Cussen Park Educational Resource

Hear and There Soundwalk

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Background

Wetlands are productive and diverse ecosystems that provide significant resources for wildlife and the community. They are the kidneys of our river systems, filtering water before it flows into our rivers. Cussen Park wetland is “a bushland-style park located in northern Victoria in a country town called Tatura. It encompasses 33 hectares of wetlands, woodlands and open spaces” (Cussen Park Advisory Committee, 2012).

It was formed from the “reclamation of wastelands by the Tatura community, working closely with council and government agencies” and contains bird hides, an observation deck and a wealth of indigenous plans and animals. Approximately 100 species of birds have been recorded in the park and rare species (such as the Latham Snipe and Marsh Sandpipers) which travel from Japan and Siberia frequent the area. Other inhabitants of the park include frogs, lizards, snakes, turtles and possums.

Wetlands can be used to teach students about the environment, habitats, the water cycle, food chains, food webs, risks associated with human impacts and the importance of conservation activities.

Soundwalk overview

A soundwalk was developed to give visitors an insight into the flora and fauna of the park and how its traditional owners may have once used this site and those that are similar in surrounding parts of the Goulburn Valley. Accessing the soundwalk is as simple as scanning a QR code on your smart device to then hear the sounds of the park.

Visitors to the park can use the Soundwalk to investigate the flora and fauna of the park by observing and listening to their surrounds as they follow the signed pathway.

Resource description

This resource is designed to accompany the interpretative Soundwalk and signage located within the park. It has been developed to provide background information on wetlands and suggested activities that could accompany a visit to Cussen Park. It is aimed at primary-school students and is linked to the Australian Curriculum. The resource includes ways of integrating digital-curriculum resources and other ICT into learning, and a list of digital resources that can be incorporated into teaching.

The resource contains:

1. A map of Cussen Park that can be used prior to an excursion to familiarise students with the locale or on the day for directional activities or navigation.

2. Wetland investigation links, to enrich knowledge and understanding of
    - wetland ecosystems and the impact of climate, environment and human interaction
    - flora and fauna common in wetland areas
    - the importance of wetlands and waterways, both traditionally and today for Yorta Yorta and Bangerang people

3. Cussen Park Soundwalk exploration activities

Learning objectives

By engaging with the Cussen Park Hear and There Soundwalk and associated exploration activities, students will

- Develop an understanding of what a wetland is and why wetlands are important
- Observe flora and fauna unique to Cussen Park
- Explore the connection between wetlands and Aboriginal and Torres Strait Islander culture and history

Curriculum outcomes

Participation in the Soundwalk and associated activities will help students work towards achievement of the following outcomes in the F–6 Science Syllabus and the Cross Curricular Priority Areas:

- Aboriginal and Torres Strait Islander histories and culture
- Sustainability

Science			
	Science Understanding	Science as a Human Endeavour	Science Inquiry Skills
Foundation – Year 2	- Daily and seasonal changes in our environment affect everyday life (ACSSU004) - Living things live in different places where their needs are met (ACSSU002)(ACSSU211) - Light and sound are produced by a range of sources and can be sensed (ACSSU020) - Living things grow, change and have offspring similar to themselves (ACSSU030)	- Science involves observing, asking questions about, and describing changes in, objects and events (ACSHE013)(ACSHE021) (ACSHE034) - People use science in their daily lives, including when caring for their environment and living things (ACSHE022) (ACSHE035)	- Pose and respond to questions, and make predictions about familiar objects and events (ACSIS014) - Use informal measurements to collect and record observations, using digital technologies as appropriate (ACSIS026) (ACSIS039) - Compare observations with those of others (ACSIS213) - Represent and communicate observations and ideas in a variety of ways (ACSIS029)
Year 3 – Year 4	- Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044) - Living things have life cycles (ACSSU072) - Living things depend on each other and the environment to survive (ACSSU073)	- Science involves making predictions and describing patterns and relationships (ACSHE050) (ACSHE061) - Science knowledge helps people to understand the effect of their actions (ACSHE051) (ACSHE062)	- Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS057) (ACSIS068) - Represent and communicate observations, ideas and findings using formal and informal representations (ACSIS060) (ACSIS071)

