

**Western Australia, the Kimberley  
and  
Central Australia**

**May – June 2006**

**Jim Russell  
with  
Elaine and Doug Johns and Wilma and David Williams**



**Crossing the Pentacost River – Gibb River Road**

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# Itinerary

Date	Day	Place	Distance - km
Tues 16 May	01	Pt Augusta	1030
Wed 17 May	02	Ceduna	644
Thurs 18 May	03	Norseman	1266
Fri 19 May	04	Perth	792
Sat 20 May	05	Port Denison	480
Sun 21 May	06	Carnarvon	560
Mon 22 May	07	Coral Bay	350
Tuesy 23 May	08	Coral Bay	
Wed 24 May	09	Karratha	493
Thurs 25 May	10	Eighty Mile Beach	520
Fri 26 May	11	Broome	400, 6631
Sat 27 May	12	Broome	
Sun 28 May	13	Windjana Gorge	
Mon 29 May	14	'Silent Grove'	
Tuesy 30 May	15	Manning Gorge	
Wed 31 May	16	Manning Gorge	
Thurs 01 June	17	Drysdale River Station	
Fri 02 June	18	Drysdale River Station	
Satay 03 June	19	El Questro Wilderness Resort	
Sun 04 June	20	El Questro Wilderness Resort	
Mon 05 June	21	El Questro Wilderness Resort	
Tues 06 June	22	Kununurra	1378
Wed 07 June	23	Kununurra	

Date	Day	Place	Distance - km
Thurs 08 June	24	Bungle Bungles – Purnululu NP	300
Fri 09 June	25	Bungle Bungles	
Sa 10 June	26	Willare Bridge Roadhouse	727
Sun 11 June	27	Broome	145
Mon 12 June	28	Broome	
Tues 13 June	29	Broome	1276
Wed 14 June	30	Fitzroy Crossing	419
Thurs 15 June	31	Tanami Desert	600
Fri 16 June	32	Tilmouth Well	764
Sat 17 June	33	Alice Springs	136
Sun 18 June	34	Kings Canyon	554
Mon 19 June	35	Uluru	467
Tues 20 June	36	Glendambo	1010
Wed 21 June	37	Rawnsley Park Station	427
Thurs 22 June	38	Rawnsley Park Station	700
Fri 23 June	39	Rawnsley Park Station	180
Sat 24 June	40	Rawnsley Park Station	
Sun 25 June	41	Broken Hill	460
Mon 26 June	42	Broken Hill	100
Tues 27 June	43	Menindee	140
Wed 28 June	44	Castlemaine	720
Thurs 29 June	45	Melbourne	130, 15740

# Maps









## **Tuesday 16 May 2006 - Melbourne – Port Augusta**

**Day 01**

After the 40<sup>th</sup> anniversary celebrations for Cookery the Australian Way the previous night the prospect of an early start was a bit daunting. However when Elaine and Doug arrived at 05:45 everything was nearly ready and at 06:05 Elaine and I headed off

for an all day drive to Port Augusta at the top of Spencer Gulf in South Australia.

There were no plans for sightseeing on this sector so stops were brief at Horsham, Tailem Bend and Port Wakefield for fuel and a bite to eat.

The weather is fine for driving and we are able to make good time, arriving at Port Augusta at about 18:15.

After settling into the motel we ate at the hotel across the road.

## **Wednesday 17 May 2006 - Port Augusta to Ceduna**

**Day 02**

An early start was not planned as we intended to spend a little time looking around the historic town and visiting the Wadlata Outback Centre. This centre has an excellent display showing the indigenous, geological and post European settlement history of the region.

We are at the Wadlata Outback Centre soon after 09:00 and spend an hour looking at the displays.

<http://www.portaugusta.sa.gov.au/site/page.cfm?u=819>

At 10:00 we are on our way towards Ceduna via Whyalla, Cowell, Cleve, Loch and Elliston. This is not the shortest route across the Eyre Peninsula, but we want to hit the coast south of Ceduna so that we can enjoy the coastal scenery along the Flinders Highway between Streaky Bay and Ceduna.

We stop briefly at Whyalla for a photo of the steel works and later along the highway for a photo of the Iron Duke iron ore mine. This ore deposit, like Iron Knob, stands out above the surrounding plain. The Iron Duke deposit was first mined in 1990.

<http://www.southeasternhistory.com.au/iron.htm>



**Courthouse - Port Augusta**

Located 76 km south of Port Augusta and 388 km from Adelaide, Whyalla is one of the three major centres on the Eyre Peninsula and, like Ceduna and Port Lincoln; it is driven by the local steel and petroleum industries. It is also the largest provincial city in South Australia.



**Theatre - Port Augusta**

The first European to visit the site of modern day Whyalla was Matthew Flinders. On 9 March 1802 Flinders sailed



along the coast and named Hummock Hill, which now is the site of the city's lookout - a marvellous location which affords 360° views across the city and steelworks as well as across Spencer Gulf and down the coast.

Thirty eight years later Edward John Eyre, on one of his many expeditions to the peninsula which now bears his name, passed near the present site of Whyalla. However it wasn't until 1862 that the first pastoral lease - appropriately called Mount Hummock - was taken up in the area.



**The Black Stump - Cowell**

In 1880 iron ore leases were taken out at [Iron Knob](#) and by 1886 BHP

had control of the leases with the plan to transport the ore across the Spencer Gulf to be used as a flux at Port Pirie where the silver, lead and zinc from Broken Hill was being smelted.



**Colonial Style Home - Port Augusta**



**Steelworks - Whyalla**

In 1901 a tramway (actually it was a privately owned railway but it was always called a tramway by the locals) was built between Iron Knob and Hummock Hill. It

replaced the bullock drays which had been used to bring the iron ore to the coast.

Slowly a tiny settlement began to grow up around Hummock Hill. It was known until the 1920s as 'Hummocky'. Fresh water was shipped across the Gulf from Port Pirie, a general store was built (1903), the telephone was installed (1911) and just a month before the arrival of the first policeman the town officially changed its name to Whyalla, an Aboriginal word probably meaning 'deep water place'.

For most of its life (probably for all of its life) Whyalla has been a town totally dependent on the economic decisions of BHP. On 8 January 1915 ore from Iron Knob was shipped to Newcastle thus ensuring the city's existence as the major port for the Middleback Ranges iron ore deposits.



**Iron Duke**

The development of the town-city from the turn of the century until 1970 was heavily influenced by BHP. Effectively a company town from 1900-1945 it then became a 'city commission' by a special Act of Parliament. From 1945-70 three local members, three BHP representatives and a chairman appointed by the

South Australian government ran the town (it was proclaimed a city in 1961). It finally achieved full local government autonomy in 1970. Between 1938-40 BHP turned the town from a port to a major production centre. In two years the harbour was dredged, a blast furnace was built and a shipyard was constructed. Between 1941-78 sixty-three ships were built. At its peak Whyalla was the biggest shipbuilding port in Australia with a capacity to build ships up to 83 000 tonnes. The largest ship ever built in Australia, a bulk carrier called the Clutha Capricorn, was launched from the Whyalla shipyards in 1972.

<http://www.walkabout.com.au/locations/SAWhyalla.shtml>

Cowell is a sleepy, pretty little village, which was once a port for ships taking agricultural products to Adelaide.

Today it is the centre of an aquaculture industry, mainly oysters.

Nephrite jade was discovered in 1965 in the nearby Minbrie Ranges. The Cowell Jade is recognized as the oldest and one of the largest deposits in the world

The town is situated on Franklin Bay and a plaque commemorates a visit by Matthew Flinders in 1802.

By the number of boat trailers, although some of them belong to commercial fishers, at the ramp, it is also a popular fishing spot.

At Cowell we leave the coast and cut across the Eyre Peninsula.

<http://www.tep.com.au/region/cowell.htm>  
<http://www.walkabout.com.au/locations/SACowell.shtml>  
[http://www.travelmate.com.au/Places/Places.asp?TownName=Cowell\\_%5C\\_SA](http://www.travelmate.com.au/Places/Places.asp?TownName=Cowell_%5C_SA)



**Commercial Hotel - Cowell**

Cleve is a centre for local wheat and sheep farmers with many agents for farm machinery and other suppliers of agriculture. We are traveling through wheat fields that have been recently planted or are being prepared for planting. Great clouds of dust follow the farm machinery across the fields.

This is an area which, prior to clearance by Europeans, was characterised by dense mallee scrub which comprised white mallee, red mallee, narrow-leaved red mallee and broombush. Euros and Western grey kangaroos were commonplace and the rainfall in the area rarely exceeded 400 mm per annum. It was dry land which, if carefully used, could produce good reliable crops of wheat and was ideal sheep country. As late as the 1850s the only Europeans who had any knowledge of

the area were a small number of drovers and explorers who had overlanded sheep from Port Lincoln to Port Augusta.

The first settlers, Dr James McKechnie and his two brothers Donald and Peter, moved into the area in April 1853.

<http://www.walkabout.com.au/locations/SACleve.shtml>

<http://www.cleve.sa.gov.au/site/page.cfm?u=165>

Fuel is needed at Elliston so it is an opportunity to take quick drive around and take a few photos.

<http://www.walkabout.com.au/locations/SAElliston.shtml>

The 1389 ft heritage listed jetty situated central in Waterloo Bay was originally built by the early settlers, and has been recently restored it is one of the few screw pylon structured jetties still in use and lit at night.

<http://www.tep.com.au/region/elliston.htm>



**Jetty - Elliston**



The Flinders Highway is inland until we reach Streaky Bay. A short stop and a few photos and we are on our way again. A roadside lookout provides a great view of Streaky Bay.

The history of European exploration of the Streaky Bay area starts with the Dutch sailors who accompanied Pieter Nuyts on his 1627 voyage across the Great Australian Bight. Nuyts reached the South Australian coast near Streaky Bay before turning westward and heading to the Dutch East Indies. His visit to the area is recalled on the Pieter Nuyts Monument in the median strip on Bay Road near the Community Hotel.

Nuyts was followed, nearly two centuries later, by Matthew Flinders who in 1802 explored the entire coast of the Eyre Peninsula. It is widely accepted that Flinders named the bay because of the streaky discolouration

he noticed in the water. The discolouration was probably nothing more than seaweed.

<http://www.walkabout.com.au/locations/SASTreakyBay.shtml>



**Streaky Bay**

It is getting late so we make tracks for Ceduna. We arrive too late to set up camp so we find a caravan park with

cabins and take that for the night. It turns out that for the next few days we will stay in motels as the distances are too great for us to arrive before dark.

<http://www.walkabout.com.au/locations/SACeduna.shtml>



**Setting Sun**

## **Thursday 18 May 2006 – Ceduna to Norseman**

**Day 03**

We had not planned to make Norseman tonight but an early start and little reason to stop except for fuel and food makes it possible to go much further than planned. It also meant that the planned long day on Saturday could be reduced.

We are soon traveling along long straight roads through saltbush plains that soon become the treeless Nullarbor Plain. As far as the eye can

see there are only a few stunted shrubs.

It was the South Australian government surveyor E. A. Delisser who, in 1867 while surveying the border between South Australia and Western Australia, gave the area the name Nullarbor from the Latin words 'nullus arbor' meaning 'no trees'. Since then the term has become wonderfully imprecise and has come to refer to all the flatlands lying to the north of the Great Australian Bight. It actually defines a large area which is about 750 km from east to west and which runs between the Great Australian Bight and the edges of the Great Victoria

Desert. Even the most indiscriminating of visitors will realise that the definition is not accurate. There are trees on the plain. The one area near the Eye Highway which is truly treeless is the area which lies between the Yalata and Nullarbor roadhouses. Here there is nothing other than dry stunted grasses and low lying hardy desert bushes. The effect of this strange landscape is both monotonous and mesmerising. The other major treeless area is much further to the north.

<http://www.walkabout.com.au/locations/SANullarbor.shtml>



**Nullarbor Plain - Nullarbor Roadhouse**

We make a couple of stops to take pictures of the cliffs along the Great Australian Bight.

Nullarbor Roadhouse stands out as an oasis in the middle of nowhere. We refuel and head off towards Eucla where the road descends from the Nullarbor Plain to the coastal plain.

The first European to pass through the area was Edward John Eyre on his ill-fated 1841 expedition. He was followed by John Forrest in 1870 and in 1873 land was taken up at Moopina Station near the present townsite. The land is very marginal experiencing an average rainfall of only 254 mm per annum.



**Early Morning - Ceduna**

Eucla came into existence in 1877 as a manual telegraphic repeater station. Its location near the state border was no accident. It is claimed that messages

would arrive in one part of the old telegraph station, be carried across to a wall (which represented the state boundary), passed through a pigeon hole, and then sent on their way by the telegraphist from the other state who was on the other side of the wall.

The location of the repeater station was chosen because it was possible to build a jetty (the ruins of which can still be seen) at which supplies could be landed. It was the only place where boats could moor for hundreds of kilometres. The cliffs to the east are the longest stretch of uninterrupted cliff face in the world.

<http://www.walkabout.com.au/locations/WAEucla.shtml>

There is more vegetation now and we make our next stop at Madura. Elaine Takes over driving and has the exciting prospect of driving along the 90mile dead straight stretch of the Eyre Highway between Caiguna and Balladonia. At this point we decided we could make Norseman at a

reasonable time and continued on, arriving at Norseman at about 18:30. We find a nice motel with a restaurant and settle in. We have driven 1225km today.



**Great Australian Bight - West of Nullarbor Roadhouse**

The quest for gold in the Kalgoorlie-Coolgardie area led to the establishment of Norseman. The story of the town's origins and its naming have become folklore. The first discoveries in the area were made in

1892 on what became known as the 'Dundas Field' and the town which sprang up in this harsh and inhospitable environment was called 'Dundas', for the lack of anything better. Two years later (and here legend and fact become rather confused) the town was named 'Norseman' after a horse owned by a prospector named Laurie Sinclair. It has been claimed that 'Norseman' kicked at a large nugget on a site which Sinclair later pegged and discovered a substantial reef.



**Great Australian Bight - West of Nullarbor Roadhouse**

Like most of the Goldfields towns, Norseman grew rapidly. It was proclaimed a town in 1895, became a municipality the following year, was connected to the telegraph in 1896, and by 1905 had a population of 3000.

The area suffered acutely from a shortage of water (its average annual rainfall is 276 mm) and an isolation from major centres. Houses were built out of anything miners

could find and rainwater was supplemented by distilling saltwater from the numerous lakes in the region.

Services in the area improved slowly between the wars - the railway arrived in 1927, reliable water came to the town in 1936 and the southern road through Esperance and Port Augusta was upgraded in 1941 - but the gold dwindled. Today there are a number of small goldmining operations in the area but only the Central Norseman Gold Corporation can be considered a major producer. Still, it is claimed that since 1892 over 100 tonnes of gold have been extracted from the area.

<http://www.walkabout.com.au/locations/WANorseman.shtml>



**Great Australian Bight - West of Nullarbor Roadhouse**





**Paddy Hannan - Kalgoorlie**

It is raining this morning and we set off about 07:15 for Kalgoorlie and wherever we can get to.

Fortunately the rain eased when we got to Kalgoorlie and we were able to walk around the town and have a look at some of the historic buildings and drive to the Super Pit an enormous open cut gold mine developed as a result of Alan Bond's bringing together a number of mines thus making it possible to create this huge pit.



**Exchange Hotel - Kalgoorlie**



**Super Pit - Kalgoorlie**



**Digger Bucket - Super Pit - Kalgoorlie**

## Kalgoorlie-Boulder

**One of Australia's most famous and important gold mining towns.**

'Welcome to Kalgoorlie' reads the sign at the western edge of this remarkable town, which is located 597 km east of Perth and 360 metres above sea-level. Here is a community which was built on gold over 100 years ago and which is still basically driven by that same metal. This is a prosperous and attractive town combining the old (Hannan Street is a feast of truly superb nineteenth and early twentieth-century buildings) and the new jostle for attention. It is a city full of extraordinary history. And it is one of Australia's truly great goldmining towns.



**Post Office - Kalgoorlie**

The first Europeans to explore the Kalgoorlie-Boulder area were H.M. Lefroy and C.C. Hunt who were searching for viable pastoral lands in

the 1860s. By the early 1890s the goldfields of the state's north-west were becoming less viable and the state government offered a reward for fresh discoveries. Attention was drawn to the state's south-east when Arthur Bayley discovered gold near Coolgardie in 1892. The following year Paddy Hannan, Tom Flanagan and Daniel Shea discovered alluvial gold nuggets near Mount Charlotte when they were forced to camp out unexpectedly after their horse lost a shoe.

<http://www.walkabout.com.au/locations/WAKalgoorlie.shtml>

<http://www.nullarbornet.com.au/towns/kalgoorlie.html>

[http://en.wikipedia.org/wiki/Kalgoorlie,\\_Western\\_Australia](http://en.wikipedia.org/wiki/Kalgoorlie,_Western_Australia)

The current Super Pit is approximately 3.5km long, 1.5km wide and 360 metres deep. The approved long-term pit development will see the Super Pit grow to be approximately 3.9km long, 1.6km wide and exceed 500 metres in depth. KCGMs geologists continue to drill exploration holes and look for every opportunity to add to the mine ore reserves and life of the operation.

<http://www1.superpit.com.au/pages/faqs.asp>

Refueled and heading towards Perth there is a loud bang as we are approaching Southern Cross. The rear window has exploded outward. I have no idea why this has happened. I tape it up with gaffer tape and at Southern

Cross Elaine phones Windscreen O'Brien to arrange a replacement. It can be done in Perth tomorrow morning so we change plans and head for Perth.

We find secure accommodation at the Country Comfort Motel. A bit expensive, but the secure parking area is reassuring.



**Perth - Kalgoorlie Water Pipeline**

**Saturday 20 May 2006 – Perth to Port Denison**

**Day 05**

We are up and away by 07:30 and it takes only 15 minutes to get across town to Osborne Park and Windscreen O'Brien's. They have the window and start work straight away.

By 10:30 the job is finished and we are on our way again heading for

Dongara. We cross to the Great Northern Highway via the Reid Highway and West Swan Road. It is a very pleasant drive through the vineyards of the Swan Valley.

We switch from the Great Northern Highway to the Brand Highway. We are traveling through Banksia country and many of the orange Banksias are in flower. There is not much evidence of other wild flowers. Grass trees abound.

<http://www.pawlan.com/Monica/xanthor/>  
<http://www.parkweb.vic.gov.au/education/factfiles/10.htm>  
<http://www.anbg.gov.au/aborig.s.e.aust/xanthorrhoea-species.html>

<http://www.anbg.gov.au/banksia/banksia.html>





**Grass Tree - road to Cervantes**

After about 200km we turn left for the coastal town of Cervantes.

## Cervantes

Located 245 km north of Perth, Cervantes is a pleasant, rather underdeveloped, fishing village and holiday destination with three jetties, a very good motel, a caravan park and a rock lobster processing plant.

Like Jurien, which lies to the north, it has that temporary and transient feel of a place which hasn't quite settled itself in. While it has more permanent and gracious holiday homes than Jurien there are still many houses

built of fibro and permalum to cater for enthusiastic fishermen. The town's fishing fleet nearly doubles in the rock lobster season. Like all of the coast on the Central West the town is surrounded by spectacular displays of wildflowers in the spring. The Nambung National Park is particularly impressive.



**Beach - Cervantes**

Cervantes is one of Western Australia's newest towns. It was as recently as 1962 that the government removed 505 hectares from the northwest corner of the Nambung National Park to establish a town.

Cervantes takes its name from an American whaling ship which was wrecked off the coast in 1844. Apparently the Cervantes was anchored off Thirsty Point, the promontory which lies to the west of the town and separates Nambung Bay (to the south) from Ronsard Bay in the north, when a gale blew up and the ship was blown ashore on an island to the south of the point. The ship was not badly damaged but due to difficulty of repairs all the contents were sold on the site. The island was named Cervantes and, in 1963, it was given to the small township which had sprung up on the mainland.

<http://www.walkabout.com.au/locations/WACervantes.shtml>

Near here is the Nambung National Park. A unique and popular feature of this park is the Pinnacles Desert. Thousands of limestone pillars, up to four metres high, rise out of a stark landscape of yellow sand. Some are jagged, sharp-edged columns, rising to a point; others resemble tombstones.



**Pinnacles Desert - Nambung National Park**

The Pinnacles were first discovered by Major Logue and his stockmen in 1849. They camped near the Nambung River and during the night the cattle strayed. While searching for them the next morning the stockmen came across the Pinnacle Desert.

So how did these strange pinnacles form? The coast of Western Australia, from Shark Bay nearly to Albany, has a near continuous belt of tamala limestone probably more accurately called aerolian calcarenite - ie. wind blown calcium carbonate - which has been produced by the combination of wind, rain and the cementing agent of calcium.



**Banksia flower - road to  
Cervantes**



**Distant Drilling Rig off Port Denison**

A set of unique circumstances produced the pinnacles. Firstly the huge sand dunes stabilised. The rains which fell on the dunes leached down through the sand carrying the calcium. This resulted in the lower levels of the dune solidifying into a soft limestone. As this stabilisation occurred a layer of soil formed on top of the dune which allowed plants to grow and further cemented the limestone below. Gradually the lowest layer of soil, which lay between the surface and the limestone, formed into a hard cap which resulted in the old dunes having three levels - a soil and plant level near the surface, a hard cap below the surface, and a thick layer of soft limestone at the bottom of the dune.



**Pinnacles Desert - Nambung National Park**

Inevitably the roots from the plants on the top level found cracks and broke up the hard cap and the layer of soft limestone. The result was that under a surface covered with plants and soil the pinnacles developed. No one knows for sure how long ago this process occurred. It may have started as long ago as 500 000 years but

equally it may only be a few thousand years old and it may still be continuing today. The Western Australian Museum has opted for some time in the last 80 000 years

<http://www.walkabout.com.au/locations/WACervantes.shtml>

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/nambung.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/nambung.html)

A track winds its way over the hard yellow sand (like school ground grave for those who can remember) between the pinnacles. The afternoon shadows make it quite an eerie place.

We return to Cervantes to pick up the trailer. To visit the park we have had to unhitch the trailer and leave it in the town.

We continue our journey North to the Caravan Park at Port Denison just south of Dongara.



## Port Denison

Port Denison is an attractive port for fishermen (especially crayfishermen) with a good marina and harbour. Originally known as Port Irwin the settlement really came to life with the construction of a jetty at the bottom of

William Street (the ruins are still to be seen) in 1867. The jetty was built by a Perth businessman, Benjamin Mason, who used both convict and free labour. The total cost was £1350. A second jetty was built in 1959 and a third one was completed, as part of the marina, in 1979. The Port Denison marina has a capacity of about 130 vessels and, as such, is one of the largest marinas on the Western Australian coast.

<http://www.walkabout.com.au/locations/WADongara.shtml>

This is our first camping night and we are a little slow setting up and also I want to redistribute some of the heavier items.

Facilities are good but we are close to the road and a strong wind flaps the tent all night.

**Sunday 21 May 2006 – Port Denison to Carnarvon**

**Day 06**

We are on the road soon after 08:00 heading for Geraldton where we spend about an hour exploring the town before heading north again.

<http://www.walkabout.com.au/locations/WAGeraldton.shtml>  
<http://www.geraldton.wa.gov.au/ExtraNet/localhistoryhm.asp>  
<http://www.geraldton.wa.gov.au/ExtraNet/LocalHistory/INTRO.asp>

## The St Francis Xavier Cathedral

Geraldton, along with Northampton, Mullewa, Yalgoo, Tardun, Morawa, Perenjori and Nanson, can boast a number of religious buildings by the famous Western Australian architect-priest Monsignor John Hawes (see introduction for details of Hawes' life). Between 1915-1939 Hawes designed and helped to build a large number of churches and church buildings in the Central West. Of all these buildings the most impressive, indeed the most

remarkable, is St Francis Xavier Cathedral in Geraldton.



**Fishing Boats – Port Denison**

By any measure the cathedral is a hodge-podge of style. The twin towers are similar to those on the Californian Mission Church at Santa Barbara, the central dome has echoes of Brunelleschi's cupola in Florence, the main doorway is from the French Renaissance, there are eight Romanesque columns inside, and the strange painting scheme (orange and grey stripes) is reminiscent of the Eastern Orthodox churches or even an Islamic mosque although Hawes' did say of the colour scheme that it was drawn from the 'many churches and cathedrals of Italy,

such as Siena and Orvieto'. There is no doubt that the interior of the church is as interesting, if not more interesting, than the exterior. It is truly a remarkable and highly original piece of architecture.

<http://www.walkabout.com.au/locations/WAGeraldton.shtml>



**St Francis Xavier Cathedral – Geraldton**

We have decided not to go to Monkey Mia. Instead we head along the road to Monkey Mia and turn off to the old telegraph station at Hamelin Pool.





**Beacon (of cloth) - Hamelin Pool**

Hamelin Pool Telegraph Station was established in 1884 as a relay station on WA's northwest coastal line, which carried messages overseas and into WA's remote northwest. This station is the last of these outposts still standing.

This is one of only two places in the world where living stromatolites exist. The stromatolites here are about 3000 years old. The bacteria build limestone formation and releases oxygen to the atmosphere. These are one of the original living organisms and are believed to have been the

source of oxygen, necessary for modern life forms.

[http://www.calm.wa.gov.au/national\\_parks/hamelin\\_pool\\_mnr.html](http://www.calm.wa.gov.au/national_parks/hamelin_pool_mnr.html)



**Courthouse - Geraldton**



**Telegraph Station - Hamelin Pool**

The reason that the stromatolites are able to exist here is that the bay is almost closed by a sand bar that limits tidal flow in the bay and with high evaporation the bay is

very salty making it uninhabitable for organisms that destroyed them elsewhere.

<http://www.ucmp.berkeley.edu/bacteria/cyanofr.html>



**Quarry - Hamelin Pool**



**Observation Boardwalk - Hamelin Pool**

Hamelin Pool was also a port for wool and wheat transport to Perth. Shallow draught lighters came to collect the goods and transported them to waiting ships in

a deep anchorage off Dirk Hartog Island 190km away. They were guided by 'beacons of cloth', similar to the one at Hamelin Pool, erected in 1880.

Early settlers in the area had few sources of timber for building. Coquina provided a solution.

Coquina is an incompletely consolidated [sedimentary rock](#) of biochemical origin, mainly composed of [mineral calcite](#), often including some [phosphate](#), in the form of [seashells](#) or [coral](#). It is created in association with [marine reefs](#). While not usually referred to as such, it is actually a subset of [limestone](#)

<http://en.wikipedia.org/wiki/Coquina>

Excavated with a crosscut saw, blocks from the quarries on the shore of Hamelin Pool were used to construct many buildings including several station homesteads and the church in Denham.

Today, shell blocks from this quarry are taken only to maintain historic buildings in Shark Bay.

This was a very interesting side trip.

Our decision to skip Monkey Mia means we can make Carnarvon tonight; a day ahead of schedule and make Coral Bay tomorrow, where we will stay two nights and skip Exmouth.

<http://www.exmouthwa.com.au/afrontpage.asp>  
<http://walkabout.com.au/locations/WAExmouth.shtml>



**Stromatolites - Hamelin Pool**

**Monday 22 May 2006 – Ceduna to Norseman**

**Day 07**

Carnarvon is located at the northern end of the Shark Bay World Heritage Area at the mouth of the Gascoyne River. The area was listed in 1991 under all four criteria for listing as a Natural World Heritage Site.

<http://www.sharkbay.org/>  
<http://www.deh.gov.au/heritage/worldheritage/sites/shark/index.html>

There is no rush today.



**Tramway to Babbage Island - Carnarvon**



**Carnarvon**



However by 08:30 we are on our way into Carnarvon; a little shopping and we head to the main street and the foreshore. We stop to take a few photos. There is no wind and the reflection of the palms along the foreshore make for very interesting photographs.

<http://www.walkabout.com.au/location/s/WACarnarvon.shtml>  
<http://www.westaustrianvista.com/history-of-carnarvon.html>

We then make our way to the Carnarvon Heritage Precinct and the One Mile Jetty. The water tank for water for the steam locomotives that hauled goods along the jetty has been converted to a lookout and provides a vantage point to view the pier and town.

The jetty was built to facilitate the transport of grain and cattle to Perth. State ships used to visit, bringing goods for to the surrounding farmers and transporting their produce to Perth. A tramway was built from the town across Babbage Island (named after the famous mathematician, Charles Babbage, because of his contribution to navigation) to the end of the jetty to make the passage of goods and people easier.

<http://www.australiascoralcoast.com/en/Outback+Coast/Carnarvon/Carnarvon+Heritage+Precinct.htm>

Next stop is Coral Bay; only 250km away. We are there in the early

afternoon, set up camp, did our washing and then headed for the beach and a swim. Very pleasant!



**Foreshore - Carnarvon**



**Carnarvon**

Coral Bay is a small settlement that lies protected from the Indian ocean by the [Ningaloo reef](#). It is Australia's only [fringing reef](#). In contrast to other locations the coral starts right at the water's edge. The fish and the coral are very accessible to all including small children. Fish and

coral can be experienced either snorkelling or on one of the Coral viewing boats. It is about 50 km to the North of the tropic of Capricorn, some 120 km south of Exmouth.

<http://www.coralbay.org/>



**One Mile Jetty - Carnarvon**



**Jetty Tramway Locomotive - Carnarvon**

The history of Coral Bay really begins at "Maud's Landing". The landing of the schooner Maud in 1884 is the earliest recorded European activity in the region.

In 1896 a town site reserve was gazetted to protect the site of an existing jetty and government goods shed. In 1915 the town was officially named Maud's Landing. Maud's Landing played an important role in the settlement and development of the North West of Western Australia. The woolshed and jetty which included a tramway served the local pastoralists in the provision of supplies and in the outward shipment of wool and sheep from 1898 until 1947. Wood from the jetty was taken away and used at the whaling station at Ningaloo station near point Cloates. Only old pilings from the jetty remain today.

Three kilometres to the south of Maud's Landing a very beautiful bay called Bill's bay was fast becoming a popular recreational area both for locals and for the more adventurous fishermen. Bills Bay was named after Ruby May French, affectionately called 'auntie Billie'. She was the wife of Charles French, the owner of Cardabia Station, the property surrounding Maud's Landing and Bills Bay. The first building in Bills Bay was a holiday shack built in 1933 by Jack McKenna, the manager of Mia Mia station and used by him as a summer coastal retreat.

It was not until 1968 that formal settlement began at Bills Bay with the establishment of an hotel, caravan park and a service station. The Hotel was named the Coral Bay Hotel probably because of the outstanding Coral Reef. Consequently the settlement became known as Coral Bay.

<http://www.coralbay.org/history.htm>

On returning to camp we arrange for an all day cruise on a catamaran.

Believe it or not, a fellow traveler from Myanmar, Elaine Rummer, saw me walking through the camp and came over.

Week One is finished and we are now over 5000km from home. Apart from the broken rear window everything has gone well.



**Set up at Coral Bay**

**Tuesday 23 May 2006 – Coral Bay**

**Day 08**

We are up at sunrise as usual and soon after 08:15 we make our way to the beach for our 6-hour cruise on the 10m catamaran, Coral Breeze. We are in plenty of time to watch the many cruise and glass bottom boats preparing for the day.

<http://www.coralbaytours.com.au/>

Licensed to carry 30 passengers; there are only 12 of us and the crew

of 2, so there is plenty of room out of the sun.

The Ningaloo Reef is a coral reef, similar to the Great Barrier Reef but for most of its length it is less than a mile from the coast and is therefore very accessible. In many places good snorkeling is available just off the beach.

<http://www.exmouthwa.com.au/pages.asp?code=24>  
<http://www.deh.gov.au/coasts/mpa/ningaloo/index.html>  
[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/ningaloo.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/ningaloo.html)

We set sail south along the coast with a 20 knot breeze behind us and soon reach the first snorkeling site about 15 miles south of the anchorage at Coral Bay. On the way spot a lone dolphin heading north.

We drop anchor about 200m from the outer reef; near, but clear of the coral.

After a safety briefing it is time to don flippers and mask and goggles and get into the water. The sea temperature is 25C and is quite pleasant without a wet suit; although some have them and wear them. There is a bit of chop



on the water and some, including Elaine, find it a little difficult to manage the snorkel.



**Coral Breeze - Coral Bay**

The corals in this location are mainly larger and as the water is shallow, most of the brilliantly coloured fish are small, darting in and out of the coral crevices.

The wind has whipped up a quite strong current and returning to the boat requires some effort.

After about an hour everyone has returned to the boat and we head off to search for turtles, locating some,

including a very large one close inshore.



**Dive Boats - Coral Bay**



**Beach Fishermen - Coral Bay**

The coastline is low sand hills and from the boat it is impossible to see what lies beyond. Dutch seafarers would have had a better view from their lookouts, but not much better, and it is little wonder they had little idea of what lay beyond.

By now the wind has moderated to about 12 knots and we head northward to another snorkeling site in deeper water.

Here the coral cliffs are 4-5m high and large colourful fish cruise in and out amongst the coral. There are brightly coloured starfish and giant clams on the seabed.

Nearby there is also a forest of tree-like coral; schools of small fish of all colours of the rainbow dart amongst the branches and around the swimmers. Elaine and some of the others use a long foam flotation aid and find they are much more able to enjoy the beauty of the reef. There is no current and swimming is much easier.



**Riding on a net behind the yacht**

Lunch of red emperor and salad is devoured; every one is hungry after all the swimming.

Lunch over we up anchor and sail back to the harbour arriving at about 15:00.

Although it had been a little windy it was still an excellent day for snorkelling.

In the evening a little light rain fell.





Coastline - Coral Bay

**Wednesday 24 May 2006 – Coral Bay to Karratha**

**Day 09**

Up again with the sun; there is still a little rain about and it looks like we were lucky yesterday and the today will be overcast and not so good for viewing the reef.

On the road by 08:00 we have about 600km to the Pilbara town of Karratha. The countryside is still flat and the vegetation is low shrubs and grassland.

There are occasional heavy showers of rain, and we later heard that Exmouth had had some very heavy rain overnight.



Mountains in the flat plain



**Flowers - Fortescue River**

As we travel north the mountains of the Pilbara region start to come into view, poking up out of the surrounding flat plain. At rivers and creeks, already mostly waterholes, the ghost gums contrast with the surrounding vegetation.



**Mountains in the flat plain**



**Fortescue River**

The Pilbara, centred on the historic town of Roebourne, has long been a pastoral region.

<http://www.roebourne.wa.gov.au/historyshire.htm>

The development of the huge iron ore mines in the Hamersley Ranges changed all that and Karratha became the centre supporting the mines in the hinterland. Railways carrying some of the longest and heaviest trains in the world transport the ore from the

mines to the nearby port at Dampier for shipping around the world.

## **Karratha**

**Modern and expensive town catering for mine workers in the Pilbara.**

Located 1557 km north of Perth, on Nickol Bay, Karratha is a modern town providing accommodation and services



for the employees of Hamersley Iron, Robe River Associates, the Dampier Salt Company and the workers on the North West Shelf Gas and Petroleum project.

The Karratha area was first settled as a result of F. W. Gregory's glowing reports about the pastoral potential of the Pilbara. In 1866 Dr Baynton and Harry Whittal-Venn established Karratha Station. The name 'Karratha' supposedly meant 'good country' in the language of the local Aborigines. The station continued to operate under Baynton and Whittal-Venn until 1879.

The modern, rather soulless town of Karratha, was planned and constructed in 1968-9 as a joint State government - Hamersley Iron project to meet the expanding accommodation needs of the mining company.

The township of Dampier, which was serving the needs Hamersley Iron and housing the people employed at the port facilities, was restricted in its ability to grow and consequently Karratha was developed on Nickol Bay. By 1973 Dampier had reached its growth capacity.



**Ashburton River**



**River Red Gums - Ashburton River**

As it grew the other major mining company, Robe River Iron Associates, invested money in the town. Today it is home to over 7000 people and, as the population continues to increase, the town has taken on a life of its own and the number of service industries continues to grow. It is the only town in the north west to have a major industrial estate servicing the needs of the community. It

is planned that the town will eventually house over 30 000 people. Inevitably the administrative functions of the Pilbara have all been moved to the town.



**Fortescue River**



**Fortescue River Bridge**

It has simply outgrown its 'company town' status and now is the largest and most important centre in the Pilbara.



It is an 'open town' providing a variety of accommodation (albeit very over-priced) for visitors and purporting to have some attractions which go beyond the mining industry.

<http://walkabout.com.au/locations/WA/Karratha.shtml>

[http://en.wikipedia.org/wiki/Karratha,\\_Western\\_Australia](http://en.wikipedia.org/wiki/Karratha,_Western_Australia)  
<http://www.roebourne.wa.edu.au/default2.htm>  
<http://www.roebourne.wa.edu.au/tour/abhistory.htm>



**Port - Dampier**



**Salt Stockpiles - Dampier**



**Ore Train - Dampier**



**Endless Plains between Roeburne and Port Hedland**



Our destination today is the caravan park at Eight Mile Beach. As usual we are on the road at around 08:00.

Leaving Karratha we pass by the historic town of Roeburne.



**Historic Gaol - Roeburne**

Port Hedland is the coastal base for the iron ore mines at Mount Tom Price and Mount Newman.

<http://www.porthedland.wa.gov.au/>

Ore is transported along several rail lines to huge ship loaders in the ports at Port Hedland and nearby Dampier.

In June 2001, BHP Billiton Iron Ore ran the world's longest and heaviest train. It stretched 7.4km, had 682 ore cars, eight locomotives, a gross weight of almost 100,000 tonnes and moved 82,262 tonnes of ore.

<http://ironore.bhpbilliton.com/default.asp>  
<http://ironore.bhpbilliton.com/repository/operations/rail.asp>  
<http://www.pilbarairon.com/default.asp>



**Port - Port Hedland**



**Ore Loader - Port Hedland**

Salt is also a major export and enormous salt pans at Dampier and Port Hedland produce huge

quantities of salt that is stockpiled in large piles for loading onto bulk carriers in the ports.



**Mt Newman Locomotive No 5497**



**Harvested Salt - Port Hedland**

Dampier Salt Limited produces 9,000,000 tonnes of salt per year and is the world's largest exporter of reliable, high quality (bulk) solar salt.



Large quantities of salt are essential to chemical and other industries in producing a wide range of products including plastic, glass, chlorine, soap, paper and water treatment to name a few. Caustic soda, an essential material in the production of refined alumina for aluminium smelting, is also produced from salt.

<http://www.dampiersalt.com.au/tnpn002785/prod/dsl/dslhome.nsf>

We lunch amongst the ghost gums beside the De Grey River where there is a pleasant roadside campsite.

The river has recently been in flood as the banks are still quite wet and muddy in places.

We reach Eighty Mile Beach mid afternoon and set up camp in a very pleasant caravan park. That is all there is here except for the spectacular white beach that stretches to the horizon in each direction and seems to stretch to Timor when the tide is out.

There is still light cloud about and as the sun sets the sky is lit with beautiful colours.



**Salt Pans - Port Hedland**



**Eighty Mile Beach**



**De Grey River**



**Eighty Mile Beach**

**Friday 26 May 2006 – Eighty Mile Beach to Broome**

**Day 11**

A more relaxed start this morning; about 350km to Broome and we don't need to be there until after 14:00, so we have time to take pictures of the beach with the tide in, and the sun rising over the eastern end of the beach.

Also time to catch up on the diary.

Nevertheless we are under way soon after 09:00 and heading back to the highway to head north to Sandfire Roadhouse for fuel.

Not much at Sandfire except the roadhouse and some large termite mounds. We push on to a lunch stop at Stanley roadside stop. The countryside is still flat and we are in Broome by 13:15 and make our way to the Broome Beach Resort where Elaine has booked a three-bedroom apartment. We are

early and they are still cleaning the rooms so we unhitch the trailer and head into town for some shopping.



**Early Morning Fisher - Eighty Mile Beach**

Cleaning is finished when we return and we get ourselves setup ready for the arrival of Doug and Wilma and David at 23:30 on the plane from Melbourne.

Elaine and I eat at the nearby Divers Tavern.

Doug, David and Wilma arrive on time. We have a late welcome drink and then into bed.



**Rising Sun - Eighty Mile Beach**



**At Stanley roadside stop**



**Termite Mounds - Sandfire Roadhouse**

**Saturday 27 May 2006 – Broome**

**Day 12**

## Broome History

Established as a pearling port in the 1880s, Broome has a romantic and often flamboyant history. It was populated by people of many

nationalities - mainly Europeans, Malays, Chinese and Japanese, as well as Australia's indigenous people - who flocked to the shores of Roebuck Bay in the hope of making their fortune from the pearling industry.

The influence of the pearling industry, with its cultural melting pot, has helped to create the distinctive character

and charm of Broome. South Sea Pearls are recognised as the best in the world and pearling remains one of the towns major industries due to the cultured pearl, which revived the industry after its near demise in the late 1950s.

Indigenous Australians

No modern discussion of Broomes history can ignore the regions indigenous Australians, historically known as the Aborigines or Aboriginals. Their claim to the lands that would become known as Dampierland, Roebuck Bay and Broome, span forty thousand years and clearly supersede that of any of the European explorers that would come later.

In 1688, when William Dampier first visited "New Holland" as the area was known to the rest of the world at the time, the first seeds were sown that would forever change the lives of the regions indigenous people. The constant and fundamental cultural clashes between the two people eventually led to the exploitation of the regions original inhabitants, especially in the early days of the pearling industry when Aborigines were forced to become skin divers for pearl shell and work aboard the pearl luggers.

