

Nature Glenelg Pty Ltd
[ACN: 153 577 907]

as Trustee for



ABN: 23 917 949 584

Annual Report: 2019-20 Financial Year

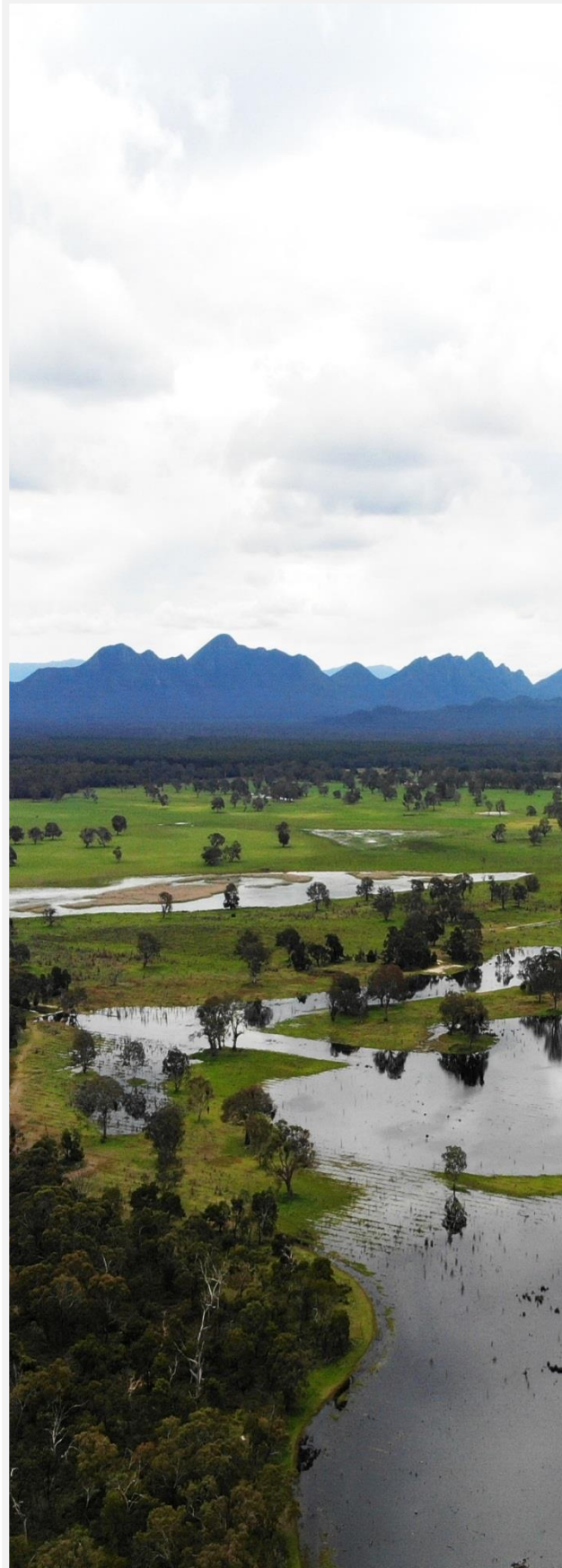


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ORGANISATIONAL PURPOSE

Nature Glenelg Trust is a mission-driven, not-for-profit organisation that has been established to operate as:

1. a community environmental NGO;
2. a source of professional ecological knowledge available for delivering project work that improves environmental management outcomes; and,
3. a recipient of charitable donations for supporting habitat restoration and other environmental work consistent with the priorities set out in our Deed of Trust.

This operating model enables the organisation to (1) seek and deliver grants for community environmental benefit, but also (2) provide ecological consulting services under two registered trading names, Aquasave – NGT (for aquatic ecology) and NGT Consulting (for general ecology). In furthering our organisational purpose by working with clients on important conservation management projects, our consulting services also provide a financial contribution to support the costs of running our not-for-profit organisation.

Since Nature Glenelg Trust was admitted to the Register of Environmental Organisations in 2014, this model also seeks to diversify organisational funding streams and minimise the need to rely upon donated funds to support day-to-day operations and administration. In this way, we give supporters the confidence that their donation to our Public Fund will achieve maximum impact in furthering the on-ground environmental objectives (such as habitat restoration and threatened species recovery) of Nature Glenelg Trust.

All core activities of Nature Glenelg Trust (including our ecological consulting services) meet at least one of our organisational objectives from our Deed of Trust, namely:

1. To protect and enhance the natural environment, with a particular emphasis on wetland conservation and restoration activities in the Focal Region^{*1}, supported by the Habitat Restoration Fund.
2. To generate and provide high quality scientific information that enhances management of the natural environment.
3. To support and undertake key conservation ecology research predominantly within, but not limited to, the Focal Region.
4. To promote public awareness of nature through education, and involving the community in the activities of the Trust.

^{*1}: Our focal region includes the NRM/CMA regions situated between Melbourne (Victoria) and Adelaide (South Australia).

DIRECTORS REPORT

1. Summary of the year's activities

1.1 Project work overview

Nature Glenelg Trust delivered a total of 145 projects during the 2019-20 financial year, with 35 of these projects completed by the 30th June 2020.

Type of Project Work	Number of Projects Active during 2019-20 Financial Year
Native flora, vegetation management or ecological monitoring	40
Native fish	42
Other fauna	14
Community engagement and education	14
Multi-faceted projects (several types combined)	6
Wetlands and waterways	29
TOTAL	145

1.2 Grant funded project work

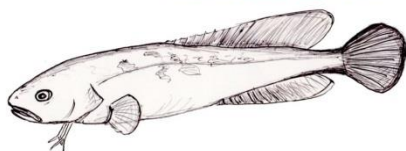
Nature Glenelg Trust was awarded grant funding to commence or continue the delivery of 33 grant funded projects in the 2019-20 financial year. Seven grant funded projects were acquitted during the financial year, with the other 26 remaining active into the 2020-21 financial year.

1.3 Environmental consulting project work

Nature Glenelg Trust delivered 112 contracted environmental fee-for-service projects for a range of clients in the 2019-20 financial year. Twenty-nine (29) of these projects were completed and closed during the financial year, with the balance (83) remaining active into the 2019-20 financial year.

As previously explained, irrespective of whether they are grant funded or contracted professional fee-for-service projects (as delivered under our registered trading names: Aquasave NGT, or NGT Consulting – logos below), NGT only delivers projects that are consistent with our organisational objectives, making a positive contribution to regional environmental management. The breakdown of these projects by category is included in the overall summary table presented in section 1.1.

AQUASAVE - NatureGlenelgTrust



Ecology, Monitoring, Conservation

NGT Consulting 

its natural condition) to agricultural (clearing and sowing introduced pasture and crops, associated with higher stocking rates and fencing the land into smaller paddocks). Being naturally a very wet run, the closer settlement of Pollockdale eventually led to a whole series of comprehensive drainage works – already visible in the earliest aerial photography in the 1940s – which continue to influence the area today. While the current Pollockdale property is smaller than the original pastoral run of the same name, it has a direct link to this fascinating past, being at the heart of the former pastoral run. Not surprisingly, water continues to be a key consideration in property management, and that is where NGT's involvement comes in.

Restoration Plans Emerge

Back in late 2012, when we were approached by Warrembool Pastoral Co, the current owners of Pollockdale, the goal was to have a fresh look at the property through a water management 'lens', and suggest options for them to consider at the same time that they were actively investing in the renewal of farm infrastructure. The 'blank slate' that this provided us with was a unique opportunity to investigate the possibilities for the property with a more open mind and less constraints than is usually the case. As a result of that exercise, which was led by NGT's Lachlan Farrington, a whole series of recommendations were made and – although not all the possibilities we discussed were economically viable for the owners to adopt – it did result in improved protection and management of a number of the important wetlands across the property, across a range of wetland types.

As a result of that process, the absolute stand-out wetland that both parties immediately agreed needed to be at the top of the list for restoration was Green Swamp, which is something of a centrepiece for the property as a whole. But Green Swamp was not the wetland it used to be.



The deepest portion of Green Swamp in October 2012 – still holding some water despite past attempts at artificial drainage. Photo: Mark Bachmann

When it comes to drainage impacts, every site is different and in this case, historic drainage activities had actually increased the run-off available to Green Swamp (through upstream drainage into the wetland), while also simultaneously decreasing its capacity to hold water (as a result of modification to its outlet sill level – i.e. maximum retention height). Additionally, in the early 2000s, the outlet from Green Swamp was significantly deepened again, further reducing its ability to hold water, and increasing downstream flooding risk.

After carefully assessing the options, and weighing up the implications of those options with the owner, we agreed to a compromise solution for Green Swamp, whereby the original full-supply level

of the wetland would be reinstated, but only by regulating the Green Swamp outlet drain at the most convenient location for farm management. This necessitated the inclusion of a minor levee bank into our design, which included a fixed-level concrete spillway to enable management of outflows once the swamp was full. Crucially, by adopting this approach, we were still able to achieve our preferred wetland restoration design criteria of building a ‘set and forget’ solution, where maintaining minimum water levels in the wetland does not require any further ongoing management intervention after works. Along with other wetland restoration activities on the property, this outlet regulation work was completed by NGT in 2014 via grant funding we received from the Australian Government (i.e. NGT’s Wetland Restoration Program 2012-2017).



Looking west, away from a dry Green Swamp, over the recently completed levee and fixed spillway on the outlet drain – July 2014. (Photo: Mark Bachmann).

The rains arrived and the site responded!

Although it took a couple of years for it to happen, when the September 2016 flood event did eventually hit, we finally got to see what this country looks like when it gets properly wet – and it was worth the wait!



Looking east over Green Swamp and the operational outlet spillway on the 9th of September 2016. The restored wetland was full to the brim! (Photo: Mark Bachmann).

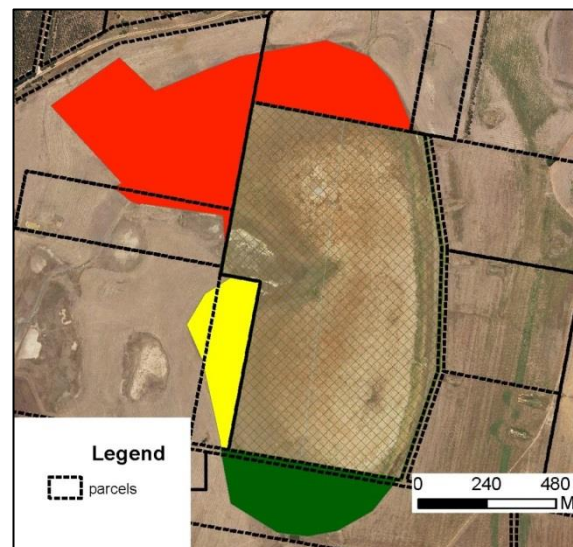
It wasn't long, and the ecological impacts of restoration started – and still continue today – to emerge. Detection of key populations of Growling Grass Frog and Western Swamp Crayfish, as well as increasing records of a number significant waterbird species, including regular use of the site by Brolga, were all the evidence we needed to know that this was an outstanding example of wetland restoration in practice. Even now we are still detecting new species of birds utilising the recovering wetland.

A novel approach to permanent protection as an NGT Reserve

Over the subsequent couple of years, as well as sharing the exciting new records coming in from surveys at Green Swamp, our conversation with the property owners started to take a bigger picture view. Anyone who works across Victoria in water management will be aware that there are many challenges of working in this space, and rural drainage activities are especially complex. The one thing that emerged from our conversations at that time was that the owners knew that they didn't want to see their good work easily undone – now that Green Swamp had once again become the centrepiece of Pollockdale. But no-one lasts forever, and property ownership of farm land will always inevitably change at some point, so we needed to determine how best to set the site up to be permanently protected and actively managed for conservation purposes in the very long term. At the same time, we were also conscious of removing the ability and /or incentive (of, for example, any future owner of the Pollockdale farm who may not be conservation minded) to interfere with the restored wetland down the track. In this context, it is worth considering that the informal loss of wetlands across rural Victoria through new artificial drainage activities and modification to wetlands is a very real threat and is ongoing.

