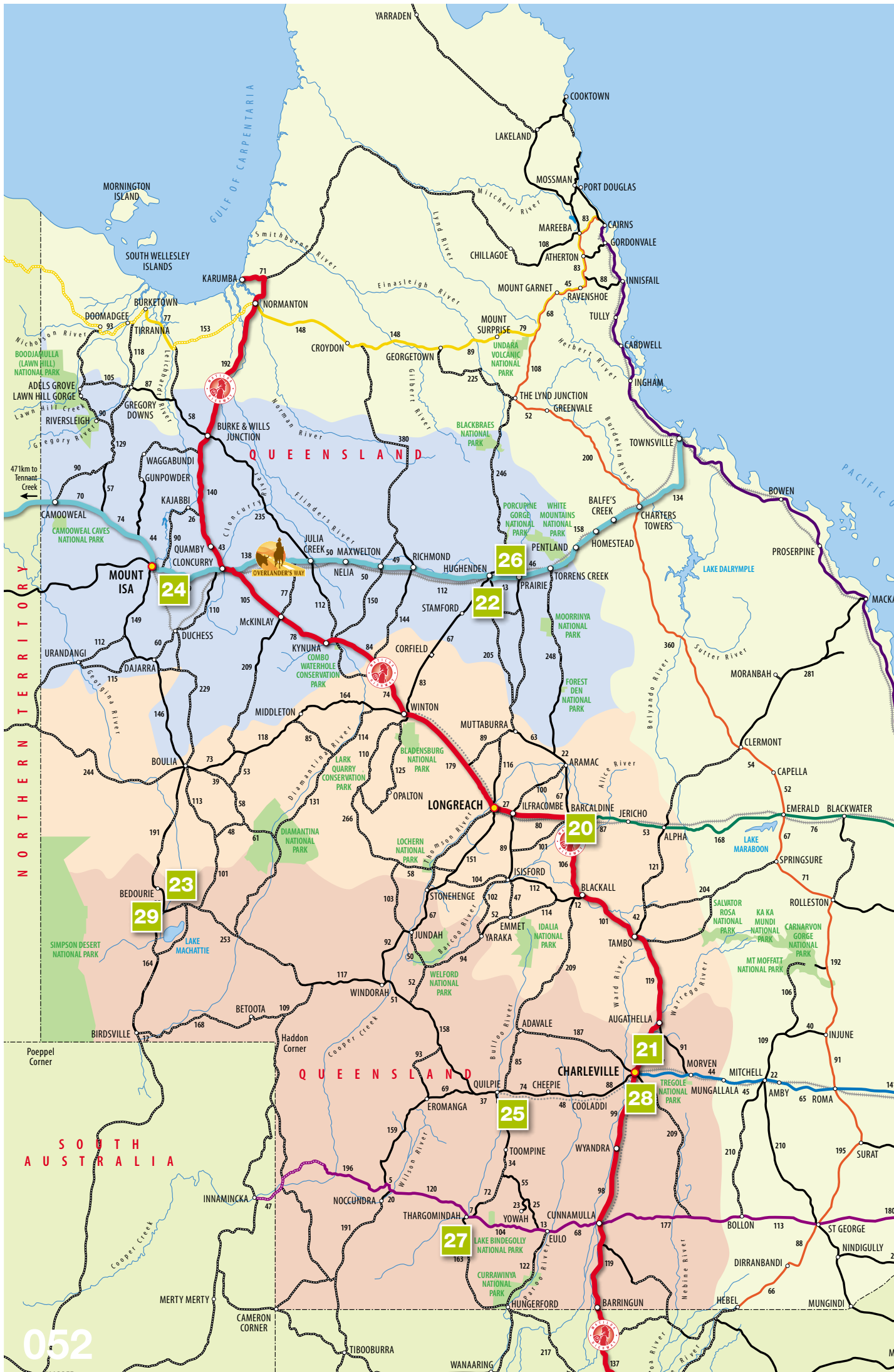


Natural Outback



Natural Outback

The bioregions of Queensland's Outback support an innumerable array of wildlife, including unique or threatened species. The red sands of the Simpson Desert come alive as small nocturnal animals emerge from their daytime retreats to search for food in the cool night. Native and migratory birds flock to the billabongs and wetlands of the Channel Country in the hope of ready food supplies and the riparian tracts that fringe the inland rivers and streams act as safe havens for thousands of water and land-based creatures. Queensland's Outback is acknowledged worldwide for its many protected areas and offers visitors unrivalled experiences of its native environment.

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Quirky fact:

The Great Artesian Basin covers over **1,711,000 square kms** and it has an estimated total water storage of **64,900 million megalitres** (a megalitre is one million litres - about half the water in an Olympic swimming pool).

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Eco Warriors - Protecting Our Most Important Natural Resource
7	Precious Water Resources - Renewable Futures and Global Responsibility

DESCRIPTION

The Great Artesian Basin is one of the largest artesian groundwater basins in the world. It underlies about one-fifth of Australia and extends beneath arid and semi-arid regions of Queensland, New South Wales, South Australia and the Northern Territory, stretching from the Great Dividing Range to the Lake Eyre depression.

The basin was formed between 100 and 250 million years ago and consists of alternating layers of water-bearing sandstone aquifers and non-waterbearing siltstones and mudstones. The thickness of this sequence varies from less than 100 metres on the basin extremities to over 3,000 metres in the deeper parts of the basin. Individual bore depths vary up to 2,000 metres with the average being 500 metres. Some of the sandstone sequences contain oil and gas.

Groundwater in the basin generally flows westward to the south-west but in the northern section they flow to the north-west and north. The rate at which water flows through the sandstones varies between one and five metres per year. Replenishment occurs through infiltration of rainfall into the sandstone aquifers mainly along the western slopes of the Great Dividing Range. Natural discharge occurs mainly from mound springs in the south-western area. Mound springs are natural outlets of the artesian aquifers from which groundwater flows to the surface. Dating of the artesian waters has given ages of almost 2 million years for the oldest waters, which occur in the south-western area of the basin.

Water quality in the main aquifers is generally good although the pH may be very high, and high sodium levels make it generally unsuitable for irrigation. Water temperatures vary from 30 degrees Celsius to over 100 degrees in its deepest parts. Total flows from the basin reached a peak around 1915. Since then, artesian pressure and water discharge rates have declined, while the number of bores has increased.



Artesian Bore - sunrise

HISTORY - Barcaldine

First residents: Iningai, Wadjabangai, Iiba, Iningas, Jagalingu, Jirandali, Mootaburra, Pitjara, and Kuungkari peoples

European exploration: Thomas Mitchell, 1846

European settlement: 1863

Town gazetted: 1886

History highlights:

- Site of the Great Shearers' Strike, 1891
- Birth place of the Australian Labor Party
- Home of the Australian Workers Heritage Centre

CLASSROOM ACTIVITIES

- Find out about the importance of the following: dams, maps showing rainfall, isohyets and irrigation schemes
- Conduct a survey at your school to find out which natural resource the students consider the most important and why. Graph your results
- Research the impact the decline of the Great Artesian Basin would have on Queensland and then the remainder of Australia

BEST EXPERIENCE

Artesian Country Tours

PO Box 232, Barcaldine QLD 4725

Cost: Fees apply (varies based on duration of tour)

Hours: By appointment

Contact: Tom Lockie

Phone: (07) 4651 2211

Email: tom@artesiancountrytours.com.au

Website: www.artesiancountrytours.com.au

OTHER POINTS OF INTEREST

- The Barcaldine and District Historical Museum
- Central West Aboriginal Co-op Red Shed, Barcaldine
- Wanpa-rda Matilda Outback Educational Centre, Barcaldine
- Tree of Knowledge Memorial, Barcaldine

ADDITIONAL RESOURCES

Queensland Department of Natural Resources and Water - Fact sheet

www.nrw.qld.gov.au/factsheets/pdf/water/w68.pdf

Australian Natural Resources Atlas - Queensland Allocation and Use

www.anra.gov.au/topics/water/allocation/qld/gmu-great-artesian-basin-western-queensland.html

Several sources and links available

REFERENCES

Queensland Department Natural Resources and Water

www.nrw.qld.gov.au/factsheets/pdf/water/w68.pdf

Natural Resources and Water

Source: Brief historical reference plus photographs
www.nrw.qld.gov.au/water/gab/

Barcaldine Shire Council

www.barcaldine.qld.gov.au/

FURTHER INFORMATION

Natural Resources and Water Education Resources

Phone: (07) 3237 1435

www.nrw.qld.gov.au/education/index.html



Quirky fact:

The bilby eats seeds using its long, skinny tongue to lick them from the ground. This feeding style means **the bilby eats a lot of sand**. In fact, 20-90 per cent of its waste can be sand!

