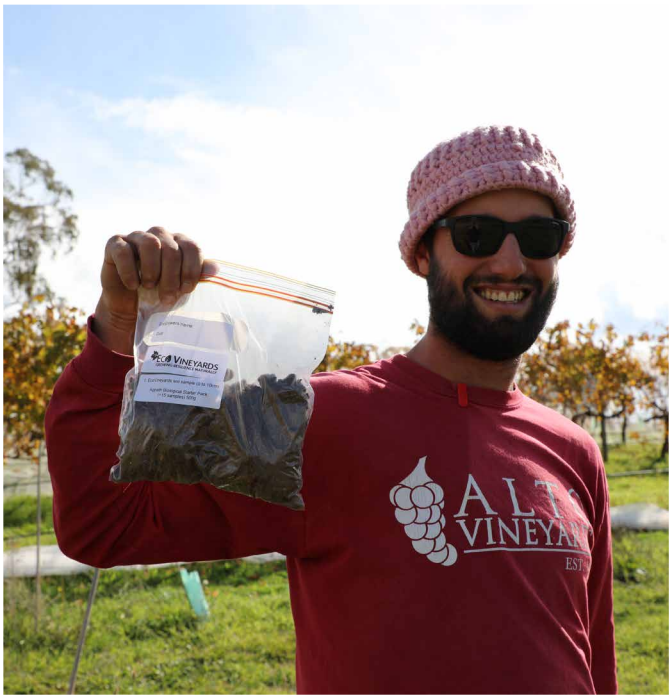


Figure 6: Initial round of soil testing to assess chemistry and biological benchmarks [Photo: Mary Retallack].

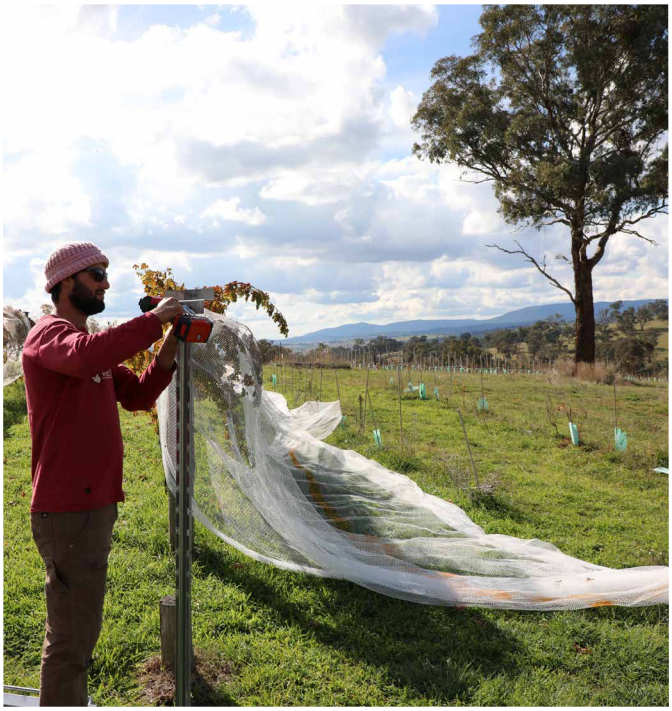


Figure 7: Installing the photopoint to monitor the growth of plants [Photo: Mary Retallack].

Where to from here?

This project is part of a journey that began well before EcoVineyards and will continue long after. We've been working on building functional biodiversity on our property for 3 to 4 years now, and we're just getting started. The EcoVineyards support has allowed us to consolidate and refocus our efforts, and we see this as a lifetime project.

We intend to continue planting out areas surrounding the insectary, expand revegetation around the dam, and eventually establish the nursery block itself. A key goal is to build up the seed bank over time so the landscape can begin to regenerate naturally with minimal intervention.

Key learnings

We now recognize the importance of seed bank health and natural regeneration in creating a resilient ecosystem.

There's a significant opportunity to deepen our understanding of how mid-row swards, insectaries, and remnant vegetation areas can be restored and sustained through ecological processes rather than constant replanting.

