



A NORTHERN KARST ODYSSEY

Cutta Cutta – Mimbi – Geikie – Windjana – Tunnel Creek

– Kent Henderson

Sasa Kennedy and Kent Henderson
at the entrance to Cutta Cutta Cave.



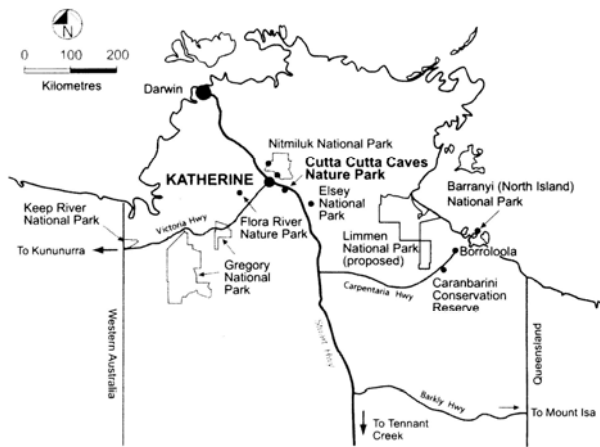
It is perhaps odd that, having been around the world many, many times I had never been to the Northern Territory or North West Western Australia. Thus it was, finally, that my wife Marise and I flew to Darwin on 28 August to begin what was to be an all-too-brief two week odyssey. After a few days staying with friends in laid-back Darwin, we motored down to Katherine, arriving around lunchtime on 2 September.

Serendipity is a strange thing... I did flag at the end of my *Editorial* in the June ACKMA Journal that I was 'heading North', which promptly elicited an email from ACKMA member and Jenolan Guide, Sasa Kennedy, advising that she too was 'heading North' and arriving in Katherine, as it turned out, on the very same day we were! ...and she was staying at the same motel! Obviously, great minds do think alike! Thus it was that we picked Sasa up from her greyhound bus, and after she saw to her comforts at the motel (an overnight bus trip from Alice Springs is not fun, she tells me...), we all headed for Cutta Cutta Caves.



The Cutta Cutta Cave entrance

The location of Cutta Cutta Caves.



Cutta Cutta

Cutta Cutta was the only show cave in Australia or New Zealand that I had never seen, so I was rather keen, as you'd expect, to 'dawn the door'. First some background. The Cutta Cutta Nature Park is 30 km south of Katherine, just off the Stuart Highway. It is on part of the land of the Jawoyn People, but no evidence has been found to suggest they ever used the caves. A stockman found the main cave around 1900 and named it Smith's Cave, and during WWII servicemen visiting the area called it 16 Mile Cave, but it is unclear why.



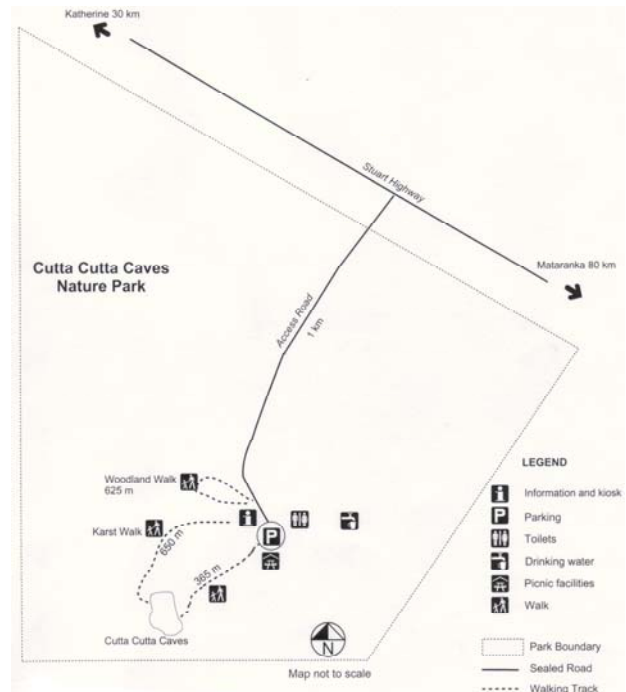
Excellent decoration in Cutta Cutta Cave.

The park covers 1499 hectares of what is known as the Tindal Limestone – which is dated to the middle Cambrian period, more than 500 million years ago. Clearly, given climate and the passage of time, an ancient tropical karst landscape has developed, although I wouldn't call it tower karst in the sense of, for example, Chillagoe in Queensland or the Napier Range in NW Western Australia (of which more later).

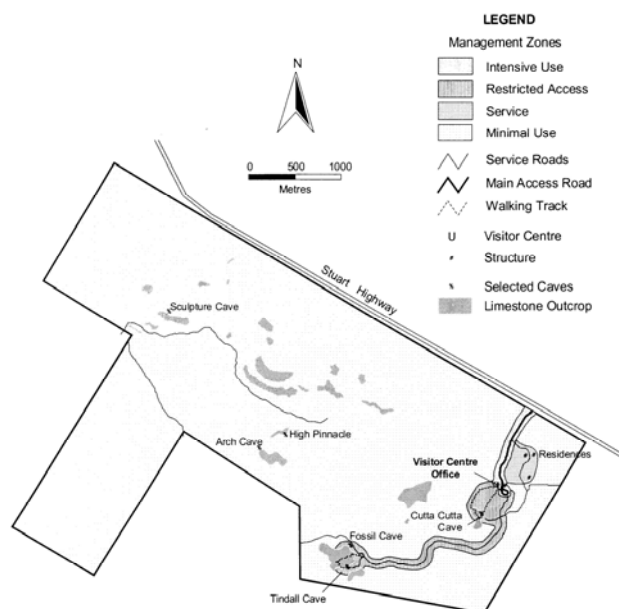
The limestone at Cutta Cutta is far from 'high', which is also the case at the Kintore Caves Nature Park (a small karst area north of Katherine). The Cutta Cutta landscape is typical of much of northern Australia. The Park is located on a rolling

plain with local relief of only 25 metres asl – no big hills here. Surface drainage in the area is indistinct, consisting of two small watercourses flowing into the southwest portion of the Park. Vegetation consists mainly of open eucalyptus woodland with minor shrub cover.

