

Resource type: Teacher resource

Year level: F - 12

Curriculum links: [Click here](#)

River Murray Turtles

Information about turtles of the River Murray for primary and high school teachers.



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Glossary

- Algal bloom** - a rapid increase or accumulation in the population of algae in a waterbody.
- Apex predators** - a predator at the top of a food chain, without natural predators.
- Brumation** - a state similar to hibernation.
- Carapace** - the hard upper shell of a turtle, tortoise, crustacean, or arachnid.
- Carnivorous** - an animal that feeds on other animals.
- Carrion** - the decaying flesh of dead animals.
- Cloaca** - single opening in reptiles and birds for digestive waste and the reproductive and urinary tracts.
- Cloacal respiration** - using the cloaca to take in oxygen from the water and expel carbon dioxide.
- Crustaceans** - a large group of arthropods which includes zoo-plankton and yabbies.
- Ecologist** - a person who studies the relationships between plants, animals and their environment.
- Ecosystem** - all of the organisms of a given area and the encompassing physical environment.
- Erosion** - geological process in which materials such as soils, sediment and rocks are worn away and transported by natural forces such as wind or water.
- First Nations** - Aboriginal or Indigenous groups - the earliest known inhabitants of an area.
- Floodplain** - the area of land adjacent to a river which experiences flooding during high river flow.
- Food web** - all of the food chains in an ecosystem. Each organism in an ecosystem occupies a specific trophic level or position in the food web.
- Habitat** - the natural home or environment of an animal, plant, or other organism.
- Hatchlings** - baby turtles that have recently hatched from their eggs.
- Herbivorous** - an animal that feeds on plants.
- Hydrology** - the study of the distribution and movement of water.
- Jacobson's organ** - a specialised structure in the roof of a turtle's mouth to detect and identify tiny scent particles in the air and water.
- Ngartji** - totems or special friends for some First Nations people.
- Omnivorous** - an animal that feeds on plants and animals.
- Plastron** - the lower section of a turtle's shell.
- Predation** - a biological interaction where one organism, the predator, kills and eats another.
- Scutes** - bony external plates or scales on the shell of a turtle.
- Snags** - trees, branches or roots underwater in the river that form habitat for aquatic life.
- Terrestrial** - of or on dry land.
- Testudines** - The order of animals that turtles fall within. Order is one of the eight major hierarchical taxonomic ranks in Linnaean taxonomy.
- Tortoise** - land-based reptiles with hard external shells.
- Turtle** - mainly aquatic freshwater or marine reptiles with hard external shells.
- Salinity** - the concentrations of salts in water or soils.
- Wetland** - areas of land covered by water either year-round or just at certain times.



Introduction

It's impossible not to love turtles!

These fascinating creatures existed alongside dinosaurs and lived on Earth hundreds of millions of years before humans appeared.

The Murraylands and Riverland region is home to three species of turtle. Each one is unique, has different habitat requirements, and plays a different role in the River Murray ecosystem.

It's a little known fact that health of the River Murray relies on turtles. They are sometimes called the 'vacuum cleaners of the river' because they clean up dead fish and animals, protecting the quality of the river's water.

Turtles are also very important to First Nations' people along the River Murray and there is much to learn about the cultural significance of these amazing creatures.

Like many species of wildlife, River Murray turtles are under threat from human activities and introduced feral predators. Conserving turtles is a major priority along the River Murray and there are a range of practical things the community, including young people, can do to help conserve these important species.

Turtles offer a fantastic opportunity for young people of all ages to learn about the natural environment, First Nations' culture, and to get actively involved in projects to protect and restore the River Murray. This resource aims to assist teachers to educate students about turtles, explore the range of ways they can be linked to the curriculum, and involve young people in saving them.

We hope teachers and students enjoy learning about River Murray turtles and we'd love to hear about any turtley awesome projects or activities that schools develop or get involved in.

Resource overview

Year level:

Foundation to year 12.

Curriculum links:

Please refer to page 19 for links to both primary and secondary curriculum.

Key ideas:

- there are 3 native turtle species in the River Murray
- turtles play an important role in the River Murray ecosystem and are critical for maintaining water quality
- turtles are culturally significant to First Nations' people along the River Murray
- River Murray turtles are under threat from a range of issues including fox predation and reduced river flows
- the community (including young people!) can help to save River Murray turtles.

Getting involved:

There are a range of fun and rewarding ways the community can get involved in turtle conservation along the River Murray, including:

- becoming a citizen scientist and helping to record and map turtles with the TurtleSAT app
- finding turtle nests and protecting them from foxes and other predators
- joining or volunteering for a local wetland group
- keeping our waterways healthy by reducing soil and chemical run off and preventing litter from entering waterways
- saving turtles on roads
- helping raise community awareness of River Murray turtles and their plight
- using turtle-safe fish traps.



Image: J Farquhar



Image: J Farquhar



Image: J Farquhar



What is a turtle?

Turtles are reptiles with hard shells that protect them from predators. They are among the oldest and most primitive groups of reptiles, with the earliest known fossils coming from the Triassic period, about 220 million years ago.

Turtles live all over the world and in almost every type of climate. They are found on most continents, on some islands and in much of the ocean.

Turtles are part of an order of reptiles known as Testudines, which are characterised by a hard shell that is formed from the fusing of their ribs and spine. There are 356 living species of Testudines including turtles, tortoises and terrapins.

Turtle or tortoise?

Although the names 'turtle' and 'tortoise' are often used interchangeably, there are some distinct differences between the two.