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Eco Warriors - Protecting the Bilby
7	Sustain and Protect Bilby Habitat - A Global Responsibility

DESCRIPTION

The endangered greater bilby, *Macrotis lagotis*, is Australia's 'Easter Bunny' and is the only surviving bandicoot in arid Queensland. As one of Queensland's 12 endangered mammals, the bilby is the subject of intense research and conservation efforts. Its closest relative, the lesser bilby, is extinct.

Rabbit-sized, the bilby has delicate features with a long-pointed nose, silky pale blue-grey fur with patches of tan, big ears and a crested black and white tail. It uses strong forelimbs and thick claws to dig for food and a sticky tongue to lick up seeds. The bilby carries its tail stiffly and its ears are almost transparent. Sharp hearing and a strong sense of smell are vital to their survival as they have poor vision. A nocturnal animal, the bilby feeds on seeds, insects such as grasshoppers, beetles, spiders and termites, fungi, and bulbs, while most of its water is extracted from its food rather than from drinking.

Bilbies inhabit dry, hot areas and burrow among hummock and tussock grasslands and acacia shrub lands. Powerful diggers, they make burrows up to three metres long and almost two metres deep where they spend their daylight hours. The burrow contains no nesting material and the entrance is often against a termite mound or small shrub. In the deserts, its home is usually temporary and can change quickly depending on where it can find food.

The bilby lives alone or in a pair and breeds throughout the year. Female bilbies have a backward-opening pouch with eight teats. One or two young are usually carried in the pouch at a time, although four have been recorded in the wild. Young stay in the pouch for 80 days. Bilbies put their young into burrows for about two weeks and return regularly to feed them.

Queensland's largest remaining wild group of bilbies lives in one area west of the Diamantina River. Charleville is home to the captive breeding program "Save the Bilby Fund". The program is operated by the Queensland Environmental Protection Agency and releases captive-bred bilbies into a fenced wild enclosure within the Currawinya National Park.



Bilby (supplied by EPA)



Greater bilby fights the odds

HISTORY - Charleville

First residents: Kunja, Wadjalang, Pitjara and Maranganji peoples

European Exploration: Edmund Kennedy, 1847

European settlement: 1860s

Town gazetted: 1868

History highlights:

- The first scheduled Qantas passenger flights left from Charleville, 1922
- Base for Cobb and Co.'s coach making business, 1890
- Home of the Steiger Vortex Rainmaking Guns, 1902

CLASSROOM ACTIVITIES

- National Threatened Species Day is held on 7 September each year to encourage the community to help conserve Australia's unique native fauna and flora. For more information on how to become involved visit www.environment.gov.au/biodiversity/threatened/ts-day/index.html
- Write and present a skit that shows the importance of conserving the bilby and its habitat
- Write the lyrics to a song which could become the theme song for the national preservation of the bilby

BEST EXPERIENCE

Bilby Sanctuary, Charleville

Queensland Parks and Wildlife Service
Warrego Highway, Charleville QLD 4470

Cost: Fees apply and bookings are essential

Hours: Nightly tours April to October 7.00pm.

Phone: (07) 4654 1255 (ask for the Save the Bilby Fund)

For tour bookings contact Charleville Visitor Information Centre (07) 4654 3057

OTHER POINTS OF INTEREST

- Cosmos Centre and Observatory, Charleville
- Tregole National Park, west of Charleville
- Thurlby Station tours, Charleville

ADDITIONAL RESOURCES

Northern Territory Department of Natural Resources, Environment and the Arts
National Plan for the Protection of Bilby
www.epa.qld.gov.au/publications?id=2129

Dreamworld Wild Life For Kids
Education Program

Email: education@dreamworld.com.au

Outback Now

www.outbacknow.com.au/index.php?module=pagesetter&func=viewpub&tid=37&pid=78

Save the Bilby Fund

www.savethebilbyfund.com

REFERENCES

Queensland Environmental Protection Agency

www.epa.qld.gov.au/nature_conservation/wildlife/threatened_plants_and_animals/endangered/bilby

Outback Now

Bilby Brothers' Aim

By Lois and Chester Wilson

www.outbacknow.com.au/index.php?module=pagesetter&func=viewpub&tid=37&pid=78

FURTHER INFORMATION

Charleville Visitor Information Centre

Phone: (07) 4654 3057

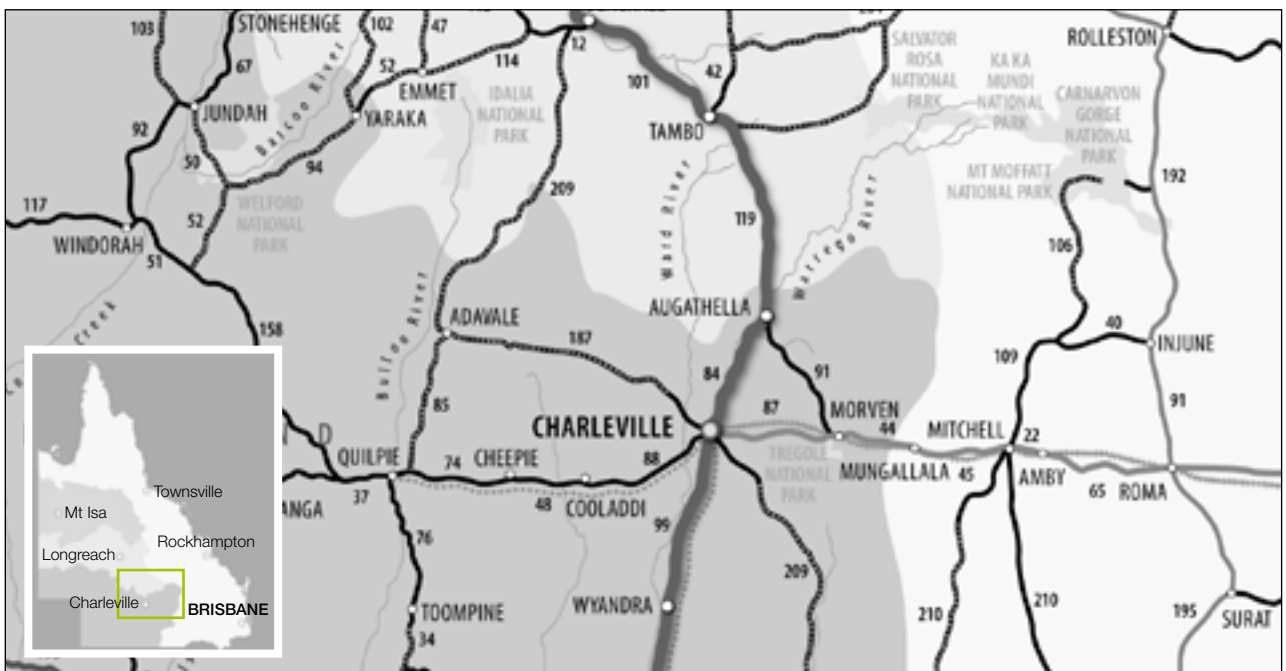
www.murweh.qld.gov.au

Save the Bilby Fund

PO Box 149, Charleville QLD 4470

Phone: (07) 4654 1255 (ask for the Save the Bilby Fund)

Email: bilby@epa.qld.gov.au





Quirky fact:

Did you know the **Flinders River** is Queensland's longest river?

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Eco Warriors - Protecting Important Flora and Fauna
7	Balancing Act - Conserving and Protecting Environments

DESCRIPTION

Queensland has 13 bioregions and the mid-west comprises characteristic flora, fauna, and environmental conditions that create natural boundaries. Four bioregions lie within the mid-west: Einasleigh Uplands - Northeast; Gulf Plains - Northwest; Mitchell Grass Downs - South; and Desert Uplands - Southeast.