There are at least three major cave systems in the Park that exceed 500 metres in length, and another twelve or so caves contain passages of 100 metres. About fifty cave entrances have been numbered and tagged by the Top End Speleological Society over the years. Most caves are mainly horizontal although a few caves have short vertical entrances.



A schematic of Cutta Cutta Caves Nature Park.
Source: DEC 'Fact Sheet'.



Management Zones – Cutta Cutta Caves Nature Park. Source: Cutta Cutta Management Plan, 2000.

A view of the tracking in Cutta Cutta Cave, showing its elevated meshed flooring.



The area was assumed by the Northern Territory Reserves Board (now the Parks and Wildlife Commission (PWC) of the Northern Territory) in 1967, and ranger-guided tours began in that year. In 1979, the area was renamed the Cutta Cutta Caves Nature Park. While PWC maintains the cave, the concessionaire's guides run the tours. The Park is open daily from April to about November – the dry season – and closed over the wet season (during which the caves are often flooded).

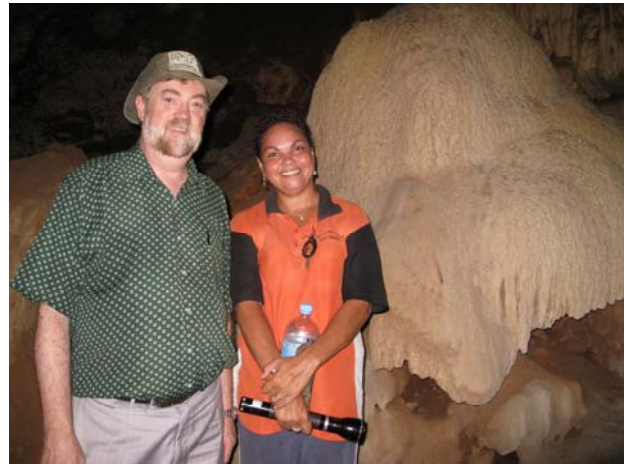
Two show caves have been available at Cutta Cutta – Cutta Cutta and Tindal Caves. Cutta Cutta Cave was the subject of ranger-guided tours from 1967 until 1991. In 1991 guided tours and kiosk sales were transferred to a concession operation. Also in 1991, Tindal Cave became the second cave developed for guided tours, and tours ceded to the concessionaire.

Both caves are fully developed, as you'd expect. Cutta Cutta Cave has a passage length of 750 metres with the first 240 metres developed for public access. The passages of Tindal Cave have a total length of 1700 metres with the first 200 metres developed for public access. Both are in-and-out tours through the same entrance/exit. Only Cutta Cutta is open at the present time – Tindal has been closed for about ten years. Flood damage to its electrics has been proffered as the 'reason', but I am reliably informed that the incoming (and still current) concessionaire at the time considered showing the cave uneconomic... All that would be required, I am advised, is for Tindal's solar power batteries to be replaced and the cave

could be speedily brought back 'on-line'. Evidentially this is under consideration, but may have to await the result of the tender process for the next concession – which comes up in about twelve month's time, I understand.

According to the Park's Management Plan (available to download from the internet as a PDF at: <www.nt.gov.au/nreta/parks/manage/plans/pdf/cuttacuttapom.pdf>): 'Past management activity has focused on supporting concession operations, furthering knowledge of the Park's caves and cave fauna, control of weeds, maintenance of boundary fencing and reducing the impact of wildfire on vegetation'. The management plan (which seems comprehensive enough) is dated 2000, so one would expect it is not too far away from review...

And so, having arrived at the Visitor's Centre/Kiosk we purchased our tickets (\$15.00 per adult), and walked the 325m pathway to the cave. The first thing that struck us was its un-gated entrance – surprising – probably the only un-gated show cave I've ever seen! Our guide, Lorraine May, advised that the 'remoteness' of the cave made gating unnecessary, and that gating would be detrimental to the caves bat population, preventing their easy access. I was not convinced on either score, the cave is very far from remote or unknown, and there are bat-friendly gate options... However, I later discovered that the cave is, effectively, 'gated' – at the entrance to the Park, which is locked at closing time each night, and security is enhanced with two PWC rangers resident in the Park. It would be a very long walk from the main road to the cave entrance, and I am advised there has never been any problem with illegal access to the cave. Still...



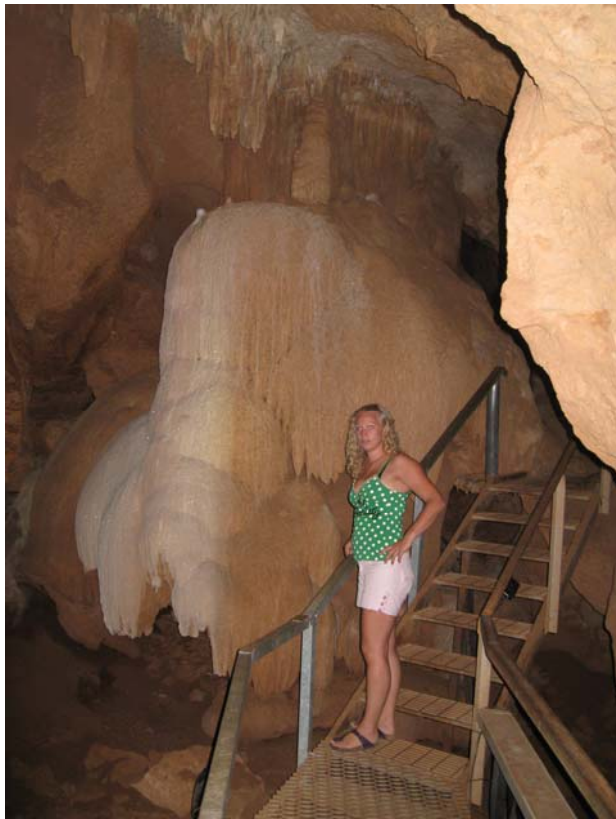
Kent Henderson with Cutta Cutta guide, Lorraine May.

