As the construction of a weir and other infrastructure near the East-Goulburn Channel was not undertaken, the water ended up being primarily used for irrigation in the broken down early in the irrigation season to reduce the surface area and therefore evaporation. Water quality issues became apparent during the drought in 1983 when the Lake was completely drained and this, combined with the poor management of the foreshores, led to high nutrient loads and significant problems with blue green algae. Lake Nillahcootie (42,400 megalitre capacity) was managed in conjunction with Lake Mokoan with Lake Nillahcootie intended to collect water during winter and high rainfall events. Water was then released into theBroken River and diverted to Lake Mokoan via a ‘diversion channel’, a few kilometres upstream from Benalla. There were problems with minor flooding of properties between Nillahcootie and the diversion channel associated with this strategy. This limited the effectiveness of the strategy. Nillahcootie was also managed (until 1992) to have an air space of 75% capacity at the end of June, decreasing to 0% by November to provide flood mitigation protection for Benalla and downstream landholders. This strategy ceased before the October 1993 floods.

1993 FLOODS
Official investigation of the 1993 floods concluded that even if Nillahcootie had been managed as originally intended the additional air space would have contributed little to protecting Benalla from the major flood event of October 1993. Not all locals accepted this conclusion. When the Labor Government needed water savings to meet its commitment to return environmental flows to the Snowy River (in return for the political support of the Independent Member for Gippsland East), decommissioning Lake Mokoan was identified as the project of choice. The local community were not happy with this proposal and argued against it on three key issues:

- the need to maintain current security of supply of water to the Broken River Irrigation District
- maintain flood protection for Benalla
- maintain the lake for boating, fishing and duck hunting.

Peter Walsh, discussing how to improve water security lost as a result of the decommissioning. Below: With Wayne Spinks and Nationals Minister for Water, Peter Walsh, discussing how to improve water security lost as a result of the decommissioning. Right: Not a happy chappy. Locked out of the breaching site.
WEDGE-TAILED EAGLE

The Wedge-tailed Eagle is Australia’s largest bird of prey, with a wingspan that can exceed two metres. These birds have amazing eyesight, which is seven times better than human sight. This enables them to soar, often at great height, scanning the ground for rabbits and hares, their favourite food. They also eat other animals, birds and carrion.

Bird Shape

Look skyward for a large, dark bird gliding with upswept wings. The tail is a distinctive long wedge shape. These birds often soar in pairs, and can sometimes be seen resting in large trees around the wetland.

THE BROWN FALCON

The Brown Falcon is a medium sized raptor, 40 to 50cm in length, and is a common resident at the Winton Wetlands. Brown Falcons vary in colour. Some are dark brown all over, but most are reddish brown on the back and wings, and pale underneath. Although they are falcons, they are not particularly fast fliers. In flight, their wings are rounded and the tail is often fanned.

PERCHING

A bird of the grasslands and open woodlands, the Brown Falcon is often seen perched on electricity poles, wires or fences. Look for them along Boggy Bridge Road or anywhere with a suitable perch. They eat a wide variety of food, including lizards, snakes, insects and small rabbits.

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THE NANKEEN KESTREL

The Nankeen Kestrel is Australia’s smallest falcon, at 30 to 35cm in length. It is easy to identify because it hunts for food by hovering. The Nankeen Kestrel is a chestnut or tan colour on the back, and has long, pointed wings which allow it to fly fast. The only other bird of prey at the Winton Wetlands that hunts by hovering is the Black-shouldered Kite, which has black and white plumage.

FLIGHT BEHAVIOUR — HUNTING BY HOVERING

Look for this bird along roadsides, as it hovers above long grass, looking for mice, lizards or insects. It faces into the wind and flaps its wings quickly to remain stationary, before plunging to the ground to grab its prey.

Sources: Kathy Costello, Birdlife Australia, Murray Goulburn Branch
Birds of Prey of Australia by Stephen Debus

Winton Wetlands is a great place to view a wide range of Victoria’s birds of prey, such as eagles, falcons, kites and goshawks. Birdlife Australia, Murray Goulburn Branch has recorded 14 raptors during their bird surveys here.

LOOK SKYWARD FOR GRASSLAND HUNTERS

As top predators, these birds play an important role in the ecosystem. Birds of prey are attracted to the wide open spaces at Winton Wetlands and to the variety of habitats found here.

