CEGSA NEWS

Newsletter of the Cave Exploration Group (South Australia) Inc.

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CAVE EXPLORATION GROUP (SOUTH AUSTRALIA) Inc.

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Cover Photograph: Beautiful multi-colour decoration from 5K91

Photo: Matt Smith

December 2022

Contents

Presidents Spot

Hi there everyone! At last Covid seems to have retreated after a long two years and we can all get out and about to our favourite caving sites again. There has been some excellent exploration and recording activity on Kangaroo Island between the three SA caving groups and word is that National Parks is finally getting around to plans for replacing the Kelly Hill Office with a new building of some kind. Those fires were a tragedy in many senses, one of which was the destruction of all the maps in the Kelly Hill map cabinet and the historical booklets in storage and on display. At least CEGSA can help replace these from our detailed records and first amongst them can be a full size copy of the CEGSA Kelly Hill Cave system map which was compiled by early CEGSA luminaries including two of our current Life Members Bob Sexton and Noel Mollett. That map is very detailed and is all the more remarkable as it was almost the first cave map produced by CEGSA at a time when our early members were still working out how to survey caves and present their various internal features by symbols and the representing of cross sections etc. There have been so many maps produced in the 65 years or so since that we forget that the concept of cave mapping and the standards of presentation had to be worked out by cavers as Australian speleology slowly began to develop with the expanding of leisure time as economies recovered after World War Two.

Speaking of earlier days in CEGSA, this is the first CEGSA News for many years which has not had Athol Jackson as Editor and chief rounder-upperer of articles. I have enjoyed working with Athol over the many years in providing articles and Prez Spots etc (usually with less than 24 hours to the deadline – exactly like this one I am now typing!) and seeing the completed version issued to CEGSA members. Athol, you have always been very thorough and consistently producing a high-quality CEGSA News which has been so much appreciated for so long. I'm not sure how many people realise that behind all that, you have had to manage all sorts of photographs and diagrams of a bewildering range of quality which needed to be scanned, re-sized or edited for colour intensity etc etc to make the final version as presentable as possible in each issue. All your great work in that area needs to be fully acknowledged and appreciated! We are sorry that you finally needed to take a rest from all that dedicated effort but are glad that you can sit back and hopefully enjoy our efforts to emulate your work and great contribution – you have set a high standard which the CEGSA Committee is committed to maintain! Thank you sincerely from all of us for your outstanding and prolonged contribution of so many CEGSA News's which have acted as a link between all our members.

Finally there is a HOST of Xmas reading by our very own Grant Gartrell in the latest ACKMA Journal #129 December 2022 wherein Grant expounds on the meteorological theories of CEGSA cave digging based on airflow detection from pages 7-19 (yes, I kid you not – pages 7-19!!). Grant gave a brilliantly entertaining and witty presentation of these topics at a major conference at Naracoorte some years ago and I have been entreating him to repeat it. Now we have the literary version which is even better as it is preserved for history! Good on you Grant for penning this tome – I will read through it between Xmas and New Year as there is plenty to absorb – enough for the next issue of CEGSA News!

All the very best to every CEGSA member for Christmas and New Year and here's to more and better caving in 2023 and a beaut successful Nullarbor Conference at Easter.

Cheers to all from Ian.

Annual General Meeting

The 2023 AGM will be held at Pam and Tim Payne's residence at 143 Tyeka Drive, ONE TREE HILL SA on Saturday the 11th February. The meeting will commence at 7:30 p.m. for the presentation of reports and election of officers and will be preceded by a BBQ and/or pizza (Pizza dough and oven provided) commencing at 6:00 p.m. BYO food and drinks. Please note that all nominations for officers must be submitted to the secretary prior to the commencement of the meeting.

Could all office bearers have their submissions for the Annual Report to the editor by the 29th January.

Volcanic Cave decorations from Carmichael's Cave
Photo: Matt Smith

Newsletter Material

Material for CEGSA News is welcome at any time, however the deadline for Volume 68 Number 1 (Issue 266) should reach the Editor by Wednesday the **10th of May 2023**. Material not meeting this deadline may be retained for possible use in a following issue.