Einasleigh Uplands

The Einasleigh Uplands straddles the Great Dividing Range in inland Northeast Queensland. It covers 12,923,100 hectares (7.5 per cent) of Queensland. The area is known as basalt gorge country. Basalt is lava that has weathered to form rich red or black volcanic soils. The major water catchments are the Burdekin and Flinders Rivers. The Einasleigh area is significant for macropods and has more species of rock wallaby than anywhere in Australia. Endangered animals include the red goshawk, gouldian & star finch and the golden-shouldered parrot. Rare species in the area are the black-necked stork, yellow-naped snake, ghost bat and the cotton pygmy-goose. This bioregion consists of a series of ranges and plateau surfaces, and contains eight protected national parks:

- Bulleringa National Park
- Dalrymple National Park
- Porcupine Gorge National Park
- Chillagoe - Mungana Caves National Park
- Great Basalt Wall National Park
- Undara Volcanic National Park
- Hann Tableland National Park
- Palmer River Goldfields

Gulf Plains

The Gulf Plains are characterised by gentle sloping sandstone tablelands along their eastern margin. The area covers 22,143,799 hectares (12 per cent) of Queensland. Population centres include Normanton, Burketown and Kowanyama. There is a small port at Kurumba where most of the regional fishing fleet is based and the Gulf and its estuarine wetlands support a strong fishing industry. The Gulf Plains are significant for the very large numbers of migratory waterbirds. The climate has a dry season during winter and a monsoonal wet season in summer. There are 36 rare and threatened fauna species of the Gulf Plains bioregion, including the radjah shelduck, masked owl, hawksbill turtle, and pygmy long-eared bat. The region contains four protected areas:

- The Mitchell - Alice Rivers National Park
- Staaten River National Park
- Bulleringa National Park
- Lawn Hill Resources Reserve

Mitchell Grass Downs

As the name suggests, this area is dominated by extensive grasslands of Mitchell grasses. The bioregion covers 23,788,550 hectares (13.8 per cent) of Queensland. Soils are deep, heavy grey or brown clays often with a self-mulching and sometimes stony surface. Soils of the grassland plains are brown, cracking, and sometimes stony clay. Limestone and deeply weathered Cretaceous sediments, sometimes covered by superficial Quaternary deposits, form low hills and ridges. Towns within this bioregion include Longreach, Winton, Aramac, Hughenden and Boulia. The Mitchell Grass Downs spans the watershed separating many of Queensland's northern flowing rivers from southern flowing rivers. These rivers supply most of the surface water through the Channel Country bioregion into the Lake Eyre Basin. The Flinders, McKinley and Gregory Rivers flow from the northern parts of the Mitchell Grass Downs into the Gulf of Carpentaria. Rivers that originate from the Mitchell Grass Downs are the:

- Barcoo
- Diamantina
- Burke
- Thomson
- Hamilton
- Georgina

Species include at least 54 mammals, 225 birds, 21 amphibians and 110 reptiles. The native fauna has adapted to the open, seasonally arid grasslands. Birds are either seed or insect-eating ground dwellers such as the little button-quail, Australian bustard and singing bushlark, or migratory, visiting in the wet season to breed before the dry sets in again. Reptiles and small mammals live in the soil cracks and some mammals found only in this habitat include the Julia Creek Dunnart, narrow-nosed planigale, and Forrest's mouse. Rare reptiles such as the bearded dragon, Collett's snake or 'Downs Tiger' and the skink are also native to the region.

Desert Uplands

The Desert Uplands lie in central northern Queensland, straddling the Great Dividing Range between Blackall and Pentland. Sandstone ranges and sand plains dominate this bioregion and coal deposits can be found deep down. The Desert Uplands cover 7,032,297 hectares (4 per cent) of Queensland. Although not a true desert, the bioregion has desert-like characteristics. With a low rainfall the sandy soils are relatively infertile. Most of the Desert Uplands' biodiversity appears to be intact, however of the region's 21 rare flora species and 33 fauna species, six species of fauna - the Edgbaston goby, red goshawk, Gouldian finch, Allan's lerista, star finch, and red-finned blue eye - are endangered and one species of flora - the *Eriocaulon carsonii*. The major communities of the bioregion are Barcardine and Aramac and protected areas include:

- White Mountain National Park
- Morrinya National Park
- White Mountain Resource Reserve
- Forest Den National Park

HISTORY - Hughenden

First residents: Dalleburra and Jirandali, Kutjala peoples

European exploration: Lt Stokes, 1841

European settlement: 1862

Town gazetted: 1866

History highlights:

- First entire Muttaborrasaurus dinosaur found in Australia, 1987
- First Bracelet horse race ever run in Australia, 1886

CLASSROOM ACTIVITIES

- National Threatened Species Day is held on 7 September each year to encourage the community to help conserve Australia's unique native fauna and flora. For more information on how to become involved visit www.environment.gov.au/biodiversity/threatened/ts-day/index.html
- Become Weed Warriors and start a weed eradication program at your school (www.weedwarriors.net.au)
- Play Weed Wipeout (www.weedsrc.org.au/for_schools/weedwipeout_flash.html)

BEST EXPERIENCE

Porcupine Gorge, via Hughenden

Kennedy Developmental Road (73 kms north of Hughenden), via Hughenden QLD 4821

Cost: Entry to the park is free, however fees apply for camping

Hours: Open 24 hours per day

Contact: Information, access and maps available at www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/

OTHER POINTS OF INTEREST

- White Mountains National Park, via Hughenden
- Moorrinya National Park, via Hughenden
- Diamantina National Park, via Bedourie
- Boodjamulla (Lawn Hill) National Park, via Gregory

ADDITIONAL RESOURCES

Queensland Natural Resources and Water
www.nrw.qld.gov.au/vegetation/bioregions.html

Queensland Environmental Protection Agency

Source: Wide range of information resources
www.epa.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/desert_uplands/introduction/

www.epa.qld.gov.au/register/p00716bt.pdf

www.epa.qld.gov.au/nature_conservation/habitats/wetlands/wetland_management_profiles/wetland_management_profiles__an_overview/what_are_regional_ecosystems_res/

National Parks Association of Queensland
Unit 9, 36 Finchley St, Milton QLD 4064
Phone: (07) 3367 0878
www.npaq.org.au/content/view/29/98/

Department Natural Resources and Water
Source: Fact sheets on all environmental elements related to Queensland bioregions
www.nrw.qld.gov.au/factsheets/index.php

Australian Natural Resources Atlas
Source: Information and Fast Fact sheets
www.anra.gov.au/topics/vegetation/pubs/biodiversity/bio_assess_contents.html

Department of Primary Industries
Source: Educational resources
www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/4790_8586_ENA_HTML.htm

REFERENCES

Queensland Environmental Protection Agency
www.epa.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/desert_uplands/introduction/

FURTHER INFORMATION

Flinders Discovery Centre
Gray Street, Hughenden QLD 4821
Phone: (07) 4741 1021
Email: info@flinders.qld.gov.au
www.hughenden.com

Quirky fact:

Did you know **fish mysteriously appear** in the Channel Country without apparent explanation?

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Natural Resources Crusader - Global Responsibility
7	Environmental Heritage - Defining Australia

DESCRIPTION

Diamantina National Park is considered to be amongst the top 20 most important national parks within Australia and lies in the heart of western Queensland's Channel Country. In the east, the terrain takes in long weather-beaten sandstone ridges that fall away to the flood plains and tributaries of the Diamantina River. Beyond the flood plains, Mitchell grass covers wide open gibber plains of cracked clay that stretch beyond the horizon to meet sand dunes in the west. Vast and abundant with rare flora and fauna, this diverse landscape was previously used as pastoral land, with its former European owners including the legendary Sir Sidney Kidman.

In 1992, the Queensland Government resumed Diamantina Lakes as a high priority acquisition for national park protection, based on:

- land and plant diversity;
- highly distinctive bioregions of the Channel Country and Mitchell Grass Downs;
- eight rare species - golden perch, a skink (*Ctenotus schevii*), freckled duck, peregrine falcon, plains wanderer, bilby, kowari and the shrub *eremophila tetraptera*;
- the gorge where the Diamantina River (Mundaweera) cuts through limestone hills was listed as a site of national significance by the Australian Geographical Society;
- several sites of cultural significance including Aboriginal rock paintings and the remnants of early European settlement including Mayne Hotel and 22 graves dated from 1884 to 1944; and
- the many waterholes that were scenically diverse and provided excellent camp sites.

The acquisition was merged with the Diamantina Gates National Park to create Diamantina National Park, a protected area of 500,000 hectares.

