

MERBEIN COMMON
WILDLIFE
DETECTIVE
Activity Book



WELCOME

This book belongs to:

**Date of your visit to
Merbein Common**

The activities can be easier and fun to do with an adult so feel free to share your book and get started on your first challenge! Have fun!!

Did you know?

Apart from the platypus, the Rakali is the only amphibious land-based mammal in Australia! It's scientific name *Hydromys chrysogaster*, means 'golden bellied water mouse', as they can vary in colour from brown through to black on its back with a pale underbelly and white-tipped tail.

Rakali have broad, partially webbed hind feet, water repellent fur, a blunt muzzle with dense whiskers and a thick tail which acts like a rudder when swimming.

Rakali generally inhabit freshwater ecosystems, with a known population at Merbein Common. As carnivores, their diet consists of insects, fish, frogs, turtles, crustaceans and mussels. Lizards, small mammals and water birds are also known to be eaten.

FUN FACT

Rakali can run twice as fast as they can swim?!

Become a WILDLIFE DETECTIVE

Welcome and Telkaya, meaning 'be well' in Nyeri Nyeri language to Merbein Common!! Join Ria the Rakali and become a Wildlife Detective to learn more about environmental watering and the surrounding floodplain environment at Merbein Common.

The activities in the Wildlife Detective book are designed for primary school-aged children. Children are encouraged to pick and choose the activities in the book that interest them.

Rakali are an important indicator of aquatic ecosystem health, however there is anecdotal evidence that population numbers in south-eastern Australia have declined since the mid 1990's, most likely due to drought and habitat degradation.

Feral predators such as foxes and cats have also impacted population numbers in certain areas. Rakali were nearly hunted to extinction for their pelts (fur) in the 1930's and 40's until they were declared a protected species.



Introducing Merbein Common

Merbein Common is located 570 km north west of Melbourne along the Calder Highway; 15 km north west of Mildura and less than 5 km north of the township of Merbein on the Murray River floodplain. The Common is approximately 1,480 ha of floodplain vegetation and comprises Murray River Park and River Murray Reserve, both managed by Parks Victoria.

There is a diversity of landscapes at Merbein Common ranging from riverine vegetation (plants located close to a river), fresh and salt water billabongs and lagoons and small patches of native pine all of which provide important habitat (homes) to native and threatened plants and animals.



THE SIGNIFICANCE OF MERBEIN COMMON

Merbein Common holds many important environmental, social, cultural and economic values and given its proximity to the townships of Merbein and Mildura, is a highly visited site by locals and tourists. It is therefore important that we all help to protect 'the Common'.

THE HISTORY



This floodplain (lower lying areas adjoining the Murray River) is extremely important to the local Aboriginal community in particular the Latji Latji and Nyeri Nyeri peoples. The area around the Murray River provided abundant food resources including fish, yabbies, crayfish, turtles and mussels.

Sites of cultural significance registered for Merbein Common, include burial sites, scarred and canoe trees, artefact scatters and hearths and the oldest recorded shell midden site in South Eastern Australia estimated to be between 15,000 and 16,000 years old! A number of walking trails highlight the cultural significance of the site particularly around the wetlands.

Dr Wilhelm Blandowski (1822-1878), a naturalist best known for his explorations in northwest Victoria, set up camp at Chaffey Landing where he collected over 17,000 specimens of birds, mammals and fish with the help of the local Nyeri Nyeri people.

Chaffey Landing is on the eastern boundary of Merbein Common and was named after William Benjamin Chaffey (1856 - 1926), a Canadian agriculturist and irrigation planner who built the winery/distillery on the cliff above the landing in 1913.





THE ENVIRONMENT



SOLVE THE SENTENCE!

Use the words below to fill in the missing words of the following paragraph. Matching the circled letters to their numbers in the question below to solve the answer!

ENVIRONMENTAL

REFUGE

PLANT

HABITAT

STATE

ANIMAL

WETLANDS

Merbein Common holds significant _____[○]_____ values including 196 _____[○]_____ species and 88 species of _____[○]_____. Many of these plants and animals are water dependent and protected under important international agreements and _____ and Federal legislation. The _____[○]_____ within Merbein Common provide _____[○]_____ (homes) for aquatic plants and animals and act as a critical _____[○]_____ for waterbirds during times of drought when the surrounding landscape is dry.

