



Coorong National Park Teacher Resource Pack



Introduction

Coorong National Park in the Upper South East of South Australia is an area of considerable recreational, biological, geological and cultural value. The park preserves a unique set of coastal ecosystems and provides important refuge for many waterfowl and migratory species. It also represents modern day examples of geological processes, contains a rich array of archaeological and historical resources and provides the community with recreational and educational opportunities.

The Coorong is a wetland of international importance, supporting many significant and endangered flora and fauna. In particular, the habitats for various waterbirds is one of the main reasons it was proclaimed a Ramsar Wetland. These wetlands provide habitat for many local species as well as for migratory wading birds, some flying in from as far away as Alaska and Siberia.

The park supports a range of other activities including fishing and tourism. There are many stakeholders responsible for the region including the Department for Environment and Water, Ngarrindjeri people, recreational boaters and fishers, conservation groups and local councils.

This resource pack

This teacher resource pack provides background information on the biodiversity of the park, its history and current management. Suggested activities are also included along with a site map and self-guided excursion itineraries.

The activities provided are linked to the Australian Curriculum and additional resources are suggested.

Natural Resources South East and SA Murray-Darling Basin staff are able to run education sessions on site or at your school, subject to availability. For more information, or to discuss opportunities for your school, please contact:

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An overview of Coorong National Park

Coorong National Park (NP) is located 200 km south east of Adelaide and is accessible via Meningie and Kingston off the Princes Highway.

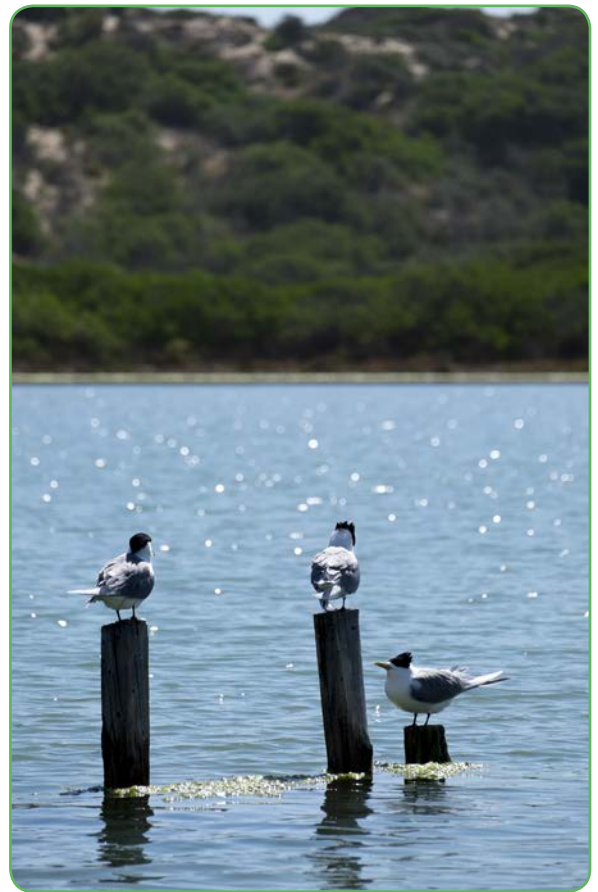
The park is long and narrow, stretching from Goolwa Barrage, past the Murray Mouth, nearly to Kingston SE. It encompasses the Goolwa Channel, Coorong Channel and northern and southern lagoons, as well as the Ocean Beach, sand dunes and surrounding land.

The Coorong provides habitat for a variety of flora and fauna. The park is an important refuge for 115 species that are listed at an international, national and/or state level. This includes 79 bird species, two amphibians, 15 mammals, four reptiles and 15 plant species. The Coorong is considered to be the most important waterbird wetland in the Murray-Darling Basin system.

Ramsar Wetland of International Importance

Coorong NP isn't simply a national park, it is also protected under the Ramsar Convention. This is an international agreement that aims to end the loss of and to conserve wetlands through wise use and good management.

The Coorong and lakes Albert and Alexandrina together with the islands in the lakes were designated as a Wetland of International Importance in 1985. The wetland was declared a Ramsar site because of its important waterbird habitats and its role as a significant drought refuge.



Ramsar Convention

Ramsar is an international agreement that aims to halt and where possible, reverse the world wide loss of wetlands. The Ramsar convention encourages the listing of wetlands across the world that contain representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity.

There are five other Ramsar listed sites in South Australia:

- Bool and Hacks Lagoon
- Banrock Station Wetland Complex
- Coongie Lakes (Lake Eyre Basin)
- Piccaninnie Ponds
- Riverland.



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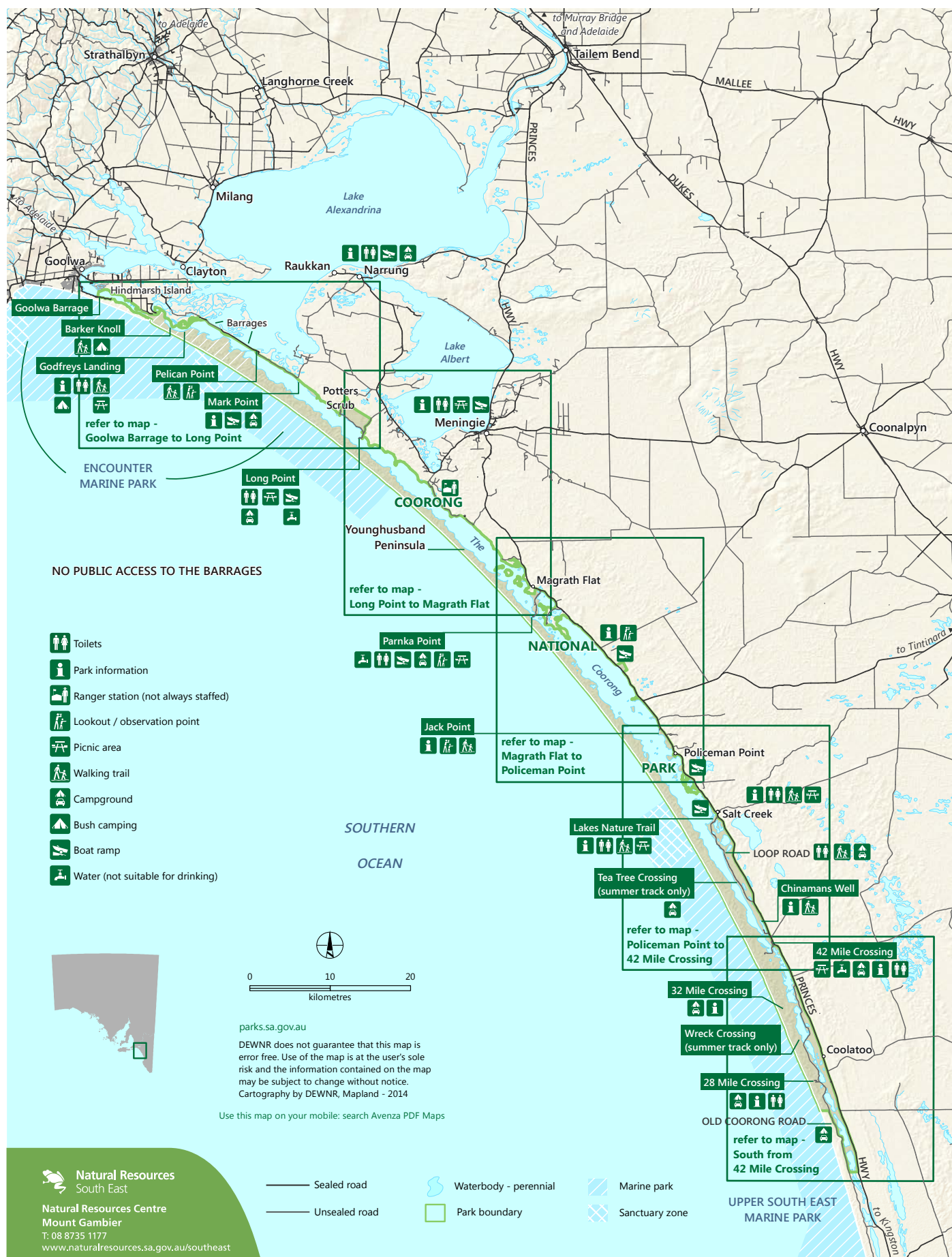
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Different ecosystem types

Coorong habitats range from seasonally freshwater near the barrages when large quantities of water are being released, to brackish (slightly salty) in the Murray Mouth area, to hypersaline in the southern lagoon. The Coorong experiences seasonal changes in water level: in the southern lagoon, depth can vary by almost a metre between late spring highs to late autumn lows.

As water levels fall from early summer, extensive tidal mud flats are exposed along the southern shores of the Coorong. These are habitat for a number of species of wading birds, many of which are seasonal migrants to Australia and breed in Alaska, northern China and Siberia. On the peninsula side, there are freshwater soaks which provide further variety of habitats.

The ocean side of the coastal dune barrier is a high energy coast with a continuous sand beach stretching nearly 200 kilometres, broken only by the Murray Mouth. The beach is habitat for a number of waders, gulls and terns. The hooded plover, listed as vulnerable, breeds on this beach.