The Channel Country is also known for its 'rains of fishes' - the sudden and mysterious appearance of fish, including spangled perch, desert rainbowfish and gudgeons, without any apparent source. The phenomenon is thought to be caused by fish, otherwise confined to waterholes for long periods of time, being flushed out and swept in many different directions, often into small, temporary tributaries. Nevertheless, some groups of fish have been found on high open ground. These fish are thought to have been picked up and then dumped by strong summer willy willies (dust whirlwinds), or forced up through dry ground by rare water spouts.



Diamantina River - aerial

HISTORY - Bedourie

First residents: Wangkangurru, Lanima, Kungalenja, Karanja, Mitaka, Jeljendi, Maiawali, and Wangkamadla peoples

European exploration: Charles Sturt, 1845

European settlement: early 1880s

Town gazetted: 1888

History highlights:

- Home of the Bedourie Camp Oven

CLASSROOM ACTIVITIES

- Create a gallery-style art exhibition that displays original paintings from your class on the theme 'National Parks'
- Journal Statement Starter: When I think about the rare flora and fauna in Diamantina National Park, I am surprised that...
- Investigate, research and name the tourist attractions in Queensland that help to conserve the natural environment

BEST EXPERIENCE

Diamantina National Park, via Bedourie or Boulia

The park boundary is located 143 kms south-east of Boulia and 260 kms south-west of Winton.

Cost: Entry to the park is free, however fees apply for camping

Hours: Open 24 hours per day

Contact: Information, access and maps available at www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/

IMPORTANT INFORMATION

- Roads are impassable in wet weather
- Four wheel drive (4WD) only
- Best time to visit is between April and October
- Due to the remote location no facilities are available

OTHER POINTS OF INTEREST

- Big Red - Simpson Desert, via Birdsville
- Burke and Wills Dig Tree, Cameron Corner, via Thargomindah

ADDITIONAL RESOURCES

Queensland Environmental Protection Agency

www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/diamantina_national_park/

Tourism Queensland

Source: General Outback Information
www.adventureoutback.com.au

REFERENCES

Barry, J.I., calling 8XD Diamantina

Nolan, C., Sand Hills and Channel Country

Queensland Parks and Wildlife Service

Visitor Information fact sheet
Diamantina National Park

Documenting a Democracy

Queensland State Archives

www.foundingdocs.gov.au/picturealbum.asp?alD=5

Queensland Museum Publishing

Johnson QM, J., Rains of Fishes

Discovery Guide to Outback Queensland

FURTHER INFORMATION

Diamantina National Park Tourism Information

Phone: 1300 794 257

Email: tourism2@diamantina.qld.gov.au

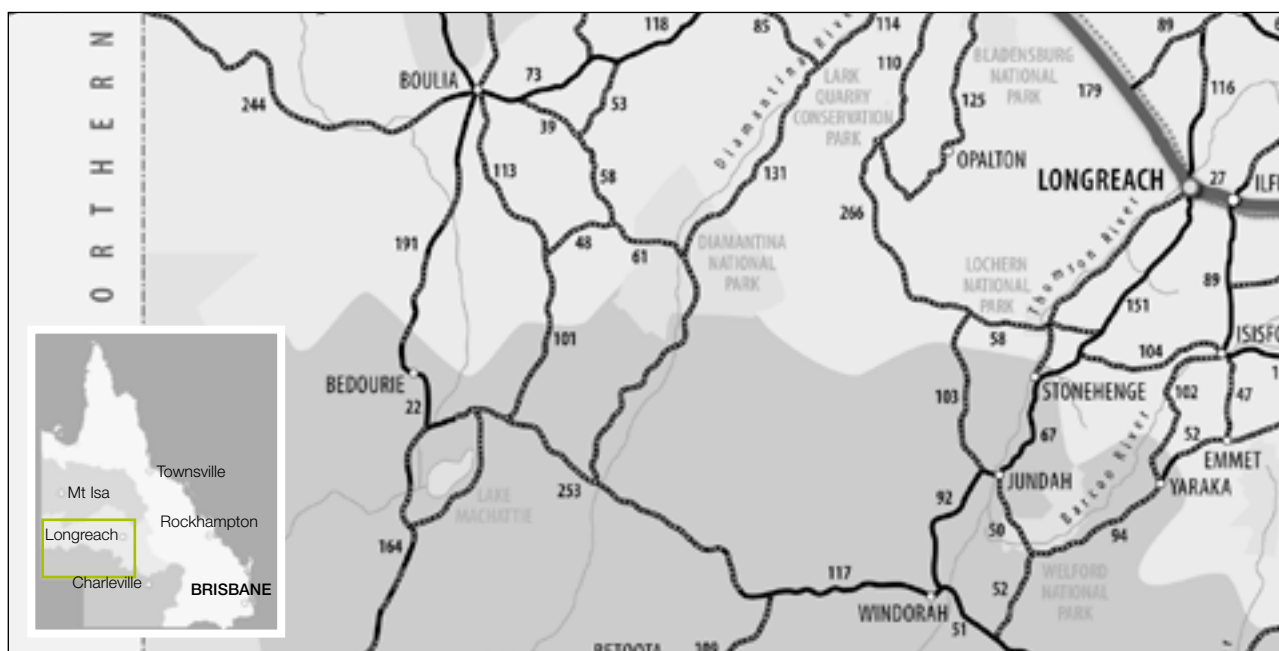
www.diamantina.qld.gov.au

EPA Longreach

Landsborough Highway

PO Box 202, Longreach QLD 4730

Phone: (07) 4652 7333



Quirky fact:

Did you know **Queensland leads the world** in the production of metallic minerals such as copper, lead and zinc?

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Mineral Wealth - Balancing the Future
7	Mineral Resources Boom - A Global Responsibility

DESCRIPTION

Queensland is rich in mineral and energy resources such as coal, gold, lead, copper, zinc, silver, nickel, tin, bauxite, uranium, industrial minerals, oil and gas. The Outback region contains some of the world's richest copper, lead, and zinc deposits and is home to one of the largest mineral producers Xstrata, Mount Isa Mines.

Queensland Copper Mines

Great Australia Mine - Cloncurry Copper

Ernest Henry discovered copper in 1867 while outcropping near Cloncurry. Full of optimism, he named his discovery 'Great Australia'. From 1906 copper prices boomed and Cloncurry flourished. The railway extended to the town to meet demand but in 1920 prices crashed and 'Great Australia' ceased operations. Ernest Henry is still considered the 'father' of Cloncurry and the old mine boasts remnants of its heyday including Queensland's oldest water-jacket smelter casing and Cornish boilers.

Ernest Henry Mine - Cloncurry Copper, Gold

The Ernest Henry copper-gold mine began commercial production in 1998. The plant provides for up to 10 million tonnes of ore to be extracted annually, to produce 100,000 tonnes of copper and 125,000 ounces of gold. Almost 3,500 people were involved in building the mine at a cost of \$310 million and ensuing regional development has included a water pipeline, electricity transmission lines, conversion of Mica Creek Power Station to gas generation, a new airport terminal and improved air services.

Mount Isa Mine - Copper Lead Zinc Silver

Xstrata Mount Isa Mines (MIM) began with the discovery of lead-zinc outcrops by John Campbell Miles in 1923. By 1941, large reserves of copper were found at Black Star mine and copper was smelted from 1943. Within two decades, new copper smelters saw the annual copper yield of Black Rock grow to twice the combined production of all other Australian mines. MIM developed the 'Isasmelt' process in the 1980s, increasing the annual lead output by over 200,000 tonnes.

Xstrata MIM is Australia's largest underground mine and one of the world's largest mining operations. It ranks in the top three producers of lead, top five producers of silver, 10th largest source of zinc and 19th largest producer of copper. Xstrata MIM includes Enterprise Mine, Australia's most recent and deepest underground copper mine and George Fisher Mine, one of the largest undeveloped lead-zinc deposits in the world.