The cave is shallow (about 15m underground), horizontal and fairly straight – a 'typical' largely phreatic stream passage cave. It is an interesting fact that the deeper one goes into the cave, the higher the temperature gets. The spring beneath the cave is hotter further in – a striking example of Hypergene karst, i.e. eroded by rising hot water. I was very impressed with the infrastructure, I have to say (and those who have read my past rants in

this Journal will know I am not easily impressed...). The tracking is almost totally raised steel mesh (up to half a metre off the cave floor), and the lighting is superb – not surprising as Neil Kell did the re-light but a few years ago, and Elery Hamilton-Smith and Andy Spate were principal advisers on both show caves, particularly Tindal!

Neil lit Cutta Cutta in 2003, but subsequent local maintenance was not good. He returned in 2007 to do, effectively, a total lighting re-vamp. In a hectic two weeks, Neil oversaw all 180 walkway fittings in the cave, and 70 plus feature halogens, replaced by LEDs. The cave is programmed on the CBus system.

Several previous visitors have suggested to me that the decoration in Cutta Cutta is 'second rate', and that it is 'nothing exciting' as a show cave. I must disagree – I thought it possessed generally excellent decoration, and any 'deficiency' (for want of a better word) is more than offset by Neil's very skillful lighting.



Decoration in Cutta Cutta Cave
(the speleothems are excellent also).

The guiding, however, left much to be desired unfortunately. The relatively meagre cave/karst information imparted did not strike me as inaccurate, but both Sasa and I were unimpressed with the guide's 'fairy tale' interpretation, which was quite ordinary. She did have a friendly style, but it was obvious that her guide training has been far from adequate. This is strange.

I am advised Cutta Cutta has a first rate Cave Guiding Manual – according to Neil Kell, the best he

has ever seen. Yes, well – nothing was in evidence. I did inform Lorraine of the Cave Guide Conference at Wellington Caves next July – hopefully she can make it.

The other problem is that the cave was fully lit for the duration of the tour. While that was 'fine' *per se* – the LEDs are probably unlikely to cause significant *lampenflora*, and the punters would be none the wiser – I was very disappointed. The cave has a full CBus system, and a large variety of lighting arrays available to the guide.

Having all the lights on is the easy way out, of course. Not good enough, I'm sorry. I wonder – is another problem the lack of a cave-focused PWC ranger? I suspect this may be the case.

My other comment on Cutta Cutta is that I was reasonably impressed with the aboveground infrastructure. The small-ish visitor's centre has a variety of good interpretation panels both inside and out, and the car park, toilets, and tracking to the caves are all more than adequate. Indeed, guide interpretation aside (and that is a big minus), as a cave 'package', it would hard to improve Cutta Cutta – it has very good standards indeed.

In short, there is much to compliment the PWC about – their local operatives have done well over a lengthy time frame – perhaps remarkable considering their relative remoteness, and what I understand to be not inconsiderable staff turn-over, over time.

The local PWC is not a current ACKMA member (a very rare state of affairs, Australasia-wide; indeed Cutta Cutta is the only show cave location not a member). They have been, intermittently – it seems that when the Ranger who organised it moves on, a membership hiatus follows. Sigh...

Upon reading my comments, Sasa Kennedy's feedback was as follows:

I was surprised when I looked at my Cutta Cutta pictures to see lampenflora appearing in several shots, so leaving the lights on for the entire tour may actually be having detrimental effects. I didn't notice any when on the tour, which is odd.

I agree wholeheartedly about using lights creatively to illustrate your interpretation and add impact. I thought at the time it was a limitation of the system, but apparently not.

I sit somewhere between you and the general opinion on the cave. While there are some very lovely decorations, they are few in number and there is not really a lot of cave to see. A great shame they haven't put the work in repairing the infrastructure in the second cave to make an overall trip to Cutta Cutta more worthwhile.

I suspect part of the problem with the tour may be time constraints which limit the chance to build on concepts that are raised, and as a result the commentary is quite basic and uninspiring. I

hesitate to blame the guide entirely for this. If she learned (as is usually the case) by watching other guides, cave 'fantasy' may have been the easiest part of their commentary to reproduce (while getting a positive reaction from visitors).

Without a deeper understanding of cave geology than you normally get from listening to a guide it is actually hard to then interpret it in a way that is anything other than mimicry.

Some guides consider that geology is dull; this is not the message I get from visitors. With time allowed for a more complex explanation most people find it fascinating.



L to R: Tracey Robins, Kent Kenderson and Neil Taylor in Kununurra.

On to Kununurra

After a pleasant dinner back in Katherine, the following morning we parted ways with Sasa. She was off to Kakadu; we were heading to Western Australia. However, before embarking on the long road trip, we drove 30 km northeast of Katherine to do the 'breakfast cruise' up Katherine Gorge – stunning (the breakfast was good too). Nitmiluk, to give it its correct, indigenous name, is in sandstone, and with a more than a few cave entrances to be espied en route...