Over several years, we'd built a really strong relationship to fix Green Swamp, so we agreed to work towards a solution that we felt was the best fit in this particular situation, and would enable us to keep our partnership going. At that point, we agreed in principle to the private portion of Green Swamp becoming an NGT Reserve, to ensure the site would be permanently protected and to guarantee that the newly restored sill level on the outlet (which is on private land) can never be interfered with again in the future.

At the same time, NGT had recently committed to the purchase of Walker Swamp as a new NGT reserve nearby, so fortunately it also fit into our long-term plans to be a land manager in the local area – noting that establishing one of our permanent private reserves is a decision we don't take lightly.



Our initial estimate of the boundary realignment required across 6 titles to consolidate the tenure of the private portion of a restored Green Swamp. Private portions are shown marked red, yellow and green, while the public portion is hatched.

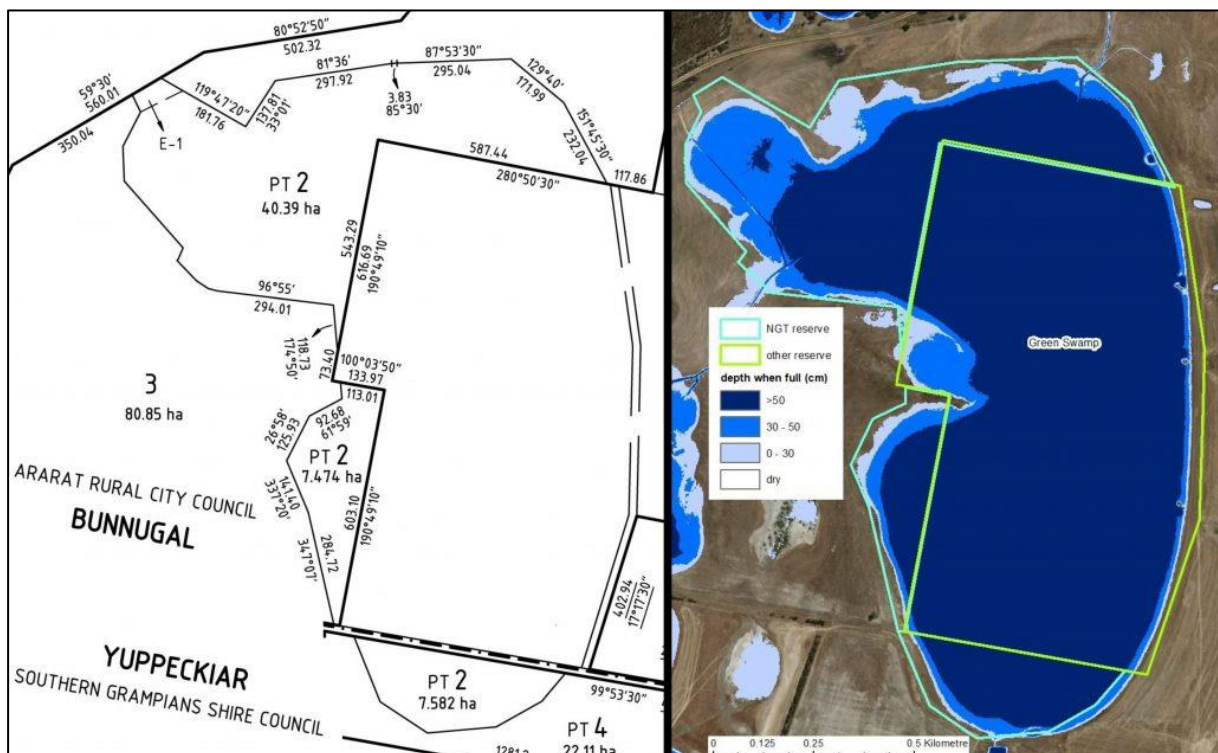
In agreeing to go down this path, we were very lucky that all of the private portions of Green Swamp were under a single ownership. This was important because it turned out that the restored private portion of the wetland actually straddled six parcels of land, on separate titles, that bore no resemblance to the physical shape of the wetland feature (see map right). Hence, we found ourselves in the unique and fortunate position of being able to seek to consolidate the boundaries of the private land around Green Swamp, to actually match the landform around the full extent of the wetland. In other places where we work, we have found that fragmented ownership of wetlands can be major obstacle to their effective conservation and management.

However, this process was not straightforward, because the wetland also actually straddles two council areas!

Hence, we are especially grateful to Mark Teakle from Alexander Symonds (surveyor) and planning staff at both Southern Grampians Shire and Ararat Rural City for their very timely and professional assistance with helping us to navigate this complicated planning process.

The future... announcing the Green Swamp Restoration Reserve.

Fast forward to today and Lot 2, the private portion of the wetland which includes the restoration infrastructure that controls water levels across the entire site, is now owned by Nature Glenelg Trust – making Green Swamp our newest Restoration Reserve.



NGT's Green Swamp Restoration Reserve – showing the new parcel boundaries (left) and the extent of the restored wetland area showing depth when full (right).

Best of all, in terms of our working relationship with the owners of Pollockdale, nothing has really changed. The wetland has not gone anywhere, so it is still a magnificent in-lying centrepiece of their

property. The only difference is that now the wetland will be permanently protected as an NGT Reserve, and benefit from dedicated conservation management and monitoring. Needless to say, we will continue to work cooperatively to ensure that conservation of this wetland operates seamlessly alongside the management of their surrounding farm, as this project would never have happened without their foresight and dedication to this fantastic outcome.

Additionally – now that it is an NGT Reserve – if you are interested in the project at Green Swamp and you are a birdwatcher, you can get involved.

How to access Green Swamp

Given the unusual (landlocked) configuration of the site, access to Green Swamp is only available by contacting Nature Glenelg Trust to obtain our formal consent. We can arrange the relevant permissions, notify our neighbours prior to your visit, and provide instructions with detailed directions for our approved access point and how to reach the best monitoring vantage points.

We are especially inviting birdwatchers (individuals or groups) who are willing to visit the site with binoculars and quietly observe the bird populations at the wetland, to record and share their observations with us. This will help us track its ecological recovery, as it has very quickly become an important summer refuge habitat since restoration works were completed. You can also get in touch and provide us with your details if you wish to be notified when we have occasional volunteer activities occurring on site.

Your visit can be arranged by contacting NGT's property manager Dr. Greg Kerr, on greg.kerr@natureglenelg.org.au or by calling him on 0418 846 993.



Green Swamp: providing important autumn refuge habitat for waterbirds in March 2019. (Photo: Greg Kerr).

2.1.2 Beach clean-up at Hutt Bay Wetland (by Lu-Wei Spinks)

NGT staff and volunteers kicked off the beginning of Autumn in 2020 at Hutt Bay Wetland Reserve for our first *Clean Up Australia Day* event. We had a fantastic turnout of 21 people, who worked up and down the beach removing rubbish and lots of Coastal Cape Weed (*Arctotheca populifolia*), also known as Cape Beach Daisy. This South African weed alters the movement of sand and also affects shorebird nesting. You can read more [about it here](#).



Donna and Helen removing Coastal Cape Weed along the beach at Hutt Bay Restoration Reserve.

Although the beach was much cleaner than expected, we did find an abandoned campsite hidden in the scrub within the dunes. It was quite devastating to see the mess that had been left behind – bottles in the sand, ropes around trees, and a large number of degrading plastic tarps which had separated into many fine strands. Unfortunately, non-biodegradable plastics ‘break apart’ rather than ‘break down’, and these tiny plastic ‘micro particles’, fragments and fibres have entered global ecosystems and food chains. [Here is a short article](#) from a few years ago by the National Geographic, exploring studies of microplastics on marine life, and what it could mean for humans.



Our hardworking NGT volunteers enjoying the beach and tackling pollution at the same time!

Thanks to everyone's hard work, we estimate around 230 kg of rubbish was collected on the day; which has reduced the amount of rubbish in the dune system as well as prevented it from entering the ocean (and into the bellies of all our native creatures!). To date, over 365,000 ute loads of rubbish has been removed as part of Clean Up Australia activities around the country. An impressive effort, but it is also important to remember that we must be focused on preventing rubbish pollution to begin with to truly address the problem.



Happy volunteers and a trailer full of rubbish!

We finished off the day with a BBQ lunch and free time to enjoy Hutt Bay in the company of wonderful people. A huge thank you to everyone that joined us on the day!

2.1.3 Reptile surveys at Long Point (by Bryan Haywood)

Tile grid surveys for reptiles were set up at Long Point Restoration Reserve in the southern Grampians at Dunkeld back in 2012 – long before NGT became the custodian of this patch – as part of the Dunkeld Pastoral Company's (DPC) interest in surveying the fauna of the property through a Biodiversity Fund project. In the course of their monitoring, DPC set up roofing tile grids to find Striped Legless Lizard (*Delma impar*) at Long Point, a nationally listed threatened reptile species found in southern Australia, predominantly within grassland and grassy woodland sites. Long Point is a combination of both these vegetation communities with an overstorey of River Red Gum and an improved pasture on the slopes of the Wannon River north of Dunkeld.



Delma impar found beneath one of the roofing tiles

The roofing tile grids have been monitored every year since 2012, and the following is a summary of results NGT has collected from 2019-20.

Four grids of 25 tiles have been checked this past 6 months to survey for and monitor this delightful species. Our survey commenced in November 2019 and continued into March 2020. Previous data collected by DPC found various numbers up to four Striped Legless Lizards encountered per survey (over the four grids). Our surveys started off in a similar fashion -however, as we headed into late summer, more shed skins (sloughs) were found (as evidence of presence) but fewer actual legless lizards. Of note, one hatchling was captured in March – note it is minus all the stripes!

RIGHT:
A hatchling *Delma impar* at the 'Open' grid site – March 2020



Additional reptile species encountered included one skink which is extremely rare in adjacent areas of SA, but seemingly widespread in Victoria – the Tussock Skink (*Pseudemoia pagenstecheri*) which we found at one grid site in March. This species has a 'soft velvet' feel in the hand and a beautiful pattern of stripes and black dots down its back.



Tussock Skink (*Pseudemoia pagenstecheri*) showing the intricate markings

Only one other reptile was found during this survey period – the common but extremely 'fast moving' Eastern Three-lined Skink (*Acritoscincus duperreyi*), which never sat still long enough to capture a photo and/or to be caught.

NGT would especially like to thank Cecilia and Hayley from DPC, for donating further roofing tiles for the expansion of monitoring of reptiles on the property, and to NGT staff Nicole, Jono and Sheryl for assisting with undertaking surveys.

2.1.4 Revegetation update at Eaglehawk Waterhole (by Kimberley Height)

Squished and triangle-shaped Banksias are free to grow after they were removed from the confines of their tree guards at Eaglehawk Waterhole. It was our final National Volunteer Week event on Saturday 25th May 2019, and despite the constant rain and cold weather, our NGT staff and volunteers managed to remove 400 tree guards from trees and bushes that have been planted as part of the 20 Million Trees project.



Sheryl and Helen removing tree guards from banksias at Eaglehawk Waterhole

As well as being squished, some plants had been “tip-pruned” by munching kangaroos – one of the reasons tree guards are so important for little seedlings. A lot of eucalypts were obviously very happy in their environment, having grown so big we struggled to pull their tree guards off!



A triangle-shaped banksia and a eucalypt ready to escape its guard

As well as removing tree guards, we also checked a tile grid to see what exciting creatures we would find underneath. We thought we had found a snake underneath one tile, but it was a rather large Eastern Striped Skink (*Ctenotus robustus*). We found three more (much smaller) skinks of the same species and a plenitude of insects including thousands of ants, some cockroaches, and also two redback spiders and a wolf spider under one tile.