Most people are clear that marine turtles, the ones with flippers that live in the sea, are turtles.

Most people are also quite confident in saying that the slow moving, land-dwelling tortoises with stumpy feet, are tortoises.

Where does that leave the hard-shelled reptiles that live in freshwater ecosystems across Australia like the River Murray? They do spend most of their time in the water like marine turtles, but they also walk quite well on land like tortoises.

Their webbed-feet don't give us too many clues either - they look like a cross between a foot and a flipper! So what are they?

The answer is, our River Murray species are **turtles**.

FUN FACT: Turtles and tortoises are very long-lived. Australian freshwater turtles can live up to 75 years and the oldest land animal alive today is a Seychelles giant tortoise, Jonathon, who hatched in 1832!



Freshwater turtle. Image: J Farquhar



Marine turtle. Image: Wikimedia



Tortoise. Image: Pexels

Turtle anatomy

From their distinctive shells to their ability to 'bum-breathe', turtles certainly have an interesting and unique anatomy!

Understanding the shape and parts of a turtle can be very important for identification and can give useful information about the turtle's behaviour and type of environment that it lives in.



Shell - the turtle's protection!

The turtle's shell evolved from backbones which flattened and fused together. Turtles cannot crawl out of their shells because the shell is permanently attached to the spine and rib cage.

The top of the shell is called the carapace, and the underside of the shell is called the plastron.

The exterior of the shell is covered by hard plates called scutes which are made of keratin and help to protect the turtle from scrapes and bruises. Because scutes contain nerve endings, turtles can feel pressure and pain through their shells.

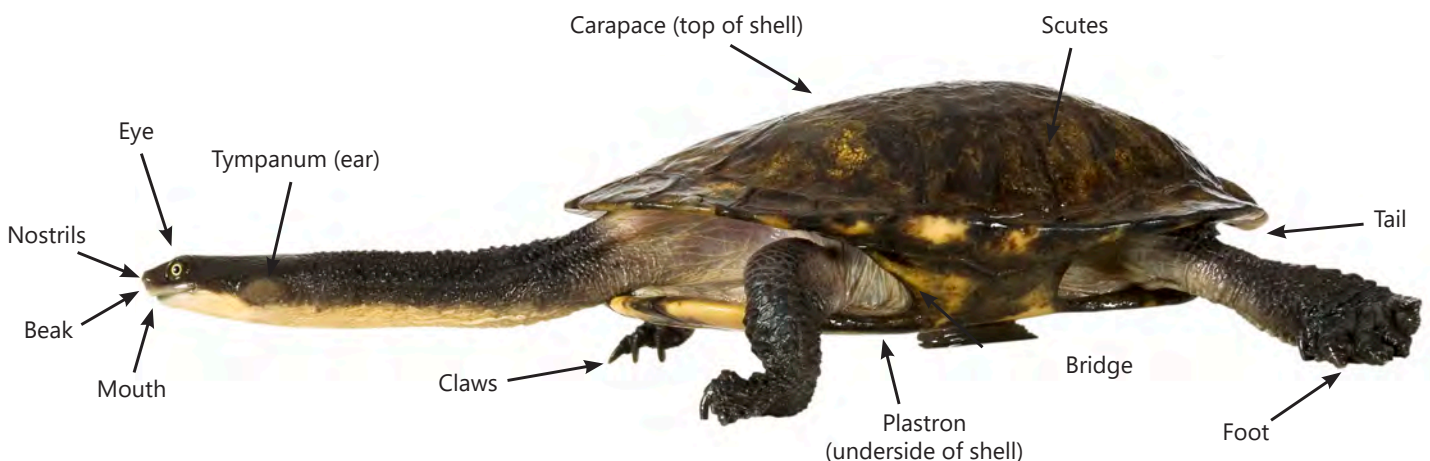
What is a cloaca?

Turtles have a cloaca which is situated at the base of their tail. A cloaca is the single opening found in reptiles and birds that serves as the single hole for digestive waste and the reproductive and urinary tracts. In other words turtles, like chickens, poo, wee and lay eggs all from the same hole!

How do turtles breathe?

Since a turtle's shell cannot expand and contract the way a person's ribs do, turtles have muscles inside their shells that expand and contract to move air in and out of their lungs. Moving their limbs also helps with breathing by altering the pressure in their lungs.

Between late autumn and early spring when the weather is colder, turtles enter a state of brumation (similar to hibernation in mammals). As they are often underwater when they brumate, and cannot breathe in the usual manner, they use cloacal respiration (commonly known as bum-breathing!) to take in oxygen from the water and expel carbon dioxide. This process is fairly common amongst amphibians and reptiles including frogs, salamanders and sea snakes.





Sense of smell

Turtles have a highly developed sense of smell both on land and under the water. They breathe through their nostrils and use a specialised structure in the roof of the mouth called the Jacobson's organ to detect and identify tiny scent particles in the air and water.

Some turtles also have bumps on the outside of their neck or lower jaws, called barbels, that also allow them to pick up scents. Their excellent sense of smell helps them to find food, especially in murky water.

Hearing

Unlike humans, turtles do not have an external ear shaped to draw sound waves into the inner ear. Turtle's ears are composed of several distinct parts, including the inner ear, the middle ear, and flaps of skin on the outside of the ear that capture sound waves.

Turtles cannot hear well above water, especially higher pitched noises. They are, however, very sensitive to low and mid-frequency sounds which travel much further underwater.

Other senses

Turtles can feel vibrations and changes in water pressure that tell them where food, or a predator, might be.