That evening, after a five hour drive, we arrived in Kununurra, and lobbied at our pre-arranged destination, the home of Neil Taylor and Tracey Robins. A bit more serendipity perhaps, they weren't living there when we planned our trip, over a year ago... I have known Neil for over fifteen years. He was the ranger-in-charge, intermittently over the years, of the Leeuwin Naturaliste karst for the WA Department of Conservation and Land Management (CALM), now re-named the Department of Environment and Conservation (DEC).

Neil and Tracey (also a DEC ranger) were both members of the 18th ACKMA Conference (Margaret River) Organising Committee. However, Neil missed the Conference, as his (requested) transfer to Kununurra came through prior to it starting. Neil is now ranger-in-charge of the Bungle Bungle World

Heritage Area, immediately south of Kununurra. Tracey did make the Margaret River Conference, and moved up to join Neil soon thereafter. So, by the time we descended upon them, at their kind invitation, they had been 'locals' for only a few months!

Upon arrival, we were warmly welcomed by Tracey – but not Neil. He was at Uluru at a World Heritage meeting, and enjoying a few quiet (?) ales with our President (and co-world heritage site manager) Steve Bourne! However, we were slated to catch up with Neil on our return to Kununurra some days later...

Next morning (4 September) we headed off bright and early to Fitzroy Crossing...



The karst walls in Geikie Gorge. The white section at the bottom marks the 'average' flood level over the years.

...compared to the massive sandstone walls in Nitmiluk Gorge (below).



Geikie (Darrngku) Gorge

After our arrival at Fitzroy Crossing about lunchtime, we booked into our motel, and then trundled north for 20km to Geikie Gorge to do its 3pm one-hour boat cruise.

As Geikie Gorge National Park is part of the Napier Range; it is necessary to briefly discuss it first to give us some context. The Napier Range is pretty much solid tower karst. Its limestone was laid down in the Devonian, about 350 million years ago. It

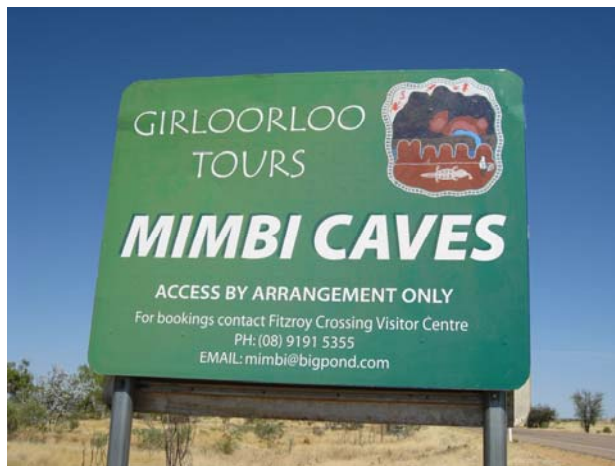
starts 'under the sea' off the WA coast and bisects much of the west Kimberley. The range is south of and runs parallel to the King Leopold Range (which is not karst).

When I asked him about the Napier Range, Professor Elery Hamilton-Smith commented:

It is a remarkable fact that the Napier Range Devonian Coral Reef has not suffered tectonic change and is the only Devonian reef anywhere in the world which is still totally intact. The various gorges are all constructional, that is, they were not eroded by the rivers, but the rivers prevented the reef from developing. There are a number of great caves in the Kimberley, especially Old Napier Downs Cave which is quite a fantastic cave; and the surface landscapes are glorious.

Old Napier Downs Cave is at the western end of the Napier Range, and quite well decorated with flowstone, stalactites, and stalagmites. It is the outflow of a very large and geomorphologically interesting depression on the plateau behind the wall of the range. There are many references, but a good general one is Davey (1980).

Most importantly, exploration is slow in the Kimberleys and the number of caves found is an inadequate indicator of the work that has been done there. I went with those on a major expedition back in 1973 and over a lot of the time since then there have been annual expeditions.



The Mimbi Caves sign.

The highest point of the Napier is Mount Behm at 325 metres (1,066 ft) asl, but much of it is in the 200-300 metre range, although it tapers off to lower levels in the east.

Amongst its features of the Napier Karst, the most visited are Windjana Gorge, Tunnel Creek and Geikie Gorge, all of which I will come too shortly. The Fitzroy River cuts through the range at Geikie Gorge, while the Lennard River is responsible for the formation of Windjana Gorge.

While Geikie is managed by the DEC, tours are largely run by the traditional owners. Incidentally,

the real (indigenous) name of the gorge is Darngku, and there are well-advanced moves for the name to be officially changed, as has already occurred at Nitmiluk, Uluru and several other locations.

Indeed, the name Geikie Gorge has long since been incongruous. It was named in 1883 for Sir Archibald Geikie, the Director General of Geological Survey for Great Britain – who never visited Australia!



The karst at Mimbi Caves.

The trip was most pleasant, and our indigenous guide very knowledgeable. Darngku Gorge is eight km long, and is not nearly as lofty as Nitmiluk; its walls average only about 30 metres high. Nonetheless, it is a truly spectacular karst landscape.

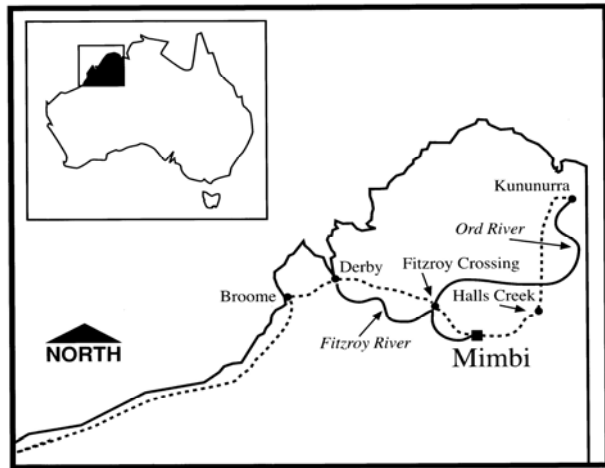
It is flooded (and I do mean flooded) by the Fitzroy River every wet season. The Fitzroy drains virtually all the west Kimberley, and in season boasts the fastest water flow of any river in the world, we are told. It is rich in wildlife, notably freshwater crocodile.