## European Discovery

Any visitor to Broome can immediately recognise the legacy of place names and landmarks named after William Dampier the navigator, explorer, buccaneer and distinguished chronicler of the seven seas who is credited for discovering the region known today as the Kimberley in Western Australia.

Dampier, who at the time was an acknowledged pirate, first visited the region in 1688 and his meticulous journal from his travels is what later inspired the first 'official' voyage of discovery. Dampier returned in 1699 but after an altercation with curious aboriginals, in which a native was killed, was forced to hurriedly depart the area.

However, Dampier's journals were enough to stimulate interest in the areas rich pearl shell beds. By the late 1870s there was a growing pearling industry in the waters off north-western Australia with the largest base of operations being located in Cossack, about 700km from what was to become Broome.

In 1879, Charles Harper suggested to the Legislative Council that Roebuck Bay be set up as a port with facilities for the pearling industry. Thus, in 1883, John Forrest selected a town site on Roebuck Bay just east of Dampier Creek where three native wells existed and predicted this site would become the Capital of the Kimberley. Later that year, the townsite of Broome was proclaimed and named after the colony's Governor, Frederick N. Broome.

The first sale of town lots took place in October 1886 and two years later Broome was gazetted as a port. In 1889, a new telegraph cable was established at Roebuck Bay, linking the isolated colony direct with England, via Singapore, India, Aden, Egypt, Malta and Gibraltar.

## Roaring Years

The Fat Years of 1889 to 1891 saw the price of mother of pearl shell escalate to new highs and established Broome as a port often referred to as the Queen City of the North. By 1898, Broome was the principal cargo port for north Western Australia and by the First World War, the Port of Broome was second only to Fremantle.

At this time, men from the UK dominated the pearling industry at Roebuck Bay but by 1900 many had retired to

England or other destinations to enjoy their fortunes. As these men disappeared, they were replaced by younger men from Victoria and New South Wales affected by the depression of the nineties.

## World War 1

When World War I was declared in 1914, Broome harboured about 300 pearl luggers and had a population of over 1,000 white men and some 2,000 coloured. Within a few months the fleet numbers were halved, as men rushed to enlist in the war effort and economic events in Europe severely impacted the Broome pearling industry with devastating results.

European markets for mother of pearl began to collapse and many thought the industry was coming to an end. During the war years the only additional use found for mother of pearl was for buttons on soldiers' uniforms. By December 1916 Broome was threatened with economic ruin as the sale of mother of pearl dwindled and enemy ships threatened shipments consigned for the states.

With excess stocks and luggers going to ruin Broome's economic situation was bleak however when the war ended in 1918, a different pearling industry emerged. The English influence and affluence of "Old Broome" disappeared forever as many socially prominent families chose not to return after the war. Broome had also suffered extensive damage by the cyclones of 1908, 1910 and especially 1912 and much of the town needed to be rebuilt. Slowly, Broome would rebuild itself once again into an exciting and economically viable port. The 1920s would see Broome once again with a vibrant, thriving pearling industry and the price of pearl shell at its highest ever.

## World War 2



War returned to Broome on December 8, 1941 the day after the Japanese attacked Pearl Harbour. Australia instantly joined America in declaring war on the Japanese and almost immediately, all pearling activity ceased in Broome. Men rushed to join the war effort and the industry's labour pool vanished overnight as Japanese residents were interred in camps.

Since Broome's livelihood relied heavily on the skill and experience of Japanese divers this was an economic death knell for the pearling industry and the town. The residents of Broome were suddenly faced with rounding up and interring friends and employees simply because they were Japanese. Unlike other towns Broome's Japanese population made up a good portion of the towns inhabitants and many had been born and raised in Australia and had no ties to Japan. Although they complied with the internment policy, Broome, residents tried to make life as easy as possible for the Japanese.

The war escalated quickly and by February 26, 1941 Malaya and Singapore had fallen, as well as the islands of Ambon and Timor. This put the Japanese only three hundred miles north of Broome and the threat of a Japanese air attack became a reality. A defence unit was organised and the town's aerodrome was upgraded to accommodate the largest planes and Broome became a re-fuelling station for the R.A.A.F.

In January 1942, pearlers were informed that their luggers were to be purchased and unseaworthy vessels destroyed as a provision against a Japanese landing. Shortly afterwards on March 3, 1942 Japanese Zeros bombed Roebuck Bay and destroyed sixteen Dornier Flying Boat planes who were refuelling after evacuating Dutch refugees from Java.

Although there were no further attacks, the constant fear continued to force Broome residents to stay away and the town languished into decay. By the time the war ended, Broome was badly deteriorated and a mere shell of its former self. Residents, who did return, found little to salvage and were forced to start from scratch. But, as had happened after World War I, Broome would recover and rebuild once again. The pearling industry once again evolved and a new market in cultured pearls changed the way pearl shell was harvested forever.

<http://www.broomevisitorcentre.com.au/pages.asp?code=20>

First task this morning is to collect the rental 4WD vehicles for Doug and Elaine, and Wilma and David. They are ready for us at 09:00 but it takes about an hour and a half to go through the formalities and check the camping gear. Wilma and Elaine are waiting impatiently so that they can get on with buying provisions. When we finally arrive we head off in the rented 4WDs to Coles supermarket in Paspaley Plaza in the centre of what was Chinatown in the old part of Broome.

<http://ebroome.com/history/>  
<http://www.broomevisitorcentre.com.au/broome.asp>

In an unfamiliar supermarket the shopping took forever as we searched for the things we needed.

Shopping finished we strolled around Chinatown and Wilma and Elaine became stuck in the only pearl shop that is open; after all it is Saturday afternoon and most shops are now closed.

After our walk around Doug and David fuelled the 4WDs and we returned to the apartment to sort and pack the food. When this was done a cooling swim, a drink and it was time to walk to the Cable Beach Resort for dinner. We are far too late for sunset and anyway it was not very good.

## **Sunday 28 May 2006 – Broome to Windjana Gorge**

**Day 13**

We are all up early for our first travel day.

After a hearty breakfast we pack everything into the vehicles and at 09:00 we head off to do some last minute shopping. This does not take

long and we are on our way to Derby about 200km along the highway on the shores of King Sound.

### **Derby - History**

Derby developed slowly as a small town serving local tenacious pastoralists who settled in the area despite the isolation and harsh conditions.

In 1880, sheep stations were built nearby at Yeeda and a landing port was built. The massive 11 metre (36 feet) tides, rips and scattered islands of the Dampier

Archipelago made a port necessary for the development of the West Kimberley outback.

In 1885, a jetty was constructed to service the growing pastoral areas and the thousands that flocked to Western Australia for the gold rush. Trouble broke out between the European settlers and local aborigines and violence and hostility racked the town's development.

Derby was the western "base" in the 1960s and 1970s as the Gibb River Road was built for the station owners in the outback to carry their beef from the remote outback stations to abattoirs at either Derby or Broome in the West Kimberley, or to Wyndham in the East Kimberley.

<http://www.derbytourism.com.au/pages.asp?code=22>

## The Derby Wharf/Jetty

The first wharf, built in 1894, was a wooden T shaped structure located at the northern end of the present steel and concrete jetty. It was linked to the town of Derby by a horse drawn tramway, crossing the mud flats via a causeway where the present day road is located. Wool and pearl shell were the major exports in the early days. In 1964, when the new jetty was built, live cattle were exported and fuel, oil and provisions were the main imports. The last passenger ship visited in 1973. Now-a-days, barges exporting lead and zinc concentrates from the

Cadjebut Mine at Fitzroy Crossing and pleasure and tourist craft are the main vessels visiting the jetty. The Jetty is a popular place from which to view the stunning sunsets over King Sound or to fish for silver cobbler, shark, golden grunter, north west salmon and mud crabs on the incoming tides. These tides are Australia's highest and the second highest in the southern hemisphere.

<http://www.derbytourism.com.au/pages.asp?code=26>



**Swirling Red Tide - Derby**

Derby has Australia's highest tides and one of the highest in the world.

The Bay of Fundy, Nova Scotia, Canada, has 15m tides. Other high tides occur at Bristol (UK) 14.6m, Mont Saint Michel (France) 12.3m, Puerto Gallegos (Argentina) 13.2m and Bhaunagan (India) 12.2m.

<http://www.derbytourism.com.au/pages.asp?code=38>

We plan to stop at Derby for lunch and after refuelling and a drive through the town and a stop at the Derby Jetty for some photos we stop for lunch at the Prison Boab Tree near the start of the Gibb River Road.



**Bucking the Red Tide - Derby**



**Derby Wharf**

The Prison Boab Tree is a huge tree is believed to be around 1,500 years old and has a girth of 14.7 metres and was once used to imprison aboriginals being brought to Derby for trial.

Nearby are Myalls Bore and Cattle Trough. The first bore at this location was dug in 1910/11. It replaced the original well sunk by Alfred Duckworth Mayall in the early



1890s. The 1910/11 bore was 322 metres deep, had a residual head of 6 metres and cost 2700 pounds. When John Tait Blain was Secretary of the Road Board (1916/17) he had Joe Griffen build the concrete trough which is there to this day. This trough could handle 500 bullocks at one time and was later extended to a length of 120 metres. The flow from the bore was dropping off even by 1919. Now water is pumped into the trough by a windmill. The water from the bore has a rich mineral content and was reputed to have therapeutic properties. A bath house once stood near the trough.

<http://www.derbytourism.com.au/pages.asp?code=26>

Lunch over we start our trek along the Gibb River Road. The first 60 km is sealed and then we hit the dirt with a thump. We adjust our driving and tyre pressures on Doug's Nissan Patrol and we continue on to Windjana Gorge Campsite 60km further on.

First night set up takes a while as Doug and Elaine, Wilma and David put their camps together for the first time.

A relaxing drink and a pleasant meal under the stars completes our first day.

## Gibb River Road

The Gibb River road travels some 700 kms through the central Kimberley Plateau from King Sound at Derby to the Cambridge Gulf at Wyndham. The whole road is now the responsibility of Main Roads WA and improvements to creek crossings and jump ups are being made every year. The majority of the road surface is of dirt and gravel construction with only some floodways paved.



**Mangroves - Mudflats at low tide - Derby**



**Enormous Boab - Civic Centre - Derby**



**Prison Boab - Derby**



**Myalls Bore and Cattle Trough - Derby**

The Derby Visitor Centre recommends use of high clearance robust vehicles, preferably 4WD, for DRY season (May to October) travel. Towing of any type is not recommended. However, well constructed off road trailers may survive the often corrugated conditions in the DRY. Caravans are definitely NOT recommended.



Wet season (November to April) travel can be severely restricted by flooding and road closures as the countryside can become very waterlogged. Access to the gorges is very often not possible and, if travel occurs, is restricted to the Gibb River Road itself and not to the sidetracks into the gorges. A 4WD vehicle equipped with a snorkel is essential once the rains have started. Travellers in breach of official Road Closure and Road Restrictions are subject to fines.

## Description

Travelling northeast from Derby you pass from the flat plain country of the Meda, May and Lennard rivers and through the impressive wall like structure of the ancient Devonian limestone reef at the Napier Range. The granite tors of the foothills of the King Leopold Ranges soon give way to the rugged and convoluted Ranges themselves. Amongst the Ranges clefts and streams provide cool shady retreats for a variety of plant and animal life. The Central Kimberley Plateau is an area of more open country. Towards the headwaters of the Hann - Fitzroy river systems to the east of the Gibb River road, and heading for Mornington Station there are wide plains dotted with mesa formations. The western side, towards the coast, is much more rugged and inaccessible. As you approach Wyndham the spectacular Pentecost Ranges come into view with massive ramparts and scree slopes.



**Off the Bitumen - Gibb River Road**



**Napier Range - Windjana Gorge**

## Land Ownership

All of the land along the Gibb River Road is owned, leased and managed by someone. Much is subject to pastoral lease and some belongs to Aboriginal Communities. The Department of Conservation and Land Management manage the national parks, conservation

parks and nature reserves. If travellers wish to travel on any roads bar the Gibb River Road, Mornington Road, the Kalumburu Road, or gorge access roads as listed in the Gibb River Road Guide, then they should seek permission of the landholder. All roads other than those listed above are constructed and maintained by the landowner and are not public roads.



**Campsite at Windjana Gorge**

## History

The country of the central Kimberley to the coast was an area rich in food sources and abundant fresh water. This enabled the original inhabitants and their descendants to develop a rich cultural life. They knew the country of their tribe and horde intimately and adorned rock outcrops and caves with their art. Both the Bradshaw tradition and the Wandjina are features of the rock paintings in the area.

Many Aboriginal people today have returned to their traditional homelands. Six different Aboriginal languages are spoken along the road and the Communities maintain many of their traditional spiritual customs.

Coastal contact with Aboriginal people occurred from the 1830s onwards. However, it was not until 1898 that non-Aboriginal people penetrated the King Leopold Ranges and opened up the area for pastoralism. Frank Hann, gold prospector and explorer, was the first to describe the southern area of the Kimberley plateau. Many of the features of the area bear the names he gave them in 1898. These include Mt Elizabeth, named after his mother, Bell Creek, after Dr Bell of Derby and Adcock Creek, after a Derby storekeeper. The Blythe family were early pastoralists who took up Mt

House Station and built their homestead on the banks of Adcock Creek a tributary of the Fitzroy River.

Provisioning of the pastoral leases in the early years of the 20th century was by bullock and donkey team and followed a route via Carpenter's Gap in the Napier Range between Windjana and Tunnel Creek. Road transport required a better route.

After the Second World War the pastoralists, investigated the slaughter of cattle at the Glenroy Meat Works, on the Mt House lease, and flying the frozen carcasses to market. This was the famous Air Beef Scheme. In the 1960s construction began on the southern section a road as a Beef Road to transport cattle to Derby. This was the original Gibb River Road, so named as it was constructed

from Gibb River Station to Derby. The northern section of the road remained in the hands of the local authority of Wyndham- East Kimberley. The lack of major pastoral leases and funding meant that the northern section was not as well constructed and maintained as the southern section. In 1996 Main Roads W.A. took over responsibility for the whole length of the road. This has led to an upgrade in road conditions in the northern section to equal the southern section.

<http://www.derbytourism.com.au/pages.asp?code=50>

[http://www.openroad.com.au/travel\\_4wd\\_thegibbriverroad.asp](http://www.openroad.com.au/travel_4wd_thegibbriverroad.asp)

## Monday 29 May 2006 – Windjana Gorge to 'Silent Grove'

Day 14

Every one is up and about soon after sunrise, which was short and brilliant. Breakfast and packing camp was completed by 08:00 and we set off for a walk into the Gorge. The Lennard River has cut a 3.5km gorge through the slowly rising 350 million year old Devonian Reef that is the Napier Range. The cliffs are up to 100m high and the colours are spectacular.

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/windjana\\_gorge.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/windjana_gorge.html)

<http://www.derbytourism.com.au/pages.asp?code=54>

## The Devonian 'Great Barrier Reef'



Windjana Gorge - Downstream

A 'Great Barrier Reef' fringed an ancient Kimberley land mass during the Devonian period, between 375 and 350 million years ago, when a tropical sea filled the Canning and Bonaparte Basins.

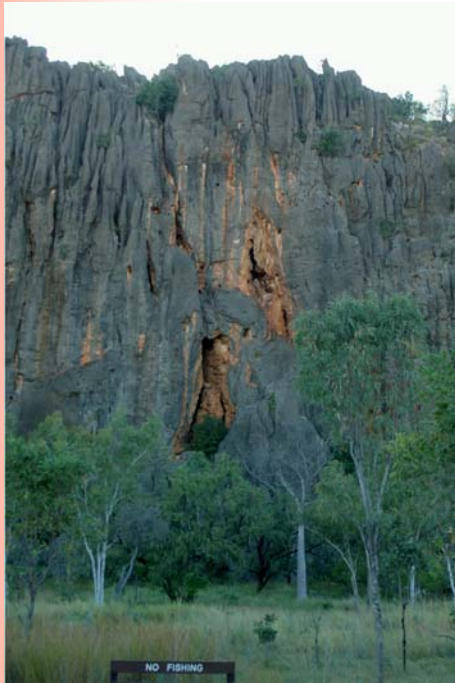


Windjana Gorge

Remnants of the reef are preserved in the West Kimberley as ranges of low, rugged hills extending for 300 kilometres. The reef probably extended for more than 1000 kilometres around the seaward margin of the



Kimberley and is also seen north of Kununurra, where it forms the Ningbing Range.



**Morning Light on the Cliffs -  
Windjana Gorge**

The structure was built by lime-secreting organisms, mainly calcareous algae and extinct coral-like organisms called stromatoporoids. Though corals were present, they were much less important in reef-building than the corals of modern times. Gastropods, brachiopods, bivalves and stromatolites were also present in and around the reef.



**Windjana Gorge**



**Freshwater Crocodiles - Windjana Gorge**

## **The reef today**

The ancient reef now forms a chain of often steep-sided, low limestone ranges, up to 300 metres above sea level, which rise from 40 to 150 metres above the surrounding Fitzroy River floodplain. Boab trees often grow on the rocky hillsides.

The formation of the present landscape occurred in two stages. The first took place 250 million years ago when the reef was uplifted above sea level, and eroded. Some caves in the limestone formed at this time. The reef was then buried by younger sedimentary rocks. When the whole area was uplifted and eroded 20 million years ago, the limestone forming the reef was more resistant to erosion than the softer overlying rocks, so that the ancient landscape was exhumed from beneath them. The reef now stands above the surrounding plains, in much the same way it would have stood above the sea floor 350 million years ago.

## **Fossils from an ancient sea**

Cross-sections through the one-time barrier reef can be seen in the walls of Windjana Gorge. In such places, you can see where flat lying limestone beds grade into steeply dipping beds. The flat-lying beds are the back reef limestones, laid down within protected lagoons between the reef and the shore. The front of the reef, which faced the sea, is marked by the steeply dipping marginal slope or forereef limestones. These were an underwater scree slope formed by the accumulation of debris eroded by waves from the top of the reef. In places large, jumbled blocks of reefal limestone can be seen. Fossil sponges, brachiopods, nautiloids and some stromatolites may be found in the slope deposits.

Around the reef, calcareous mudstones, sandstones and thin limestones represent material deposited in the deeper and quieter waters of the main basin adjacent to the reef. Here, fossil ammonoids (shelled animals that are now extinct), nautiloids and more than 25 species of the prehistoric, armour-plated fishes, that dominated Devonian times, may be found.





**Entrance to the Gorge - Windjana Gorge**

Fish were the first vertebrates and some species eventually developed rudimentary limbs and the ability to breathe air, becoming the precursors to the amphibians, reptiles, mammals and birds.

The Bush Book [Geology and Landforms of the Kimberley](http://www.calm.wa.gov.au/national_parks/previous_parks_month/devonian_feature.html) has more information on the geology of the Kimberley.

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/devonian\\_feature.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/devonian_feature.html)



**Windjana Gorge**

We walk through the remnants of ancient rainforest trees alongside the river admiring the scenery.

At one point on a beach across the river there are about a dozen freshwater crocodiles lying in the and on a rock near by is a magnificent white heron. We continue further into the gorge and spot a bowerbird's nest in the undergrowth; there is no bird about.

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/freshwater\\_croc\\_feature.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/freshwater_croc_feature.html)

Debris from past floods indicates that the water had been about 6m above its present level.



**Pandanus - Silent Grove**

We reach the end of the walk and retrace our steps to discover on a beach we had walked over on the way up there were now 10-12 freshwater crocodiles up to 3m in length basking on the sand and in the shallow water. The ones we had seen earlier were still on their beach.

We make way back to the camp and after a quick drink head back along the gorge road to the Gibb River Road and turn east towards our next stop at 'Silent Grove' near Bell Gorge.

Along the road I spot a large monitor lizard crossing the road.



**Pandanus Seed - Silent Grove**

'Silent Grove' is 20km off the Gibb River Road and we are surprised to find two creek crossings about 400mm deep. We negotiate them with ease.

Camp is set up more quickly and Elaine gets stuck into making bread in the camp oven.

## Bell Gorge / Silent Grove

The King Leopold Ranges extend for some 300 kilometres from Walcott Inlet, in the west to about 100 kilometres from Halls Creek in the east. The ranges consist of long, rugged, spinifex-covered ridges and escarpments. Mount Ord at 947 metres above sea level and Mount Broome at 935 metres are the highest peaks in the range.

The most abundant of the tilted strata are white and pink quartz sandstone, buff siltstone and brown mudstone. There are also layers of grey-green basalt that solidified from lava flows and grey dolerite formed from molten rock which invaded the older sedimentary rock to form layers.

This sequence of rocks formed in a region known as the Kimberley Basin, which is, in places 5000 metres thick. It was deposited in shallow water on a slowly subsiding large continental mass in Precambrian times, about 1800 million years ago.

About 560 million years ago the generally flat-lying layers were thrust from the north-east over older granite, volcanic and metamorphosed sedimentary rocks of the Hooper Complex. This caused the rocks on the leading edge to crumble in a major mountain building exercise. Subsequent erosion formed the King Leopold Ranges today.

Following wet season rains, great volumes of water cascading from the range drain to the west through a series of creek systems such as the Lennard River and Bell Creek. This water ultimately flows into the sea at King Sound and Walcott Inlet.

## Recent History

In 1897 Alexander Forrest's survey party travelling from the De Grey River to Port Darwin named the Ranges "After King Leopold of Belgium, in recognition of the great interest taken by His Majesty in exploration". However they were unable to find a way through the rugged ranges.

In 1898 the explorer and stockman Frank Hann managed to cross the ranges via the pass which bears his name.

Hann named Bell Creek "after Mr Bell of Derby".

The Mount Hart pastoral lease, which encompasses Bell Gorge and Silent Grove, was first taken up around 1919. Since then there have been a succession of pastoralists who went broke, and walked off the lease because the land was too rugged and unsuitable for pasture.

In 1991 the Department of Conservation and Land Management acquired the land to create the proposed King Leopold Conservation Park. The park, which covers over 392,000 hectares, is situated approximately 200

kilometres from Derby and 450 kilometres from Kununurra via the Gibb River Road.

<http://www.derbytourism.com.au/pages.asp?code=58>



**King Leopold Range**



**First Creek Crossing**



Bell Gorge and Silent Grove are in the King Leopold Range Conservation Park.

<http://www.derbytourism.com.au/pages.asp?code=58>



**Reflection – Bell Gorge Track**

Bell Gorge is about 10km further along the road to the Silent Grove campsite and after breakfast and packing up camp we take the Nissan and the Toyota, leaving my car and trailer at the campsite, to the head of

the walking trail to Bell Gorge and waterfall.



**Sunrise – Silent Grove**



**Bell Gorge**

It is fairly rough going as we descend to the creek for the one km walk to the falls. It is a pleasant shady walk

through the trees and spiral pandanus palms. At the end we emerge on to the rock shelf above the falls. Cliffs beside the falls provide excellent vantage points to view them.

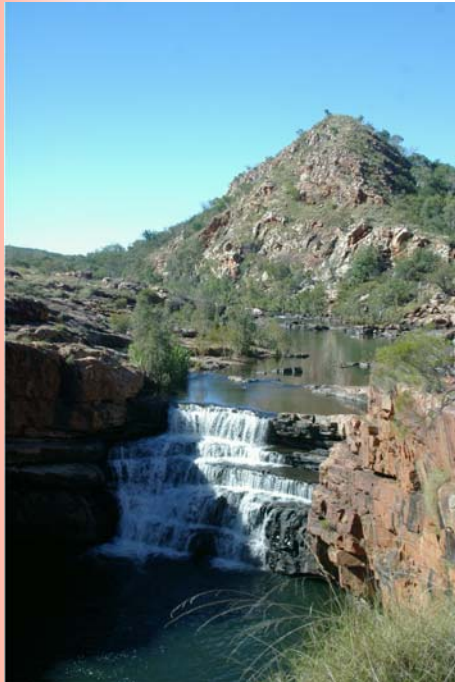


**Upper Pool – Bell Gorge**



**Bell Gorge**





### **Waterfall - Bell Gorge**

We push on; the road is pretty good, dusty, but not badly corrugated. I believe I have enough fuel in the tank to reach Mt Barnett Roadhouse where we will turn off to Manning Gorge for the night. I have eighty litre of fuel in jerry cans so it won't be a problem, just a bit of a nuisance.

<http://www.derbytourism.com.au/pages.asp?code=62>

We are travelling out of the King Leopold Ranges and into the Phillips Range.



### **Galvan's Gorge**

The Phillips Range lookout provides a panoramic view of the valley below and the mountains beyond.

We descend from the lookout to the valley and Galvan's Gorge; a short walk from the road to a pretty waterhole and waterfall.

We are now only 14km from Mt Barnett and I will have enough fuel.

We all refuel; I am using about the same as the diesel 4WDs, but their larger fuel tanks give them greater range.

Manning Gorge campsite is 7km off the road and slow going along a narrow track.



### **Galvan's Gorge**

It is possible to cross Bell Creek and descend to the lower falls. However this involves wading through the Creek in fairly fast flowing water and we decide it is not worth the risk of turning an ankle on the stony creek bed.

We return to the campsite at about 10:15 and start back to the Gibb River Road. Soon after we rejoin the Gibb River Road we make a stop at the Imintji Store.

A young couple we had met at Bell Gorge were there and Doug and I were able to sort out a problem they were having with their fridge power: a blown fuse and make a temporary repair until they could get a replacement.



### **Imintji Store**

It is a very pleasant campsite beside a large waterhole. We set up camp and have a swim to wash off the dust.

A couple of Customs Officers arrive late in the afternoon and set up camp; complete with video projector and screen. They are on a 6 day patrol in the region to tell people about their activities and what to watch out for to help protect our borders from illegal import and immigrants and smuggling, particularly wildlife. They give a very interesting talk to about 30 campers.

We have a stack of spaghetti in the pot so we ask them to dine with us and they accept.



**View from Phillips Range Lookout**

**Wednesday 31 May 2006 – Manning Gorge**

**Day 16**

We are staying put today. After breakfast Doug and David went back to the road to collect firewood. We are finding that most campsites have no firewood; it has all been burnt and collecting any from near the camp is forbidden.

Elaine and Wilma are washing everything in sight; I did mine last night.

The Manning Falls are a 45 to 60 minute walk away from the camp. However one has first to swim across the waterhole pushing a polystyrene box with lunch and walking shoes inside.

Wet clothes are not a problem: they soon dry in the sun.



**Distant Cliffs – Manning Gorge**





**Boab - Manning Gorge Campground**

I was not prepared to put my camera in a box that could capsize: one did, so I placed it inside a plastic bucket with a lid and sealed it with gaffer tape. Very successful! Not a drop of water in the bucket after both crossings.



**Pool at Manning Gorge**



**Falls - Manning Gorge**

The path was moderately rough in places, particularly the climb out of the valley, crossing gullies and descending to the river at the falls. Once on to the plateau we are walking through savannah and there are views of the Caroline Ranges in the distance. We spot a few lizards along the path. The final descent to the falls and the very attractive pools is fairly steep and well worth the effort. We stay about an hour for lunch and then make our way back to the waterhole for a cooling swim back to camp.

We manage a campfire tonight and it is appreciated, as evenings are cold.



**Manning Gorge**

**Thursday 01 June 2006 – Manning Gorge to Drysdale River Station**

**Day 17**

We are on our way a little later than usual this morning. Our first stop is at the Mt Barnett Roadhouse so that Wilma can make a phone call.

We are soon heading north west towards the turn of to Drysdale River Station.

Road conditions vary from very badly corrugated to smooth dirt and generally we are able to make good time. A few creek crossings, one badly eroded, are all negotiated without problem.



We reach Drysdale River Station at around 12:30.

## Drysdale River Station – History

The area of Drysdale River Station was first taken up in January 1882 by the Victorian Squatting Company. Regrettably this company is best known for their failed attempt to settle at Camden Harbour in 1864. There is an excellent little book of this sad and amazing story. It is called *There were three Ships*, by Christopher Richards.

The Drysdale River was named in 1886 by Charles Burrows during an exploration of the area on behalf of the Victorian squatting Company. The lease was next taken up by Captain Joe Bradshaw. Bradshaw took up the lease of a large area extending along the Prince Regent River, he intended to establish a cattle station. It was during his attempts to reach some of his leases on the Prince Regent River overland, that he first saw and recorded in April 1891, the style of rock painting now known as Bradshaws. As Bradshaw was unsure of his exact location at the time of recording, it took until 1998 for these particular paintings to be found again. A most beautiful book is available '*Bradshaw Art of the Kimberley*' by Graham Walsh.

Bradshaw had his own steamer the Red Gauntlet, by sea he sent ahead Mr. Aeneas Gunn, whose wife wrote

"We of the Never Never" to build stock yards ready for his herd. He himself went to bring his herd of cattle from Queensland, but on reaching the border between the NT and WA he was met by a party of police who informed him he must pay one pound per head tax to bring each animal into WA.



Early Morning Reflections - Manning Gorge



Flowers and Birds - Manning Gorge

Bradshaw refused to pay, turned his cattle down the Victoria River and took up land there instead.

His successful station was then known as Bradshaws Run, now Bradshaw Station.



Roadside Scrub



Preparing for the flight - Drysdale River Station

One of the great problems this area faced was it's isolation, although the Gibb River Beef road received



funding allocation, it only went as far as Gibb River Station. The Kalumburu Road was surveyed by Surveyor J.F. Morgan in 1954, this then opened the area up a great deal more.

In 1967 the lease was taken up by Dick Condon, he had a vision and put a large amount of time and money into the place, sadly the cattle prices were not favourable and added to the then time required and high cost required to truck out cattle, he made the decision to sell the station.

The high cost to get things both in and out of here, the providing of own power and water supplies plus many other high expenses makes the running of these places far more costly than most people realise.

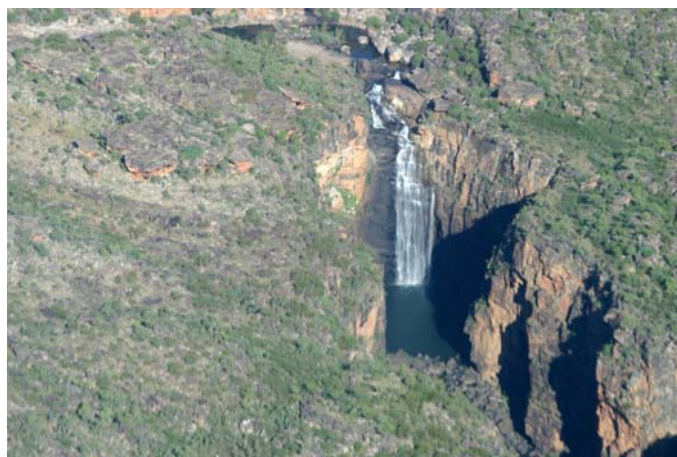
The story goes that when the current homestead was built in 1967, the trucks arrived with building materials which were unloaded at the chosen position at the top of the river bank. Thankfully someone happened to look up and notice flood debris a very long way up, in the tree tops. The homestead was then positioned 1.5 km back from the river. In the floods of 1986 and 1997 the river level rose to within 200 m of the house and 5 meters of the staff quarters. All I can say is I am glad they did not build it on the first choice!

The whole area has been and still is, subject to many mining exploration leases. Miners Pool got it's name because Stockdale Prospecting had a

long term base camp set up there in the early eighties.



**Mitchell Falls**



**Donkin Hill Fall**

After Dick Condon sold out the station had overseas ownership, no money was put into the place and it was very run down with almost no plant or equipment by the time we came along.

We purchased the lease in the wet of 85 / 86. With 3 4WD vehicles and a truck we set off from Derby only to be caught in the floods from cyclone Hector and have to do a dash back to town. We barely made it, crossing the last river when it was 2 feet over the bridge. After waiting two weeks for the floods to drop we tried again, it took one day to do the first 300 km and 4 more to do the next 180 km. At one point we were stuck between two rivers and one of our children suddenly became very ill, not an experience I would like to repeat. Luckily she got better, the river dropped and we finally arrived.

At that time there was no telephone service to the area at all, the only means of communication was by the Royal Flying Doctor radio service.

This experience taught me the futility (and looking back stupidity) of attempting to travel these roads when very wet. I now have the greatest admiration for early settlers to the area. Back then, even in a time of dire need it was just not possible to radio or phone for help. Now, we are pretty spoilt in the knowledge that even if a plane can't get to you, then a helicopter probably can. The size these rivers can get to is amazing, the depth of water running down the road makes it appear to be a creek. Please keep this in mind if someone suggests an adventure holiday over the Wet season traversing North Kimberley dirt roads. Main Roads don't just close the road because they are concerned over damage, they close it because it can be very dangerous. Both the Main Roads Dept. and the locals are tired of the damage done to the road by people forcing through just for fun when it is still soft and boggy. You may get through but the ruts you create hold the water and make it a lot longer before the road dries out and all are able to use it.

Drysdale is a family owned and operated million acre working cattle station, running approx. 7000 head.

2005 is our 20th year here, making our family by far the longest resident leaseholder since this land was first released. As we have no intention of departing we hope

you get to visit us and the wonderful North Kimberley one day.

<http://www.drysdaleriver.com.au/history.htm>

We have been debating the wisdom of trying to get to the Mitchell Plateau and Mitchell Falls by road. Reports are that the road is very rough and the King Edward River crossing is between 70 and 80cm. We had never intended to take my car and trailer, and David and Doug are not too happy to take the rented vehicles. We finally decide that a flight over the region is a better alternative and we are delighted to find we can fly at 14:00 today. Tomorrow is booked out.

Camp is quickly set up; we are getting better.

The two-hour flight, about 500km, takes us over Drysdale River Station to the Mitchell Falls and then to Donkin Hill Falls and Prince Frederick Harbour.

Drysdale River Station is 1,000,000 acres and currently carries 10,000 head of cattle. Mustering should have started some weeks back but the unusually long wet season has delayed it. The station management is still trying to burn off the grass before mustering can start, but the ground is too wet. There are a few fires burning.

Cruise ships anchor in Prince Frederick Harbour so that their

passengers can take helicopter flights to the Mitchell Falls.

Our flight then takes us along Prince Frederick Harbour and overland to Mt Trafalgar and Mt Waterloo to St George Basin.



**King's Cascade**



**Prince Frederick Harbour**



**Mt Trafalgar**



**Prince Regent Nature Reserve**

Mt Trafalgar and Mt Waterloo are outcrops of oxidised sandstone, covered in part with lichen that is black at this time of year.

St George Basin is a shallow tidal basin frequented by sharks, crocodiles and dolphins.



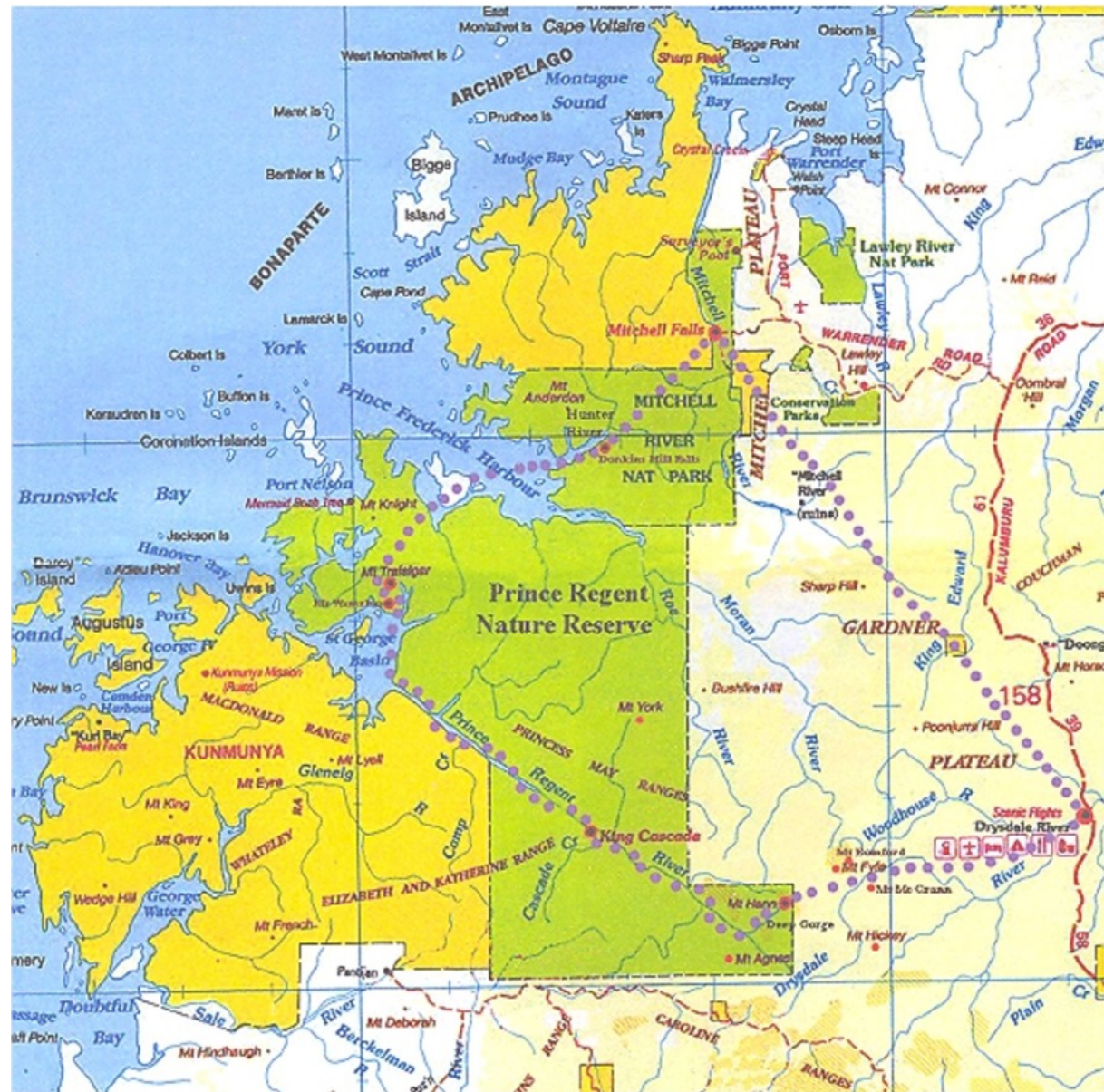
The Prince Regent River flows into the Basin and we fly low along the river in the hope of spotting a few crocs. Some are spotted cruising along the mangroves beside the river.

We circle King's Cascade, made famous when a crocodile killed an actress there, about 20 years.

As we continue back towards Drysdale River we fly over the very rugged and inaccessible terrain of the Prince Regent Nature Reserve. The Caroline Ranges are to our south and we pass Mt Hann, the highest mountain in the Kimberley. Deep Gorge and the Rift are below us as we fly west past Mt Fyfe to the landing field.

We have seen much more of the country than was possible by road including country that can only be seen this way.

We finished the day with a drink at the bar, followed by a few more in camp and dinner at the restaurant.



Flight Path over Mitchell Plateau



We have not planned a busy day today. It is time to catch up on diaries and washing.

For lunch we indulge ourselves with a Kimberly Burger, and in the afternoon a swim in the Drysdale River at nearby Miners Pool. This is a large waterhole and an alternative campsite with more primitive amenities than the homestead campground.



**A Kimberley Burger**



**Relaxing at Drysdale River Station**



**Miners Pool**



**Miners Pool**



**Sunset – Drysdale River Station**



This is the day we have been dwelling on for the entire trip.



**Pentecost River**



**Cockburn Ranges**

Because of the unusually long wet season The Gibb River Road was opened only a few days before we left home to high clearance 4WD vehicles and experienced drivers. This was

because the depth of water at most of the river crossings was too great for most vehicles.

By the time we started on the Gibb River Road most of the crossings were passable to the rented vehicles and the Forester. However there was still some doubt about the Pentecost River Crossing and, as it happened, the Durack River Crossing.

Today we cross both the rivers to reach El Questro.

I have been talking to drivers of a tour bus travelling south and they inform me there is more water at the Durack River than at the Pentecost and that I will be able to get through the Durack.

Off we set at about 08:45; still unsure as to what we will find. We first return to the Gibb River Road and it seems to me that there is already less water at the crossings we had crossed two days before.

Back on the Gibb River Road we head towards Wyndham and Kununurra. The road conditions are very variable and a section under reconstruction is marked as a traffic hazard, and was. We are now travelling through undulating hills of the Bluff Face Range and the Pentecost Range and there are many flood ways (wet and dry) and it is necessary to slow down to negotiate them safely. We are making good time but using more fuel.

We finally reach the Durack River Crossing. Doug is leading and goes through first and, although this the deepest water we have encountered, he gets through easily.



**Crossing the Pentecost River**



**Crossing the Pentecost River**

I follow, easing the Forester and trailer into the river and am soon across without any drama although the water is above the bottom of the trailer. David and Wilma follow. We heard on Sunday that a tour bus had been bogged there a couple of days early.

We were feeling pretty pleased with ourselves. We press on to the Home Valley lookout overlooking the Pentecost River, the Cockburn Ranges and Home Valley.

Photos taken we descend into Home Valley and Blue O'Malley's Crossing. This crossing of the Pentecost River can be impassable in the wet season and at the end of the dry be a very narrow shallow crossing.



**Cockburn Ranges after the Pentecost River crossing**

Today it is about 150m across and the maximum water depth is about 450mm. As usual Doug leads off in first gear, low ratio 4WD. Initially the water is above the running board but as he approaches the far side the river deepens and the water is well up on the rear bumper.