Suggested activities

Compare the different plants that grow in the different areas of the park and predict why there is a variation.

Hydrology of the Coorong

The Coorong is found at the end of the Murray-Darling Basin system. The River Murray flows into lakes Alexandrina and Albert (known as the Lower Lakes) and then joins the ocean at the Murray Mouth, near Goolwa. Barrages separate Lake Alexandrina from the Coorong. Flows through the Goolwa Barrage and Murray Mouth are critical for maintaining a healthy Coorong, as they influence salinity levels in the northern and southern lagoons.

When there are high river flows through the barrages, freshwater enters the North Lagoon and freshens the Coorong. When there are low flows, sea water enters the North Lagoon through the Murray Mouth.

Changes in water level and salinity have a strong influence on habitat conditions. The water regime of the region is primarily dependent on inflows from the River Murray, but flow from the eastern Mount Lofty Ranges, South East drainage network and groundwater, as well as evaporation from the water bodies, also contribute.

The Coorong naturally splits about halfway into the North and South Lagoons at a narrow constriction ('the Parnka Narrows'). Because the majority of the freshwater flows to the Coorong occur through the barrages in the North Lagoon, the Coorong acts as an 'inverse estuary', in which salinity increases away from the Murray Mouth. In addition, the southern end of the South Lagoon receives smaller volumes of fresh to brackish water from a network of drains culminating at Salt Creek.

During extended periods of low barrage flows and reduced connection between the two lagoons, the salinity in the South Lagoon well exceeds the salinity of sea water, a state that is called hypersaline. During the Millennium Drought there was no flow through the barrages for several years, which meant that the salinity in the South Lagoon exceeded four times that of sea water.



Suggested activities

Take part in [National Water Week](#).

Undertake [water quality monitoring](#) (borrow equipment from your local Natural Resources Centre). Compare different sites throughout the park.

Learn about the water cycle, in particular how water moves through the Murray-Darling Basin system and into the Coorong.

Make your own [wetland in a bottle](#).

Investigate how changes in water salinity affect animals and plants. Conduct experiments on plants.

What would happen to the Coorong if there was less water coming down the Murray? Or a lot more?

Use Bureau of Meteorology [water data](#) to analyse the changes in water flow and water quality in the Coorong.

Build a model of the Coorong that shows how water flows in and out of the system.

Find out how the Murray-Darling Basin is managed and by who, and how this helps or hinders the management of the Coorong.

Display and analyse [Murray-Darling Basin river data](#).

Observe how the depth of the lagoons can change throughout the day – place a measuring stick at the edge of the water and observe changes throughout the day. What do you think causes the change? (Hint: it's not tidal).



Cultural significance

The Coorong is of enormous cultural significance to the Ngarrindjeri people. 'Kurangk' (meaning 'long narrow neck') is the name given to the area by the Ngarrindjeri people. Ngarrindjeri involvement in cultural heritage is linked with current management of the park.

Aboriginal peoples continue to play an active role in Caring for their Country, including in parks across South Australia.

In 2009 the Ngarrindjeri Nation of South Australia negotiated a formal Kungun Ngarrindjeri Yunnan Agreement (KNY – Listen to what Ngarrindjeri people have to say) with the state government that recognised traditional ownership of Ngarrindjeri lands and waters and established a process for negotiating and supporting Ngarrindjeri rights and responsibilities for Country. The KNY Agreement has provided the framework for the South Australian Government to support Ngarrindjeri to build their capacity to engage in Caring for Country activities and to become long-term contributors to regional natural resources management.

Ngarrindjeri Vision for Country

Our Lands, Our Waters, Our People, All Living Things are connected. We implore people to respect our Ruwe (Country) as it was created in the Kaldowinyeri (the Creation). We long for sparkling, clean waters, healthy land and people and all living things. We long for the Yarlumar-Ruwe (Sea Country) of our ancestors. Our vision is all people Caring, Sharing, Knowing and Respecting the lands, the waters and all living things.

From the Ngarrindjeri Nation Yarlumar-Ruwe Plan: Caring for Ngarrindjeri Sea Country and Culture (2006), prepared by Ngarrindjeri Tendi, Ngarrindjeri Heritage Committee and Ngarrindjeri Native Title Management Committee

[Ngarrindjeri Regional Authority](#)

[Ngarrindjeri Nation Yarlumar-Ruwe Plan: Caring for Ngarrindjeri Sea Country And Culture](#)

Coorong NP rangers (phone Nooneameena office 8775 1200)

Bush Repair Cultural Education Experience (Ken Jones)
phone 8738 2131 or email info@bushrepair.com.au

Middens

A midden is a site where Indigenous communities camped and left remains of their meals, which largely consisted of shellfish. Oyster and cockle shells are often found in middens, as well as animal bones. Some middens also contain artefacts and tools made from stone, bone or shell.

At some sites very large deposits grew over time, as generations continued to camp in the same area. Some middens can be up to a few metres deep.

Please respect middens by avoiding walking over them. No objects should be removed from the national park.



Suggested activities

Learn more about Ngarrindjeri culture:

- weaving
- bush foods
- fish traps
- seasons
- totems
- sustainable use of resources
- language.

Investigate how park managers are working with Ngarrindjeri people.

Meet a cultural ranger in Coorong National Park.

Visit a midden and make predictions about what you find.

Take part in a cultural session with Rita Lindsay. Learn Ngarrindjeri language and how to dance like a pelican!

Perform an Acknowledgement of Country when you visit the park.

Visit the town of [Raukkan](#).



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European history

The Coorong has sustained European settlement since the 1840s, when the explorers, coming by sea and river, found good pasturage and abundant fresh water. Due to its physical characteristics, the area was not intensively settled by Europeans.

Explorers and overlanders

When Matthew Flinders and Nicholas Baudin explored the southern coast of Australia in 1802, neither was inspired by the Coorong shoreline. Baudin described it as 'wretched and unpleasant'. Charles Sturt and Captain Collet Barker navigated the River Murray (1839-1830 and 1831) and were impressed by Lake Alexandrina. Barker was the first European to enter the Coorong waters.

In 1839, overlanders began to bring cattle across from Victoria and used the Lower Lakes as watering points. In September 1839, Surveyor General E.C. Frome surveyed the shorelines of the lakes and made a quick trip along the Coorong as far as Salt Creek, reporting good feed and water and advising that it would make a suitable stock route.

Pastoralists

The overlanders had shown the potential of the Lakes region and the Coorong. Pastoralists looking for land for their stock quickly followed: by February 1846, T.G.F. Lang was setting up near Salt Creek and by September of that year Edward Spicer was on the Coorong.

As pastoralists found that sheep did not thrive along the Coorong (they were affected by coast disease, the result of a copper and cobalt deficiency in the soil that was not resolved until the 1930s) the switch was made to cattle. A successful horse-breeding stud was established near Magrath Flat.

Pastoralism was also established further down the Coorong: John Gall purchased Cantara Station in 1863 and later acquired Tilley's Swamp and Marcollat Station.

The nature of the Coorong changed when large areas of wetlands were drained to establish pastures for sheep, cattle and crops. This caused long-term changes to the environment.

Chinese miners

In the mid-1800s, to avoid paying a Victorian poll tax, hundreds of Chinese miners travelling to the Victorian goldfields arrived in Port Adelaide and walked 700 km to Ballarat.

To split the cost of a guide they would travel in groups of up to 300. The trip took about five to six weeks.

It's thought that the local Ngarrindjeri people showed the travellers how to locate water and, in a remarkable display of bush stonemasonry, the Chinese set about building wells.

The South Australian government introduced their own toll in the 1860s and so the flow of Chinese travellers stopped.

Visitors can see a restored stone well at Chinamans Well in Coorong NP.



Suggested activities

Research the European history of the Coorong. Write stories from the perspective of early settlers e.g. farmers, bushrangers, overlanders, Chinese miners, etc.

Investigate the impact of European settlement on the environment.

Investigate the history of the place names within the park.

Imagine you were a settler here: what would you eat and drink? How and where would you build a shelter?

Coorong Country

[Natural History of the Coorong, Lower Lakes and Murray Mouth Region \(Yarluwar-Ruwe\)](#)



The road through the Coorong

The Coorong was the main route to the south-east and on to Victoria. From a rough overlanding stock route it developed into a road. Hotels sprang up to cater for passing traffic and to supply the few locals.

In July 1858 the first telegraph line between Adelaide and Melbourne, running from Goolwa to Pelican Point to Magrath Flat along the Coorong, was opened.

Coach travel along the Coorong became regular from 1867, with relay stations for the horses at several points. Later, with the advent of motor traffic, the track was compacted with local limestone and shells. The road was officially proclaimed the Princes Highway on 9 February 1922, named after Edward Prince of Wales (1894-1972); it was bituminised in the 1930s.

Fishing

Fishing in the Lakes and Coorong includes both salt-and freshwater fish. Fishermen were recorded at the Murray Mouth in 1846. Commercial fishing did not flourish until the transport infrastructure improved with the railway from Goolwa and Milang in the 1880s and road transport from the late 1930s, although getting the fish fresh to the Adelaide market remained a problem before refrigeration, particularly in the summer. The fishery peaked in 1939. Mulloway and yellow-eyed mullet were the main species harvested and they remain so, but quantities are greatly reduced.