Some birds of prey hunt over water, for example the White-bellied Sea Eagle, Swamp Harrier and Whistling Kite, while goshawks and sparrowhawks are woodland hunters. Other birds of prey find their food in the grasslands. The following three species are all grassland hunters, but they employ completely different methods for finding food.
The Winton Wetlands region is a ‘biodiversity hotspot’ for the Carpet Python (Morelia spilota metcalfei) as it provides the perfect mix of water, frogs, fish, small mammals, rocky outcrops, trees and understorey. I find it intriguing that a python could live here; normally pythons are associated with lush tropical jungles, however this sub-species found its niche amongst the twisted tree trunks and dry rocky granitic spaces around the Warby Ranges and the Winton Wetlands.

** ABOUT THE PROJECT**

In 2005, while employed at the then Department of Primary Industries, I initiated and managed the Carpet Python Project, working with groups and agencies such as the Warby Range Landcare Group, Goulburn Broken Catchment Management Authority, Broken Boosey Conservation Management Network, Norman Whettenhall Foundation, Department of Sustainability and Environment, Parks Victoria and Goulburn-Murray Water to assist the survival of this iconic and endangered local python. This project saw over 100 hectares of strategic remnant vegetation protected and established to link across the landscape. It also involved landholder engagement, plenty of community conversations about the python and biodiversity, the development of habitat management guidelines, the production of education material, community events and field days, workshops, a Carpet Python Picnic and public presentations, fox baiting across a 43,000 hectare region and signage to inform the community of the Carpet Python’s presence.

Janice Mentiplay-Smith, Broken Boosey Conservation Management Network

**DWINDLING NUMBERS**

The python would have been an important food source for the area’s Traditional Owners, as well as for birds of prey and goannas. European settlement changed the landscape, and saw the introduction of pests such as foxes and cats. Slow to breed, the python population could not keep up with these threats; consequently numbers dwindled. While some studies on the area’s Carpet Pythons had been carried out over the years, it was clear a dedicated project was needed to help protect this amazing species.
The Chesney Vale School was located here at the intersection of McGann Hill Road and the old Lake Mokoan Road. Originally known as Mokoan West, the school started life on Old Thoona Road in 1878 and the site here within the Winton Wetlands was actually its third location. Chesney Vale School 4403 closed in 1969 prior to the inundation to create Lake Mokoan.

**CHESNEY VALE SCHOOL**

I remember Chesney Vale State School 4403 as one room with one teacher who was usually newly qualified and boarded with a district family. We sat in old desks with ink wells seating two students. The school was cold in winter, warmed only by a Warmray heater, which we used to heat up our pies and pasties on top of it, which usually meant burning the bottom of them.

Monday mornings always started with raising the flag, singing God Save the Queen and reciting the Oath of Allegiance. The school was the centre of the district and the (mens) School Committee looked after the grounds, including the tennis court and football ground.

The men also arranged to spend the money raised by the Mother’s Club. Most of their funds came from closely contested euchre nights held in the school lit by Tilley lamps. The annual School Concert was a highlight which finished with a visit from Father Christmas who arrived after numerous rounds of Jingle Bells.

Sharon Brennan - Former Student

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**A LOVE OF SPORTS**

As a student of the Chesney Vale School, I don’t recall much of the studies, but I remember our film and sports days.

We would travel to Winton School for a film afternoon one day a month. We would car pool through Winton North (the area then known as Winton Swamp) along Boggy Bridge Road. This was the fastest route to Winton back then.

We were a part of the Goorambat and District School Sports Association for our annual sports day and travelled to Goorambat to compete.

The ‘heat policy’ got tested a few times during my time as a student – it’s not like the ones that are in place today. In the midst of summer temperatures would get up around the 40 degree mark often and on these days there wasn’t much to keep us cool.

There was a thermometer in the shelter shed and if it got to 110 degrees or over, the teacher had to buy us all icy poles. The one summer this happened was the same summer that the ‘policy’ got bumped up to 112 degrees!

Doug Bain - Former student

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Monday mornings always started with raising the flag, singing God Save the Queen and reciting the Oath of Allegiance.
Conservation Management

The Winton Wetlands lay at the base of the Warby and Mokoan Ranges, with seasonal creeks that flow from the Greta Hills in the east filling the ephemeral swamps most years. The wetlands are home to a thriving frog population with a prolific food base. In turn, the frogs themselves support a variety of bird and animal species.

PEST CONTROL

Effective terrestrial and aquatic management of the wetlands and the box woodlands is critical for the survival of native plants and animals. Eradication of large carp from the 33 wetlands will enhance the aquatic vegetation, creating the clear water required to support native fish and turtle populations.