I'm next, as usual locked in first gear, the water resistance increases as the river deepens; a little extra on the accelerator and I am ploughing through the water. As I enter the deepest section, water is appearing at the top of the bonnet, but there is no sign that I will stop. When I reach the bank the climb up the now slippery bank is achieved without drama.

No water in the car; none in the trailer. David follows and we are all across.

We continue on to El Questro, 30 km further on.

We check in, set up camp and treat ourselves to a celebratory drink. When we started on the Gibb River Road we did not know for sure that we would or could get this far.

In residence is an Australian Artist, David Byard, who has a display of oils and pastels of landscapes

and rural scenes. Some of the pastels are very attractive.

[http://www.byardart.com.au/david\\_story.html](http://www.byardart.com.au/david_story.html)

Another 35 km and with a little luck we will get through without any problems with the vehicles or punctured tyres.



**Camp at El Questro**

**Sunday 04 June 2006 –El Questro Wilderness Resort**

**Day 20**

Elaine and Wilma are planning a big camp-cooking event so we plan a visit to the Zebedee Springs during the morning.

The start of the 750m walk to the springs is a short drive from the campsite. The walk passes through areas of savannah woodland forest, a

forest of Livistona Palms, ending at the springs where there are a number of pools in which there are many bathers.

Zebedee Springs is a permanent thermal spring surrounded by livistona palms and sheer cliff faces. The spring is fed via a fault line from a permanent supply of water; deep within the earth. The water temperature is 28 – 32C all year.

The surrounding cliff faces and scree slopes are up to 1800 million years old and are known as 'King Leopold Sandstone'.





**Livistona Palms – Zebedee Springs**

Recent research has discovered a unique and ancient aquatic isopod crustacean (a white crablike creature) in the water. Zebedee Springs is the only known place in the world where this isopod is found.



**David Byard's Gallery – El Questro**

The springs are closed at 12:00 to ordinary mortals like us so we return to do the washing and have lunch.

Preparation for bread making and the evening feast starts at about 14:00. There is a brief interruption when two of the resorts riding horses decide they like Elaine's bread flour and come over seeking a meal. They are finally returned to their proper task of mowing the grass.

The bread and the meal are a great success.



**Store – El Questro**



**Pool – Zebedee Springs**

**Monday 05 June 2006 –El Questro Wilderness Resort**

**Day 21**

Breakfast over we head off to Emma Gorge, one of the many gorges in the area.

Emma Gorge is within the El Questro Wilderness Resort in the Cockburn Range about 25km from the camp. This is a more difficult walk than Zebedee; although only 1.6km the path follows the creek bed and is rough in

parts so it is slow going as we pick our way through the stones and over the boulders, crossing the creek several times before we reach the head of the falls.



Elaine had been here with Rachel and Marcus before tropical cyclone Ingrid wiped out the Emma Gorge Resort on 15 March 2005.

445mm of rain fell in 24 hours at Emma Gorge.

[http://www.bom.gov.au/inside/services\\_policy/tc\\_ingrid/index.shtml](http://www.bom.gov.au/inside/services_policy/tc_ingrid/index.shtml)



**Emma Gorge**

The gorge has changed completely as the flood also scoured the valley of almost all topsoil and plants and trees. The recent long wet has made it worse and it will be a long time before the valley recovers.

The walk start is savanna woodland and as the gorge narrows and the towering cliffs shade the valley the path traverses Kimberley Rainforest. Finally the gorge ends in a magnificent pool and falls, which plunge about 100m from the plateau above. As it is now the dry season there is not much water flowing but there is still a gentle veil of water falling from the overhanging cliffs.



**Cockburn Range**



**Scoured riverbed - Emma Gorge**



**Emma Gorge**

The walk has taken three hours and any thought of walking into another gorge before the boat trip on the river in the Chamberlain Gorge is abandoned.



**Waterfall - Emma Gorge**

The Chamberlain River is approximately 150km long and winds through the Durack Ranges mainly through steep valleys and Elgee Cliffs.



A shuttle bus takes us to the landing stage, passing the El Questro Homestead, where the cruise boat Wandjina is waiting for us. We board and commence a leisurely cruise upstream under the towering cliffs and passed banks lined with paperbarks, mangroves and water pandanus.



**Emma Gorge**

At this time the water is about 3m deep; in flood it can be 13m deep.

We come to a rock barrier and tie up. Some entertainment was provided by archer fish firing spouts of water at passengers, particularly at bright objects that they mistook for insects. Bread thrown into the water attracted

them and they in turn attracted barramundi and perch.



**Emma Gorge**



**Chamberlain Gorge**

A scramble up onto the rocks and a short walk takes us to the site of some Wandjina Aboriginal paintings on the cliff face. These are about 200-300 years old. Further along there is some Bradshaw art, believed to be between 17,000 and 20,000 years old.

## Wandjina Art from the Kimberley

Wandjina figures are some of the most visually striking of all images in Kimberley art.

The Worrorra, Wunambal, and Ngarinyin people of the north-western and central Kimberley say that the Wandjina are the creator beings of the Dreaming, and that they made their world and all that it contains. They are found in many rock art sites in caves and rock shelters throughout the Kimberley.

Wandjina are usually painted as full-length, or head and shoulder, figures, either standing or lying horizontally. Their large mouthless faces feature enormous black eyes flanking a beak-like nose. The head is usually surrounded by a band with outward radiating lines. Elaborate head-dresses are both the hair of the Wandjinas and clouds. Long lines coming out from the hair are the feathers which Wandjinas wore and the lightning which they control. Wandjina ceremonies to ensure the timely beginning of the monsoon wet season and sufficient rainfall are held during December and January, following which the rains usually begin (Source: [Western Australian Museum](http://www.wandjina.com.au/)).

Aboriginal people believe that if the Wandjina are offended then they will take their revenge by calling up lightning to strike the offender dead, or the rain to flood the land and drown the people, or the cyclone with its winds to devastate the country. These are the powers which the Wandjinas can use.

<http://www.wandjina.com.au/>

## Indigenous Art

*Spanning across the depths of time, Indigenous groups have left their mark on the landscape of the Pilbara & Kimberley regions of Australia's North West.*

## Petroglyphs

Found throughout coastal and inland Pilbara are some of the world's oldest art galleries; the Mandu Mandu Rockshelter on the Northwest Cape is thought to date back 300,000 years.

Rock engravings known as petroglyphs are abundant especially along the Burrup Peninsular near Dampier and inland in Newman. These engravings depict a wide variety of marine & land animals and are easily accessible.

## Wandjina

Wandjina images are some of the most spectacular of Kimberley art. The Worrorra, Wunambal and Ngarinyin people of northwestern and central Kimberley believe that Wandjina (sacred snakes) created their world and all it contained.

Aboriginal people do not believe their ancestors painted the images but rather they are the shadows of Wandjina imprinted on the walls. The Wandjina are generally depicted with black eyes, black nose and no mouth and the head is usually surrounded by a halo of radiating lines.



Chamberlain Gorge



'Bradshaw' Art - Chamberlain Gorge

Dating back over thousands of years, each Wandjina has a custodial clan which is required to touch up the images each year to preserve it; they are found in many caves and rock shelters throughout the Kimberley.

## Gwion Gwion (Bradshaw Paintings)

The Gwion Gwion also known as the Bradshaw or Kimberley Dynamic Figures are believed to be at least 17,500 years old.



Wandjina Art - Chamberlain Gorge



Rock Wallaby - Chamberlain Gorge



These figures were originally named after Joseph Bradshaw, an early explorer who discovered them in 1891. Most Gwion Gwion are found under rock ledges and in caves throughout the top part of the Kimberley region.

The beautiful elongated figures feature birds, reptiles, fish and most famously human figures; who appear to be wearing bracelets, necklaces

and carry bags; they closely resemble the Mimi cave art of the Northern Territory.

Aboriginal people do not believe their ancestors painted them, rather that they were painted by the beaks of birds.

Aboriginal sites are unique and irreplaceable cultural resource for all Australians. Please help preserve these places for future generations. Avoid touching or stepping on the art, leave the area free of rubbish and do not mark the art in any way.

<http://www.australiasnorthwest.org.au/en/Indigenous+Experiences/Indigenous+Art/default.htm>

We return to the boat and then cruise back down the river enjoying the champagne and fruit provided.

On the cliffs we spot some rock wallabies.

Sunset is approaching as we return to camp.

## Tuesday 06 June 2006 – El Questro to Kununurra

Day 22

Back onto the Gibb River Road and then north to the Great Northern Highway. Photos at the end of the Gibb River Road and then we turn onto the highway and head for Wyndham.



Northern end of Gibb River Road

We make a stop at The Grotto for a short walk to the top of the waterfall. David and I elect to descend the 140 steps to the grotto and the pool, apparently free of saltwater crocodiles and safe for swimming. On the way we are told to watch out for

the snake in the water; it turns out to be a large water monitor. The estimated depth of the water is 100m.

Wyndham was once a fairly prosperous town with a large meat processing works. This is now closed and the main activity is now live cattle export from the East Kimberley through the small port.



The Grotto

A lookout above the town overlooks the confluence of 5 rivers, where the Ord, Forrest, King, Durack and Pentecost Rivers enter the Cambridge Gulf.



Water Monitor - The Grotto

## Wyndham

Wyndham is really two towns about 5 km apart and linked by a sealed road that skirts the edge of the mudflats. The reason for the two towns is

geographic. As the population near the port grew, there was not enough high ground to accommodate the extra people, so they settled at a point 5 kilometres inland from the port. This inland location is where most of the population now lives.



**The Grotto**

The burgeoning live-cattle trade with South-East Asia and the increased production from the nearby Ord River irrigation area will ensure Wyndham remains a viable and busy port.



**Port - Wyndham**



**West Arm, Cambridge Gulf and Cockburn Ranges**

The port of Wyndham still has much of the atmosphere of an old Kimberley town. Boabs line the main street and most of the action centres around the pub and the hardware store. It remains the port of the East Kimberley, just as Broome is for the West Kimberley. As Wyndham supplies come in, ore, cattle and produce go out.



**Lake Kununurra**

## History

Wyndham was declared a town site on 2 September 1886, as a result of the gold rush at Halls Creek. The first lots of land at the port sold with a reserve of £50 each. Early on the town serviced miners who came in for supplies and later, pastoralists brought cattle for shipment to other ports in Australia and South-East Asia. After the gold rush, the town languished until 1919 when the meat works opened. Until its closure in November 1985, the works provided a popular tourist attraction, large saltwater crocodiles waiting at the outflow of the abattoirs blood drain.



**Spillway Creek**

In World War II, Wyndham was bombed on only one occasion and suffered little damage. However, in a separate attack, the Koolama, a State Shipping Service vessel, was hit on its way out of Darwin and, disabled, made its way to Wyndham where it sank upside down near the wharf. It remains a significant hazard for every ship using the port.

<http://www.blueytravel.com/Wyndham.asp>



[http://www.discoverwest.com.au/western\\_australia/wyndham.html](http://www.discoverwest.com.au/western_australia/wyndham.html)  
[http://www.awm.gov.au/Encyclopedia/air\\_raids/index.htm](http://www.awm.gov.au/Encyclopedia/air_raids/index.htm)



**Spillway - Lake Argyle**

Heading south our next stop is Kununurra about 100km away.

Kununurra is the centre for the Ord River Irrigation Scheme and was built to house the workers on in the scheme in the 1960's. It is now a town of 7000 people and besides being the centre for the irrigation scheme is also the tourism centre for the region. Despite early problems due to the selection of inappropriate crops, the irrigation scheme is now very successful.

## Kununurra

**Kimberley township servicing the surrounding area.**

Kununurra is a very long way from just about everywhere. If you take the short route from Perth, via the Great Northern Highway, it is 3184 km and if you take the long route it is 3336 km. It is also

1057 km from Broome (the nearest major town in Western Australia) and 1057 km from Darwin. And if you want to drive from Sydney it is about 4300 km.

In spite of all this apparent isolation Kununurra (the word means 'big water' in the language of the local Aborigines) is an interesting, modern town which came into existence in the early 1960s as a construction centre for the Ord River Scheme. This modernity is something of a mixed blessing. Even today the residential houses, most of which are made out fibro and surrounded by those hastily constructed gardens that are so common in places where people are not planning to stay too long, have a temporary feel about them. The abundance of wild, tropical plants and the obvious casualness of the community gives it a very transient feel.



**Ord River Dam**

The public section of town contrasts with the residential areas. The construction companies and local council have created a modern town centre which boasts an excellent swimming pool-leisure centre complex, a substantial Commonwealth Bank, a delightful 'traditional Australian' broad verandahed Post Office and a number of large supermarkets.



**Lake Argyle**

The area was first explored by Alexander Forrest (the older brother of Sir John Forrest, Western Australia's first Premier) in 1879. Forrest was the first white man to discover and name the Kimberley district, the Margaret and Ord Rivers, the King Leopold Ranges, and the fertile area between the Fitzroy and Ord Rivers. He subsequently set himself up as a land agent specialising in the Kimberleys and was thus instrumental in the leasing of over 51 million acres (21 million hectares) in the region during 1883. In 1887 he became the first Member for Kimberley in the WA Legislative Council.

Of all the people who sought Forrest's advice the Durack family were the most famous. They went on to establish the Lissadell, Argyle, Rosewood and Ivanhoe cattle stations in the Kimberleys. It was at the Ivanhoe Station, to the north of Kununurra, that Kimberley Durack (an appropriately named person to live in the area) first began experimenting with the possibility of growing cash crops on the rich black alluvial soils of the Ord River valley. This was to later grow into the Ord River Scheme.



### **Texas Downs Station**

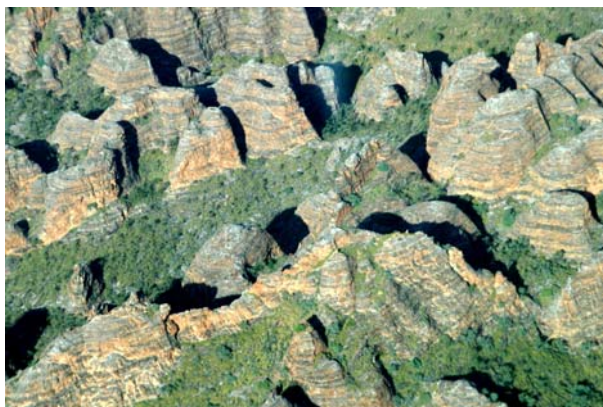
The Ord River Scheme is one of those dreams that politicians have which looks good on paper but doesn't quite match up when it is executed. The original aim were simple: to harness the water and growing potential of Australia's tropical north.



### **Bungle Bungle Beehives**

The plan went like this: dam the Ord River in the Carr-Boyd Ranges southeast of Wyndham, build a diversion dam 50 km downstream so that the waters can be directed to irrigable land, irrigate about 75 000 hectares of land which was

previously used for cattle grazing, use the movement of the water to generate hydroelectricity for local consumption, and build towns to cater for the developing economy of the area.



### **Bungle Bungle Beehives**

In 1941 a small experimental farm was established on the Ord River by the Western Australian Government. It was closed down in 1945 when a joint Commonwealth-State Research Station was established at Ivanhoe Plain to the north of Kununurra. For the next 12 years the Research Station experimented with crops such as rice, safflower, linseed and sugar cane.

In 1958 the construction of the irrigation scheme started and by 1963 the first stage had been completed. It was during this time that Kununurra was established as the main construction town associated with the irrigation scheme. By 1966 there were 31 farms on the Ord River plains but the results were less than satisfactory. Cotton, which was grown in the area in the early days, has now been totally abandoned.

In 1972 the second stage of the scheme was completed with the opening of the huge Lake

Argyle Dam. Since then the agriculture of the area has been a constant battle against the very really tyranny of distance (markets are just too far away) and the constant problems of tropical diseases and birds. Some crops, such as watermelons and bananas, have proved hugely successful and have been sold directly to the nearby southeast Asian markets.

<http://walkabout.com.au/locations/WAKununurra.shtml>

<http://www.kununurra.west-oz.com/#history>

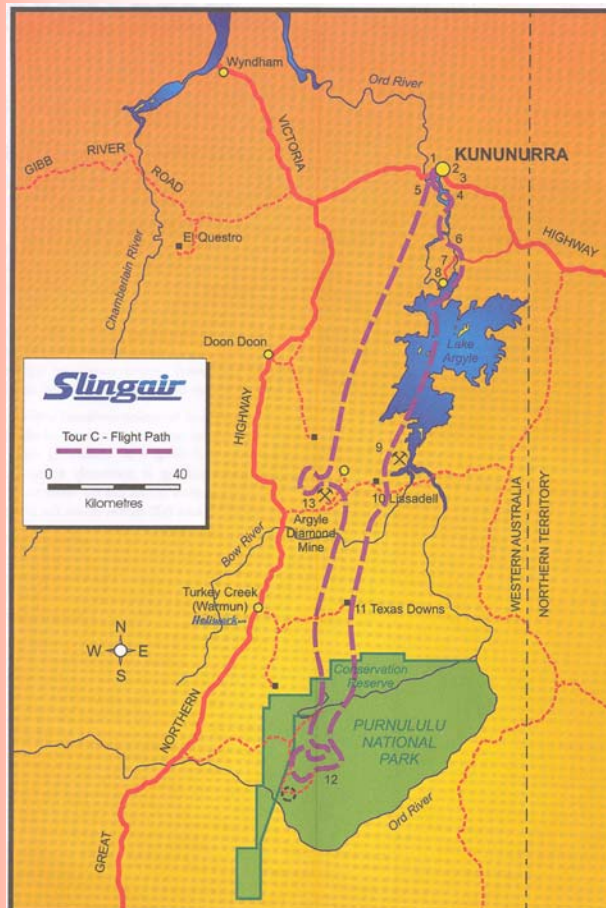


### **Deep Gorges in the Bungle Bungles**

We arrive at the Hidden Valley Caravan Park in time to book a flight over the Bungle Bungles for David and I and to book a river cruise for all of us tomorrow.

Camp is set up quickly and David and I are picked up for the flight and Elaine, Doug and Wilma set off to shop.





### Bungle Bungles Flight Path

The flight with Slingair takes us out over the Ord River Irrigation Scheme, along Lake Kununurra and the Ord River to Lake Argyle and the Argyle Diamond Mine. Along the way we are able to see the Ord Dam and Spillway Creek. Unlike many dams that have their spillway at the dam wall, the spillway for Lake Argyle is several kilometres from the wall. Water from the last wet is flowing down Spillway Creek. In the big wet of 2001 the lake reach a record height, 6.5m above the spillway.

<http://www.abc.net.au/nt/stories/s1349572.htm>  
<http://www.hi.com.au/resource/rfactsa.asp?kla=13&subtopicid=3514>



### Deep Gorges in the Bungle Bungles

The Bungle Bungle Range is at the southern end of Lake Argyle in the Purnululu National Park and is a sandstone massive that has been pushed up; previously to a height of 600m. The rocks are 380million years old. Erosion over the past 20million years has reduced the height to 200m. We were told that the unique beehive hills on the southeastern side of the range result from erosion by the abrasive sands from the Tanami Desert. This does not seem to explain the symmetrical nature of the beehives and water flowing over the surface as described below is a more likely cause. There are alternating layers of sandstone and sandstone hardened by the remains of cyanobacteria and the harder layers protect the rocks and slow the erosion.

The distinctive beehive-shaped landforms seen today have been produced by uplift and erosion during the last 20 million years. Contrary to its solid appearance, the sandstone is extremely fragile. The weight of overlying rock holds the sand grains

in place, but when this is removed, the sandstones are easily eroded and the rounded tops reflect this lack of internal strength. Water flowing over the surface will exploit any weaknesses or irregularities in the rock, such as cracks or joints, and rapidly erodes the narrow channels that separate the towers.



### Tilted, eroded landscape

#### Geological features

One of the most obvious features of the sandstones is the alternating orange and black or grey banding. The darker bands are on the more permeable layers of rock (which means water is able to move through them with relative ease). They allow moisture to seep through to the rock surface, promoting a dark algal growth.

The less permeable layers in between are covered with a patina of iron and manganese staining, creating the orange bands. These outer coatings (the rock beneath is a whitish colour) help to protect the lower parts of the towers from erosion.

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/purnululu.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/purnululu.html)

<http://www.deh.gov.au/heritage/worldheritage/sites/purnululu/index.html>



**Argyle Diamond Mine**

There are many deep gorges in the range resulting from the massive flows of water in the wet season that have enlarged the natural fractures in the rocks.

On the northwestern side there are typical weathered escarpments and not the beehives.

Our flight returns over Lake Argyle and the Argyle Diamond Mine and as the sun is now low in the

west the western faces of the ranges and the islands a brightly coloured in the setting sun.



**Afternoon sun - Lake Argyle**

Argyle Diamonds is the world's largest supplier of diamonds, producing approximately 30 million carats each year from its operations in the East Kimberley region, in the remote north of Western Australia. The company's production accounts for approximately one-quarter of the world's natural diamond production.

More than 90% of Argyle's diamonds are destined for the jewellery industry.

[http://www.argylediamonds.com.au/about\\_profile.asp](http://www.argylediamonds.com.au/about_profile.asp)

It is almost dark when we land from this most interesting flight over a unique landscape.

The shoppers are returning to camp as our bus drives through town to the caravan park.



**Diversion Dam - Lake Kununurra**

**Wednesday 07 June 2006 – Kununurra**

**Day 23**

After breakfast we head into the town for a look around, a little more shopping and visits to some art galleries. Elaine and Wilma both buy some pieces painted by local aboriginal artists.

At 11:30 we are picked up by Triple J Cruises for a bus trip to the Ord Dam

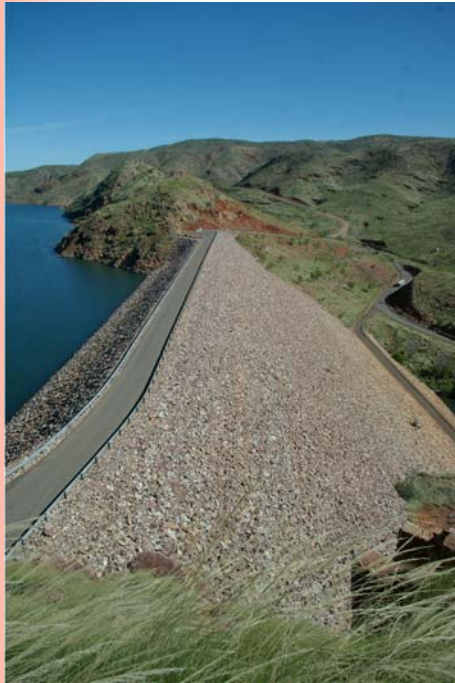
and Lake Argyle and a 50km trip down the Ord River and Lake Kununurra to Kununurra in a purpose built boat powered by three 200hp Honda outboard motors.

At Spillway Creek we have a short stop to view the large water volume of water flowing from Lake Argyle to Lake Kununurra and the lower Ord River.

Another stop at the historic Argyle Downs Homestead, built by the Durack family in 1894/1895, and moved in 1971 from its original site before the site was submerged under the waters of Lake Argyle.

<http://www.ozeco.com.au/ecoaustralian/gfx/duracks.pdf>  
[http://www.mynrma.com.au/western\\_australia\\_kununurra.asp](http://www.mynrma.com.au/western_australia_kununurra.asp)





**Ord River Dam**

Lake Kununurra was created by building a diversion dam close to the town to hold back water from the Ord River so that the irrigation areas could be irrigated by gravity flow.

The resultant narrow lake stretches about 40km upstream from the dam.

To ensure year round supplies of water in the lake, Lake Argyle was created to collect the water flowing in the wet season by building the Ord River Dam about 55km upstream from the Diversion Dam at Kununurra. This enormous lake holds the equivalent of 23 Sydney Harbours.



**Spillway Creek**

Water flows from the lake through a hydroelectric power station into the Ord River and also into Spillway Creek when the lake is too full. Spillway Creek flows into the Ord. We stop at a bridge over the creek; enough water is flowing to supply Perth and Adelaide with water.



**Argyle Downs Homestead**

Should the lake ever threaten to overtop the dam then water is able to flow through a number of saddles and emergency spillways below the level of the dam.



**Lake Argyle**



**Ord River below the dam**

This has changed the ecology of this section of the Ord; previously a seasonal river, it is now a permanent watercourse and the result is that the vegetation along the banks has changed. First a native grass, able to grow



in up to 2m of water became established protecting the banks from the wash from passing boats, then as paperbarks and other trees took root the grass died in the shade and the banks are becoming lined mature trees.

[http://savanna.ntu.edu.au/publications/savanna\\_links17/the\\_ord.html](http://savanna.ntu.edu.au/publications/savanna_links17/the_ord.html)



**Shady Backwater - Lake Kununurra**

Habitat for some endangered bird species has been formed and at least three; including the buff sided robin previously endangered species are now common.



**Freshwater Crocodile - Ord River**

We stopped frequently to observe the changing vegetation and the animal life and to enjoy the spectacular scenery. In the first 15km, before we reached Lake Kununurra we sometimes travelled quickly to pass through shallow parts of the river. From time to time we diverted into creeks to observe freshwater crocodiles and birds not on the main waterway.



**Lake Kununurra**



**Fruit Bats - Lake Kununurra**



**Beside Lake Kununurra**

As we approached Kununurra the sun was setting and lit the river as it set. By the time we reached the landing stage it was dark.





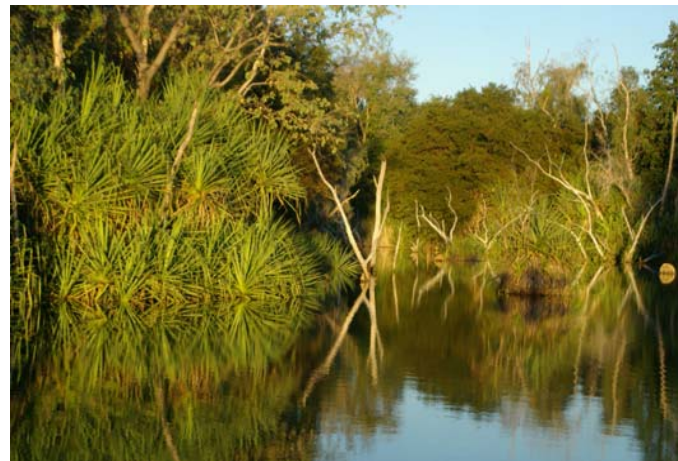
**Lengthening Shadows - Lake Kununurra**



**Previously endangered ducks - Lake Kununurra**



**Beside Lake Kununurra**



**Aquatic Pandanus - Lake Kununurra**

A most successful and worthwhile day, lead by Jeff, one of the owners of Triple J Cruises. Jeff has been leading tours on the river since 1988 and has witnessed the changing ecology and has a wealth of knowledge about it.

<http://www.triplejtours.net.au/about.html>



**Evening Reflections - Lake Kununurra**



**Sunset Sky - Lake Kununurra**

**Thursday 08 June 2006 – Kununurra to Bungle Bungle**

**Day 24**

We have decided to spend two nights in the Purnululu National Park where the Bungle Bungle Ranges are situated. The first thought to spend only one night there was soon

abandoned; there is too much to see and the 53km road in from the highway is rough and slow.

We arrive mid afternoon and set up camp at the Walardi Campsite as this is closest to three of the scenic walks. It

is too late to do any of the walks by the time we are set up so we relax after the fairly gruelling drive into the Park.

**Thursday 08 June 2006 – Kununurra to Bungle Bungle**

**Day 25**



**Termite Mound - Bungle Bungle**



**Cathedral Gorge - Bungle Bungle**



**Rock Wedge - Cathedral Gorge - Bungle Bungle**



**Small Palms Gorge - Bungle Bungle**



We are up early and breakfast over we head out to the Piccaninny Creek car park from where we can commence three walks, the Domes Walk, the Cathedral Gorge Walk and a walk to a lookout that overlooks the surrounding plains to the southeast.



**Small Palms Gorge - Bungle Bungles**

It is possible to combine these walks into one 6km walk. The Domes Walk is quite easy going with close views of some of the beehive domes and the Spinifex termite mounds on top of them. These termites sometimes choose to build high above the plain where the Spinifex grows and have to

build passages from the mound to the source of food (and moisture).



**Flowers - Bungle Bungles**



**Flowers - Bungle Bungles**

The Cathedral Gorge Walk is more difficult, often over sand and river pebble, sometimes scrambling over large boulders. It is worthwhile; at the end is an enormous

cavern shaped by water falling from the top of the range into the gorge. The gorge has formed here due to fault in the range caused by a large wedge of rock having been forced up from below to split the mountains.



**Beehives - Bungle Bungles**



**Termite Mounds - Bungle Bungles**

Walking back I spot a large water monitor in the creek bed.





**Small Palms Gorge - Bungle Bungles**

We return to Piccaninny Creek and walk upstream along the dry creek bed which is mostly eroded rocks to the turnoff to the walk to the lookout. We are following another gully along an easy walking path that gradually rises to a saddle between two domes and from here there is a panoramic view of the plains with some smaller domes in the foreground.

We stop for a while to admire the view before walking back to the car park and returning to camp.

It is now lunchtime.

After lunch David and I decide to drive the 30km to the Small Palms Gorge. The morning walk had been fairly hard on Elaine and Wilma and the Small Palms Gorge walk is more difficult; they decided to stay in camp to cook bread. Doug decided to stay with them.



**Pool - Cathedral Gorge - Bungle Bungles**



**Eroded Creek Bed - Cathedral Gorge - Bungle Bungles**



**Cathedral - Cathedral Gorge - Bungle Bungles**



**Monitor - Cathedral Gorge - Bungle Bungles**

This is a 5km return walk, for the most part along a very stony creek bed followed by some scrambling over large aggregate boulders. It is certainly much harder on the feet, ankles and knees than the mornings walk.

David and I set off at a steady pace, stopping from time to time to take photos of the coloured rock and the Livistona Palms. We need to make good time as we wish to go to



the Visitor Centre on our way back and be back in time to see the setting sun illuminate the western face of the range near our camp.



**The end of Small Palms Gorge - Bungle Bungles**

We reach the viewing platform at the end of the gorge in about 45 minutes to find another large cavern, this time in a narrow chasm. A few more photos and 10 minutes chatting to some other walkers and we are start back. We make very good time; we have taken the photos and complete the walk in a little over 90 minutes.



**Beehives - Bungle Bungles**



**Piccaninny Creek - Bungle Bungles**

We head back to the Visitor Centre to find a tour group buying tee shirts and souvenirs has beaten us.

Still we have just enough time to get back to camp, pick up the others and head to the viewing site to watch the sunset. It was worth the effort as the sun slowly set behind the ranges to the west and the shadow crept

across the plain the western face of the range to the east became brilliant red.

As soon as the light show was over, back to camp, dinner and bed after a fairly tiring day.



**View from the lookout - Bungle Bungles**



**Small Palms Gorge - Bungle Bungles**





**Small Palms Gorge - Bungle Bungles**



**Sunset on the Bungle Bungles**

**Saturday 10 June 2006 – Bungle Bungles to Willare Bridge Roadhouse**

**Day 26**

Today we intend to Willare Bridge Roadhouse, about 150km from Broome so that Wilma and David can have some time in Broome before they head home tomorrow.

We are on the road out of the Park at 07:45 and by 09:30 we are back on the Great Northern Highway heading for Hall's Creek our next stop for fuel. After a visit to the Visitor Centre to get track information for the Tanami Road we are on our way again towards our next fuel stop at Fitzroy Crossing. We stop long enough to get fuel and some lunch as it is now nearly 14:00 and we hope to be at Willare Bridge by 16:00 so that we can set up camp before sunset.



**Visitor Centre - Halls Creek**

Outside the Visitor Centre is a statue commemorating 'Russian Jack'.



**'Russian Jack'**

'Russian Jack' (Ivan Fredericks), a famous figure in the gold rush of 1885, once carried a sick friend more than



300 kilometres in a bush-made wheelbarrow seeking medical aid over a track which existed in name only.

His feat symbolises the mateship and endurance of the pioneers of a region,

then lacking all the amenities of civilisation.

The roadhouse campsite at Willare Bridge proves to be good and very cheap.

We are now within striking distance of Broome.

That we have not stopped at Hall's Creek and Fitzroy Crossing does not matter as I will be coming back this way on my way home next week.

**Sunday 11 June 2006 – Willare Bridge to Broome**

**Day 27**



**Breakfast – Willare Bridge Roadhouse**



**Sails in the Sunset – Cable Beach – Broome**



**Setting Sun – Cable Beach – Broome**



**Cable Beach – Broome**



**Camels – Cable Beach – Broome**



**Sunset – Cable Beach – Broome**

We now have ample time to get to Broome in the morning and before we break camp all the gear in the 4WD's has to be sorted and returned to the correct vehicle. This does not take long and we are on the road by 08:30, arriving in Broome about 10:30. We stop at the visitor centre for maps and for me to book a floatplane trip to the Horizontal Falls tomorrow morning.

I head for the Palm Grove Holiday Resort where I have a site booked; fortunately, as campsites are now scarce in Broome and unhook the trailer and head back into town to meet the others for lunch. They have been able to check into their rooms at the Mangrove Resort.

After lunch and some shopping Elaine and Doug and Wilma and David head off for some sight seeing and I head back to set up camp and check emails.

We get together again to celebrate a successful trip and watch the sunset on Cable Beach before dinner at the Mangrove Resort.

This is when I part company with them. Wilma and David leave for home tomorrow and Doug and Elaine go to Cape Leveque for a few days. I plan to stay in Broome until Wednesday and then start home.

It has been a great adventure.

## **Monday 12 June 2006 – Broome**

**Day 28**



**Near Slack Water – Horizontal Falls**

A very early 05:50 pick up for the flight to the Horizontal Falls means I am up before sunrise.



**Buccaneer Archipelago**

The Horizontal Falls Adventure Tours flight tracks northeast over King Sound to the Horizontal Waterfalls at Talbot Bay where we land on the Bay and transfer to a Zodiac.

<http://www.horizontalfalls.com.au/>

The flight has been at 5000ft and directly into the rising sun so apart from viewing the countryside below there has been little of note until we have crossed King Sound and start to descend. A feature of the ranges as we approach is the close spacing of the hills, all running toward the sea, and it is the submerged valleys of these ranges that form the bays and islands of the Buccaneer Archipelago.



**Talbot Bay**





**The Narrow Falls - Horizontal Falls**

Tidal ranges of over 11m are experienced here and hence large volumes of water flow in and out of the bays twice a day.

At the Horizontal Falls a very narrow channel connects two small bays and a larger channel connects one of the bays to Talbot Bay.

<http://www.derbytourism.com.au/pages.asp?code=84>

The twin gaps are part of the McLarty Ranges, which have two ridges running parallel approximately 300

metres apart. The first and most seaward gap is about 20 metres wide and the second, most spectacular, gap is about 10 metres wide



**McLarty Ranges**



**Buccaneer Archipelago**

Tide water has to pass through these channels that have at some time been narrow passages through the range and are now chasms through which the water roars.



**Taking off for Derby**

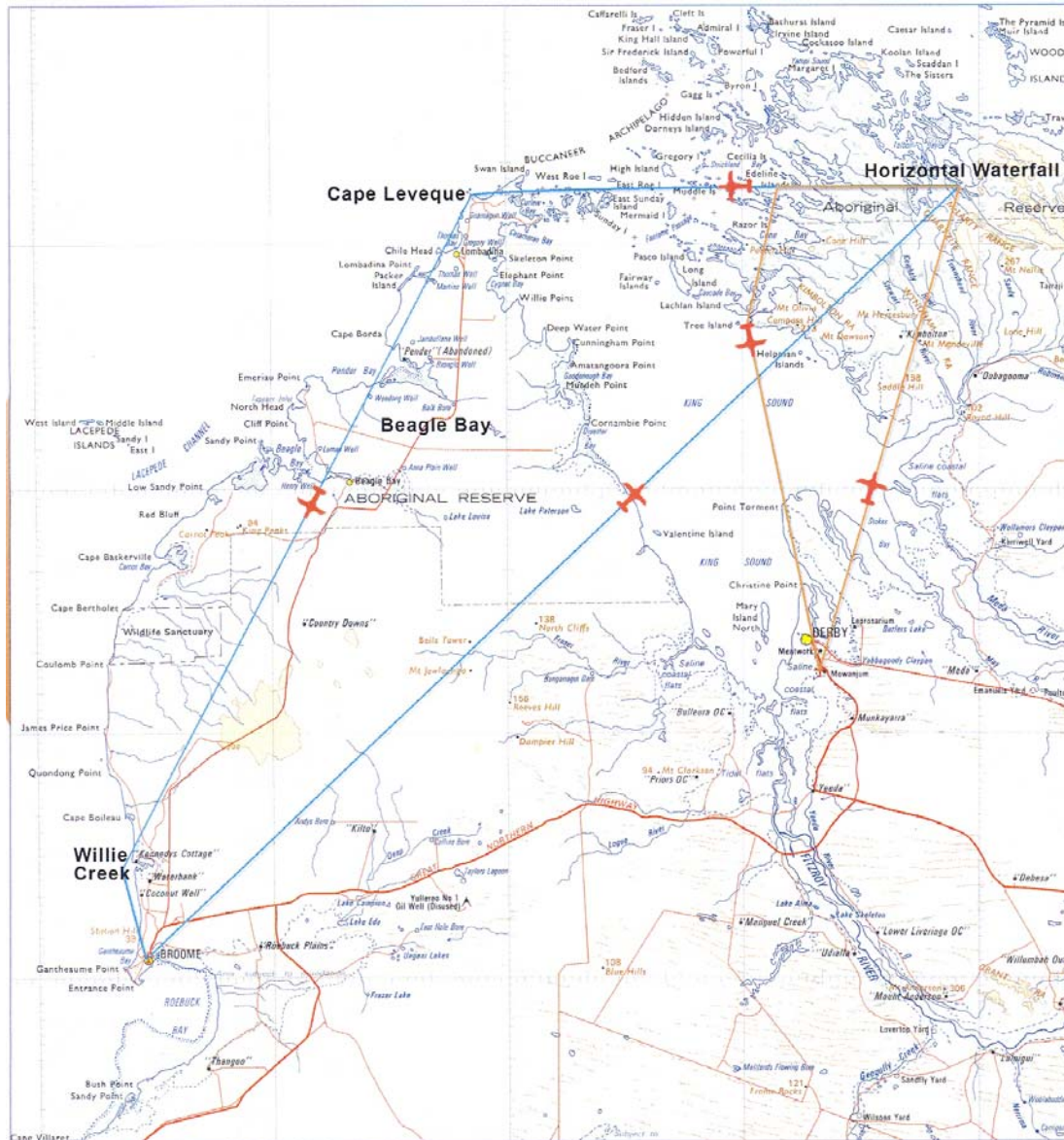


**The Tide has started run in - Horizontal Falls**

It has just passed slack water low tide when we arrive and our passage in the Zodiac through the first passage is smooth.

Breakfast is supplied aboard a boat moored in the first bay and whilst we are eating we are briefed on the area.





Flight Path - Horizontal Falls Adventure

By the time we have had breakfast the tide is running more strongly and we head out in the Zodiac, now wearing life jackets, to traverse the falls and experience the swirling, boiling waters of the falls.



Swirling water in the Wider Falls - Horizontal Falls



Tide is now running strongly - Horizontal Falls





**Swirling tides - Buccaneer Archipelago**

At king tides the difference in level in the larger falls can be 1.5m and in the smaller falls as much as 5m.



**Rugged terrain below**

It will be no where near this today, but between our first and last traverse of the main falls the difference has grown to about 0.5m and the waters much more violent.

We make one pass each way through the smaller, narrower falls; here the water is very turbulent in

the narrow channel as it rushes from one bay to the other.



**Cape Leveque**

Our plane has gone to Derby to pick up some more passengers and when we have finished we return to the boat to wait for it to return.



**Beagle Bay**

We do not have to wait long, and we get back into the Zodiac to meet it when it lands nearby.

The incoming passengers are transferred to the Zodiac and we climb back on board for the flight back to Broome via the Buccaneer Archipelago, Cape Leveque, Beagle Bay and Willie Creek. A whale heading north to the calving grounds is spotted off Willie Creek.



**Cable Beach**

We are back in Broome by 11:30 after a very enjoyable flight over the countryside and coastline.



**Japanese Cemetery - Broome**

The Japanese Cemetery at Broome dates back to the very early pearling years and bears witness to the close ties Japan has with this small North West Town

The first recorded interment in this cemetery is 1896.

During their years of employment in the industry a great many men lost their lives due to drowning or the diver's paralysis. A large stone obelisk bears testimony to those lost in the 1908 cyclone.

It is also recorded that in the 1887 and 1935 cyclones each caused the death of 140 men.

In the year 1914 the diver's paralysis claimed the lives of 33 men.

The Japanese Cemetery is well maintained unlike the nearby Chinese Cemetery.

Most of the afternoon is spent catching up on the diary, a little sight seeing and shopping for food for the trip home.



**Broome Wharf**

**Tuesday 13 June 2006 – Broome**

**Day 29**

Today is an R&R day; the others have gone their separate ways and my plans for the day are rather flexible. Washing to do, catch up with Stephen Hawes and Wendy, wander around Broome and take some photos and do more shopping for the trip home via the Tanami Desert.

The Sun Pictures is an open-air theatre with display of equipment used to project movies on old posters from its 90year history.

The Sun Pictures building in Broome's Chinatown was constructed at the turn of the century on a site owned by the Yamsaki family.



**Modern Commercial Building - Broome**

Initially the spacious double-fronted tin structure served as an Asian emporium selling imported Asian foodstuffs,

clothing and other household goods to Broome's polyglot community.