Mount Isa

HISTORY - Mount Isa

First residents: Kalkadunga, Wakabunga, Indjilandji, Wakaja, and Jaroinga peoples

European exploration: Burke and Wills, 1861

European settlement: 1870s

Shire gazetted: 1963

History highlights:

- Discovery of one of the world's largest single deposits of copper, silver, lead and zinc, 1923
- Declared the world's largest city (area), 1968
- Hosts one of the world's richest and largest rodeos

CLASSROOM ACTIVITIES

- Set up a display with examples of all the mineral resources being mined in Queensland
- Draw up a table on Queensland Mining. In column 1, list all the minerals being mined in Outback Queensland. In column 2, list the flora and fauna which this may affect. In column 3, write suggestions to deal with this problem
- Compare and contrast natural weathering and erosion in this region to erosion caused by the mining industry

BEST EXPERIENCE

Outback at Isa

The Hard Times Mine Tour provides a unique first hand experience into the daily life and workings of an underground mine.

19 Marian Street, Mount Isa QLD 4825

Cost: Entry fee applies

Contact: 1300 659 660 or (07) 4749 1555

Email: info@outbackatisa.com.au

Website: www.outbackatisa.com.au

*check on the day for wheelchair access to mine
4WD occasionally available

OTHER POINTS OF INTEREST

- The Ernest Henry Mine Pit Tour, Cloncurry
- Underground Hospital Museum, Mount Isa
- Royal Flying Doctor Service Visitor Centre, Mount Isa

ADDITIONAL RESOURCES

Language and Power in Nineteenth Century Mining: A View from North Queensland

Source: Journal article by Jan Wegner; Journal of Australian Studies, 1999
www.questia.com/googleScholar.
qst?docId=500182661

Australian Bureau of Statistics

www.abs.gov.au/AUSSTATS/abs@.nsf/94713ad445ff1425ca25682000192af2/93136e734ff62aa2ca2569de00271b10!OpenDocument

MIM archives

Source: Excellent information source
http://archive.xstrata.com/mim/www.mim.com.au/copper.html

Australian Mining History 1848 to 1999

Source: Chronology of Australian mining
www.readyed.com.au/Sites/minehist.htm

Queensland Department of Mines and Energy

Source: Educational resources
www.dme.qld.gov.au/mines/mining_awareness.cfm

REFERENCES

Queensland Environmental Protection Agency

www.epa.qld.gov.au/cultural_heritage/heritage_places/queenslands_mining_heritage/#Mining%20memories

Republic of Mining

www.republicofmining.com

About Australia.com

www.about-australia.com/travel-guides/queensland/outback-queensland/attractions/mining-industry/ernest-henry-mine/

MIM

http://archive.xstrata.com/mim/www.mim.com.au/ehm.html

Mount Isa City Council

www.mountisa.qld.gov.au

Queensland Resources Council

www.qrc.org.au/

FURTHER INFORMATION

Outback at Isa Riversleigh Fossils Interpretive Centre and Mount Isa Tourist Information

Email: info@outbackatisa.com.au
Phone: (07) 4749 1555 or 1300 659 660

Xstrata Mount Isa Mines Limited

Private Mail Bag 6, Mount Isa QLD 4825
Phone: (07) 4744 2011

Email: communityinfo@isa.mim.com.au

http://archive.xstrata.com/mim/
www.mim.com.au/index.html



Quirky fact:

When **boulder opal** is cut and polished some of the ironstone is always retained as a natural backing.

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Opal Mining - A Tourist Attraction
7	Opals, A Natural Resource - Finding the Balance

DESCRIPTION

Australia produces 96 per cent of the world's opals. Opal was first mined south of Quilpie in 1871, following its discovery at Listowel Downs near Blackall in 1869. Today, Quilpie remains the largest miner of opal and the only producer of the ironstone boulder opal.

The opal fields of Queensland's Outback follow a 300 km-wide belt of deeply weathered Cretaceous sedimentary rocks known as the Winton Formation. This belt extends a distance of about 1,000 kilometres from Hungerford on the New South Wales border, west of the townships of Cunnamulla, Quilpie, Longreach and Winton, to Kynuna. Boulder opal is unique to Queensland and widely distributed in the weathered sandstone rocks common to these areas. In general, finds can range in size from a few centimetres to three metres across.

Opal acts as a lining between the concentric layers or cracks of ironstone. Sometimes it appears as a kernel in smaller concretions or nuts - hence the term 'Yowah-nuts'. While boulder opal is only found in Queensland, other more common opal types include:

- Matrix opal - where the opal occurs as a network of veins between grains of the host rock (ferruginous sandstone or ironstone);
- Seam or band opal - usually found encased in ironstone;
- Pipe opal - which may be up to several centimetres in diameter within the sandstone; and
- Wood opal - sometimes found replacing woody tissue material.

Large mines are mostly open-cut operations. Boulders are carefully removed from the ground for processing and heavy equipment is often used to open up old workings. Underground mining is also practised and shafts are sunk to detect any intersecting layers beneath the ground surface. Miners use light machinery to remove the boulders, at which point they are checked for opal content and sorted for sale or further processing.



Fossicker



Precious opals

HISTORY - Quilpie

First residents: Karendala, Kulumali, Ngandangara, Wadjalang, and Punthamara peoples

European exploration: Sir Thomas Mitchell, 1845/46 expedition

European settlement: 1870s

Town gazetted: 1917

CLASSROOM ACTIVITIES

- Invite a guest speaker from the Queensland Department of Mines and Energy to come and speak to the class
- Think/Pair/Share: Think about the information you have been presented with regarding opal mining. Make notes on the important points. Discuss your ideas with a partner and record things of interest you shared
- Read a daily newspaper and write down everything you can find related to mining in Queensland/Australia

BEST EXPERIENCE

Gem Fossicking, Quilpie

Quilpie has fossicking at Duck Creek and Sheep Station Creek opal fields.

Quilpie Museum and Visitor Information Centre

Brolga Street, Quilpie QLD 4480

For information contact the Quilpie Visitor Information Centre for maps and permits or contact the Department of Mines and Energy at www.dme.qld.gov.au

Cost: Fees and licenses apply

Hours: By appointment

Phone: (07) 4656 1133

Email: information@quilpie.qld.gov.au

Website: www.quilpie.qld.gov.au

Please note: All mining activity is covered under Acts administered by the Department of Mines and Energy. Permission is required before entering an area held under mining tenure and a Prospecting Permit is usually required.

OTHER POINTS OF INTEREST

- Gem fossicking, Opalton
- Gem fossicking, Yowah

ADDITIONAL RESOURCES

Tourism Queensland

Source: General Outback information
www.adventureoutback.com.au

The Mineral and Gemstone Kingdom

www.minerals.net/mineral/silicate/tecto/quartz/images/opal/opalvary.htm

Treasure Enterprises of Australia

www.treasureenterprises.com/Gem%20Fossicking/gem_fossicking_information.htm

REFERENCES

Queensland Department of Mines and Energy

www.dme.qld.gov.au/mines/fossicking.cfm

Opals Down Under

www.opalsdownunder.com.au/articles/history.php

Opal Bar Map

www.opalbar.com.au/boulder.html

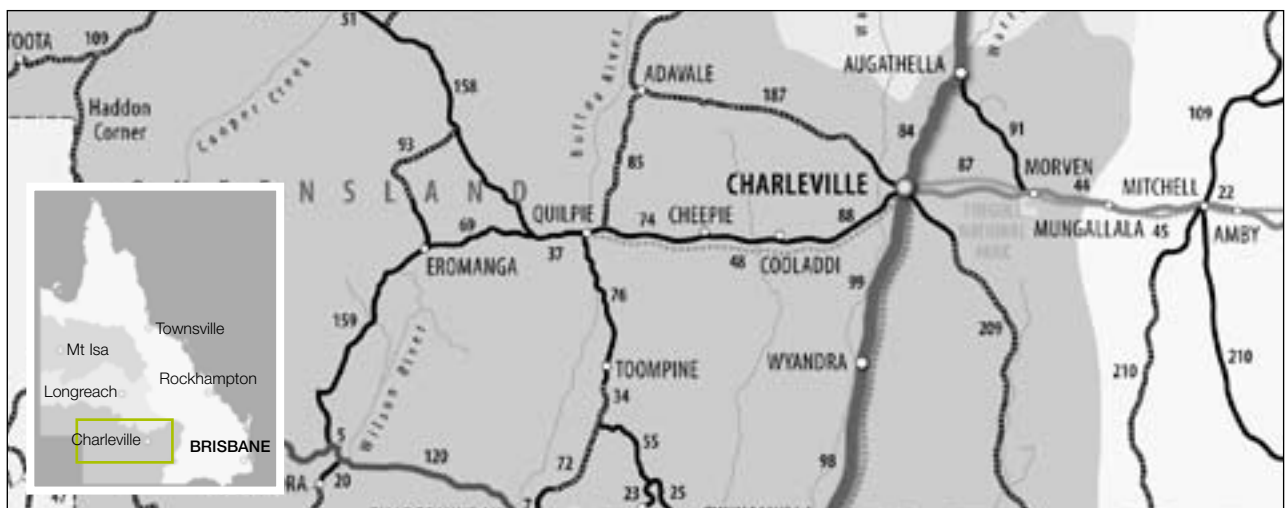
FURTHER INFORMATION

Department of Mines and Energy Information Centre

Level 2, Mineral House

41 George Street, Brisbane QLD 4001

Phone: (07) 3237 1434



Quirky fact:

Sedimentary rocks are the second major rock group. They are cool rocks, meaning they form at the earth's surface, mostly under water. They usually consist of layers or strata.