We've learned to observe and work with natural cycles, for example, by sowing grasses only during conditions where native species are naturally most likely to germinate.

There is a growing need to better understand insect and microfauna dynamics, especially the diversity and activity of beneficial insects and microbats in response to our interventions.

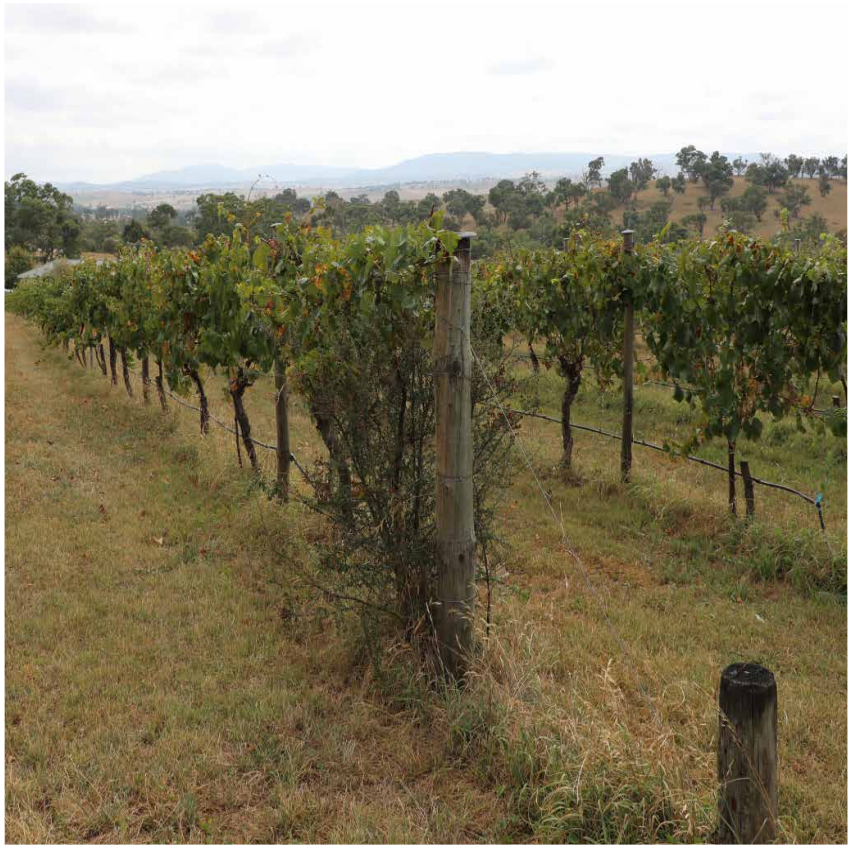


Figure 8: Native shrubs have been planted in the vine row inside the strainer post [Photo: Mary Retallack].

Reflections

The EcoVineyards program gave us the much-needed impetus to act.

The encouragement and support from Mary and the EcoVineyards team, along with access to program resources, have been instrumental. The experience helped us align our actions more closely with our values and provided a strong framework for experimenting with ecological improvements.