**Sun Pictures - Broome**



The Yamasaki building was the most commodious store in Carnarvon Street, an area where shops, bazaars, brothels, food stalls, in the Asian quarter known as Chinatown.



**Memorial to the Pearl Divers - Broome**

The Yamasaki family's love affair with theatre however, saw them devote a portion of the building to a Japanese playhouse where traditional Noh theatre was performed.

In 1913, Master Pearler Ted Hunter purchased the building from the Yamasaki family and commissioned architect Claude Hawkes, to design

and construct a picture theatre that would seat up to 500 people.

Sun Pictures officially opened on December 9th 1916 with a silent movie, English Racing Drama 'Kissing Cup' with supporting 'Bachelor Brown' Comic.

<http://www.sunpictures.com.au/history.html>



**Johnny Chi Lane - Broome**



**Broome Courthouse**



**Memorial to the Founders of the Cultured Pearl Industry**



**Shire Administration Centre Broome**

Diving for pearls has been replaced by farming pearl oysters to produce cultured pearls. A memorial in Chinatown commemorates the men whose vision and hard work started the industry in Broome in 1956.

[http://www.broomeport.com/bp/About\\_Us/History/Broome\\_History.asp](http://www.broomeport.com/bp/About_Us/History/Broome_History.asp)

<http://www.fish.wa.gov.au/wf/articles/PearlingHistory.php?0301>  
<http://www.cultureandrecreation.gov.au/articles/pearling/>



**Our Lady Queen of Peace  
Cathedral - Broome**

1889, a new telegraph cable was established at Roebuck Bay, linking the isolated colony direct with England, via Singapore, India, Aden, Egypt, Malta and Gibraltar. The structure the Eastern Extension and China Telegraph Company erected in Broome was by far the most elegant building in the town and was called Cable House. Today it serves as Broome's Court House and is located

on the corner of Frederick and Hamersley Streets.

[http://www.broomeport.com/bp/About\\_Us/History/BroomeHistory.asp](http://www.broomeport.com/bp/About_Us/History/BroomeHistory.asp)

However one thing is a must for today.



**Cruise Ship - Broome**

At the rise of the full moon the reflections on the mud flats at low tide create an illusion of a ladder to the moon and today is the first of three days that this phenomenon will be visible and the vantage points for viewing this are at the Mangrove Resort or Town Beach.

As I don't intend to sit and drink at the Mangrove before the moon rises I investigate the situation at Town Beach. There is little parking and the notices around town suggest the local bus is the best way to get there, possible, but rather impractical from where I am staying.

There is nearby an area that is obviously used by many people as an alternative viewing point and I figure most tourists will not find it.

My next-door neighbour at the caravan park is also travelling alone and suggests we go together. This saves

taking two cars and I suggest we should be there about 45 minutes before the moon rises.

This proves an excellent strategy; we are able to get a parking spot and an excellent vantage point. A number of tour buses have also selected the same spot.

In the meantime Stephen Hawes has arranged dinner at the Wharf Restaurant at the Broome Port. The arrangement is that I ring him as soon as I return; he and Wendy are staying about 2 blocks away.

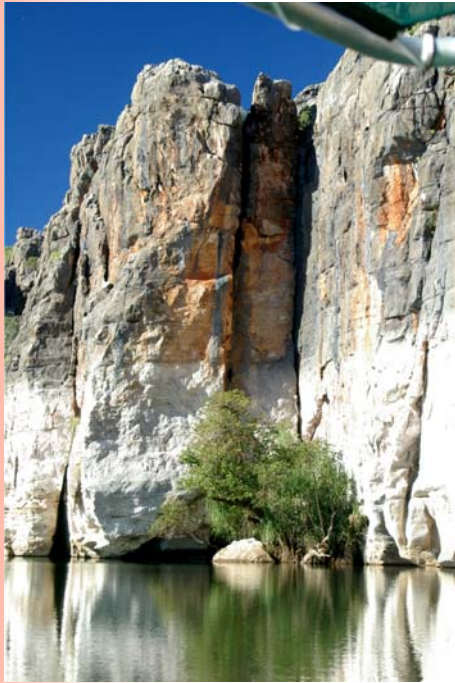
The moon rose as scheduled at 06:51 and the ladder developed as it rose. We watched the display for about half an hour and then returned to the camp.



**Ladder to the Moon**



Up at sunrise; I can't leave until 08:00 so I have time to do a few things like send last week's notes off to everyone before I leave.



**Geike Gorge**

## **Fitzroy Crossing**

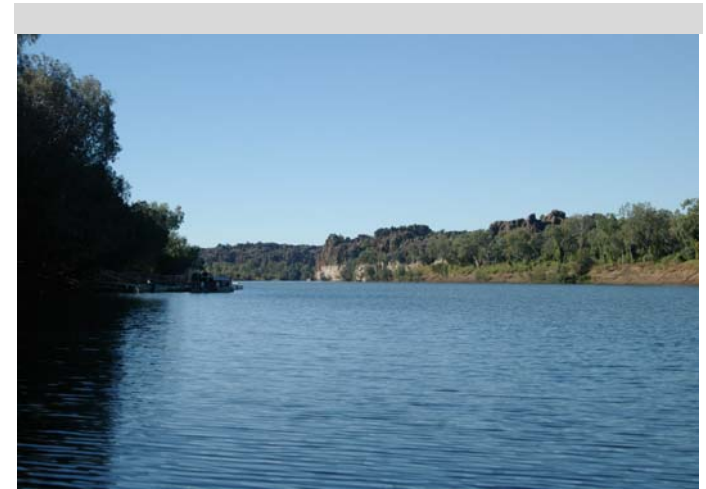
Located 2686 km north of Perth, 258 km from Derby and 110 metres above sea level, Fitzroy Crossing is one of those places which sprung up for a single very good reason. It was a suitable place to cross the huge

Fitzroy River which, during the wet season, was capable of stranding travellers for weeks. Once a decent bridge was built the town's raison d'être vanished. It is now a small, predominantly Aboriginal settlement, on the banks of the Fitzroy River with very little to commend it to the visitor apart from the beautiful Geikie Gorge which lies 15 km to the north of the town and the unusual Tunnel Creek and Windjana Gorge which lie 63 km and 95 km, respectively, from the town on the alternative Derby-Fitzroy Road.



**Rocky Outcrop between Broome and Fitzroy Crossing**

The Fitzroy River was first explored and named after Captain Robert Fitzroy (a former commander of the HMS Beagle) by Captain Stokes in 1838. However its upper reaches weren't explored until Alexander Forrest travelled through the area in 1879. Forrest's reports on the pastoral potential of the area resulted in Solomon Emanuel (a grazier and banker from Goulburn, NSW) founding the Gogo station 20 km downstream from the present day site of Fitzroy Crossing.



**Geike Gorge**



**Geike Gorge**

The local Aborigines resisted incursions from European pastoralists and the area around Fitzroy Crossing was the subject of some particularly bloody battles including

one which resulted in the Aborigines retreating into Geikie Gorge followed by posses of police.

<http://walkabout.com.au/locations/WA/FitzroyCrossing.shtml>

<http://www.australiasnorthwest.org.au/en/Kimberley/Fitzroy+Crossing+and+Halls+Creek/default.htm>

The drive to Fitzroy Crossing is an easy 400km drive and I am there around 12:30. A check at the Information Centre to see if there is camping Geikie Gorge National Park; there is not, so I check into the Tarunda Caravan Park and set up camp and then head out to the Park and the Gorge.

## Geikie Gorge

In Western Australia's far north Kimberley Region, the flood waters of the Fitzroy River have carved the 30-metre-deep Geikie Gorge through the limestone at the junction of the Oscar and Geikie Ranges.

During the wet season, the Fitzroy River rises about 16.5 metres, staining the walls of the gorge and flooding the national park with seven metres of water.

In the dry, between April and November, the river transforms itself into a quiet stream strung out beneath the towering cliffs of the Devonian reef.



**Geikie Gorge**

Unlike modern reefs—which are built by corals—algae and a group of now extinct lime-secreting organisms built the bulk of this reef.



**Geikie Gorge**

Ranging from atolls of a few hectares to hundreds of square kilometres, the reef platforms grew close to sea level, rising 200 metres or more above the sea floor.

As the ocean floor slowly subsided over the 50 million years of the Devonian period, the reef-building organisms were able to keep pace, building up and up until, in places, the reef became more than two kilometres thick.



**Geikie Gorge**

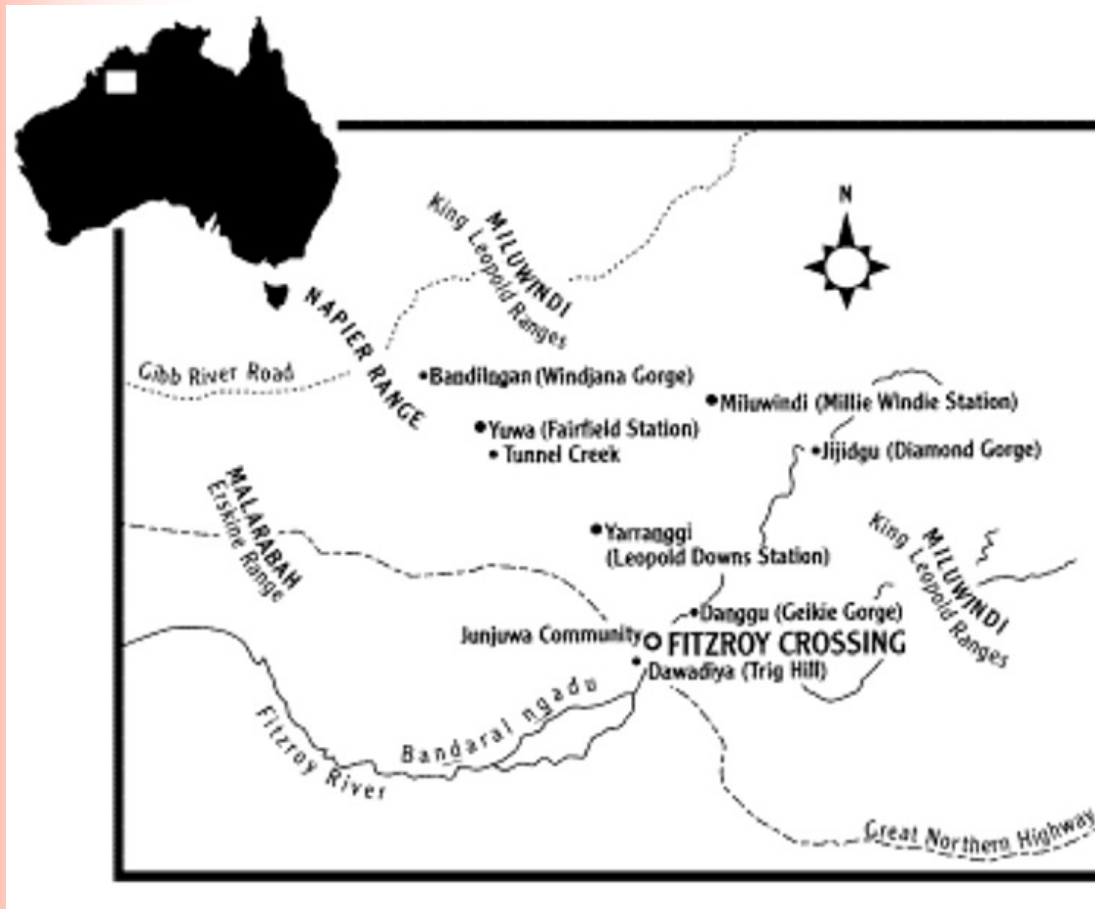
The limestone ranges, formed from the ancient barrier reef, wind across the country between 50 and 100 metres above the surrounding plains, in much the same way that the reef would have reared above the Devonian sea floor. From the air, it's easy to imagine that the sea has just withdrawn, leaving the reefs uncovered.

Here, layers of fossils and the limestone strata of an ancient reef are exposed in cross section, showing glimpses of life in the Devonian period before reptiles or mammals evolved.

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/geikie\\_gorge.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/geikie_gorge.html)

[http://www.calm.wa.gov.au/tourism/gg\\_boat\\_tours.html](http://www.calm.wa.gov.au/tourism/gg_boat_tours.html)





**Bunuba Country Map**

Besides a number of walks there are two boat cruises on the Fitzroy River; one conducted by Conservation and Land Management (CALM) rangers and the other by the Bunuba people, the original inhabitants of the area. The gorge was known as Darngku or Dangggu by the Bunuba people

**Bunuba Country** extends from the township of Fitzroy Crossing in the Kimberley region of Western Australia, north along the Fitzroy River to Jijidju (Diamond Gorge), and follows Miluwindi (King Leopold Ranges) to Napier Range in the west. It includes Bandilngan (Windjana Gorge) and

Tunnel Creek national parks. The southern extreme extends from Malarabah (Erskine Range) to Dawadiya (Trig Hill) near Fitzroy Crossing, and includes Dangggu (Geikie Gorge National Park).

Our neighbours are Gooniyandi in the east, Unggumi and Ngarinyin to the north, Nyikina to the west and Walmajarri to the south.

<http://www.fatsil.org/LOTM/june00.htm>

I chose the Darngku Heritage Cruise. A good choice as the aboriginal guide for the tour was able to explain the indigenous cultural significance of various places in the gorge and aspects of the local traditional law and custom of the area.

This was a land of plenty for the aboriginal population; abundant food and medicinal plants provided a good living for 45,000 years.

At the end the small group that took the tour were suffering from information overload. Nevertheless it was a worthwhile experience that also included an introduction to the geology, fauna and flora of the gorge.

In addition the scenery is spectacular; the intricately eroded cliffs, the colours, and the heights, 20m above the current river level that the water reaches in peak floods. The river can be 25km wide in the wet season.

Freshwater crocodiles abound along the banks

Back to camp and dinner cooked on the camp barbeque completes a very pleasant day.



*Geike Gorge*

***Thursday 15 June 2006 – Fitzroy Crossing to Tanami Desert***

***Day 31***

Up with the sun and on the road by 07:15, there are few highlights along the road to Hall's Creek. I stop occasionally for photos of the countryside; particularly of some of the small ranges that poke up here and there out of the otherwise flat countryside. One exception is the Ngumpan Cliff that extends for some distance parallel to the road.

At Hall's Creek I make the 18km trip out to Old Hall's Creek. Apart from monuments commemorating the pioneers there is little left of this gold rush town.



**Bridge at Fitzroy Crossing**



**Fitzroy River - Fitzroy Crossing**





**Ngumpun Cliff**



**Plaques Old Hall's Creek**

All that remains of the Australian Inland Mission hospital, established by the Rev. John Flynn, founder of the Royal Flying Doctor Service, is a plaque.

<http://www.flyingdoctor.net/birth.htm>  
<http://www.southaustralianhistory.com.au/royalflyin.htm>

On Christmas Day in 1885, Charlie Hall (the town was named for him) found a 28-ounce gold nugget. News of the discovery drew hordes of men to Halls Creek to try their luck searching for gold. Many perished in the harsh outback conditions, the graves of some can be found in the town's tiny cemetery. The gold rush lasted for a mere three months and soon the gold diggers left for the more lucrative southern goldfields of Coolgardie and Kalgoorlie.

Halls Creek eventually became a centre of trade for the cattle stations, local Aboriginal communities and miners exploring the area. In 1948, an airfield was built and the town of Halls Creek gradually moved closer to this, 15km to the west. The major road, the Great Northern Highway was re-routed

which also forced the movement of the town as its livelihood depended greatly on the passing travellers and massive road trains that service the outback.

The Old Halls Creek was eventually abandoned into a ghost town by 1954. It's worth a visit to see the remains of the historic mud brick Post Office, mineshafts and pioneer cemetery. Both towns are full of gold rush stories and relics. One of the more famous stories is of Russian Jack, a man who carried his injured mate in a wheelbarrow for over 300 kms to get medical attention. A statue is dedicated to his amazing feat outside the Shire Office.

[http://www.discoverwest.com.au/western\\_australia/halls\\_creek.html](http://www.discoverwest.com.au/western_australia/halls_creek.html)



**Wall of China - Hall's Creek**

Along the road is the 'China Wall'. This quartz reef that stands vertical on the hillside is so called because of similarity in appearance, but not in scale, to the Great Wall of China.

As a result of the early start, I am back in Hall's Creek refuelling for the first leg across the Tanami Desert by 11:30.

18km back towards Fitzroy Crossing and the sign says 'Alice Springs'. This is the start of the Tanami Track, the short cut to SE Australia.

[http://www.openroad.com.au/travel\\_4wd\\_tanamitrack.asp](http://www.openroad.com.au/travel_4wd_tanamitrack.asp)

Wolfe Creek Crater is only about 150km from Hall's Creek so I am there soon after 01:00. This crater is the result of a meteorite strike and is 880m diameter and 60m deep. It is situated in a plain so that the raised edges of the crater form a prominent feature in the landscape.



**Start of the Tanami Track WA**



**Wolfe Creek Crater.**





**View from the rim of the Wolfe Creek Crater**

Although it has long been known to Aboriginal people, who called it *Kandimalal*, the Wolfe Creek meteorite crater was only discovered by Europeans in 1947, during an aerial survey. The Aboriginal Dreaming tells of two rainbow snakes who formed the nearby Sturt and Wolfe Creeks as they crossed the desert. The crater is believed to be the place where one snake emerged from the ground. This striking formation is now protected by a reserve. Wolfe Creek was named in 1889 after Robert Wolfe, a prospector and storekeeper of Halls Creek, who was chairman of the Kimberley Goldfields Roads Board.

On the edge of the Great Sandy Desert and the extensive spinifex grasslands of the East Kimberley lies the Wolfe Creek meteorite crater, the second largest crater in the world from which fragments of a meteorite have been collected.

Scientists have made an intensive study of the Wolfe Creek meteorite crater. Dating of the crater rocks and the meteorite have shown that it crashed to Earth around 300,000 years ago - relatively recently, in geological terms. It would have

weighed more than 50,000 tonnes and is thought to have been travelling at 15 kilometres a second, a speed which would have taken it across Australia in five minutes. The impact of its enormous mass would have punched a huge hole in the ground, pulverising the underlying rocks and putting a sudden halt to its progress.

Within seconds, the energy caused by its tremendous mass and velocity would have been converted to heat, melting and vaporising the meteorite and causing a massive explosion that sent debris flying in every direction and deformed the surrounding rocks. This helps to explain why some fragments of iron meteorite have been found about four kilometres away.

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/wolfe\\_creek.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/wolfe_creek.html)



**Inside Wolfe Creek Crater**

My plan was to camp at Wolfe Creek, but it is too early in the day and I decide to press on as if I can make another 200km before I make camp I will be able to complete the desert crossing tomorrow.

Road conditions are extremely variable; in some places the road is very good and in others it is slow going as the rough sections are negotiated.

Soon after 16:00 I find a suitable spot by the road and set up camp. As the sun sets the only sounds are the birds and the insects and later there is the brilliant starlit night sky. The moon does not rise until about 21:00 and by then I am asleep. There are some lights on the horizon that turn out to be the Coyote Gold Project Camp. There is no traffic on the road during the night.

<http://www.tanami.com.au/>  
<http://www.abc.net.au/rural/content/2006/s1655269.htm>

I also refuelled from the jerry cans I was carrying, as the next fuel stop was 170km away at Rabbit Flat. Fuel is available only on Friday, Saturday, Sunday and Monday at Rabbit Flat Roadhouse.



**Lizard - Wolfe Creek Crater**

I have camped about 40km from, the Northern Territory and there I will have to set my clock forward by an hour and a half, so an early start is needed if I am to make Tilmouth Well, about 600km away by nightfall.

The sun rose about 05:30 and by 06:30 I had breakfasted on bacon and eggs, packed up and was on my way. The road to the border was one of the roughest so it was slow going.

I make a short stop to photograph the Northern Territory welcome sign before crossing the border.

A group of men from the Newmont Gold mines at Tanami who are travelling to the Coyote gold Prospect are also stopped at the border. They provide me with information about road conditions ahead, indicating that there are some bad washaways, and to take care.

The road continues to be mainly rough and careful driving is required.

I finally arrive at Rabbit Flat, a little outpost is the middle of nowhere and fill the tank with fuel at \$A2.10 per litre. Fortunately I did not need a full tank.



**Daybreak – Tanami Desert**



**Newmont miners – NT Border**



**Northern Territory Border**



**Rabbit Flat Roadhouse**

Although I have been travelling through a desert and the country is very flat there is always vegetation. Sometimes there a few trees, sometimes Spinifex grass and termite



mounds and at other times the plain is quite densely wooded with small trees.

The road improves considerably after Rabbit Flat and I am able to make good time.

There are a number of active mines along the way, at Coyote Gold Project, Tanami and The Granites that may explain the improved state of the road as they are supplied by road trains travelling from Alice Springs

Newmont Gold

<http://www.newmont.com/en/operations/australianz/tanami/index.asp>

My next fuel stop was is Yuendumu Aboriginal Community. With 50km to go on a good stretch of road the rear left tyre is punctured.

## Yuendumu Aboriginal Community - History

Yuendumu community is located two hundred and ninety (290) kilometres northwest of Alice Springs on the Tanami Highway and has a population of approximately 1,300 people. The vast majority of the population is Walpiri People.

Yuendumu is the largest community in Central Australia, with the exception of Alice Springs, and is also one of the most studied communities in Australia. The Community

Government area comprises 22,242 square kilometres and Traditional Owners control the land as part of self-determination with support from various Government Departments. Entry Permits are required by visitors intending to stay overnight or to visit for a greater period of time. The permit applications are available from the office of the Central Land Council.



**Termite Mounds and Spinifex - Tanami Desert**



**Wooded area - Tanami Desert**



**Rocky Outcrop - Tanami Desert**

Yuendumu was established by the Native Affairs Branch in 1946 for the purpose of rationing and welfare. A Baptist Mission was later established, in February 1947, and by 1955 many local Walpiri groups were settled in Yuendumu

There are a large number of Outstations surrounding Yuendumu and most have been registered with the Central Land Council. Each Outstation is developing at its own rate and has been assisted, on occasions, by the Aboriginal and Torres Strait Islander Commission and the Central Land Council.

<http://www.yuendumu.nt.gov.au/>

[http://en.wikipedia.org/wiki/Yuendumu,\\_Northern\\_Territory](http://en.wikipedia.org/wiki/Yuendumu,_Northern_Territory)

I have seen hardly any other cars all day but a few minutes after I stop a traveller coming the other way stops to see if I need any help.

About 20 minutes to unload the back of the car and change the wheel and I am on my way again.

Visiting Yuendumu Aboriginal Community is rather depressing. Most communities do not allow visitors so this was a rare opportunity to see one. However first impressions can be misleading. This is one of the largest communities in the NT and its elders are leaders in the fight against substance abuse among aboriginal people.

<http://www.mttheo.org/home.htm>

The man I asked for directions was most helpful as were the people at the store and the man who filled my tank was interested in where I had been and where I was going.

Refuelled, it was now only 100km to Tillmouth Well Roadhouse and it was on this stretch that I encountered several road trains. They don't travel very fast on this road but they do make a lot of dust. Best to simply pull over and wait till the dust settles.

Finally, at about 16:15 I reach the Tillmouth Well Roadhouse and my campsite for the night; 5km more and I will be back on the bitumen. It has been hard drive; every inch of the road has to be watched for potholes and changes in road surface. Nevertheless an achievement.



**Approaching Road Train**

**Saturday 17 June 2006 – Tillmouth Well to Alice Springs**

**Day 33**



**MacDonnell Ranges – Tanami Track**



An early start is the order of the day. As soon as it is light enough to see I am up, showered and cooked breakfast and by 07:15 I am on my way. I need to get the tyre repaired and find a place to stay.

It is a pleasure to drive along the single lane sealed road after so much unsealed, sometimes rough road. To the south, across grazing land, is the MacDonnell Ranges.

I arrive in Alice Springs about 09:30 and after refuelling soon find a tyre service that is able to repair/replace the tyre. It transpires that the tyre is too damaged to repair and a good used tyre is fitted for \$100.

Alice Springs is a busy tourist town with a permanent population of about 30000 people. However 250000 people visit each year.

Originally Alice Springs was the name of the Overland Telegraph Station built on the banks of the Todd River, named after Charles Todd who promoted and oversaw the construction of the telegraph line from Adelaide to Darwin. Alice Springs was named after his wife.

Once the business of tyre repair and changing the wheel back again was completed I took the car to a fancy car wash. It got most of the red mud and dust off, but not all of it.

By now it is early afternoon and I set off to have a look around. Excellent

views of the town are to be had from Anzac Hill and I go there to take some pictures of the town and the surrounds. The Ghan, the train that now runs from Adelaide to Darwin, has arrived in town and I take the opportunity to take some more pictures.



**Eastern End of the Tanami Track**



**Alice Springs nestles in the MacDonnell Ranges**



**Memorial to the Afghan Camel Drivers**



**The Modern Ghan**

In the limited time I have it seems a visit to the Old Telegraph Station would be the most productive and the guided tour turns out to be most interesting. The first of the stations to be built in 1870 the buildings have been in continuous use since.

<http://www.nt.gov.au/nreta/parks/find/astelegraphstation.html>

However the modern Ghan (Adelaide to Darwin) is in town for a few hours and before going to the Telegraph Station I take the opportunity to get some pictures. Until 2003, when the Alice Springs to Darwin track was completed, the Ghan had travelled between Adelaide and Alice Springs. The service's name is an abbreviated version of its previous nickname *The Afghan Express*, which in turn comes from the [Afghan camel trains](#) which trekked the same route before the advent of the railway..

[http://en.wikipedia.org/wiki/The\\_Ghan](http://en.wikipedia.org/wiki/The_Ghan)

A statue at the Alice Springs railway station commemorates the role of the Afghan camel drivers in opening up the outback

When the Telegraph station closed in the 1930's the buildings became the centre of a home for half-caste children, who were taken away from their aboriginal mothers and who are now known as the stolen generation.

For a time the site also served as an aboriginal camp until a new camp was built.

In 1960 it was decided to restore the Station to its condition as it was in 1900. Although much was known of the buildings before that date the best photographic records were from the early 20<sup>th</sup> century. All the buildings that had been constructed after the Telegraph Station closed were

demolished and the original buildings were faithfully restored.



**Inside the Telegraph Office**



**Post and Telegraph Office - Alice Springs  
Telegraph Station**

In the meantime a new town, Stuart, was established to serve the growing number of people exploring for gold and other minerals and a growing pastoral industry. To

complicate matters the post office at the Telegraph Station (Alice Springs) was moved into the new town.



**Alice Springs Telegraph Station**



**Trig Hill - Alice Springs Telegraph Station**

In the 1930's the townspeople voted to change the name of the town from Stuart to Alice Springs.

Originally named [Stuart](#), the town was established almost as a frontier settlement for north-south travel by [camel](#)



[trains](#) through the desert of the [outback](#). A telegraph station was placed near a permanent waterhole called Alice Springs (see photograph) after the wife of Sir [Charles Todd](#), [Postmaster General](#) of [South Australia](#), after whom the [Todd River](#) (which is usually dry) was named. [The Ghan railway](#) from [Adelaide](#) reached Stuart in [1929](#), and the town moved away from the waterhole, but locals kept the name. In [1933](#), after much debate, the town of Stuart was officially renamed Alice Springs. The north-south road between Darwin, Alice Springs and Adelaide is still called the [Stuart Highway](#).

Almost in the exact center of the continent, Alice Springs is some 1200 km from the nearest ocean and 1500 km from the nearest major cities, Darwin and Adelaide. Alice Springs is now the midpoint of the [Adelaide-Darwin Railway](#).

During the 1960s it became an important defence location with the development of the U.S/Australian [Pine Gap](#) joint defence satellite monitoring base, home to about 700 workers from both countries, but by far the major industry in recent times is [tourism](#).

[http://en.wikipedia.org/wiki/Alice\\_Springs](http://en.wikipedia.org/wiki/Alice_Springs)

[http://www.alicesprings.nt.gov.au/about\\_alice/history.asp](http://www.alicesprings.nt.gov.au/about_alice/history.asp)  
<http://www.southaustralianhistory.com.au/alicesprings.htm>

<http://www.bradshaw.nt.edu.au/index.htm> This is an interesting site produced by Bradshaw Primary School  
<http://www.schools.nt.edu.au/bradshaw/> in Alice Springs.



**Town Centre - Alice Springs**

Nearby is Trig Hill In 1877 the South Australian Government set a party of 8 men to survey the country around Alice Springs and east to the Queensland border. Led by Henry Barclay and Charles Winnecke, they established 50 trigonometrical stations in Central Australia whose latitude, longitude and altitude has been accurately determined.

Trig Hill was the first established. Fixing the latitude was straightforward but they need to know the exact time to work out the longitude. So Postmaster – General Charles Todd transmitted accurate time signals up the Line from Adelaide.

I finish the day with a stroll through the town centre. It is Saturday afternoon and very quiet.



**The Residency - Alice Springs**

The Residency was once the home of John Cawood, who, from 1926 to 1931 was the first and only Government Resident of Central Australia when for a brief period Central Australia was a separate region with its own administration.

<http://www.nt.gov.au/nreta/heritage/visiting/residency/stories.html>



**Adelaide House - Alice Springs**



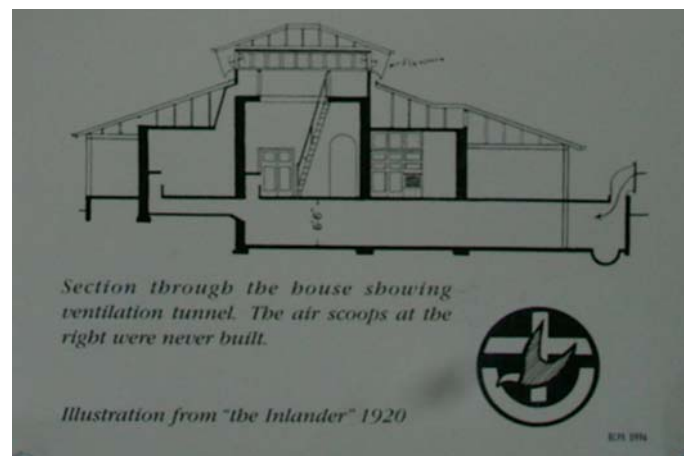
**River Red Gum - Alice Springs  
Town Centre**

### **Adelaide House**

Adelaide House in Todd Mall was designed and built by John Flynn and was the first Alice Springs Hospital.

The idea for a hospital was originally suggested by Sister Finlayson who arrived in the Centre in 1915 and was horrified to find that seriously sick patients had to be transferred by cart

or wagon to Oodnadatta over 600 km away.



### **Cross Section of Adelaide House**

Built between 1920-26 it employed a unique cooling system which was a combination of air tunnels and wet hessian - thus making the whole hospital a kind of huge Coolgardie safe. The walls are nearly 45 cm thick. Around the back is the stone Radio Hut where Alfred Traeger (the South Australian inventor who devised the famous pedal wireless which was powered by turning a pair of bicycle pedals) and John Flynn made their first field radio transmission in 1926. It was also the site of the first field radio telegram transmission in Australia. Today Adelaide House has an interesting photographic display of the early history of the Centre.

<http://walkabout.com.au/locations/NTAliceSprings.shtml>



**Flynn Memorial Church - Alice Springs**



**Todd River - Alice Springs**



King's Canyon with Uluru and the Olgas is one of those places that must be visited if you are in the region. It is nearly 500km from Alice Springs on the sealed road; there is a shorter route but reports indicate it will take longer to go that way.



**King's Canyon**

As I want to be there with enough time to do the walk around the canyon rim I plan a 07:00 departure from Alice Springs. I am on my way at 07:10 and

just miss being held up at the railway crossing by a southbound goods train.



**South bound Freight Train**



**Sandhill – South of Alice Springs**



**Gill Ranges and Desert Oaks – Kings Canyon Road**

As I approach Kings Canyon desert oaks become more plentiful.



**King's Canyon**



**Kurkara** (desert oak - *Allocasuarina decaisneana*) are slow growing and grow in deep sand in large numbers. Juveniles look like Christmas trees and mature to an adult form spreading massive limbs when the roots meet the water table. It is the only member of its family in Central Australia and its cones are the biggest in its family. Fire burns its foliage but usually does not kill the tree.

<http://www.deh.gov.au/parks/uluru/natural/flora.html>



**King's Canyon**

some 40–50 km, slowly rise so that by the time they reach Kings Canyon they are over 100 metres above the surrounding countryside.



**King's Canyon**



**King's Canyon**

A few stops for photos along the way and I reach King's Canyon Resort just after 12:00, check in and set up camp.



**King's Canyon**

## **Kings Canyon (including Wallara)**

One of the Territory's most remarkable natural features.

The road to Kings Canyon passes along the southern side of the low lying Gill Ranges which, over a distance of



**King's Canyon**

There is a ranger station (often unmanned) 20 km from the Canyon. It is well worth visiting as large, well illustrated boards outside provide a comprehensive



history of the area as well as alerting the visitor to the fauna and flora of Watarrka National Park.



**King's Canyon**

The Canyon walls rise above the valley of Kings Creek (named by Ernest Giles in 1872) and are particularly spectacular at sunrise and sunset. The canyon abounds in water holes of great beauty and a bewildering array of fauna and flora. The recent scientific expeditions into the National Park have revealed over 600 different species of native plant. This abundance of fauna is due largely to the location of Kings Canyon which combines areas of the western desert with the more varied flora of the MacDonnell Ranges and

the harsh vegetation of the Simpson Desert.

<http://www.walkabout.com.au/locations/NTKingsCanyon.shtml>



**King's Canyon**



**King's Canyon**

Soon after 13:30 I am at the start of the 6km canyon rim walk. The walk starts with a 100m climb up the canyon

sides where there is a short respite before climbing higher.



**King's Canyon**



**Broken piece of sandstone showing the white interior**

The walk meanders through the eroded beehive structures to vantage points overlooking the canyon and the plain below. The colours and structures of the canyon provide ample photo opportunities. One part of the canyon is called the Garden of Eden.



Here there are plants that date back to the time, millions of years ago, when the climate here was wet.

The brilliant colours of the rock walls result from oxides (usually of iron that have formed on the surface; the underlying rock is white. Dark stains result from lichen that has grown when the rock is wet.

<http://www.nt.gov.au/nreta/parks/find/watarrka.html>  
<http://www.kingscanyonresort.com.au/geology/>

It is a quite strenuous walk, up the canyon side and then over rough paths; nevertheless a very enjoyable walk.



**Garden of Eden - King's Canyon**



**King's Canyon**



**Lizard - King's Canyon**

### **Monday 19 June 2006 – King's Canyon to Uluru**

**Day 35**

Another early start! Although it is only 300km to Yulara, the location of the Ayers Rock Resort I want to get there as early as possible to secure a campsite and have sufficient time to see some of the sights.

I am on my way soon after 07:30; it is now light enough to see any animals on the road and about 30km along the road I see ahead of me, on the road, two wild camels. I slow down hoping

to get a photo but they lope off into the bush.

I have not seen many live animals along the road; I did see a dingo on the Tanami Road and in the Kimberly, bustards and a Jabiru. Crows and wedge tail eagles cleaning up the road kill, usually kangaroos, wallabies, cattle or horses are common. There seems to be many wild horses in this area.

I arrive at the Resort on schedule at 10:45 and set up camp. Next to me are three German boys, who like the Dutch girls at Coral Bay, have bought an old Holden Commodore to see Australia. It seems to be doing the

job, but they are tall boys and I think it is rather cramped. We chat for a while about the World Cup and what we are each doing and soon after midday I head out to the Uluru - Kata Tjuta National Park; the home of Uluru (Ayers Rock) and Kata Tjuta (the Olgas).

The National Park was recognised as a World Heritage site in 1987 for its geological formations and again in 1994 for its cultural significance. This listing honours the traditional belief system of the Anangu, the traditional owners, one of the oldest human societies on earth.





**Uluru (Ayers Rock)**

## **Uluru (Ayers Rock), Kata Tjuta (The Olgas) and Yulara.**

The greatest tourist attraction in the Northern Territory. An awesome sight particularly at both sunrise and sunset.

There is something totally awe-inspiring about Uluru. There it sits in the centre of Australia. A huge monolith, 862.5 metres above sea level, 1395 km south of Darwin and 465 km south west of Alice Springs, rising out of the desert. No wonder the local Aborigines regarded it as a sacred site.



**Site of battle between Kinuyu and Liru**

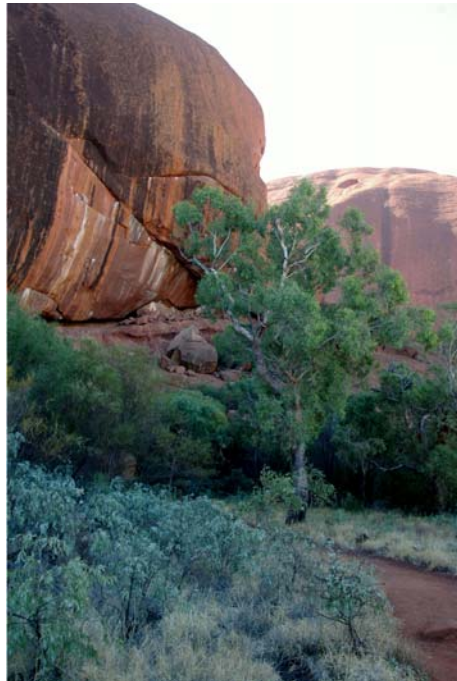
The average white Australian, clinging to the shores of this vast continent, also regards 'the greatest stone on earth' as something very special.



**Anangu paintings - Mutitjulu waterhole**

Uluru rises 348 metres above the surrounding countryside, has an area of 3.33 sq. km and a circumference of 9.4 km. It experiences an average of

200-250 mm of rainfall per annum and a typical desert temperature range which can fall to -8°C at night-time in winter and rise to 47°C during the day in summer.



**Uluru**

In the language of the local Aborigines 'Uluru' is simply a place name which is applied to both the rock and the waterhole on top of the rock. 'Yulara', the resort located 21 km from the base of the rock, means 'crying' or 'weeping' (which is what happens when most people see their accommodation bill) in the language of the local Pitjantjatjara and Yunkunytjatjara peoples.

There is some scientific disagreement about the origins of Uluru. The most widely held theory is that both Uluru and Kata Tjuta are remnants of a vast sedimentary bed which was laid down some 600 million years ago. The bed was spectacularly tilted so that Uluru now protrudes at an angle of up to 85°. The rock is actually grey but is covered with a distinctive red iron oxide coating.



**Mutitjulu waterhole**

No one is sure when the first Aborigines moved into the area but the best evidence suggests that it was at least 10 000 years ago. The notes on the history of Uluru National Park explain the Aboriginal understanding of Uluru in the following terms: 'In the beginning the world was unformed and featureless. Ancestral beings emerged from this void and journeyed widely, creating all the living species and the characteristic features of the desert landscape you see today. Uluru and Kata Tjuta provide physical evidence of feats performed during the creation period. Anangu are the direct descendants of these beings and are responsible for the protection and appropriate management of these ancestral lands. The knowledge necessary to fulfill these responsibilities has been passed down from generation to generation from the Tjukurpa.' An excellent and more detailed account of the Aboriginal history of Uluru appears in Robert Layton's

Uluru: An Aboriginal History of Ayers Rock published by the Australian Institute of Aboriginal Studies in 1986.



**The Olgas - Walpa Gorge**

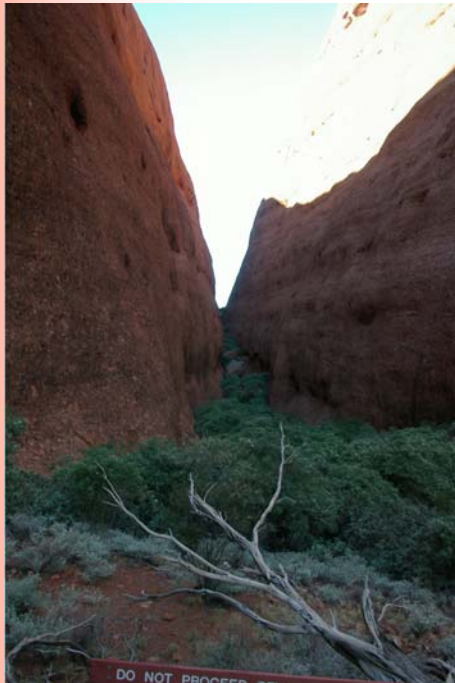


**Walpa Gorge**

The arrival of Europeans in the area was part of the exploration of the centre during the 1870s. Ernest Giles travelled through the area in 1872 and named both Lake Amadeus and Mount Olga. His original names, Lake Mueller and Mount Ferdinand in honour of Baron



Ferdinand von Mueller (Giles' benefactor) were changed by the Baron to the names of the reigning King and Queen of Spain.



**Walpa Gorge**

Giles returned to the area in 1873 but was beaten to Uluru by William Gosse who sighted the monolith on 19 July and named it after the Chief Secretary of South Australia, Sir Henry Ayers. Giles also was the first European to climb the rock which he did accompanied by an Afghan camel driver named Khamran.

The inhospitable nature of the terrain ensured that few whites ventured into

the region. Pastoralists were defeated by the lack of water and the only whites to pass through the area were trappers, quixotic miners like Harold Lasseter, and the occasional missionary. The area was declared the Petermann Aboriginal Reserve in the early 1900s and this existed until the 1940s when road access (the first graded road was built in 1948), the possibility of gold in the area, and the tourist potential of Uluru, all showed how fragile the original reserve had been.



