Mount Vandyke: Saturday 14th May 2022

Welcome to the Mount Vandyke Restoration Reserve

It was only 12 months ago that Nature Glenelg Trust announced the purchase of Mt Vandyke, our 8th Reserve, but a lot has certainly happened in that short space of time!

This update accompanies our first community event at Mt Vandyke, and provides us with the opportunity to recap our progress over that time and highlight the next steps in this novel ecological restoration project.

We wish to acknowledge the Gunditjmara people, the First Nations custodians of the land that includes the Mount Vandyke Restoration Reserve (traditionally known as Banbangil), and pay our respects to elders past, present and emerging.

We are fortunate that a sole newspaper article from 1870 (right) preserves a fragment of the deep time connection of the Gunditjmara people to this land, with the recording of traditional oral history; accumulated knowledge passed down over millennia. At present, this is the only reference we have discovered to the traditional name Banbangil.

We hope you enjoy learning about the site, and being part of this restoration project as it unfolds.

Mark Bachmann,

Managing Director and Founder

SINGULAR LEGEND.

(FROM A CORRESPONDENT.)

The aborigines have a legend which may have had some foundation in reality. They aver that "long ago" a great water (tidal wave) came to Leywhollot (Portland), but as the beach there was too low to restrain it, it rolled on through the Nine-mile forest, devastating the country, and destroying all animal life. It, however, did not reach the summit of Yayah (Mount Eccersly), where some aborigines were then encamped; and they alone of a numerous tribe were left to tell the dismal tale. The legend states that prior to the advent of the wave Wombriknik (Scott's Waterhole) was a great lake; and Wangot (Oak Bank) the haunt of great birds, probably the dinornis. At that time Yallok (Crawford River) was a great arm of the sea; and Banbangil (Mount Vandyke) rose from the plain in one night, and Pyrtpartee (Mount Mistake) leapt up a day or two after. Palawarra (Heywood) was a great swamp, and Benwerrin (Mount Richmond) was on fire. There were great wild beasts in the country then, and at Namburnburn (Ettrick) there were some that the blackfellows dared not encounter. The first blackfellows, the legend asserts, came from where the sun sets, across an isthmus, which the tidal wave destroyed; and when Mount Gambier begins to burn, and the earth to shake, the tidal wave will come again.

Introducing Mt Vandyke - *Mark Bachmann, Managing Director*

1. The land purchase

Nature Glenelg Trust first investigated the purchase of Mt Vandyke when it was placed on the market 10 years ago, in autumn 2012, only a few months after NGT was launched. As we had just started operating and had no track record or financial resources to call upon, our options for purchase or securing finance were limited. Soon after, the property went under contract and was sold to another buyer as we were still trying to come up with a way to make a purchase possible. While we were disappointed and thought we may not see another opportunity to secure the site, we had to quickly move on with other plans as we worked hard to get NGT fully up and running.

Mount Vandyke in 2012, after blue-gum harvest

Then in late 2019, we were surprised to see the property placed back on the open market for sale and by this time NGT was in a better position to act more quickly. Our Board resolved to secure the $280,000 property under contract, delay settlement (which occurred in July 2020) and also seek a loan to cover the property purchase cost until we were ready to make the purchase public. NGT was servicing the loan with minimum repayments until making the new project public in May 2021, kicking off our public fundraising campaign at that time with a $268,192 shortfall (right). In doing so, we were incredibly fortunate to have several major supporters of NGT offer to match incoming general donations to help accelerate the process of paying down the loan. This was the first time we had offered this option and also the first time that we had structured a land purchase fundraiser by simply sharing the loan balance over time. So yes, in case you are wondering, the balance we shared each month was literally a screenshot from the NGT bank account, showing the latest loan amount!

Our dollar for dollar matching arrangement was incredibly successful and over the first 6 months, the balance of the loan had dropped to approximately $130,000. It was at this time that we took a call from Judy Glick, who had been quietly following the progress of the fundraiser and decided to make a major gift in honour of her late parents, Dora and Felix Hiller, wonderful people who shared their passion for nature with their family throughout their lives. Her incredibly generous gesture was matched by the Purryburry Trust, and suddenly in mid-December 2021, the land purchase loan was paid off!

Felix and Dora Hiller on their 60th Wedding Anniversary. Photo courtesy of Judy Glick

So after contributions from a wide range of more than 150 different people and organisations, coming together to support NGT's vision for the site, we finished 2021 on a high note and able to fully focus on the next steps of this long-term restoration project. The vision for the site and subsequent steps are outlined over the following pages.