So, after a most pleasant afternoon, we returned to Fitzroy Crossing, to get psychologically-prepared for Mimbi Caves the next day.



Guide Johanan Nugget interpreting indigenous art – on the rock to his left.

Location map – Mimbi Caves.



Mimbi Caves

Saturday 5 September will ever remain a most memorable day for me – rarely have I enjoyed and appreciated a cave tour as much as I did Mimbi. Prior to Tracey Robins bringing it to my attention in emails whilst discussing our looming visit to north west WA, I had never heard of Mimbi Caves, and I suspect that would apply to the majority of ACKMA members.

Indeed Tracey's knowledge stemmed only from seeing the sign as she drove past some weeks previously! So, I hit their excellent website at <http://mimbicaves.com/> to discover a full-on tourist operation!

Mimbi is located 90 km east of Fitzroy Crossing on the Great Eastern Highway towards Hall Creek – thus we passed the entrance sign the previous day on the way in. Mimbi is not in the Napier Range which 'frizzles out' not far past Fitzroy Crossing, but it is possibly in a later surfacing spur of same limestone.

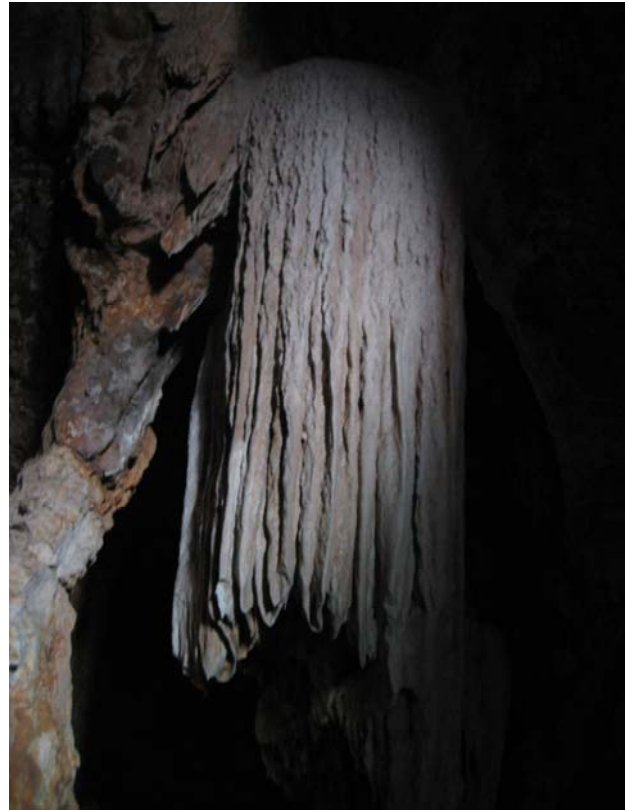


In one of many daylight entrances to Mimbi Caves.

Mimbi is on indigenous land, and run and operated entirely by the traditional (and actual!) owners, who operate as *Girloorloo Tours*. One tour only is

available every day (except Sundays), at 10am (dry season only). Cave tours have been run at Mimbi for about twenty years, but only intermittently. It is only in the last few years that it has become a regular operation.

One drives out from Fitzroy Crossing (all tours must be booked at, or through, the Fitzroy Crossing Visitors Centre) to the Mimbi Caves turn off (where the sign is), where one is met by your indigenous guide (in our case, by Johanan Nugget), who then leads the participant's vehicles inland a few kilometres to the Mimbi car park. There were only six people on the tour this day, which was pleasant; they will take up to 15-20.



Decoration in Mimbi Caves.

At the car park there is a shelter with excellent interpretation panels. This was not to be an ordinary 'there is a stalactite' cave tour (happily) – rather an exposition of indigenous legend and culture. Johanan (who is young – maybe 19-20?) lead us into a stunning smallish gorge surrounded by karst towers.

On the walk he explained various aspects on his culture. We were each provided with a helmet and torch, and led firstly into a small cave (only a few metres wide) which he explained was used by his ancestors as accommodation.

We were then led further on, to Mimbi itself. Mimbi is a phreatic maze-like cave which, unlike other caves in tropical karst I had seen, has a permanent stream flowing through it. And it is stunning! Of course, in the wet season Mimbi is pretty much impossible to enter... There are many daylight

entrances dotted through the cave – I suppose the nearest, although inadequate, comparison I could come up with is a ‘version’ of the Royal Arch Cave at Chillagoe, with significant water added...

While, according to Johanen, ‘geologists’ have looked at Mimbi in the past. He obviously means speleologists... despite its rather remote location (and that is not necessarily a bad thing...), Mimbi has been ‘looked at’. I am advised that the Illawarra Speleological Society (NSW) did a few trips to Mimbi in the late 1970s and early 1980s. A Mimbi map exists, drawn by Dave Dicker of ISS in July 1980. I understand ACKMA member Lloyd Robinson was on the survey team with about fifteen others.



Looking out an entrance – Mimbi Caves.