Over the years, commercial fishing has faced numerous threats. When, in the 1870s, fishermen blamed pelicans and shags for a decline in fish stocks, the government declared a closed season to allow fish stocks to recover, leading to an outcry from fishers, fish mongers and customers.

Law and order

Law and order in the regions of the Coorong and Lower Lakes region began as early as 1841, when police troopers were stationed at Wellington. The Wellington police oversaw a huge area extending into the Coorong. Everyday occurrences included drunkenness, abusive language, robbery, sheep stealing and the illegal supply of alcohol to the local Indigenous population.

However, the lonely reaches of the Coorong were also the scene of some horrific murders including George McGrath in 1842, Jane Macmenimen at Salt Creek in 1862 and Trooper Harry Pearce at White Hut in 1881.

Bushranger Birdman of the Coorong

John Francis Peggotty was born in Ireland in 1864. He became a thief in England before travelling to Australia. He eventually turned up in the Coorong where he continued with his criminal ways.

He was labelled the most eccentric bushranger in the history of Australia as he was often seen stripped to the waist and wearing stolen gold jewellery whilst brandishing two ornamental pistols and riding an ostrich. He was finally shot by fisherman Henry Carmichael, but his body was never found. His bones still lie in the Coorong along with at least \$1 million worth of gold and jewellery.



John Francis Peggotty, the Bushranger Birdman of the Coorong

(Image: Brand SA <https://brandsanews.com.au/coorong-birdman-revives-lake-town/>)

Park management

National parks provide protection for our native flora and fauna and opportunities for people to enjoy being in nature.

Managing national parks is a complex task, with a wide variety of areas requiring consideration and resources. Some of the roles of park management include:

- providing facilities for visitors (signage, toilets and picnic spots)
- managing visitor impacts (for example constructing and maintaining walking trails, undertaking patrols and cleaning toilets)
- pest plant and animal control (programs for species such as foxes, rabbits and boxthorn)
- monitoring and research in the park (understanding what occurs in the park)
- fire management (to try and minimise the impact and risk of wildfires)
- managing habitat and protecting biodiversity (restoration works and fencing)
- looking after threatened plants and animals (protecting species that are at risk of extinction).

Visitor management

Providing facilities for visitors and managing the possible impacts that visitors have on the park is a big component of overall park management and planning. Facilities that have been provided in Coorong NP include toilets, signage, picnic tables, shelters, boardwalks, campgrounds, viewing platforms, walking trails, car parks, jetties and boat ramps.



Suggested activities

Investigate the history of national parks in Australia and South Australia.

Suggest ways visiting Coorong NP could help with physical and mental health and wellbeing.

Visit the park and do a bushwalk or kayak to discover the sites.

Build a cubby (remember to use fallen timber only).

Do the Friends of the Coorong [nature hunt bingo](#).

When visiting the park, use all five sense to experience the Coorong environment.

Create ephemeral art.

Identify the natural, managed and constructed features in the park.

Before your visit, create guidelines to keep everyone safe.

Map the area (use GPS if you want).

Go [geocaching](#).

Assess the accessibility of Coorong NP and suggest improvements so that people of all abilities can visit.

Managing visitors

Management actions put in place to help minimise the impact of visitors include:

- providing walking trails to limit impacts on native vegetation
- restricting access to environmentally sensitive areas e.g. Ocean Beach track north of Tea Tree Crossing is closed to vehicles from 24 October to 24 December every year to protect the hooded plover.
- undertaking patrols to investigate inappropriate behaviour
- educating the community regarding the 'National Parks Code'
- removing rubbish left by visitors.

The National Parks Code

Rules can change from park to park, so visitors should always check the [National Parks SA website](#) before they go. There is a general National Parks Code for all parks and reserves across the state. This code aims to help people understand some of the ways they can help protect these areas (see right).

In Coorong NP, additional rules apply. Dogs are permitted below the high water mark on Ocean Beach only. Dogs must be transported directly to and from the beach inside a vehicle. They must be kept on a lead of no more than two metres.

Managers are always grateful to visitors who leave the bush in its natural state for the enjoyment of others.

Four-wheel driving

The park is very popular for four-wheel driving, particular along the Ocean Beach. The Ocean Beach is a gazetted road so speed restrictions apply. Standard road rules apply when driving anywhere in the Coorong, including the laws for speed limits, drink driving, vehicle registration, drivers licences and seat belts.

Visitors are warned to be careful if driving on the beach, and only do so at low tide. Tides are unpredictable and can turn quickly. Visitors may only drive on the beach between the high and low water mark. Visitors must stay on designated tracks.

Off-road driving is the main challenge that park managers face. Off-road driving can damage precious Indigenous sites, disturb nesting birds, cause erosion and damage native vegetation.

To protect the hooded plover, the Ocean Beach track north of Tea Tree Crossing is closed to vehicles from 24 October to 24 December every year.

Fishing

Commercial fishers must have a licence. Recreational fishers must observe bag and size limits. Net fishers must have recreational licences. There is currently no recreational collection of cockles allowed in the Coorong. No fishing is allowed within 150 m of the barrages.

Fishing is not allowed in marine park sanctuary zones. Coorong Beach South and Coorong Beach North sanctuary zones border Coorong National Park.

The National Parks Code

Help protect your national parks:

- leave your pets at home
- take your rubbish with you
- observe fire restrictions, usually 1 November to 30 April (check the CFS Hotline on 1300 362 361)
- conserve native habitat by using liquid fuel or gas stoves
- camp only in designated areas
- respect geological, cultural and heritage sites
- keep our wildlife wild, do not feed or disturb animals, or remove native plants
- keep to defined vehicle tracks and walking trails
- be considerate of other park users.



Suggested activities

Consider the National Parks Code and think about why these particular rules are important. How could you encourage people to follow the code?

Investigate the impact of off-road driving on sand dunes, native vegetation and wildlife.

There are no bins in the park: design a sign to encourage people to take their rubbish with them.

Design a tour of the park.



Marine parks

South Australia's marine environment is under pressure from population growth, development and pollution. To help protect both our native species and the beautiful marine environment they call home, South Australia has created a system of marine parks as an investment in the state's future.

Both Encounter Marine Park and Upper South East Marine Park border Coorong National Park.

The Encounter Marine Park covers an area of approximately 3,119 km² and encompasses the waters off southern metropolitan Adelaide and the Fleurieu Peninsula, extending past the Murray Mouth to the Coorong coast. The park offers some of Australia's best-preserved ocean wilderness, from amazing dive sites, spectacular reefs to vitally important fish breeding and shelter areas.

The Upper South East Marine Park covers 906 km². Part of the iconic Coorong Beach system, the park is a vital meeting point for different marine animals that feed upon the region's nutrient-rich water from the Bonney Upwelling. The significant seagrass area also offers an important habitat for fish breeding and shelter.

Habitats of these marine parks include high energy beaches and dune systems, sandy seafloor habitats, and limestone reefs.

South Australia's only giant kelp forest is found in the sea off the Coorong. Giant kelp forests have national protection as endangered ecosystems and shelter a range of other marine life, including reef fish, sea snails, sea urchins, algae and crabs.



Sanctuary zones

A sanctuary zone is a specially designated area within a marine park for the conservation of all plants, fish, other animals and the habitats they rely on for survival. It is illegal to remove or harm plants, fish, other animals or habitats in a sanctuary zone, helping to ensure the conservation of our marine species.

Bonney Upwelling

The Bonney Upwelling is a marine phenomenon that occurs between Portland (Victoria) and Robe (SA), taking place from around November to May.

Spring winds shift to the south east and drive an ocean current to the north west along the coast, where the surface waters drift offshore. This 'shifting' water is replaced with cold nutrient rich water from Antarctica, where it "wells up" from the deep sea floor and onto the continental shelf, which is nearest to the coast here.

Sunlight converts the nutrients into food for a variety of marine species, and sea animal populations prosper.

[Marine parks in South Australia](#)

[Encounter Marine Park](#)

[Upper South East Marine Park](#)

Suggested activities

Consider the different users of the areas where marine parks have been declared. Debate their different points of view regarding the impacts of marine parks.

Investigate the history of marine parks in Australia and South Australia.

Design a citizen science program that involves a species in a marine park but doesn't involve getting in the water.



Prescribed burning

Prescribed (or planned) burning is the controlled use of fire for a particular area of landscape.

Prescribed burns are part of the government's fire management program, which aims to reduce fire fuel hazards by removing excess build-up of vegetation. This can help make bushfires easier to control, help prevent a bushfire spreading to residential areas and ultimately save lives and property.

Prescribed burning is also used for ecological reasons such as:

- Protecting and maintaining animal habitats: some species of native animals prefer regenerating or 'new' vegetation, while others like long unburnt habitat. Prescribed burning helps to manage the landscape so that there is a mix of habitats for all species.
- Assisting the regeneration of plant species and communities that are reliant on fire: many native plants depend on fire for regeneration. Some plants grow from seed germination following fire and some re-sprout buds from under their bark or roots.
- Providing conditions for improved biodiversity.