Due to the size of this issue, the need for an annual report and a conference to organise, the editor will be deferring the usual February issue of CEGSA News

The preferred method of submitting content is via email to hellboy1975@gmail.com

General guidelines for content submission:

- Word files *.doc(x), *.pdf or even *.txt files are all great options.
- Don't spend too much time on formatting content - styles other than bold, italics and underlines are likely to be altered by the editor.
- Photos are preferring in colour, and as a separate attachment rather than embedded in a document. Please include a note on where it should be inserted. Most common image formats are accepted including *.jpg and *.png. Feel free to send them in the highest quality you have.

Approved CEGSA Trip Leaders

Name	Trip Leader Levels
Minky Cockshell	Horizontal and Laddering
Mark Corbett	Horizontal and Laddering
Stan Flavel	Horizontal and Laddering
Grant Gartrell	Horizontal
Richard Harris	Horizontal
Peter Kraehenbuehl	Horizontal, Laddering and Vertical
Ian Lewis	Horizontal and Laddering
Steve Milner	Horizontal, Laddering and Vertical
Pam Payne	Horizontal
Tim Payne	Horizontal, Laddering and Vertical
Damien Pilkington	Horizontal
Graham Pilkington	Horizontal and Laddering
Mark Sefton	Horizontal and Laddering
Heather Siebert	Horizontal and Laddering
Neville Skinner	Horizontal, Laddering and Vertical
Matt Smith	Horizontal and Laddering
Andrew Stempel	Horizontal, Laddering and Vertical
Tom Szabo	Horizontal and Laddering
Michael Woodward	Horizontal, Laddering and Vertical

All the above named are also CEGSA Trip Coordinators.

- Members may query the classification of any Trip Leader at any time with the Committee.
- It is a requirement that each trip be organised by an approved Trip Coordinator to be classed as an official CEGSA trip.
- It’s also a requirement that all trips be led by an approved Trip Leader at the appropriate skill level for the cave being entered.
- Trip Leaders ensure that every caving party has a member with current First Aid training.

Quartermasters Note

High usage equipment will now be stored at the quartermaster’s residence. Please make arrangements with the QM well in advance of required date for equipment. The QM can be contacted at the telephone numbers on the previous page.

Trip Reports

January 20th 2022: Beginners Trip 5Y1 Corra Lynn Cave

Participants: Damien Pilkington, Rory, Isiah, Benjamin (first trip), Jeremiah (first trip), Graham, Ellie and Jamie.

Started as a warm and muggy day meeting at Curramulka bowling green at 10ish. After gearing up we entered the cave. Upon entry we noticed that a lot of the flooding rain had made its way into the cave, washing a lot of the ground. This wash-away has made the entrance slightly hazardous and washed a lot of material away exposing rocks and bones.

As this was a beginners trip we made our way to Grand Central and began exploring looking for challenges for the new cavers.

When we went through the first tight squeeze for us one of the party felt unwell so we went out of the cave and saw to his needs. Once we determined he was OK we went back into the cave. We spent about 5 hrs underground visiting Bushwalkers Chamber, Rope Crevasse, Crystal Maze and Crystal Chamber before making our way out.

It was a great days' caving and a good experience for everyone not sick. We did find rubbish left in the cave by previous visitors which wasn't good.

Damien Pilkington

Misc. Scout pushing through Wedding Cake Squeeze

April 9th 2022: Rescue Training, 5M18 Punyelroo Cave

On April 9th 2022, members of South Australia's three caving clubs, FUSSI, CEGSA, and the Scout Caving Group SA, got together for some cave rescue training in Punyelroo Cave on the Murray River. The day included training in cave communications and stretcher handling, and useful discussions about rescue logistics and how a rescue might be run at this particular cave.

My role involved training people up on how to use the CaveLink radios, which included setting up both an outside unit and an underground unit, and then moving the underground unit deeper into the cave, and problem-solving all the complications that arose from that. The Michie phones were also on hand, and we ran those in parallel, which provided an excellent opportunity to demonstrate the different uses and limitations of both systems.