Image: J Farquhar



Image: iStock

River Murray turtles

There are 3 species of turtle found in the River Murray. They play a crucial role in the river ecosystem and are culturally significant to First Nations people.

Turtles are under threat from a range of issues but there are a number of ways the community can support their conservation.

Which turtles live in the River Murray?

The 3 species of turtle in the River Murray are the Murray short-necked turtle (*Emydura macquarii*), the eastern long-necked turtle (*Chelodina longicollis*), and the broad-shelled turtle (*Chelodina expansa*).

Although at a glance these species can look similar, they are each quite different and distinct once you know how to tell them apart.

Murray short-necked turtle / Thukubi (Thook-uh-bee)*

The Murray short-necked turtle is listed as vulnerable in South Australia.

As its name suggests, the Murray short-necked turtle is distinct from the other 2 species of River Murray turtles by its relatively short neck.

Its olive green/bronze shell grows to around 30 cm in length making it larger than the eastern long-neck turtle but smaller than the broad-shelled turtle.

They prefer permanent areas of slow moving water and can be found in open water such as the main river channel and its lagoons.

Murray short-necked turtles are omnivorous (meaning they eat both plants and animals) and they find their food by prowling along the bottom of the waterbody.

They nest during or just after storms in spring and early summer. Up to 30 eggs are laid in a hole that is 15-20 cm deep. Eggs usually take 6-8 weeks to hatch.

Eastern long-necked turtle / Malinthaipari (Mal-in-thigh-pari)*

The eastern long-necked turtle is not rated as threatened however its numbers are declining.

It has a relatively long neck, particularly in comparison to the Murray short-necked turtle.



Murray short-necked turtle. Image J Farquhar



Underside of female and male Murray short-necked turtles. Image: J Farquhar



Eastern long-necked turtle.

*Ngarrindjeri name

The eastern long-necked turtle is the smallest of the River Murray turtles with its light brown to almost black shell (with distinctive black lines between the plates on the bottom-side) growing to around 25 cm in length.

Eastern long-necked turtles are widespread and can be found in any body of fresh water including the main river channel, wetlands, and even farm dams.

They are carnivores and although they feed mostly on crustaceans (including zoo-plankton and yabbies), and water insects, they have a very diverse and opportunistic diet depending on what is available at the time.

Like Murray short-necked turtles, they nest during or just after spring and early summer storms. The eggs usually take 2-3 months to hatch and their hatchlings have distinct orange spots on the underside of their shell (plastron).

Broad-shelled turtle

The broad-shelled turtle is listed as vulnerable in South Australia.

It has a very long neck - in fact the longest neck of any turtle in the world!

The broad-shelled turtle is the largest of the 3 River Murray turtle species with a shell that can be up to 50 cm long. When small they can look similar to eastern long-necked turtles however they do not have the black lines between the plates on the underside of the shell.

They mostly live in deep water bodies (more than 3 m deep) and rarely come out of the water.

Broad-shelled turtles are carnivores (meaning they eat other animals) and they feed by laying in wait and ambushing prey such as fish and shrimps.

They nest in autumn, which is different to the other 2 species, laying approximately 20 eggs in a nest which can be up to 500 m from the river. The eggs take about a year to hatch.

For more information on the three species of River Murray turtles, view our fact sheets [here](#).



Underside of eastern long-necked turtle showing the distinctive black lines. Image: J Farquhar