The Our Coorong, Our Coast project includes developing a fire program for controlling invasive shrubs in sedge lands in the southern Coorong.



Vegetation after a prescribed burn



Suggested activities

Explore the impact of fire on native plants and animals.

Learn about Aboriginal fire practices.

Cook on a campfire (permitted only on the Ocean Beach between high water mark and low water mark when there is no total fire ban).

Invite a fire management officer from the Department for Environment and Water to talk about prescribed burns.

[Fire management in South Australia](#)

[Fire science](#)



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Monitoring

Monitoring is an integral part of managing a park as it provides information that helps to inform decisions. It is also an important tool to measure the success of management actions and allows managers to track the condition of park values. A variety of monitoring programs can be undertaken, depending on park priorities, time of the year, aims of the monitoring and available resources. Sometimes particular monitoring programs continue for many years assessing change over time, and sometimes only for a very short period.

The table below shows some of the monitoring undertaken and when it takes place within the Coorong, Lower Lakes and Murray Mouth.

What is monitored?	By who?	When?
Lower Lakes threatened fish monitoring	University of Adelaide	November and March
Coorong and Lower Lakes bird census and habitat analysis	University of Adelaide	January
Lower Lakes aquatic vegetation monitoring	SARDI Aquatic Sciences	October and April
Lower Lakes monthly bird monitoring	Coorong Nature Tours	Monthly; ongoing
Coorong and Lower Lakes benthic invertebrate/mudflat monitoring	Flinders University	December/January
Coorong commercial fish monitoring	SARDI Aquatic Sciences	Ongoing
<i>Ruppia</i> monitoring	University of Adelaide	November to January
Barrage fishway monitoring	SARDI Aquatic Sciences	June/July

Citizen science

Anyone can contribute to environmental monitoring by becoming a citizen scientist. Citizen scientists are members of the community who take part in environmental monitoring, with their data being used by decision-makers to manage our natural resources.

[Citizen Science in the South East](#)

[Citizen science in the SA Murray-Darling Basin](#)

Suggested activities

Get involved in monitoring:

[FrogWatch SA](#)

[TurtleSAT](#)

[Echidna CSI](#)

[Goanna Watch](#)

[Fungimap](#)

[Birds in Backyards](#)

[Discovery Circle](#)

[Wild Pollinator Count](#)

Undertake [water quality monitoring](#) (borrow equipment from your local Natural Resources Centre).

Learn about environmental monitoring in the Coorong: what is measured, why and what have researchers learnt? How has the data been used by the managers of the Coorong?



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Flora of Coorong NP

A total of 353 plants (including 132 exotics and five listed as rare in South Australia) have been recorded in the Coorong, Lower Lakes and Murray Mouth region since 1975.

Coorong National Park has several plant species that are classified as rare at a state level including white correa, star spider-orchid, swamp honey-myrtle, pink gum, Manila grass and velvet daisy-bush. Kangaroo Island pomaderris is classified as vulnerable at a national and state level.

Plants of the Coorong can be split into three groups: terrestrial species (generally growing above the high water mark and intolerant of waterlogged and inundated conditions), amphibious species (adapted to wetting and drying cycles) and submerged species (require the presence of water to complete their life cycle).

Terrestrial vegetation on the Younghusband Peninsula is characterised by coastal colonisers such as spinifex, coastal daisy, coastal water and currant bush. The lagoon edges and the ephemeral lakes are characterised by salt marsh species and are fringed by tea trees. Mallee-grassland communities are widespread in the southern and mainland section of the park.

Introduced plants

Introduced plants are a major management problem. It is estimated that 30% of the vegetation on the Younghusband Peninsula is made up of introduced species including horehound, bridal creeper and African boxthorn.

Native species, particularly the amphibious and submerged species are threatened by changes in the quality and quantity of water in the Coorong.

Where historically aquatic plants dominated the South Lagoon, algae now dominates. The shift from plants to algae is speculated to be due to a combination of a reduced flooding of the mudflats in late spring and early summer and increased nutrient availability.

Ruppia tuberosa

Ruppia tuberosa is a key aquatic plant for the Coorong, as it is a food source for waterbirds and provides habitat and food for fish and other species.

Ruppia tuberosa was once widespread in the South Lagoon, with *Ruppia* beds occupying more than 1500 ha. The Millennium Drought resulted in the rapid decline of *Ruppia*.

Today, water quality in the Coorong has improved and conditions suitable for *Ruppia* growth have returned. However due to the severely exhausted seed bank, *Ruppia* populations have not naturally returned on a large scale. The [Ruppia Translocation Project](#) enables *Ruppia* seeds to be collected and translocated to the South Lagoon.

Suggested activities

Conduct experiments to learn how changes in water salinity affect plants.

Learn about different Coorong plants: their structure, how they germinate, tolerance to salinity, etc.

Propagate bush foods.

Explore how vegetation has an important role in sustaining the Coorong environment.

Compare the features and requirements of terrestrial, amphibious and submerged plants.

Identify plant species in the park.

[Wetlands plants identification guide](#)

[Coorong National Park flora list](#)

[Aboriginal bush foods identification cards](#)

[CLLMM Recovery Project's revegetation program](#)

Common Native Plants of the Coorong Region by Neville Bonney

It's Blue with Five Petals by Ann Prescott

Native Trees and Shrubs of South-Eastern Australia by Noel Costermans



Fauna of Coorong NP

Birds

Some 85 species of waterbirds have been recorded in the region. While bird numbers fluctuate both seasonally and annually, the region is important for migratory waders, principally red-necked stilts, sharp-tailed sandpipers and curlew sandpipers. These species and other migratory waders are protected under the JAMBA and CAMBA agreements (migratory bird agreements with Japan and China). Habitats, including the Coorong, on their migratory flyway between Australia and their northern breeding grounds are being conserved under the East Asian-Australasian Shorebird Reserve Network.

Resident waders include stilts, avocets, plovers, lapwings and oystercatchers. Ducks include, at times, in excess of 50,000 grey teal and large numbers of Australian shelducks. There are also black swans and about 2000 Cape Barren geese during the summer months. The rare fairy tern and the endangered little tern nest on islands in the Coorong. A number of other species nest in the area including pelicans, swans and ibis. During a good breeding season 3000 to 4000 pelicans gather on the islands that make up the pelican nurseries.

The biggest threat to migratory wader birds is human impact on wetland areas. Australia has lost nearly half of its wetlands in the last 200 years. Fishing lines and hooks, discarded nets, 4WDs along coastal areas and pollution all negatively affect waders and their habitat.

Suggested activities

Research the migratory birds that visit the Coorong: where do they come from and how do they survive their long journeys?

Read Rusty Loses His Loop and complete activities from the [teacher resource pack](#).

Watch or read Storm Boy and then research pelicans: learn about their morphology, breeding, habitats etc.

Birdwatch in Coorong National Park. Try Jack Point.

Compare the beaks and feet/claws of different birds and make predictions about what they might eat and where they might live.

Pelicans

In the Storm Boy novella and movies, the main character raises three pelicans that he rescues as chicks.

Pelicans form breeding colonies on secluded islands or shorelines where they undertake unique courtship rituals. The males try to win the females' affection by swinging their bills from side to side or throwing small objects such as sticks and fish in the air.

Pelican breeding numbers are a good indicator as to the health of the Coorong. Recently, researchers have used drones to monitor pelican breeding in Coorong National Park.



[Migratory wader birds of the Coorong and Lower Lakes](#)

[Waterbirds of the Coorong, Lower Lakes and Murray Mouth](#)

[Wetland bird identification guide](#)

[Wetlands birds ID chart](#)

[Wetland birds teacher resource pack](#)

[Birdlife Australia shorebirds identification booklet](#)

[Coorong, Lower Lakes & Murray Mouth Waterbird Diversity and Distribution](#)

[More information about migratory birds](#)

The Australian Bird Guide by Peter Menkhorst et al.

Field Guide to Australian Birds by Michael Morcombe

The Field Guide to the Birds of Australia by Graham Pizzey and Frank Knight



Mammals

Coorong National Park is home to several mammal species including seals and sea-lions, echidnas, wombats, possums, bats, kangaroos, wallabies and native rats. Some species are listed as rare or vulnerable at a state level. The Australian sea-lion is listed as vulnerable at a national level.

There are also introduced species such as cats, foxes, hares, deer, rabbits and rats.

Reptiles

The Coorong is home to several reptile species, particularly lizards and snakes. The heath goanna is listed as vulnerable at a state level.

Amphibians

Frogs are an integral element within food webs in the Coorong, contributing to limiting algae growth, insect consumption and acting as prey for many species including herons, egrets and bitterns.

There are several species of frogs in Coorong National Park, the populations of which fluctuate in response to changing environmental conditions. Generally, frog distribution is limited by salinity and water availability. The most widespread species in the region is the common froglet. The banjo frog and the spotted marsh frog are present in large numbers at times.

Suggested activities

Identify frogs using the [FrogWatch SA](#) app.

Borrow the threatened species kit or fish kit from the Murray Bridge Natural Resources Centre.

Make your own [seasonal calendar](#) for the Coorong: show when plants flower, animals breed, birds migrate, water quality changes.

Learn about frog life cycles (borrow the frog kit from the Murray Bridge Natural Resources Centre).