2. An exciting opportunity to test a new concept in a unique location

If you have previously completed the stretch of the Great South West Walk through the Cobboboonee forest, you might recall that not long after you leave the Fitzroy Camp, a small in-lying parcel of private farmland suddenly appears, as shown right, situated on a volcanic peak in the middle of the National Park. The walk skirts the southern edge of the block and then disappears back into the forest.

Traditionally known as Banbangil, this peak has been known on maps since European colonisation as Mount Vandyke, and by old time locals as the "Good Hill" – presumably for its reliable rainfall and rich volcanic soil that originally sustained open native grassland and sedgeland, likely maintained by traditional burning by Gunditjmara people.

Remnant damp tussock grassland/sedgeland habitat in the National Park adjacent to the fence at Mt Vandyke – providing an example of the future habitat structure we'll be hoping to recreate across the Reserve.

This 85 acre parcel of land presents a unique opportunity for NGT to embark on a very exciting and different type of restoration project – one that puts some of our threatened small mammal fauna (a topic we have spoken about for a long time at NGT) in the spotlight. While normally a modestly sized 85 acre block with a long history of farming and a more recent phase of commercial blue-gum forestry would not necessarily attract our attention, it is the location of Mt Vandyke that offers some tantalising possibilities.

Firstly, that is because it is surrounded by two of south-west Victoria's premier National Parks, Cobboboonee and Lower Glenelg, which together comprise an area of approximately 50,000 hectares of continuous native vegetation. Yet despite the large size of these protected areas, this part of mainland Australia has experienced precipitous declines and/or extinctions of many species since the European Red Fox arrived (after its deliberate introduction in Victoria) over 120 years ago. Species that formerly occurred in this area that are now extinct in the wild on the mainland – but still occur in nearby Tasmania – include the Eastern Quoll, Rufous-bellied Pademelon, Eastern Bettong and Eastern Barred Bandicoot. These species are an important part of the food-web and play critical functional roles in Australian ecosystems, like working the soil and dispersing seed or spores, but have now been missing in this area for many decades. Other nationally threatened medium sized mammals that have managed to hang on in these forests – at least for now – include the Long-nosed Potoroo and Southern Brown Bandicoot.

Secondly, and with these latter (still extant) species in mind, these parks also now happen to be home to one of Victoria's longest running continuous fox-baiting programs, Glenelg Ark, which has seen DELWP and Parks Victoria actively suppressing foxes in the large forested area surrounding Mt Vandyke since 2005 to benefit these threatened species. However up until now Glenelg Ark, despite its large-scale influence via introduced predator control, has not yet resulted in any value-adding trials in this wider landscape, and that is where this project comes into play – building on the existing good work of others.

Why is this project described as a 'trial'?

Put simply, we are going to be planning, implementing and testing a different model of small mammal recovery and reintroduction. Most small mammal recovery projects on the mainland have generally either sought to build large introduced predator-free exclosures to re-establish extinct species, or alternatively aimed to suppress introduced predators over large unfenced landscapes to protect or recover threatened species that are still persisting (e.g. Glenelg Ark, Southern Ark in Gippsland, Western Shield in WA).

The NGT project at Mt Vandyke is actually looking to experimentally blend and test these concepts together, by reducing the scale (and hence cost) of the introduced predator-free enclosure, but then embedding it within a wider landscape where introduced predator control is already occurring.

In doing so, we are looking to build on the extremely valuable recent experiences of a reintroduction project in Booderee National Park in NSW, where project managers have encountered difficulties in re-establishing some species in a wider unfenced landscape without the benefit of ongoing population supplementation. At its core threatened species recovery is, after all, simply a numbers game – which means we need to find innovative and sophisticated ways to better manipulate the odds of recovery; that is, we need to tip the numbers in our favour to improve the probability of ongoing success.

With this in mind, Mt Vandyke is being established as a strategically located staging point for small mammal reintroductions, to re-establish and/or supplement populations beyond the fence, to contribute to their long-term viability in the wider managed landscape outside the fence. If successful, then this is a concept that could be replicated more broadly in similar situations in temperate higher-rainfall regions (where less of this type of experimentation has occurred than in arid or semi-arid areas), seeding and sustaining re-established populations of threatened fauna outside of fences. This new project is all about testing, trialling and refining this concept for our three initial target species in a semi-wild setting inside the fence.

Our initial focal species for this project are:

- the threatened (but still locally occurring) **Southern Brown Bandicoot** and **Long-nosed Potoroo**. For these species, NGT has partnered with DELWP and will use the Mt Vandyke safe haven as a staging point for releases of animals into the wider forest, allowing for the introduction of increased genetic diversity and fitness to sustain and enhance local wild populations to prevent further declines.