**Wild Camel - The Olgas**

Ayers Rock was created a national park in 1950. In 1957 Bill Harney came to the area and in 1958, when the rock was combined with the Olgas to form the Ayers Rock National Park, he was appointed the first official curator. In 1959 a motel lease was granted near the rock and soon after an airstrip was built. In 1976 the Commonwealth Government set up the lease at Yulara and in 1983-84 the old tourist locations near the rock were closed down. In 1985 the title to the rock was handed back to the traditional owners who, in turn, granted the Australian National Parks and Wildlife Service a 99 year lease on the park. Today over 30 local Aborigines work in the park and the Board of Management is dominated by the traditional owners.

Although they are quite close to each other Uluru and Kata Tjuta have quite different geological and human histories. Where Uluru is a sedimentary rock which has been tilted nearly 85°, Kata Tjuta has only been tilted some 20°. They are made of a much coarser sediment and contain quite large pebbles of granite and basalt.

The name Kata Tjuta means 'head' and 'many' in the language of the traditional owners.

Artistically Kata Tjuta is noted for its engravings and its rock piles whereas Uluru is famous for its rock paintings. Both the engravings and the geometric rock piles are believed to have been created by the Spirit Ancestor during the Dreamtime.

<http://walkabout.com.au/locations/NTUluru.shtml>

<http://www.deh.gov.au/parks/uluru/>

<http://www.deh.gov.au/parks/uluru/natural/geology.html>

<http://www.ayersrockresort.com.au/geology/>



**Sun setting on The Olgas**



**The Olgas**

The Cultural Centre provides a wealth of information about the Anangu and the significance of Ayers Rock and the Olgas.

In 1985 the title to the area was handed back to the Anangu people, who then leased it back to the Commonwealth Government under a joint management agreement. The Anunga people are a majority on the Board of Management and have continued to allow non-indigenous people to visit the area, provided their traditional sacred sites and beliefs are respected.



**Sun Setting on Uluru**

This working together seems to be working well.

After yesterdays canyon rim walk I am a little too stiff and sore for another long walk, and I don't have enough time to walk around the Rock, so I chose a short walk, the Muṯitjulu Walk, where a great battle between Kinuya, a python, and Liru, a poisonous snake, takes place.

Muṯitjulu waterhole is the most reliable and as it is situated at the end of a gully provided an excellent site for trapping animals for food. A nearby dwelling cave also contains examples of Anangu paintings.

After the walk I circumnavigate the rock and marvel at the obviously unfit who are starting the climb to the top. Most will not make it before their bus departs.

The Olgas are a 50km drive away and I head there to see the multiple domes and to walk into Walpa Gorge to see



the towering gorge walls and the relatively luxuriant plants in the shaded watered gorge.

Although this is desert with less the 400mm of rain per year, on average, and evaporation rates of up to 3000mm per year there is plenty of water below ground and many plants,

including the desert oak, send roots down to the water table before developing into mature trees,

I don't have time for the Valley of the Winds Walk and make my way back towards the sunset viewing point for the Olgas and there as I turn back onto the main road is another wild camel; this time I get a photo.

By the time I get back to the sunset viewing point or Ayer's Rock it is 17:15, sunset is 18:03, and the car park is almost full.

Sunset does not disappoint as the colour of the Rock changes with the setting sun.

Back to camp and cook dinner.

## **Tuesday 20 June 2006 – Ayers Rock to Glendambo**

**Day 36**

Today is a driving day; my plan was to make Coober Pedy tonight and travel to meet Andrew and Pete and their families at Rawnsley Park Station via William Creek and the Oodnadatta Track tomorrow. Reports from other travellers indicate that this route would be slow as the Oodnadatta Track is rough south of William Creek so I opt for the highway route.

I depart as the sun rises above the eastern horizon and head due west along the Lasseter Highway to rejoin the Stuart Highway, 240km, for the trip south. I reach the Stuart Highway at Erldunda just before 10:00. I have stopped once to photograph Mt Connor lit by the morning sun.

My next stop is Kulgera for fuel, a walk around and a bite to eat. I am making good time and at this rate I will be at Coober Pedy by 14:30. If I can make it to Glendambo, a further 250km on, I will have an easy trip and time to stop in Pt Augusta for supplies.



**Mt Connor**

South of Marla I catch up with a freight train heading south, possibly from Darwin; it is travelling at over 100km/h and it takes some time to overtake it and get far enough ahead to take some photos. It is quite a sight to see these long trains snaking through the desert.

I easily make Coober Pedy and after refuelling and a hot pasty I am on the road south. There is little traffic and what there is, is mainly caravans and camper trailers heading north. I was travelling fairly quickly and overtook a handful of caravans travelling south. I passed a couple

of road trains and there were only two or three travelling north all day. I encountered an oversize load travelling north; two semitrailer, each carrying half a building as wide as the whole roadway. They had a police escort and the only thing to do was to get off the road and stop.



**Very Wide Load on the Stuart Highway**

Along the way I make a few stops to photograph the landscape.



**Southbound Freight Train**



**'Moonscape' - Coober Pedy**



I am in the campground at Glendambo soon after 17:00 with plenty of daylight remaining to set up camp.

Glendambo is roadside stop built about 1980 when the Stuart Highway was realigned and sealed.

It had been a long day; I had driven 1000km, so I shouted myself to a T-

bone steak in the pub and spent a pleasant evening with a chap who had been prospecting for zircons. A chemist he had worked in universities, the government and since retirement his hobby had become geology and prospecting for precious stones. We got to talking to a crew from an exploration drilling rig who had been working in the area and whose rig had gone to Pt Augusta. The chap in charge, a Kiwi, had drilled exploration holes in many parts of the world including eastern Russia and China.

As I am getting into bed a group, teenagers with some leaders, arrives and sets up camp nearby. They rolled out their swags and were quiet very quickly. They were with WASP (Wilderness Adventure Survival Program), were from South Gippsland and were heading home after three weeks on the road in Central Australia including being at the Finke Desert motorcycle race.

### **Wednesday 21 June 2006 – Glendambo to Rawnsley Park Station**

**Day 37**

A more leisurely start this morning; as I travel east the sunrises a little earlier, nevertheless first light is after 06:30 and I have slept very well.



**Sunrise - Glendambo**

By 08:00 I am packed and refuelling for the trip to Pt Augusta. Along the way I stop at Lake Hart, Island Lagoon and Mountain Lookout to take photos of the scenery.

When I arrive at Pt Augusta I am back where Elaine and I really started this trip 5 weeks ago.

Since then I have travelled nearly 12500km. By the time I meet Andrew and Pete and the crew I will have travelled nearly 14000km since I left home.



**Windmill - Glendambo**

Disaster this morning; my kettle sprang a leak. I am unable to get another in Pt Augusta. Fortunately I have a billy to see me through.

After refuelling and some shopping I am heading out of Pt Augusta at 11:45 for the 145km trip to Rawnsley Park Station near Wilpena Pound in the

Flinders Ranges. My route takes me through the historic town of Quorn, once a major junction on the original Ghan railway from Pt Augusta to Alice Springs. The Pichi Richi Railway is based at Quorn.



**Lake Hart**

Pichi Richi Railway is an operating museum, operating regular heritage train journeys on the oldest remaining section of the famous narrow-gauge old Ghan railway.

Pichi Richi Railway is located at Quorn, in South Australia's Flinders Ranges. Trains depart from Quorn and Port Augusta. The railway is operated, maintained and managed by its dedicated volunteer members.

[http://www.prr.org.au/cms/component/option,com\\_frontpage/Itemid,1/](http://www.prr.org.au/cms/component/option,com_frontpage/Itemid,1/)

I arrive at Rawnsley Station at about 13:30 to find everyone had gone out for the day; fair enough as they had no idea when I would arrive and it has given me time to do a few chores and catch up with the diary before they return.

<http://www.rawnsleypark.com.au/>  
[http://www.rawnsleypark.com.au/main/about\\_us/history](http://www.rawnsleypark.com.au/main/about_us/history)



**Island Lagoon**

**Rawnsley Park Station**, on the southern face of Wilpena Pound, was settled as part of Arkaba Station in 1851. Early pastoralists attempted to grow wheat and farm sheep in the

area, however a succession of natural disasters, along with the low rainfall and fluctuating prices, made earning a living difficult. In 1895, parts of Arkaba were subdivided for farming allotments, including a 6,253-acre portion now known as Rawnsley Park Station.

Between 1895 and 1953, the land was owned by a number of pastoralists, who had varying degrees of success. In 1953, it was purchased by Clem Smith, youngest son of Howard and Ida Smith of the neighbouring Prelinna Station. In 1963 Clem purchased an adjoining parcel of land, bringing the total area to 7,453-acres, and renamed the property Rawnsley Park Station after Rawnsley Bluff, the southern tip of Wilpena Pound.



**Flinders Ranges - Mountain Lookout**





**Southern Flinders Ranges near Pt Augusta**



**Hotel Augusta - Port Augusta**



**Main Street - Quorn**

Initially devoted solely to sheep grazing, Rawnsley Park Station ventured into tourism in 1968, when the first cabin was established and sheep shearing demonstrations began. Though tourism is now the

main industry on the property, the Station still runs 600 sheep.

[http://www.rawnsleypark.com.au/main/about\\_us](http://www.rawnsleypark.com.au/main/about_us)



**Railway Station - Quorn**



**Grand Junction Hotel - Quorn**

Shortly before 17:00 they arrive back and spill out of the cars.

Josh has not come with Andrew and Caroline so they have Connor, Julian and Callum. Pete and Liz have Lachlan, Ben, Nicholas, Dominic and

Lachlan's friend Riley. A rather daunting mob of boys.

Pete cooks a large camp oven of brown stew for everyone.

A large campfire keeps us warm.



**Flinders Ranges - North**



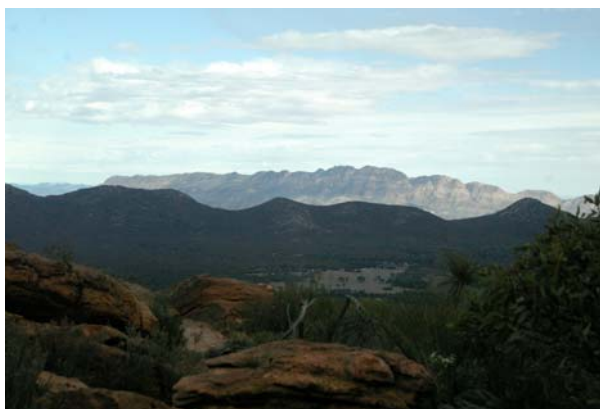
**Sunrise - Rawnsley Park Station**

**Thursday 22 June 2006 – Rawnsley Park Station**

**Day 38**



**Setting out - Mt Ohlssen Bagge - Wilpena Pound**



**Wilpena Pound from Mt Ohlssen Bagge**

The day starts slowly with eight little boys to be fed and watered; eventually we are able to set out for the day.

In the morning Andrew and Caroline have their own plans and will meet us later in the day at the Wilpena Pound Visitor Centre.

## **Wilpena Pound**

One of Australia's most famous landmarks and an area of excellent bushwalking





**Lachlan (hidden), Connor, Riley and Ben at the top - Mt Ohlssen Bagge**



**Refreshments at the summit - Mt Ohlssen Bagge**



**View from Mt Ohlssen Bagge**

There's a postcard of Wilpena Pound, a magnificent aerial view of this almost perfectly formed geological bowl, which declares: 'Did you know - An aerial view of Wilpena Pound, the floor of which is 200 metres higher than the surrounding country. The highest point is St Mary's Peak which is 1188 metres above sea level. The pound is 17 km long and 8 km wide and contains 8960 hectares.'



**Mt Ohlssen Bagge**

Located 429 km north of Adelaide, Wilpena Pound lies in the heart of the north Flinders Ranges and is a remarkable natural amphitheatre covering nearly 8000 hectares. It is a huge flat plain covered in scrub and trees and totally surrounded by jagged hills which form a rim. From the ground it looks like a rugged low mountain range which can easily be traversed. When you reach the top you look across the plain and can clearly see the hills around the edges. From the air it is a remarkable sight. It is

claimed that the word 'wilpena' means 'place of bent fingers'.



**Wilpena Pound**

Wilpena Pound is basically for bushwalkers. Certainly it is true that the road to the 'pound' traverses some of the most beautiful country in the whole of the Flinders Ranges (this was where Hans Heysen found the inspiration for some of his most famous gum tree paintings) but when the traveller arrives at Wilpena Pound there is nothing to do but walk. That is not a bad thing. But it is the reality of the experience.

The Flinders Ranges, of which Wilpena Pound is the emotional centre, were first sighted by Matthew Flinders in 1802. He lent his name to the low lying range of hills which starts south of Port Augusta and stretches northward for some 500 kilometres. In 1839 Edward John Eyre traversed the ranges as he travelled north discovering the vast Lake Eyre which lies to the north of the range. By the 1850s, although the land was deemed to be beyond the limits of cultivation, large tracts of the land were being leased. Wilpena Pound was leased in 1851 and, given its natural protection, was first used as a large horse breeding area. The horses were simply led into the 'pound' and left to their own devices.





**Tangled Trees in the river bed - Wilpena Pound**



**Waterhole - Wilpena Pound**

In 1899 the Hill family who lived at Hawker took out a lease over the whole of the pound. They cleared the land and started wheat farming. If you come across old pieces of farm equipment while walking in the pound it probably is left from these days. By 1904 the Hills were doing sufficiently well from their wheat that they built a small stone house near the entrance to the pound. They lived there until 1914. A resort was established near the only entrance to Wilpena Pound in 1945. It was administered by the

South Australian Tourist Bureau. By 1972 the pound was under the control of the National Parks Commission and it has remained under government control ever since.



**Wilpena Pound**



**On the road to the Pound**

In recent times Rawnsley Park Station, which is located to the south of the pound, has established itself as a modestly priced caravan park with good quality apartments (taken from a nearby mining site). It offers a range of activities including scenic flights over the Pound, horse riding and bicycling,

as well as interesting and unusual walks to the Pound.

<http://www.walkabout.com.au/locations/SAWilpenaPound.shtml>

[http://www.parks.sa.gov.au/flinders\\_ranges/index.htm](http://www.parks.sa.gov.au/flinders_ranges/index.htm)



**Hill Homestead - Wilpena Pound**



**Connor and Dominic - Wilpena Pound**

Pete and Liz and I with Lachlan, Riley, Ben, Connor, Nicholas and Dominic in a back pack set



off to climb Mt Ohlssen Bagge. This is a fairly difficult hike to 950m and takes about an hour and a half to complete the 3.4km climb.

The views from the top of Wilpena Pound and the surrounding mountains are spectacular. The trip down is as strenuous as the climb as there is a lot of rock hopping to do.

Andrew and Caroline with Callum and Julian are waiting for us at the visitor centre and after some lunch we set off into the pound to visit the Hill's Homestead. This was the home of the Hill family that established a pastoral property in the pound, first with sheep and then growing wheat. Bad

seasons and floods finally led to the family abandoning the property and eventually the Flinders Ranges National Park was established, including Wilpena Pound.

**Friday 23 June 2006 – Rawnsley Park Station**

**Day 39**



**Our Camps - Early Morning - Rawnsley Park Station**

The little boys had a very strenuous day yesterday and this morning's walk is to the aboriginal cave paintings at Arkaroo Rock. These Adnyamathanha images in charcoal and ochre tell the creation story of Wilpena Pound. The trail is only 3km return and much easier than yesterday.

<http://www.southaustralianhistory.com.au/art.htm>

## **Adnyamathanha Culture**



**Chase Range**

The Adnyamathanha are the Aboriginal people of the northern Flinders Ranges. Adnyamathanha meaning hills or rock people is a term now used to describe the Kuyani, Wailpi, Yadiaura, Pilatapa and Pangkala, the traditional groups in the Flinders Ranges. Sharing a common identity based on the Yura Muda, culture and language of their descendants, all understanding is derived from the land.

The Yura Muda is passed on in the form of creation stories from generation to generation in a long held oral tradition.

A story may explain how a particular feature of the landscape was formed, provide details of animal behaviour, create a map for travellers and prescribe appropriate behaviour for Aboriginals. One well known creation story which assists to explain some well known features of the Flinders Ranges landscape is Yurlu Ngukandanha - the Kingfisher Story.



**Adnyamathanha images - Arkaroo Rock**



**Sacred Canyon**

## Yurlu Ngukandanha

### The Track to Wilpena Pound (Ikara)

Yurlu, the Kingfisher, decided to go south for a ceremony. On the way he made a big fire, a sign that he was coming. The remains of that fire is the big heap of coal still at Leigh Creek today.

As Yurlu was travelling, there were also two big Akurras (Dreamtime Serpents) going south. Yurlu continued down the valley still making smoke, leaving coal behind him.

The two serpents also went on southwards and entered the Pound through Edeowie Gorge and camped at a large waterhole.

That night some people in the Pound were holding a ceremony. When they looked into the sky at the stars to see if it was time to start, the stars they saw were actually the eyes of the two Akurras. The male Akurra told his mate to go to the south-west, while he went north-east to surround the people.

When Yurlu reached Mount Abrupt he stopped and looked into the Pound. He could hear the sound of the ceremony. He threw a firestick into the air; it turned into the red star, Mars. While this was going on, the two Akurras came up on each side of the ceremonial ground and ate up all the people except two initiates and Yurlu.



**Adnyamathanha images - Sacred Canyon**

St Mary Peak is the head of the male Akurra and Beatrice Hill is the head of the female serpent, both watching the flight of the initiates. Their bodies form the two sides of the Pound. Using traditional knowledge the Adnyamathanha people of the Flinders Ranges lived sustainably with the land for thousands of years. British settlers moved into the Flinders Ranges in the 1840s changing the land. For the Adnyamathanha people traditional knowledge was challenged and they were forced to adapt and change.

Many Adnyamathanha people live and work in the area today. Nepabunna in the Gammon Ranges, Leigh Creek and Port Augusta are central townships for the Adnyamathanha people. Family and work responsibilities enable Aboriginal people to maintain the link with their country. Some work on cattle stations and in towns. Others are involved

in cultural tourism, several working as park staff in the Flinders parks.

Cave paintings, stone arrangements, occupation sites, graves and ochre quarries are testament to a rich cultural heritage and have great significance for Adnyamathanha people.



**Sacred Canyon**

Cave paintings and rock engravings can be seen at Arkaroo Rock and Sacred Canyon in the Flinders Ranges National Park. People visiting heritage sites in the Flinders Ranges are asked to show respect to the Adnyamathanha people and their culture by refraining from touching, damaging or removing items at these sites.

For a greater understanding of local Aboriginal culture, ask at the Wilpena Visitor Centre or other regional visitor information centres about local Adnyamathanha cultural tour operators in the area. Adnyamathanha cultural tours and camp fire activities are offered in the park as part of the [Flinders Ranges Seasonal Events Program](http://www.parks.sa.gov.au/flinders_ranges/cultural/index.htm) each autumn and spring.

[http://www.parks.sa.gov.au/flinders\\_ranges/cultural/index.htm](http://www.parks.sa.gov.au/flinders_ranges/cultural/index.htm)



After the walk Pete and Liz return to camp with the boys and I drive to Sacred Canyon another site for

Adnyamathanha images. In this case they are

images inscribed into the canyon walls, representing people, waterholes and animal tracks.

**Saturday 24 June 2006 – Rawnsley Park Station**

**Day 40**



**Arkapena Scenic Adventure Route**



**On top of Mt Pinnacle (Prelinna Lookout)**

Andrew is keen to drive around the Arkapena Scenic Adventure Route. The track climbs into the foothills of the Chase Range on one side of the Martins Well Road and ends on top of the ABC

Range on the other side. It is a fairly rough 4WD track that frequently crosses steep sided creek beds and climbs to high vantage points overlooking the surrounding valleys and ranges.



**Spot the kangaroo - Arkapena Scenic Adventure Route**

Peter's car is unsuitable so everyone piles into Andrew's Nissan Patrol and the Forester. We make our way slowly through the bush and up to the top of the hills. Euros are plentiful and towards the end we see an emu grazing close to the track. The highlight of the trip is the climb to Prelinna Lookout at the top of Mt. Pinnacle. Here there are 360degree views of the ranges.

The trip takes about three and a half hours (40km) including a stop at the Lookout for lunch.



**Chase Range - Arkapena Scenic Adventure Route**



**View from Prelinna Lookout over Martins Well Road**



**Headframe of the Kintore Shaft,  
principal shaft of the Central  
Mine**

Today my route takes me south through Hawker, Orroroo and Peterborough before turning west towards Broken Hill on the Barrier Highway. Most the trip is through pastoral land with the Ranges of the Southern Flinders Ranges in the distance.



**Derelict Farmhouse**



**Sulphide Street Railway Station, established in  
1905 as the passenger terminal for the Silverton  
Tramway.**



**Trades Hall - Broken Hill**



**Formerly, Silver King Hotel**

Cattle, sheep and wheat are the main pastoral activities. Low rainfall and the stony ground make farming difficult. There are many derelict farmhouses from the early



settlement days, many close to more modern farmhouses and sheds.

At Peterborough I turn onto the Barrier Highway



**Story Poles**

This section of the Barrier Highway follows the rail line from Broken Hill to Port Pirie and Port Augusta.

<http://walkabout.com.au/locations/NSW/BrokenHill.shtml>  
<http://www.visitbrokenhill.com.au/pages.asp?code=20>

The Broken Hill region was first visited by a European in 1841, Sir Thomas Mitchell, the New South Wales

Surveyor General. Three years later, Charles Sturt, saw the Barrier Range (so called because it was a barrier in his search for an inland sea) and referred to a 'Broken Hill'.



**Sully Emporium, now Broken Hill Regional Art Gallery**



**Post Office - Broken Hill**

Pastoralists followed in the wake of Mitchell and Sturt, but many of the small stations proved non-viable.



**Town Hall Façade - Broken Hill**



**Court House - Broken Hill**

One day in 1883, a boundary rider, Charles Rasp, found what he thought were deposits of tin at 'Broken Hill'.

What he had discovered was the largest silver, lead and zinc lode in the world and he with six others commenced mining in 1885 and in the same year The Broken Hill

Proprietary Company Limited was floated on the Melbourne.

<http://www.bhpbilliton.com/bb/aboutUs/companyOverview/ourHistory/home.jsp>

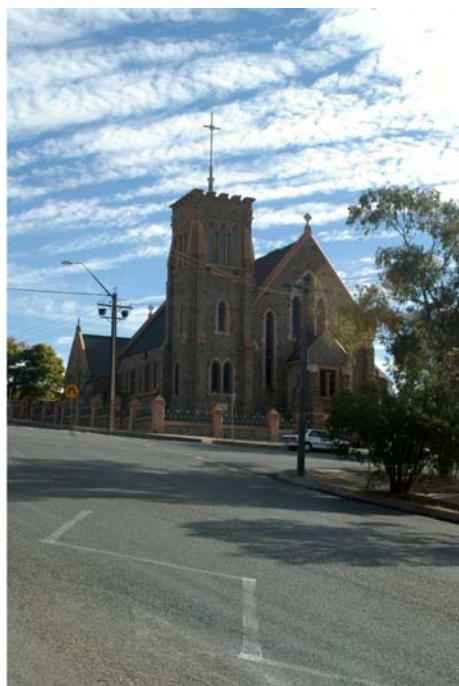
Thus was the town of Broken Hill formed and the beginnings of what is now the largest mining company in the world, BHPBilliton.

I arrive in Broken Hill at about 13:30, South Australian time, set up camp and have enough time to visit the visitor centre and do the Heritage Walk in the centre of town. Many of the early buildings remain and have been

adapted to new uses and others have been demolished. There is an interesting mix of Victorian Building, typical South Australian buildings and miner's cottages of corrugated iron.

**Monday 26 June 2006 – Broken Hill**

**Day 42**



**Sacred Heart Cathedral – Broken Hill**

There is plenty to see in Broken Hill and as I am only staying for one day I have to be selective.

I have booked for the underground tour of Delprats Mine at 10:10 so I make use of the early morning to follow part of the Silver Trail, a self drive tour around Broken Hill, that meanders through and around the town past places of historical interest in the town.



**South Mine – Perilya Ltd – Broken Hill**

The 'Line of Lode' extends for 7.5km and is 250m wide in some places. The lode surfaces at its centre and it was here that it was discovered in 'Broken Hill'. At its Northern and Southern ends it is almost 2km below ground.



**Residence – Broken Hill**

Many shafts were sunk and Delprats mine was one of the early ones near the centre of the lode and extended to 1000ft deep. Formerly a BHP mine it closed when BHP left Broken Hill in 1939 and in 1977 was reopened as a tourist mine. Tourists do not go to the deepest level, but to about 400ft below ground and in a 2-hour tour are introduced to the workings of a pre 1940 mine and some of the miner's working conditions. Work was carried out without many of the aids used by modern miners and the work was dangerous. Physical labour was hard although air operated machinery was common before the mine



closed. Headlamps had been available for about 10 years and had replaced acetylene lamps. Since BHP's departure from Broken Hill there have been several companies working the 'Line of Lode'. Perilya Ltd is the present operator.

<http://www.perilya.com.au/>



**Miners Memorial - Broken Hill**

Modern underground hard rock mines use large machines in large workspaces to access and extract the ore.

The early mines concentrated and smelted the ore in Broken Hill, but when firewood ran out for the

furnaces it became necessary to send the concentrate elsewhere. Port Pirie in South Australia was selected as the site. Rivalry between the colonies of New South Wales and South Australia prevented a railway being built between Broken Hill and the SA border. However a tramway could be built to connect with the South Australian railway at the border. This was done to carry concentrate from Silverton and Broken Hill to Port Pirie.



**Residence - Broken Hill**

On top of the enormous mullock heap is a Miners Memorial which can be seen from all around against the sky.

A visit to the Broken Hill Regional Art Gallery is a must. Apart from the excellent restoration and adaptation of a former warehouse the gallery collection includes examples of the work of many renowned Australian artists.

In 1960 a group of local artists, dubbed the Brushmen from the Bush by the Womens Weekly, placed Broken Hill on the artistic map. They were, Pro Hart, Jack Absalom, Eric Minchin, Hugh Schultz and John Pickup. The gallery currently has an exhibition of their work that will shortly go on tour around Australia.

Whilst painters had become prominent in Broken Hill, sculpture had not. In 1993 a sculpture symposium was held and 12 sculptors from around the world were commissioned to create works from large blocks of sandstone on a hilltop in the Living Desert Reserve where there is also a fauna enclosure. The widely diverse sculptures stand on the skyline in a desert wilderness.

## Living Desert Sculpture Symposium

Six kilometres out of town, the **Sculpture Symposium in The Living Desert Reserve** is the most stunning of Broken Hill's art exhibits, a reserve in the eroded Barrier Ranges desert region that is the location of a group of sculptures carved from Wilcannia sandstone boulders. The twelve artists involved in their creation were part of a sculpture symposium in 1993 and were drawn from diverse cultures – two from Mexico (including an Aztec Indian), two from Syria, three from Georgia (in the Caucasus), and five Australians, including two Bathurst Islanders – and this is reflected in the variety of their works.



**Sturt Park - Broken Hill**



**'The Bride' - Living Desert Sculpture Symposium**

The pieces from the Georgian artists are particularly fine: Badri Sulushia's Outback Madonna and Child; Valerian Jiiya's Cubist interpretation; and Jumber Jikiya's horse's head, a tribute to the rare breed of Georgian horses slaughtered under Stalin's orders. Nastra Luna of Mexico badly injured his hands and his piece became a collective effort, depicting a soaring eagle, with the hands of the other sculptors who helped him imprinted in the rock.



**Murals - Community Centre - Broken Hill**



**Broken Hill**

The Aboriginal artist Badger Bates, from Broken Hill, was inspired by the stone carvings of his ancestors, and his piece shows two rainbow serpents travelling north. The best time to visit the sculptures is at sunset when the light is magical and you can really soak up the atmosphere. It's a pleasant fifteen-minute walk up the hill from the car park to the sculptures; you can also drive right up, but because of unfortunate bouts of vandalism in the past

you must first go to the tourist information centre in town, get a key to the gate (\$10 deposit) and pay \$5 per car. A \$1 information brochure about the sculptures is available from the tourist office.

[http://www.pacificislandtravel.com/australia/newsouthwales/brokenhill\\_artgalleries.asp](http://www.pacificislandtravel.com/australia/newsouthwales/brokenhill_artgalleries.asp)

<http://www.brokenhill.nsw.gov.au/about/1000/1004.html>  
<http://www.visitoutbacknsw.com.au/arts/sculptures/sculptures.html>

Finally there is Silverton; founded before Broken Hill and the site of small-scale silver mining. It is now a ghost town 25km from Broken Hill. The few remaining buildings relics of a bygone era, a pub remains, as does the school the municipal buildings and the gaol.

Dame Mary Gilmore (Miss Mary Jane Cameron) taught at the Silverton School from 1887 to 1889.

[http://www.rba.gov.au/CurrencyNotes/NotesInCirculation/bio\\_dame\\_mary\\_gilmore.html](http://www.rba.gov.au/CurrencyNotes/NotesInCirculation/bio_dame_mary_gilmore.html)  
[http://en.wikipedia.org/wiki/Mary\\_Gilmore](http://en.wikipedia.org/wiki/Mary_Gilmore)



**Delprats Mine**





**'Under the Jaguar Sun' - Living Desert Sculpture Symposium**

Some, like the gaol, have become museums, others are closed up and some have become galleries or artists' studios. It is quite surreal as there are large distances between many of the surviving buildings.

By now it is getting close to sunset, so I head back into town after a busy day.

## **Broken Hill Complex - regional history**

### **Aboriginal occupation**

The Wiljakali people traditionally occupied the lands around Broken Hill ([HO and DUAP 1996](#)) visiting the Barkindji people on the Menindee Lakes each year.



**Miners Memorial - Broken Hill**



**South Mine**

For further information on Aboriginal occupation of the Broken Hill Complex Bioregion, see an [overview of the Aboriginal occupation of western NSW](#).



**'The Living Desert'**

## **European occupation**

Charles Sturt named the Barrier Range which impeded his progress when he explored the area near Broken Hill in 1844-45, referring to a "broken hill" in his diary ([HO and DUAP 1996](#)). ([Walkabout Australian Travelguide: Broken Hill](#)) Edward Giles explored the Mootwingee area in 1861 and 1863 ([NSW NPWS 1991](#)).

Broken Hill, like other towns in western NSW, is far removed from major rivers and owes its existence to the discovery of mineral resources ([HO and DUAP 1996](#)). Gold was first discovered in the Barrier Ranges in the 1860s, although the key period of lucrative exploration for gold, silver, tin and lead did not really begin until 1875, and lasted about 10 years ([HO and DUAP 1996](#)).

The first find in this critical period of mining history occurred during the sinking of a well at Thackaringa

pastoral station in 1875 ([NSW NPWS 1991](#)), less than 40 km west of Broken Hill. The expense of transporting and processing the ore turned interest towards more lucrative gold discoveries further north in the Channel Country Bioregion, although some mining continued in the Broken Hill area ([HO and DUAP 1996](#)).

The early 1880s saw many hopeful finds of silver to the northwest of Broken Hill at Silverton and Umberumberka. Silverton had a population of 250 by September 1883, a number which doubled by December the same year and reached 1,700 a year later. Silverton had a reputation for harbouring various undesirables in the form of "horse stealers, cattle duffers and mining sharks" ([NSW NPWS 1991](#)).

In 1883, Charles Rasp collected samples of what he thought was tin and although these turned out to be from rich lodes of silver and lead, it was almost two years before the ore body was discovered to be the largest and richest of its kind in the world.

The "syndicate of seven", led by Rasp, were leaseholders at Mount Gipps, the site of this discovery in 1883. The following year they became the "company of fourteen" and by 1885 had formed Broken Hill Proprietary Company, now known as BHP ([Department of Mineral Resources](#)).



**'The Living Desert'**



**Silverton**

Due to these developments, Broken Hill began to dominate the bioregion from 1885 as a major township ([HO and DUAP 1996](#)). Its growth was aided by the newly discovered lodes and the creation of the Silverton Tramway Company which provided a link from Broken Hill to the new mines and the South Australian border.

By 1891 the population of Broken Hill had exploded to 20,000 and it became the third largest metropolis in NSW, although it retained its strong ties with South Australia ([HO and DUAP 1996](#)). With the growth of Broken Hill, the population of Silverton began to decline and its status as a municipality was removed in 1907, the same year that Broken Hill was declared a municipality ([HO and DUAP 1996](#)).



**Silverton**

Several new mines developed in the 1920s, ensuring the continued growth of Broken Hill. As it was some distance from the nearest major river, the water supply in the Broken Hill area had to be transported by the Silverton train from 1888.

In 1889, the tramway from Menindee to Broken Hill was used to transport water from the Darling River ([NSW NPWS 1991](#)). Water continued to be carted to Broken Hill until after World War II when a pipeline from the Menindee Lakes to Broken Hill underwent construction, and by 1952 it serviced not only Broken Hill but agriculture on the Darling as well ([NSW NPWS 1991](#)). A railway line from Sydney reached Broken Hill in 1927.



The population of Broken Hill grew to 27,000 in the early 1900s, remaining at this level through the 1920s and 1930s and reaching 30,000 in the 1960s ([HO and DUAP 1996](#)).

Broken Hill's population was recorded as 20,963 in the 1996 Australian census ([Australian Bureau of Statistics](#)). BHP ceased work at Broken Hill in 1940 and there is only one mining operator remaining in Broken Hill today.

Timber was always a naturally scarce resource in the Broken Hill Complex Bioregion, its shortage heightened by the demand for timber to fuel steam trains as well as for structural supports in the mines ([NSW NPWS 1991](#)). When most of the local timber was removed in the bioregion, prompting erosion and contributing to serious dust storms, builders and

miners brought timber in from Adelaide ([NSW NPWS 1991](#)).



**Silverton School**

Irrigation and a protective cultivation zone surrounding the town of Broken Hill have reduced the incidence of dust storms ([NSW NPWS 1991](#)).

<http://www.nationalparks.nsw.gov.au/npws.nsf/Content/Broken+Hill+Complex+-+regional+history>



**Municipal Chambers - Silverton**

**Tuesday 27 June 2006 – Broken Hill to Menindie**

**Day 43**

Out of bed as the sun is rising; it is freezing but I need to get on the road as early as possible if I am to reach Hay in the Riverina at a reasonable hour. As I travel south the daylight hours have become less and I don't like to travel after dark.

Menindie is 110 km east of Broken Hill on the banks of the Darling River and the road first passes through low hills and then descends onto the flood plain. This is a vast flat expanse, broken only by a few low hills.

<http://www.walkabout.com.au/locations/NSWMenindee.shtml>

At Menindie there is a series of seasonal lakes that have been made permanent lakes to store water for Broken Hill. In recent years, low rainfall and excessive water use by cotton and rice farmers has reduced the river flow and the southern lake has been empty for 6 years. The lakes are shallow and evaporation rates are very high so that much of the water is lost.

My plan is to continue east to Ivanhoe and then to take the Cobb Highway to Hay.

A few photos of the Darling River and I am on my way again on the unsealed road to Ivanhoe. The road is good with few corrugated sections.

20km from Menindie I have a flat tyre on the right side of the trailer. The tyre is ruined and when I set about to replace it I find the cause; the retaining pads at the rear of the springs have broken allowing the axle to move sideways and the tyre to

touch the side of the trailer. The friction has quickly worn through the tyre.



**Menindie Lakes**



**Darling River - Menindie**

The only sensible thing to do is to try to realign the axle and drive slowly back to Menindie and see if I can get the trailer repaired.

This proves straightforward and by midday I am back in Menindie. I soon locate a mechanic who can fix the trailer first thing in the morning so I set off to the Lake Menindie Caravan Park situated on

a hill overlooking the dry south lake and set up camp.



**Main Weir - Menindie Lakes**



**Lake Pamamaroo - Menindie Lakes**

I am unable to replace the tyre in Menindie so I drive back to Broken Hill to get one.

Returning to Menindie I have time to detour to the Main Weir of the lake system and it was near here, on the banks of the Pamamaroo Creek, that Bourke and Wills set up their base camp in 1860.



**Bourke and Wills Campsite - Pamamaroo Creek**



**Sunset - Menindie**

The expedition party included 15 men, 23 horse, 27 camels and 21 tons of stores. At the time of Burke's arrival in Menindee it was an outpost with no other settlements between here and the vast interior. On 19 October the small party of Burke, Wills, Brahe, King, Gray, McDonagh, Patton and Dost Mahomet, 15 horses and 16 camels left the Pamamaroo camp and headed north. The balance of the expedition party stayed for the next year.



**Wednesday 28 June 2006 – Menindie to Castlemaine**

**Day 44**

It is freezing again this morning and the frost is thick on the car windscreen, but as I have to be at the mechanics by 08:45 I am out of bed before sunrise and breakfasting.

The mechanic is waiting and we soon have the trailer jacked up and the wheels off. He soon cleans up the damage and welds new pads and reinforces the pad mounting points. It is also a good opportunity to check the wheel bearings. They are OK.

By 10:45 I am ready to leave. I have a dinner appointment with Sally Kaptien and Jack Carolan in Castlemaine tonight so I decide it will be quicker to head down the Darling Highway and then via the Calder Highway: it is a better road and shorter than through Ivanhoe and Hay. I have about 700km to cover so I am not going to have time for stops to sight see. Fuel stops will be necessary but will have to be short.

From Menindie to Pooncarie the road is unsealed; there has been a little rain and the road is smooth and I am able to travel at the speed limit.



**A touch of green on Darling River Pastures**

This area has been in drought for some time, but recent light rain has brought a green tinge to some of the paddocks.

Around Mildura the roads are busy and speed limits are low, however once I have cleared the irrigation district

and I am driving through the wheat fields of the Mallee the road is clear.

I have not travelled this route from Mildura before and mixture of mallee scrub and fields makes it quite an interesting drive.

I finally arrive at about 18:30; ready for the roast lamb dinner Sally has prepared



**Sand Dunes North of Wentworth**

**Thursday 29 June 2006 – Castlemaine to Melbourne**

**Day 45**

A relaxed start today as there is only 130km to go. I set off at about 10:00 for home and arrive before 12:00. This

is a familiar trip having done it many times when we were building the school camp at Fryerstown 35 years ago. Improvements to the road have made it an easy drive.

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# Flinders Ranges Research



<http://www.southaustralianhistory.com.au/alicesprings.htm>



## Alice Springs (Mparntwe) NT

The original, or Alice Springs proper, is situated some six kilometres up the Todd River from Heavitree Gap. Today this is better known as the Old Telegraph Station. It was during the building of the Overland Telegraph Line that W.W. [Mills](#) discovered the dry riverbed and, following it down, found pool after pool of clear water. That night he wrote in his diary, 'numerous waterholes and springs, the principal of which is the Alice Spring which I had the honour of naming after Mrs [Todd](#)'. Mills also named the pass Heavitree Gap after his school in Devon, England.

Among some of the first white speculators or settlers to take up land in Central Australia were Edward Meade Bagot, who had contracted for the southern portion of the [Overland Telegraph](#) line, and Joseph Gilbert. On 1 April 1872 they gained pastoral leases in the Alice Springs region.

In 1878 a Post Office was opened, followed on 28 April 1879 by a Police Station. On 4 August 1882 William Willshire was posted to the station.

Born in Adelaide on 5 March 1852 he had worked as a drover before joining the police force on 1 January 1878. Erwein Wurmbrand was posted to the Alice on 9 November 1884.

In 1885 Francis Gillen was at Alice Springs. Born at Little Para in South Australia on 28 October 1855, he had joined the Telegraph Department at

Clare in 1877. While at Alice he studied Aboriginal culture and later published several books in conjunction with Professor Baldwin Spencer.



Todd River

In July 1888 the South Australian government commissioned David Lindsay to lay out a town on the banks of the Todd River. On 29 November 1888 the town of Stuart was proclaimed. The first blocks were sold in January 1889. Born in [Goolwa](#) on 20 June 1856, Lindsay had been appointed surveyor in the Northern Territory in 1878.

Alice Springs, with its Telegraph Station and the newly proclaimed town of Stuart remained separate communities. Some of the first buildings and businesses at Stuart were opened during 1889 when Billy Benstead built the Stuart Arms Hotel and F.B. Wallis opened a store.

Very little progress was made at Stuart during the first decade. The Bradshaw family arrived in 1899 when Thomas Bradshaw took over from Francis Gillen at the Overland Telegraph Station. Gillen had been in the Alice for twenty-five years and had Mount Gillen named after him. The arrival of the Bradshaws pleased Mrs Meyers, wife of Charles Meyers, who up to that time had been the only white woman at Stuart. Charles Myers operated a saddler's shop for many years whereas his wife ran a boarding house. The other white woman, the wife of Mounted Constable Charles Brookes, lived with her husband at the Heavitree Gap police camp. The Bradshaws remained at Stuart until August 1908.