An Eastern striped skink found under a tile

With all of the planting that has been happening at Eaglehawk Waterhole, it is becoming even more beautiful. The local wildlife are very happily using the restored habitat too – we saw a lot of kangaroos, emus and many different bird species.

2.1.5 Boandik culture returns to Mt Burr Swamp (by Bryan Haywood)

In March 2020 Nature Glenelg Trust announced a new cultural learning area at Mt Burr Swamp Restoration Reserve. A site overlooking the wetland is progressively being created to facilitate storytelling and learning about cultural heritage on Boandik country. The descendants of Annie Brice, a Boandik woman featured in an inspiring children's book titled 'Annie's Story', travelled from far and wide to attend a gathering in December 2019 at Mt Burr Swamp – to celebrate in their cultural heritage and to create a learning space for future generations.

A recent article in the local 'Lifestyle1' magazine (see below) nicely highlighted this event and all the fun activities held on the day. The aim for the day was to construct a camp and shelter area like ancestors once did, helping maintain the long and rich Boandik history – giving the younger

generation a taste of Boandik life before Europeans arrived, and to encourage further involvement in cultural activities at Mount Burr Swamp in the future.

Boandik culture returns to Mount Burr



More than 60 family members from Sydney, Melbourne, Adelaide, Warrnambool, Penola, Port MacDonnell and Mount Gambier have gathered at the Plentiful Waterhole to reconstruct a permanent campsite while sharing knowledge of their Boandik ancestors.

Mount Burr Swamp was drained for pastoral land years ago and by blocking the drainage channel, the waterhole has filled and captured water once again, creating a haven of biodiversity.

The restoration project is one of the key initiatives by Nature Glenelg Trust and their volunteers. It's now returning

to its glorious originality as water ribbons begin to establish themselves from bulbs under the ground that have laid dormant for many years. The water is drawing insects, birds, animals and people back to the area and recreating a brilliant biodiverse location.

The family constructed a Wurla - Boandik housing made from sheoak timber. They also created a yarning circle and a ceremonial circle which are used to share cultural knowledge, law and culture stories and experiences for future generations.

The descendants of Annie Brice met near the magnificent restoration project of the waterhole and are

working with Nature Glenelg Trust and the University of South Australia for improved understanding, respect and support of Australia's land and history that takes in more than 1800 generations and more than 60,000 years of occupancy recorded on the productive Boandik Mraat (Country).

The country which stretches from Guichen Bay, Robe, to the Glenelg River and toward the Grampians was once a bountiful and spiritual landscape for Boandik ancestors, as they managed their economic strategies, beliefs, rituals and lifestyle.

Because of this land management and cultural learnings are key subjects

being offered as part of the Aboriginal Pathway program for students of the South Australian University in Mount Gambier and the waterhole offers plenty of learnings for those wishing to appreciate it.

Boandik descendants have invited the local aboriginal students of SAATA to come and support in a second Wurla build and share in the appreciation of the land, culture and history of the Boandik people and the family hopes that many generations can experience and benefit from this plentiful waterhole into the future.

Photos courtesy of Jack Brookes

The article appearing in the February-March 2020 issue of Lifestyle1 Magazine, highlighting the celebration and gathering of Boandik family at Mount Burr Swamp.

The main activities on the day were boomerang throwing, constructing a Wurla (Boandik housing made from Sheoak timber), and creating ceremonial and yarning circles.

NGT's Bryan Haywood had the pleasure of being present for this event and was delighted to see all the family interacting and engaging in all activities (including the story telling, dancing & singing), but overall having fun and learning about their family's heritage in the beautiful surrounds of Mount Burr Swamp.

NGT is proud of cultural engagement and learning on Mount Burr Swamp and looks forward to creating similar opportunities in the future, and on other NGT Reserves.

2.1.6 Volunteering continues at Kurrawonga (by Nicole Mojonnier)

In early 2020, we gave our wonderful volunteers a chance to describe their experiences at Kurrawonga, to give you a sense of what it means to them to be involved with the Reserve. These are shared below:

"My first trip to Kurrawonga was to discover what a treasure to the world it is. My first impression was the sound of so many different birds.

The day was grey and misty, my most favourite weather to be out in the bush and the lichen and fungi were happy to have a little summer moisture. Our tasks were to check the nest boxes, mow and clear the track, fill pit fall trap buckets with debris and checking the tiles for reptiles. To our great joy, two sugar gliders were curled up asleep in a nesting box and all the other ones with the small holes had leave nests as if they were being use. However, the nest boxes with the larger openings were not so successful.

It was a lovely morning spent with like minded people." Deb T.



Checking the nesting boxes for Sugar Glider activity. (Image C. Loras)

"Our first task was to check the nesting boxes which were installed during a working-bee last year. With 30 mm entrance holes we were hoping for Sugar Gliders to use these boxes. All the Nest boxes had nesting materials in them, eucalyptus leaves covering the interior base of the box. In one box the leaves were in a beautiful cup shaped nest and in one box there was a pair of sugar gliders all curled up resting for the day – yay!" Sue B.

"Kurrawonga Volunteer Working bees are a great source of enjoyment for me! Nicole always receives us warmly, provides tea, coffee and usually an additional unusual tasting (eg. semolina and muntries!). The physical activity, walking through the restful bush doing something which will have a productive outcome, is so good for my "spirit".

Christina L.

"I enjoyed looking for sugar gliders, it was my first experience with nesting boxes. We also checked the tiles that are placed on the property and found one skink under one of the tiles. – Thank god there were no snakes! We also discovered interesting and stunning spider webs including some egg sacks. I also found great satisfaction in mowing the tracks and the sound of cutting down the larger plants in the middle of the track."

Donna S.

"A great day, a chance to spend time with like-minded people, enjoy the outdoors and be active as well. A good social day. The staff are very pleasant."

Helen B.

"Volunteering with NGT has been a wonderful experience. The process to join NGT and volunteer was easy and they make you feel very welcome and appreciated. The staff and volunteers are really friendly and passionate about the environment and wildlife. In the short amount of time volunteering with NGT I have already learnt a lot about the organisation, the projects they are currently working on and some ecology of the local landscapes. Best of all is spending time in nature interacting with a team of like-minded people helping to conserve our local environment."

Beck L.



Two Sugar Gliders huddled up in a nesting box.

Thanks again to all our volunteers for being involved, so interested and passionate about our work and our environment!

2.1.7 The birds return to Walker Swamp (by Greg Kerr)

After six years of intensive monitoring at Walker Swamp Restoration Reserve (WSRR) and following completion of the major on ground works, the initial response of the avian community to these changes can now be gauged. Digging into the results from 115 bird surveys including 46 x 20-minute (2ha) surveys; 42 x area search (500 m radius) surveys; 14 x Shorebird 2020 counts; three x 5 km radius area search surveys, and ten incidental searches, show a total of 129 species recorded in association with all habitats at WSRR.



Figure 1: Sacred Kingfisher (Photo: G.Kerr).

Changes to the wetland were designed to increase the area of inundation and extend the period of inundation without removing the important wet / dry cycles that underpin wetland productivity. The changes meant that there was an increased likelihood of some wetlands in the Reserve holding water through summer into early autumn, providing important summer (and potentially drought) refuge for a range of water-dependent species. And indeed, in some years the wetlands might now stay wet all year.

With increased depth of water, the wetlands remaining wet for longer, and wetting and drying over a larger area, the types and distribution of plant communities present was also expected to increase. The plants that grow in the areas that dry out over summer and autumn are the main source of energy and carbon for the wetland when it fills in the next winter. Bacteria and fungi break down these plants when the wetland floods and the rest of the food web builds upon this. So the variety of food and shelter mean a wider diversity of animals that need wetlands are attracted to and able to live in the swamp. The more reliable and longer lasting water also increases the likelihood that a greater number of species, including colonial nesting waterbirds (like ibis and spoonbills), may start to breed across the Reserve. Most waterbirds are found feeding in water around the edge in depths up to about 30 cm. Because the wetlands now include a large area of shallow gently graded edge, the

inundated shallow mud flat and sand flat areas should increase both the productivity and carrying capacity of the wetlands. A range of diving birds (e.g. hardhead ducks, grebes, blue-billed ducks and musk duck) may use the deeper water habitat.

The question is what did the waterbirds think of these ideas?

Over the past 18 years there have been 48 surveys of waterbirds at Walker Swamp and 53 wetland dependent bird species have been recorded across all the wetlands.

To see if the survey effort at Walker Swamp has been adequate to describe the waterbirds a species accumulation curve (SAC; or species-richness curves, collector's curves, species effort curves) was plotted (Figure 2). These graphs are used to estimate the adequacy of a fauna survey (in this case, the number of waterbird species) in representing the fauna in a particular area. When you start surveying a new area most of the birds you see are new observations and so the curve increases steeply. As you continue to monitor the number of new species drops off and the curve flattens out. If all the species in an area have been recorded then the SAC will become a horizontal line. At Walker Swamp the curve reveals that new waterbird species were still being added when sampling stopped (as of the most recent survey on 26/02/2020) and that the asymptote had not been reached. This is despite the relatively high sample intensity.

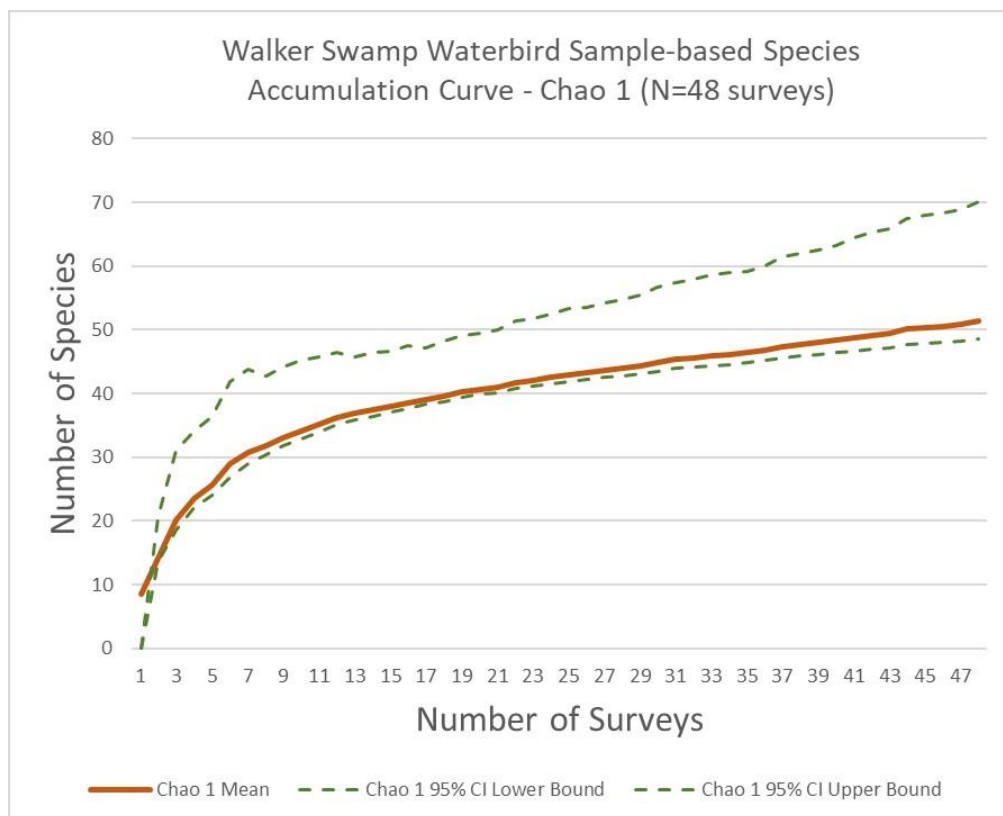


Figure 2: Walker Swamp waterbird sample-based species accumulation curve (Mean and 95% Confidence Interval for Chao 1).