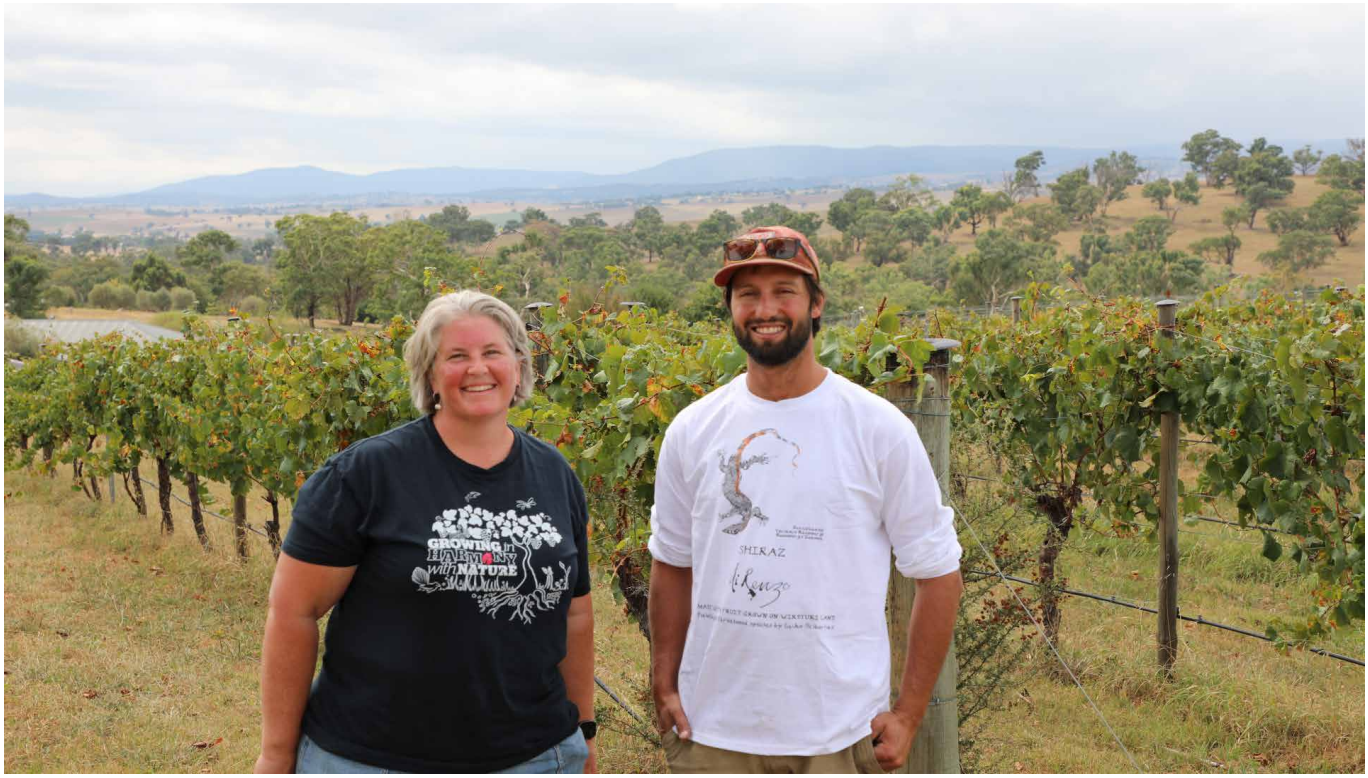
"Knowledge is always developing, but wisdom comes from observation and experience.

We've learned that the most impactful outcomes happen when we align our timing and actions with what nature is already doing. We've stopped trying to shape nature into our ideal and instead work alongside it."