<table>
<tr><th colspan="4">Science cont.</th></tr>
<tr><td></td><td>Science Understanding</td><td>Science as a Human Endeavour</td><td>Science Inquiry Skills</td></tr>
<tr><td>Year 5 – Year 6</td><td>- Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)
- The growth and survival of living things are affected by physical conditions of their environment (ACSSU094)
- Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE098)</td><td>- Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE081) (ACSHE098)
- Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083) (ACSHE100)</td><td>- Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (ACSIS090) (ACSIS104)
- Compare data with predictions and use as evidence in developing explanations (ACSIS218) (ACSIS221)
- Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (ACSIS093) (ACSIS110)</td></tr>
<tr><td rowspan="4">Foundation – Year 6</td><td colspan="3">Cross Curriculum Priority: Aboriginal and Torres Strait Islander Histories and Cultures</td></tr>
<tr><td colspan="3">OI.2: Aboriginal and Torres Strait Islander communities maintain a special connection to and responsibility for Country/Place.
OI.3: Aboriginal and Torres Strait Islander Peoples have holistic belief systems and are spiritually and intellectually connected to the land, sea, sky and waterways.
OI.9: The significant contributions of Aboriginal Peoples and Torres Strait Islander Peoples in the present and past are acknowledged locally, nationally and globally.</td></tr>
<tr><td colspan="3">Cross Curriculum Priority: Sustainability</td></tr>
<tr><td colspan="3">OI.2: All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival.
OI.3: Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems
OI.6: The sustainability of ecological, social and economic systems is achieved through informed individual and community action that values local and global equity and fairness across generations into the future
OI.7: Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments</td></tr>
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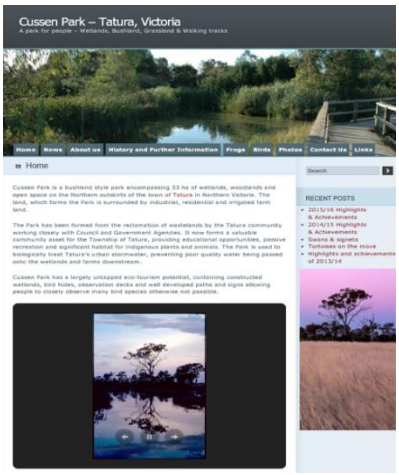
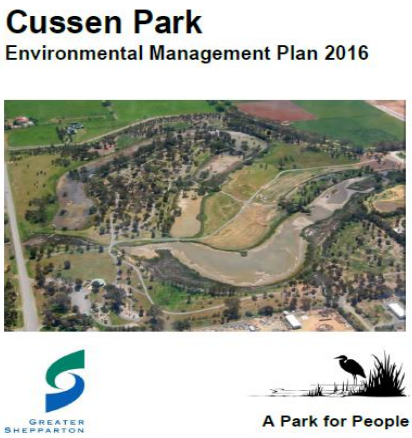
Map of Cussen Park

Image source: Cussen Park Advisory Committee (2012)

Wetland investigation links



Resource: Cussen Park Tatura website (2012)
Author: Cussen Park Advisory Committee
Overview: This website provides information about the history and ecology of Cussen Park.
URL: https://cussenpark.wordpress.com/

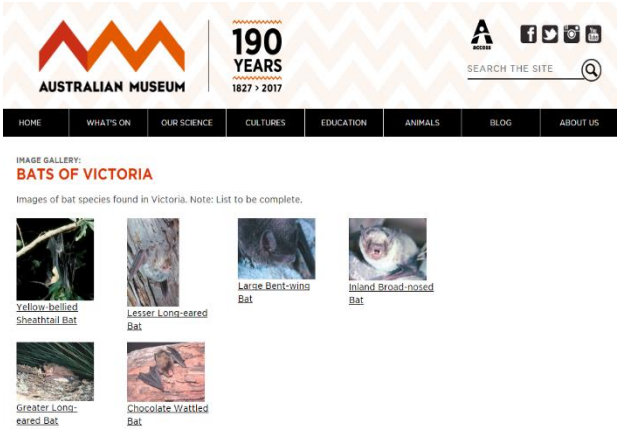


Resource: Cussen Park Environmental Management Plan (2016)
Author: Greater Shepparton City Council
Overview: Provides a detailed overview of flora and fauna species located in the park
URL:
http://greatershepparton.com.au/assets/files/documents/consultations/2016/Cussen_Park_Environmental_Management_Plan_Review_DRAFT_2016.PDF

Resource: Discovering Wetlands in Australia: A Primary Classroom resource (2011).
Author: Department of Sustainability, Environment, Water, Population and Communities.
Overview: A comprehensive resource providing a unit of work on wetlands in Australia. Includes an overview of the different ecosystems and useful information on characteristics of these.
URL:
http://www.environment.gov.au/system/files/resources/21499ab3-dbc5-445d-ab82-ed727019de31/files/classroom-resource.pdf

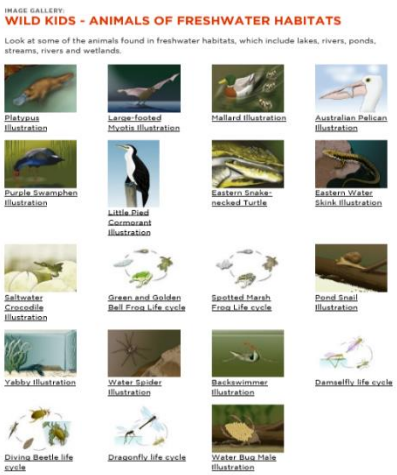
Resource: Wetlands Education Toolkit (2013)
Author: Queensland Wetlands Program, Department of Environment and Heritage Protection
Overview: This resource encompasses a detailed unit of work on wetlands for students in the middle years.
URL: https://wetlandinfo.ehp.qld.gov.au/resources/static/pdf/resources/education/wetlands-education-toolkit.pdf