This is great, as the curve shows an ongoing increase in new waterbird species being recorded. This indicates that the recent changes to increase the duration, extent and timing of inundation in the

wetland are allowing new species to settle. So we are still getting new species arriving as they discover Walker Swamp and find the appropriate habitat niche there.

While the number of waterbirds recorded in each survey varies a lot every year as birds come and go with the wetting and drying of the wetland, on average both the number of waterbird species (Figure 3A) and their abundance (Figure 3B) have increased throughout the time of monitoring.

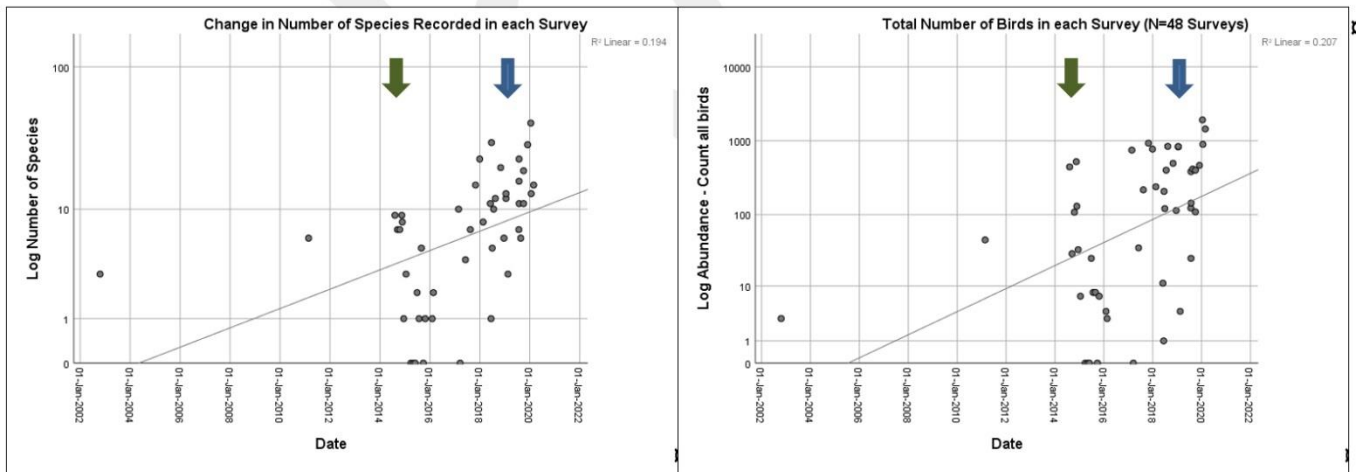


Figure 3A (left): Change in number of waterbird species ($R^2=0.194$) and Figure 3B (right): total abundance of waterbirds ($R^2=0.207$) for each survey between 2002 to 2020 at Walker Swamp. Note the y-axes in both graphs are log scales. N=48 surveys. Green arrows show timing of temporary regulator construction. Blue arrows show timing of permanent regulator construction.

Of the 53 species, 11 species (20.7%) are singletons (i.e. recorded in only one survey: Freckled Duck, Banded Stilt, Red-necked Avocet, Red-capped Plover, Black-fronted Dotterel, Wood Sandpiper, Australian Pelican, Nankeen Night-Heron, White-bellied Sea-eagle, Little Eagle and Australian Reed-Warbler). These are species we expect to see more of as the complexity of habitat and the food web in the wetland increases. Four species (7.5%) are doubletons (Pink-eared Duck, Musk Duck, White-throated Needletail and Royal Spoonbill), again species we hope to record more frequently into the future. The most often recorded species in Walker Swamp were: Black-winged Stilt, Pacific Black Duck, Grey Teal, Black Swan, White-faced Heron, Australian Shelduck and Masked Lapwing. Species like the migratory Sharp-tailed Sandpiper (Figure 4) have recently been recorded in flocks of up to 500 birds. They can be seen in summer foraging in the shallow water and mudflats in the north western region of Walker Swamp.



Figure 4: The migratory Sharp-tailed Sandpiper (Photo: G. Kerr).

The impact of the restoration works can also be seen by comparing the mean number of species in association with each of the major works (Figure 5). Firstly, following the construction of a temporary regulator (Sill 242.90 m AHD) in August 2014 and then after construction of the permanent regulator in March 2019 at a higher sill height (243.5 m AHD). Increasing the area that is wet and the time it is wet for through the installation of a permanent regulator has been an important part of restoring more natural wetting and drying patterns.

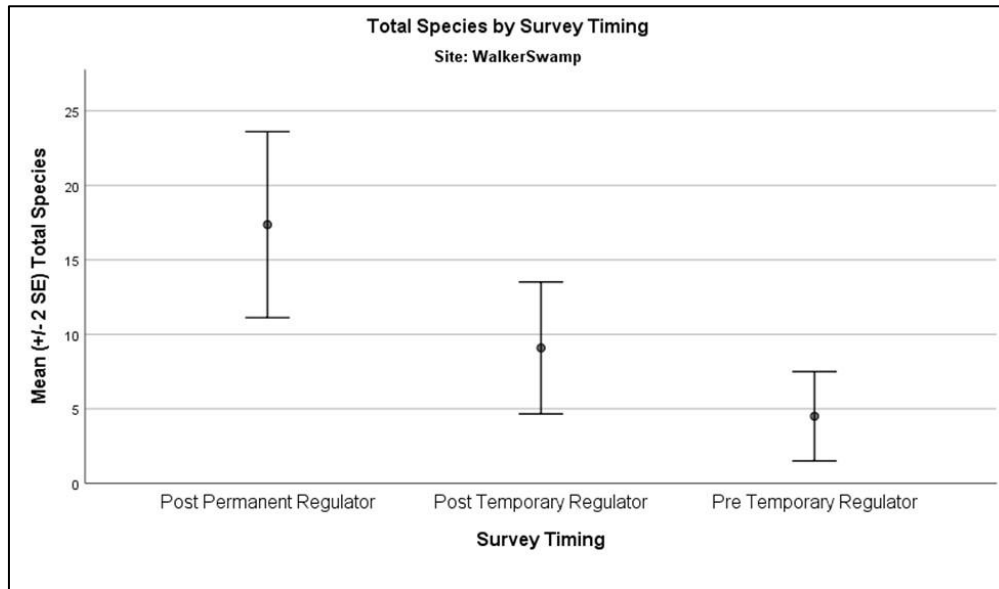


Figure 5: Comparison of mean (\pm 2 SE) waterbird species diversity in all surveys at Walker Swamp following temporary (August 2014) and permanent (March 2019) regulator construction.

An important foraging guild to appear more often and in greater abundance in the wetland post regulator construction has been the diving ducks and grebes. This includes Hardheads, Musk Duck, Blue-billed Duck, Pink-eared Duck and Freckled Duck and both the Australasian and Hoary-headed Grebes. This indicates an increase in abundance and diversity of aquatic infauna, as shown by invertebrate survey results at the Reserve.

Species like Brolga (Figure 6) are now present in the wetland more often than not (60% of surveys over the last two years), and birds like the Latham's Snipe and Sacred Kingfishers (Figure 1) are now being recorded.



Figure 6: Brolga pair foraging in Walker Swamp as it fills in winter 2019 (Photo: G. Kerr).

So, the initial results, post regulator/spillway construction, indicate that both waterbird abundance and diversity have increased markedly in response to the increased duration and extent of water and associated changes to floral diversity and abundance, and increased habitat and food web complexity within Walker Swamp. We see diverse and abundant collections of birds feeding across the recently exposed mudflats and in the extensive areas of shallow water, particularly in the north west of Walker Swamp.

What about the non-waterbirds?

A lot of birds not normally thought to be associated with wetlands also benefit from having a healthy and productive wetland nearby. The flow of energy and nutrients between wetland and adjacent terrestrial food webs is important to the productivity and diversity of both aquatic and terrestrial ecosystems.

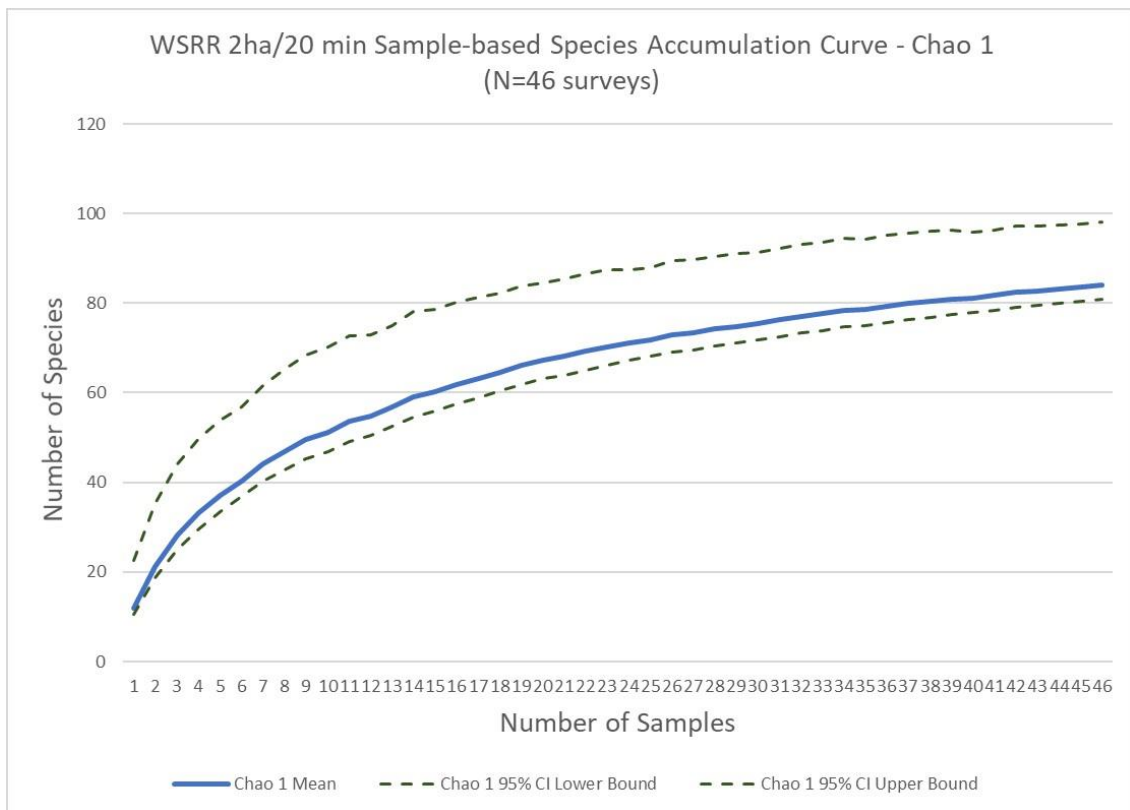
During and after a flood the related increase in primary productivity across a floodplain, and in wetlands, is the basis of a complex terrestrially-based food web. Inundated trees and shrubs like River Red Gums and Teatree provides foraging, refuge and breeding habitat for terrestrial fauna species. Following water recession, the subsequent growth of understorey provides forage for herbivores again contributing significant productivity. Many species that forage in the region will move to the area for refuge and breeding. Heterogeneity in lowland floodplain macrohabitat has been shown to significantly increase local avian biodiversity (Parkinson 2002).