What is the second largest monitor (lizard) in Australia after the Perentie which can grow up to two meters in length?

The Lace _____[○]_____ or Tree Goanna is considered endangered in Victoria due to habitat loss. It can be observed (from a distance) climbing the River Red Gum and Black Box trees within Merbein Common in search of nestlings (baby birds), eggs and other food items.



RECREATION

Merbein Common is extremely popular for recreational activities including walking, bird watching, fishing, boating, water-skiing, camping, canoeing and photography due to its close proximity to the townships of Mildura and Merbein. There are a number of designated picnic sites, a boat ramp and formal cultural and nature trails some of which have interpretation signs to guide the interested nature walker.



ECONOMY

Merbein Common is surrounded by a diversity of irrigation industries including citrus growing, dried fruits, vineyards and wineries and is the site for the original pump station for the region.





MERBEIN COMMON

COWANNA
BEND

MURRAY
RIVER

COWANNA
BILLABONG

BRICKWORKS
BILLABONG

CATFISH
BILLABONG

MERBEIN
SANDBAR

CHAFFEY
LANDING

WENTWORTH RD

COWANNA AVE

COMMERCIAL ST

CALDER HWY
A79

REILLY ST

FORBES
DRIVE

N

0 250 500 750 1000
METRES



THERE ARE SO MANY INTERESTING SITES, ARTEFACTS, TRAILS AND NATIVE PLANTS AND ANIMALS TO DISCOVER AT MERBEIN COMMON AND SURROUNDS. TICK THE BOXES SHOWING THE PLACES YOU HAVE VISITED ON THE MAP. IF YOU DISCOVERED A SITE THAT IS NOT ON THE MAP, PLEASE WRITE OR DRAW IT IN THE BOX BELOW.

☐

ARCHAEOLOGICAL TRAIL

☐

LEVEE

☐

BLANDOWSKI WALK

☐

MERBEIN LINK TRAIL

☐

CATFISH BILLABONG WALK

☐

MURRAY RIVER

☐

CULTURAL AND NATURE TRAIL

☐

PICNIC / BBQ AREAS

☐

BLANDOWSKI WALK STAIRS

☐

REGULATORS

☐

BOAT RAMP/CANOE LAUNCH

☐

TOILETS

☐

FLUKER POLES



ADD YOUR OWN DISCOVERIES:

Remember when you visit Merbein Common

- Leave only footprints, take only pictures and memories.
- Let animals find their own food, do not feed them.
- Don't pick the plants, they provide food and shelter for animals.
- Do not disturb archaeological sites including shell middens, scar trees, hearths etc.
- There are no bins at Merbein Common, please help keep this site beautiful by taking all your rubbish home with you.



THE WETLANDS OF MERBEIN COMMON

The Merbein Common wetlands support a diversity of native and threatened water dependent animals including macroinvertebrates (critters without a backbone that are large enough to be seen with our naked eye e.g. snails, crayfish, insects etc), fish, frogs, turtles and waterbirds. Terrestrial species such as microbats, reptiles and mammals also benefit from the wetland ecosystem.

Cowanna Billabong

Cowanna is a permanent freshwater wetland, 16ha in size, 150m wide and one km long. Water depths range from 2.5 - 3m when full and can support small and large bodied native fish, piscivorous (fish eating) waterbirds, ducks, deep-water foragers and when water levels are low, wading birds. The regulator enables water levels to be raised and lowered allowing a healthier and more productive wetland system in addition to assisting with carp control via a carp screen.



Brickworks Billabong

Brickworks is similar in size to Cowanna with a maximum depth of 2.5m. Due to saline groundwater intrusion (very salty water underground mixing with fresher billabong water), it is now a permanent saline (salty) wetland with salt levels measured between 4,000 - 50,000EC. To put that into perspective, the salinity of the ocean is approximately 50,000EC! Areas of open water and bare mud support large wading birds and provides habitat for small native fish. The critically endangered Murray Hardyhead (fish) was successfully translocated to Brickworks Billabong in 2014 with breeding recorded in the first year.