In 1887 Thomas Bradshaw married Atlanta Allchurch in Adelaide and he worked as the night shift operator at the Adelaide Telegraph Office. With Bradshaw being a distant relative of Aeneas [Gunn](#)'s cousin Joseph Bradshaw, he too liked to see a bit more of Australia and applied for the

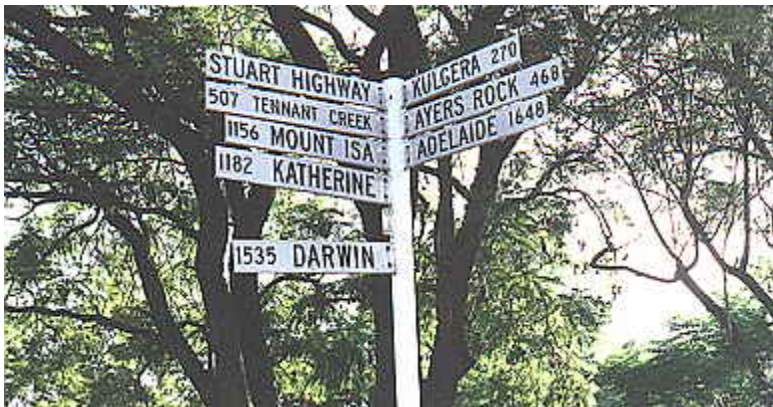
job of station master in Alice Springs. He was successful and promptly left by train for [Terowie](#), where he had to change trains for [Oodnadatta](#) and from there by horse and buggy to the centre. His wife and children followed him a few months later. Thomas was also appointed a Special Magistrate and had at times to travel as far as [Barrow Creek](#) to hear cases.



Heavitree Gap

When gold was discovered in the MacDonnell Ranges, Mounted Constable William Willshire was appointed Warden of Goldfields in July 1887. H.Y.L.

Brown, Government Geologist said in 1890 that he regarded the Alice Springs District as one of the most favourable areas for gold prospecting. However he did realise that the lack of water would be a great problem. To overcome this he suggested the sinking of wells.



In December 1907 the first car arrived at Stuart driven by Henry Dutton and Murray Aunger. It must have created some excitement for the population of about fifteen white people. It also would have been some trip on more than a thousand kilometre of dirt road, which was not graded

regularly as it was done much later. Petrol would also have to be taken for most of that distance.



Stuart Town Gaol

Constructed during 1907-1908 by well known stone mason Jack Williams it replaced the original Heavitree Gap Goal. This building was used until 1938. Being one of the coolest places in town it was occasionally used as a school room in the 1920s when there was a lack of suitable buildings.

From the first of January 1911 the Northern Territory administration was transferred from South Australia to the Commonwealth Government. Sergeant Robert Stott was doing the rounds at Stuart during that time and for many years thereafter. Born on 13 July 1858 in Scotland he had joined the South Australian Police in 1882. After service at Roper River and Borroloola he was transferred to Stuart. Stott retired on 13 April 1928 and moved to Adelaide. Sadly he did not enjoy a long retirement as he was killed on 5 May while crossing the railway line at Wayville.

Ida Standley opened a school in June 1914 and also became the matron of the Bungalow home for part Aborigines. Standley Chasm was named for her. Mrs Standley lived at the hostel and had the care of the children as well as the school. When C.T. Madigan visited the place he was suitably impressed, but showed little understanding referring to the aboriginal children as 'natural little animals'. Later Ida lived at Myrtle Villa which had been home for some years to Sister Jean Finlayson from the Australian Inland Mission.



In October 1921 the first plane, flown by Francis Briggs, landed at Stuart. The population had increased to 30 whites and about 300 Aborigines. It was enough for Bob Laver, publican of the Stuart Arms Hotel who also had many visitors from down the track.



Adelaide House

Adelaide House completed in 1926. It became the social and nursing home. First nurses were Sisters I.Pope and E.Small. It had been brought about by [John Flynn](#) when he visited the Telegraph Station in January 1913. Until 1939 it remained the only hospital in Central Australia when the Alice Springs Government Hospital was completed. Previously Flynn had been instrumental in building a hospital at Maranboy in 1917 and [Victoria River Downs](#) in 1923.

On 1 February 1927 the town of Stuart was proclaimed the administrative capital of Central Australia. During that same year the Railway extension from [Oodnadatta](#) to Stuart was surveyed by David Douglas Smith. The isolation of Stuart, or Alice Springs was broken finally in 1929 when it was connected by rail to [Adelaide](#) providing employment for nearly 900 men.

On 30 August 1933 the name of Stuart was changed to Alice Springs.

Major developments and expansion occurred during the second world war. In many ways Alice Springs gained a good deal from WWII. Most of all it put an end to its isolation by becoming a military base. Many of the local men enlisted but because of the formation of the Darwin Overland Maintenance Force some 750 military personnel moved into the town. During the first years of the war nearly 200,000 men passed through. Even better was the sealing of the road as far as Larrimah. Alice Springs also

became the railhead and centre of activity with as many as 60 trains a week giving employment to over a thousand people.

The Government took over the mining around town as well. During the war years Alice Springs also gained a much larger and better water supply, a power station, a new airport and a newspaper. Whereas its population in 1933 had been just over 500 it now had more than 2000.



only on Todd was the brainchild of Reg Smith in 1962 when the Rotary Club was scratching its head for something different to raise funds for charity. It is now the only place in the world where a boat race is cancelled when the river has water in it.



## The Great Trek of the Durack Family

Mary Durack

<http://www.ozeco.com.au/ecoaustralia/n/gfx/duracks.pdf>

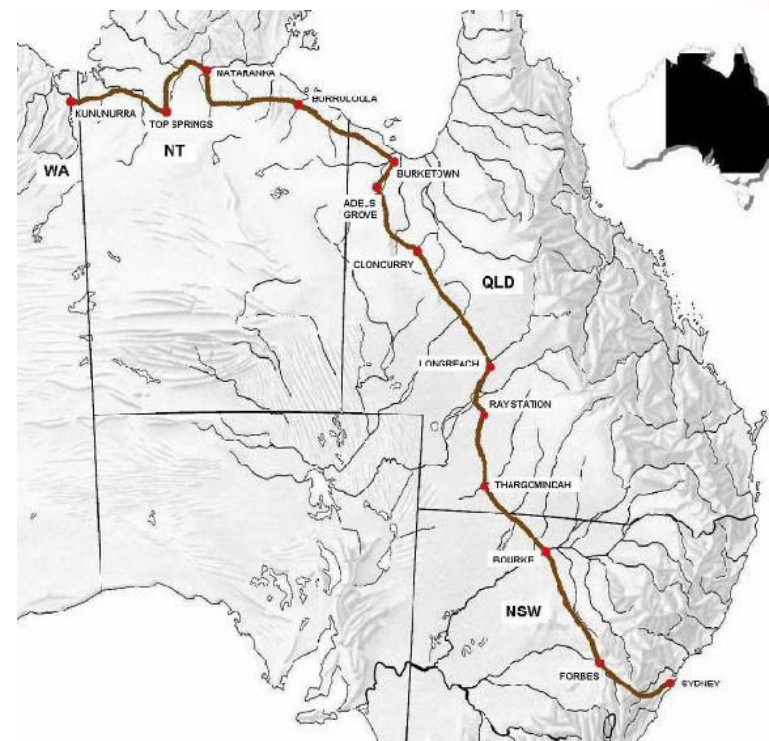
**From Ireland in 1855  
to KununurraNorth  
West Australia in 1885**

**“THE TREK OF THE DURACK  
FAMILY IS THE STORY OF  
AUSTRALIA ITSELF; HUGE,  
PIONEERING, AND TREMENDOUS  
IN CONCEPT”**



Patsy Durack brought his family to Australia in 1855 to escape the Irish potato famine –he subsequently encouraged and sponsored many other Irish families to immigrate to Australia. One of Australia’s great driving exploits was the overlanding of cattle from Goulburn in NSW to the Kimberley district of WA by members of the Durack, Costello & MacDonald families. On this trek we follow as closely as possible the path taken by these families and visit places of significance along the way.

**Goulburnto Kununurra**



**Goulburn, 1855**

**DAY 1**

**Sydney -Goulburn -GrabbenGullen  
-Forbes**

“In December 1855 Grandfather (Patsy Durack) purchased 273 acres –in the vicinity of Dixon’s Creek about 12 miles north east of Goulburn...early in ’67 after 14 years in Australia, Grandfather started on his trek north in search of greener pastures –the family cavalcade moved out of Goulburn wending its way north along the Lachlan River–the first stages were comparatively easy travelling, over wheel made tracks and past farms and





stations where they would sometimes linger for a day or so on the invitation of hospitable bush people (farmers)."465 km.

## DAY 2

**Forbes -Bogan Gate -Nyngan - Bourke**

"...a month by easy stages to the Bogan gates...the route wound for about 150 miles northwest along the Lachlan and up the Bogan River to its junction with the Darling River...they made 8-10 miles a day over good country...2½months to Bourke, last outpost of NSW settlement."435km.



## DAY 3

**Bourke -Fords Bridge -Thargomindah**

"...after replenishing their stores for the last time the party moved north...feeling their way up the inconsistent stream of the Warrego and across the Cuttaburra...they moved on to the sandy, treeless plains of the Paroo into an area of seemingly permanent springs...here, south of the border they established a depot."356km



## DAY 4

**Thargomindah -Kyabra-Ray Station**

"Stumpy Michael (Durack) and the native Cobbyhad set off...sixty-five miles north up the sprawling course of the Bulloo to somewhere about the site of the present town of Quilpie. Grandfather and his family settled on the Thilling-

gurrawaterhole while the Costello party moved south...to where KyabraCreek swelled into a lake, seven miles long by half a mile wide."350km

## DAY 5

**Ray Station**

Patrick Tully and Sarah Durack "sold up everything and started out for Queensland. Their fourth son, and ninth child, was born in Parkes on the way –a few weeks later the family moved on –Patrick driving the wagon, with his wife Sarah and smaller children in a loaded spring cart, and the older ones driving the cattle and horses."They took up Ray Station in 1874 and it still remains in the family today.



Mark and Sandra Tully (descendants) will spend the day with us showing us the history of Ray Station and its links with the Duracks.

## DAY 6

**Ray Station -Windorah -Longreach**

"The route from Thylungrastretched north to the Gulf and swung west to no-mans land. On the map it looked simple enough and measured a fairly neat 2500 miles. In fact, it veered to every compass point from water to water, from grass to grass, and nobody knew how far they must travel in 'drovers miles'."395km



## DAY 7

### Longreach -Winton -Cloncurry

"At Winton one of the wagon drivers found romance with a full-blown beauty behind the bar of the local pub and became so lovelorn at the Diamantina River that he returned to the township as fast as horse and packs would carry him."

"The bar at the Drovers Rest in Cloncurry overflowed with lanky, sunbronzed, bearded overlanders, swapping yarns, sketching maps on the bar counter or on the floor..."517km



## DAY 8

### Cloncurry - AdelsGrove

"From 'the Curry' the route ran over a deep crossing where the cattle were forced to swim...they veered north west...the route wound through bold outcrops of copper coloured hills, over stony, treeless vistas –hard country, unfolding into open plains with welcome belts of messmate and shady silver box."423km



## DAY 9

### AdelsGrove -Burketown

"It was at a camp on the Nicholson that the first dreaded symptoms of disease appeared...while here Long Michael & Patsy Moore took the wagons into Burketown; supply centre for the spearheads of northern settlement –then a little metropolis of the lonely gulf."



## DAY 10

### Burketown -Woollogorang-Borrooloola

"But slowly they were ticking off the miles as river after river dropped off behind them –Calvert, Robinson, Foelsche, Wierien...A man known as Black Jack Reid had brought a schooner up the McArthur River to form a shanty store at a spot the blacks called Borrooloola – place of the paperbarks'spectacular gorges. 490km



## DAY 11

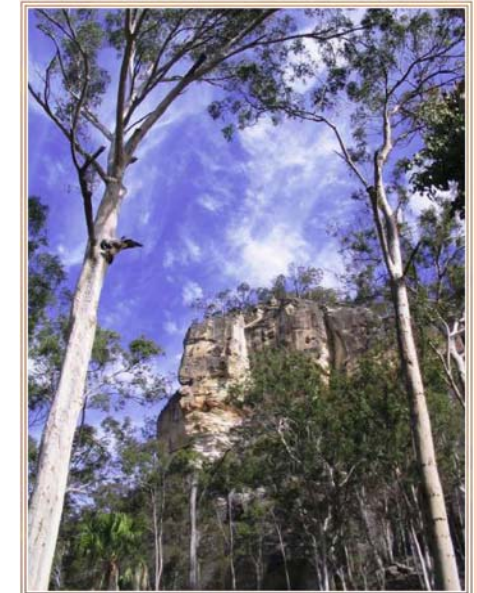
### Borrooloola -Mataranka

"Sometimes they crossed the trail of a previous party –probably that of Nat Buchanan, but they lost no time looking for tracks –their compass course lay due west and one man's guess was as good as another's which way to deviate in looking for a river crossing or skirting a range."530km

## DAY 12

### Mataranka -Elsley Station -Roper Bar

"Here now was the lush, tropical north that returning drovers spoke of with mixed repugnance and fascination: the deep oily waters of the Roper with thickly bordering Pandanus palms, bamboos, banyans and paperbarks – the Roper depot among thick tropical trees and creeper had the unreal quality of a stage setting....the Roper ran west to Red Lily Lagoon, a place of fantastic beauty withits massed water lilies, crimson and blue, green reeds and drooping paperbarks; haunt of wild duck – they pushed on to the Overland Telegraph Line and the little post office at Elsley Station."





## DAY 13

### Mataranka -Katherine -Top Springs

TELEGRAM MAY '85:

"Party now overland telegraph and travelling well condition remaining stock (3500 hdlost) reasonably good expect reach Ord 4 to 5 months time regards and love...."

"A sixty mile stretch west of the Telegraph was heavy going through rough heavily timbered but almost waterless country...basalt ridges, swampy flats of tangled cajuput and gutta-percha trees, tantalising rivers that turned their tracks to north and south, led on at last to the Victoria."400km



## DAY 14

### Top Springs -Jasper Gorge -Kununurra

"...over a difficult pinch across the Victoria -Ord divide...they passed the (Victoria River) station on the west side and followed up the big river to its

junction with the Wickham... the route swung south up the Wickham and turned west -open park like vistas of white gums, boabs, baubins, nutwoods and cork trees gave place to tea tree thickets and bulwaddiescrub...down the Stirling to the Negri and on to the Ord River fall."419km

## DAY 15

### Kununurra-Lake Argyle-Kununurra

"...and on September 25, 1885 Long Michael carved his initials M.D. on the broad trunk of a boab at Red Butt above the Ord to mark the end of the long road."



"The 7520 head that had left the Cooper had dwindled to less than half – their zigzagtrail had covered a good 3000 miles over which the estimated cost was £ 20 a head – the total cost of the trek as something over £ 70000 "



## Shark Bay, Western Australia

*Inset: Coquina shells are an unusual feature of the beaches of L'haridon Bight. (M. Brouwer, AHC collection)*

<http://www.deh.gov.au/heritage/worldheritage/sites/shark/index.html>

Inscribed on the World Heritage List in 1991

## AUSTRALIA'S WORLD HERITAGE

SHARK BAY IS LOCATED ON THE MOST WESTERN POINT OF THE COAST OF AUSTRALIA AND COVERS AN AREA OF 2.3 MILLION HECTARES. THE REGION IS ONE OF THE FEW PROPERTIES INSCRIBED ON THE WORLD HERITAGE LIST FOR ALL FOUR OUTSTANDING NATURAL UNIVERSAL VALUES:

as an outstanding example representing the major stages in the earth's evolutionary history;  
as an outstanding example representing significant ongoing ecological and biological processes;  
as an example of superlative natural phenomena; and  
containing important and significant habitats for in situ conservation of biological diversity.

The Shark Bay region represents a meeting point of three major climatic regions and forms a transition zone between two major botanical provinces—the South West and Eremaean provinces.



The number of species that reach the end of their range is a major feature of the region's flora. Twenty-five per cent of vascular plants (283 species) are at the limits of their range in Shark Bay. Many vegetation formations and plant species are found only in the interzone area.

The area south of Freycinet Estuary contains the unique type of vegetation known as tree heath. There are also at least 51 species endemic to the region and others that are considered new to science.

The Shark Bay region is an area of major zoological importance, primarily due to habitats on peninsulas and islands being isolated from the disturbance that has occurred elsewhere. Of the 26 species of endangered Australian mammals,



five are found on Bernier and Dorre Islands. These are the boodie or burrowing bettong, rufous hare-wallaby, banded hare-wallaby, the Shark Bay mouse and the western barred bandicoot.



*A spectacular contrast between desert sands and aquamarine seas. (AHC collection)*

The region is also noted for the diversity of its amphibians and reptiles, supporting nearly 100 species. Again, many species are at the northern or southern limit of their range. The area is also significant for the variety of burrowing species, such as the sandhill frog, which, apparently, needs no surface water. Shark Bay contains three endemic sand swimming skinks, and 10 of the 30 dragon lizard species found in Australia.

The 12 species of seagrass in Shark Bay make it one of the most diverse seagrass assemblages in the world. Seagrass covers over 4 000 square kilometres of the bay, with the 1 030 square kilometre Wooramel Seagrass Bank being the largest structure of its type in the world.

Seagrass has contributed significantly to the evolution of Shark Bay as it has modified the physical, chemical and biological environment as well as the geology and has led to the development of major marine features, such as Faure Sill.

The barrier banks associated



The Shark Bay region has a rich avifauna with over 230 species, or 35 per cent, of Australia's bird species having been recorded. A number of birds attain their northern limit here, such as the regent parrot, western yellow robin, blue-breasted fairy wren and striated pardalote.

with the growth of seagrass over the last 5 000 years has, with low rainfall, high evaporation and low tidal flushing, produced the hypersaline Hamelin Pool and L'haridon Bight. This hypersaline condition is conducive to the growth of cyanobacteria which trap and bind sediment to produce a variety of mats and structures including stromatolites.

Stromatolites represent the oldest form of life on earth. They are representative of life-forms some 3 500 million years ago. Hamelin Pool contains the most diverse and abundant examples of stromatolite forms in the world.



Shark Bay is renowned for its marine fauna. The population of about 10 000 dugong, for example, is one of the largest in the world, and dolphins abound, particularly at Monkey Mia.

Humpback whales use the Bay as a staging post in their migration along the coast. This species was reduced by past exploitation from an estimated population of 20 000 on the west coast to 500–800 whales in 1962; the population is now estimated at 2 000–3 000.

Green and loggerhead turtles are found in Shark Bay near their southern limits, nesting on the beaches of Dirk Hartog Island and Peron Peninsula. Dirk Hartog Island is the most important nesting site for loggerhead turtles in Western Australia.

Shark Bay is also an important nursery ground for larval stages of crustaceans, fishes and medusae.

The Western Australian Government is responsible for day-to-day management of the Shark Bay World Heritage Area. Further Reading

Figgis, P. and Mosley, G. 1988, *Australia's Wilderness Heritage*, Weldon Publishing, Sydney.

Department of Conservation and Land Management, 1989, *Shark Bay*.

Trugden, M. 1995, *Flora of Shark Bay World Heritage Area and its Environs*, Department of Conservation and Land Management, Como, WA.





## Stromatolites

<http://www.ucmp.berkeley.edu/bacteria/cyanofr.html>



### Cyanobacteria: Fossil Record

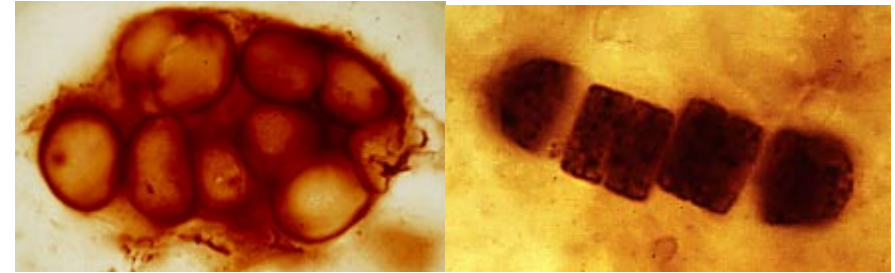
The cyanobacteria have an extensive fossil record. The oldest known fossils, in fact, are cyanobacteria from [Archaean](#) rocks of western Australia, dated 3.5 billion years old. This may be somewhat surprising, since the oldest *rocks* are only a little older: 3.8 billion years old!

Cyanobacteria are among the easiest microfossils to recognize. Morphologies in the group have remained much the same for billions of years, and they may leave **chemical fossils** behind as well, in the form of breakdown products from [pigments](#). Small fossilized cyanobacteria have been extracted from Precambrian rock, and studied through the use of SEM and TEM (scanning and transmission electron microscopy).

Many [Proterozoic](#) oil deposits are attributed to the activity of cyanobacteria, such as *Gloeocapsomorpha*. Small concentrically layered structures called **pisolites** are also the result of fossilized bacteria. Cyanobacteria are otherwise rarely preserved in rocks other than chert, though some possible blue-green bacteria have been recovered from shale.

At right is a layered **stromatolite**, produced by the activity of ancient cyanobacteria. The layers were produced as **calcium carbonate** precipitated over the growing mat of bacterial filaments; photosynthesis in the bacteria depleted carbon dioxide in the surrounding water, initiating the precipitation. The minerals, along with grains of sediment precipitating from the water, were then trapped within the sticky layer of mucilage that surrounds the bacterial

colonies, which then continued to grow upwards through the sediment to form a new layer. As this process occurred over and over again, the layers of sediment were created. This process still occurs today; [Shark Bay](#) in western Australia is well known for the stromatolite "turfs" rising along its beaches.

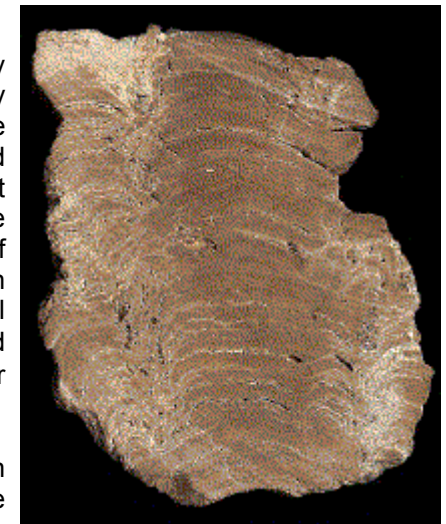


**Ancient Fossil Bacteria** : Pictured above are two kinds cyanobacteria from the Bitter Springs chert of central Australia, a site dating to the Late Proterozoic, about 850 million years old. On the left is a colonial chroococcalean form, and on the right is the filamentous *Palaeolyngbya*.

In some cases, the stromatolites were infiltrated with a mineral-rich solution which fossilized the bacteria along with the layers, but more often only the layers are preserved.

The oldest stromatolites date to the Early [Archaean](#), and they became abundant by the end of the Archaean. In the Proterozoic, stromatolites were widespread on earth, and were ecologically important as the first reefs. By the close of the Proterozoic, the abundance of stromatolites decreased markedly, though cyanobacteria continued to leave a fossil record, such as *Langiella* and *Kidstoniella* known from the Lower Devonian Rhynie chert.

The cyanobacteria have also been tremendously important in shaping the course of evolution and ecological change throughout earth's history. The **oxygen** atmosphere that we depend on was



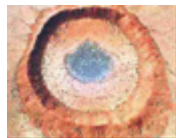
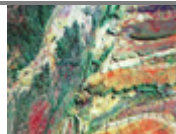
generated by numerous cyanobacteria photosynthesizing during the Archaean and Proterozoic Era. Before that time, the atmosphere had a very different chemistry, unsuitable for life as we know it today.

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Bitter Springs chert fossil image provided by J. William Schopf. Image of stromatolites provided by the University of Wisconsin Botanical Images Collection.

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## Geology of the Kimberley, Australia

[Map of the Kimberley Region](#)

The [geologic history](#) of the Kimberley has been turbulent, from volcanic eruptions to major extinction events to ice ages. The Kimberley Craton was formed by the deposition of [1,800](#) million year old (1.8 Ga or giga annum) sand and silt onto the floor of a shallow sea on top of an inferred Archean basement. The craton is flanked by [1.91 to 1.82](#) Ga mountain belts, the King Leopold Orogen on the west and Halls Creek Orogen on the east. These mountain belts formed about the same time as the Kimberley Craton, but have been subjected to deformation, metamorphism, and igneous intrusion. Basaltic lava, Carson Volcanics, extruded [1.8](#) Ga onto the sea floor covering an area of [250,000](#) sq km. Tropical weathering of these basaltic rocks produced the rich, brown soil that covers the valleys and the aluminum-rich bauxite deposits in the northern Kimberley. In the northern Kimberley, the Charnley, Drysdale, Mitchell, Prince Regent, and other rivers cut deep gorges and waterfalls in the sandstone and volcanic rocks. The sandstone units were intruded [1.79](#) Ga by thick sheets (sills) of mafic magma, Hart Dolerite. Uplift and erosion produced the open valleys and flat-topped black hills of the Kimberley plateau. The dolerite forms black hills with blocky boulders, especially in the King Leopold Range and the eastern Kimberley, and bouldery outcrops in the floors of narrow sandstone gorges in the northwestern Kimberley. Around [515](#) million years ago (Ma), there was a huge outpouring of lava, Antrim basalts, covering [400,000](#) sq km of the Kimberley and Northern Territory, nearly all, of which, has been eroded. In the western Kimberley, the Lennard and Fitzroy Rivers cut through limestone of the Napier Range forming the [Windjana](#) and [Geikie](#) Gorges, respectively. Steep, red cliffs of limestone line these gorges exposing a 350-375 Ma [Devonian reef](#). The [reef](#) extends for 220 miles along the northern margin of the Canning Basin and once extended 630 miles further to the north in the Bonaparte Gulf.



Today, the reef winds through the countryside 50-100 m above the plain much as it did when it stood above the ocean floor in the Devonian. In the Late Carboniferous and Early Permian (280 to 320 Ma), [ice sheets](#) several kilometers thick covered all or most of Australia. Water at the base of the ice dissolved the limestone forming [karst](#) landforms like [Mimbi caves](#) and [Tunnel Creek](#). In [Purnululu](#) National Park (Bungle Bungle), sandstone forms beehive mounds encased in a skin of alternating orange and black bands. At the edge of the Great Sandy Desert lies the world's [second](#) largest [meteorite](#) crater from which meteorite fragments have been recovered. [Wolfe Creek](#) meteorite crater was identified in 1947 by geologist [Frank Reeves](#) during an aerial survey. [One-third](#) of the world's supply of diamonds comes from the [Argyle Diamond Mine](#). Argyle also produces most of the world's gem-quality pink diamonds.



## Kimberley – Information, Flora and Fauna

[http://www.kimberley.wa.gov.au/index.cfm?menu=200&page=ff\\_area](http://www.kimberley.wa.gov.au/index.cfm?menu=200&page=ff_area)

### Kimberley Location & Area Quick Facts

Location: North west corner of the Australian continent.

Latitude: Extends between the latitudes of approx. 14 to 20 degrees South.

Longitude: Extends between the longitudes of approx. 121 to 129 degrees East.

Area: 421 451 square kilometres.

#### Area Comparisons

1/6 size of WA  
2 > State of Victoria  
3 > England  
3/5 size of Texas

Bounded By:

Timor Sea  
Indian Ocean  
Great Sandy Desert  
Tanami Desert  
Northern Territory

### Physical Features of the Kimberley



Lennard River  
Gorge

The Kimberley region is one of marked physical contrasts. From turquoise waters to turbid bays and inlets. From white sandy beaches to extensive mangrove rimmed mudflats. From rainforest to spinifex plains. In the inland areas rugged hilly terrain gives way to vast stretches of fertile plains.

The varied physical conditions account for settlement and economic activity. They have historically provided opportunity

and challenge, and will continue to influence future plans and initiatives.

### Kimberley Coast



Kimberley Coast  
Cape Leveque  
© Image WATC

The Kimberley coast displays wide variation and is a significant component of the region's physical setting. Wide sandy beaches give way to mudflats. Mangrove inlets and tidal creeks are interspersed with coastal cliffs. Some embayments such as Cambridge Gulf and King Sound extend well inland.

The marine environment is influenced by the warm, south-equatorial current that flows from the east through the Asian and northern Australian region.

There are numerous offshore islands. The coast is prone to large tidal variation. In King Sound, the highest tides reach 11m. Strong tidal flows, together with summer river discharges, dramatically influence the coastal environment.

Much of the coast remains uninhabited. Long stretches of isolated coastline provides wilderness attraction, but at the same time presents issues of management and national security.

### Geology of the Kimberley



Windjana Gorge  
Gibb River Rd

The Kimberley is a region with complex and diverse geology representing a time frame extending from ancient Proterozoic rocks formed more than 1800 million years ago, to the dune systems and sandstones of more recent times.

In Devonian times (375-350 million years ago) a large part of the Kimberley was covered by a warm shallow sea with fringing coral reefs.

Erosion, geological movement and varying sea levels have changed and sculptured the landform. As the sea level has fallen to its present level, fossilised materials from old sea beds and coral reefs have been exposed by erosion. These exposures now form many of the spectacular gorges of the region.

### Kimberley Landforms

The Kimberley region can be divided into four distinct landform divisions:  
The North Kimberley Division

A high plateau of the central highland

The Ordland Division

A lowland region to the east

Fitzroyland Division

A second lowland area to the south and west

The Sandland Division

sandy country in East and West Kimberley.

## **The North Kimberley Division**

The North Kimberley Division is predominantly plateau country comprising sandstone with some shales and volcanic. Spectacular coastal scenery constitutes the north and north west boundaries of the Plateau. Iron ore is mined from rock in this area, and laterisation has led to the deposits of bauxite on the Mitchell Plateau.

The Plateau acts as a water shed with streams and river systems flowing to the ocean in the north and the north west. River systems draining to the south join with the catchments of the Ord and Fitzroy basins. The Kimberley Foreland on the southeastern and southwestern boundaries of the Plateau contains intensely folded and faulted landscapes.

## **The Ordland Division**

The Ord River flows into Cambridge Gulf, north of Wyndham. The Ordland Division contains Lake Argyle and the Ord River Irrigation Area. Well known land forms include the Bungle Bungle, the rugged ranges around and to the south of Kununurra, and the tidal mud flats of the Cambridge Gulf Lowlands.

The Ordland Division contains Western Australia's first goldfield near to the current day Halls Creek, and the Argyle diamond fields formed through massive geological events more than 500 million years ago.

## **The Fitzroyland Division**

The Fitzroyland Division contains the Fitzroy River and its tributaries, which drain north west entering King Sound south of Derby. The north eastern edge of the Fitzroyland Division contains the Devonian reef system that harbours 350 million year old marine fossils. The reef system is deeply incised and weathered to form the gorges and caves that make this area such an attractive tourist destination. Lead zinc is mined from this area east of Fitzroy Crossing. Dampierland contains Broome and the Pindan country of the Dampier Peninsula.

## **The Sandland Division**

The Sandland Division comprises the southern parts of the region and contains portion of the Great Sandy and Tanami Deserts.

## **Water in the Kimberley**

River Catchments

Divertible Surface Water

Fresh Water Resources

Ground Water Resources

The region's climatic pattern provides for very seasonal stream flows in the river catchments. The Fitzroy and Ord River systems and their tributaries are seasonal and irregular. Heavy rainfall and rapid runoff in the catchments produce severe flooding events. The shorter rivers originating in the higher rainfall parts of the northern Kimberley plateau, and flowing north or north west, are less variable.



Fitzroy River  
River Catchments

**Divertible Surface Water**

The divertible surface water resources provided by these catchments are very large. The Kimberley has 80% of the State's total divertible water resources,



with less than 1% currently being utilised. Lake Argyle and the Ord River Irrigation Area account for the major use of this resource.

## Fresh Water Resources

All rivers in the region provide fresh water resources, with most having less than 100 mg/L Total Dissolved Solids. There are, however, problems of catchment area soil erosion and water turbidity, with colouring of water and silting of reservoirs the major consequences. High flow variability and high evaporation rates mean that very large reservoir storage is required to maintain supplies over dry periods.

## Groundwater Resources

The Kimberley region also has significant groundwater resources, with 29% of the State's total potentially divertible underground water supply. As with divertible surface water supplies, utilisation of groundwater is low at less than 1%. Groundwater resources are not evenly distributed throughout the region, with 87% contained within the sedimentary rock aquifers of the Fitzroy sub-region which takes in the Dampier Peninsula and the Fitzroy and Lennard River Basins. Of the remainder, 5% is contained within the North Kimberley aquifers with 8% in the Ord sub-region incorporating the Ord and Keep River Basins. There are extensive artesian and sub-artesian groundwater reserves in the Canning Basin in the south of the Kimberley.

## Population Structure & Characteristics



The Estimated Resident Population (ERP) of the Kimberley in 2004 was 35,001.

From 1997 to 2002, the region's population increased at an average rate of 4.8 per cent per annum, exceeding the State average of 1.4 per cent per annum.

The region has a young population relative to Australia and Western Australia. The median age of the Kimberley population is 28 years compared to 34 years for WA (2001 Census).

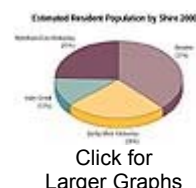
The region also has a very high proportion of Aboriginal persons compared to other regions and to Western Australia. The 2001 Census recorded 47.3 per cent of the Kimberley resident population were of Aboriginal or Torres Strait

Islander descent, while for Western Australia, the proportion of indigenous people was around 3.5 per cent.

Population mobility is a significant demographic feature in the Kimberley, particularly among the non-Aboriginal workforce. The majority of Aboriginal residents tend to be represented in the stable population.

A second major demographic feature of the Kimberley is the large number of short-term visitors during the popular tourist period between May and October.

## Kimberley Population Projections



The Kimberley is expected to be one of the fastest growing regions in Western Australia over the next 15 years.

The Department for Planning projections for the region's population indicate an average growth rate of 2.9 per cent per annum from 2006 to 2021. The projected growth rates are likely to result in the Kimberley's population being 38,600 by 2006 and 57,900 by 2021.

Additional major developments in aquaculture, irrigated agriculture, tourism and mining are likely to provide further employment and investment opportunities that will significantly influence population projections.

The Kimberley's population is further forecast to reach 70,400 people by 2031.

Source: Department of Planning & Infrastructure WA (2005) WA Tomorrow Population Report No 6.

## Flora and Fauna in the Kimberley

The Kimberley has a huge variety of habitats which support very diverse animal and plant communities. The region's geographic positioning and the barrier provided by desert conditions to the south has resulted in the Kimberley having flora and fauna distinct from elsewhere in Western Australia. Kimberley biota is more closely related to the 'top end' of the Northern Territory and Queensland.

The north west Kimberley is notable as the only region of



Barn Owl

Western Australia, and one of very few in Australia, that appears to have retained its complete fauna without extinction in the period since European settlement.

The impacts on the flora and fauna since European settlement have resulted primarily from changes in the fire regime, the effects of pastoral land use, feral predators and weed invasion.

## Flora in the Kimberley

Variations of vegetation across the region reflect the distribution of rainfall and soil types. Dense eucalypt woodlands, mangrove forest and rainforest remnants occur in the north. Savanna woodlands occur in the central area and sparse acacia scrub land and spinifex savanna in the south. Conservation reserves comprise almost two million hectares.

Two vegetation types of relatively limited occurrence in the Kimberley deserve special mention. They are rainforests and mangroves.

Rainforest patches occur in heavy rainfall and/or protected locations chiefly in the north west Kimberley but also extend inland and as far south as Broome. These are the only occurrences of rainforests in Western Australia. They support a wide range of species of flora and associated fauna that do not occur elsewhere in the State, and are of particular conservation significance.

Mangrove communities are a notable feature of the Kimberley coast, forming extensive low closed forests on tidal flats. These communities are more species rich than those further south in the State and are an important biological feature supporting diverse land and marine faunas including many species dependent upon this habitat.

The predominance of grasses from a wide range of genera is also an important feature of the Kimberley flora. World wide attention has focused in recent years on tropical grassland ecosystems.

The Department of Conservation and Land Management (CALM) produce a series of excellent pocket guides (bush books) to the plants, birds and animals in the region.



Kapok Bush  
*Cochlospermum fraseri*  
© Image  
Anthony Ellis

## Fauna in the Kimberley

The Kimberley (especially the north Kimberley) region is highly biodiverse and supports an important endemic fauna. The Kimberley region has lower levels of threatened land fauna and extinctions (rodents and marsupials) than other parts of Western Australia.

Kimberley fauna is similar to other northern Australian regions and islands to the north. It includes a number of species not represented further south in Western Australia including two species of crocodile and large spectacular birds such as the Black Necked Stork and Saurus Crane.

The Department of Conservation and Land Management (CALM) produce a series of excellent pocket guides (bush books) to the plants, birds and animals in the region.

## Endemic Plants of the Kimberley

The total Kimberley flora at present is estimated at 2,536 species but new species are being discovered every year.

Paczkowska & Chapman list 306 endemic Kimberley plants. Some of the more obvious endemic plants include:

3 slender fan-palms (*Livistona eastonii* from Mitchell Plateau, *L. lorophylla* and *L. kimberleyana*)

3 cycads (*Cycas basaltica*, *C. furfuracea*, *C. pruinosa*),

6 species of scarlet-flowered 'Kimberley Rose' or Kurrajong (*Brachychiton fitzgeraldianus*, *B. incanus*, *B. tridendatus*, *B. tuberculatus*, *B. viscidulus* and *B. xanthophyllus*)

A number of Acacias (e.g. *Acacia maconochieana* from the shores of Lake Gregory, *Acacia paula*, a shrub from the Mitchell Plateau)



Olive Python  
*Liasis olivaceus*  
© Image  
Winston Kay



Cycas Pruinosus  
© Image  
Ken Hill



Several rare Grevilleas (e.g. *G. cravenii* from the Prince Regent River, *G. cunninghamii* from N.W. Kimberley, *G. donaldiana* from cliffs on the Sale River, *G. maherae* from Mount Elizabeth, *G. psilantha* from Purnululu)

The beautiful Seppelt Range Gum (*Eucalyptus ceracea*) and Mountain White Gum (*Eucalyptus mooreana*) from the peaks of the King Leopold Ranges

*Ondinea purpurea*, a striking, purple-flowering aquatic from creeks in the N.W. Kimberley

A range of spectacular-flowered Wild Cotton (*Gossypium* spp) and Hibiscus spp.

Numerous Bush Tomatoes (*Solanum* spp.) & burr-fruited Velcro Bushes (*Triumfetta* spp.)

Several prickly Spinifex grasses (*Triodia* spp.).

Source: Department of Conservation and Land Management

Reference: Paczkowska & Chapman, The Western Australian flora - a descriptive catalogue. Wildflower Society of Western Australia, Nedlands, 2000)

## Endemic Fauna of the Kimberley

Endemic Fish (18)

Endemic Frogs (10)

Endemic Geckoes (6)

Endemic Lizards (2)

Endemic Skinks (16)

Endemic Snakes (6)

Endemic Birds (1)

Endemic Mammals (4)

### Endemic Fish (18):

48 species of freshwater fish are presently known in the Kimberley, of which 18 species (38%) are believed to be endemic to the region. Species restricted to the Upper Fitzroy include the Barnett River Gudgeon (*Hypsilotris kimberleyensis*) and Greenway's Grunter (*Hannia greenwayi*).



Cave-dwelling Frog  
*Litoria cavernicola*  
© Image H. Ehmann

### Endemic Frogs (10):

Wailing Frog (*Cyclorana vagitatus*) is confined to the Ord and Fitzroy valleys. The Cave-dwelling Frog (*Litoria cavernicola*) and the Small Toadlet (*Uperoleia minima*) are only known from the Mitchell Plateau. Magnificent Tree Frog (*Litoria splendida*), Weigel's Spadefoot (*Notaden weigeli*) and the Fat Toadlet (*Uperoleia crassa*) are all confined to the northern Kimberley. The Derby Toadlet (*Uperoleia aspera*), Mjoberg's Toadlet (*Uperoleia mjobergi*) and the Mole Toadlet (*Uperoleia talpa*) are only known from pindan country in the West Kimberley, while the Marbled Toadlet (*Uperoleia marmorata*) was first and last collected at Hanover Bay, at the mouth of the Prince Regent River, in 1840!

### Endemic Geckoes (6):

*Diplodactylus mcmillani* is endemic to the NW Kimberley, as are *Gehyra xenopus* and *Oedura obscura*. *Gehyra occidentalis* is confined to the West Kimberley. *Oedura filicipoda* and *O. gracilis* are only known from Mitchell Plateau.

### Endemic Lizards (2):

The Agamid lizard *Diphoriphora convergens* is known only from the Mitchell Plateau, while the spectacular green *Diphoriphora superba* is confined to the NW Kimberley.

### Endemic Skinks (16):

*Carlia johnstonei* is confined to the NW Kimberley, as are *Ctenotus burbridgei*, *C. ehmanni* and *C. mastigura*, *Cyclodomorphus maxima* and *Lerista walkeri*. *Egernia douglasi* is confined to the King Leopold Ranges. *Glaphyromorphus brongersmai* is confined to the NW Kimberley. *Lerista apoda* and *L. simillima* are confined to West Kimberley pindan. *L. borealis* is endemic to the North Kimberley. *L. kalumburu* is confined to that area and *L. bunglungle* to

Purnululu. *Lerista praefrontalis* is only known from Buccaneer Archipelago. *Lerista robusta* is confined to Cherabun Station, while *L. separanda* is confined to Dampier Peninsula.

#### Endemic Snakes (6):

The Burrowing species *Ramphotyphlops howi* is only known from Mitchell Plateau. *R. kimberleyensis* is confined to NW Kimberley, while *R. troglodytes* is only known from Tunnel Creek. *R. yampiensis* is only known from Koolan Island. The Rough Scale Python (*Morelia carinata*) is only known from the Mitchell Plateau/Hunter River area. Worrell's Snake (*Simoselaps minimus*) is confined to Dampier Peninsula

#### Endemic Birds (1):

Black Grasswren (*Amytornis housei*) is only known from rugged sandstone spinifex country (including Mitchell Plateau) in the NW Kimberley.