Broad-shelled turtle. Image: J Farquhar

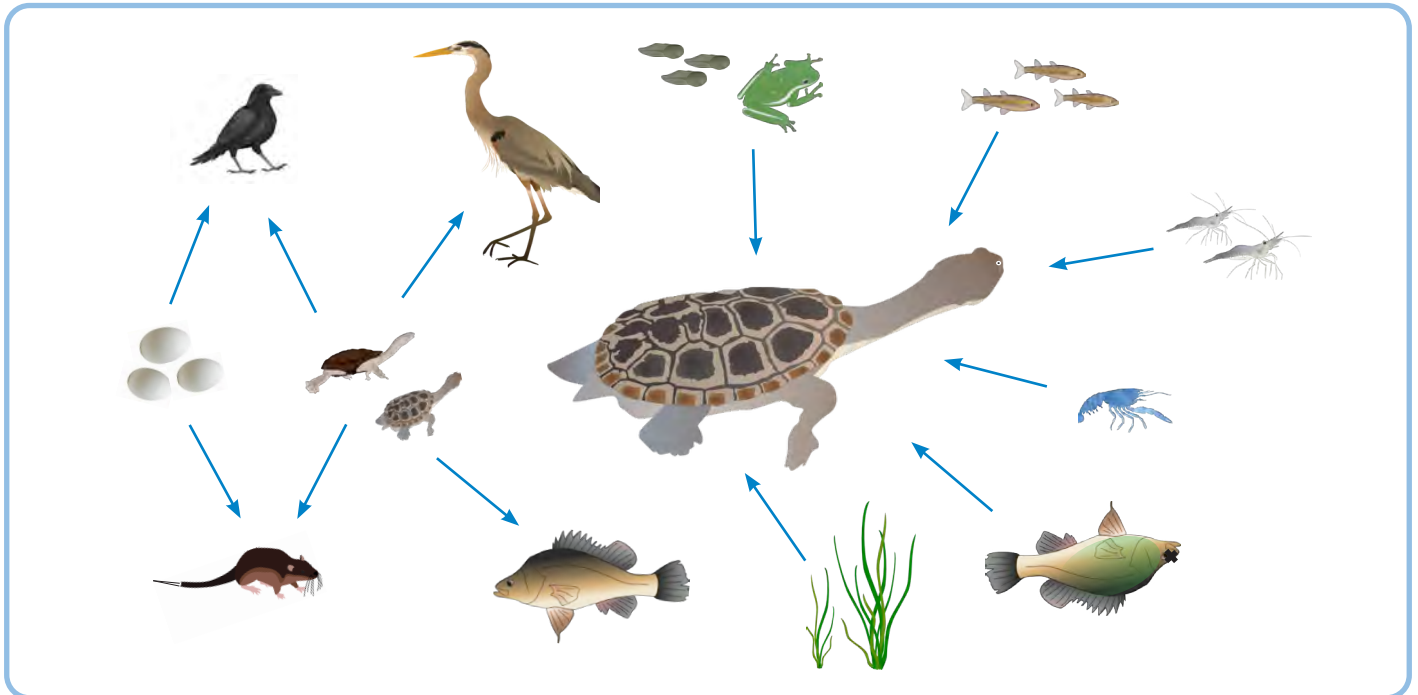


Underside of the broad-shelled turtle - note distinguishing lack of black lines. Image: J Farquhar

Turtles in the River Murray ecosystem

Turtles play a complex and crucial role in the River Murray ecosystem.

Adult turtles are one of the apex predators at the top of the River Murray food web, while turtle eggs and hatchlings form food for a range of other animals including birds, fish, mammals and reptiles.



A simple food web showing the type of animals and plants consumed by turtles as well as the predators that eat turtle eggs and hatchlings. A full page food web image can be found on page 22.

Turtles play an incredibly important role in the river ecosystem by eating other dead animals (known as carrion).

All three species of River Murray turtle eat carrion and this forms a critical part of the river's nutrient cycle by breaking this material down quickly and safely.

The image to the right from a [study](#) conducted in the wetlands near Murray Bridge, shows that without turtles in the river, dead animals would slowly rot leading to serious issues such as algal blooms.

By being the 'vacuum cleaners' of the river turtles play an important role in maintaining water quality for humans as well as all the other important creatures in the River Murray ecosystem.

When you next enjoy the relatively clean and safe water of the River Murray, don't forget to say thanks to the turtle clean-up crew!



Turtles play an important role in consuming dead animals in the River Murray. Image: C Santori

Cultural significance of turtles to First Nations

Turtles are highly significant to First Nations groups along the River Murray and Lower Lakes.

In the Ngarrindjeri language the Murray short-necked turtle is called Thukubi and the eastern long-necked turtle is known as Malinthaipari.

They feature in First Nations' [creation stories](#) which have been passed down from generation to generation for thousands of years. These stories provide important information about culture, values, people, animals and the environment.

Turtles are Ngartjis (totems or special friends) for some First Nations people. People have a responsibility to care for and protect their Ngartjis, including their habitat, and this obligation continues today.

More information on local creation stories and Ngartjis can be found in the [Ngarrindjeri Nation Yarluwar-Ruwe Plan](#).

Turtles were also an important part of traditional life for First Nations people. Turtles and their eggs were eaten and their shells were used as drinking vessels.

Remains of turtle shells have been found in several archaeological sites in the lower Murray including at Ngaut Ngaut Conservation Park near Nildottie.

Turtle conservation is very important to First Nations people because of the critical role they play in the River Murray environment, because people have cultural obligations to look after their Ngatjis, and because they enable the continuation of cultural practices such as passing on traditional stories and knowledge, hunting, and collecting their eggs.

First Nations groups play an important role in River Murray turtle research and protection programs, and contribute greatly to their conservation.

A great way for students to further explore First Nations culture is to organise for a local First Nations' community member to come and speak at the school or attend an excursion to the river or a local wetland.



Turtle hatchling.



Turtle rock art at Ngaut Ngaut Conservation Park on the River Murray near Nildottie. Image used with permission.



Turtle weaving by Yvonne Koolmatrie. Image used with artist's permission.

Nesting

A knowledge of how turtles nest and lay eggs is critical for students to understand the turtle's role in the River Murray ecosystem and some of the key threats to their survival.

Turtles reproduce by laying eggs. Unlike marine turtles, which can lay up to 100 eggs in one nest, Australian freshwater turtles only lay 10-30 at a time.

Turtles bury their eggs in an underground nest to protect them from predators and fluctuations in temperature. Hard soils can be a challenge to dig through so they often wait for heavy rainfall to soften the soil.

Because turtle eggs are porous they are generally laid above the flood zone to prevent them from drowning.

All River Murray turtle species appear to prefer nesting in sandy areas with low vegetation so their nests receive full sun.

When the female turtle finds a suitable nesting site she starts digging with her back legs. She digs down one foot at a time, removing a foot-full of dirt from the hole with each scoop. She continues digging until the hole is as deep as she can reach with her back legs, and then digs backwards at the bottom of the hole to create boot-shaped nest chamber. Once all her eggs are laid into the hole she refills it by scooping the soil back in using one back leg at a time.

She then stands over it, stretches her legs out to gain as much height as possible, then pulls her legs out from under her body so the bottom of her shell bangs down on the ground to compact and hide the nest.

Once the eggs hatch, the hatchlings dig their way out of the nest and head for the water.



Murray short-necked turtle. Image: Toolunka Creek Olives



Murray short-necked turtle nesting. Image: K Millstead



Turtle eggs in an excavated nest. Image: A Simms



Murray short-necked turtle hatchlings making their way from the nest to water.