- the now extinct (but long-ago, once abundant) **Eastern Quoll**. For this species, NGT is partnering with the Dunkeld Pastoral Company and Shepherd's Hut Sanctuary as founding members of the SW Victorian Quoll Hub, working together to return eastern quolls to the landscape. With the Dunkeld Pastoral Company recently funded by the Australian Government to build a new safe haven for the species near Dunkeld, our three organisations will cooperate in our future plans for this species and the use of our fenced enclosures. This includes the goal of using Mt Vandyke as a location for returning eastern quolls into the wider landscape surrounding our reserve that is subject to the Glenelg Ark fox-baiting program.

3. Fence design

Rose Thompson, Project Ecologist

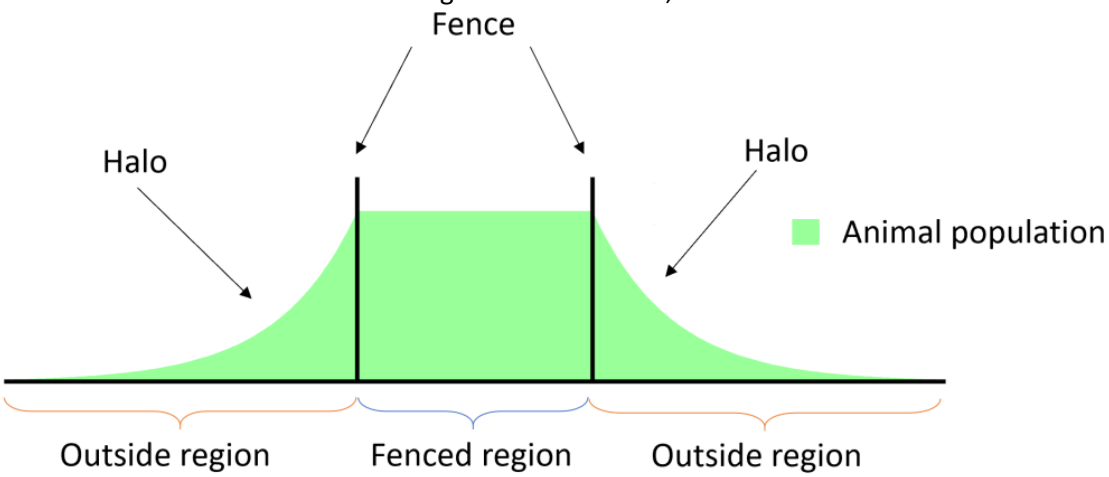
On Tuesday the 21st September 2021, NGT held a fence design workshop with representatives from our immediate 'neighbours' at Mt Vandyke. This included staff from Parks Victoria, who manage Cobboboonee National Park, and DELWP, who deliver the Glenelg Ark fox baiting program across this reserve and adjacent public land. This was a chance for us to share what we had learned after researching the latest on conservation fences around Australia, as well as to test the logic our preferred fence design (considering current and future potential species of interest), and to discuss any optional elements that we were yet to finalise. We were really grateful for a number of sanctuary managers so openly sharing their designs, experiences and ideas in the lead up to this workshop, which greatly assisted in the development of our preferred design. The latest fences currently being built around Australia are now generally very similar to each other, but there are still some minor design variations based on target species and local sites conditions.

After weighing everything up, we settled on a fence design as follows:

- 2 m high fence, with mesh size of 40 mm
- apron on both sides along the ground, also with mesh size of 40 mm
- umbrella over the top with 50 mm mesh (overhanging floppy top on both sides)
- manual sliding gate
- fence capable of future electrification, but not initially fitted

The logic of this design was that:

- we have no rabbits at the site, meaning that 40 mm mesh is sufficient for preventing incursions of all other undesirable species. This size also means that young bandicoots are capable of squeezing through this size mesh, but this type of outward 'leakage' into the surrounding landscape is desirable and a phenomenon recorded at most safe havens. The logic of how a fenced area can maintain a population outside the fence via this 'leakage' is shown below, and is referred to as the 'halo effect'.



- the apron and umbrella on the inside of the fence will allow us to control the rates of leakage of some of our target species that dig (e.g. bandicoots) and/or climb (e.g. quolls).
- we're not convinced just yet (based on all the asking around we have done) that electric wires are going to be necessary based on this design, but we designed the fence so that this element can easily be added later if required.

4. Fence construction

Tom Sheehan, Field Ecology and Works Officer

After our fencing materials order was placed in late 2021, the fence construction process formally commenced in January 2022 and initially involved preparation of a property perimeter track, to both provide sound access for future fence inspection / repairs (given how wet the site gets in winter), as well a solid foundation upon which to build the new fence.

RIGHT: Track construction completed in early 2022.