There is also an additional faunal-mediated transfer of energy and resources from the aquatic environments to the adjacent terrestrial environments, increasing the productivity of those terrestrial environments (Ballinger and Lake 2006). The emergence of adult insects from the water contributes significantly to riparian consumers such as insectivorous birds, bats, lizards and spiders (Baxter et al. 2005). Densities and diversity of non-aquatic woodland bird species, for example, have been shown to increase significantly with the presence of wetlands in woodlands when compared with equivalent woodland habitat without wetlands (Parkinson et al. 2002, Ballinger and Lake 2006). Foraging bat activity has been correlated with insect abundance along riparian zones (Ballinger and Lake 2006, Fukui et al. 2006), with flux of aquatic insects emerging from streams identified as one of the most important factors affecting the distribution of riparian-foraging bats. In tropical Australian savannas total bat species diversity was found to be associated with distance to rivers and rainfall (Milne et al. 2005). This exchange may influence ecosystem productivity at the landscape scale (Ballinger and Lake 2006), bringing about breeding activity and population growth across a suite of faunal species.

The fauna community associated with a floodplain and riparian zone, and wetlands is therefore complex and diverse, with many species that make use of the area in differing ways and which are reliant upon inundation of the floodplain and wetlands and the presence of healthy floodplain and riparian vegetation as the basis of the community. Survey results so far at Walker Swamp reflect restoration of this complexity with both waterbird and non-waterbird species richness on the up-trend!

Eighty bird species were recorded in 46 2ha / 20min surveys at six repeat sites and five one-off sites

in the Reserve between 01/11/2018 and 15/01/2020. A sample based species accumulation curve (Figure 7) for all 2ha / 20min surveys at the WSRR reveals that new species were still being added when sampling stopped (Last survey 15/01/2020) and that the asymptote had not been reached. Recent changes to wetlands and nearby habitats across the WSRR have been significant and are ongoing. These changes are likely impacting the diversity and abundance of bird species using the area. Under these conditions of ongoing change, it is unlikely that an asymptote to the species accumulation curve will be reached in the near future and so ongoing survey effort is required.



**Figure 7: WSRR 2ha/20min sample-based species accumulation curves for non-waterbirds.
Mean and 95% CI for Chao 1.**

In a normal and diverse community a handful of species contribute most of the abundance and typical contribute significantly to ecosystem function. If some species are common, many more are rare. But, rare species are an important component of a diverse system and may play critical roles in a community, for example as pollinators.

A Whitaker (Rank Abundance) plot of species abundance data for the logarithmic series at Walker Swamp (Figure 8) gives the expected nearly straight and steep gradient (Krebs 1999, McGill et al. 2007). That is – the most abundant or common species occurred in a much greater number compared to the less abundant species.

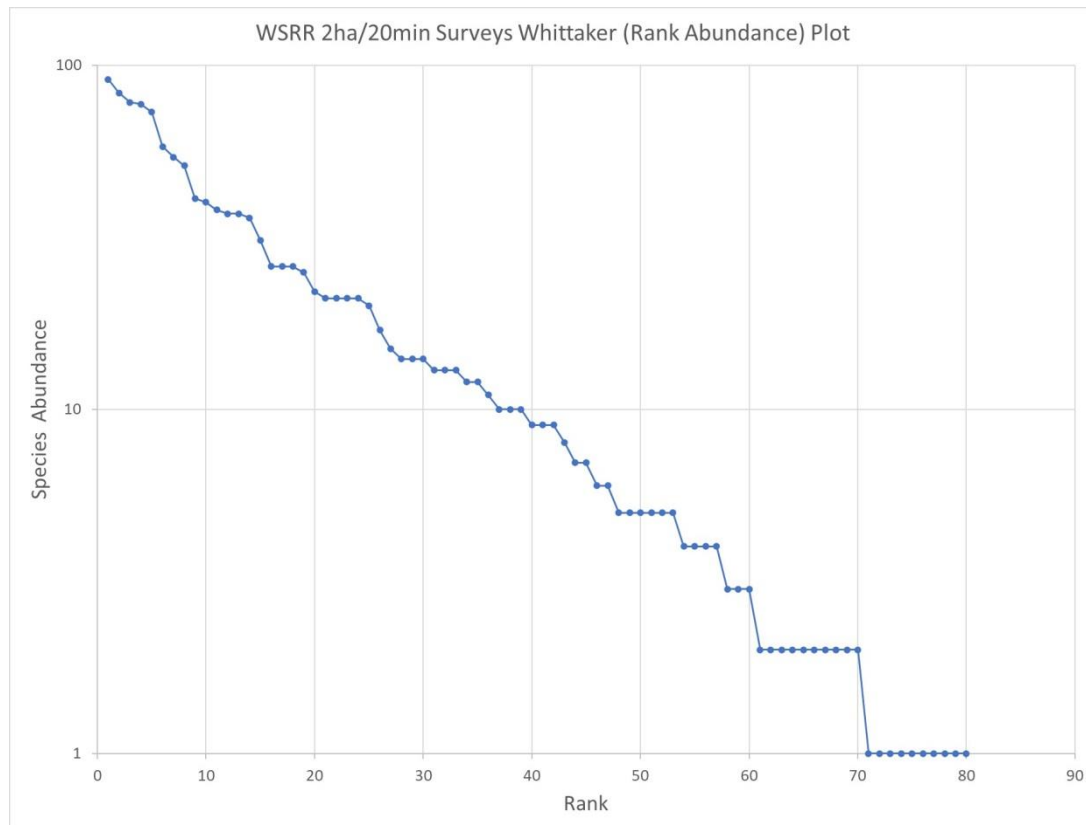


Figure 8: Whittaker Plot of species abundance data for the 46 2ha/20min surveys of non-waterbirds across the WSRR.

Of the 80 species, 10 species (12.5%) are singletons (i.e. recorded only once in all surveys: Horsfield's Bronze-Cuckoo, Shining Bronze-Cuckoo, Brown Goshawk, Australian Hobby, Blue-winged Parrot, Musk Lorikeet, Golden Whistler, Grey Currawong, Rufous Songlark, Common Blackbird). Remembering that only a 2 ha area was surveyed each time, this is not unexpected as many species have very large home ranges. Two of these species are raptors and normally in low abundance, the remaining eight species are rarely observed in the area / these habitats. Ten species (12.5%) are doubletons (Australian Shelduck, Masked Lapwing, Wedge-tailed Eagle, Whistling Kite, Brown Falcon, Yellow-tufted Honeyeater, White-winged Triller, White-throated Needletail, Mistletobird, Red-browed Finch), two of these are wetland specialist and unlikely to occupy this habitat and three are raptors and likely in low abundance. The remaining five species are rare in this habitat. The most often recorded species in the Reserve were: Crimson Rosella, Long-billed Corella, Yellow-faced Honeyeater, Australian Magpie, Superb Fairy-wren, Brown Thornbill, Yellow-rumped Thornbill, Red Wattlebird, Buff-rumped Thornbill.

Murray et al. (1999) found that most (90%) species in the tails of local rank–abundance curves are substantially more abundant somewhere else and that there exists a small but still interesting group of species that are sparse everywhere. Most of the species identified above as rare in the Reserve would appear to fit into the first group being more abundant elsewhere or in the case of the raptors in low abundance on a large geographic scale.

When comparing diversity among the habitat types within Reserve, the Sand Forest (EVC134) in relatively good condition supports the highest diversity of bird species relative to the Plains Grassy

Woodland (EVC55) (Figure 9A). Areas that have recently had blue gum plantations removed support the lowest diversity of species (Figure 9B).

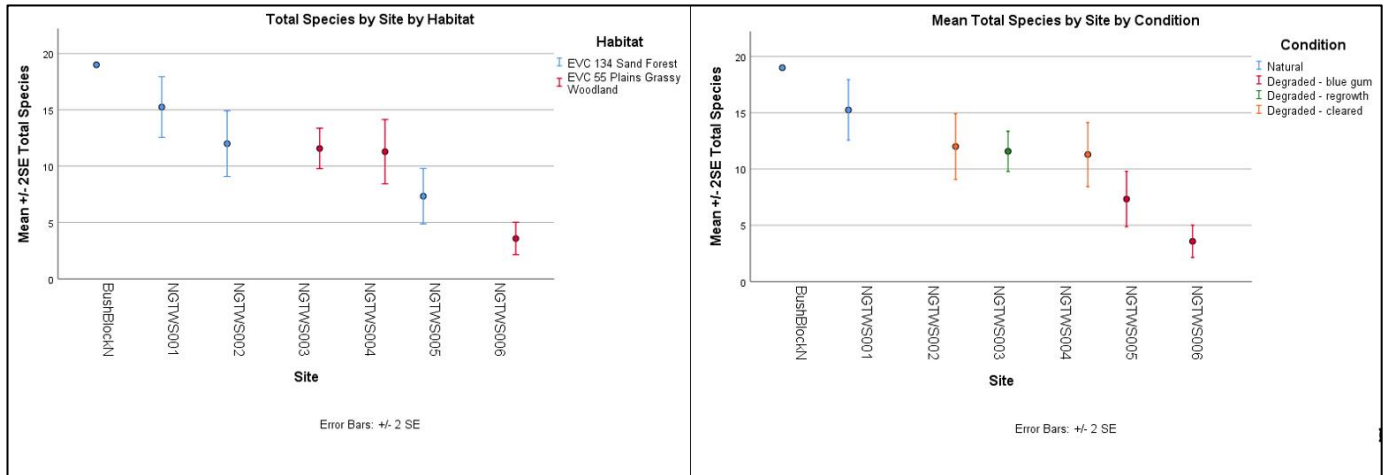


Figure 9: Mean \pm 2SE terrestrial bird species diversity at each of six monitoring sites in the Reserve.

A. (left): Ecological Vegetation Class (EVC) habitat type B. (right): Habitat condition.

To allow for a valid comparison of species diversity between each of the six (non-waterbird) sites an empirical cumulative distribution function (eCDF) for each ecological community (monitoring site) was created (Figure 10). To create this graph both axes are standardised (dividing by each site's species richness and total abundance). This means that communities with higher diversity (more bird species) can be compared with other communities that have lower diversity and/or abundance. In so doing, the richness-independent graph allows a valid visual comparison between sites.

The slope of these lines indicates species evenness (evenness is a measure of how different the abundances of the species in a community are from each other). The traditional assumption is that undisturbed communities of birds follow a log-normal pattern of species abundance and that this is replaced, following some sort of impact on the habitat, such as clearance, by a less even geometric series distribution (Magurran 2004). So a healthier, more natural, bird community has a flatter line more to the left. The increasing slope evident from Site 001 (dark blue) through Sites 002, 004, 003, 005 to Site 006 (green) suggests an increasing gradient of disturbance (better habitat on the left, poorer habitat on the right), with an impact on both species' abundance and diversity at the site.

The least disturbed community is Site 001 (dark blue). Those of you who have been to a Walker Swamp open day will know this site as the Sand Forest community in which we gathered, either in the marquee or the shed in the centre of the Reserve. Forty-four bird species have been recorded in this site. Some species are very common (nearly 10% of all the birds) and there is a gradual shift through to a group of other species that are rare (around 0.3% of all birds).

This compares with a total of 18 species recorded in Site 006 (green) in the middle of a recently harvested blue gum community. Looking at the graph you can see that site 006 is very different in evenness. The evenness is much higher as the line is more sharply vertical. This suggests that most species in the middle have an abundance of about 3% of the total population. Again, the sites where blue gum have recently been removed (Sites 005 and 006) are showing the highest level of disturbance.