Fox control works are undertaken with the timing aligned to optimise feral reduction during turtle hatching time. Consideration is also given to the timing to best suit the lambing season of the local farming community.

FIRE MANAGEMENT PLAN

The Fire Management Plan (FMP) nominates and maps out the annual fire preparedness tasks and planned burning to be carried out prior to each fire season. It also ensures that visitor and emergency service access and safety is considered when building and maintaining infrastructure and when planning events. Grazing leases are in place in specific areas within the wetlands. These long term and short term permits enable us to strategically manage the reduction of biomass of some difficult to access areas.

WEED MANAGEMENT

Weed management programs are implemented to manage and monitor weeds such as St John’s Wort, Paterson’s Curse and Bathurst Burr. In the long term the aim is to competitive plant native species as a means of sustainably combating weeds. Revegetation plantings with seed and tube stock are timed to complement native grass and remnant box and red gum populations. The Ecological Vegetation Class (EVC) dictates what types of plants should be planted where. The timing of the plantings is designed to facilitate a mix of not only species, but also of age class.

Another sustainability goal for the Wetlands is to have a viable population of grasses, trees and understorey plants. In time, these will become a viable source for seed collection for future plantings within and around the reserve.

Julie Flack, Winton Wetlands
The Cycle of Life

For centuries, the cycle of life on the wetlands has seen different species come and go at different times of the year. Some live at the wetlands all year round, while others make fleeting visits when the conditions are to their liking.

Calling the Wetlands Home

The presence and behaviour of the many species of fauna that call the wetlands home is intricately linked to the water cycle of the reserve. As the water levels rise and fall, the animals adapt to the ever-changing landscape.

During the drying season (January - March), the receding water means less feed and a reduction in the breeding habitat for many species. As the 'breaking' rains of autumn begin to occur throughout April and May, the swamps begin to dampen and fill, with the wetlands springing back to life. The availability of key prey such as crabs and freshwater shrimp increases and both terrestrial and aquatic vegetation begins to flourish.

Water Levels

In terms of water levels, the wetlands usually reach their highest level in spring (September/October). At this point the wetlands offer a rich variety of food and shelter resources, with extensive aquatic vegetation giving fish, frog, turtle and water bird species the ideal habitat in which to breed and thrive.

Eastern long-necked turtles return to their favorite nesting locations on the Spit. Black Swans tend to their floating nests along the Northern Foreshore. Murray Cod forage on the abundant crustaceans. And Red-bellied black snakes are spoilt for choice with a plentiful supply of spotted marsh frog to dine on.

In the woodlands surrounding the swamps, Brush-tailed Phascogales and Diamond Firetails thrive on the nectar, seeds and insects in amongst the flowering native woodland flora.

As summer returns the waters once again begin to recede and the cycle of life on the wetlands continues as it has for thousands of years.

Lisa Farnsworth - Restoration Scientist
As our name suggests, the Friends of Winton Wetlands is a volunteer organisation made up of people who are passionate about the wetlands and its surrounding woodland areas.

ABOUT THE GROUP
Our group was established in 2013 and has been growing in numbers ever since. Our primary aim is to support the conservation and restoration of the Wetlands by raising awareness of the value of its many and varied ecosystems.

Our key focus is to provide a program of fun and family friendly activities and events throughout the year.

The purpose of these activities include the following:

The environment: to assist with and undertake specific environmental projects and activities.

Ambassador: to promote the Wetlands by acting as ambassadors in a range of settings.

Stakeholders: to encourage the involvement of individuals and organisations.

Education: to participate in educational forums and other activities designed to inform others of the nature and value of the Wetlands.

THINGS WE DO
We love the Winton Wetlands and all that it has to offer. We encourage anyone else who shares this passion to join our group and play an active part in restoring and preserving this valuable natural asset.

Becoming a Friend of Winton Wetland will enable you to participate in a wide variety of interesting activities...

- Participate in quarterly bird surveys
- Assist with Waterwatch surveys
- Take part in regular kangaroo counts
- Assist with monitoring of frogs and other reptiles that call the Wetlands home
- Tree planting and other restoration and revegetation activities

HOW DO I BECOME A FRIEND OF WINTON WETLANDS?
It’s easy. Membership forms are available at Mokoan Hub and outline the steps involved in becoming a Friend of Winton Wetlands.
The Magic of the Wetlands

The magic of the Wetlands is that they tend to transcend human history as most of us understand it. People have been coming here for thousands of years, doing the same things – meeting people, sharing food, interacting. The wetlands don’t care what the colour of your skin is, your religion or what your politics are. They facilitate the social being in all of us and help us all remember our connection to the landscape.