After also trimming back overhanging limbs, to minimise the future risk of the new fence being breached by falling trees, construction of the fence itself commenced in March and was completed by the end of April 2022. Our contractor Mike McFall and his crew did an excellent job, ably assisted by the NGT field staff who were also on hand through much of the process.

We're extremely pleased with the workmanship and quality of the fence, which is now essentially complete, except for a final few tidy-up jobs being completed by NGT staff. Given that the weakest potential link in any fence design is the gate, we're especially satisfied with how the new sliding gates work.

The newly completed sliding gate and fence at the Mt Vandyke safe haven.

5. Grassland / sedgeland restoration

Rose Thompson, Project Ecologist / Jonathan Tuck, Senior Ecologist

With the all-important job of fence construction complete, we're now focussed on taking the necessary steps towards recovering the former diversity and structure of the original native vegetation inside the fence at Mt Vandyke, in readiness for future use of the site by small mammals.

As the site has been grazed for the past 150 years, before spending 15 years under blue-gum plantation, and then having most of the stumps removed and being tilled and sown to pasture over the past decade, we have quite a habitat restoration job ahead of us!

Difference in habitat condition inside and outside the fence at Mt Vandyke

Given the location of the site, embedded in the middle of a National Park, we are going to do our best to ensure the future vegetation structure and diversity at Mt Vandyke is as consistent as possible with the surrounding landscape and our ongoing conservation plans for the site. We are fortunate that we have some excellent pockets of habitat outside the fence that give us a very useful template, as shown right.

Thankfully there are many wonderful people and organisations who have been working to restore and better manage grassland vegetation communities across the Victorian Volcanic Plain for many years, devising techniques for their management, re-creation and/or restoration. They have been generously sharing their knowledge with us, as we currently plan for the commencement of the first phase of a grassland restoration trial inside the smaller of our fenced areas, situated in the grassland behind the shed.

The grassland restoration trial is commencing at Mt Vandyke inside the smaller triangle fenced area shown above.

As part of the trial, we're looking to test two different methods of site preparation before sowing with native grasses and sedges:

(1) a mould board ploughed area (see example right) – to invert the top layer of the soil profile (and bury the weed seed present in the upper profile); and,

(2) an area that is scalped (see example right) – with the top 10cm of the soil profile (and its weed seed load), being removed and redistributed nearby.

As well as determining which method is best for using across more of the site in the future, we are aiming to use this trial area for seed production. This will allow us to harvest our own native seed in the future, for expanding the restoration works across more of Mt Vandyke. Despite the reserve not being especially large by most standards, as a grassland restoration area, we are told that if we eventually succeed in bringing it back, it will end up being one of the largest grassland areas recreated in western Victoria.

6. Next steps for bringing small mammals back inside the fence

Mark Bachmann, Managing Director

Now that we have cleared our first major hurdles for the project at Mt Vandyke over the past 12 months, such as paying off the land purchase debt and completing the predator-proof fence, we are better able to fully focus on the important next steps for this project.

Tom and Rose have led NGT's work over the past 12 months

Those tasks which will unfold over the next few years include:

- maintaining the new fence;
- eliminating feral species and managing weeds inside the fence;
- monitoring changes to wildlife at the site (inside and outside the fence) over time;
- implementing the staged grassland/ sedgeland revegetation program (described in the previous section) to restore habitat structure inside the fence; and
- planning and implementing projects for the specific native mammals species that will utilise the site in the future, commencing with the Southern Brown Bandicoot, Long-nosed Potoroo and Eastern Quoll.

Even before we get to the point of releasing animals inside the fence, we have an interesting opportunity now to see what changes unfold inside the fence in the absence of introduced predators and as we restore the area to tussocky grassland and sedgeland. The 40 mm mesh size in the boundary fence will enable some movement of smaller reptiles and mammals, so it will be fascinating to see what changes naturally unfold now, on their own, with the feral predators gone.

Southern Brown Bandicoot digging: *The return of digging mammals to Mt Vandyke will have positive physical and biological flow-on effects within the ecosystem.*

Eventually, once we have the opportunity to re-introduce digging mammals like the Southern Brown Bandicoot and Long-nosed Potoroo, we are also hoping and expecting to see a positive long-term influence on both the soil characteristics and grassland flora of the site. This is because symbiotic relationships between native flora, fauna and physical processes will soon be reinitiated by the presence of these keystone mammals in the ecosystem.

For more information about the project, or to donate to Nature Glenelg Trust, please visit the NGT website: www.natureglenelg.org.au, or call 08 8797 8596, or email info@natureglenelg.org.au.

Nature Glenelg Trust is grateful for the support of the following partners at Mt Vandyke:

Australian Government

PURRYBURRY TRUST

VICTORIA State Government | Environment, Land, Water and Planning

Parks VICTORIA