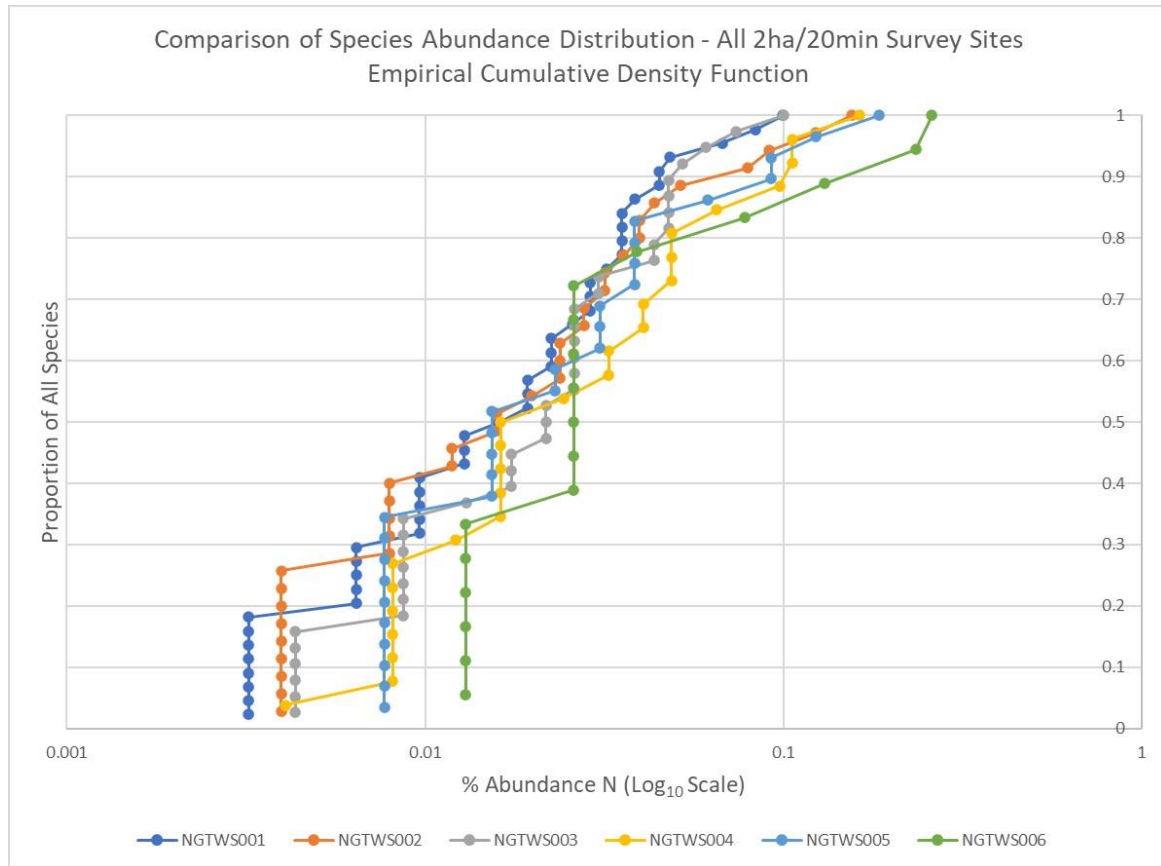


Figure 10: Empirical Cumulative Distribution Function comparing species abundance of non-waterbirds across the six 2ha/20min survey sites at Walker Swamp Restoration Reserve.

As different habitat types recover and change across Walker Swamp in response to our restoration efforts over the last five years, ongoing changes to the diversity and abundance of terrestrial bird species (and biodiversity more broadly) can be anticipated. This initial survey work in the WSRR has recorded approximately 55% of the likely diversity of ‘terrestrial’ species found in the region (Birdlife Hamilton and Hamilton Field Naturalist Club 2019). Monitoring of avian species and diversity in habitats away from the wetlands will with time enable an analysis of benefits of increased wetland productivity to terrestrial species diversity and abundance.

Birds like the Scarlet Robin (Figure 11), Flame Robin, Eastern-yellow Robin (Figure 12) and Rose Robin have been recorded at the Reserve. The Rose Robin has only been recorded once, the Scarlet and Eastern-yellow Robins are recorded year round and the Flame Robin is recorded every winter when it migrates down from the higher slopes in the nearby Grampians.



Figure 11: Female scarlet robin (Photo G. Kerr) Figure 12: Eastern yellow robin (Photo: G. Kerr)

2.2 NGT Staff Stories

2.2.1 Nick Whiterod is officially a Churchill Fellow

Following approval of his Fellowship report, Nick officially became a Churchill Fellow in early 2020.

Nick's Fellowship focused on the conservation translocation of threatened Australian freshwater species, namely, 'To develop world leading reintroduction strategies for threatened South Australian aquatic species'.

His Fellowship report summarises the main activities of his overseas travels to Costa Rica, US, UK, Ireland and Sweden from June to September 2019. Nick's key findings relating to the conservation translocation, and conservation in general, of freshwater species were:

- **Process** – effective planning is critical and must consider a range of factors and all stakeholders;
- **Production** – large-scale production (with time and resources) is possible for most freshwater species;
- **Implementation** – translocations can be successful and recovery is possible, but long-term commitment and resources are required; and
- **Promotion** – we need to find ongoing, opportunistic and novel ways to raise the profile of neglected freshwater species.



(Left to right) Jen Nightingale (Bristol Zoo), Ben Marshall (National Lobster Hatchery) and Julian Reynolds (Trinity College) with NGT's Nick Whiterod (right).

A collage of 24 photographs arranged in a grid-like fashion, tilted at an angle. The photos depict various natural elements: trees, plants, animals (turtles, birds), and natural textures. The images are framed by a dark border. The collage is divided into three main sections: a top section with 12 photos, a middle section with 8 photos, and a bottom section with 4 photos. The top section includes images of a large tree trunk, a turtle, a bird, and various natural textures. The middle section features a large tree trunk, a turtle, a bird, and various natural textures. The bottom section shows a close-up of a plant, a green frog, a small plant, and a close-up of a plant.

Many thanks to Mark Bachmann and NGT for agreeing to the placement, and for allowing me to find my own way through the process. Lachie Farrington was my flexible, supportive and generous workplace supervisor, and my other colleagues offered their interest, great opportunities, and support.

After the placement, Jodie moved onto a new project working with the Gunditj Mirring Traditional Owners Aboriginal Corporation.

2.3 Permanent Restoration of Long Swamp (by Jonathan Tuck)

Over winter and early spring of this year, NGT implemented the final major on-ground works at Nobles Rocks, permanently blocking the artificial channel and securing the hydrological restoration of Long Swamp, in Discovery Bay Coastal Park (near Nelson, Victoria). The three year project (2019-2021), made possible by a Biodiversity On-ground Action grant from the Victorian Government, builds on investigations, trial structures and monitoring efforts (outlined in detail here). After the positive ecological response to these trials, the focus shifted to converting the most recent trial structure into a permanent, reinstated sand dune.

Rebuilding the dune was not a regular construction project, and required some creative engineering. The design was finalised in an earlier project run by NGT wetland ecologist Tessa Roberts, with the well-established 7000 sandbag structure re-purposed to become the permanent solid 'core' of the reformed dune. More than 500m³ of sand was to be added and shaped to form a sloping dune that, in time, will blend into the natural coastal landscape.

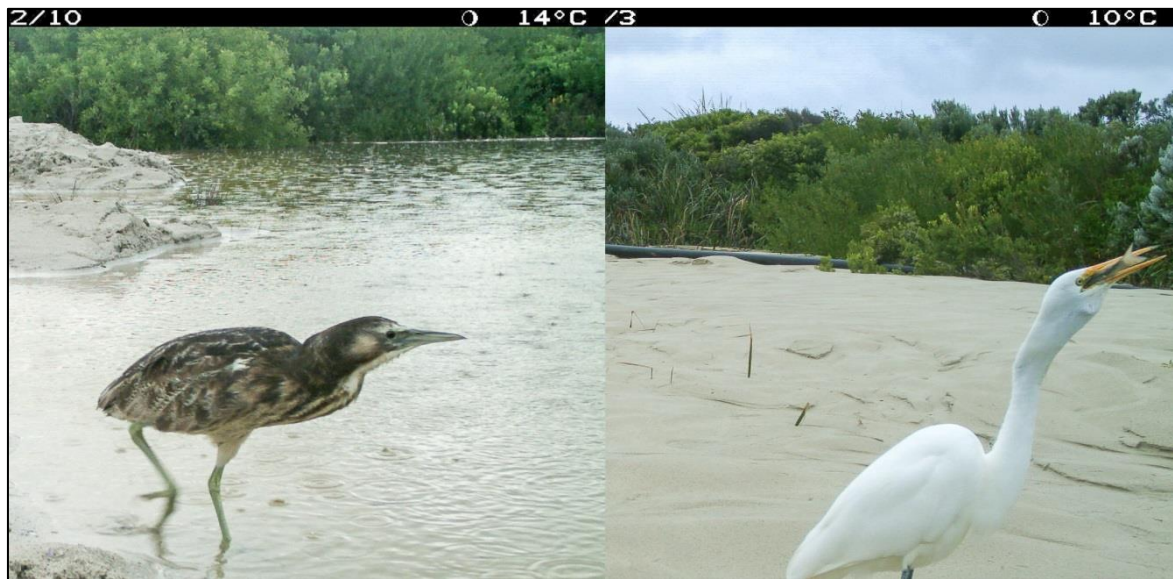
The project area is culturally significant for the local Gunditjmara people, and ecologically sensitive, and with challenges to ensure the works protected these values. The lowest impact method for moving very large quantities of sand was to pump it from the beach, over the dunes, before being shaped into its final form. NGT worked with Gunditj Mirring Traditional Owners Aboriginal Corporation to avoid any impacts to a significant shell midden on the old access track, instead moving machinery along the beach.

After the complex task of moving sand pumps and pipes to the site, the sand finally got moving. A couple of weeks later, including some stops and starts due to the unpredictable weather on this wild bit of southern coastline, the pumping and shaping was complete, and jute matting was rolled over the whole structure to help hold it in place.



Time sequence showing the trial structure and recreated sand dune at Nobles Rocks. Photos: M. Bachmann

Spending so much time on site in a wild and diverse environment led to some interesting fauna sightings. There were almost daily appearances by multiple curious (and nationally endangered) Australasian Bittern – reinforcing that, as a result of our restoration work, Long Swamp is once again a stronghold for the species. We also saw numerous Great Egret and other waterbirds working the moving water for fish, when sand pumping was in progress. There were short-finned eels at the surface of Bully Lake (the original name of the permanent water body that has now been recreated at Nobles Rocks), a couple of coastal echidnas and wallabies, and a possible orca sighting offshore. Seeing a group of Magpie Geese settling in reeds right next to the structure shortly after the works felt like a sign of approval!



Curious observers... Australasian Bittern and Great Egret at Nobles Rocks during restoration works

Now that construction is finished, we will continue to monitor the ecological response, and revegetate the site to speed up the natural regeneration and dune stabilisation process. Luckily for us, the coastal vegetation at the site quickly colonises and stabilises bare patches; our trial structures were covered with native vegetation only a couple of years after construction. To give the new dune a head start, NGT staff and volunteers planted local coastal species to bind the sand together, and applied brush matting to protect plants and further stabilise the dune.



NGT volunteers laying brush matting around the planted seedlings

Thanks to all who have been involved in the Long Swamp restoration story so far – a long list that includes DELWP, the Glenelg Hopkins CMA, Parks Victoria, Gunditj Mirring Traditional Owners Aboriginal Corporation, Glenelg Shire Council, Nelson Coastcare Group, Friends of the Great South West Walk, our sand pumping contractors Dave and Dale – who went above and beyond to complete the job to the high standard needed, and the many volunteers, staff and other supporters who have pitched in or supported the project. This investment in locally-driven, large-scale wetland restoration outcomes has achieved great things for the Glenelg Estuary and Long Swamp Ramsar site, and we're looking forward to monitoring the continued recovery of Long Swamp, and watching the recent works blend in to the coastal landscape!

2.4 Mulloway tagging program update (by Lauren Brown)

Back in July 2019, Lauren reported on a number of new interesting recaptures when she posted the following story.