Catfish Billabong

Catfish Billabong is inundated (filled) by the Lock 10-Wentworth Weir pool and with no regulator on this wetland, water levels are dependent on current river height. As such, it transitions from a freshwater wetland near the Murray River connection, to a salty environment higher in the floodplain. Catfish is approximately 1.5Km long and 150m wide.



WETLAND WONDERS

Did you know?



Freckled ducks are listed as endangered in Victoria and considered one of Australia's rarest waterbirds. They have a large head with a narrow and upturned bill. The male's bill becomes crimson at the base during breeding season. These ducks have been recorded feeding in shallow areas of the wetlands at Merbein Common, filtering sediment (particles found in the water) to feed on a mix of plants and invertebrates (animals without a backbone).

Imagine you are Finnigan the Freckled Duck and find a quiet spot overlooking your favourite wetland at Merbein Common. Which wetland are you sitting at? Do you know if the wetland has recently received environmental water? Is it a freshwater or saltwater wetland? While sitting at the lake, list some of your thoughts and discoveries below then draw the view from where you are sitting in the box below:



Two things I saw: _____



Two things I heard: _____



Two things I smelled: _____



Two things I touched: _____

SCAVENGER HUNT BINGO

Go on a scavenger hunt at Merbein Common. Look out for (but don't collect), the items in the boxes below. Remember to leave all plants, animals and cultural artefacts where you find them. Place a tick against each of the items you see. Find four in a row either down, across or diagonally in order to complete this activity.

Good luck!.....can you find them all?



Waterbird



Fluker post



Murray River



Shell midden



Interpretative sign



Billabong



Pigface



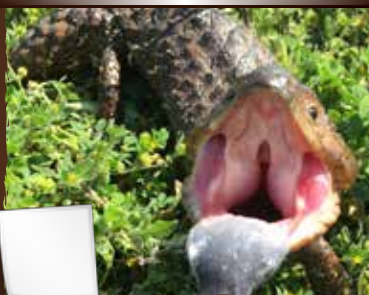
Someone fishing



Animal Track



Boat and canoe ramp



Lizard



River Red Gum Tree



Ruby Saltbush



Insect



Nature Walk



Rakali

ALL ABOUT ARTEFACTS

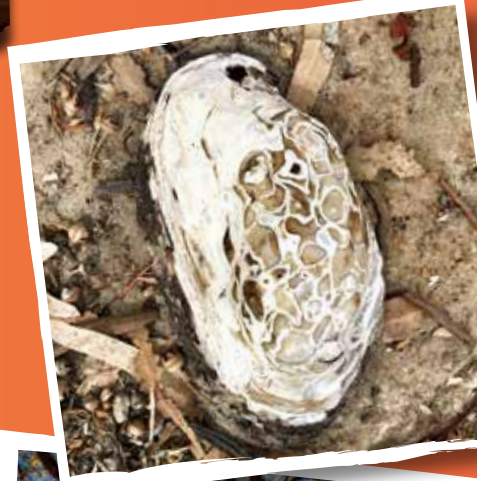
The Murray River and associated wetlands were an important meeting place for multiple Aboriginal groups as they provided food, shelter and tools for hunting and gathering. Shell middens are commonly found beside waterbodies throughout Australia and show the remains of past Aboriginal campsites. Other artefacts that can sometimes be seen at old campsites include: charcoal, animal bones, traditional tools and shellfish remains.

Spiritually, these sites remain extremely important to Aboriginal people and should be left in situ (their original place). What artefacts have you been lucky enough to discover during your visit to Merbein Common? List and/or draw them below (remembering to leave everything on site):

1. _____

2. _____

3. _____



DID YOU KNOW?

Bush Tucker

Many native plants were relied on by Aboriginal people as a source of food (bush tucker), but were also used as natural medicines due to their strong healing properties.

"Punyup", Pig Face or Rounded Noon-flower (*Disphyma crassifolium*)

Succulent leaves can be used to replenish water loss, nutrients and minerals in the body.

"Kurrkuty", Ruby Saltbush (*Enchylaena tomentosa*)

The bright yellow, orange or red berries can be eaten when ripe and contain more vitamin C than an orange.