Turtles under threat

There has been a serious decline in turtles in the River Murray. Recent studies have shown reductions in turtle numbers of up to 91% in some areas over the last 50 years.

There are big concerns for the long-term survival of River Murray turtles and the effect their loss would have on the river's ecosystem and water quality.

There are a range of things that impact on turtles, but the major issue is believed to be foxes (*Vulpes vulpes*).

The impact of foxes

Foxes are not native to Australia and were first introduced in the 1800's for recreational hunting. Since their introduction fox numbers have greatly increased and they now have a significant impact on many species of native animal.

Foxes are devastating River Murray turtle populations in two main ways - digging up and eating turtle eggs and killing adults when they come on to land.

Egg predation by foxes

Although some native animals such as ravens, magpies, goannas, water rats and even echidnas are known to dig up and eat a small number of turtle eggs, this has always happened as a natural part of the food web.

Introduced foxes, on the other hand, are not part of the natural ecosystem and are very effective at finding and destroying nests. Studies have found that they can take approximately 93% of all eggs laid, leaving very few to successfully hatch.

The small number that do hatch are then subject to predation by a range of animals, resulting in very few hatchlings surviving to adulthood. This results in populations of mostly old turtles with very few young to replace them as they die of old age or other causes.

Fox predation of adult turtles

Foxes also prey on adult turtles when they come onto land. Because one of the main reasons turtles leave the safety of the water is to lay eggs, many of the adult turtles that are killed by foxes are pregnant females.

Killing large numbers of breeding-age females further threatens the viability of turtle populations and their long-term prospects for survival.



Foxes prey on turtles and their eggs. Image: iStock



A fox digging up a turtle nest. Image: M Keevil



A turtle nest destroyed by a fox.



A fox taking an adult turtle. Image: N Black

Other threats to turtles

Although foxes are considered the main threat to turtles, a range of other issues also impact them.

Reduced river flows and altered hydrology

The River Murray has undergone enormous changes since European settlement. Large volumes of water are taken for irrigation and other human uses, and the river is highly regulated with locks, weirs and barrages.

These changes, together with droughts and a drying climate, have greatly reduced the river's flow, the frequency and size of floods, and the natural, seasonal variability in water levels.

Wetlands and floodplains have been particularly affected by these changes. Having lost the natural seasonal cycles of wetting and drying, many are now either permanently wet or dry.

The degradation of these areas has reduced habitat for turtles and also greatly reduced the overall health of the river's ecosystem that supports them.

Changes in habitat

Changes in the river environment have greatly altered the habitat for turtles. Many areas have lost the aquatic vegetation that provides food and protection for them, and habitat for the smaller creatures that they rely on for food.

River bank habitat has also changed significantly in some areas. In the lower parts of the River Murray, for example, many areas are eroding or are covered in dense, tall introduced grasses like water couch. These create barriers for turtles and prevent them from accessing suitable nesting sites.

Water quality issues

Being reliant on a healthy aquatic environment, turtles are impacted by reduced water quality. A range of issues impact water quality including salinity, erosion, polluted run-off, and the effect of carp.

Cars

Cars running over turtles on roads can have a significant impact on turtle populations. As the most terrestrial of the 3 River Murray turtle species, the eastern long-necked turtle is often the one that gets killed on roads. Unfortunately pregnant females coming on to land to nest are also commonly killed.



The River Murray is now a highly regulated system.



Reduced river flows and altered hydrology have resulted in a significant loss of habitat.



Cars hit turtles on roads. Image: 1 Million Turtles

Saving River Murray turtles

There are many ways that the community, especially young people, can get involved in helping to save River Murray turtles.

Educating and involving young people!

There are many things young people can do to help turtles now and as future leaders and decision makers.

By educating and involving young people, and inspiring them to take action, teachers are in very powerful position to help prevent the extinction of River Murray turtles!

Becoming a citizen scientist

Record any turtles or turtle nests you find using the [TurtleSAT](#) app. You may want to go actively looking for them or just make sure you have the app in case you happen to come across one.

Make sure you get involved in the [1 Million Turtles](#) community conservation program which has a range of ways the community, including schools, can participate in citizen science and community action to save turtles.

Protecting turtle eggs from foxes

Undisturbed turtle nests can be difficult to see. If you do find one and you can protect it, you will be helping to combat one of the turtles biggest threats - nest predation by foxes.

Keep a particular eye out after late spring/early summer rains as this is when many turtles will come out to nest.

To make things easier try and work out where your local turtle nesting hot-spots are. Look for past nests that have been dug up by foxes (a small hole with broken egg shells around it) or check out the interactive map on the [TurtleSAT](#) app.

Plastic garden mesh cut into squares and pegged into the ground makes a very effective barrier against digging foxes but still allows turtle hatchlings to dig their way out.

When you're done don't forget to record the nest sighting on [TurtleSAT](#)!



There are many ways young people can get involved in saving River Murray turtles. Image: Eagle family



High school students protecting turtle nests from foxes near Murray Bridge.

Managing wetlands

Healthy wetlands provide important habitat for turtles and the plants and animals that turtles rely on for food.

Many wetlands have active volunteer groups that people can join which is a great way to help manage these important places, learn more about our local environment, and meet like-minded people.

There are also opportunities for young people to work along-side wetland ecologists by doing work experience with organisations like the Murraylands and Riverland Landscape Board.

Leaving snags in the river

Snags in the river are important habitat features for turtles and the other creatures turtles feed on.

By leaving snags in the water (or in some cases even putting them back in) we are helping to support turtle survival.

Saving turtles from cars

As long as it is safe to do so, removing turtles from roads before they get run over is an important and easy thing the community can do for turtle conservation.