There are currently 75 anglers across Victoria dedicating their time to tagging Mulloway. Collectively, they have tagged almost 500 Mulloway, and so far we have recorded a total of 64 recaptures, which equates to around 15%. A further seven of these Mulloway have been recaptured a second time! The project is funded by the Victorian Fisheries Authority through Recreational Fishing License Fees, and kicked off in late 2017. The three year tagging project is increasing our understanding on Mulloway movements across Victoria and interstate.



Back in March 2019, Tim Vincent caught this 102 cm tagged Mulloway from the Hopkins River. The fish had previously been tagged from the Hopkins River by Warrnambool angler, Luke Gercovich, almost exactly one year earlier. The fish was 80 cm when tagged, and therefore showed considerably high growth. After this quick pic, the fish was released back to the water.

During May 2019, we recorded six recaptures! Three were Mulloway tagged off Browns Bay in south east South Australia (in summer to early autumn 2017/18), and later recaptured in the Glenelg River. One fish was at liberty for 515 days, which is the longest period we've recorded so far. These three

recaptures indicate a seasonal trend for Mulloway to move into the Glenelg River during late autumn.

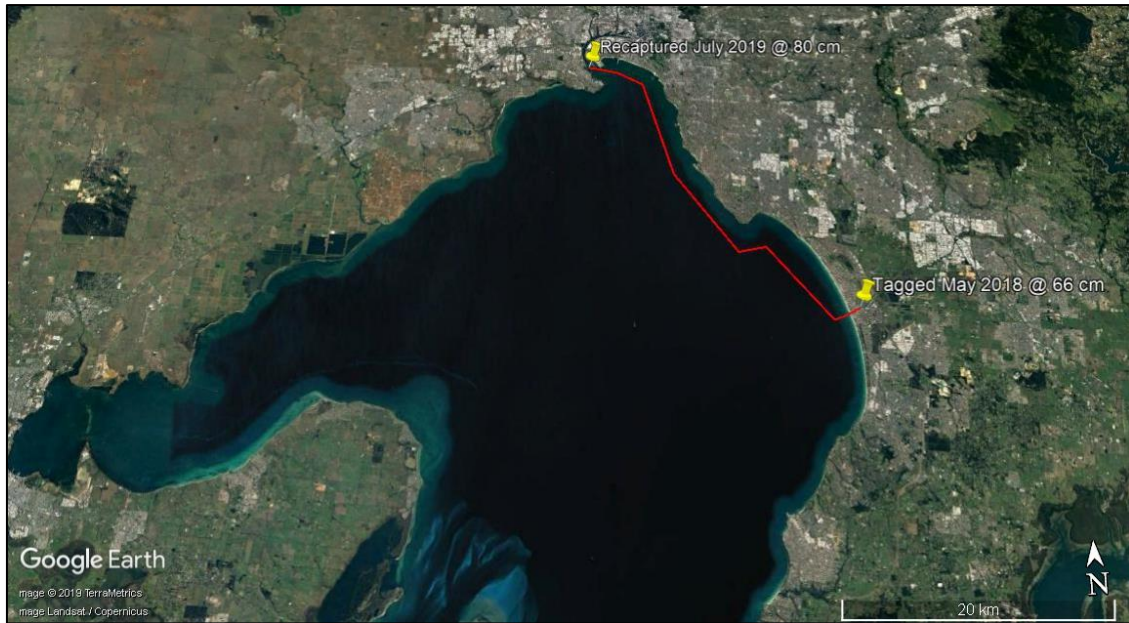
In a first, we also recorded a Mulloway undergoing a 'round trip' from the Glenelg River to Browns Bay and back again. The fish was tagged in the Glenelg by Neil Humphries in December 2017 at 60 cm, then recaptured by Shane Murrell over a year later at Browns Bay when it measured 79 cm. At the start of the month, the fish was recaptured again in the Glenelg River near Donovans at 80 cm. This is quite exciting as it provides evidence of Mulloway leaving the Glenelg, presumably to breed out at sea during the summer months, then returning to the Glenelg in Autumn.



Movement map for Mulloway #222, which completed our first observed 'round trip.' The fish was tagged in the Glenelg River in December 2018, then recaptured at Browns Bay in February this year, before returning again to the Glenelg where it was caught further up river near Donovans in May.

Further to the east, a Melbourne angler was lucky enough to catch a Mulloway he'd tagged in the Yarra River almost exactly one year earlier! The fish was tagged at 104 cm on 22nd May 2018, and recaptured only 1.5 km away, measuring 106 cm. This is obviously very minimal growth, so it's likely the fish was of an older age (since growth slows down considerably in the older life stages).

There were also four Mulloway tagged in the Patterson River in March-April this year, that were recaptured between 17 and 72 days later in similar locations, highlighting that autumn-winter is prime fishing time for Mulloway in the Patterson. Finally, just last week, a fellow caught a tagged Mulloway at the mouth of the Yarra River (near the warmies) which had been tagged over a year ago in the Patterson River. The fish was at liberty for 427 days, growing from 66 to 80 cm. This is the second Mulloway to move from the Patterson River to the mouth of the Yarra River and represents the only 'between estuary' movements we've documented so far (i.e. when Mulloway move from one estuary to another).



Last week, a Mulloway which was originally tagged from the Patterson River in May last year, was recaptured at the mouth of the Yarra River. The fish was at liberty for 427 days, and grew from 66 to 80 cm.

I'll finish by kindly thanking the Glenelg Hopkins Catchment Management Authority for presenting us with the Innovation Award for the Mulloway Tagging Program. The awards were part of the 2019 Glenelg Hopkins Environmental Achievers Award which were recently announced in Hamilton. I feel very humbled to have received this award and would like to recognise and thank all the anglers that have made this research program possible.

2.5 Cross-border Silver Xenica translocation update (by Bryan Haywood)

Previous work had indicated that the population of this species in the South East of SA was in dire need of help.

Since the millennium drought of 2006-07 the Silver Xenica butterfly had not been seen in South Australia – despite searches some years later in March and April 2014. Then in 2017-18, Michelle Sargent and I prepared the translocation plan for the Silver Xenica butterfly in South Australia which was an action from the Swamp Gum Woodland Regional Action Plan.



Silver Xenica roosting in Overland Track NFR – April 2020.

In 2018, 40 females were captured from the closest known stronghold for the species (near Dartmoor in western Victoria) and then released into two native forest reserves in SA (20 in each reserve). In 2019, we visited the SA release sites BUT no adults were seen flying in either reserves.

Hmm, “it hasn’t worked,” was the first conclusion.

We decided the best approach was to wait for one more year – we might have missed the butterflies during the surveys or their numbers might be too low for us to detect them easily. We thought things couldn’t get much worse as they might already be extinct!

Well, I am very pleased to report that on Easter Monday 2020 during warm and sunny conditions, Sue and Roger Black observed up to five Silver Xenica butterflies in Overland Track Native Forest Reserve – near where females were released two years earlier. What a pleasant surprise!

I subsequently visited both reserves the following, day despite weather conditions deteriorating overnight, but managed to observe several individuals at Overland Track and also one female at the second translocation site – Honan Nature Forest Reserve. What a result ... both sites with ‘Silver Xenica’ butterflies!



Female Silver Xenica seen in Honan NFR – April 2020.

NGT couldn’t have undertaken this conservation project without the initial support from Natural Resources South East, NGT staff, volunteers, ForestrySA and with funding from the Restoring under-represented Ecological Communities project. As with all projects, they eventually come to an end, as this one did in mid-2018. So OneFortyOne Plantations generously stepped in to keep some of our priority tasks going in the region, which has ensured the project continues and allows us to report this positive result for the species.

In summary – the statewide extinction of this beautiful creature has been avoided (for now) – let’s hope this population continues to thrive and expand so we all continue to see Silver Xenica butterflies in South Australia.

2.6 Major federal grant to help save the spiny crayfish following bushfire impacts (by Nick Whiterod)

Spiny crayfish from the *Euastacus* genus are an inconspicuous casualty of the widespread and enduring bushfires that profoundly impacted Australia over 2019–20. As with other freshwater animals, spiny crayfish were not only directly impacted as the bushfires swept over the landscape but also following subsequent rainfall and runoff that has delivered ash and sediment into waterways from burnt areas. These impacts may continue for these species for months and even years and threaten ongoing survival.

Late in the 2019-20 financial year, Aquasave–NGT received confirmation that our ‘Saving the Spinys: urgent actions to conserve the *Euastacus* freshwater crayfish’ grant was one of 19 projects funded by the Australian Government through the first tranche of its Wildlife and Habitat Bushfire Recovery Program.



The Blue-Black Crayfish (*Euastacus jagabar*) and Clayton's Crayfish (*Euastacus claytoni*) [Rob McCormack]

The project, focusing on the recovery of all 22 priority bushfire-impacted spiny crayfish species, represents the most significant investment in the conservation of these spiny crayfish species to date. It is a collaboration between world-leading experts on freshwater crayfish from Arthur Rylah Institute for Environmental Research, Australian Aquatic Biological, Australian Museum, University of Canberra, Deakin University, Griffith University, University of Poitiers (France) and the Queensland Department of Environment and Science. The project has the following key objectives:

1. Determine the extent of range limits, identify critical remnant populations and threats to those populations
2. Resolve taxonomic status of the undescribed priority species and identify evolutionarily significant units within established species, develop genomic markers and eDNA to support range mapping
3. Explore feasibility of conservation translocations (including ex situ production)
4. Undertake a Species Expert Assessment Plan to inform EPBC assessment and guide recovery plans and actions

Over the next year, the project provides an opportunity to redress knowledge deficiencies, assess the impact of the bushfires and set the strategic platform for the long-term conservation of each species. It will also provide a means to promote each of these poorly known species and help incorporate their plight into management.

3. Plans for the 2020-21 Financial Year

3.1 Strive to be universally viewed as leaders in restoration ecology in south-eastern Australia

Nature Glenelg Trust has already had considerable success delivering a wide range of projects over the organisation's first five years. However, consistent with having an organisational emphasis on restoration and threatened species ecology, we continue to strive to be universally viewed by current and future project partners as leaders in these fields in south-eastern Australia.

Goal: Increase the geographic reach and effectiveness of NGT's restoration activities in south-eastern Australia, based on the ecological expertise and commitment of our staff, volunteers and supporters.

3.2 Continue a focus on high quality research and monitoring to inform conservation management

An important element of our organisation's work has been an ability to initiate and participate in scientific research and monitoring that provides information to better conserve and manage aquatic species and ecosystems. Each year, a number of scientific publications have been produced and used to assist conservation and fisheries managers. We believe that greater opportunities exist in the future to robustly document the outcomes of restoration actions as well as continue to conduct research on key aquatic species.

Goal: Continue to produce scientific publications, present at conferences and foster new research collaborations

3.3 Build lasting partnerships within our focal region

Further to the previous goals, NGT will seek to build on our reputation and credibility in the sector to form longer term partnerships with any individuals or organisations who may want to support our work. This will enable NGT to continue to explore different pathways for achieving environmental results, including research partnerships and looking for opportunities to work across sectors (especially with those involved in the arts, education and social justice) to facilitate meeting the organisation's goals.

Goal: Forge new partnerships to achieve positive results on the ground

3.5 Develop and implement restoration and/or management plans for NGT Reserves

In order to trial and demonstrate property-scale restoration activities for wider conservation benefit on NGT's Reserves, each property requires a restoration and/or management plan to be in place or under development. This will provide a clear set of objectives to drive NGT's grant seeking, or other funding mechanisms pursued, to support active restoration, management and on-ground works.

Goal: To develop ecologically sound management plans for implementation on NGT Reserves

3.6 Grow the balance of the NGT Foundation

The NGT Foundation was launched in early 2018, meeting a goal from the previous NGT Annual Report. In order to successfully meet the long-term objectives of the Foundation, creating a recurrent funding stream to support the management of NGT Reserves, the balance of the Foundation requires significant growth.