#### Endemic Mammals (4) :

The Scaly-tailed Possum (*Wyulda squamicaudata*) is confined to rocky ranges of the North Kimberley. *Monjon* (*Petrogale burbidgei*), Australia's smallest rock-wallaby, is confined to Bigge Island and the adjacent mainland. Butler's Dunnart (*Sminthopsis butleri*) is confined to the Kalumburu area. The Kimberley Mouse (*Pseudomys laborifex*) is confined to the north Kimberley.

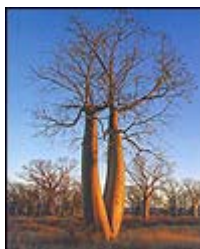
Source: [Department of Conservation and Land Management](#)

## Boab Trees

The Australian Boab *Adansonia gregorii* is indigenous to the Kimberley region.

The boab is a large spreading tree up to 15m high with branches that radiate from the top of the swollen barrel like trunk that can be up to 20 metres in circumference

The tree has very smooth grey-brown bark and compound leaves that comprise of 5-9 leaflets that are elongated with a pointed tip.



Boab Tree  
*Adansonia gregorii*

Flowering occurs anytime from October through to December with fruit set from January to April. It has large fragrant white flowers that start to bloom when the wet season is on its way.

The fruit of the Boab are small to large woody capsules that are brownish with a fine hair layer and contain many kidney-shaped seeds embedded in white pith like substance.

Local aboriginal people use Boab nuts as decorative ornaments by scratching pictorial scenes into the nut's surface. Traditionally aboriginal people have used various parts of the tree for food, medicine, water supply, fibre, glue and shelter.

Early European settlers to the region used the boab as shelter, stock food in times of drought and as 'prison' trees.

## Crocodiles in the Kimberley

Two species of Crocodiles

Be Crocodile Aware

Two species of crocodiles can be found in the Kimberley:

The estuarine crocodile (*Crocodylus porosus*) Also known as 'salties' or saltwater crocodiles.

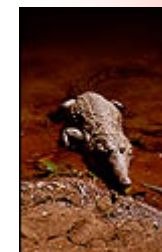
Johnstone's crocodile (*Crocodylus johnstoni*) Also known as 'freshies' or freshwater crocodiles.

Saltwater crocodiles are DANGEROUS and have no fear of humans. Saltwater crocodiles can be found in both salt and fresh water and can be found long distances from the ocean.

Freshwater crocodiles are not usually considered to be dangerous. They inhabit freshwater rivers, creeks and artificial lakes (ie Lake Argyle). They feed mainly on small aquatic animals.

All crocodiles in the Kimberley are protected species. It is an offence to harm or kill them.

Be Crocodile Aware



*Crocodylus johnstoni*  
© Image WATC



All Crocodiles over 1.5 metres should be considered as dangerous. Be aware of signs erected where crocodiles may be found. Absence of a warning sign does not signify a safe area.

There is potential danger anywhere saltwater crocodiles occur. If there is any doubt DO NOT:

Swim or wade.

Clean fish on or near water. Fill a bucket with water and do your chores at least 50 metres away.

Camp next to the waters edge.

Allow pets near the water.

Dangle legs or arms over the edge of boats.

Stand at the water's edge when fishing.

Return daily or regularly to the same spot at the water's edge.

Always seek local or expert advice before swimming, camping, fishing or boating. Further queries should be directed to Department of Conservation and Land Management (CALM)

## Broken Hill

<http://walkabout.com.au/locations/NSWBrokenHill.shtml>

### Broken Hill (including Mootwingee National Park)

#### Major outback centre of New South Wales and famous mining town.

Broken Hill is located on the Barrier Range in the far west of NSW, just 48 km east of the South Australian border. 1160 km west of Sydney via the Great Western, Mitchell and Barrier Highways and 304 m above sea-level it had a population in 1991 of 23 263.

'The Silver City', as it is sometimes called, is and always has been inextricably associated with the silver, lead and zinc mining. Many of the streets are named after metals, minerals and compounds, or after mine managers, leading citizens and civic leaders. The town is also the centre of the 16-million hectare West Darling pastoral industry which has 1.75 million wool-producing merino sheep, protected by a 600-km dog-proof fence.

One of the most striking aspects of the town, apart from the number of pubs, is the remarkable aridity of the region.

Drive out to the start of the Mundi Mundi Plain, north-west of the town, and marvel at the fact that you are in New South Wales and the desert around you doesn't fundamentally change until you reach the coast of Western Australia. Broken Hill is literally an oasis in the desert, a place of green parks and gardens. It can get very hot in summer but it is rare for the daily maximum to exceed 38° C for more than 8 or 9 days a year.

### History

The earliest known human inhabitants of the area are said to be the Willyama Aborigines, although, with no permanent water supply in the area their presence was only intermittent. With the arrival of Europeans they were decimated by disease and forcibly driven from the lands. More recently the Paarkinjji people have moved up from the lower Darling.



The main street of Broken Hill

The first Europeans to see the Barrier Range were Charles Sturt and party in 1844. Sturt was trying to determine the existence of an inland sea. Sturt referred to a 'broken hill' in his diary. He also named the Barrier Range as a result of the difficulties it presented to his progress. Sturt described the land as some of the most barren and desolate he had seen.

During their trek of 1860-61 Burke and Wills passed through the area. They formed a base camp at Menindee to the south-east and stopped at Mootwingie to the north-east.

Pastoralists, who had followed in the wake of Sturt in the 1850s, moved further west in the 1860s. Much local land was taken up in 1864. Goods were shipped up the Darling via river steamer and then hauled overland by bullock teams.

Mount Gipps station was taken up around 1863. By 1867 there were gold prospectors in the area. However, it wasn't until 1883, after the discovery of silver in the area, that Charles Rasp, a watchful boundary rider at the Mt Gipps station, discovered what he thought were tin deposits at the 'broken hill'. The samples he took contained silver chloride and he claimed 16 hectares.

A syndicate of seven was set up with the object of purchasing the surrounding land to prevent a rush from other miners. In January 1885 they hit a rich vein of silver in what turned out to be one of the world's largest known silver-lead-zinc lodes. They made vast fortunes, although two members of the syndicate were unfortunate enough to sell their shares for a pittance before the scale of the find was apparent.

The ore body was a continuous arch 7 km long and 220 m wide. Later that year they decided to form and float shares in The Broken Hill Proprietary Company (BHP), now Australia's largest company.

A stone chimney and plaque in Proprietary Square, by the skimp dump, marks the spot of the hut which was built at the foot of the hill for the use of the first miners. It was later used as a BHP works office.

As the effective founder of BHP, one of Australia's most important companies, Rasp is a significant figure in Australian history. However, according to his biographer, he was not at all the simple lucky man he appeared. 'Rasp' was in fact born in Saxony as Hieronymous Salvator Lopez von Pereira. His grandfather was of the Portuguese aristocracy. His father became private secretary to a German prince, moved to Saxony, married a German woman and



died while being pursued by the financier Rothschild. Both men sought to obscure their identity by changing the family name. 'Jerome', as Rasp was then known, received an education in economics in the Baltic States. He later joined the army and, for complicated reasons, decided to abandon the army and head for Australia while fighting in the Franco-Prussian War.

Soon after mining commenced the township was surveyed. Randolph Bedford wrote that 'Argent St was a huge dust heap, filled with hotels and flimsy offices and saloons. A two chain wide road knee deep in dust, and crowded with men from all the earth, selling at tremendous prices shares in alleged mines'.

Broken Hill was declared a municipality as early as 1888 and a city in 1907.

The geographic isolation of the town was originally an added expense to the mine's transport costs. The South Australian government extended their line to the border but the NSW government refused to join it to the two nearby towns so the locals formed the Silverton Tramway Company and, in 1888, built a line to the South Australian border. It soon became the most prosperous private railway in Australia. A line from Sydney arrived in 1927. The two tracks were of different gauges and a transcontinental line from Sydney to Perth was not opened until 1970.

Smelting was initially carried out on the site from 1886 but was transferred to Port Pirie, South Australia, when its smelter came into operation in 1898. At first there was no known way to extract the zinc from the ore in a cost-effective manner. It was Herbert Hoover, later president of the United States, who first succeeded in this endeavour when he formed the Zinc Corporation in 1905.

Working, housing and living conditions at Broken Hill were appalling in the early days as the population soared from virtually nil in 1886 to 20 000 in 1891.



View over Broken Hill from the top of Chloride Street - the mine can be seen behind the town

Dysentery and diseases like typhoid were a problem due to the unsanitary conditions and lead poisoning was rife. 360 men were killed in the mines between 1894 and 1913, with many more dying subsequently of lung disease. BHP employees even had to pay the company four shillings out of their first pay for the shovel they were to use.

Not surprisingly industrial unrest emerged and Broken Hill developed a strong trade union movement which pressed for improvements. Industrial disputes were particularly common in the 1890s. A strike in 1892 to protest the usage of scab labour saw union leaders imprisoned. Unrest peaked again from 1909-1921 with the 'Big Strike' occurring in 1920.

The Barrier Industrial Council, an affiliation of eighteen unions, was formed in 1923. The amalgamation proved highly successful in resolving disputes with the Mining Managers' Association through arbitration. Both working conditions and industrial relations greatly improved. The trades hall (built 1898-1905) was the first building in Australia owned by unions. Its original foundation stone was laid in 1891 by Sir Henry Parkes but strike action swallowed all available funds and building did not commence until 1898, by which time the original stone was gone. In the same year The Barrier Daily Truth became a rare example of a newspaper wholly owned and controlled by unionists.

Broken Hill became the first town in the state to get a motorised mail service (1911), although initial confidence was not high. A horse-drawn vehicle followed the truck from Menindee in case it broke down.

On New Year's Day, 1915, Broken Hill became the site of the only outbreak of war hostilities on Australian soil. It began when a trainload of picnickers passed an ice-cream cart flying the Turkish flag at the eastern fringe of the town. Two men fired at the picnickers killing three people and wounding another six - a boy, a girl, three women and an old man. The two gunmen were locals of Turkish origin. They moved on to a cottage where they murdered the occupant and then were confronted by a party of police, soldiers and rifle-club members. After a lengthy battle the men were killed. Today there is a railway truck to mark the spot of the initial encounter (listed on the town's heritage trail) and a replica ice-cream cart at White Rocks, at the northern end of the town, where the shootout occurred.

Dust storms plagued Broken Hill in the early days. Today the encroaching sand is kept at bay by a protective reserve which completely surrounds the town, established in 1936-37 at the suggestion of local naturalist Albert Morris.

Water supply, always a problem in the past, was resolved in 1952 when a 109-km pipeline was built to channel water to Broken Hill from the Menindee Lakes.

BHP ceased work at Broken Hill in 1940. Today Pasminco is the only remaining operator, formed through a merger of companies in 1988. The ore is now mined, extracted, brought to the surface and treated to separate the valuable minerals from the waste rock. The resulting concentrates are still being smelted at Port Pirie.

### Famous Residents

Broken Hill and district has also been the birthplace or home of a number of historical figures. Australian soprano June Gough was born at Broken Hill in 1929, taking the stage name June Bronhill in honour of her birthplace. Noted artist Pro Hart was born here the year before and has remained in the town.

In an earlier era two sons of Charles Dickens were associated with local sheep stations: Alfred managed Corona to the north from 1869-72 and Edward managed Mt Murchison station (see entry on [Wilcannia](#)).

C.J. Dennis lived and worked here just after the turn of the century, subsequently writing 'A Ballad of the Barrier'. Kenneth Cook is thought to have used it as the model for his inland city of Bundanyabba in the novel Wake in Fright (1961). The film was shot at nearby Silverton.

## Things to see:

### Historic Buildings

The visitor's centre has a map and pamphlet to accompany a signposted heritage walking tour which takes in the many outstanding heritage buildings which have been listed by the National Trust. A book is also for sale (\$8.50) which outlines an expanded version of the walking tour and includes an even more extensive driving tour called The Silver Trail which is an informative account of the relevant sites and their relationship to the town's history.

Most of the notable buildings are in Argent St. At the corner with Chloride St is the red-brick Post Office (1890-92), designed by James Barnet, with its massive turret capped by a decorative mansard roof and enveloped by a footpath verandah and corner balcony. Next door is the town's architectural highlight, the extraordinarily ornate Town Hall (1890-91). Next to it is the modest Police station (1890). It replaced an earlier tin shed in which the prisoners were

chained to the flooring joists, although if a female prisoner was present they were chained to the station fence outside!

Next door is the Federation-style Technical College (1900-01) with its large, arched windows and ornamented entrance. Built to meet the needs of the mining industry it now also houses a museum. Adjacent is the dignified and unpretentious Courthouse (1889), again designed by James Barnet. In the grounds is a sculptured bronze war memorial made by noted artist Charles Webb who died one week before its unveiling in 1925.

There are also a number of historic hotels. The most impressive of these is the large, three-storey Palace Hotel (1889) with its lengthy verandahs and elaborate cast-iron balustrades. It was used in the movie *Priscilla, Queen of the Desert*.

Other notable buildings include the highly ornate facade, stained-glass windows and geometrically patterned ceiling of the Trades Hall (1898-1905), Mt St Joseph's Convent of Mercy (1891), the Sacred Heart Roman Catholic Cathedral (1903) and the impressive interior of the Gothic revival Wesley Church (1888), all in Sulphide St.

The old sandstone railway station, at the corner of Blende and Bromide Streets, diagonally opposite the Tourist Information Centre, was built by the Silverton Tramway Company to replace the original iron and timber station (1888). The building is largely unaltered and has an attractive interior. Closed in 1970 it is now the Railway, Mineral and Train Museum, open 10.00 - 3.00 daily, with a



Trades Hall



Looking down the main street from the balcony of the Palace Hotel



display of old locomotives, railway machinery and a large mineral collection. There is a separate hospital museum.

Broken Hill is also the site of Australia's first mosque. It was erected in 1891 by a small group of Muslim camel drivers from Afghanistan and India. The location is the site of a former camel camp. Importation of the animals had commenced in 1840 and the first Afghan camel driver, Dost Mahomet, accompanied Burke and Wills in 1860. He is buried near Menindee (see entry on Menindee). Now restored it is located at the corner of Buck and William Sts and is available for inspections on Sundays at 2.30, tel: (08) 8088 6060.

### **Parks, Museums and Galleries**

Sturt Park is an attractive place to stop for lunch. The reserve features The Titanic Memorial, in memory of the bandmen of the Titanic who kept playing in the hope of maintaining calm while the ship went down in 1912. The broken column is not an unrepaired accident but an ancient Greek symbol of being cut down in youth.

Riddiford Arboretum in Galena St between Pell and Mercury Sts features Broken Hill's (and South Australia's) floral emblem, the stunning Sturt's Desert Pea. It was named after Charles Sturt who gathered specimens around present-day Broken Hill in 1844.

The Albert Kersten Geocentre, located in the old Bond Store building (1893) on the corner of Crystal and Bromide Sts, has displays on the geological history of the earth, the history of the town and its mines, a large mineral collection, treasure maps and treasure trails for the children and souvenirs. It is open from 1-5 daily.

White's Mineral Art and Mining Museum is located at 1 Allendale St, west of town off Silverton Rd. It features a walk-in mining stope (an excavation site), collages made of crushed minerals depicting mining equipment, local historical buildings and landscapes, and the legend of Sturt's desert pea. There is also a mining video, guided tours, salvaged machinery, scaled models of mine structures and displays of mineral specimens, jewellery, dolls, opals and pottery. It is open 9-6 daily, tel: (08) 8087 2878.

The Conservation Centre in Crystal St is a museum of antiquated machinery run by volunteers. It is only open on Sunday afternoons, tel: (08) 8087 4559.

Broken Hill has also become an important regional art centre. It is home to the so-called 'Brushmen of the Bush', a group consisting of Pro Hart, Eric Minchin,

Hugh Schulz, John W. Pickup and Jack Absalom. Although diverse of style they are all self-taught and are all noted for their distinctly Australian subject matter and the inspiration they draw from the town and its surrounds.

There are numerous galleries in town featuring local, national and international works. A complete list can be found at the visitor's centre or in the telephone book. The City Art Gallery, in the civic centre at the corner of Blende and Chloride Sts, is the second oldest art gallery in Australia after the State Gallery of NSW in Sydney. It started in 1904 when George McCulloch donated some paintings. The display features traditional, modern and Aboriginal works and includes the 'Silver Tree', commissioned by Charles Rasp. It is open seven days a week (08-8088 5491).

The City Gallery has a pamphlet (also available from the visitor's centre) relating to the Living Desert Art Trail which takes you on a walk through the Living Desert Reserve, located on the northern outskirts of town along Nine Mile Road. Its 2400 hectares contain aboriginal sites, a regeneration reserve, panoramic views, a four-wheel drive track, a permaculture site, a

range of flora and fauna and there are currently plans to set up an animal reserve for endangered species. In 1993 twelve international sculptors each worked on a huge Wilcannia sandstone boulder of their own without power tools for 14 hours a day, every day for 8 weeks. The results are still there for all to see. A book about the sculptures is available at the visitors' centre.

16 artists from around the world were also invited to the site to paint the landscape as they saw it from a given position. The results hang in the City Gallery but poles now mark the spots where each artist stood and the pamphlet allows you to compare the painted image with your own perspective from that spot.



Wilcannia stone sculpture on the edge of the desert

The Pro Hart Gallery features a collection of Australian and European works and one of the largest pipe organs in Australia. At 108 Wyman St it is open 9-5 weekdays and Sunday afternoons, tel: (08) 8087 2441.

Jack Absalom's Gallery is at 638 Chapple St (08) 8087 5881, Hugh Schulz's can be found at 51 Morgan St (08) 8087 6624, and Eric and Roxanne Minchin's is located at 105 Morgan St (08) 8087 5853.

The largest commercial gallery in town is the Ant Hill Gallery at 24 Bromide St, opposite the visitor's centre (08) 8087 2441. Also worth a look is D'Art De Main Galleries at 233 Rowe St (08) 8087 6308. The latter is situated in a heritage building surrounded by beautifully landscaped gardens.

### **Thankakali Aboriginal Arts and Crafts Centre**

Located on the eastern edge of town the Thankakali Aboriginal Arts and Crafts Centre is particularly interesting and worth visiting. It is located in the old South Australian Brewing Company building (which has some huge spaces). The visitor enters and it taken through a series of well-presented art galleries with the lights automatically coming on as the visitor enters each new room. Perhaps the most interesting aspect of the gallery is that it does not adhere to the current dot painting orthodoxy. Mercifully there is also no sense of overt commercialism in the gallery. Instead there is a wide variety of styles and artistic forms (didgeridoos, song sticks, linocut prints) on exhibition. All the paintings are for sale and range in price from a few hundred dollars to \$3,500. There is also a café and the people who run the gallery are happy to talk to visitors.

### **In the Area**

#### **1. Delprats Underground Tourist Mine**

The town's mining history can be experienced first-hand at Delprats Underground Tourist Mine. This 2-hr tour will take you deep inside one of BHP's old mines in a cage with miner's hat and light. The site is five minutes drive from the visitor's centre. Head south on Iodine St and, once across the railway



Pro Hart's giant ant sculpture in Rotary Park

tracks, turn right following the signs. Tours are held at 10.30 am weekdays and at 2 pm on Saturdays (08) 8088 1604. Be sure to arrive 15 minutes before commencement.

#### **2. Day Dream Mine**

One of the original mines around Silverton is the Day Dream Mine, which opened in 1882. It is located 33 km to the north-west. Take the Silverton Rd out of town and, after 20 km, watch for the signposted turnoff to the north. The tour takes one hour. You can either make a booking at the visitor's centre or just turn up any time between 10 and 3.30 seven days a week.

#### **3. Royal Flying Doctor Service and School of the Air**

The Royal Flying Doctor Service has its headquarters at Broken Hill and is interconnected with the School of the Air. Inspections can be made to see both if you make a booking at the visitor's centre. The former has a film about the service, a museum and a visitor's shop.

#### **4. Joe Keenan's Lookout**

There is a fine view of the town and the mine dumps plus information boards on the town's history at Joe Keenan's Lookout in Marks St.

#### **5. Stephen's Creek Reservoir**

17 km north-east of town is Stephen's Creek Reservoir. Constructed in 1892 it holds 20 000 megalitres and is an ideal picnic spot. Another such location is the Twin Lakes on the northern side of Wentworth Rd in South Broken Hill.

#### **6. Mootwingee National Park**

130 km to the north-east is Mootwingee National Park, located on a rocky, cypress pine and mulga-clad red-sandstone range. Wildlife includes falcons and wedge-tailed eagles, euros, skinks, frogs, snakes, emus, kangaroos and lizards. The insect eating sundew plant can also be found amongst the flora.

There are numerous self-guided walks of varying length and difficulty through shaded gullies, open ridges, dry sandy creek beds, historic Aboriginal and European sites, pleasant rock pools and some truly splendid scenery. Sunsets are particularly impressive. The walks are outlined in pamphlets available at the park's visitor's centre (13 km east off the Tibooburra Road) or through the



National Parks and Wildlife Service (NPWS) Office, located at 183 Argent St, Broken Hill, tel: (08) 8088 5933.

The park's 5-million-year-old quartzite and sandstone gorges have acted as water catchments and have provided a reliable source of water. Consequently the reserve contains Aboriginal material dating back some 40 000 years, including paintings, stone arrangements and other artefacts. There are several large rock shelters, one extending for 21 metres x 2.7 metres, which are adorned with a range of artwork both figurative and abstract. Parts of the park were handed back to the traditional owners in 1991.

Mootwingee Historic Site has some particularly impressive rock engravings and ochre stencils (created by blowing mouthfuls of pigment over a hand), together with explication of relevant aspects of Aboriginal mythology. Access to this site is only by guided tour (2.5 hours) on Wednesday and Saturday mornings from April to November at 11 am. Bookings are essential. Phone the NPWS office. There is a small fee associated with this tour which also takes in the Mootwingee Cultural Resource Centre. Alternatively you can follow the self-guided Homestead Creek Track which also takes in significant Aboriginal sites.

A section of the park was originally part of Mootwingee Station and there are remnants from the pastoral era. The Old Coach Road Drive (10 km) takes in the ruins of Rockholes Hotel, Gnalta Lookout and some amazing rock formations. The Thaaklatjika Mingkana Walk includes Wright's Cave, named after William Wright, one-time manager of Kinchega Station, who was hired as part of the Burke and Wills expedition at Menindee because of his knowledge of the local area. He was widely blamed for the tragedy that befell the expedition when he failed to meet the party as arranged at Cooper Creek. The cave contains Aboriginal artwork as well as a blue triangle painted by Wright with his initials inside.

The park is 2 hours drive from Broken Hill on the Silver City Highway to Tibooburra. Bring plenty of fuel, good walking shoes, extra provisions in case rain blocks you in, a hat and some sun screen. Always take water on your walks as it can get very hot indeed. There is bore water only at the Homestead Creek campsite which has basic facilities such as fireplaces, barbecues, toilets and showers.

If you return via Waterbag Station Rd it will take you south to the Barrier Highway which takes you back to Broken Hill. On the way you will pass Little Topar Pub which is a pleasant spot for a stopover.



<http://www.southaustralianhistory.com.au/art.htm>

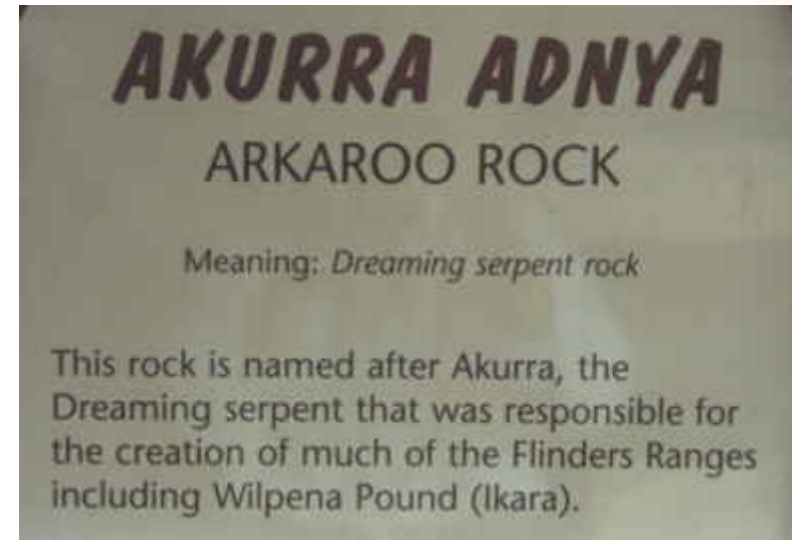
### Art in the Flinders Ranges.



Aboriginal cave paintings.

Many forms of art have been practised in the Flinders Ranges. The first artists were the Aborigines during their thousands of years of living in, and travelling through, the Flinders Ranges. Long before the Aztecs or Egyptians practiced their art, [Aborigines](#) used the rocks as their canvas to make large numbers of paintings or carvings. In traditional Aboriginal societies there was a great interest in art. They expressed their art through painting, engraving, carving and modelling. It can be seen on rock walls, animal skins, wooden items, on the ground and on their own bodies. Often their art had a religious meaning. One of the mediums used in their art was ochre, which was highly priced, especially red [ochre](#). One of the best ochre sites in the Flinders Ranges was near [Parachilna](#). Luckily some of these art forms have survived the ravages of man, beast and time and can still be seen and admired at different locations in the Flinders Ranges. Although some of the best known sites are at Oratunga,

Yourambulla, Red Gorge and Chambers Gorge, there are numerous other localities in the Flinders Ranges where they can be admired.



The paintings at Arkaroo Rock are found on the underside of a huge rock and were probably begun nearly 6000 years ago. They are either drawn, using dry pigments like ochre or charcoal, brushed or applied by finger using wet pigments mixed with water, animal fat or blood. Arkaroo Rock, first discovered by Europeans in 1957 has been used by the Adnyamathanha people for thousands of years.

Non-Aboriginal artists, visitors and locals alike, have tried to capture the grandeur of the ranges and its flora and fauna as well. The first artist to do so was William Westall. He sketched the still un-named Flinders Ranges in March 1802 from [Mathew Flinders'](#) ship the 'Investigator'. Ever since the occupation of South Australia and the progress of the northern exploration and settlement of the Flinders Ranges, surveyors and artists have used their pen, pencil, brush and camera to draw, sketch or paint the [Flinders Ranges](#) in an attempt to capture its vistas and spectacular and elusive atmosphere.

In 1842 Thomas Burr produced some interesting sketches. Edward Charles Frome and James Henderson made some of the first paintings and a few sketches during their 1843 trip to Lake Frome. [Samuel T. Gill](#) accompanying Horrock's ill fated expedition in 1846 was also an early



artist. He returned a year later to make some additional sketches and watercolours.



George [Goyder](#) produced a sketch 'Mud Hut of Mt Brown and Devil's Peak' in 1857 and others of the Willochra Plain, [Wilpena](#) Pound and Mount Serle. B.H. Babbage produced some drawings of the Flinders Ranges in 1858. Many of these early sketches and paintings can now be viewed at the South Australian Art Gallery. The principal role of these artists, especially the surveyors among them, was to record the country for scientific or economic reasons. These artists were the official photographers of these early expeditions into a new land.

Several of the early [pastoralists](#) and later some of the wheat farmers also made sketches of their surroundings. Unfortunately most were made in station diaries or in their own and are not readily available to the general public. It was not really until the twentieth century when painters and photographers ventured north and discovered the Flinders Ranges.

Hans [Heysen](#) made the first of his many journeys into the Flinders Ranges in 1923. Heysen was enthralled, describing the Flinders Ranges as 'the bones of nature laid bare'. Heysen was the first to sketch and paint the Flinders Ranges for their artistic merit, recognising them as subjects of commercial worth. During 1926 Heysen had visited the Flinders Ranges and was highly impressed with its scenery, in particular its great variety of beautiful gum trees. Many years later he said; 'The Flinders region has held a 'spell' over me ever since I first went there looking for new material

for brush and pencil. Since then my interest in this unique landscape has grown with each successive trip. The great Red Gums in the creek beds fill me with wonder; their feeling of strength of limb, of vigour and life, suggest the very spirit of endurance'. His well-known watercolour, Guardian of Brachina Gorge, was finished in 1937 at his home, the Cedars at [Hahndorf](#), from several drawings made in the early 1930s.



Aboriginal rock carvings.

He was not the only one filled with wonder and the potential commercial value of producing paintings of the Flinders Ranges. Many of these artists had visited the Flinders Ranges previously as [tourists](#) but came back later to record what they had admired. During the 1960s Ronald Coudrey's [Kanyaka](#) Country and Land of the Arkaroo, Gary Gaston's Rawnsleys Bluff, Terry Lewistka's Track to Moolooloo and Margaret Lang's Creek Bed At Telford provided some excellent paintings of the rugged landscapes that form part and parcel of the Flinders Ranges.

Others quickly followed, Margaret Carr, Allan Thomas Bernaldo, Melvine Duffy, Fred Klix, Janine Parsons, Max Ragless, Charles Rawling, Jeffrey Smart and George Whinnen. Artwork depicting scenes from the Flinders Ranges can be seen at several Art Galleries and Museums, particularly in [Quorn](#) and Hawker. Since 1982 [Hawker](#) is home to the yearly Hawker Art Exhibition, which is now known throughout Australia.

During the early 1930s a vastly different form of art was in the process of development. It would eventually turn into a multi million dollar industry. This success story started at Italowie Gorge in the Vulkathunha Gammon Ranges where now well known R.M. Williams was camped with his family near a spring and date palm. One night the family was joined by a man known as Dollar Mick and a lasting friendship developed between Dollar and Reg. It was Dollar who showed and taught Reg all he knew about leather and the items which could be crafted from it. After many trials and errors, Williams was able to make stockman's riding boots, stockwhips, saddles and many other busman items. One of Williams' earliest customers was Sidney [Kidman](#).

Photographers have also been attracted to the Flinders Ranges. One of the earliest photographs taken in the Flinders Ranges was that of the [Blinman](#) Police 'Station' in about 1862. After the 1870s government officials often took photographs of the Flinders Ranges. Many policemen, stationmasters, teachers, church ministers and pastoral workers kept photographic records of their experiences in the north. Harold Cazneaux first visited the Flinders Ranges in 1937. His photographs soon found their way into many publications both in Australia and overseas. His best known picture is that of The Spirit of Endurance, showing a giant red gum on the edge of a creek and regarded as his most Australian picture. He was followed by Bernd Stoecker, Stavros Pippas and more recently Pete Dobre, have done much to focus attention on the Flinders Ranges.



Horrock's Pass

Because of its beautiful surroundings, historic buildings and climate, several films have been made in the Flinders Ranges. The first, in 1949, was Bitter Springs followed by [Kangaroo](#). Other films which have used the Flinders Ranges scenery, and some of its locals, have been [Back of Beyond](#), Robbery Under Arms, [The Sundowners](#), Gallipoli, Sunday Too Far Away, Epsilon, A Thousand Skies, The Territorians, Alice to Nowhere, The Light Horsemen, One Night the Moon, filmed near [Hawker](#), Kings in Grass Castles, Holy Smoke, Disappearance and Serenades. The last two films have used [Leigh Creek](#) as a base. They have all captured much of the Flinders Ranges' aura.

The three most recent films made in the Flinders Ranges were Rabbit Proof Fence, made around the Leigh Creek area and dealing with Australia's Stolen Generation and The Tracker, made at the Arkaroola Wilderness Sanctuary in the Northern Flinders dealing with a racist police officer hunting a fugitive Aborigine. The last film using the Flinders ranges as its background setting was Wolf Creek, a chilling horror thriller, written and directed by Greg McLean and John Jarratt, of [Picnic at Hanging Rock](#) fame, as the fictitious psychopath.

A completely different form of art, and entertainment came to the Flinders Ranges in 1988 when 'Opera in the Outback', with Dame Kiri Te Kanawa and the Adelaide Symphony Orchestra, was staged near [Beltana](#) to celebrate Australia's Bicentenary. There are still more and different forms of art to be admired in the Flinders Ranges. There are the numerous ruins of mine buildings, railway structures and naturally the Cornish chimneys. They are most certainly a form of art as well. Last but not least there is [Talc Alf](#) just outside [Lyndhurst](#) on the [Strzelecki Track](#).

More recently another form of 'art' has been added with the 'Marree Man, a drawing of an Aboriginal warrior. Discovered in June 1998, it turned out to be 4.2 kilometres long and about 28 kilometres around making it the world's largest piece of art. The artist responsible for it is still unknown.





# Flinders Ranges Research



<http://www.southaustralianhistory.com.au/agriculture.htm>

## Agriculture in the Flinders Ranges



Some of the farm implements used in the Flinders Ranges

Agriculture has been tried in the Flinders Ranges on several occasions. It has been successful in some isolated areas on a number of occasions but for most of the time agriculture has been a disaster. In an effort to master the land and with little knowledge of the climate, farmers not only ruined the land but also their own economic viability and that of the pastoralists who had previously established successful holdings.

Deceived by several years of excellent rainfalls and believing that 'rain would follow the plough', farmers went beyond the safe agricultural areas. When agricultural land became scarce in the settled districts, combined with the good seasons and crops during the early 1870s, the government decided to disregard [Goyder's Line](#) and allow farmers to buy land north of

it. Since the passing of the Strangways Act in 1869, buying land on credit had made it much easier for farmers to take up land.

More rains fell in April 1873 cheering and comforting hopes for a favourable wet season with plenty of fresh feed. Because of these good seasons, memories of the drought slowly faded and many people again believed that the drought had been the exception rather than the rule. Some even wondered whether Goyder's rainfall line had ever existed.

Many farmers started pushing for more land to be opened up for growing wheat. They wanted agricultural areas surveyed to make the north their home to settle down with their families. They argued that there was a lot of good land among the hills and plains that would grow almost anything if cultivated.

Numerous petitions were signed and presented to parliament in the hope of amending existing land laws. Others who pushed for the opening up of more land from [Pekina](#) to [Blinman](#) and beyond, said that there were many thousands of acres where in ordinary seasons heavy crops of hay and other produce could be grown. Some ways to solve these problems was to make land available on credit and start building a [railway](#) north from Port Augusta and setting aside large farms on both sides of the line. There was even talk of the government to establish a research station at Government Gums, later renamed [Farina](#). Wheat was even grown as far north as Dalhousie Springs, just south of the Northern Territory border.

Finally the government decided to disregard Goyder's Line in November 1874. Obviously it expected a substantial increase in revenue from land sales. After cutting up some of the large and successful pastoral properties for agricultural blocks, it expected a large increase of population. To cater for it many new towns were surveyed. Among them were such places like [Pekina](#), Orroroo, Wilmington, [Hammond](#), Bruce, [Cradock](#), Gordon, [Johnburgh](#), Wilson, [Carrieton](#), Chapmanton and Amyton.

For several years it looked as if Goyder had been wrong as rain just kept on falling every year. During the winter of 1882 it looked as if 'the rain did indeed follow the plough', when a local correspondent reported that 'About seven miles north-east of Blinman are several farms which, last year, notwithstanding the unfortunate season, yielded 15 cwt. of hay to the acre, for which \$24 per ton was obtained, and I am told that several more farmers are likely to at once settle in the district'. He went on to predict that 'Hay will always realise a high price here so long as a limited

quantity is grown, as the heavy charge for carting from [Parachilna](#) will render competition from down south impossible'. Blinman had become 'the garden of the north' with valleys and hills covered with splendid herbage. The good feed, the growth of which was 'perceptible to the naked eye' seemed to be everywhere.



Farm implements used in the Flinders Ranges

By the end of 1883 farmers could not believe their eyes. The good feed had gone, and Blinman, which had a year before been called 'one of the healthiest places in South Australia' was now nothing more than a dustbowl. It had experienced one of the worst droughts for twenty years, affecting the country between the Flinders Ranges and Lake Torrens. For more than three hundred kilometres not a blade of grass was to be seen.

By the start of 1884 stock losses had been substantial.

Fortunately splendid showers fell in March. In fact enough rain fell to wash away the railway bridge embankment just north of Quorn and cause the Willochra Creek to flood an area of thirteen kilometres wide. That same rain also caused the flooding of creeks near Oratunga, delaying the mail from Parachilna for Blinman. In October farmers recorded nearly four centimetres of rain and as a result expected a harvest of about half a ton of hay per acre. They were more than just disappointed. The 1884 harvest was an utter failure and the end of another desperate venture that had gone wrong.

It was the last of the good rains for a long time. The very poor seasons of the remainder of the 1880s proved that George Goyder had been right after all, and farmers, many of them financially ruined, slowly moved back south of the Line. The great wheat drive had well and truly run its course.

Some farmers converted their holdings into long-term low rental leases and hoped for better seasons. Exceptionally good rains fell once more in 1889 giving much needed hope to farmers who had survived until that time. Above average rainfall was recorded for a few years in some isolated areas and even floods in others. Some good crops appeared but locusts and rabbits ate most of it.

A good example of the hardships suffered by farmers at this time is provided by the [Borgas](#) Family. In 1899 the Hill family from [Hawker](#) began wheat growing in [Wilpena](#) Pound and remained there until 1914 when they were forced out, not by drought but floods. By the 1920s most farmers had come to realise that wheat growing in the [Flinders Ranges](#) was not the best way to make a living.

Well beyond Goyder's Line, Bruce and its surrounding area did have some successful harvests. It wasn't always dry. The area did have rain sometimes and even its occasional floods as well. In March 1921 one of the northern newspapers reported that 'An official who returned last night from the scene of the Willochra floods, states the scene is beyond description. The northern abutment of the Bruce bridge is washed away, and the end of the bridge has dropped'. Floods and washaways like these would occur many times before the railway was finally closed after the completion of a new standard gauge line via Tarcoola to Alice Springs.

Farming outside Goyder's Line is still very risky, but also inviting, especially after good rains. In the early 1980s Brenton Byerlee of [Eurelia](#) tried it once again. In doing so he became South Australia's northernmost farmer.



## Royal Flying Doctor Service

<http://www.flyingdoctor.net/history.htm>

### History

This is the story of how medicine, aviation and radio were combined to bring health care to the people who live, work and travel in the more remote areas of Australia.

Established in 1928 and developed on a national basis in the 1930s, the Service soon provided not only emergency medical aid to the people of the Inland, but also a comprehensive health care and community service.

The development of the Inland was in many ways made easier by the presence of the Flying Doctor. Previously, serious illness or accident often meant death and the Inland holds many graves of people who might have lived had they been able to receive medical aid quickly enough.

The late Sir Robert Menzies, Former Prime Minister of Australia 1939-41 & 1949-66, once very aptly said that the Flying Doctor Service represented the "greatest single contribution to the effective settlement of the far distant back

country that we have witnessed in our time..."

The RFDS was the first comprehensive aerial medical organisation in the world and to this day remains unique for the range of primary health care and emergency services it provides and for the huge area of sparse population and climatic extremes over which it operates - 24 hours a day, 365 days a year.

### The Birth of an Idea

The story of the Flying Doctor Service is forever linked with its founder, the Very Reverend John Flynn - it is a story of achievement that gave courage to the pioneers of the Inland.



In 1911 the Reverend John Flynn took up his first appointment at Beltana Mission in the north of South Australia. Flynn became very close to the people of the outback and in 1912 he was appointed as the first Superintendent of the Australian Inland Mission (AIM), the 'bush department' of the Presbyterian Church.

He began his missionary work at a time when only two doctors served an area of some 300,000 sq kms in Western Australia and 1,500,000 sq kms in the Northern Territory.

Flynn began establishing bush hospitals and hostels in remote outback areas which alleviated much of the dread associated with the great loneliness of the inland. But while they provided an important service, they were only really scratching at the surface of the problem of caring for people in the outback.

The problems of distance and communication remained with many people dying from the lack of medical treatment.

Flynn told many tales to illustrate the need for medical care in the outback. One such story was that of Jimmy Darcy, a stockman hurt in a fall near Halls Creek, Western Australia in August 1917.

Found badly injured, Darcy was transported by his friends to Halls Creek, 30 miles away, a 12 hour journey. There the only person who knew first aid was FW Tuckett, the Postmaster who quickly saw Darcy's injuries were serious. After trying unsuccessfully trying to contact doctors by telegraph at Wyndham and Derby, he finally thought to telegraph 2,000 miles to his former first aid lecturer, Dr Holland in Perth. Following diagnosis by morse code, Holland went on to instruct Tuckett through two long and painful bladder operations with a pen knife. Holland then set out on a 10 day journey from Perth to Halls Gap by Cattle Boat, Model T Ford, a horse drawn sulky and finally foot. When he arrived he found that although the operations were successful, Darcy, weakened by undiagnosed malaria and an abscessed appendix, had died the day before.

The tragedy elbowed even war news from many Australian newspapers and more than any other single event attracted nationwide attention to the urgent need for doctors, hospitals and nurses in outback Australia.

In 1903 the first powered air flight had taken place and by 1918 the aeroplane was beginning to prove itself as a reliable means of transport. Radio, then very

much in its infancy, was also displaying its remarkable capability to link people thousands of miles apart.

Flynn saw the potential in these developments along with Lieutenant Clifford Peel, a young Victorian medical student who had developed an interest in aviation.

Peel, hearing of Flynn's ideas, combined them with his own and wrote to John Flynn from the boat which took him to the war raging in France. The gist of Peel's letter, dated November 21, 1917, was that aeroplanes would overcome many of the transport problems of the inland. In particular, he saw "a missionary doctor administering to the needs of the men and women scattered between Wyndham and Cloncurry, Darwin and Maree". Peel outlined the costs of adopting aircraft for the AIM's medical work, the speed and distances the early planes flew, and the support facilities needed.