Resource: Land for Wildlife: Bats in Rural Victoria (1992)
Author: Department of Natural Resources and Environment, Victoria
Overview: An informative resource on bats in rural Victoria.
URL: http://www.swifft.net.au/resources/12_bats%20in%20rural%20Victoria.pdf



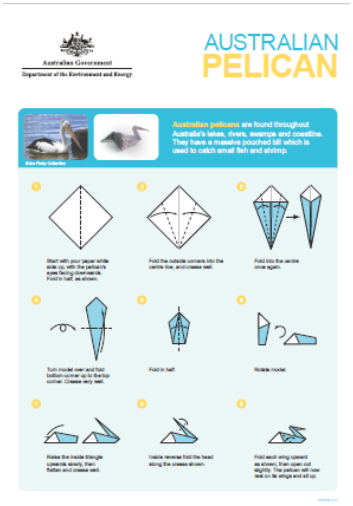
Resource: Australian Museum: Bats of Victoria (2017)
Author: Australian Museum
Overview: A user-friendly informative website providing general information about different varieties of bat species.
URL: https://australianmuseum.net.au/bats-of-victoria

Resource: Duck's Unlimited's Teachers Guide to Wetlands Activities
Author: Green Wing Ducks Unlimited
URL: https://www.uaex.edu/environment-nature/wildlife/youth-education/TR%20Wetlands%20activities%20DU.pdf
Overview: While this is a Canadian resource, it provides relevant child-friendly information about wetlands and some interesting worksheets and exploratory activities.



Resource: Animals of Fresh Water Habitats Image Gallery
Author: Australian Museum
Overview: Each image links to an illustration and informative notes on animals typically found in freshwater habitats.
URL: https://australianmuseum.net.au/wild-kids-animals-of-freshwater-habitats

Resource: Wetlands colouring sheet
Author: Museum WA
URL:
http://museum.wa.gov.au/sites/default/files/Wetlands%20Make%20Sense%20Colouring%20In.pdf



Resource: Australian Pelican Origami (2011)
Author: Department of the Environment and Energy
Overview: Pelicans inhabit Cussen Park and can be observed regularly. This resource consists of visual instructions for creating Pelican origami and could be used to springboard investigation into the characteristics of this unique creature and the appeal of Cussen Park as a habitat.
URL: http://www.environment.gov.au/system/files/resources/21499ab3-dbc5-445d-ab82-ed727019de31/files/australian-pelican-origami.pdf

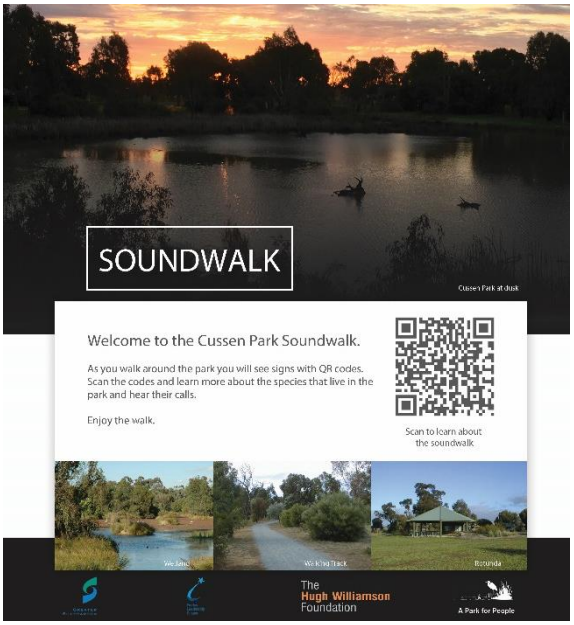
Resource: Wetlands and Indigenous Values
Author: Australian Government Department of Environment
Overview: A great resource outlining traditional connections between Indigenous people and wetlands.
URL: http://www.environment.gov.au/system/files/resources/b04e5e2a-4256-4548-974e-00f7d84670a9/files/factsheet-wetlands-indigenous-values.pdf

Cussen Park Soundwalk exploration activities

Soundwalk reflection

Overview:

Students will follow the Soundwalk signs placed around Cussen Park to observe and discuss its unique features. Each sign provides images, some written information and a QR code. The QR code can be scanned using an iPad, iPod or mobile device, to provide audio content linked to each sign. Students will need a QR code reader to be able to listen to the sounds. These can be downloaded from the App Store.



Students will read each sign, view and discuss the images located upon these, and will listen to the associated sound files.

Focus questions accompany each sign and are provided to encourage reflection, discussion and further research.

Photography, drawing or observation notes should be encouraged as students are interacting with the soundwalk. These can later be compiled into a class observation log, or shared with others by creating:

- a simple slide show with narration,
- a poster
- a graphic organiser or flow chart containing images and observations

Focus questions

Before visiting Cussen Park, research the questions below using the Wetland investigation links:

1. How is a wetland different to a creek or a river?
2. What role do wetlands play in our environment?
3. Why is a wetting and drying cycle necessary to maintain wetlands?
4. How do aquatic insects survive when a wetland dries?