In addition to the work with the radios, some stretcher training was carried out, which involved packaging up a patient and transporting them through the cave, under instruction by CEGSA and SES member Matt Warne. A SKED stretcher was used, which was loaned to us from the SES. This task required us to navigate rocky terrain and tight corners, while looking after the patient's welfare and some medical needs, such as spinal support.

In short, I think everyone learned a lot, and a great day was had by all.

Edwina Virgo

Left: Three different radio systems – CaveLink (black crate in background), Michie phone (yellow device in foreground) and UHF/portable radio (black device at bottom right).

Right: Setting up the SKED rescue stretcher with cavers from FUSSI, CEGSA, and the Scout Caving Group SA.

Photos courtesy of the South Australian Speleological Council (Cave Rescue Team).

July 28th - 31st 2022: Inter-agency Cave Search and Rescue Exercise at Naracoorte

On the weekend of 28-31st July 2022, members of CEGSA, FUSSI, Scout Caving Group and VSA descended upon Naracoorte for a cave search and rescue exercise. Friday started with the cavers upskilling in communications gear: we set up and practised using the Michie Phones, Cave Link and UHF radios. We practised using various stretchers, and examined some techniques to set up traverses for stretchers. Unrelated to the SAREX we also helped install the second gate for Beekeepers Cave.

Left: Unravelling the mysteries of the CaveLink Right: Petzl NEST in action at Wirreanda
Photos: Heather Siebert

Members from SES, SAAS, SAPOL, CFS and National Parks attended Wirreanda with the cavers for a briefing lead by Matt Warne (SCG and SES) and Thomas Shortt (Site Manager, Naracoorte and Tantanoola Caves), focusing on preserving the cave whilst maintaining a realistic rescue scenario. Despite Covid spoiling some plans, 25 people managed to attend the event. We then moved to Blackberry Cave where a situation report was given from the National Parks guides who reported having a member of the public on an adventure caving trip who sustained a leg injury and was unable to get themselves out of the cave.

The first team entered the cave and located the casualty and began treatment. Next was the communications team who set up the Michie phone and Cave Link for practice in the cave environment. Interestingly we found that the UHF radios worked well from the surface to the chamber before the letterbox squeeze (for those familiar with Blackberry Cave!). The casualty was packaged into a sked (roll up stretcher used by SES) and extricated in a team effort, pausing intermittently to check the casualty and simulate pain relief administration as well as update the surface team via our many forms of radio communications!

The rescue team assemble at Blackberry Cave
Photo: Heather Siebert

After about 2.5hrs the casualty was at the surface and the cave was cleared of equipment and cavers. In future events we would consider switching up roles and re-setting the exercise to get more people to have different experiences. This is also a fairly simple cave and not remotely located geographically or far from emergency services but ideal for an easy SAREX.

We had a group debrief and BBQ lunch cooked by Matt Smith and Rick (one of the Ambos). There was consensus that a real rescue would take much longer including the time to alert emergency services, assemble equipment and teams and get to the site. The afternoon was spent doing an equipment showcase during which each group demonstrated their gear which was very useful for everyone to see the specialist cave rescue stretcher, the SAAS VacMat and the various SES gear.

Sunday was the day for vertical rescue practice at VDC Cave, this time there was a brief in-cave search scenario and we rescued a faceless dummy this time! The solution tube entrance was rigged by the SES team which is quite extensive compared to regular caving set ups! This was great to see how the rescue professionals do it and the two SAAS people who attended were very grateful to be able to practice their prussik skills in a real life scenario instead of a shed.

Packaging the casualty into a sked
Photo: Heather Siebert

After the event we sent out a survey for feedback and 100% of respondents said they would attend a cave SAREX in the future and thought it was a valuable exercise. Our aim is to continue to foster the inter-agency relationships as well as hold annual exercises and continue to hold training events for cavers in various equipment and cave scenarios.