DECOMMISSIONING

As a local, I have been associated with Lake Mokoan since a child, coming here for picnics and water sports with my family.

My extended family is based all over the northeast so we all converged on the lake to get together, share a meal and generally catch up – something people have been doing for thousands of years!

It was with great excitement that once I qualified as an archaeologist, I had the opportunity to return to the wetlands, for which I had such fond memories, and truly understand why I loved it so much.

I was involved with the Lake Mokoan Decommissioning project from the onset and was an original member of the FLUS consulting team (Beca Pty. Ltd). I worked on other projects at the wetlands, predominantly irrigation pipelines and I was involved in what we called the ‘drawdown’ surveys.

As the lake level diminished, we carried out cultural heritage assessments to determine what remained following 40 years of inundation – we were not disappointed.

WHAT DID WE FIND?

The historic literature indicates that the wetlands fell within the language group boundaries of either Daung Wurrung or Bangarang. However, these boundaries tended to be somewhat fluid and indeed the wetlands are quite close to the boundaries between Daung Wurrung, Bangarang and Ngurai-illam wurrung.

It would make sense that during particular times, members of all three friendly groups, and possibly others, would converge on the wetlands for corroboree, trade and discussion. It may even have represented shared country for such a purpose given that the wetlands contained a huge number of resources that had the capacity to feed a large number of people over a period of time.

The wetlands are remarkable in their geology, geomorphology and vegetation. This in turn, created a great place for people to live. The natural depression, surrounded by the Warbys, the Goorambat Hills and the Uplands, spills onto the wider and flatter Benalla Plain. The wetlands would pretty well always have held water, except during the most extreme droughts, so was probably also seen as a sanctuary during these times. A plethora of bird life always accompanies wetlands, and fish, mussels and reptiles too, so food would have been plentiful. The adjacent hills and the plain would have supported the larger mammals that were hunted. Rock wells have also been found in the surrounding hills, providing potable water for thirsty travellers.

Scarred trees and artefact scatters are probably the most prevalent of Aboriginal cultural heritage places found at the wetlands. Bark from trees was used to make canoes, shelters, carrying containers and shields; and artefact scatters are really the remains of past Aboriginal occupation. They generally contain evidence of stone tool manufacture and/or use. All the cultural heritage at Winton Wetlands represents activities of daily living of Aboriginal people who lived here in the past.

Jo Bell, Archaeologist

AS THE WATER RECEDED

As the water receded, we were able to identify the banks of the original wetlands. This was exciting as the majority of cultural heritage material that we found during earlier surveys was predominantly caught in strandlines at the high water mark, washed up on the shoreline like seaweed at the beach.

Later surveys revealed that despite the 40 years of inundation, cultural material was still to be found pretty much in situ around the edges of the wetlands themselves, particularly the larger ones like Winton and Sargeants.

A series of small mounds were also identified adjacent the smaller wetlands such as Black’s and Taminick Swamps. There aren’t many mounds outside the River Murray corridor, which indicates that people came here often, from far and wide, converging on the wetlands and the resources they offered. This is also supported by oral history information from local landholders, handed down through generations since European occupation of the first squating runs here.
The Regent Honeyeater Project has established itself as one of the most active volunteer conservation projects in Australia. The project has seen large areas of Box-ironbark habitat protected and restored, including out at the Winton Wetlands.

**ABOUT THE PROJECT**

The project has engaged a whole farming community in restoring remnant Box-ironbark habitat for the endangered species still living in the district. It has been made possible thanks to the ongoing support from a wide cross-section of community volunteers who give up their time and energy to help farmers with the on-ground works.

Propagation and planting days are organised each year, involving over a thousand students from more than 20 local schools, and hundreds of volunteers from universities, walking clubs, church groups, bird observers, scouts and environment groups. These groups participated in 3 major plantings here at the Winton Wetlands in just the first 2 years, and many more are planned for the coming years.

Our focus is on the Grassy Woodlands surrounding the Wetlands. The few old-growth woodland areas remaining are tiny fragments, yet are crucial habitat for a whole range of woodland-dependent species, both fauna and flora.

Many of these species are under threat simply because there is not enough woodland left.

**RESTORING THE WOODLAND**

The Winton Wetlands Reserve provides an opportunity to restore Box Woodland areas on a massive scale that is simply not possible on private farm land.