Create a food web using species from the Coorong. Predict what would happen if certain species disappeared.

Identify features of animals that help them survive in this environment e.g. adaptations to water that is four times saltier than the sea.

Visit the park and look for evidence of animals – tracks, scats, nests, burrows, bones – and identify the creatures.

Long-nosed fur seals

Long-nosed fur seals (*Arctocephalus forsteri*) are native to Australia and New Zealand. They are found all along the South Australian coast, where they come into frequent contact with fishers, water users and beachgoers.

Long-nosed fur seals are inquisitive creatures and they will often explore new territory. Reports of fur seals appearing in the Coorong began in about 2007.

Fishers and the Traditional Owners of the Lower Murray, Lakes and Coorong and surrounding areas, the Ngarrindjeri, have both been impacted by the arrival of seals in the Coorong.

The state government has invested funding for research into fishing gear, methods and deterrent devices in an effort to reduce impacts of long-nosed fur seals on the local fishing industry.

[More information about seals](#)



Long-nosed fur seal (By Bernard Spragg. NZ from Christchurch, New Zealand)

[Froggy futures teacher resource pack](#)

[Frog ID key](#)

Get involved in citizen science:

[FrogWatch SA](#) or [Echidna CSI](#)

Tracks, Scats and Other Traces: A Field Guide to Australian Mammals by Barbara Triggs

There are various field guides for mammals, reptiles and frogs



Fish

Recent research reports that 93 fish species are found within the Coorong. Altered river flow, salinity, connectivity, altered land use, harvesting and interactions with alien species all impact native fish populations. Introduced species include European carp, redfin perch and mosquito fish.

The salinity levels of the lagoons dictate which species are found where. There are some species, such as the congolli, that move between the freshwater and estuarine environments throughout their life cycle. [Fishways](#) have been built at the barrages to allow this movement to occur.

Macroinvertebrates

Macroinvertebrates are animals that lack a 'backbone' and can be seen with the naked eye. Macroinvertebrates are susceptible to catastrophic damage whenever flows cease to connect the river, Lower Lakes, Coorong and sea for extended periods of time.

Macroinvertebrates are found in both the freshwater and saline waters of the Coorong. Over 60 species of macroinvertebrates have been recorded from the Murray Mouth and Coorong.

Bristleworms and crustaceans are the most numerous in species, followed by insects and molluscs. Forty species are found in the North Lagoon and only 22 species (mostly insect larvae) in the South Lagoon.

Macroinvertebrates are one of the most important food sources for fish and shorebirds. Because of their position in food webs, a change in their abundance can have big flow-on effects to other animals.

Because macroinvertebrates are highly susceptible to environmental conditions, they are used as 'bio-indicators': they alert people to changes in the environment.

Suggested activities

Learn about congolli and the impact of drought on their breeding habits https://www.youtube.com/watch?v=UP8rUlfYY_o or https://www.youtube.com/watch?v=Q_uUMfgsCCo

Create keys to identify different animals or plants found in the Coorong.

Identify macroinvertebrates and calculate a signal score. For charts contact cindy.kakoschke@sa.gov.au

Borrow the macroinvertebrate kit, fish kit or fishing game from the Murray Bridge Natural Resources Centre.



Congolli (From *Fishes of Australia*, <http://fishesofaustralia.net.au/home/species/403>)



Yelloweye mullet (By StellaMcQ - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=56822863>)

[Macroinvertebrate ID chart](#) (best for early/primary years).

[Macroinvertebrate ID Key](#) (for middle/high school years).

[The Waterbug app](#)

The Waterbug Book by John Gooderham and Edward Tsyrlin

[Fish identification chart](#)

[Freshwater fish information](#)

Economic values

Following European settlement, fishing has provided an important food resource for a growing human population. Commercial, recreational and Indigenous fisheries continue to be important in this region and to complement agriculture, viticulture, manufacturing and tourism in supporting the regional population.

The Coorong and the marine parks are home to a significant commercial fishing industry. In the Murray estuary and Coorong lagoons, large mesh gill nets are used to target mulloway, black bream and greenback flounder. Small mesh gill nets are used to target yelloweye mullet. In the surf zone adjacent the Murray Mouth, a specialised mesh gill net, known as a 'swinger net' is drifted out from the shore to target mulloway.

Tourism is an important economic contributor to the region. Key activities include recreational and charter fishing, charter sailing and diving, marine mammal watching, sightseeing cruises and four-wheel driving.

Suggested activities

Learn about the different industries that rely on the Coorong (fishing, tourism, etc). Debate issues such as the presence of seals from different perspectives.

Find out how commercial fishers ensure their industry is sustainable (both economically and environmentally).

Identify the different resources available in the park and suggest how people might use them.

Interview a tour operator and find out how they started their business and how changes in the Coorong affect their business.



Image from Fish&Co,
<https://www.fishandco.com.au/>



Image from Spirit of the Coorong,
<https://www.spiritofthecorong.com.au/>



Threats to the Coorong

At the heart of nearly all impacts on the Coorong ecosystem is a decrease in quality and quantity of water flows. This decrease is a result of a number of factors: over-allocation, South East drainage, drought, climate change and sea level rise.

Over-allocation

Water use in the Murray-Darling Basin has increased five-fold in less than a century. The problems caused by over-allocation have been exacerbated by severe drought and the early impacts of climate change. There is insufficient water to maintain the Coorong's natural balance and ecosystems, resulting in a marked decline in its ecological health.

A lack of water passing through the barrages has resulted in sand pumping to maintain an open Murray Mouth as well as activities to manage acid sulfate soils (see the next page).

South East drainage

Before European settlement the south-east of South Australia featured extensive wetlands. Much of the water in the South East flowed along natural flow paths in a north-westerly direction to ultimately enter the Coorong's South Lagoon.

From the 1860s onwards an extensive network of drains was constructed through the South East to alleviate flooding and make land more suitable for agriculture. The effect of this solution was to deny the Coorong freshwater inflows from the South East, which led to an increase in salinity levels in the South Lagoon.

Work is now being done to reinstate some of the flows to the southern lagoon through the [South East Flows Restoration Project](#).

Drought and climate change

Drought is a natural phenomenon in the Murray-Darling Basin. The Millennium Drought resulted in the longest period of low flows since the river was regulated by weirs and locks.

Climate science predicts that south-eastern Australia is likely to become drier and hotter in the future, leading to below-average flows into the Coorong.

Suggested activities

Explore the impact of the Millennium Drought on living and non-living aspects of the environment.

Come up with ideas on how the plants and animals of the Coorong can be helped to cope with threats such as introduced species, climate change or habitat clearance.

Learn about water allocations: who uses River Murray water and how much do they use? How does the government determine how much water people can use?

How can you conserve water at school and home? Communicate your ideas with other students, your family and the wider community.

How much water is available for human use? A great introductory activity that demonstrates how much water is available on Earth for human use. For pdf copy contact cindy.kakoschke@sa.gov.au

Find out what is being done to make the Coorong more resilient to drought and climate change.

Create a food web using species from the Coorong. Predict what would happen if certain species disappeared.



Image from <http://theconversation.com/as-drought-looms-the-murray-darling-is-in-much-healthier-shape-just-dont-get-complacent-50063>

[Water allocation planning](#)

[Water licences and permits](#)

[Climate change](#)



Salinity

Most plants and animals have a threshold for the amount of salt they can tolerate in the water or soil. Decreased flows as a result of the activities listed above can lead to an increase in salinity levels in the Coorong. This changes the diversity of plants in the ecosystem, which in turn affects the animals (particularly birds) that rely on these plants for their food source and shelter.

Turbidity

The lakes have become more turbid ('dirty' with suspended matter) over time. This is largely a result of more water coming from the Darling River which has more fine clays suspended in it and because of the presence of European carp.

River bank erosion, often accelerated by excessive grazing also contributes to turbidity.

Turbid water reduces aquatic plant growth by limiting light. This leads to a loss of invertebrate species that rely on aquatic plants, and in turn to the loss of birds and fish that rely on the plants and invertebrates. The ecosystem becomes dominated by microscopic species, principally algae, and filter feeders like carp that can live in the turbid conditions. Some algae species are toxic, rendering the water unfit for consumption and affecting native animals.

Suggested activities

Research [acid sulfate soils](#) – causes, impacts, management.

Investigate the impact of [high salinity](#) on plants and animals and find out what is being done to manage it.

Undertake [water quality testing](#) to measure salinity and turbidity. Compare results from different sites and times. Borrow a water quality testing kit from your local Natural Resources Centre.

Acid sulfate soils

Acid sulfate soils occur naturally in coastal and fresh water areas, and are found in wetlands and floodplains along the River Murray.

While covered by water, acid sulfate soils are a harmless, normal part of the environment. But if water levels drop and the soils are exposed to air they can react with oxygen to form sulfuric acid (the same acid as in a car battery) and release metals such as manganese and aluminium.

When the exposed soils are rewetted, by rainfall or increased river flow, the acid and metals can be transported and negatively affect large areas.

Natural cycles of drying and flooding once flushed the small amounts of acid that occasionally formed. Controlling the River Murray's flow with structures such as weirs and locks has resulted in less natural cycles and a build-up of acid sulfate soils in some areas.