The [1 Million Turtles](#) website has some good information about moving turtles found along roads.

Again don't forget to record your sightings on the [TurtleSAT](#) app.

Using turtle-safe fish traps

Some fish and shrimp traps, such as funnel traps, can cause turtles to get trapped inside and drown. It's important to use turtle-safe traps and make sure an air pocket is kept in them to allow any trapped turtles the ability to reach air and breathe.

Raising community awareness

As well as learning about turtles and getting involved themselves, young people can play a valuable role by teaching and inspiring other young people, and the wider community.



Maintaining and restoring healthy wetlands along the River Murray is important for turtle survival.



Young people can get involved in managing their local wetlands.



It is important to safely remove turtles from roads.

Further resources

Teaching about turtles is a great way to help raise awareness and increase community involvement their conservation. Here are some great resources and ideas for teaching more about turtles.

Fact sheets, posters, colouring sheets and life cycle activity

Download fact sheets with more detailed information about each of the River Murray turtle species. Our River Murray turtle posters are a great way to help educate students and community about the importance of and threats to our River Murray turtles. For younger students, download the life cycle activity and colouring sheet.

landscape.sa.gov.au/mr/education/teacher-resources/plants-and-animals

Blooket

Click "Discover" in Blooket and search "MRLB" to find our question sets, including River Murray turtles. You'll need to set up a Blooket account to access the questions:

blooket.com

Or use these links to go directly to the River Murray turtles question sets:

River Murray Turtles – General

dashboard.blooket.com/set/62fb2da36f71d2a7f74f9d42

River Murray Turtles - Why are they important and what can you do to help?

dashboard.blooket.com/set/6302f1bdd691557cd68b97d5

River Murray Turtles - Anatomy

dashboard.blooket.com/set/63016cb6928eb8ec82fac811

River Murray Turtles - Habitat and role in the river ecosystem

dashboard.blooket.com/set/6302edf5d691557cd68b95bd

River Murray Turtles – Threats

dashboard.blooket.com/set/6302efc1d691557cd68b96b1

River Murray Turtles – Reproduction

dashboard.blooket.com/set/6301564778a68a6a037a6625

Kahoot!

Visit our Kahoot! profile to see our question sets including River Murray turtles:

create.kahoot.it/profiles/f2915701-6810-43be-943b-43c5baed3958

Or use these links to go directly to the sets:

River Murray Turtles – General

create.kahoot.it/share/river-murray-turtles-general/eba9b7a0-0f8c-42b7-b081-3514be1e1877

River Murray Turtles - Why are they important and what can you do to help?:

create.kahoot.it/share/river-murray-turtles-why-are-they-important-and-what-can-you-do-to-help/bf8e0da7-638b-4312-a0e8-04c25e17cd39

River Murray Turtles - Anatomy

create.kahoot.it/share/river-murray-turtles-anatomy/e60b983b-a291-4606-8514-13ef3eabd74d

River Murray Turtles - Habitat and role in the river ecosystem

create.kahoot.it/share/river-murray-turtles-habitat-and-role-in-the-river-ecosystem/8bfe80-2d0d-4027-bfe7-1547d558566f

River Murray Turtles – Threats

create.kahoot.it/share/river-murray-turtles-threats/877bf75e-a6e0-42a1-ac94-12bad6341b66

River Murray Turtles – Reproduction

create.kahoot.it/share/river-murray-turtles-reproduction/b1e8ea82-2d70-4908-a41d-dcf9a09376e6

Turtle conservation websites:

1 Million Turtles

A citizen science and community conservation program for turtles, with the goal of improving turtle habitat and increase turtle populations.

1millionturtles.com

TurtleSAT

A mapping tool for citizen scientists to collect information about turtles. This information is used by the 1 Million Turtles program to inform science based conservation decisions to protect turtles.

turtlesat.org.au

Turtle videos:

Turtle talk - Dr Mike Thompson and Emily Brown

A short talk about River Murray turtles and their anatomy.

youtube.com/watch?app=desktop&v=nQLpT3MDen4

Freshwater turtles - Aussie Ark

A great overview of turtles and problems. Includes Auslan interpreter.

facebook.com/AussieArk/videos/animal-tales-with-tim-faulkner-freshwater-turtles-of-australia/181169286366212/

Australian freshwater turtles in the Corowa region - Corowa District Landcare

This NSW based video is an overview of the 3 turtles found in South Australia. Recommended for older students (Yr 5 +).

corowadistrictlandcare.org.au/news/australian-freshwater-turtles-in-the-corowa-region-nsw

Turtles of South Australia - Animals Anonymous

A great overview of the anatomy of the 3 turtles found in SA.

youtube.com/watch?app=desktop&v=PCVFgXFU1yo

River Murray turtle release with Dr Dave

A quick overview of the Murray short-necked turtle including great footage. Recommended for younger students (Yr 2+).

youtube.com/watch?app=desktop&v=EgA1L83IPog&list=PLC1CEAA22BDF5BD7D&index=1

5 minute citizen science

Presentation style recommended for older students (Yr 6+). Potential pre-learning activity for a hands-on maths lesson.

youtube.com/watch?app=desktop&v=Tv6yabKDp3U

1 million turtles - turtle talk. Webinar featuring South Australian turtles

Foundation for National Parks and Wildlife hosted speakers with a range of information about freshwater turtles, including different species, current threats, and what people can do to help.

