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CAWTHRON MARLBOROUGH ENVIRONMENT AWARDS 2023

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JUDGES' REPORT

WINE INDUSTRY

PATRIARCH VINEYARD WETLAND

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INTRODUCTION

The owners of Patriarch Vineyard took on a big challenge when they decided to restore a 3.8 ha wetland along the foot of the escarpment near Wairau Valley township.

Gorse, briar, blackberry, climbing muehlenbeckia and willows as well as rank pasture are the main weeds to control but good progress is being made to clear and replant with natives.

Rob Fryer of FuturEcology is leading the project and takes a pragmatic approach - working in small stages, rather than biting off too much at once.

The owners have a genuine desire to improve the property and biodiversity around the vineyard and are setting a strong example for other landowners in the Wairau Valley.

GENERAL INFORMATION

Patriarch Vineyard is a 90 ha property planted in Sauvignon Blanc, Pinot Noir, Chardonnay, Pinot Gris and Gruner Veltliner. It is owned by a syndicate of retired farmers as part of a MyFarm Investment and the vineyard is leased to winemaker Ant Moore.

The grapes are planted over two river terraces while a series of three spring-fed wetlands cover 3.8 ha along the base of the higher terrace.

The open-water sections of the wetlands are man-made, but it is not known when or why the ponds and channels were excavated.

When the syndicate bought the property in 2015 they were keen to eradicate the gorse and broom and restore the wetland with natives. They said it's about doing the right thing, and restoring the wetland aligns with their values to give back to the land.

The project took off in earnest in 2019 with FuturEcology coming on board and creating a wetland restoration plan.

FuturEcology has two staff in Marlborough and nine in Nelson. Managing director and ecologist Rob Fryer is a strong believer in making a project achievable and affordable for the landowner by approaching it in stages.

The key processes at Patriarch are weed control and good species selection to improve plant survival and minimise maintenance. The project is being approached in stages, based on three different areas of wetland.

Area 1 (MDC Wetland W327) covers 1.5 ha and has the largest area of open water. 4000 natives have been planted along the wetland margins and on drier banks of stony spoil that had been previously excavated to create the pond.

- Weed control: Willow, old man's beard, gorse, blackberry and exotic grasses are the biggest issue. Willows spread and crowd out natives. They are controlled by drilling and filling with herbicide (50/50 glyphosate and water). As the willows die off, there is space and light for natives to grow. Chemical spray to kill gorse cannot be used near water or vineyards. Instead, islands of gorse are cut and poison is pasted on to the stumps. Some pockets of gorse are left to provide nursery cover for young natives. Rank grass is sprayed with Round-up to create planting areas.
- Planting: Once weeds have been cleared, a mixture of natives are planted. Carex is the hero plant for riparian areas – it copes with flooding and sedimentation and provides shade, cooling for freshwater species and is food source for insects. Mingimingi, toetoe, flax and manuka provide an understory, while cabbage trees, ribbonwood, totara, kowhai and kahikatea are planted for height. Seeds are eco-sourced from Marlborough and grown into root-trainers. They are planted 1m apart and protected by plant guards made from recycled cardboard pulp and secured with one bamboo stake, which also shows where the plant is. These EmGuards, invented and produced by FuturEcology, have played an important role in allowing seedlings to establish. They provide shelter, protection from spraying, reduce water loss and stop animals from chewing young growth. The guard is biodegradable and breaks down as the plant grows.

- Maintenance: A combination of spraying and scrub bar is used to release weeds and keep the grass down. The EmGuards provide protection from both of these methods. The high survival rate (90 percent) is attributed to a combination of initial weed spray, plant selection, EmGuards, managing grass and weeds, and ongoing plant husbandry by staff.

Area 2 (MDC Wetland W798) is 2.45 ha and connects with Area 1. There is flowing water in two small streams that border an otherwise large area of dry and stony ground. Rank pasture grass is hard to penetrate, along with gorse and woody weeds, but patches have been cleared and 3000 natives planted, with a focus on carex and flax. The same species list, weed control and maintenance programme is used in both areas. Establishment of Area 1 and 2 was staggered over two years to space out maintenance requirements and allow for any changes in methodology based on the experience of the first year.

Rare freshwater mussels (kākahi) have been found in a neighbouring stream and it is hoped that spat could spread to the Patriarch wetland if the water channels are kept clear and koaro (a native fish that hosts the kākahi larvae) are able to migrate. Kākahi help filter sediment in freshwater and are a traditional food source for Māori.