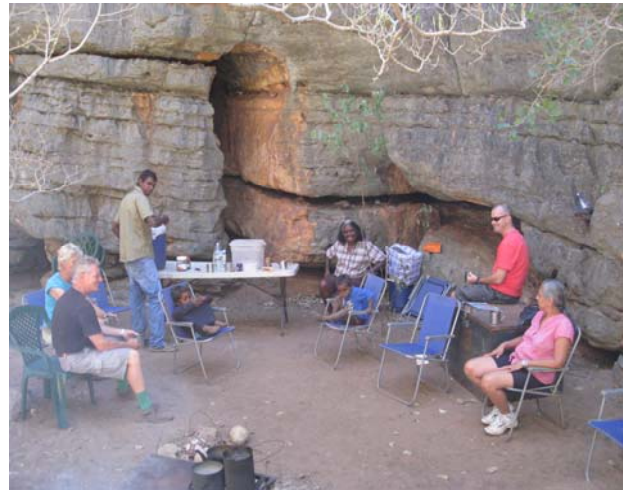
We spent over an hour being led through various passages, streamways, small lakes, and past daylight entrances. There is some decoration in the cave, but it felt quite secondary to the magic of the cave itself, and particularly to the thrust of Johanen’s tour – indigenous association and legends surrounding the cave.

Over the course of our tour, he explained much – he literally led us through the dreamtime – and to a section of excellent indigenous art. There are twenty registered indigenous sites within a ten kilometre radius of Mimbi, including occupational areas, painted rock shelters, ceremonial places, and sites with mythological associations.



The inflow stream into Mimbi Caves

As will be appreciated, we were not shown anywhere near the whole of the Mimbi system – there are a number of areas that have deep cultural significance and are thus not included in any tour. Johanen’s tour was not solely cultural (that would have been enough!). He also dealt well with the general environment, and particularly with fossils.



Enjoying damper and billy tea at Mimbi Caves.

After the tour, we sat around a fire near the cave entrance for damper and billy tea, prepared by Johanen’s mother, Cissy (a local elder). After that pleasant experience, we thought that was it, but no! It was back to the vehicles and off to another nearby cave location – a ‘birthing’ cave.

Again, this cave had an active stream/lake inside a wide, open entrance (it was, effectively, part of the Mimbi system). To the rear of the entrance (with daylight penetrating to it) was a smaller offshoot chamber, the ‘birthing’ cave. Again, excellent interpretation was provided by Johanen.



A view inside the ‘birthing cave’ at Mimbi.

What great 2½ hour tour! ...and, I must add, very good value at \$65.00 per adult. It was absolutely wonderful – and of course, unique in an Australian context. Needless to say, Johanen and Cissy received our grateful thanks, not to mention a copy of the latest ACKMA Journal (what a surprise!).

A view of Windjana Gorge.



I am pleased to advise Mimbi is now an ACKMA member. Indeed, it would be wonderful to get Johanan and/or others from Mimbi to the next ACKMA Conference. I will certainly be working on it. A final word – there is an excellent colour book(let) on Mimbi – I'll deal with that in *Book Reviews* elsewhere herein.

Windjana Gorge

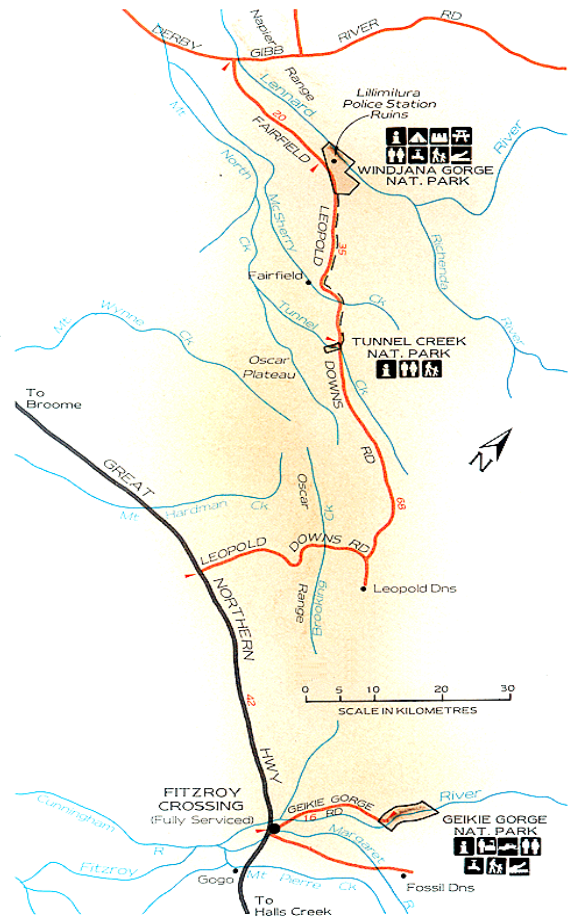
While it is hard to get much better than Mimbi, Windjana and Tunnel Creek are right up there! Unfortunately, as we were unable to hire a four wheel drive from Darwin (don't ask...) we had a non four wheel drive car – which cannot be used into Windjana and Tunnel Creek (to say the road is not good is to praise it...).

Our only option was, therefore, a commercial four wheel drive tour. Unfortunately, no such beast now runs from Fitzroy Crossing (the short route...), so we had to go with a tour from Derby (the very long route – a bit like driving from Sydney to Jenolan via Newcastle...). Thus, we left Fitzroy Crossing about 5am on Sunday 6 September to drive 2½ hours to Derby, to catch our 8.15am departing tour.



An obvious cave entrance – Windjana Gorge.

Indeed, it was great – only five people plus our driver/guide, Annie (she was very good too)! After a lifetime's worth of back jarring, we arrived at Windjana Gorge National Park – which, if you were paying attention earlier – you will recall bisects a section of the Napier Range. The park, gazetted in 1971, is not big. It covers only 2000 hectares and is situated 145 east of Derby and 150 km north east of Fitzroy Crossing.