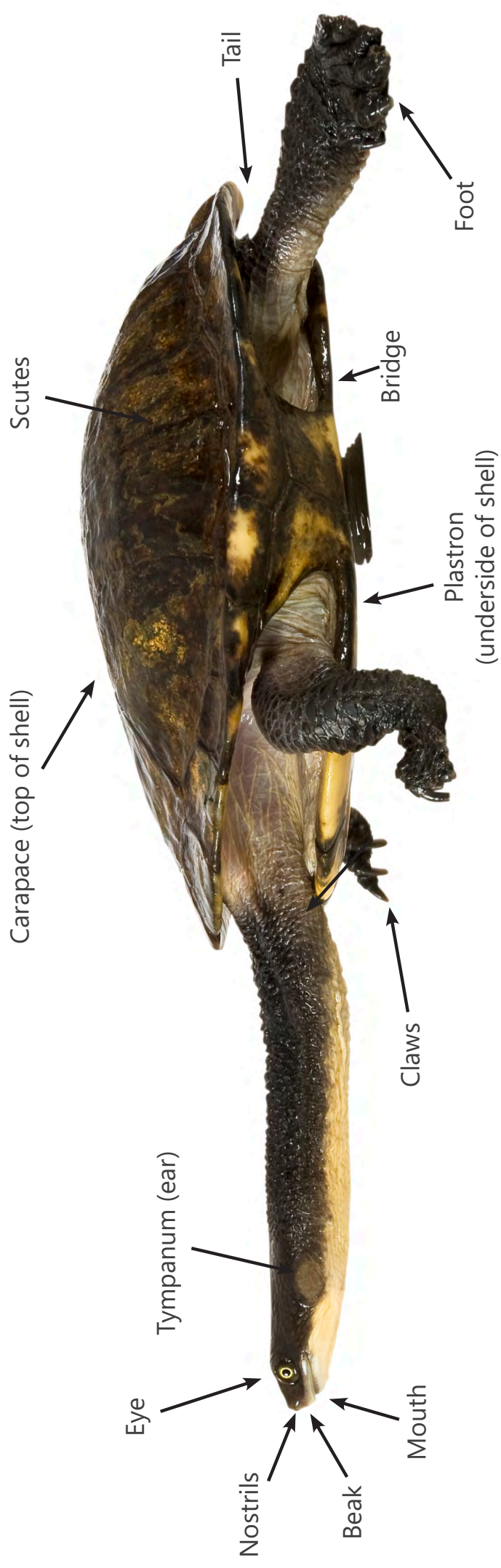
fnpw.org.au/news/latest-news/turtle-talk/

Turtles and Traditional Owners in the Barmah-Millewa Forest

First Nations involvement in turtle conservation in the Barmah-Millewa Forest.

youtube.com/watch?v=vUB3P-HQljj

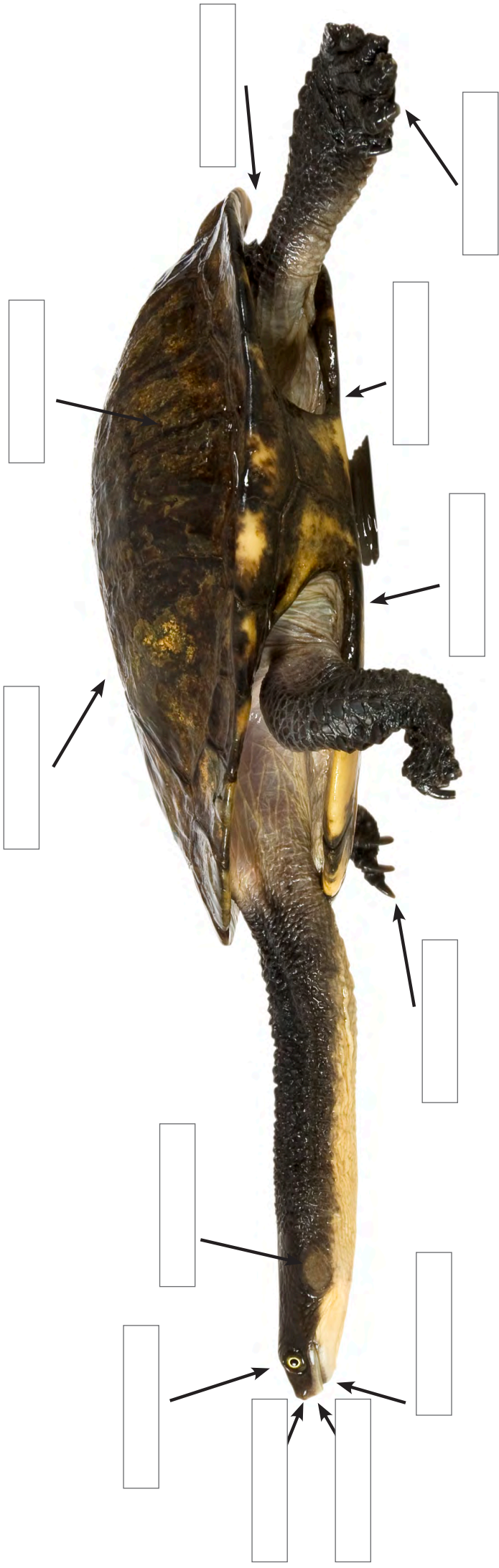
Turtle anatomy



The main features of the turtles anatomy.