When water levels in the Lower Lakes reached unprecedented lows during the Millennium Drought, more than 20,000 hectares of acid sulfate soils became exposed. The consequences to local communities included decreased water quality, health issues for people and livestock, dust storms, sulfuric odours, ecological degradation and fish kills.



Inspecting an area affected by acid sulfate soils

Vegetation clearance

Clearance of native vegetation throughout the region and particularly around the edges of the Coorong and Lower Lakes has resulted in a more windswept environment with more wave action, contributing to water turbidity. It has also reduced shelter for birds and the nest sites available for many species.

Conflicts of use

The Coorong supports a large commercial and recreational fishery. The region is growing as a tourist destination. These activities could potentially conflict with conservation purposes if they are not managed appropriately. Many conflicts occur because people are unaware that their activity is harmful to the environment or to other users. Increased education and interpretation can address some of these conflicts.

Boating

Boats that emit a lot of noise have impacts on birds and this increases significantly when the vessels move fast and in shallow water. Bird disturbance disrupts feeding and resting. For birds trying to accumulate fat reserves for long migration flights, this disturbance could be critical and could mean they do not reach their destination.

Boats of any kind near nesting colonies usually provoke a response which involves birds leaving nests in a defensive response, so nests are open to predation by other birds or predators.

Fragmented management

There are many branches in several government departments which have interests or responsibilities in the region. There are also three local government councils and many non-government bodies. When many people and organisations are each working in their own areas of responsibility without regard for the whole, it can lead to situations where it is sometimes unclear where responsibility lies.

Tourism

Tourism activity in the region is increasing. The proximity of the region to Adelaide and the scenic qualities of the area attract a range of visitors from intrastate, interstate and overseas.

Poorly managed developments could lower the attractiveness and sense of wilderness that the Coorong currently conveys.

Visitor facilities can also alienate habitat, creating zones of disturbance and general degradation. Sensitive environments can be adversely impacted by visitor activities and some wildlife can be easily disturbed. Regular disturbance of some bird species may cause them to desert habitats or prevent adequate feeding time to survive necessary migration flights.

Due to the reliance of the tourism industry on the natural values of the area, most tourism operators are themselves keen to manage any potential impacts.



Suggested activities

Contact one of the Coorong tourism operators and ask them how they ensure their operation is sustainable.

Choose different user groups and discuss why the Coorong is important for them and how its resources can be shared in a fair and sustainable way.

Get involved in revegetation works (on park or in your local area).



Introduced plants and animals

Pest animals are species that occur outside of their natural range. Pest animals can have a major impact on native animals, through predation, competing for food or by damaging habitat.

Except in rare circumstances such as on small islands, it is generally not possible to eradicate feral populations; they therefore have to be managed at tolerable levels.

The most significant pest animal in the Coorong is the fox. Foxes prey on birds and their eggs. Deer also disturb nesting birds, bring in weeds, foul fresh water soaks and overgraze native vegetation.

Pest plants are flora species that occur outside of their natural habitat and have the potential to cause significant adverse economic, environmental and social impacts. Pest plants are also referred to as weeds. They invade natural areas, compete with native plants and can reduce habitat, shelter and food for native fauna. Weeds can also clog up waterways and affect water quality, as well as impact on coastal dune environments.

In the Coorong, the main weeds are African boxthorn, spiny rush and caltrop.

Suggested activities

Research an introduced plant or animal: its history, impacts, controls.

Sort pest animals into predators and competitors. What would happen to food webs if they were removed?

Research [aquatic weeds and pests](#).

Conduct a habitat assessment and then take steps to improve habitat e.g. make and install nesting boxes.



Foxes have a significant impact on ground nesting birds such as hooded plovers.



African boxthorn provides a haven for feral animals.

Isolation

Many nearby wetlands in the Upper South East, along the River Murray, in the Bremer and Angas catchments, the local coast and in the general Mount Lofty Ranges and Adelaide plains region have now been drained, degraded or converted to other uses. Thus the Coorong and Lower Lakes are now more isolated than previously. In isolated habitats, species rely on relatively few resources and their populations are vulnerable to even small environmental events such as floods, droughts and disturbance. If a local population dies out, it may not be replaced by recolonisation if the nearest population is too far away.

Coorong restoration works

South East Flows Restoration Project

The South East Flows Restoration Project (SEFRP) is a \$60m investment made by the South Australian Government and the Australian Government to assist salinity management in the South Lagoon of the Coorong, enhance flows to wetlands in the Upper South East and reduce drainage outflow at Kingston beach.

Historically, quantities of freshwater flowed into the South Lagoon from the South East and this source of freshwater has been reduced by drainage works over the past 150 years.

Reduced inflows have raised salinity in the Coorong South Lagoon to a hypersaline range, making it too salty to support important species.

By restoring inflows from the South East, the SEFRP seeks to assist maintaining salinity in the South Lagoon within the target range and prevent ecological degradation during periods of low flows from the River Murray.

The SEFRP involves constructing a new flow path to connect existing elements of the South East Drainage Network so that water flows into the South Lagoon.



A structure and fishway have been constructed to join the South East drainage system to the Coorong's South Lagoon at Salt Creek.

Suggested activities

Visit some of the SEFRP sites with a project officer to learn how the structures are constructed.

Construct a model fishway and demonstrate how it works to other students.

Investigate how stakeholders and the community are engaged in large-scale environmental projects.

[South East Flows Restoration Project](#)



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CLLMM Recovery Project

There have been record low river flows to the Coorong, Lower Lakes and Murray Mouth (CLLMM) region due to drought and over-allocation across the Murray-Darling Basin. A range of environmental and community issues – such as acid sulfate soils, salinity and the invasion of pest plants and animals – now affect the region.

Flows have recently increased, resulting in higher water levels and flow reaching the Coorong. However many issues affecting the region remain. If they are not remedied or managed properly there could be serious and irreversible environmental impacts on the wetlands.

The CLLMM Recovery Project was comprised of 20 management actions aimed at restoring habitats, restoring vegetation, managing acid sulfate soils, engaging with the community, and monitoring the environment.

The Living Murray Project

The Living Murray (TLM) Program was established in 2002 to improve the health of six designated sites including the Lower Lakes, Coorong and Murray Mouth. The program is continuing to return water to the environment through purpose built infrastructure that will help deliver water to the icon sites and improve the health of the River Murray.

It was clear a water allocation specifically for the environment was needed in response to a steady decline in natural river flow as a result of over extraction of water, increased river regulation and diversion and a changing climate. The concept of '[environmental water](#)' was developed to reverse the decline.

The Living Murray is a joint initiative funded by the New South Wales, Victorian, South Australian, Australian Capital Territory and Commonwealth governments, coordinated by the Murray–Darling Basin Authority.

CLLMM Recovery actions

Restoring habitats:

- Meningie foreshore wetland
- Milang foreshore habitat restoration project
- Lake Albert scoping study
- Construction of fishways
- Critical fish habitat
- [South East Flows Restoration](#)
- Coorong Investigations Project

Restoring vegetation:

- [Vegetation program](#)
- [Protecting unique plants and animals](#)
- [Managing aquatic weeds and pests](#)
- Ruppia Translocation Program (restoring the aquatic plant by collecting Ruppia seeds and planting them in the Coorong South Lagoon)

Other actions:

- [Managing acid sulfate soils](#)
- Community engagement and communication
- Ngarrindjeri partnerships
- Monitoring and adaptive management framework
- Research priorities

Suggested activities

Investigate the importance of environmental flows. Who is responsible for ensuring the environment gets the water it needs?

Choose one of the CLLMM projects and investigate what was done and what the impacts have been to date.

[CLLMM Recovery Project](#)

[The Living Murray Project](#)

[Coorong and Lakes Ramsar Wetland Portal](#)



Future of the Coorong

It is important that work to restore a healthy Coorong is based on the latest science, as well as the experience and knowledge of Traditional Owners and the local community.

A [Coorong Summit Summary Report](#) and [Goyder Expert Panel Report](#) were published in 2018.

The reports recommend a series of short, medium and long-term actions to restore the Coorong. These include:

- Establishing refuge wetlands for migratory waterbirds while the South Lagoon is recovering
- Optimising the benefits of water from the River Murray, Southern Ocean and the Upper South East
- Managing nutrients to control algae growth
- Determining the risks posed by climate change and mitigation needed.

Our Coorong, Our Coast

Over \$3.25 million will be invested over five years to improve fragile ecosystems in the Coorong to support bird populations.

Key elements of this project are:

- Action plans for important migratory shorebird sites and the Murray Mouth seabird site
- A fire program for controlling invasive shrubs
- Revegetation plans to buffer the Coorong Ramsar site and provide threatened species habitat
- A monitoring program for saltmarsh of the Coorong
- A cat control program
- Implementing a weed control program
- Undertaking a herbivore threat abatement program to protect Temperate Coastal Saltmarsh, malleefowl habitat and the ecological character
- Implementing a fox control program to protect hooded plover and malleefowl from predation.

[Our Coorong, Our Coast](#) is supported by the South East Natural Resource Management Board through funding from the Australian Government's National Landcare Program, in partnership with Friends of Shorebirds South East and Birdlife Australia.