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Environmental Concerns - Eco Warriors
7	Preservation of National Parks - Global Accountability

DESCRIPTION

Often known as the 'Little Grand Canyon', Porcupine Gorge National Park lies within the Savannah plains and extends for more than 25 kms along Porcupine Creek surrounded by open woodland and grassland. The creek cuts a meandering path through a deep canyon that reveals sedimentary rock strata spanning hundreds of millions of years. A thin, hard, basalt cap, the product of geologically recent lava flows, has protected much of the older underlying rock, but where this capping has been worn away, the scouring action of waterborne particles has excavated a deep chasm into the softer sandstone. The culprit, Porcupine Creek, reduces to a string of clear pools in winter and becomes a torrential cascade during the wet season (summer).

In the wider section of the gorge, the eroding action of the creek has also created the Pyramid, a monolith of multicoloured sandstone rising from the floor of the gorge. Wind and water have coloured and sculpted the sandstone to form fluted channels, boulders, potholes and shallow caves. Permanent deep pools, each with its resident turtles, are lined with casuarinas (sheoaks) and melaleucas (paperbarks), while various eucalypts and acacias including the rare pink gidgee precariously root in the cliffs above.

The gorge and surrounding area is rich with cultural history. Three traditional Aboriginal groups, the Gutjal, Jirandali and Mitjumba continue their traditional connections to Country within the park. The Tattoos, just a few kilometres up the road, is the site of Aboriginal and European carvings as well as spectacular rock formations.

The gorge is home to currawongs, parrots and the occasional soaring bird of prey. Closer observation reveals a wide variety of birds including the black duck, red-winged parrot, black bittern and numerous honeyeaters. The gorge becomes a focal point for many animals in the dry season while others, such as the wallaroo, rock wallaby and rufus bettong, are permanent residents.



Porcupine Gorge National Park

HISTORY - Hughenden

First residents: Dalleburra and Jirandali, Kutjala peoples

European exploration: Lt Stokes, 1841

European settlement: 1862

Town gazetted: 1866

History highlights:

- First entire *Muttaburrasaurus* dinosaur found in Australia, 1987
- First Bracelet horse race ever run in Australia, 1886

CLASSROOM ACTIVITIES

- National Threatened Species Day is held on 7 September each year to encourage the community to help conserve Australia's unique native fauna and flora. For more information on how to become involved visit www.environment.gov.au/biodiversity/threatened/ts-day/index.html
- EPA (www.epa.qld.gov.au) has developed SoE Online enabling the delivery of the most up-to-date environmental information statistics
- Visit the Queensland Cyber Rangers website. Chat with park rangers, write a conservationist story, participate in interactive activities and artwork, and download conservation reports.

BEST EXPERIENCE

Porcupine Gorge, via Hughenden

Kennedy Developmental Road (73 kms north of Hughenden)
via Hughenden QLD 4821

Cost: Entry to the park is free, however fees apply for camping

Hours: Open 24 hours per day

Contact: Information, access and maps available at www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/

OTHER POINTS OF INTEREST

- White Mountains National Park, via Hughenden
- Moorrinya National Park, via Hughenden

ADDITIONAL RESOURCES

Queensland Environmental Protection Agency

www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/porcupine_gorge_national_park/

Tourism Queensland

www.queenslandholidays.com.au/things-to-see-and-do/porcupine-gorge-national-park/map.cfm

Flinders Shire Council

www.flinders.qld.gov.au

REFERENCES

Flinders Discovery Centre Porcupine Gorge National Park Information Brochure

About.com: geology

www.geology.about.com/cs/basics_roxmin/a/aa011804b.htm

Queensland Environmental Protection Agency

www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/porcupine_gorge_national_park/

FURTHER INFORMATION

Flinders Discovery Centre

37 Gray Street
PO Box 274, Hughenden QLD 4821
Phone: (07) 4741 1021
Fax: (07) 4741 1029
Email: info@flinders.qld.gov.au
www.hughenden.com

QPWS Reef and National Parks Information Centre

Old Quarantine Station
Pallarenda Road, Townsville
PO Box 5391, Townsville QLD 4810
Phone: (07) 4722 5224
Fax: (07) 4722 5222
Email: tsv.infocentre@epa.qld.gov.au



Quirky fact:

Energy sources used to **generate electricity** include water, wind, sun, gas diesel fuel, tidal energy, waves and geothermal energy.

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Natural Resources - Provision of Energy
7	Sustaining the Outback - Renewable Energy Schemes

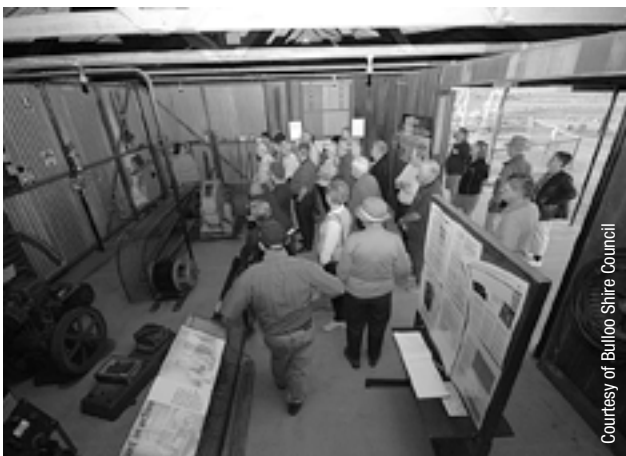
DESCRIPTION

In 1891, the Bulloo Shire Council embarked on a project of drilling an artesian bore to provide Thargomindah's town water supply. The water pressure was so strong that by 1893 it was decided to harness it as energy to drive a generating plant for the supply of electricity to the town. This formed the Thargomindah Hydro Electric Plant, a distinction that would mark it as the first town in Australia to have a hydro electricity plant and third in the world behind Paris and London to have street lighting generated by hydro power. The plant continued to supply electricity until 1951, when the Capricornia Electricity Board installed a diesel plant, which still operates today.

In the early 20th century, Queensland was characterised by isolated urban areas, separated by large distances, with the majority of townships on the coast and in the southeast. Rural properties tended to be large and pastoral service towns were small. At the turn of the century private companies supplied power to Brisbane, Charters Towers and Rockhampton. During the following 20 years other major centres developed power stations, most of which were small thermal, diesel or gas engine driven plants. Up until the 1940s electricity generation remained largely in the hands of local government and private enterprise. However, during World War II all domestic resources were diverted into essential services and the war effort, and afterwards all of the generating authorities needed to replace and expand their generating equipment.

The provision of electricity to rural areas became a major focus of the Electricity Commission during the 1950s and increasingly thereafter, supplies were delivered by large power stations located close to their power sources, with huge transmission networks.

Indicative of its heritage, in 2002 as part of "Year of the Outback" celebrations, Thargomindah implemented two state-of-the-art renewable energy schemes that would place the town at the forefront of Australia's 21st century power generation.



Hydro power display



Thargomindah powers on!