Turtle anatomy - fill in the blanks

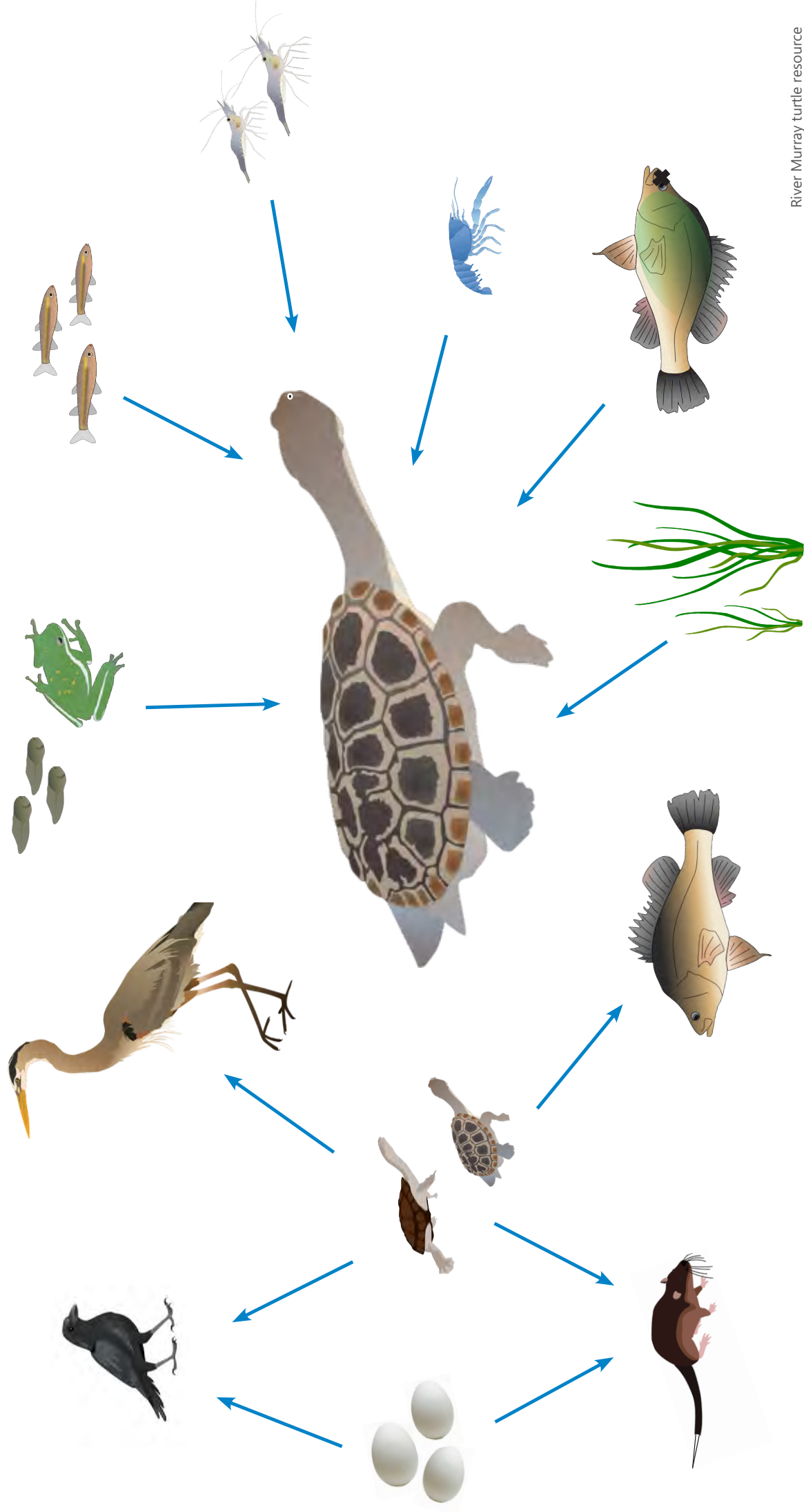
Cut out all the features and paste them in the correct position on the diagram OR write the correct features in the blank boxes.



Carapace
Bridge
Foot
Tail
Scutes
Plastron

Tympanum
Eye
Nostrils
Beak
Mouth
Claws

River Murray food web - turtles



A simple food web showing the type of animals and plants consumed by turtles as well as the predators that eat turtle eggs and hatchlings.

Curriculum links

This resource supports a range of elements of the curriculum, including:

F-10 Australian Curriculum

Learning Areas

English	Mathematics	Science	Health & PE	Humanities & Social Sciences	The Arts	Technologies	Languages
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General Capabilities

Literacy	Numeracy	ICT Capability	Critical & Creative Thinking	Personal & Social Capability	Intercultural Understanding	Ethical Understanding
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Cross-curriculum Priorities

Aboriginal & Torres Strait Islander Histories & Culture	Asia & Australia's Engagement with Asia	Sustainability
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Senior Secondary

Australian Curriculum, Assessment and Reporting Authority (ACARA)

English	Mathematics	Science	Humanities & Social Sciences
English	Essential Mathematics	Biology	Geography
English as an Additional Language or Dialect	General Mathematics	Chemistry	Ancient History
Essential English	Mathematical Methods	Earth & Environmental Sciences	Modern History

South Australian Certificate of Education (SACE)

Arts	Business, Enterprise & Technology	English	Health & PE (Outdoor Education)
Humanities & Social Sciences (Aboriginal Studies, Geography)	Languages	Mathematics	Sciences (Biology, Earth and Env Sciences)



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landscape.sa.gov.au/mr/education



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The Murraylands and Riverland Landscape Board acknowledges the First Peoples of the lands and waters we live and work upon. We pay our respects to their Elders past, present and emerging and acknowledge and respect their deep spiritual and cultural connection to Country.