Sam Renzaglia, Renzaglia Wines

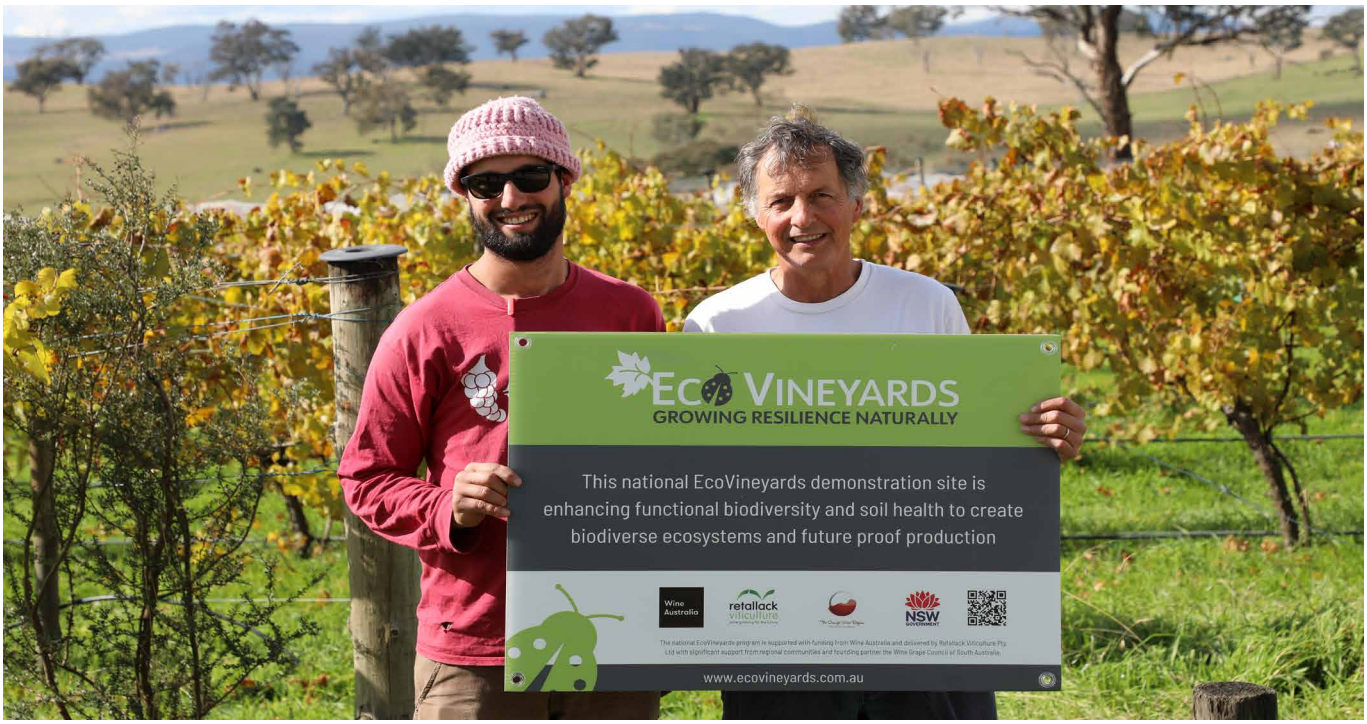
Plant list

#	Scientific name	Common name	Form	# planted
1	*Acacia rubida*	red stem wattle	shrub	40
2	*Allocasuarina littoralis*	black she-oak	tree	20
3	*Bursaria spinosa*	blackthorn	shrub	40
4	*Callistemon sieberi*	river bottlebrush	shrub	20
5	*Carex appressa*	tall sedge	sedge	20
6	*Chrysocephalum apiculatum*	common everlasting	ground cover	40
7	*Chrysocephalum semipapposum*	clustered everlasting	ground cover	40
8	*Daviesia latifolia*	hop bitter-pea	shrub	40
9	*Dianella longifolia*	blueberry Lily	sedge	20
10	*Dodonaea viscosa*	sticky hopbush	shrub	40
11	*Eucalyptus dives*	broadleaf peppermint	tree	20
12	*Eucalyptus sieberi*	silvertop ash	tree	20
13	*Goodenia pinnatifida*	scrambled eggs	ground cover	40
14	*Hardenbergia violacea*	purple coral-pea	ground cover	40
15	*Indigofera australis*	austral indigo	shrub	20
16	*Isolepis cernua*	low rush	sedge	20
17	*Juncus usitatus*	common rush	sedge	20
18	*Leptospermum myrtifolium*	grey tea-tree	shrub	20
19	*Leptospermum polygalifolium*	yellow tea-tree	shrub	20
20	*Microseris lanceolata*	yam daisy	ground cover	40
21	*Olearia elliptica*	sticky daisybush	shrub	20
22	*Xerochrysum viscosum*	sticky everlasting	ground cover	40
			Total	**640**



Expenses

Date	Item	Number of plants	EcoVineyards costs (ex GST)	Co-contribution (landholder contribution)	In-kind time (hours)
1/07/2023	Material to fence off insecatary Area B		$1,383		
1/07/2023	Labour 1 person x 10 hours				10
21/08/2024	Cumberland Plain Seeds 5kg of topseed mixed native grass seed @ $180/kg	5kg	$900		
12/09/2024	Impact Ecology - Microbat call analysis		$124		
24/09/2024	Cumberland Plain Seeds 55g *Calotis lappulacea*, 35g *Calotis cunefolia*, 45g *Eromophilia*, 45g *Glycine*, 45g *Chrysocephalum* @ $4/gram		$900		
11/11/2024	Lithgow and District Community Nursery tube stock	120	$260		
14/10/2024	Central Tablelands Landcare Inc tube stock	180	$540		
	EcoGrower contribution	340		$3,000	
	Total	**640**	**$4,107**	**$3,000**	**10 hours**