HISTORY - Thargomindah

First residents: Wongkumara, Jandruwanta, Wadikali, Thereila, Bitjara, Karenggapa, Ngandangara, Kullili and Punthamara peoples

European exploration: Vincent Dowling, 1859

European settlement: 1864

Town gazetted: 1874

History highlights:

- Site of the Australia's first hydro electric scheme, 1893

CLASSROOM ACTIVITIES

- Create a Class Trivia Competition using all the factual information related to the generation of power to the Outback
- Debate the difference between thermal, diesel or gas power versus nuclear power
- List all the examples of renewable and non-renewable resources you can think of

BEST EXPERIENCE

Hydro Power Plant

Gilmour Street, Thargomindah QLD 4492

Cost: Free Entry

Hours: Daily from 8.30am to 5.00pm with a working display everyday

Phone: (07) 4655 3399

Email: thargo.info@bigpond.com.au

Website: www.bullooshire.net

OTHER POINTS OF INTEREST

- Leahy House, Thargomindah
- Burke and Wills Dig Tree, Cameron Corner, via Thargomindah

ADDITIONAL RESOURCES

Queensland Energy Museum

Source: Fact sheets, Teacher resources, Activities
Queensland Energy Museum Inc.
Phone: (07) 3854 1266
Email: info@energymuseum.com.au
www.energymuseum.com.au/06_education/index.htm

Resource and Land Management Services

Source: Maps of resources
www.rims.com.au/products.asp

Bibliography of Electricity Industry History and Heritage materials By MacLaren North, Heritage Consultant for EnergyAustralia January 2007

www.ewh.ieee.org/r10/nsw/subpages/history/bio_electrical_heritage.pdf
Email: maclaren.north@gmail.com

Queensland Environmental Protection Agency

Source: Many sources on sustainable energy
www.epa.qld.gov.au/environmental_management/sustainability/energy/

REFERENCES

Aussie Heritage

Queensland History of Electricity

www.aussieheritage.com.au/listings/qld/Howard/HowardPowerStation/756

Scholz Electrical

www.scholzelectrical.com.au/history/history5.html

Queensland Environmental Protection Agency - Case Study in Alternative Energy Solutions

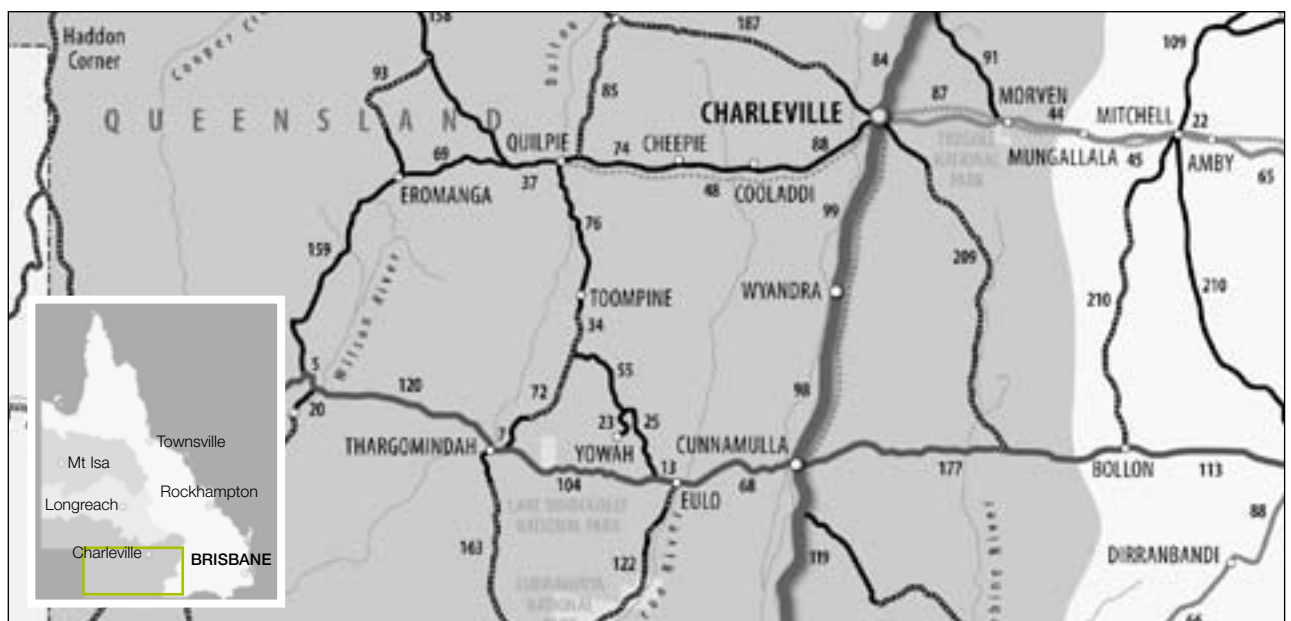
www.epa.qld.gov.au/publications/p00382aa.pdf/Bulloo_Shire_Council_alternative_energy_solutions.pdf

FURTHER INFORMATION

Environmental Protection Agency

Sustainable Industries

Phone: (07) 3225 1999
Email: sustainable.industries@epa.qld.gov.au
www.epa.qld.gov.au/sustainable_industries



Quirky fact:

In 1997 there were **256 bird, 56 mammal, 94 reptile and 23 amphibian species** recorded for the Mulga Land bioregion. The eucalypt woodlands showed the highest diversity of species.

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Natural Resources - Provision of Energy
7	Sustaining the Outback - Renewable Energy Schemes

DESCRIPTION

The native bush that skirts many inland billabongs or stretches along the banks of inland rivers conjures up images of peace and quiet. However, these 'riparian' areas are in fact teeming with wildlife. Riparian describes the land that lies between the bed of any natural watercourse, creek, river or wetland and the surrounding terrain. They are narrow corridors that vary in width from just a few metres to more than one kilometre.

A constant water supply combined with fertile alluvial soil and sand deposits create riparian conditions. These areas sustain a vast array of unique habitats for native plants and animals, as well as being highly valued for their agricultural benefits. The availability of water, shade, shelter and food not only supports resident wildlife but also many nomadic and migratory species.

In Queensland's Outback, open woodlands of large river red gum, coolibah and varieties of eucalypt commonly line the rivers and creeks. Shrubs provide a thick blanket of undergrowth and after periods of flooding, the ground becomes lush with grasses, sedges and forbs. Floods also bring hundreds of water birds including pelicans, herons, egrets, cormorants and spoonbills to roost in the trees or hunt for fish. Once the water subsides and waterholes become fished out, these birds move away.

Riparian zones are home to birds, mammals, frogs, reptiles and invertebrates. Koalas are common in riparian woodlands. The hollows of trees provide breeding sites for brushtail possums, gliders, owls and insectivorous bats. Water rats fish in waterholes at night and by day nest in burrows and hollow logs. Small birds feed on insects prevalent in the undergrowth while the kingfisher feeds on small fish, crustaceans and water insects. Fallen timber and leaf litter provide habitat for invertebrates, frogs and reptiles and migratory animals such as flying-foxes, honeyeaters and some parrots travel long distances each year to seek out blossom-laden eucalypts.

Riparian areas are fragile and can be easily damaged. Major threats include: over-grazing; clearing; feral animals and weeds; changes in water flow; pollution; and high recreational use.

*Riparian habitat in Western Queensland BP1319
October00 Product of Habitat Case Studies*



Gregory River

HISTORY - Charleville

First residents: Kunja, Wadjalang, Pitjara and Maranganji peoples

European Exploration: Edmund Kennedy, 1847

European settlement: 1860s

Town gazetted: 1868

History highlights:

- The first scheduled Qantas passenger flights left from Charleville, 1922
- Base for Cobb and Co.'s coach making business, 1890
- Home of the Steiger Vortex Rainmaking Guns, 1902

CLASSROOM ACTIVITIES

- In groups research the environmental factors that result in greater biodiversity from one region to another and then report your findings to the remainder of the group
- Create a poster which depicts what the 'Green Revolution' means to you
- National Threatened Species Day is held on 7 September each year to encourage the community to help conserve Australia's unique native fauna and flora. For more information on how to become involved visit www.environment.gov.au/biodiversity/threatened/ts-day/index.html

EXTERNAL ACTIVITIES

Parks and reserves within the region include Currawinya National Park, Hell Hole Gorge National Park, Lake Bindegolly National Park, Thruston National Park, Mariala National Park, parts of Welford National Park, Idalia National Park, Culgoa Floodplain National Park, part of Tregole National Park and Nocolche and Peery Lake Nature Reserves.

BEST EXPERIENCE

The Mulga Lands bioregion includes 253,000 sq. kms of land within both Queensland and New South Wales. Seventy-four per cent of the bioregion lies within Queensland. Major towns include Charleville, Cunnamulla, Bollon, St George, Quilpie, Hungerford in Queensland and White Cliffs, Wanaaring and Enngonia in New South Wales.