A schematic showing the location of Windjana and Tunnel Creek

Of course, the main attraction of Windjana is its gorge carved by the Lennard River. One can/should walk the whole length of the gorge – a 3.5km narrow canyon (which Andy Spate tells me is fantastic), but sadly, our tour schedule enabled us only a short walk in. Nonetheless, what we saw was stunning – plenty of obvious cave entrances too, not to mention more than a few freshwater crocodiles. The Lennard River only flows during the wet session, so for most of the year it consists mainly of isolated pools. Some of the pools are quite large, more than enough to support the crocs, and extensive fish and bird life.

As for the DEC management of Windjana, I have few complaints. The car park and tracking was good, as was the not-infrequent interpretive signage. That said, one sign near the river purposely indicated very adjacent fossils in the

limestone. Laudable education, but... of course, the indicated fossils had either been dug out or otherwise despoiled. Sacrificial fossils perhaps – but I do concede it is a difficult call.



Raised speleothem wall in Tunnel Creek, largely populated by grey-headed flying fox.

Windjana, and indeed the Napier Range itself, has been the focus of some speleological exploration over the years. There is no local caving club. However, there has been biannual expeditions from Perth since 2000, led by Jay and Ross Anderson, which usually log around thirty new karst features/caves per trip. Even so, it is fair to say that a good portion of the Napier karst has 'never been looked at'.



Inside the entrance – Tunnel Creek.

Tunnel Creek

So, after lunch, it was off to Tunnel Creek, of which I had no real pre-conception. It was without doubt the greatest highlight of the trip – wondrous indeed! The Tunnel Creek National Park is situated 36 kilometres east of Windjana Gorge and 111 kilometres from Fitzroy Crossing. It takes its name from the 750 metre long tunnel carved through the Napier Range by flowing water.

The creek in question once flowed across the top of the range when the surrounding area was higher than it is today. This original watercourse is marked by a shallow valley on top of the range. Unsurprisingly, enlarged fractures in the limestone occurred when the creek adopted its underground course, which is what we see today.

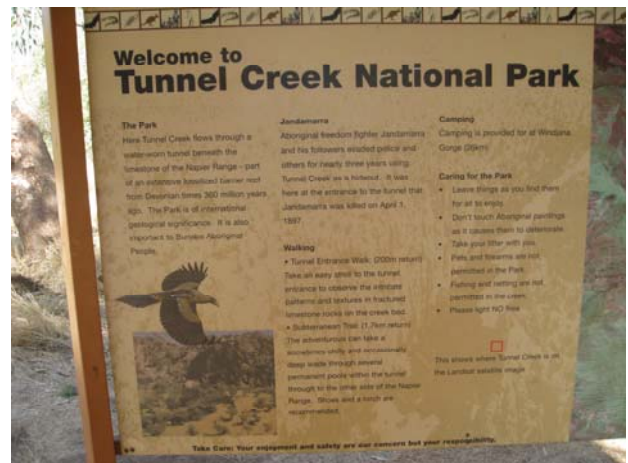
Looking out the exit of Tunnel Creek.



The 1.5 kilometre return walk through the cave can require wading through water, depending on how far away the wet season it is (when the cave is invariably flooded and closed to the public). Happily, our wading didn't bring water much over our ankles.

Visiting Tunnel Creek is unregulated. You do need a torch, of necessity (which Annie supplied in our case), but that is about it. The tunnel is up to 12 metres high and 15 metres wide in parts. Near the centre of the cave the roof has collapsed, and thus provides a secondary daylight entrance.

The cave is truly stunning. The only Australian comparative is the Grand Arch at Abercrombie Caves in New South Wales – which is not really in the same league, in my view. Abercrombie, while more voluminous, is only 221 metres in length – not much more than a quarter the length of Tunnel Creek.



Interpretive sign near the Tunnel Creek entrance.

There are many tremendous features in this cave. The roof decoration is abundant and prolific. One suspects only the worst floods get up that high to disturb it. In any case, as flooding occurs for only a short time each year, the speleothems have still had plenty of growth opportunities over the centuries. There are two sections in the cave where secondary

springs enter the main tunnel, both of which have extensive flowstone cascades at the junction, and one of which is pretty much pure white – wonderful stuff.



Looking in from the exit to Tunnel Creek. The ‘dots of light’ are the torches of people in the cave.

At least five species of bats are known to use the cave. The most common is the grey-headed flying fox (*Pteropus poliocephalus*). They congregate, seemingly in their thousands, in and around the middle daylight entrance to the cave, and roost on adjacent cave ceiling speleothems in semi-daylight. And they are very noisy! – but a great sight. Another important species in the cave is the Ghost Bat (*Macroderma gigas*). Tunnel Creek is a major roosting site for this species.



White flowstone wall at a secondary creek entrance into Tunnel Creek.

Interpretation Booth at Tunnel Creek.



The management of the cave? Let us start with the good. There is an excellent information shelter, with good interpretation, near the entrance, along with toilets, and quite adequate tracking to the cave entrance. No camping is permitted at Tunnel Creek, and that is a big plus in my view.

And the bad? A great deal, I’m afraid. To start with, no management plan for Tunnel Creek exists – never has been one, I’m advised (the same applies at Windjana, but one is more crucially needed at Tunnel Creek, I suggest). Not good...



Grey-headed flying foxes in trees at the secondary (middle) daylight entrance to Tunnel Creek.

Given its sensitivities, Tunnel Creek access should not be unregulated. Ranger-guided tours are necessary, or alternatively a purposefully-trained concessionaire (if it was economic...I think it almost certainly would be).

Alright, perhaps we can agree the cave will get a ‘spring clean’ every wet season. However, there is ample evidence of non-natural speleothem, and other, damage in the cave.

Many of the inhabiting bats, particularly the endangered ghost bat and the vulnerable orange leaf-nosed bat (*Rhinonicteris aurantia*), are very

sensitive to disturbance, and may abandon their refuges if too much artificial light penetrates their roosts.