If you are interested in becoming involved in future cave search and rescue activities, please get in contact with us at sasc-rescue@googlegroups.com

Heather Siebert

Top: Navigating the tight confines of Blackberry Cave Photo: Sil Ianello
Bottom: The final haul out of the entrance doline Photo: Matt Smith

Left: SES Team members extracting a dummy from VDC Cave using the Petzl Nest
Photos: Matt Smith

Right: the stretcher hauling team moving the casualty to the bottom of the entrance in VDC Cave
Photos: Sil Ianello

August 30th 2022: Mercedes College Trip 5Y1 Corra Lynn Cave

Participants:

CEGSA: Graham Pilkington, Damien Pilkington, Michael Woodward, Neville Skinner, Isiah Pilkington, Mark Sellars plus Mercedes Collage teachers Steve Wasilewski and Lachlan Jones.

FUSSI: David Mansueto, Lucy Stokes

26 Mercedes Collage year-10 students as 3-month Introductory CEGSA members.

Was a fantastic day, with all the extra helpers we were able to split into 5 small groups, making it a lot faster in the cave although we did keep coming across other groups. As all the students were beginners we did come across some nervous nellies but everyone grew through the experience and were a lot more confident by the end of the day.

A few things to consider for future trips:

- Due to track damage it took longer to get to the cave entrance (walking) which reduced the time underground.
- Need to take up a whipper-snipper to clear weeds from the path to the cave. Weeds made it slippery.

Otherwise all great day enjoyed by all.

Damien Pilkington

August 8th 2022: A18

The Adelaide Advertiser published an article on 10 June 2021 titled "Concerns hold up quarry plan". In the article reference is made to a cave known to rock climbers as "Bachelor Pad' Concerns were expressed that the cave which may contain aboriginal artwork was threatened by proposed quarry expansion.

I raised this issue with CEGSA at the time but have heard nothing further. A further article was published in the Sunday Mail on 29 May 2022, titled "Cave's fate hangs on the edge". This article claimed the cave would be destroyed by the proposed quarry expansion. Still no response from CEGSA.

Through the vast resources of Dr Google I was able to obtain a location for Bachelors Pad. In August I had to visit Adelaide so on August 8th I visited the cave. It is about 30-40 m above the road and the entrance is about 9m wide x 12m high and leads to a chamber 20m diameter with the floor sloping down to rear of the cave. The area is used extensively by rock climbers. There are a number of heavy foam mats on the floor of the cave. The cave is in quartzite. The site was familiar to a cave I document earlier and on returning home was able to confirm that it was indeed cave A18.

The literature suggests the cave was discovered by climbers Stuart Williams and Simon Wilson in 1995. The cave is visible from the Norton Summit Road. I first visited and documented the cave in June 1974. At that time the cave was pristine

and the vegetation around the cave less dense. At that time water was seeping from the rear of the cave at a rate of 1 drop every 18 seconds.

Climbers I spoke to in August did not know of any other cave in the climbing area. Given the extensive use by climbers I would suspect if there were any aboriginal painting they may well have been compromised by now.

If any one is keen to document more caves there also appears to be caves on the northern side of Norton Summit Rd, in Morialta Conservation Park. They are in cliffs under the transmission lines. As far as I know no one from CEGSA has documented the caves on the walking track to falls.