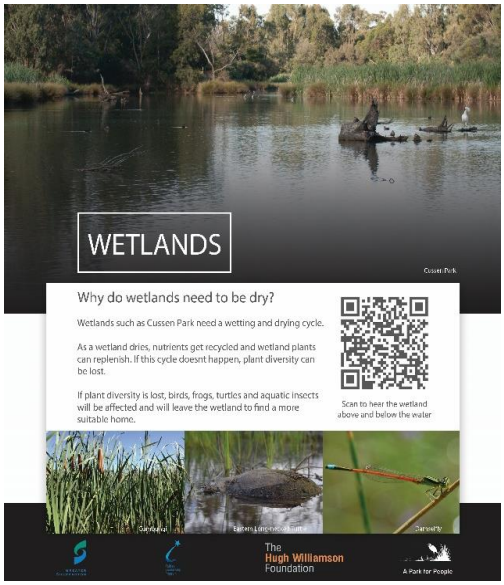
Download and explore the Melbourne Waterbug Identification Guide and provide this to students. Allocate each student a waterbug to explore further. Encourage students to make predictions about what they expect to find at Cussen Park https://www.melbournewater.com.au/sites/default/files/Waterbug%20Guide_Online.pdf

5. Upon arrival at the park, listen to the QR linked audio file on the wetlands sign. This explains what wetlands are and an audio recording of the sounds of the underwater bugs. How many different sounds can you hear? Describe some of the different ones. What might the bugs trying to communicate? Pay attention to some of the similar sounds around you in the environment.

6. Perform an investigative bug sweep. Find a safe spot on a bank, sweep a net through the water against submerged plants and empty into a bucket of water. Explore more closely with a magnifying glass. Use the waterbug identification to recognise the class, order and family of bugs that you locate. Record the bugs identified using drawing, photography or data logging. Return the bugs to the location in which they were found. Encourage students to compare their observation and findings. Were these different to the hypotheses they made before visiting the park?

Cussen Park wetlands

There are four basic types of wetlands: marsh, swamp, bog and fen and wetlands are divided into these different types depending on their location and what is contained within them. Cussen Park is a swamp-based wetland.

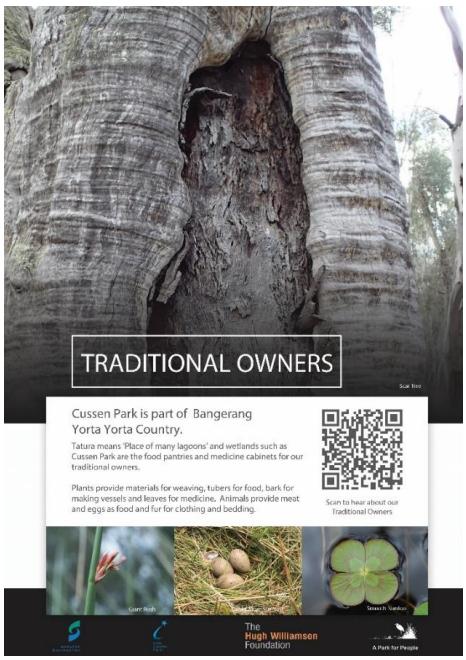


Wetlands are full of life. They are like the kidneys of our waterways. They filter water before it outfalls into our rivers. Wetlands clean the water by the aquatic plants that live in them. They filter out the sediments and algae and make the water cleaner. Microscopic water bugs then feed on this sediment and algae, which also helps clean the water.

Wetlands need a wetting and drying cycle to help maintain their health. Sediments that are filtered out of the water column can sit on the bottom of the wetland. When a wetland dries these sediments blow away, which helps replenish the wetland.

Traditional owners

Tatura is a rural township located 17km south-east of Shepparton in the Goulburn Valley. The name is said to have originated from an Aboriginal word meaning “place of many lagoons” (Bossence, 1969).



As you enter Cussen Park it is important to acknowledge the Bangerang and Yorta Yorta people, the traditional landowners of the area, and pay respect to their elders, past, present and emerging. The Bangerang and Yorta Yorta have a continuing connection to land, water and the local community.

Areas such as Cussen Park are significantly important to Aboriginal people, “providing a source of flora and fauna that would have been eaten or otherwise utilised by Aboriginal people” (Gott, 1999). Native flora within the park, which may have been used in this way includes:

- Native grasses such as kangaroo grass (*Themeda triandra)* produce seeds that could be ground into flour, mixed with water and cooked to make damper.
- The wiry stems of the plant may have been used to make twine for fishing nets (Angelis, 2005).
- Various wattles, including silver wattle (*Acacia dealbata*) traditionally provided a wood source for making tools, gum that could be dissolved into water to make a mild sweet drink as well as being a source of resin (Angelis, 2005).
- Black-anther Flax-lily *(Dianella revoluta)* produces violet flowers and small, dark blue berries that were traditionally eaten as a fruit and used to make dye. The leaves could be split and plaited into string to make strong cord (Collins, 2007).
- Wedge-leaf hopbush *(Dodonaea viscosa)* contains paper red-seed capsules that were used as a local anaesthetic, and leaves which when placed on the skin to treat stings and when chewed could relieve toothache (Gott & Zola, 1992).
- River red gum *(Eucalyptus Camaldulensis),* the bark of which was traditionally used to make canoes, shelters and containers; the sap was used to seal burns and the leaves were used to treat a range of ailments (Angelis, 2005).