Hunting Tools

Many floodplain and dryland timbers were used by Aboriginal people to make hunting tools such as boomerangs, nulla nulla (hunting stick), spears and other useful implements including coolamon (multi-purpose utensil) and canoes.



ENVIRONMENTAL WATERING AT MERBEIN COMMON

The waterways and surrounding floodplain areas of Merbein Common have declined in health due to the regulation of the Murray River over a long period of time. Pre European settlement, many freshwater wetlands would have experienced wet and dry phases. The locks and weirs now control how much water can flow downstream and there are many competing requirements for the river's water (i.e. domestic use and water for irrigation and agriculture). Due to these factors, some wetlands have been completely disconnected from the Murray River, while others remain permanently inundated.

How can we help?... Environmental Watering!

From 2005 to 2013, water was occasionally pumped from the Murray River into Brickworks Billabong to provide seasonal flushes. In 2014, a population of Murray Hardyhead was added to Brickworks. The arrival of this rare fish meant an annual water delivery to the wetland to maintain water height and salt levels. The delivery of water to this wetland plays an important role in the protection of the Murray Hardyhead fish.

Cowanna and Brickworks billabongs are both in reasonable environmental condition. The condition of Catfish billabong has declined due to high levels of carp and unchanging water levels contributing to poor water quality and vegetation health around the wetland.



The water level at Cowanna Billabong is managed with a regulator. To help Cowanna be healthy the regulator is used to vary the water height. The regulator is opened in late winter/early spring, allowing water to move into the wetland and then closed in summer/autumn. This results in a wetland that is full in spring, which is perfect timing for birds and fish to breed and then lower water levels during summer. A screen placed over the regulator helps to manage carp populations by preventing large carp from entering the wetland.

Why do we need environmental water?

- It provides River Red Gum and Black Box trees and floodplain plants the water they need to survive;
- Wetland and floodplain trees and plants remain healthy and continue to provide food and habitat to native animals;
- Native animals are more likely to remain living at Merbein Common because they have better access to water for drinking and breeding, and better access to food and habitat.
- We all get to enjoy the benefits environmental watering provides Merbein Common!



KEY MESSAGE

**Where there is healthy
water, there are healthy
plants and animals!**

WATERING WORD-FIND

Environmental watering can benefit the environment in so many ways. Improving water quality, nutrient cycling (the process where nutrients are naturally recycled), providing triggers for animals to breed, increasing food for plants and animals and improving the health of riparian vegetation. Can you help Pierre the Peron's Tree Frog find the 16 words hidden in Cowanna Billabong? They may be found forwards, backwards and diagonally!!



M	S	F	S	Q	R	C	F	I	S	H	C	A	X	M	G
U	I	J	H	A	A	N	T	V	K	T	S	S	D	U	N
R	F	R	E	C	K	L	E	D	D	U	C	K	A	R	O
R	A	B	L	S	A	V	D	I	C	E	A	R	H	R	B
A	C	I	L	D	L	C	P	A	C	H	R	O	P	A	A
Y	O	N	M	I	I	Y	M	A	G	S	T	W	G	Y	L
R	O	F	I	I	V	N	F	B	A	U	R	K	V	H	L
I	L	V	D	A	O	G	V	N	W	B	E	C	A	A	I
V	A	U	D	O	I	P	A	E	W	T	E	I	P	R	B
E	M	P	E	P	T	R	T	B	O	L	U	R	L	D	H
R	O	O	N	U	W	L	D	F	E	A	X	B	O	Y	S
S	N	H	G	D	A	S	G	X	J	S	C	N	P	H	I
P	E	R	O	N	S	T	R	E	E	F	R	O	G	E	F
U	A	R	D	M	O	H	C	Y	K	O	B	C	P	A	T
O	Z	W	P	S	N	E	E	Z	E	W	E	E	D	D	A
G	N	O	B	A	L	L	I	B	A	N	N	A	W	O	C

BRICKWORKS
CATFISH BILLABONG
COOLAMON
COWANNA BILLABONG
FISH
FRECKLED DUCK
MURRAY HARDYHEAD
MURRAY RIVER
PERONS TREE FROG
PIGFACE
RAKALI
SALTBUSH
SHELL MIDDEN
SCAR TREE
SNEEZEWEED
WETLAND

Did you know?