All information courtesy of Australian Natural Resources Atlas

OTHER POINTS OF INTEREST

- Bilby Sanctuary, Charleville
- Tregole National Park, via Morven

ADDITIONAL RESOURCES

www.actewagl.com.au/education/default.aspx

CSIRO

www.csiro.au/places/QBP.html

Greening Australia

Source: Factsheet

<http://live.greeningaustralia.org.au/NR/rdonlyres/43E8AEE6-0FAD-456E-973D-A8ECA414EA3B/2356/Riparianvegetation.pdf>

Queensland Environmental Protection Agency

Source: Factsheet Aquatic ecosystems - riverine habitat

www.epa.qld.gov.au/register/p01258bm.pdf

The Encyclopedia of Earth

www.eoearth.org/article/Eastern_Australia_mulga_shrublands

South West NRM

www.southwestnrm.org.au

REFERENCES

Queensland Parks and Wildlife Service
Riparian Habitat in Western Queensland
BP1319 October00

Product of Habitat Case Studies

Australian Natural Resources Atlas

www.anra.gov.au/topics/rangelands/overview/qld/libra-ml.html#natural

FURTHER INFORMATION

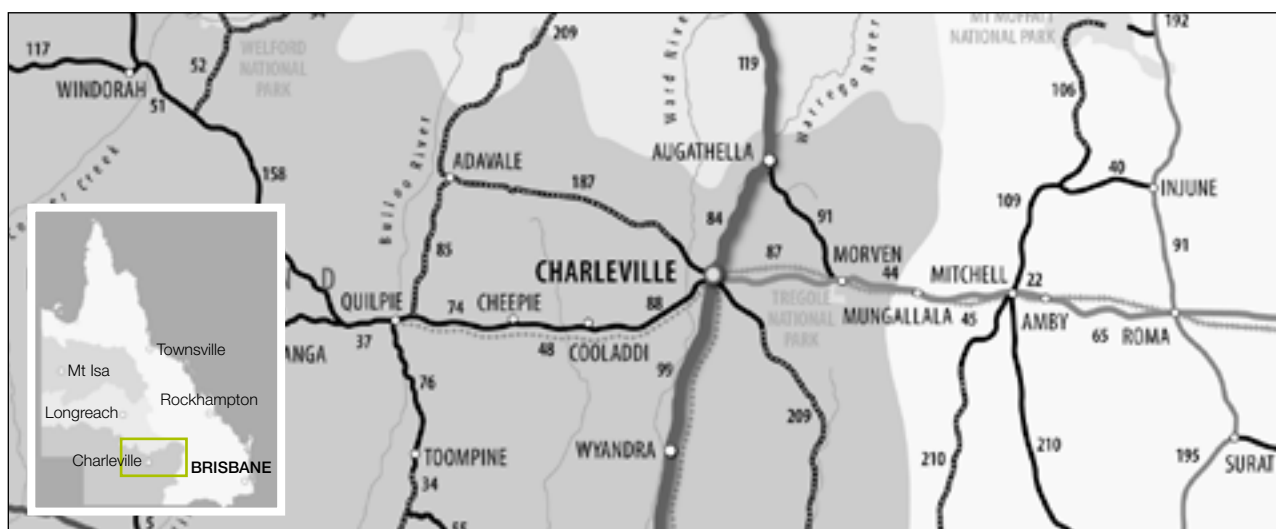
Roma District Office

Queensland Parks and Wildlife Service

36 Quintin Street,
PO Box 981 Roma QLD 4455
Phone: (07) 4622 4266

Charleville Visitor Information Centre

Phone: (07) 4654 3057
www.murweh.qld.gov.au



Quirky fact:

Canegrass thrives in arid environments because it is almost leafless, so **water is not lost through evaporation**. When it rains, the green stems direct moisture straight to the roots through photosynthesis.

CURRICULUM INFORMATION

Year	Learning and Assessment (Place and Space)
6	Conserving a Natural Biome
7	Sustainability of a Natural Phenomenon

DESCRIPTION

At one million hectares, Simpson Desert National Park is Queensland's largest protected area. At Poeppel Corner it meets South Australia's Simpson Desert Conservation Park and the Northern Territory's Simpson Desert Regional Reserve. The entire Simpson Desert covers more than 17 million hectares of Central Australia.

Across the Simpson, parallel dunes run south-east to north-west, the dominant wind direction when they formed during the Pleistocene epoch about 80,000 years ago. Spaced about 1 km apart, dunes can extend 200 kms.

The range in temperature can be extreme. In the summer months temperatures average at 39 degrees but can reach up to 50 degrees, while in the winter morning temperatures can drop to zero. There is no surface water in the Simpson Desert and dust storms are common. The average annual rainfall is less than 150 mm. While it usually rains in short bursts from December to March, heavy falls and overflows from the Channel Country occasionally sweep across the plains quenching the dry rivers and creek beds that feed Lake Eyre.

Bare, windswept crests stand atop slopes secured by spinifex and canegrass. Flat plains between dunes can be wind-polished gibber pebbles or mineral-encrusted claypans but many, surprisingly, support open shrublands of acacias, hakeas and grevilleas. Georgina gidgee, a rounded wattle tree, is found extensively in dune swales and is well known for its pungent odour after rain.

Far from deserted, the Simpson Desert is home to hardy mammals, many reptiles and over 180 bird species.

Sandhill canegrass shelters small birds. Lizards hide from predators in spiky, rounded clumps of lobed spinifex. Mulgaras, small and venerable carnivorous marsupials with a distinctive crest of short black hairs on their tails, burrow into dunes to escape the heat.



Couple on Big Red sand dunes

HISTORY - Bedourie

First residents: Wangkangurru, Lanima, Kungalenja, Karanja, Mitaka, Jeljendi, Maiawali, and Wangkamadla peoples

European exploration: Charles Sturt, 1845

European settlement: early 1880s

Town gazetted: 1888

History highlights:

- Home of the Bedourie Camp Oven

CLASSROOM ACTIVITIES

- Invite a guest speaker from the Aboriginal community or National Parks and Wildlife to come and speak about the importance of maintaining the Simpson Desert in as pristine condition as possible
- Make a list of the most important words in the main descriptive text
- Create a PowerPoint which gives a visual image of the landscape, plus the most important flora and fauna, in the Simpson Desert

BEST EXPERIENCE

Big Red, Simpson Desert National Park

The Simpson Desert National Park is Queensland's largest national park, and 80 kilometres west of Birdsville

Cost: Entry to the park is free, however fees apply for camping

Hours: Open 24 hours

Contact: Information, access and maps available at www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/

IMPORTANT INFORMATION

- The Simpson Desert National Park is vast and remote and should be accessed by 4WD only.
- All visitors must check their travel plans with local authorities i.e. EPA, Police and Warrari Information Centre
- From Birdsville take the Birdsville Track to Big Red (35 kms).

OTHER POINTS OF INTEREST

- Diamantina National Park, via Bedourie
- Burke and Wills Dig Tree - Cameron Corner, via Thargomindah

ADDITIONAL RESOURCES

Queensland Environmental Protection Agency

Source: Many sources of information
www.epa.qld.gov.au/parks_and_forests/find_a_park_or_forest/simpson_desert_national_park/#park_features

The Encyclopedia of Earth

Source: Many sources and additional reference material
www.eoearth.org/article/Simpson_desert

World Wildlife Organisation

Source: Many sources
www.nationalgeographic.com/wildworld/profiles/terrestrial/aa/aa1308.html

Diamantina Shire Council

www.diamantina.qld.gov.au/

Diamantina Touring

Source: History of European explorers of the region. Excellent source for bioregional (land systems) information
www.diamantina-tour.com.au/outback_info/simpson_desert/european_exploration/european_exploration.htm

REFERENCES

Queensland Environmental Protection Agency

www.epa.qld.gov.au

National Geographic

www.nationalgeographic.com/wildworld/profiles/terrestrial/aa/aa1308.html

FURTHER INFORMATION

Environmental Protection Agency, Birdsville

Cnr Billabong Boulevard and Jardine Streets, Birdsville QLD 4482
Phone: (07) 4656 3249 or (07) 4656 3272

Warrari Visitor Information Centre

Billabong Boulevard, Birdsville QLD 4482
Phone: (07) 4656 3300
Email: warrari.centre@bigpond.com
www.diamantina.qld.gov.au



Notes