Focus questions/discussion points

1. What does Tatura mean and why might it have been given its name?

2. Aboriginal and Torres Strait Islander communities maintain a special connection to land and waterways. As you explore the surrounds of Cussen Park, consider how wetlands such as these may have been used in the past and present by the Bangerang and Yorta Yorta people.

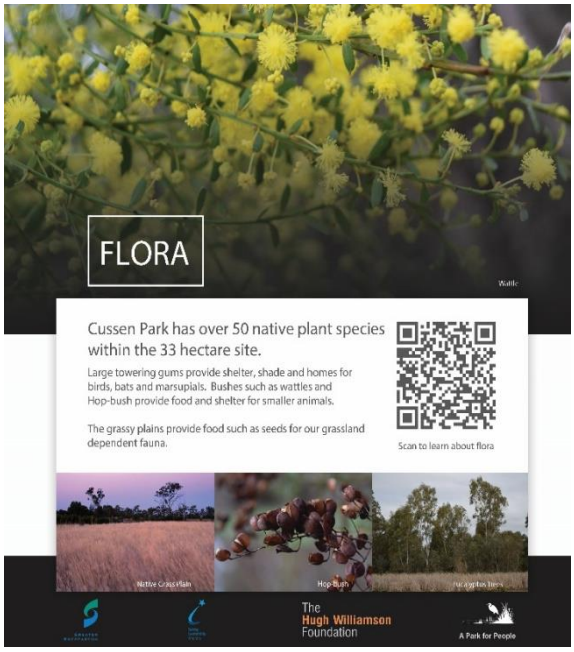
3. *Gulpa gaka anganya* (Welcome friends). Language is a strong and vibrant part of cultural identity for Aboriginal people. Why do you think language is important to Aboriginal culture? How is traditional language shared?

Protection of native flora and fauna

“It is important that all park visitors (both humans and their pets) restrict their movements to specific designated areas to ensure native flora and fauna are protected” (Greater Shepparton City Council & Cussen Park Advisory Committee, 2016).

Flora

The flora of Cussen Park consists of natives trees, shrubs, grasses, wildflowers and aquatic plants. The sign describing this states that there are more than 50 plan species within the park. Many of these have names at the base of the plant on small plaques. To help students explore these, a photographic treasure hunt is recommended.



Photographic treasure hunt

Equipment required:

- Digital camera, tablet or smart phone

Goal:

Students will work in pairs to photograph the flora of Cussen Park, capturing an agreed number of images from the list below.

	Scientific Name	Common Name
☐	*Acacia dealbata*	Silver wattle
☐	*Acacia pycnantha*	Golden wattle
☐	*Austrodanthonia caespitosa*	Wallaby grass
☐	*Brachyscome basaltica*	Swamp daisy
☐	*Callistemon sieberi*	River bottlebrush
☐	*Carex appressa*	Tall sedge
☐	*Carex tereticaulis*	Common sedge
☐	*Corymbia. maculata*	Spotted gum
☐	*Eucalyptus camaldulensis*	River red gum
☐	*Eucalyptus citriodora*	Lemon-scented gum
☐	*Eucalyptus cladocalyx*	Sugar gum
☐	*Eucalyptus ficifolia*	Red flowering gum
☐	*Eucalyptus melliodora*	Yellow box
☐	*Eucalyptus microcarpa*	Grey box
☐	*Eucalyptus ovata*	Swamp gum
☐	*Leptospermum obovatum*	River teatree
☐	*Marsilea drummondii*	Common nardoo
☐	*Poa sieberiana*	Fine-leaf tussock grass
☐	*Pittosporum phylliraeoides*	Weeping pittosporum
☐	*Pycnosorus chrysanthus*	Golden billy-buttons
☐	*Themeda triandra*	Kangaroo grass
☐	*Wahlenbergia fluminalis*	River bluebell

Native fauna

"Many species of native mammals, bird, reptile, amphibian and fish have been recorded within the park. Notable species identified include common bent-wing bat (*Miniopterus schreibersii*), eastern long-neck tortoise (*Chelodina longicollis*), little red flying fox *(Pteropus scapulatus)* and the sugar glider (*Petaurus breviceps*).