Flynn was immediately impressed by the idea and published Peel's ideas in the Church's 'Inlander' magazine in 1917. Peel unfortunately did not live to see the enormous impact it was to make - he was killed flying over German lines in France shortly before WWI ended in 1918, but his remarkable vision lives on today in what is now the Royal Flying Doctor Service.

John Flynn had set his considerable fund raising abilities to use for several years, and by 1928, the AIM had sufficient money to establish a flying doctor scheme. Supporters of the project included the industrialist HV McKay, manufacturer of the Sunshine Harvester, Hudson Fysh at QANTAS, and, on the ground, Dr George Simpson, a young Melbourne doctor who had heard Flynn speak many years before.

On 15 May 1928, the Aerial Medical Service was established as a one year experiment at Cloncurry in Queensland. After many years of dreaming, hard work and planning the Flying Doctor Service was a reality.

### About John Flynn

John Flynn was born at Moliagul in Central Victoria on 25 November 1880, the same year famous Australian bushranger, Ned Kelly, was executed. His father,

Thomas Eugene Flynn, a school teacher, married Rosetta Lester in April 1876. The couple had three children - John was the youngest. Rosetta died in childbirth, when John was only three, and for several years he lived with relatives, until the family was reunited at Snake Gully, near Ballarat.

The Flynn family later moved to Sunshine in Melbourne's western suburbs. Here young John first heard romantic tales about Australia's vast outback when his father's business partners mounted an unsuccessful business venture to the far north of the country.

John graduated from secondary school in 1898 and began school teaching. In 1903 he decided to train as a Presbyterian minister. Initially he financed his studies working at Church Home Missionary centres around Victoria, and in 1907 commenced a four year course in divinity at Melbourne University. Flynn graduated in 1910, and was ordained as a Minister of Church in January 1911.

Throughout his training, Flynn continued to develop an interest in working in the Outback, and helped other Presbyterian Ministers like Donald Cameron and Andrew Barber with missionary work in rural and remote areas in Victoria and South Australia. In 1910, Barber and Flynn published *The Bushman's Companion*, a small book of information and encouragement for people in the bush which quickly became a best-seller. In early 1911, however, John was on the road to the real outback.

In February, John Flynn arrived at the tiny Smith of Dunesk Mission at Beltana, over 500 kilometres north of Adelaide in South Australia. At Beltana, he saw at first hand the rigours of Outback life, learnt there was no medical care available to inland residents and travellers. Within a year he was commissioned to prepare a report on life in the Northern Territory, to be presented to the Presbyterian Church in 1912. The General Assembly acted upon Flynn's recommendations and appointed him the head of a new organisation, the Australian Inland Mission (AIM).

The Australian Inland Mission (AIM) furthered Flynn's idea of a "Mantle of Safety" for Outback Australia, by establishing, over the next few years, several nursing homes, and recruiting a team of "Boundary Riders", ministers who travelled vast outback parishes by camel or on horseback, visiting communities and households, and tending to all the people of the inland. Another great Australian, Fred McKay (later to be leader of the AIM), joined Flynn's team of "patrol padres" in 1937.





John Flynn was 51 when he married the secretary of the AIM, Miss Jean Baird, in 1932. The years to follow saw Australia struggle through the Great Depression, and the no-fuss and knowledgeable Mrs Flynn became a great support to her visionary and hard-working husband.



John Flynn, who was twice moderator General of the Presbyterian Church died in 1951 and is buried at Mt Gillen near Alice Springs, the very centre of the vast territory to which he brought communication, medical comfort and pastoral care.

RFDS founder Reverend John Flynn is featured on one 'face' of the Australian \$20 note. (Image used by permission.)

The Australian Council Office collaborated with the Reserve Bank of Australia on the design of the new twenty dollar note, one face of which features the Royal Flying Doctor Service of Australia and its founder Reverend John Flynn.

## The Growth of the Service

In 1928 the dream of a flying doctor was at last a reality but Flynn and his supporters still faced many problems in the months and years to come. The first year's service was regarded as experimental, but the experiment succeeded and almost miraculously the service survived the Great Depression of the late 1920s and early 1930s.

By 1932 the AIM had a network of ten little hospitals across the centre. As for the flying doctor service, a succession of doctors and pilots followed Welch and Affleck and the Cloncurry operation continued to grow over the next few years.

The Service suffered severe financial difficulties during this period, but the continuing success at Cloncurry caught the imagination of people around the country and the world and prompted John Flynn and Dr Alan Vickers, a flying doctor, to push for a network of flying doctor bases spread across the continent, with government support.

In 1934 the Presbyterian Church handed the service over to a new organisation, the Australian Aerial Medical Service. Over the next few years Sections were established across Australia with their operational bases at Wyndham, Port Hedland, Kalgoorlie, Broken Hill, Alice Springs and Meekatharra along with two additional Queensland bases at Charters Towers and Charleville.

In 1936 a coordinating Federal Council was created. In 1942 the Service was renamed the Flying Doctor Service and the Queen granted use of the Royal prefix in 1955.

The growth of the Service made heavy demands on available funds and repeatedly John Flynn and his associates had to launch public appeals for donations. While some Government financial aid was made available on occasions in the early days, regular Government subsidies (both Federal and State) only became an established practice later on.

Even today the Service continues to rely heavily on money from trusts, donations and public appeals for part of its annual funding. Fundraising remains an integral part of the working day for the Service and volunteers, who played an important role in the establishment of the Flying Doctor, are still the backbone of the organisation.

Throughout the seventy year history of the flying doctor there has been a gradual increase in the number of Bases and the area that the Service covers. As needs have changed a number of Bases have also closed down or been relocated to more central areas to the people they serve.

BASE	STATE	YEAR FOUNDED
Cloncurry	QLD	1928 - closed 1965, transferred to Mt Isa
Wyndham	WA	1935 - closed 1989
Port Hedland	WA	1935
Kalgoorlie	WA	1937
Broken Hill	NSW	1938
Alice Springs	NT	1939
Charleville	QLD	1943
Meekatharra	WA	1946
Charters Towers	QLD	1952 - closed 1972, transferred to Cairns

Port Augusta	SA	1955
Derby	WA	1955
Carnarvon	WA	1955 - closed 1996
Launceston	TAS	1960
Jandakot	WA	1964
Mt Isa	QLD	1965
Cairns	QLD	1972
Geraldton	WA	1977 - closed 1989
Adelaide	SA	1987
Yulara	NT	1992
Brisbane	QLD	1995
Rockhampton	QLD	1995
Townsville	QLD	1996
Bankstown	NSW	1996
Essendon	VIC	1997
Dubbo	NSW	1999

## Medicine

When the Service first began, the responsibilities of the Flying Doctor were to fly to urgent cases, render first aid and, if necessary, transport the patient to hospital; give advice by radio; fly a regular clinic circuit to areas without doctors and consult with rural and remote doctors. In essence these are still the objectives of the Service today, however with improvements in technology telephones are used more than radios and increasingly the Service is taking advantage of video-conferencing technology.



Over the years the practice has developed and expanded to take along on clinic flights medical specialists, dentists and various health related professionals.

Sister Myra Blanche was the first nurse employed by the RFDS in 1945. Sister Blanche worked for the New South Wales Section in the 1940s and 1950s undertaking home nursing, immunisations, advising on prevention of illness and general health care and, on occasions, filling in for the doctor.

Although she was called a Flying Sister, most of her travelling was in a utility instead of a plane and on occasions she even travelled on horseback. Flight Nurses as we know them today were not used by the Service on a regular basis until the 1960s.

Today, based on the judgement of the doctor authorising the flight, up to 80% of medical evacuations are made with only the flight nurse and pilot on board.

Remote control medicine became a reality when medical chests were introduced to outback stations in 1942.

Costing 12 pounds, each chest was identical and contained numbered drugs, bandages and other first aid materials.

The RFDS body chart, drawn by Sister Lucy Garlick in Broome, Western Australia in 1951, is still included in all medical chests and remains a vital tool in assisting with a patient's diagnosis via remote consultations.

A doctor speaking from anywhere, including an aircraft, can ask, by number, where pain is being felt, and then instruct the caller to use medication or treatment by referring to numbered items on the lid list of the chest.

Many tall stories grew up around the service and one about the medical chests is typical. A station manager was told to give his wife a number nine tablet. Later he told the doctor, "We'd run out of number nines, but I gave her one five and one four and she came good right away!"

## Aviation

Aviation was still a new and wondrous endeavour in the years after WWI. Flynn began a campaign within the Presbyterian Church to find the money to buy some aircraft for the Australian Inland Mission (AIM). He met Hudson Fysh, a WWI fighter pilot who founded Qantas, and together they developed the idea further.



The first flight, on 17 May 1928, was made using a De Havilland model DH50 aircraft hired from the fledgling Queensland and Northern Territory Aerial Service, later to become Qantas.

The aircraft was a single engine, fabric covered, cabin bi-plane capable of carrying a pilot and four passengers at a cruising speed of just under 80 miles per hour.

For the first trial year Qantas charged two shillings per mile flown and also provided an engineer based at Cloncurry. The Federal Government paid half the cost of maintaining the aeroplane with the other half funded by donations.

On its first official flight the DH50, appropriately named 'Victory', was greeted at the Julia Creek airstrip by more than 100 people. The distance travelled was 85 miles.



'Victory' went on to fly 110,000 miles in the service of the Flying Doctor until 1934 when it was replaced by Qantas with a DH83 Fox Moth.

The DH50 was sold to another organisation, the Rockhampton Aerial Service in 1934. On 8 December 1935 it unfortunately crashed into the sea off Caloundra, north of Brisbane while on a regular newspaper run. The pilot was unhurt and

was helped to shore by the Caloundra Lifesaving Club.

It is significant that over the years the Flying Doctor has maintained a very good aviation safety record. This record is maintained despite the sometimes very difficult conditions under which aircraft have to operate.

In 1928 Flying was still in its early days. Airstrips often left much to be desired and there was a lack of navigational facilities and airstrip lighting.

The first Flying Doctor pilot, Arthur Affleck, had no navigational aids, no radio and only a compass and inadequate maps, if any. He navigated by landmarks

such as fences, rivers, river beds, dirt roads or just wheel tracks and telegraph lines. He also flew in an open cockpit, fully exposed to the weather, behind the doctor's cabin. Airstrips were, at best claypans or, at the worst, hastily cleared paddocks.

Flights were normally made during daylight hours although night flights were attempted in cases of extreme urgency. Fuel supplies were also carried on flights until fuel dumps were established at certain strategic outstations.

In the 1930s and 1940s aircraft used by the Sections were predominantly British - most were De Havilland types like the DH-50, DH-83 Fox Moth, the DH-84 Dragon, the DH-104 Dove and the Australian built DHA (Marks I, II and III) Drover.

Later, American aircraft predominated like the Beechcraft Baron, Travelair, QueenAir and Duke, the Cessna 180, 182 and 421B, the Piper Cherokee, Chieftain and Navajo.

Since the 1980s the RFDS has been using Beechcraft Kingair 200C's, B200C's and C90s, Conquest C425, Conquest II. The newest types of planes to be included in the RFDS fleet are Pilatus PC12s and Cessna Titan 404s.

Aircraft developments have seen great changes. Prior to the mid 1980s, RFDS aircraft were all piston engines. The introduction of the twin engined Kingair B200Cs in the late 1980s and the Pilatus PC12s in the mid 1990s show the great benefits of turbo prop aircraft.

Speed, pressurisation, the ability to fly above turbulence and longer distances, larger cabins and integrated medical fit outs greatly improved the level of patient care possible as well as the comfort and safety of both patients and flight crews.

Compared with the cramped interiors of the earlier models, the new aircraft have much more space for doctors, nurses and patients. They carry all the required medical equipment and are fitted out rather like a flying intensive care unit.

Fortunately navigational aids and aircraft have improved over the years allowing all-weather and night flying so that there are hardly any remote areas the RFDS cannot reach - safe landing at the remote areas is another issue however.

Airstrip length requirements vary with the different aircraft used. They range from 800m to 1100m. Because most strips are not used continually, it has been

the practice to test them by driving a motor vehicle over it prior to each landing to make sure it is safe for the aircraft to land.

Many of the outstations have some form of airstrip lighting but there are occasions when car headlights or other methods must be used to light the strip for a night landing.

Until the 1960s, the Service rarely owned aircraft, using contractors to provide aircraft, pilots and servicing. The RFDS progressively began to purchase aircraft and employ their own pilots and engineers.

Although the aircraft are guided by satellite navigation systems, landings must often be made in difficult circumstances on remote dirt airstrips or roads, lit at night by kerosene flares or car headlights.

As when the Service first began the Pilots continue to be responsible for determining if the flight can be safely undertaken in the prevailing weather conditions.

## Communication

In the early 1900s most city dwellers viewed the Australian Outback with a sense of romanticism, in part fuelled by tales of the goldrush and promises of fortunes from the land. The reality was quite different - for every successful adventurer striking it rich a hundred more struggled to survive.

For many the isolation and loneliness could cause terrible depression and in the case of sudden sicknesses or serious accidents the brutal fact was that death was often the result.

Communication was virtually impossible. Basic telephone and telegraph links existed only near larger towns, radio communication was practically unknown and neighbours could be hundreds of miles away.

*"Without a wireless transmitting station at every isolated homestead, an Aerial Ambulance Service would be 75% futile."*  
JOHN FLYNN

One of the greatest problems when the Service first started was the lack of radio communications between the base at Cloncurry and outstations. The

Flying Doctor service relied on telephone links between towns and settlements and on people physically travelling long distances for help.

What was needed at the outstations, which could include cattle or sheep stations - huge grazing properties, small settlements, missions and police stations was a portable, cheap and reliable two-way radio, with a range of 500 kms. It also needed to be simple enough to be operated by an untrained person and have its own power source.

This was a tall order in those days when radio was still in its infancy.

Flynn had developed an interest in the emerging field of wireless around 1920 and he saw the potential for wireless to provide outback communication. The early technology, however, was cumbersome, complex, expensive and unreliable - wholly unsuitable for the tough inland conditions Flynn was so familiar with.

Flynn and some other enthusiasts began to build more portable, robust equipment and took several wireless sets into the outback to experiment. Voice communications proved impossible due to the low power levels available, so Morse code was used.



In 1925 John Flynn met Alf Traeger, an Adelaide engineer, and soon Traeger was employed as a radio expert and electrician by the Australian Inland Mission (AIM). Within a few months the pair had established Morse code communications across a distance of 140 kilometres.

Traeger next set his mind to the problem of power generation for wireless transceivers. Previous experience with generators, and his engineering qualifications, led him to invent a hand-cranked generator, a cheap and durable solution which provided sufficient power, but required two operators - one for the generator, and another for the radio itself.

A spectacular demonstration of the new system was staged at Cloncurry, in far western Queensland for Melbourne Cup Day 1927. The excitement and



possibilities for these new inventions were obviously enormous. After various experiments, Traeger found that it was too difficult for an operator to use one hand to turn the handle while the other hand was used to operate the Morse key. Traeger overcame the problem by equipping the generator with pedals and so the famous pedal wireless was created.

Flynn, and Australia, had the solution to the communication problems of the Outback.

The Cloncurry Base radio station became operative in 1929 and the first of the outstations were equipped with Traeger pedal transceivers that year.

When the first pedal radios were distributed, the wives and daughters on stations who operated them had to learn Morse Code. The first major development in the manufacture of the pedal sets was the introduction of a keyboard transmitter which when the required key was pressed, sent out the correct Morse signal.

In the mid 1930s voice communication made the task even easier and the radio sets could be operated with car batteries replacing the need for pedal power generation.

The advent of Alf Traeger's Pedal Radio in the late 1920s and early 1930s brought a significant change to life in remote places. This change was more far reaching than providing help in emergency medical situations - it also helped reduce the isolation and loneliness by enabling people who lived hundreds of kilometres apart to speak with each other. People were still physically isolated from each other but the loneliness for many was eased as help and friendship was now only a call away.

Women took on the role of Radio Operator on the stations and quickly developed a bush community over the air. In time the "Galah Session" developed which allowed a chat among neighbours who could be hundreds of kilometres away. This Session was named after the noisy, chattering, grey and pink native parrot.



The Very Rev Fred McKay who succeeded John Flynn as Superintendent of the Australian Inland Mission said of Traeger:

*"He created a social revolution. Human relations were transformed. In a very real way he made Outback Australia."*

For many years the RFDS was the key communication point for people with Flying Doctor radios, both fixed in homes and portable in vehicles.

In the 1970s the Service faced a major re-equipment program with the introduction of the single sideband mode of transmission. These new sets were more reliable and efficient and less subject to static interference.

With the development of telecommunication systems, the telephone is increasingly taking the place of radio communication and there is a gradual decline in this area of the Flying Doctor service.

Whereas a few years ago, all calls for medical assistance were received by radio, today this represents only about 2% of all such calls.

Despite this decline, communications continues to be the vital link between a patient requiring medical assistance and the RFDS.

With the onset of satellite technology which now offers satellite telephones both for vehicles, and in the near future, hand held telephones, it will have an even greater effect on the decline in HF radio usage. There is still the need to protect the small number of people who must by circumstance rely on our HF radio network - small communities who cannot connect to the standard telephone, mobile users including exploration camps, Aboriginal outstations, tourists and as a backup to the standard telephone in remote areas.

When an emergency call is received by a Flying Doctor Communications Officer, they can be in contact with a doctor, nurse and pilot within 30 seconds and an aircraft can be airborne within 45 minutes. Today people are still isolated but with the RFDS network of bases across Australia, no-one is more than two hours away from medical help.

The famous "School of the Air" which began in 1951 in Alice Springs has until recent years utilised the Flying Doctor Radio network to link children and their teachers and conduct a program of education which includes all the usual subjects taught in city primary schools. With improvements in technology there is now no need to use the RFDS radio network; telephones and the internet

have become the methods of communication. The organisation was also re-named in the mid 1990's to become The School of Distance Education. They are still permitted however to use the more romantic name of "School of the Air".

High frequency radios are still recommended for people travelling in remote areas. When tourists and 4WD enthusiasts are planning outback trips they should contact a Flying Doctor Base to ensure they are equipped with the appropriate communications equipment and information.

## Today

Since 1928 the Service has grown into one of the most respected organisations in the world. Covering an area equivalent in size to Western Europe, it now operates from 20 Bases, 24 hours a day, 365 days a year.

No longer is the RFDS just for the people of the outback. Flying Doctor territory is just one hours drive out of most capital cities in Australia.

With the improved condition of roads and facilities in the outback, the Service is also becoming more involved with the ever increasing number of tourists visiting Australia's remote locations.

Today Flynn's dream of a "Mantle of Safety" continues to be there for us all



## Kalgoorlie - Boulder

<http://www.walkabout.com.au/locations/WAKalgoorlie.shtml>

### Kalgoorlie-Boulder

One of Australia's most famous and important gold mining towns.

'Welcome to Kalgoorlie' reads the sign at the western edge of this remarkable town, which is located 597 km east of Perth and 360 metres above sea-level. Here is a community which was built on gold over 100 years ago and which is still basically driven by that same metal. This is a prosperous and attractive town combining the old (Hannan Street is a feast of truly superb nineteenth and early twentieth-century buildings) and the new jostle for attention. It is a city full of extraordinary history. And it is one of Australia's truly great goldmining towns.



York Hotel

The first Europeans to explore the Kalgoorlie-Boulder area were H.M. Lefroy and C.C. Hunt who were searching for viable pastoral lands in the 1860s. By the early 1890s the goldfields of the state's north-west were becoming less viable and the state government offered a reward for fresh discoveries. Attention was drawn to the state's south-east when Arthur Bayley discovered gold near Coolgardie in 1892. The following year Paddy Hannan, Tom Flanagan and Daniel Shea discovered alluvial gold nuggets near Mount Charlotte when they were forced to camp out unexpectedly after their horse lost a shoe.

On 17 June 1893 Paddy Hannan (in the early days the town was simply named Hannan's or Hannan's Find) registered his claim and, within three days, an estimated 700 men were prospecting in the area. This was the goldrush to beat all goldrushes. In comparison to what would eventually become known as 'the richest goldfield in the world' all other Western Australian finds paled in

comparison. It was the goldrush which suggested to potential prospectors that a few weeks of hardship could be rewarded with a lifetime of untold affluence.

In effect, Hannan's find drew attention to an area which was home to an ore body that later became known simply as the 'Golden Mile'. Hannan's claim was not part of this reef. It was miners, forced to move further south, who stumbled upon this lode. Central to the discovery were a South Australian syndicate who, hearing the news of the gold around Kalgoorlie, moved from a settlement called Boulder, taking the old name with them to their new mining operation.



The Indian Pacific at Kalgoorlie Station

By the end of 1893 over 100 leases had been taken out in the Kalgoorlie-Boulder area. The great challenge of the area was that the local quartz deposits, which are usually accepted as the rocks most likely to contain gold, did not produce high yields. In fact by 1894 the results from mining these quartz reefs were so disappointing that the field began to experience a small depression. Investors were less than enthusiastic and returns were not what had been hoped for.

It was a Canadian miner, Larry Cammilleri, who discovered that the quartz in the area was not carrying most of the gold. Years later he recalled: 'I sank on the leader and where she junctioned with the lode material she carried nice gold. I dollied some ounces. I found that the lode matter carried a little gold so started a shaft. This shaft led me to be the first to discover what later proved to be the lode matter which made the Golden Mile famous. The lode was composed of ironstone, with small quartz veins, greenstone, diorite and porphyry, all decomposed in the shallow workings.'

Others, including Paddy Hannan, were sceptical about Cammilleri's discovery but Cammilleri replied with the old Cornish saying 'where it is, there it is'. At first, the lack of good gold-yielding quartz in the area continued to keep investors away. It was not until the establishment of the first battery, on 10 April 1894, and some of its early yields (2008 tons of ore from the Great Boulder Mine yielded 15 000 ounces of gold) that confidence was restored in the field.

In his book *In Search of El Dorado* the Scottish writer Alexander Macdonald gives a description of Kalgoorlie at this time:

'When my party stepped from the train at Kalgoorlie, we saw before us a scattered array of wooden and galvanised iron houses...In the near distance we could see the towering poppet heads of the widely known Great Boulder mine, and the din created by the revolving hammers of the ever active stamping machinery assailed our ears as an indescribable uproar. But beyond the dust and smoke of these Nature-combatting engines of civilisation, the open desert, dotted with its stunted mulga and mallee growths, shimmered back into the horizon.'

As with all of the gold mining towns progress was almost instantaneous. The first post office was established in 1894. The following year the town was surveyed and proclaimed while some entrepreneur provided the new settlement with a daily newspaper. The railway arrived in 1896.

By 1897 the population in the area had grown so rapidly that two towns had been established: Kalgoorlie (it probably comes from the Aboriginal word 'karlkurlah' meaning 'silky pear' which was a common plant along the Boulder ridge) and Boulder which was declared in August 1897 when miner's shacks and tents were moved to be closer to their workplace around the Great Boulder Mine.

Kalgoorlie peaked in the early years of this century with an estimated 93 hotels, 8 breweries and a population of 30 000 people. By 1903 the School of Mines had been established and the town had fresh water from Mundaring Weir in Perth.

The story of the remarkable 563-km pipeline, which brought water from Perth to the parched desert around Kalgoorlie (the average annual rainfall is only 252 mm per annum), is really the sad story of a man of remarkable vision who was destroyed by public cynicism.

Charles Yelverton O'Connor was born in Ireland in 1843. He emigrated to New Zealand in 1865 and moved to Western Australia where he was employed as the engineer-in-chief, in 1891. His major projects were to be the state's railways, the establishment of Fremantle harbour, and, as far as the goldfields were concerned, the construction of the water pipeline from Mundaring to Coolgardie and Kalgoorlie. O'Connor initiated the plan in 1895 but it was violently opposed in parliament and the approval to start work wasn't granted until 1898. Even when the project was underway its critics, believing it to be impractical, did not relent. O'Connor was subjected to a particularly vicious press campaign. He

committed suicide in March 1902, partly as a result of the pressures, and his suicide note included detailed instructions on the construction of the pipeline, which was completed the following year. The result was that vast areas of the wheatbelt and the Eastern Goldfields, which had been relying on unreliable wells, waterholes and condensers, suddenly found that they had regular supplies of water. The pipeline assured the survival of Kalgoorlie and Boulder.

The city centres, which were built at this time, are still largely intact. Hannan Street in Kalgoorlie and Burt Street in Boulder are thick with gracious buildings which announce that here are two centres built on the wealth of gold. By 1910, both were thriving inland cities with fresh water, electricity, a tramline running up Hannan Street, and every possible comfort for men who worked hard for very rich rewards.

It is one of the sad ironies of Kalgoorlie-Boulder that the men who found the 'Golden Mile' which has sustained the city for nearly a century did not reap great benefits from their find. Tom Flanagan died in Bendigo in 1900 leaving no great wealth, Daniel Shea died in 1908 having continued to prospect for new fields up to 1904, and Paddy Hannan, the father of the whole area, made some money from his find but never become massively wealthy.

However, for the goldminers and the settlers of Kalgoorlie, Hannan became a symbol of the battler who struck it rich. They called their main street after him, the local club was The Hannan's Club, even one of the locally brewed beers was Hannan's beer. To some oldtimers the town was never Kalgoorlie but only Hannan's Find or, more simply, Hannan's.

In 1904, at the age of sixty-one, having prospected for all his adult life, Hannan was granted a pension of £100 by the Western Australian Government. It was increased to £125 and by 1911 had risen to £150. He retired to Fallon Street, Brunswick, Victoria, where he lived until his death on 4 November 1925.

Today there are still about 50 mines operating in the goldfields district. About half of those are gold mines, including the massive Super Pit, which exploits the most productive square mile of gold-bearing ore ever discovered anywhere in the world. Nickel, chrysoprase, copper, granite, lime, salt, sand and silver are also the focus of industrial interest.

Boulder hosts the unusual Undies 500 Car Rally every year, on the third Sunday in February. All participants must compete covered only by their underwear. There is also a market at Boulder on the third Sunday of each month.



## Menindee

<http://www.walkabout.com.au/locations/NSWMenindee.shtml>

**Menindee (including Kinchega National Park and Sunset Strip)**

**Historic town on the edge of the desert**

Menindee is located 1106 km north-west of Sydney via the Great Western, Mitchell and Barrier Highways and 70 m above sea-level. If you are approaching from Broken Hill it is 111 km south-east along a sealed road and, if your departure point is Wilcannia, it is 143 km south-west on a mostly unsealed road.

Menindee is a tiny settlement of 980 people. The countryside is flat and arid and barely supports grazing, although Menindee itself is surrounded by citrus orchards and vegetable cultivation. If desert and fruit-growing sound incompatible, then one has to remember that Menindee is also surrounded by some 20 lakes fed by the Darling River. It is a weird experience to drive through land which is so marginal that you wonder whether it ever rains and to suddenly come across vast freshwater lakes full of dead trees and surrounded by sand, saltbush and inhospitable red soils.

The lakes were previously an unreliable source of water, filling out during flood periods and disappearing when the river level dropped. As early as 1894 plans were put forward for conservation of the resource but a water storage scheme was not implemented until 1949 (completed in 1960). The current storage capacity is 1 794 000 megalitres, 3.5 times the volume of Sydney Harbour and covering eight times its area. Lake Menindee, the largest, is 16 x 14 km in surface area. The purpose of the scheme is the provision of regulated flows for water supply and irrigation. A pipeline which runs from Menindee provides Broken Hill with a regular supply of water.

Historically the Darling River has been associated with the Barkindji Aboriginal people who travelled its length from Wilcannia through Menindee and down to Wentworth. They relied upon the river for water and food, using canoes and

elaborate stone traps for their fishing. The town's name is said to derive from the Barkindji place name 'Minandichee'.

It is thought by some that the first Europeans in the immediate vicinity, the 1835 party of Major Thomas Mitchell, laid the foundations for what turned out to be disastrous relations with the Aborigines. Mitchell followed the Bogan and Darling rivers down to Menindee and the surrounding lakes, which he named Laidley's Chain of Ponds after the deputy commissary-general of NSW (the Barkindji called them 'Wontanella' meaning 'many waters').

At the lakes Mitchell selected a campsite on top of the sandhills. According to Mitchell's account trouble broke out when two of his party took a kettle for fresh water and some Aborigines

they encountered wanted it. A white was clubbed and a black shot. A skirmish broke out and another black was killed. The Aborigines fled to the water where a woman with a baby on her back was killed. Mitchell records that 'a mournful song, strongly expressive of the wailing of women' was then heard and they hurriedly departed for the north expecting heavy retaliation.

Charles Sturt travelled up the Darling from the Murray in 1844 during his exploration of the interior. He arrived at the site of Menindee in 1844 and then headed north-west (see entries on [Broken Hill](#), [Milparinka](#), [Tibooburra](#)).

As pastoralists, drovers and shepherds followed in the wake of the explorers frequent and violent conflict arose with the Aborigines. The whites encroached upon traditional hunting grounds and raped the black women. The Aborigines killed and ate white stock, attacked droving camps and stole station food and stores. The trouble was serious enough to cause drovers to shun the area and landowners to abandon their properties, at least until 1853 when police were brought in to secure the area. Afterwards the tide turned against the Barkindji who were subsequently decimated by European disease, forcibly driven from



Maiden's Hotel where Burke and Wills stayed



Lake Menindee in the Kinchega National Park

the land and moved to government missions at Menindee, Lake Cargelligo and Ivanhoe.

While most skirmishes were limited in scope there were two ill-publicised massacres in the area. Leaseholds along the Darling stipulated that the property owners had to provide the Aborigines with provisions and permit the hunting of traditional game. When Avoca station, to the south, fell upon a period of hardship the bread provision was garnished with arsenic and the entire tribal group was found dead the next morning. On the shore of Boolaboolka Lake, to the east, a group of whites shot a tribe and left the skeletons to bleach in the sun, suggesting their conviction that they would not be held answerable.

The first settler in and effective founder of Menindee was Tom Pain and his family who arrived in 1852, determined to establish a home and business on the river. He opened the Menindee Hotel the following year. With numerous additions it is still open and considered the second-oldest hotel still in continuous operation in NSW. It is now known as Maiden's Menindee Hotel for the simple reason that it was owned, from 1896 to 1979, by the Maiden family (see entry on [Moama](#)). It burnt down a couple of years ago and a more modern hotel now replaces the original and historic building.

With the growth of the river trade in the 1850s, the arrival of a police force and Pain's presence, prospects for the settlement of the region improved. The runs of the Central Darling were officially surveyed and opened for tender in 1855. Explorer John McKinlay took up several of the properties, including 'Menindel', one of the first small frontage blocks along the Darling. This station later became Kinchega.

Captain Francis Cadell, who pioneered the operation of river steamers along the Murray, established a store near the hotel at Menindee in 1856. It was named Wurtindelly after the Aboriginal word for the sand ridges on which it was built. These two buildings became the nucleus around which the town grew. Although not the first to navigate the Darling, Cadell is the first whose name is recorded. It was not until early 1859 that he travelled upriver as far as Mt Murchison station (see entry on [Wilcannia](#)) and visiting his Menindee store on the return journey. Settlers began to pour into the region with news that the Darling was navigable.

Burke and Wills reached Kinchega station in October 1860 on their expedition to the Gulf of Carpentaria. They journeyed on to Menindee by steamer, stayed at the Menindee Hotel then continued north.

Burke split the expedition in two. He headed an advance party of eight while Wright was left in charge of the main body of the expedition, which was to bring up the rear. Burke, Wills, Gray and King set off for the Gulf of Carpentaria leaving Brahe in charge of a stockade at Cooper Creek. Brahe was to wait for Wright's party but they never showed up. Four months later Gray was dead and Burke, Wills and King staggered back to Coopers Creek barely alive, only to find that, just seven hours prior to their arrival, Brahe's team had left some provisions and departed.

One of those who waited at Cooper Creek was Dost Mahomet, one of the party's Afghan camel drivers. After losing an arm in a camel-related accident Mahomet settled in Menindee and worked in the bakery of William Ah Chung, who established one of the first market gardens in town. His grave is located about 1 km out of town on the road towards Broken Hill. Ah Chung's bakehouse, built around 1880, is still standing in Menindee St. It currently houses an art gallery.



The grave of Dost Mahomet

A post office opened at the fledgling settlement in 1861 and the site was officially known as 'Perry' but locals protested and the township was gazetted as Menindie in 1863 (it was respelled Menindee in 1918). Growth was initially slow but with the help of the steamers Menindee became an important river port and telegraph station. The boats were quicker and much cheaper than bullock trains although in drought periods the water level would sometimes fall so low the waterways became unnavigable.

The 1860s and 1870s were a period of expansion for the town. However, when gold and other mineral finds were made to the north in the late 1870s and 1880s, employees along the Darling chased the new prospects and Wilcannia displaced Menindee as the main river port and business centre. Consequently, Menindee slowed down to become a service and community centre to the surrounding district. As previously mentioned this role was later supplemented by fruit and vegetable production when the lakes' irrigation potential was harnessed.



## Wolfe Creek Crater National Park

[http://www.calm.wa.gov.au/national\\_parks/previous\\_parks\\_month/wolfe\\_creek.html](http://www.calm.wa.gov.au/national_parks/previous_parks_month/wolfe_creek.html)



Although it has long been known to Aboriginal people, who called it *Kandimalal*, the Wolfe Creek meteorite crater was only discovered by Europeans in 1947, during an aerial survey. The Aboriginal Dreaming tells of two rainbow snakes who formed the nearby Sturt and Wolfe Creeks as they crossed the desert. The crater is believed to be the place where one snake emerged from the ground. This striking formation is now protected by a reserve. Wolfe Creek was named in 1889 after Robert Wolfe, a prospector and storekeeper of Halls Creek, who was chairman of the Kimberley Goldfields Roads Board.

On the edge of the Great Sandy Desert and the extensive spinifex grasslands of the East Kimberley lies the Wolfe Creek meteorite crater, the second largest crater in the world from which fragments of a meteorite have been collected. The crater is 880 metres across and almost circular. Today, the floor is about 60 metres below the rim, and is generally flat, but rises slightly in the centre. The porous gypsum found in this central area supports reasonably large trees and

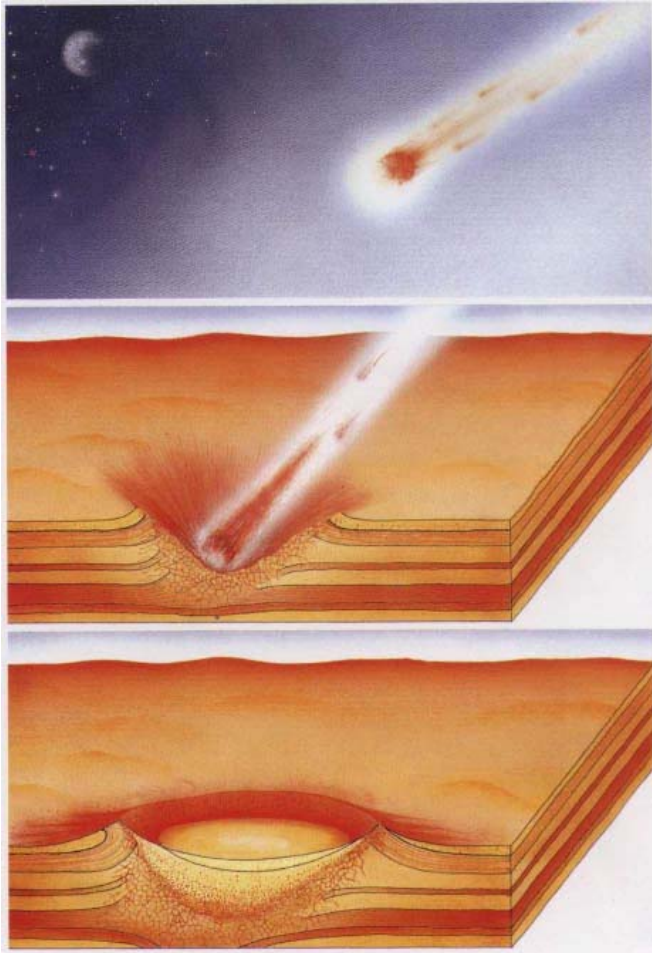
contains a number of sinkholes that may reflect the position of stress fractures formed by the impact from the meteorite.



The crater is inhabited by a variety of wildlife. Among the broken rocks on the crater wall you may see a brown ringtail dragon stalking insects that frequent the flowering shrubs. These shrubs grow well along the crater rim, where moisture is contained beneath the rocks. Mammals are active at dawn and dusk, avoiding exposure during the heat of the day. Red kangaroos live in the area but are rarely seen. Although the dry desert conditions restrict the number of birds in the park, spectacular and noisy Major Mitchell cockatoos harvest seeds from the wattles and paperbarks of the crater floor. However, most visitors come to the park to marvel at the crater itself.

### Formation

Scientists have made an intensive study of the Wolfe Creek meteorite crater. Dating of the crater rocks and the meteorite have shown that it crashed to Earth around 300,000 years ago - relatively recently, in geological terms. It would have weighed more than 50,000 tonnes and is thought to have been travelling at 15 kilometres a second, a speed which would have taken it across Australia in five minutes. The impact of its enormous mass would have punched a huge hole in the ground, pulverising the underlying rocks and putting a sudden halt to its progress.



Within seconds, the energy caused by its tremendous mass and velocity would have been converted to heat, melting and vaporising the meteorite and causing a massive explosion that sent debris flying in every direction and deformed the surrounding rocks. This helps to explain why some fragments of iron meteorite have been found about four kilometres away.

Rusty balls of rock, known as "shale-balls", lie on the top of the slopes of the crater, particularly on the western side. Some of these are scattered on the ground, but other chunks are fused into the laterite capping. They contain iron-nickel and iron-

phosphide and are the deeply rusted remains of iron meteorites. Similar rocks are associated with other large craters around the world.

The effects of the impact on the surrounding rocks can also be seen. The area in which the crater has formed is quartzite capped with laterite. The quartzite, which became distorted as a result of the explosive impact, is clearly visible on the inner walls. The laterite which once capped the quartzite can now be seen in some places, sandwiched between layers of folded quartzite. The crater which resulted was probably up to 120 metres deep but has been filled by blown sand and gypsum over the intervening hundreds of thousands of years.

### Secrets from Space

The Earth has been so altered since it was formed 4,600 million years ago that there is little or no evidence available to scientists that illustrate its earliest history, or which helps to shed light on how planets were made. Most meteorites, on the other hand, are believed to be among the earliest solid rocks to form in our Solar System, and have remained unchanged.

The most common meteorites, the chondrites, are composed of numerous rounded grains, known as chondrules. Chondrules are thought to be among the first matter to solidify from the cloud of gas and dust that gave birth to the Sun and its planets. Their accumulation eventually led to the formation of larger bodies and, ultimately, to the planets of our Solar System. Meteorites are therefore regarded as precious relicts from outer space containing clues to the very beginning of our Solar System.

Meteorites may even contain information as to how living organisms first evolved. Some meteorite fragments recovered from other parts of Australia have been shown to contain amino acids, which are the building blocks of life.

### Could it Happen Today?

Scientists have also speculated about the chances of a large meteoroid plunging to Earth this century. Most fragments that enter our atmosphere burn out as meteors before they reach the surface of the planet, due to friction with atmospheric gases.

Their progress may, however, produce quite a spectacular light show. Many others plunge harmlessly into the ocean, while some actually fall to land as relatively small fragments.

Fragments from some 450 or so different meteorites have so far been





recovered from Australia and more than 16,000 fragments have been excavated from the Antarctic ice, where they have been protected from the deep weathering processes they would have experienced elsewhere in the world.

Many of the large craters from earliest times would also have been weathered away from the surface of our planet over millions of years. It is estimated that meteorite impacts on the scale seen at Wolfe Creek may occur every 25,000 to 50,000 years. Collisions on a scale capable of causing a major catastrophe may take place only once every 15 million years. It is thought that more than 1,000 asteroids greater than a kilometre in diameter have orbits that cross that of Earth. So although there is only the most remote chance of such an event occurring during our lifetime, it is nevertheless a very real possibility.

There is also mounting scientific evidence that one or more giant meteorites collided with Earth during the end of the Cretaceous period, and some scientists believe that such an event may have contributed to the extinction of the

dinosaurs and other animals that died around that time. These theories may not be as far-fetched as they initially sound.

At many places throughout the world, a thin layer of clay has been deposited in layers of rock aged at some 65 million years. These deposits contain the metallic element iridium, which is rare in the Earth's crust, but often present in meteorites. It is thought that such an occurrence would have triggered a global holocaust, blasting more than 10 000 cubic kilometres of dust into the atmosphere, obliterating the Sun and making it impossible for many plants and animals to survive. The evidence for impact is very strong, but whether it was responsible for mass extinctions is still disputed. Nobody really knows for sure, but the possibility is certainly intriguing.

Or perhaps, like local Aboriginal people, you would prefer to believe that Wolfe Creek crater was created by a powerful rainbow serpent during the Dreamtime. Whatever you believe, there is no doubt that meteorites and the remarkable meteorite crater at Wolfe Creek will fascinate humankind for many years to come.

## **National Park Fact and Information Sheets**

**Watarrka National Park – Fact Sheet**

**Alice springs Telegraph Station Historical Reserve – Fact Sheet**

**Flinders Ranges National Park – Visitor Information Sheets**

**Uluru – Kata Tjuta National Park Notes**