Coorong Summit Summary Report vision

"We want the Coorong to return to being a beautiful landscape teeming with abundant and diverse populations of waterbirds, fish and plants. We want the Coorong to support the values of the Traditional Ngarrindjeri Owners and be an icon for South Australia and its visitors through supporting a strong tourism industry. We want management of the Coorong to not be rigid and must allow for variability in environmental and river operations conditions. It must also be managed at an ecosystem scale including the Murray Mouth, Lower Lakes and surrounding wetlands and more broadly and importantly within the Murray-Darling Basin."



Healthy Coorong, Healthy Basin Action Plan

The Healthy Coorong, Healthy Basin Action Plan is being finalised and will detail the on-ground works, management tools, research and infrastructure activities to get the Coorong back on track for a healthy future. The action plan is due mid-2019.

[Healthy Coorong, Healthy Basin Action Plan](#)
[Project Coorong](#)



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What can you do?

There are many ways to get involved with looking after our environment, from joining a community group or not-for-profit organisation, participating at one-off events or getting involved in hands-on activities such as revegetation or citizen science.

Get involved in a local bird group, helping with:

- shorebird banding and surveys
- bird observations and monitoring
- protecting nesting hooded plovers.

Participate in or run your own beach clean-up. Waste and rubbish is one major risk to our marine species.

If you visit a park:

- take your rubbish home with you! Rubbish not only destroys the natural beauty of these areas, it also provides a hazard to native animals.
- leave your pets at home: pets and wildlife don't mix!
- stay on trails and tracks. This helps minimise human impacts on native vegetation and animal habitat.

[Friends of the Coorong](#) is a community based group of volunteers who work in genuine partnership with the Department for Environment and Water (DEW) and in accordance with the National Parks and Wildlife Act.

The Friends group is dedicated to the protection and enhancement of the natural and cultural heritage in the park and adjacent reserves.

Their key roles are:

- to provide voluntary assistance to protect and enhance Coorong National Park, wildlife, cultural sites and cultural heritage in liaison with DEW
- to provide cultural and social opportunities and activities for members and the general public
- to raise funds for projects which benefit Coorong National Park
- to build upon community responsibility through awareness, support and enjoyment of the Coorong.

Be careful what you pour down the sink and drain – look after our water quality by keeping our waterways clean and pollutant free.



Suggested activities

Visit Coorong National Park!

Invite the Friends of Coorong to visit your school and interview them about their work.

Meet with the Friends of Coorong on park and help with their projects.

Contribute to citizen science by undertaking monitoring.

Get involved in a revegetation project.

Create a film showing why the Coorong is such a special place.

Educate others on how to care for the Coorong and the environment.

Take part in a [microplastic survey](#).

[More information about volunteering in the South East](#)

[More information about volunteering in the SA Murray-Darling Basin](#)

[More information about citizen science in the SA Murray-Darling Basin](#)

[Friends of the Coorong](#)



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Sites to visit

Coorong National Park has a range of sites to visit with students. Depending on your focus, different locations may provide more suitable experiences.

Chinamans Well

A walk around the intricate stone well, associated quarries and eating house ruins provides an insight into the history of the area when the Chinese passed through the Coorong during the gold rush era.

Godfreys Landing

Accessible by boat from Goolwa and Hindmarsh Island, Godfreys Landing offers a fascinating walk through the sand dunes of the Younghusband Peninsula to the ocean beach near the Murray Mouth. Storm Boy (2019 movie) scenes were filmed here.

Jack Point

Home of the largest breeding colony of the Australian pelican, Jack Point Observatory allows visitors to observe numerous birds flying back and forth to visit and breed on the nearby islands. Don't forget your binoculars! August to February is pelican breeding season.

Parnka Point

Parnka Point or 'Hells Gate' is the narrowest point between the northern and southern Coorong lagoon. It is noted for excellent views up and down the lagoon, and wading birds are commonly seen fossicking in the shallow and sheltered bays nearby.

Pelican Point

Pelican Point offers a great vantage point to see some of the wide variety of birdlife in the park. It is also where Lake Alexandrina enters the Coorong through the Tauwitchere barrage. There is no public access to the barrage.

Overnight camps

There are eleven campgrounds located throughout the park, as well as beach camp sites. Campsites must be booked prior to arrival to the park. Book online to reserve your campsite up to 12 months in advance.

The Nukan Kungun Hike (two days one way, 25 km) is great for school groups. It starts from Salt Creek and links some of the more popular trails in the park, concluding at the 42 Mile Crossing campground. From the campground you may continue over the sand dunes to the ocean beach, a further 1.3 km. Secluded bush campsites are dotted along the trail.

Salt Creek

The longest walking trail in the Coorong (27 km) starts at Salt Creek and extends south to the 42 Mile Crossing. This trail links four other interesting but shorter walks focusing on wildlife, scenery, sand dune systems and the early settlement of the Chinese.

The Ngrugie Ngoppun Walk (2.5 km) and Lakes Nature Trail Walk (3 km) are particularly good for school groups.

42 Mile Crossing

42 Mile Crossing is the closest point for 2WD vehicles to access the beach. A pleasant 20 minute walk through the sand dunes along an easily accessible walking trail from the campground rewards you with the sight and sound of the endless Southern Ocean waves rolling onto the beach.



References

Natural History and the Coorong, Lower Lakes and Murray Mouth Region (Yarluwar-Ruwe) <https://www.adelaide.edu.au/press/titles/natural-history-cllmm/>

At the end of the river: the Coorong and Lower Lakes (2010) by David Paton

Park information

Coorong National Park https://www.parks.sa.gov.au/find-a-park/Browse_by_region/Limestone_Coast/coorong-national-park

Coorong National Park Management Plan https://www.environment.sa.gov.au/files/sharedassets/public/park_management/parks_pdfs_coorong_np_mp.pdf

Encounter Marine Park <https://www.environment.sa.gov.au/marineparks/find-a-park/kangaroo-island/encounter>

Upper South East Marine Park <https://www.environment.sa.gov.au/marineparks/find-a-park/south-east/upper-south-east>

Ramsar

Coorong and Lakes Alexandrina and Albert Ramsar Management Plan

<https://www.environment.sa.gov.au/topics/river-murray/improving-river-health/ramsar-management-plan-coorong-lower-lakes>

Australian Wetlands Database - Coorong, Lakes Alexandrina and Albert Wetland <http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=25>

Biodiversity

Migratory birds <http://www.environment.gov.au/biodiversity/migratory-species/migratory-birds>

Birdlife Australia <https://birdlife.org.au/>

Coorong bioregion fact sheet https://www.naturalresources.sa.gov.au/files/sharedassets/adelaide_and_mt_lofty_ranges/plants_and_animals/bioregion_factsheets/coorong-bioregion-plus-bioicons-fact.pdf

Management and recovery projects

Coorong, Lower Lakes and Murray Mouth Recovery Project <https://www.environment.sa.gov.au/topics/river-murray/improving-river-health/coorong-lower-lakes-and-murray-mouth>

A long term plan for the Coorong, Lower Lakes and Murray Mouth (2010) https://www.environment.sa.gov.au/managing-natural-resources/river-murray/river-restoration-and-environmental-water/Coorong_Lower_Lakes_Murray_Mouth/long-term-recovery-plan

Murray-Darling Basin Authority <https://www.mdba.gov.au/>

Murray-Darling Basin Plan <https://www.mdba.gov.au/basin-plan-roll-out>

Ngarrindjeri

Ngarrindjeri Regional Authority <https://www.ngarrindjeri.org.au/>



Curriculum links

The activities suggested in this teacher resource pack are relevant to all year levels. The activities are most relevant to the areas of science and the humanities and social sciences (HASS).

Teachers are advised to consult the [Australian Curriculum](#) and curriculum outlines relevant to their state or territory.

Teachers should direct students to complete tasks that are subject-relevant and age-appropriate. The vocabulary used to express some questions and activities will need to be adapted to suit.

Science

The Australian Curriculum: Science provides opportunities for students to develop an understanding of important science concepts and processes, the practices used to develop scientific knowledge, of science's contribution to our culture and society, and its applications in our lives. The curriculum supports students to develop the scientific knowledge, understandings and skills to make informed decisions about local, national and global issues and to participate, if they so wish, in science-related careers.

The activities within this teacher resource pack link with the biological sciences sub-strand in particular and develop students' science inquiry skills.

Humanities and social sciences (HASS)

The Australian Curriculum: Humanities and Social Sciences plays an important role in harnessing students' curiosity and imagination about the world they live in and empowers them to actively shape their lives; make reflective, informed decisions; value their belonging in a diverse and dynamic society; and positively contribute locally, nationally, regionally and globally.

The activities within this teacher resource pack enable students to develop a range of skills including questioning, researching, analysing, evaluating and reflecting, and communicating. Students apply these skills to investigate events, developments, issues and phenomena, both historical and contemporary.

Outdoor learning

The [outdoor learning connection](#) provides a framework for students to experience guided, integrated learning across the curriculum in natural environments. Students have the opportunity to gain unique and specific benefits from outdoor learning.

A visit to Coorong National Park allows students to develop skills and understandings while valuing a positive relationship with natural environments and promoting their sustainable use.