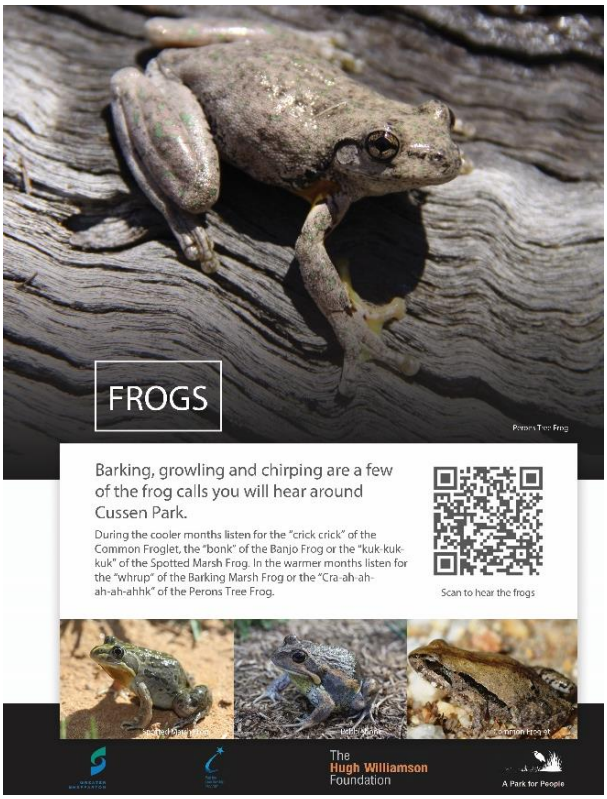
Most of the native species have the potential to enhance visitor experiences in the park; however, visitors should exercise caution around some species. Several species of snake have been identified within the park, particularly the tiger snake (*Notechis scutatus*) and the eastern brown snake (*Pseudonaja textilis*). Both of these species are venomous, and while park visitors should be vigilant for their presence, they should not take any action to harm these species because they are protected under the *Wildlife Act (1975)*" (Greater Shepparton City Council & Cussen Park Advisory Committee, 2016).

The frogs of Cussen Park

Adapted from Cussen Park Advisory Committee website (2012)

In Australia there are approximately 200 species of frogs. Frogs are amphibians. The word amphibian is from the Greek words for double (amphi) and life (bios), which describes that most amphibians live in water and on land at some stage of their lives.

All Victorian frogs require water at the beginning of their life and during the tadpole stage, while adult frogs can be found in a range of habitats. However, the adult frog must live near water, or in regions that have plenty of dew and moisture, because they can die if their thin skin dries out too much. Therefore, wetland environments such as those of Cussen Park, provide ideal habitats for frogs.



Frogs indicate healthy environments

Frogs serve as good indicators of the overall health of a wetland. Adult frogs have thin delicate skins, and their eggs and tadpoles are directly exposed to soil, water and sunlight, which means that frogs are very sensitive to pollution, especially pesticides and herbicides. Unfortunately, worldwide amphibian populations have been on the decline since the 1970s. Luckily at Cussen Park, frog numbers are still quite high.

Focus questions/discussion points

1. The main picture on the frog sign is of what type of frog? Where are we most likely to find this?
2. Look closely. How are frog's eyes different to human eyes?
3. What does the lifecycle of a frog look like? Draw the life cycle.
4. How is the life cycle of the frog important to the environment?
5. What are some of the threats to frog populations? What might be some of the solutions?
6. Amphibians are among the most fascinating animals on earth. Frogs are amphibians. Can you think of some fun facts about amphibians?
7. Should students be allowed to keep frogs as pets? Give reasons for your answer.

Activity: Identifying frogs

There are many ways of identifying frogs and surveying frog numbers. Hand searching for frogs can destroy their habitat and you may harm them if you handle them incorrectly.

The table below displays images of five of the most common frogs found at Cussen Park and features that can help to identify them without the need for unnecessary handling. It is preferable to identify frogs by listening to their call, because it can be done quickly, accurately and without disturbing the frogs or their environment, thus a simple key to identifying some frogs by their call has been provided.

The table is presented as an observation log, providing opportunities for students to record what they see and hear in relation to the Cussen Park frog population.

Cussen Park wetland frog observation log

Below are images of some of the frogs that you may see or hear while at Cussen Park. Read the description below each frog to help you identify the sounds that each frog makes. Record your observations based on what you see or hear beside each image.

Common froglet (*Crinia signifiera*)	Observation notes
 The common froglet makes a cricket-like chirping sound and can be heard all day and all year around. The call is a series of three to five pulsed calls, with a chirping quality, rapidly repeated in a long series – "crick crick crick crick crick". **Photograph credit:** Damien Cook	

Spotted marsh frog (*Limnodynastes tasmaniensis*)	Observation notes
 The frog is usually found in association with water, and in dry periods shelters in cracks in the ground, usually under large rocks. It has a short staccato call of three or four distinct notes repeated in long series – "kuk-kuk-kuk". **Photograph credit:** Damien Cook	

Peron's tree frog (*Litoria peronii*)	Observation notes
 The call is very long and drawn out, slowly pulsed and increasing in loudness – "cra-ah-ah-ah-ah-ah-ah-ah-ahhk". **Photograph credit:** Damien Cook	
Barking marsh frog (*Limnodynastes fletcheri*)	Observation notes
 The call is a short, modulated note, similar to the sound of a distant barking dog and is repeated every few seconds – "whrup". **Photograph credit:** Steve Wilson	