Disclaimer

The information contained in this EcoVineyards case study is provided for information purposes only. Wine Australia and Retallack Viticulture Pty Ltd give no representations or warranties in relation to the content of the case study including without limitation that it is without error or is appropriate for any particular purpose. No person should act in reliance on the content of this case study without first obtaining specific, independent professional advice having regard to their site(s). Wine Australia and Retallack Viticulture Pty Ltd accept no liability for any direct or indirect loss or damage of any nature suffered or incurred in reliance on the content of the case study.

For more information about the National EcoVineyards Program please visit www.ecovineyards.com.au @EcoVineyards

EcoVineyards
GROWING RESILIENCE NATURALLY

PROGRAM PARTNERS

Wine Australia

retallack viticulture
wine growing for the future

REGIONAL PARTNERS

Adelaide Hills Wine Region

Wine Grape Council SA

riverland wine

Clare Valley

A Drop Above
Orange Wine Region

Langhorne Creek Wine Region

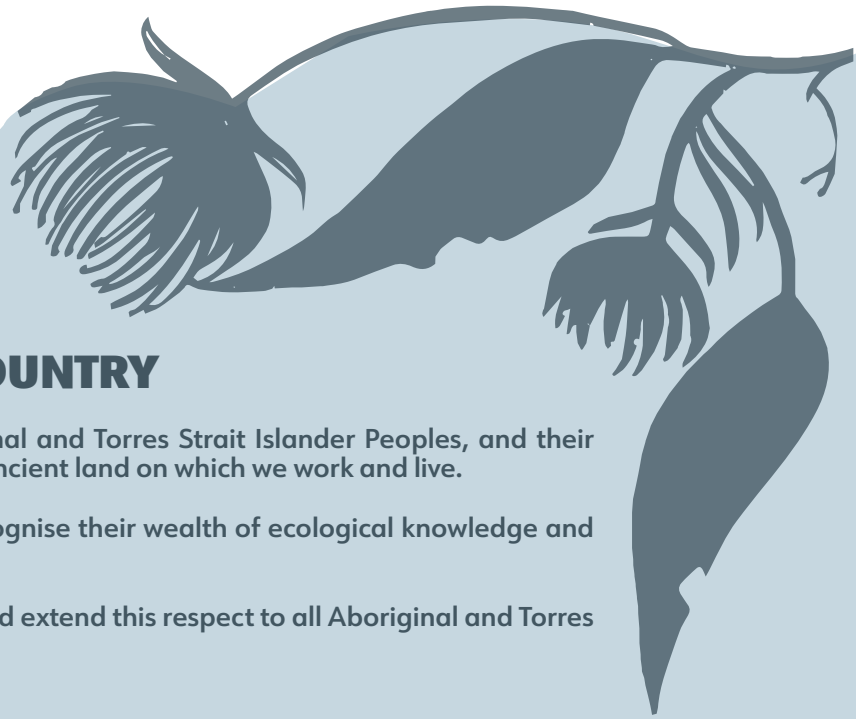
wine. Yarra Valley

MPW Mornington Peninsula Wine

Margaret River Wine

Hunter Valley Wine and Tourism Association

The National EcoVineyards Program is funded by Wine Australia with levies from Australia's grape growers and winemakers and matching funds from the Australian Government.



ACKNOWLEDGEMENT OF COUNTRY

EcoVineyards proudly acknowledges the Aboriginal and Torres Strait Islander Peoples, and their ongoing cultural and spiritual connection to this ancient land on which we work and live.

As the Traditional Custodians of this land, we recognise their wealth of ecological knowledge and the importance of caring for Country.

We pay our respects to elders past and present and extend this respect to all Aboriginal and Torres Strait Islander Peoples.


ECO VINEYARDS
GROWING RESILIENCE NATURALLY