Hence the priority now shifts to attracting additional support for the Foundation and attempting to lift its balance during these initial stages after its establishment. During this initial growth phase, all interest generated by the Foundation will be re-invested and no funds will be used for NGT operations.

Goal: To explore strategic opportunities to grow the balance of the NGT Foundation, broadening its funding base and over the next 12 months.

3.7 Provide interesting practical opportunities for our staff, ecology graduates and volunteers

Nature Glenelg Trust is proud to be creating regular opportunities for our staff, recent graduates (as interns) and volunteers to develop and build their ecological expertise through their work with NGT. With changes to the tertiary education sector and its teaching methods, providing opportunities to gain this hands-on ecological experience is a key service NGT can provide, while also adding significant value to our work. This will continue to be a focus for the next 12 months.

Goal: To continue to provide practical learning opportunities for ecology graduates and volunteers

3.8 Explore new and innovative ways to add value to our operations

NGT is a small and dynamic operation that is at the mercy of the range of economic forces that shape the environmental sector on a regular basis. Government funding sources, such as grants, are notoriously unpredictable and make longer term planning difficult. Hence NGT will continue to explore options for value adding to and diversifying our operations to improve our longer term financial security and viability.

Goal: To explore new and innovative ways to add value to our operations

3.9 Undertake a strategic review of NGT Committee of Management in the lead-up to the 10th Anniversary of the organisation

NGT was legally established in October 2011 and commenced operating in January 2012. The operationally focussed structure and function of the Committee of Management has been fit for purpose during that establishment phase, when establishing a track record and demonstrating our scientific credibility was our most important focus. Now that the organisation is moving into a new phase, developing a sustainable funding model for the long-term is the priority, and a strategic review of NGT Committee of Management structure and function is the first step down this path.

Goal: To review the structure, membership and function of the NGT Committee of Management

4. Employee Statistics

Nature Glenelg Trust employed eight full-time, 11 part-time and eight casual staff throughout the 2019-20 financial year. Our full-time and part-time employees at the time of writing (Nov 2020) are:

1. Mark Bachmann (Manager / Principal Ecologist)
2. Jessica Bouchier (Administration Support and Project Ecologist)
3. Lauren Brown (Aquatic Ecologist)
4. Lachlan Farrington (Senior Wetland and Landscape Ecologist)
5. Ruan Gannon (Aquatic Ecologist)
6. Bryan Haywood (Senior Ecologist)
7. Sheryl Holliday (Field Officer)
8. Greg Kerr (Senior Ecologist)
9. Lauren Kivisalu (Project Ecologist)
10. Ryan Little (Nursery Officer)
11. Rupert Mathwin (Amphibian Ecologist)
12. Nicole Mojonier (Program Co-ordinator – Education on NGT Reserves)
13. Tessa Roberts (Wetland Ecologist)
14. Ben Taylor (Senior Wetland Ecologist)
15. Rose Thompson (Project Ecologist)
16. Jonathan Tuck (Ecologist and Project Logistics)
17. Nicholas Whiterod (Senior Aquatic Ecologist)
18. Sylvia Zukowski (Aquatic Ecologist)

5. Membership

As a duly constituted fixed trust, Nature Glenelg Trust does not have its own financial membership base. As a NGO committed to filling gaps, we are specifically interested in using our expertise to work with (not compete with) other membership-based community groups to increase their effectiveness, and help them to retain and attract members. We also aim to provide regular and meaningful volunteering opportunities for community through participation in our projects. Nature Glenelg Trust is listed on the Register of Environmental Organisations, enabling the organisation to seek tax-deductible financial contributions to our Public Fund. Supporters of Nature Glenelg Trust are also encouraged to register their email address on our website (www.natureglenelg.org.au) to receive regular updates on our projects and organisational activities.

The Board of the Trustee for Nature Glenelg Trust, currently has five voting members:

1. Mark Bachmann
2. Catherine Dickson
3. Lachlan Farrington
4. Michael Hammer
5. Nicholas Whiterod

At present, the Trustee for Nature Glenelg Trust members also comprise NGT's Committee of Management, which meets 3-4 times a year to oversee the strategic direction of the organisation, and are legally accountable for the administration of the Public Fund (the Habitat Restoration Fund).

6. FINANCIAL STATEMENT

NATURE GLENELG PTY LTD T/A NATURE GLENELG TRUST

STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 30th JUNE 2020

	Note	2020 \$	2019 \$
Revenue			
Sales		1,395,206	1,858,526
Administration Fees		2,706	192,344
Donations		133,716	1,925,270
Other Income		676,806	201,694
Total Revenue		2,208,434	4,177,834
Less			
Expenses			
Cost of Goods Sold		394,599	668,269
Employee benefits expense		1,110,825	1,057,394
Other expenses		248,443	299,690
Total expenses		1,753,867	2,025,353
Net surplus for the Year		454,567	2,152,481
Other comprehensive income		-	-
Total comprehensive income		454,567	2,152,481

NATURE GLENELG PTY LTD T/A NATURE GLENELG TRUST

STATEMENT OF FINANCIAL POSITION
AS AT 30th JUNE 2020

	Note	2020 \$	2019 \$
Current Assets			
Cash and Cash Equivalents		2,884,521	1,493,253
Receivables	2.	152,979	356,319
Inventories	3.	2,145,317	1,226,623
Other	4.	123,013	335,000
Total Current Assets		5,305,830	3,411,195
Non-Current Assets			
Property Plant and Equipment	5.	7,543,585	7,499,273
Total Non-Current Assets		7,543,585	7,499,273
Total Assets		12,849,415	10,910,468
Current Liabilities			
Trade Creditors and Other Payables	6.	3,592,255	2,190,801
Provisions	8.	342,975	271,135
Total Current Liabilities		3,935,230	2,461,936
Non-Current Liabilities			
Interest Bearing Liabilities	7.	205,173	218,734
Provisions	8.	124,180	99,533
Total Non-Current Liabilities		329,353	318,267
Total Liabilities		4,264,583	2,780,203
Net Assets		8,584,832	8,130,265
Equity			
Issued Shares & Settled Sum		396	396
Retained Surplus		8,584,436	8,129,869
Total Equity		8,584,832	8,130,265

NATURE GLENELG PTY LTD T/A NATURE GLENELG TRUST

STATEMENT OF FINANCIAL POSITION
AS AT 30th JUNE 2020

	Note	2020 \$	2019 \$
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NATURE GLENELG PTY LTD T/A NATURE GLENELG TRUST

STATEMENT OF CASH FLOWS
AS AT 30th JUNE 2020

	2020 \$	2019 \$
Cash Flow from Operating Activities		
Receipts from		
Donations and Gifts	133,716	1,925,270
Government/Other Grants & Income	2,905,739	2,178,113
Interest	12,580	28,392
Payments to		
Suppliers and Employees	(1,571,799)	(2,315,372)
Interest paid	(9,892)	(11,186)
Net cash flow from operating activities	1,470,344	1,805,217
Cash Flows from Investing Activities		
Purchase of Property Plant & Equipment	(65,515)	(4,410,374)
Net cash flow from investing activities	(65,515)	(4,410,374)
Cash Flow from Financing Activities		
Repayment of interest bearing liabilities	(13,561)	(12,589)
Net cash flow from financing activities	(13,561)	(12,589)
Net increase (decrease) in cash and cash equivalents	1,391,268	(2,617,746)
Cash and Cash Equivalents at the beginning of the year	1,493,253	4,110,999
Cash and Cash Equivalents at the end of the year	2,884,521	1,493,253
Reconciliation of Net Surplus for the year to net Cash Flows from Operations		
Net Surplus for the year	454,567	2,152,481
Depreciation Expense	21,203	19,054
(Increase)/Decrease in Inventories	(918,694)	(76,692)
(Increase)/Decrease in Receivables	203,340	(46,059)
Increase/(Decrease) in Provisions	96,487	97,578
Increase/(Decrease) in Trade Creditors	1,401,454	(6,145)
Increase/(Decrease) in Trade Other Assets	211,987	(335,000)
Net Cash Flow from Operations	1,470,344	1,805,217



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**INDEPENDENT AUDIT REPORT
TO THE BOARD MEMBERS OF
NATURE GLENELG PTY LTD ATF NATURE GLENELG TRUST**

REPORT ON THE AUDIT OF THE FINANCIAL REPORT

AUDIT OPINION

We have audited the financial report of Nature Glenelg Pty Ltd atf Nature Glenelg Trust (the trust), which comprises the statement of financial position as at 30 June 2020, the statement of comprehensive income, for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and the members' declaration by those charged with governance.

In our opinion, the accompanying financial presents fairly, in all material respects of Nature Glenelg Pty Ltd atf Nature Glenelg Trust is in accordance with the Corporations Act 2001, including:

- (a) giving a true and fair view of the company's financial position as at 30 June 2020 and of its performance for the year then ended; and
- (b) complying with Australian Accounting Standards to the extent described in Note 1, and the Corporations Regulations 2001.

BASIS FOR OPINION

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Report section of our report.

We are independent of the entity in accordance with the auditor independence requirements of the Corporations Act 2001 and the ethical requirements of the Accounting Professional and Ethical Standards Board's (APES 110) Code of Ethics for Professional Accountants (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We confirm that the independence declaration required by the Corporations Act 2001, which has been given to the members of the association, would be in the same terms if given to the members as at the time of this auditor's report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

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**INDEPENDENT AUDIT REPORT
TO THE BOARD MEMBERS OF
NATURE GLENELG PTY LTD ATF NATURE GLENELG TRUST**

REPORT ON THE AUDIT OF THE FINANCIAL REPORT

EMPHASIS OF MATTER – BASIS OF ACCOUNTING AND RESTRICTION ON DISTRIBUTION AND USE

Without modifying our opinion, we draw attention to Note No1 to the financial report, which describes the basis of accounting.

The financial report is prepared to assist Nature Glenelg Pty Ltd atf Nature Glenelg Trust members to comply with the financial reporting provisions of the Corporations Act (2001).

As a result, the financial statement may not be suitable for another purpose. Our report is intended solely for Nature Glenelg Pty Ltd atf Nature Glenelg Trust and should not be distributed to or used by other parties other than Nature Glenelg Pty Ltd atf Nature Glenelg Trust.

RESPONSIBILITIES OF THE MEMBERS FOR THE FINANCIAL REPORT

The members of the association are responsible for the preparation of the financial report that gives a true and fair view and have determined that the basis of preparation described in Note 1 to the financial report is appropriate to meet the requirements of the Corporations Act 2001 and is appropriate to meet the needs of the members.

The members' responsibility also includes such internal control as the members determine is necessary to enable the preparation of a financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the members are responsible for assessing the association's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless the members either intend to liquidate the association or to cease operations, or have no realistic alternative but to do so.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL REPORT

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian Auditing Standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

As part of an audit in accordance with the Australian Auditing Standards, we exercise professional judgment and maintain professional scepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting

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**INDEPENDENT AUDIT REPORT
TO THE BOARD MEMBERS OF
NATURE GLENELG PTY LTD ATF NATURE GLENELG TRUST**

REPORT ON THE AUDIT OF THE FINANCIAL REPORT

from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the members.
- Conclude on the appropriateness of the members' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial report or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial report, including the disclosures, and whether the financial report represents the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the board members regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

INHERENT LIMITATIONS

Due to the inherent limitations of an assurance engagement, together with the internal control structure, it is possible that fraud, error, or non-compliance with the listed provisions may occur and not be detected.

A reasonable assurance engagement does not provide assurance on whether compliance with the listed provisions will continue in the future.

COMPASS GROUP SA PTY LTD

BARRIE LLOYD

RCA - 5357

Signed at Adelaide on the 20th September 2020

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