Banjo frog (*Limnodynastes dumerilii*)	Observation notes
 The banjo frog (also known as the pobblebonk) is a large common frog that calls from floating vegetation. It makes a rapid series of "bonk" sounds and repeats these every few seconds. **Photograph credit:** Steve Wilson	

Information Source: Amphibian Research Centre (n.d.) Frogs of Australia. Accessed online 3/12/17 from: https://frogs.org.au/frogs/

The birds of Cussen Park

Cussen Park is home to approximately 100 species of birds and on an any given day, it is quite likely that you could spot at least half of these. Many are rare and threatened species and are frequent visitors to the park. The park is the only place you are likely to see many of these species in the Goulburn Valley. Many birds travel for days, even weeks, before resting in Cussen Park. They come from as far away as Japan and Siberia.

One of these birds is called the Latham's snipe. This is a visitor to Australia from Japan. Specific information about this bird can be found here: http://www.birdsinbackyards.net/species/Gallinago-hardwickii

Great egret *(Ardea alba)*

Threatened species

"The reason that animals and plants become extinct or threatened is because their habitat has been destroyed or changed. Their habitat is the place where they live" (Australian Government Department of Environment and Energy, n.d.).

Cussen Park is home to the threatened species of the Great egret *(Ardea alba)* and the grey-crowned babblers *(Pomatostomus temporalis).*

Grey-crowned babblers *(Pomatostomus temporalis).*

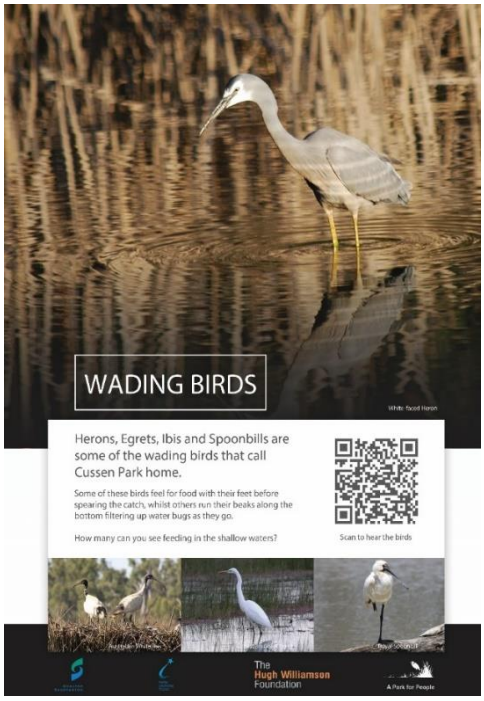
Photo: Les George.

For information on how you can help protect threatened species and the environment in which they live, access the document below:

http://www.environment.gov.au/system/files/resources/b2129628-7852-4c30-b605-2aae352190d1/files/tsd06green-kids.pdf

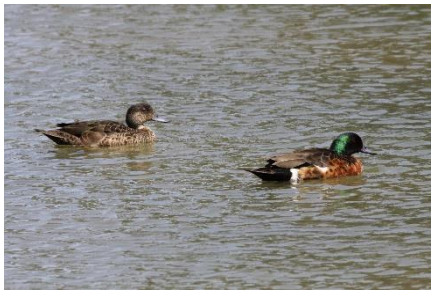
Wading birds

Wading birds are commonly found in the wetlands and ponds surrounding Cussen Park. These include herons, egrets, ibises, spoonbills, plovers and stilts.

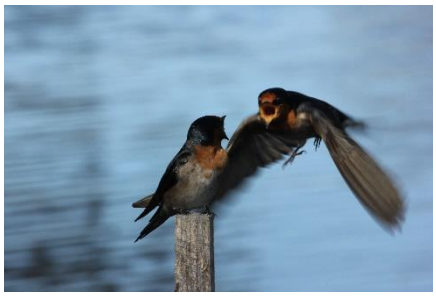


Focus questions/discussion points

1. Wading birds share several physical characteristics that help distinguish them as a specific type of bird. Describe the common characteristics of their neck, legs, bill and plumage.
2. Sit and watch wading birds in the water. How do they use their feet? How do they use their beak? How many can you see? What might they be eating?
3. Wading birds share a variety of behavioural traits that help identify the bird family.
    a. How do they forage for food?
    b. Do they live in communities?
    c. Vocalisations?
    d. Flight?
4. The Cryptic Birds sign gives some information on the shy birds of the park and some suggestions on where they might be hiding. Go to the bird hides around the park and sit quietly. Can you see any of these birds?
5. A Cussen Park wetland observation log is located on the page that follows. Use this to record your observations of the most common birds in the park.
6. The Cussen Park Advisory Committee is keen to hear about your observations and view images of the flora and fauna that you photograph. Share these on social media with the hashtag #cussenparktatura so that the community can observe your findings.