Storm Boy movie (2019) study guide

The Australian Teachers of Media (ATOM) have published a [study guide](#) for the new Storm Boy movie designed for students in Years 3-9. The activities in the guide link with English, geography and media arts.

Cross-curriculum priorities

This teacher resource pack is a relevant resource to address the cross-curriculum priorities of Aboriginal and Torres Strait Islander Histories and Cultures and Sustainability.

The Aboriginal and Torres Strait Islander Histories and Cultures priority provides opportunities for students to deepen their knowledge of Australia by engaging with the world's oldest continuous living cultures. Through the Australian Curriculum, students will understand that contemporary Aboriginal and Torres Strait Islander communities are strong, resilient, rich and diverse.

The Sustainability priority enables students to develop the knowledge, skills, values and world views necessary to contribute to more sustainable patterns of living.



Curriculum links

	Year	Content description
Science	F	Living things have basic needs, including food and water (ACSSU002) Daily and seasonal changes in our environment affect everyday life (ACSSU004)
	Year 1	Living things have a variety of external features (ACSSU017) Living things live in different places where their needs are met (ACSSU211) Observable changes occur in the sky and landscape (ACSSU019)
	Year 2	Living things grow, change and have offspring similar to themselves (ACSSU030) Earth's resources are used in a variety of ways (ACSSU032)
	Year 3	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)
	Year 4	Living things have life cycles (ACSSU072) Living things depend on each other and the environment to survive (ACSSU073) Natural and processed materials have a range of physical properties that can influence their use (ACSSU074) Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)
	Year 5	Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)
	Year 6	The growth and survival of living things are affected by physical conditions of their environment (ACSSU094) Sudden geological changes and extreme weather events can affect Earth's surface (ACSSU096)
	Year 7	Classification helps organise the diverse group of organisms (ACSSU111) Interactions between organisms, including the effects of human activities can be represented by food chains and food webs (ACSSU112) Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable (ACSSU116)
	Year 8	Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)
	Year 9	Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment (ACSSU175) Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176) Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer (ACSSU179)
	Year 10	The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185) Different types of chemical reactions are used to produce a range of products and can occur at different rates (ACSSU187) Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189)



Curriculum links

Year	Content description
F	<p>The representation of the location of places and their features on simple maps and models (ACHASSK014)</p> <p>The Aboriginal or Torres Strait Islander Country/Place on which the school is located and why Country/Place is important to Aboriginal and Torres Strait Islander Peoples (ACHASSK016)</p> <p>The reasons why some places are special to people, and how they can be looked after (ACHASSK017)</p> <p>Compare objects from the past with those from the present and consider how places have changed over time (ACHASSI006)</p>
Year 1	<p>The natural, managed and constructed features of places, their location, how they change and how they can be cared for (ACHASSK031)</p> <p>The weather and seasons of places and the ways in which different cultural groups, including Aboriginal and Torres Strait Islander Peoples, describe them (ACHASSK032)</p> <p>Activities in the local place and reasons for their location (ACHASSK033)</p>
Year 2	<p>The history of a significant person, building, site and/or part of the natural environment in the local community and what it reveals about the past (ACHASSK044)</p> <p>The idea that places are parts of Earth's surface that have been named by people, and how places can be defined at a variety of scales (ACHASSK048)</p> <p>The ways in which Aboriginal and Torres Strait Islander Peoples maintain special connections to particular Country/Place (ACHASSK049)</p> <p>The connections of people in Australia to people in other places in Australia and across the world (ACHASSK050)</p>
Year 3	<p>The importance of Country/Place to Aboriginal and/or Torres Strait Islander Peoples who belong to a local area (ACHASSK062)</p> <p>How the community has changed and remained the same over time and the role that people of diverse backgrounds have played in the development and character of the local community (ACHASSK063)</p> <p>The representation of Australia as states and territories and as Countries/Places of Aboriginal and Torres Strait Islander Peoples; and major places in Australia, both natural and human (ACHASSK066)</p> <p>Who makes rules, why rules are important and the consequences of rules not being followed (ACHASSK071)</p> <p>Why people participate within communities and how students can actively participate and contribute (ACHASSK072)</p>
Year 4	<p>The diversity of Australia's first peoples and the long and continuous connection of Aboriginal and Torres Strait Islander Peoples to Country/Place (land, sea, waterways and skies) (ACHASSK083)</p> <p>The importance of environments, including natural vegetation, to animals and people (ACHASSK088)</p> <p>The custodial responsibility Aboriginal and Torres Strait Islander Peoples have for Country/Place, and how this influences views about sustainability (ACHASSK089)</p> <p>The use and management of natural resources and waste, and the different views on how to do this sustainably (ACHASSK090)</p>
Year 5	<p>The nature of convict or colonial presence, including the factors that influenced patterns of development, aspects of the daily life of the inhabitants (including Aboriginal Peoples and Torres Strait Islander Peoples) and how the environment changed (ACHASSK107)</p> <p>The impact of a significant development or event on an Australian colony (ACHASSK108)</p> <p>The influence of people, including Aboriginal and Torres Strait Islander Peoples, on the environmental characteristics of Australian places (ACHASSK112)</p> <p>The environmental and human influences on the location and characteristics of a place and the management of spaces within them (ACHASSK113)</p> <p>The impact of bushfires or floods on environments and communities, and how people can respond (ACHASSK114)</p> <p>How people with shared beliefs and values work together to achieve a civic goal (ACHASSK118)</p> <p>Types of (natural, human,) and the ways societies use them to satisfy the and of present and future generations (ACHASSK120)</p>
Year 6	<p>The roles and responsibilities of Australia's three levels of government (ACHASSK144)</p>

HASS



Curriculum links

	Year	Content description
HASS	Year 7	<p>The nature of the sources for ancient Australia and what they reveal about Australia's past in the ancient period, such as the use of resources (ACHASSK170)</p> <p>The importance of conserving the remains of the ancient past, including the heritage of Aboriginal and Torres Strait Islander Peoples (ACHASSK171)</p> <p>Classification of environmental resources and the forms that water takes as a resource (ACHASSK182)</p> <p>The way that flows of water connect places as they move through the environment and the way these affect places (ACHASSK183)</p> <p>The quantity and variability of Australia's water resources compared with other continents (ACHASSK184)</p> <p>The nature of water scarcity and ways of overcoming it, including studies drawn from Australia and West Asia and/or North Africa (ACHASSK185)</p> <p>Economic, cultural, spiritual and aesthetic value of water for people, including Aboriginal and Torres Strait Islander Peoples and peoples of the Asia region (ACHASSK186)</p> <p>Causes, impacts and responses to an atmospheric or hydrological hazard (ACHASSK187)</p> <p>Factors that influence the decisions people make about where to live and their perceptions of the liveability of places (ACHASSK188)</p> <p>The influence of environmental quality on the liveability of places (ACHASSK190)</p>
	Year 8	<p>Different types of landscapes and their distinctive landform features (ACHGK048)</p> <p>Spiritual, aesthetic and cultural value of landscapes and landforms for people, including Aboriginal and Torres Strait Islander Peoples (ACHGK049)</p> <p>Geomorphic processes that produce landforms, including a case study of at least one landform (ACHGK050)</p> <p>Human causes and effects of landscape degradation (ACHGK051)</p> <p>Ways of protecting significant landscapes (ACHGK052)</p>
	Year 9	<p>Distribution and characteristics of biomes as regions with distinctive climates, soils, vegetation and productivity (ACHGK060)</p> <p>Human alteration of biomes to produce food, industrial materials and fibres, and the use of systems thinking to analyse the environmental effects of these alterations (ACHGK061)</p> <p>Challenges to food production, including land and water degradation, shortage of fresh water, competing land uses, and climate change, for Australia and other areas of the world (ACHGK063)</p> <p>The perceptions people have of place, and how these influence their connections to different places (ACHGK065)</p> <p>The effects of people's travel, recreational, cultural or leisure choices on places, and the implications for the future of these places (ACHGK069)</p> <p>The extension of settlement, including the effects of contact (intended and unintended) between European settlers in Australia and Aboriginal and Torres Strait Islander Peoples (ACDSEH020)</p> <p>Experiences of non-Europeans in Australia prior to the 1900s (such as the Japanese, Chinese, South Sea Islanders, Afghans) (ACDSEH089)</p>
	Year 10	<p>Human-induced environmental changes that challenge sustainability (ACHGK070)</p> <p>Environmental world views of people and their implications for environmental management (ACHGK071)</p> <p>The Aboriginal and Torres Strait Islander Peoples' approaches to custodial responsibility and environmental management in different regions of Australia (ACHGK072)</p> <p>The application of systems thinking to understanding the causes and likely consequences of the environmental change being investigated (ACHGK073)</p> <p>The application of geographical concepts and methods to the management of the environmental change being investigated (ACHGK074)</p> <p>The application of environmental economic and social criteria in evaluating management responses to the change (ACHGK075)</p> <p>The background to environmental awareness, including the nineteenth century National Parks movement in America and Australia (ACDSEH028)</p> <p>Responses of governments, including the Australian Government, and international organisations to environmental threats since the 1960s, including deforestation and climate change (ACDSEH128)</p>

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