Much of the soil is highly productive, so the habitat will be a fabulous food bowl for wildlife, whether permanent residents or seasonal visitors that come for the rich pickings in a good season.

Every seedling that arrives on-site represents a significant investment. It takes money, time and a lot of effort to collect and propagate seed, then care for thousands of young trees and shrubs until they are ready to be planted.

We carefully select the plant species to match the various soil types across each site, and are experimenting with novel planting techniques to further improve our efficiency.

**WORKING TOWARD THE FUTURE**

The work we have been doing for 20 years in the Lurg Hills, south of the Reserve, now has to be linked up to the Winton Wetlands.

This will enable the threatened species to expand to new territories, meet new breeding partners, and broaden their gene pools in the long term. The creation of connecting corridors from Lurg to the Wetlands and beyond to wider landscapes, will have significant benefits for a number of threatened species.

Ray Thomas
Project Co-ordinator - Regent Honeyeater Project
Welcome to the Winton Wetlands, previously known as ‘Mokoan Swamp’, the Winton Swamp and, from 1970-2010, the site of Lake Mokoan. Whether you are a local, a regular visitor or exploring here for the first time, this site will certainly engage you and fascinate you.

WELCOME
There are many stories associated with the Winton Wetlands, some happy, some sad, but all stories that need to be told.

Through our interpretive signs we strive to give people with a connection to the Wetlands, a voice so that they can share their stories in an honest and authentic way. It is through these stories that we all learn more about the history of the area, the tragedies, the moments of triumph and the hopes and aspirations for the future.

We have also tried to tell the stories of the unique and rich ecology of the area which, since 2010, has continued to naturally reclaim the site. We are proud of our efforts to re-establish the area as a series of very healthy Wetlands that support many rare and threatened species of fauna and flora.

The story of Winton Wetlands is one of resilience through constant change. The Wetlands are one of the few places in Victoria where stories of settlement and displacement, rebellion and struggle, depression and drought, agriculture and entrepreneurship, and hope and renewal are all tightly-bound and well-documented.

The long history of Indigenous people and European families in the area will allow many more stories to be rediscovered over the coming years, and we look forward to sharing these with you.

The site does bear the scars of its history. Visitors may feel anger and grief connected to loss, joy at the sight of birds or wildlife or a stunning landscape, or a sense of euphoria linked to connecting spiritually with the site in its desolate beauty.

SHARE YOUR STORIES
Throughout the Wetlands we provide places and ways for you to share your experiences of visiting the Wetlands.

We have signs in place that invite you to write about what you’ve seen and done. We also have social media platforms, such as Facebook, where you can share your thoughts and photos of your visits. It is through the telling and sharing of these stories that we discover more about the Wetlands and what they mean to the people who come and make a connection to the site.

You are also welcome to share your stories via email at: info@wintonwetlands.org

Currie sisters notes - Benella Ensign 1939
Water Quality

**Restoring the Winton Wetlands** is a long-term project. One of our key priorities is to improve the health of the water system. The water quality of the wetlands is largely determined by the extent and condition of aquatic and shoreline vegetation.

**WATER QUALITY**

Aquatic condition is driven by the extent of seed banks and propagules (suckers) of the plants, the water regime and the threats to the vegetation. Threats include carp, turbid water inflows, uncontrolled grazing and erosion.

Improvement in water quality also promotes aquatic vegetation growth and, as a result, aquatic fauna diversity, through feedback loops.

In late 2014 and early 2015, the refilling wetland showed extensive regeneration of aquatic plants. Milfoil and cane grass, both native aquatic plant species, have recovered and regenerated to such an extent that in November 2014 they were almost spread across the entire wetland site.

**THE IMPORTANT ROLE OF AQUATIC PLANTS**

Aquatic plants will form the basis of aquatic food chains, supporting aquatic insects and crustaceans, fish and ultimately large numbers of internationally listed waterbirds.

Visual clarity is one of the key indicators for the health of the water. As the aquatic plants expand they will help the recovery of the wetlands’ water quality by binding sediments and clarifying surface waters.

While these aquatic plant species may seem to disappear when the big dry comes in summer, only the above ground portions are lost while the roots remain in the wetlands’ soil. These roots then have the ability to quickly recolonise as the water system refills with the autumn break.

These are all encouraging signs for the ecosystems at Winton Wetlands, indicating a steady return to good health.

Lance Lloyd, Restoration Scientist