Cussen Park wetland observation log Below are images of some of the more common birds that you may see while at Cussen Park. Count and record your observations next to each image.			
Bird species	How many did you see?	Where were they located?	What were they doing?
 Australian pelican			
 Pacific black duck Photo: Steve Wilson			
 Chestnut teal Photo: Steve Wilson			

Bird species	How many did you see?	Where were they located?	What were they doing?
 Purple swamphen Photo: Jo Wood			
 Royal spoonbill Photo: Steve Wilson			
 Black-winged stilt Photo: Damien Cook			

Bird species	How many did you see?	Where were they located?	What were they doing?
 Australasian reed warbler Photo: Steve Wilson			
 Eastern great egret Photo: Keith Ward			
 Welcome swallow Photo: Jenny Wilson			

The bats of Cussen Park

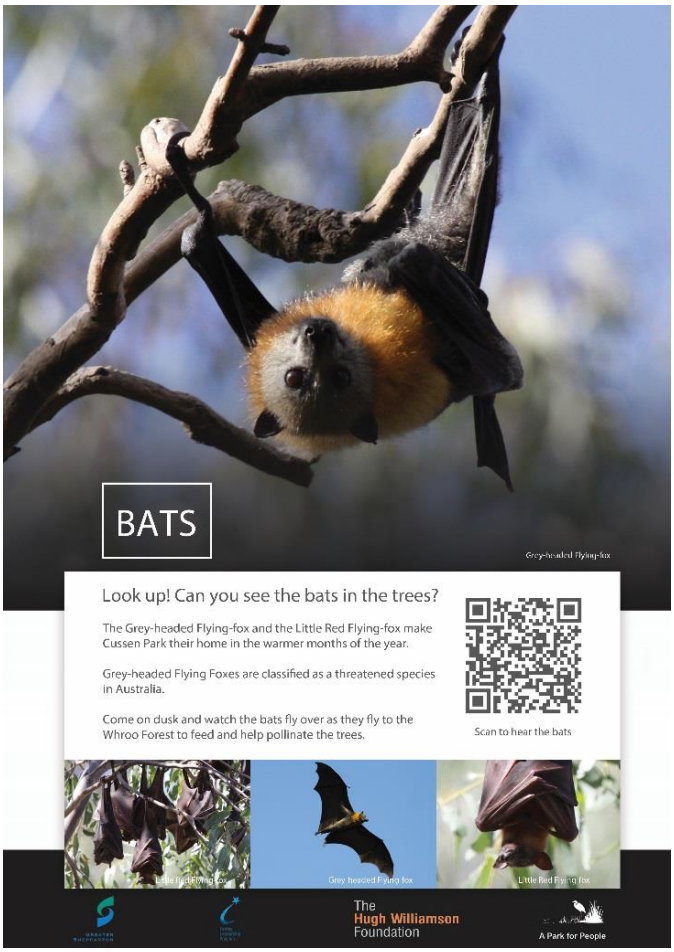
Adapted from Victorian Department of Land, Water and Planning (2016).

The grey-headed flying-fox and the little red flying-fox make Cussen Park their home during warmer months of the year.

Known for their fly outs at sunset, both species of flying-foxes fly to the Whroo forest to feed.

The grey-headed flying-fox is the largest member of the flying-fox family and is the only species permanent to southern Victoria. Colony numbers fluctuate with the seasons and there are usually more flying-foxes in summer and fewer in winter.

Flying-foxes are ecologically important, playing a major role in the regeneration of native forests by pollinating trees and dispersing seeds as they move between trees and forests. A single flying-fox can disperse up to 60,000 seeds in one night.
Flying-foxes are nocturnal and typically roost by hanging upside down during the day (as per the image on the Cussen Park bat sign).



More information on bats in Victoria can be found here: https://www.wildlife.vic.gov.au/__data/assets/pdf_file/0028/27676/Victorias-flying-fox-species.pdf

Focus questions/discussion points

1. We have all heard the old saying, "Blind as a bat." How blind are bats?
2. How do bats hunt for food?
3. Are bats solitary animals?
4. Where are bats during the day?
5. When is the best time to see bats?
6. How many offspring does a female bat have in a year?
7. How old do bats live to be?

Bird hides and observation decks

Around the park there are a variety of bird hides and observation decks. These provide great vantage points for observing the flora and fauna of the park.

Five senses observation activity:

The acronym SORE (Fasano, 2017) provides a good basis for looking deeply at what surrounds you, using your senses. This process can assist students to learn about and monitor environments such as Cussen Park.

Stop	Stop, pause and listen
Observe	Observe what is happening around you in detail
Record	Write down or draw what you see, hear, smell and touch, noting the time and date
Evaluate	Make sense of what you have observed

There are some interesting locations around the park where students can sit or stand to do this activity.

Encourage them to work through this task in different locations around the park.

They could sit on a park bench, inside a bird hide, an observation deck or platform, or on a picnic rug at a location of their choosing.

As students work through the template on the page that follows, they will be prompted to use their senses to explore the surrounds.

Following the activity, support students through guided discussion to make sense of what they have observed.

Sensing your surrounds

Close your eyes and use your other senses to learn more about the environment around you.

I can smell:

I can touch:

I can hear:

Now open your eyes and record what you can see.

I can see:

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