Area 3 (MDC W799) is 0.8ha and is not connected to the other areas. It is boggy, choked with weeds and difficult to work in. There is a big job ahead to tackle the willow, blackberry, wild rose/briar, muhlenbekia vine and elderberry. There are some plantings of umbrella sedge, flax, cabbage trees and carex but the priority for this area is to tackle the weeds, bit by bit. The focus is on the rampant grey willows, which are drilled and filled with herbicide (50/50 glyphosate/water mix). FuturEcology picks their fight – for example, patches of climbing muehlenbeckia, briar and blackberry are left unless they are interfering with growing natives. An earlier planting of oaks is now well established and may have been planted by Fish & Game to attract ducks. Area 3 has been fenced off to prevent sheep from the vineyard getting in.

Environmental benefits of restoring the wetlands include:

- Storage of carbon and reducing emissions to help mitigate the effects of climate change.
- Improving water quality by filtering out sediment, nitrates and chemicals.
- Absorbing water during floods and releasing during periods of drought.
- Providing native habitat and biodiversity amid the vineyard monoculture.

Rob believes that success breeds success and hopes the Patriarch project will inspire neighbouring vineyards to consider native plantings to wildlife corridors across and down the valley.

THE JUDGES WERE IMPRESSED BY:

- The syndicate of owners are to be commended for their initiative and financial commitment to restoring the wetlands. Up to June 2022 the project has cost $65,000. There is no commercial benefit to the syndicate - the work is being done because they want to do the right thing.
- The close collaboration between the owners and FurturEcology. The enthusiasm and commitment is evident in both parties and shows the strength of working with the willing.

- Taking a staged approach and not biting off more than they can chew.
- The 90% survival rate of plantings. This can be attributed to the pragmatic approach of spraying with Round Up before planting to knock down long grass, selecting appropriate species for different sites, and protecting plants with EmGuards.
- The environmental benefits of EmGuards: biodegradable and made from 70% recycled cardboard. They nurture the young plants and break down gradually to provide mulch. There is no plastic going into the waters or the landfill.
- Taking a wider view of wetland restoration by understanding the need to create habitat for fish, birds and invertebrates. Plant selection and the role of plants to shade water, encourage insect life, attract fish and hopefully kākahi to filter the water.

PROBLEMS AND HOW THEY HAVE BEEN TACKLED

- Invasive weeds: Willow, old man's beard, blackberry and exotic grasses inhibit native growth and germination.
  Willow has dense roots that raise the bed of the wetland and suck up a lot of water. Chemical spraying is problematic around waterways so the willows are drilled and filled. Weed control before planting combined with biodegradable plant guards helps the plants establish.
  Instead of glyphosate, a scrub bar and scythe is used to clear weeds around carex and the waterways.

- Wasps: There is a big risk to workers from wasps, particularly in Area 3. In late summer-autumn, Vespex bait is put out for wasps to carry the poison back to their nests. If a wasp nest is found, Permex insect dust is applied by a puffer to the entrance of the nest. Due to health and safety concerns, staff do not work on their own in Area 3.
- Floods: The wetlands are on a river terrace beside the Wairau River and new plantings were put to the test with the July 2021 floods. Over a metre of water went through but the new plantings were surprisingly resilient and bounced back after being flattened. Species selection helped with the survival rate. Not too many swamp flaxes are planted because they can impede the flow of flood water.

SUMMARY

Restoring and enhancing the Patriarch Vineyard is a big task requiring extensive weed control, native plantings and a commitment to long-term maintenance.

The syndicate of owners are on the way to achieving their vision to improve the wetlands as part of the vineyard environment, thanks to thoughtful project management by FuturEcology.

There has been and continues to be significant land and waterway modification by the viticulture industry and it is good to see the efforts at Patriarch Vineyard to bring back the wetlands and improve biodiversity. It is hoped that other larger vineyard landowners will follow their lead.

SUGGESTIONS

- Approach the leasholder/winegrower to see if they would be interested in contributing to the wetland project. As well as improving the biodiversity of his vineyard, it may be useful for wine marketing.
- Invite MyFarm Investments to visit and promote the story of the wetland restoration to their other vineyard clients. They could also put the video from the Awards up on their website.
- Seek Council funding for planting and weed control - applications for Working for Nature/Mahi mō te Taiao grants open in April 2023 https://www.marlborough.govt.nz/our-community/grants-and-awards/working-for-naturemahi-mo-te-taiao
- Seek Council support for a study of the freshwater ecology to establish a baseline. Contact Mike Aviss, MDC Biodiversity Co-ordinator, mike.aviss@marlborough.govt.nz
- Provide staff with an Epi pen for adrenaline for wasp stings, to be carried at all times.
- To improve habitat for native birds, consider a predator trapping programme. There may be interest in establishing a local volunteer wetland protection group including Wairau Valley school and vineyard staff.
- Come up with names for Areas 1, 2 and 3. For example, Tōtara, Kākahi and Mātātā (fernbird).
- Ensure wetlands staff and the leaseholder are familiar with new rules in the Marlborough Environment Plan about working in and around wetlands.