The Peron's Tree Frog can quickly change colour from a pale green-grey colour by day to a reddish brown with green flecks at night. This frog has bright black and yellow markings on its thighs, groin and armpits and a cross shaped pupil.

Fun Fact!

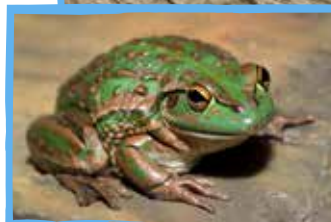
This frog is sometimes referred to as the 'maniacal cackle' frog due to the distinctive call from the males. Frogs are fantastic environmental health indicators as they are very sensitive to environmental change. In general, if frogs are present the ecosystem is relatively functional.

CITIZENS MAD ABOUT SCIENCE

The popularity of citizen science based projects in Australia is on the rise. Citizen science involves scientific research being conducted by amateur scientists (interested members of the public) to record important changes in the environment. Examples of these projects include Bird Life Australia's Birdata and Birds in Backyards projects, Frog ID Australia project, Echidna CSI, Fluker post project and Turtle SAT. Interested members of the community can record sightings of the relevant particular species and submit these via an app on a smart device. Similarly, although not related to environmental monitoring, geocaching is another fun activity where families can enjoy time together in the great outdoors!

You too can participate in citizen science.....

Can you match the animal or activity in the middle with the relevant citizen science project/app on either the left or right?



CULTURAL COLOURING

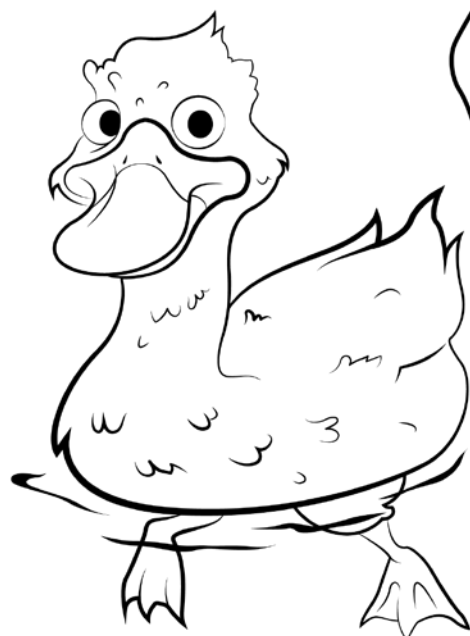
"Kurumpert"
Rakali
(*Hydromys chrysogaster*)



"Mirri-kar"
Peron's Tree Frog
(*Litoria peronii*)



"Tyling"
Lace Monitor
(*Varanus varius*)



"Ngel Ngel"
Freckled Duck
(*Stictonetta naevosa*)

Did you know?

Many Aboriginal families have totems - a natural object, plant or animal inherited by members of a clan or family as their spiritual emblem. It is believed that totems are descendants of the Dreamtime heroes.

Colouring pencils, crayons and textas did not exist hundreds of years ago. Aboriginal people would use natural paint in the form of ochre (natural pigments found in the soil) which ranged in colour from white, yellow, orange, red to brown, depending on where in the landscape the ochre is collected. The ochre was mixed with water and/or saliva to make a natural paint and used to decorate their bodies during ceremony, rock art and maps, animal skins, and artefacts.

Can you colour in each of the above pictures? You may choose to use the natural ochre colours used in Aboriginal art, or really bright colours found in your pencil case! Let your imagination run WILD!



THANK YOU FOR VISITING AND LEARNING ABOUT MERBEIN COMMON



The Authors acknowledge the rich cultural diversity of north western Victoria and have utilised local knowledge, language (Nyeri Nyeri) and artwork in the development of this book. Language (where known) has been written within talking marks or another colour beside the English name.

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'Stories In The Lines Of My Country #4' (p15)

'My Grandmother's Country 2018' (p16)

Yelta Landcare

Friends of Merbein common

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Designed by
EnviroEDU