The only 'saving grace' for Tunnel Creek is that its road access is appallingly bad, and thus can only be accessed by four wheel drive vehicles. Clearly, this holds down visitation.

That said, during our visit, there would have to have been at least 60-70 people spread through the cave – and we were there at the end of the dry (tourist) season. God help the DEC if the access road from either Derby or Fitzroy Crossing (or both!) was sealed...

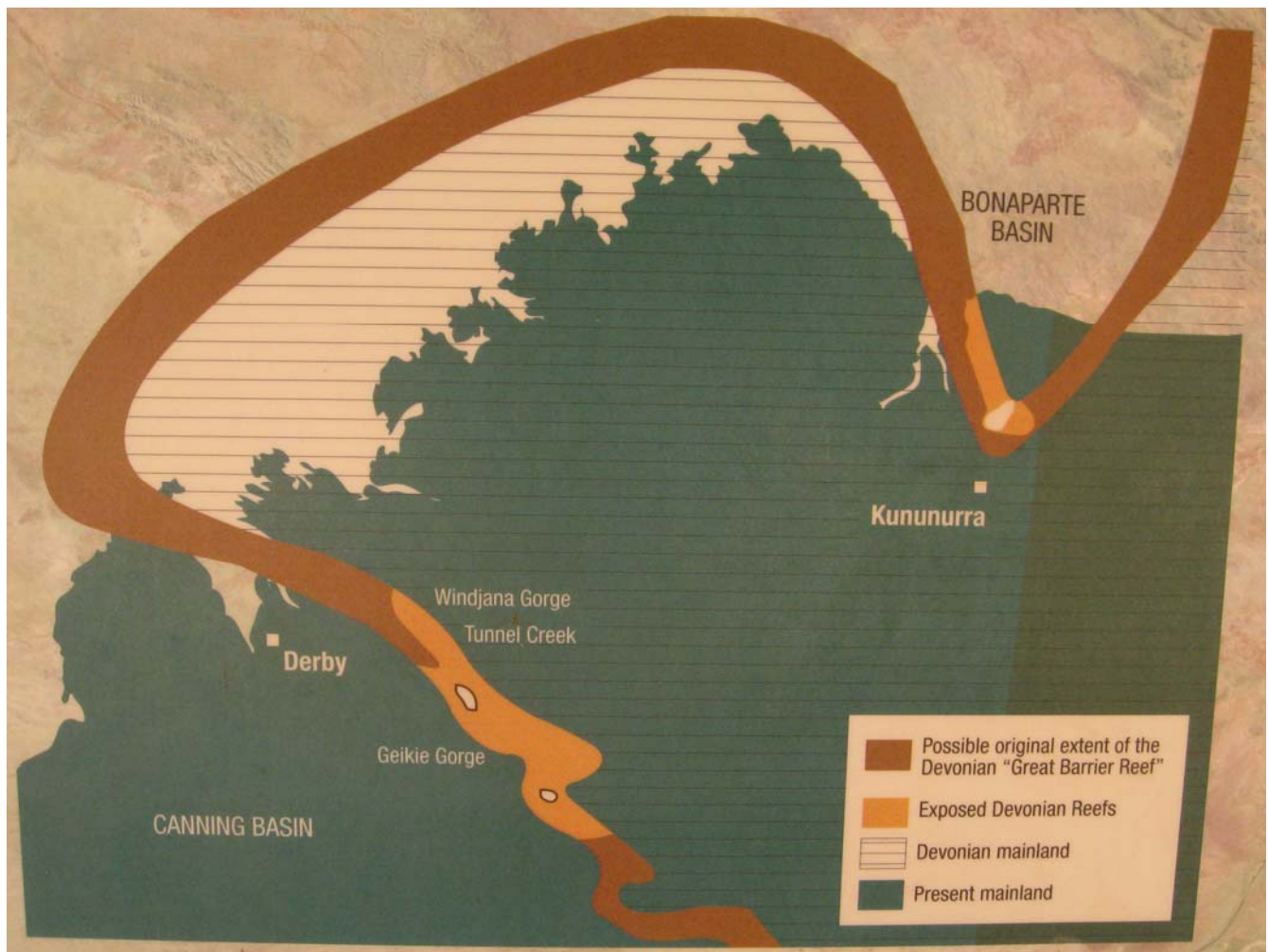
So, it was back to Fitzroy Crossing later that evening, and back to Kununurra the next day – for two further nights in the company of Tracey, and now Neil – duly returned from Uluru. It was great to

catch up with them both, and we were most grateful for their kind hospitality.

Our final WA tour was a day trip down the fabulous Ord River from Lake Argyle (which holds '27 Sydney harbours' of water, we're told) – which, while not in karst, came a close second to Tunnel Creek in our minds, as the top highlight of our time away. The environment, surrounds, bird life, etc. of the Ord is just stunning.

We thus said goodbye to Tracey and Neil, for now, and spent a day driving back to Darwin (about 7 hours...) for a few more days before flying home. It was an amazing trip, although driving over 4,500 kilometres in 10 days is not something I'd like to do regularly....a necessity in this case.

Many thanks to all those who looked after us and guided us, it was most appreciated!



An interesting interpretive sign at Windjana – showing the Napier Range, and also the Nimbing Range north of Kununurra (which are both Devonian and considered to be of the same origin). Nimbing appears to have received less speleological investigation than the Napier karst.

REFERENCES

- Davey, Adrian (1980) 'The Kimberley Karst' from 'The Conservation of the West Kimberley Karst'. *The Western Caver* Volume 20 Number 2 pp 35-48. See: <http://wasg.iinet.net.au/kimberley.html>
- Anderson, Jay and Ross (2005). 'Karst in the West Kimberley – and Overview and Update'. Proceedings of the 25th ASF Conference. pp 64-69.