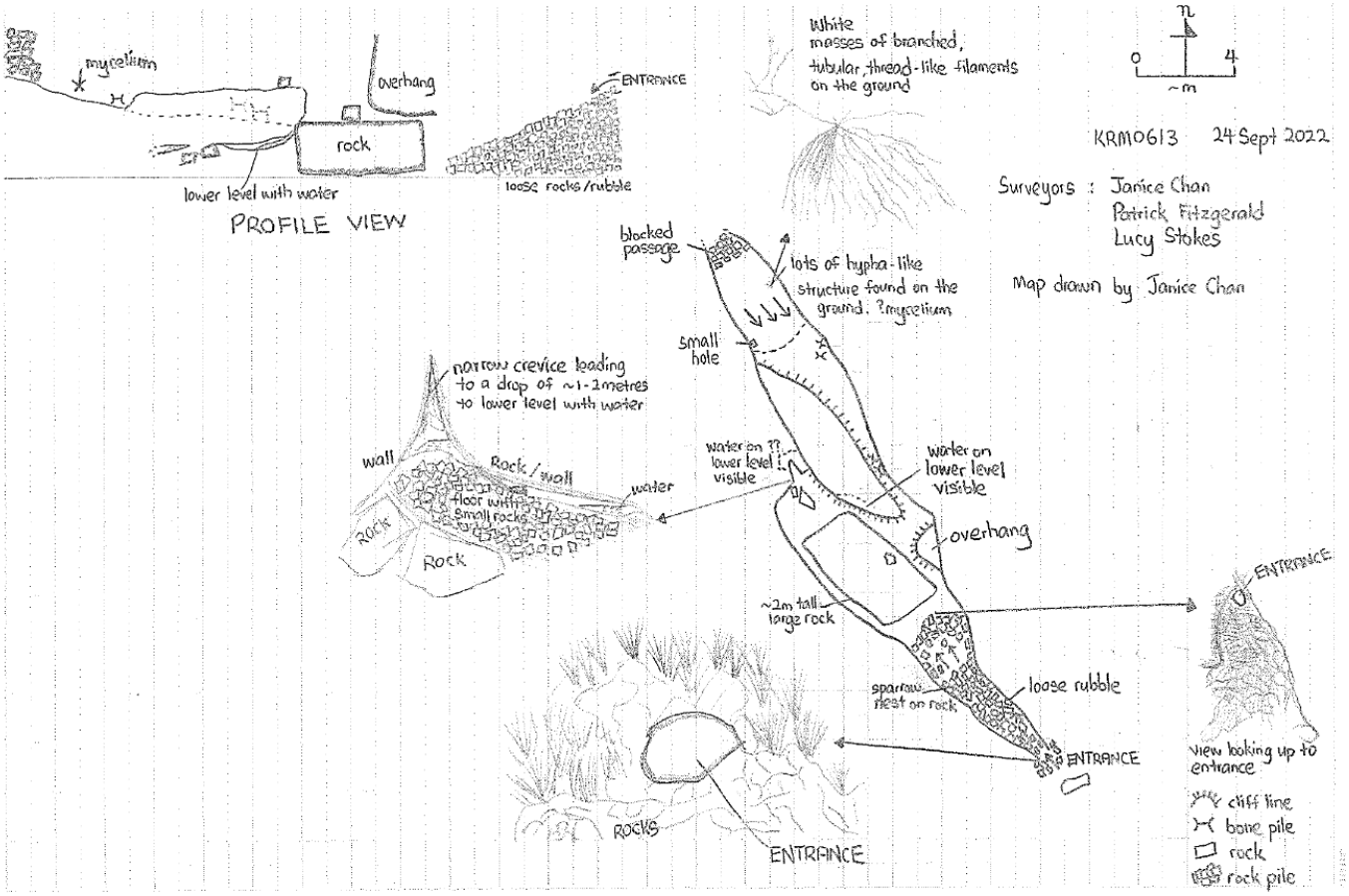
Kevin Mott

September 24th-25th 2022: Mount Gambier

Survey team: Patrick Fitzgerald, Janice Chan, Lucy Stokes (FUSSI)

A short weekend survey trip has taken place at Mount Gambier with the intention of mapping KRM0613, L0405, L0403 on the 24th and 25th of September 2022. All cave locations were located at private property, currently a dairy farm. Finalised maps have been handed over to CEGSA for safekeeping.

Roughly 26m of KRM 0613's passage was accessible. KRM0613's entrance was located in close proximity of the fence and the dirt road on the right, with Mt Shank in sight if you were facing the cave entrance. The entrance was approximately 1 metre wide with loose rubble around the entrance leading downhill into the cave. Once inside the cave, you would be making your way down a slope filled with unstable loose rocks before stopping in front of a huge rock approximately 5m x 3m x 2m (L x W x H).

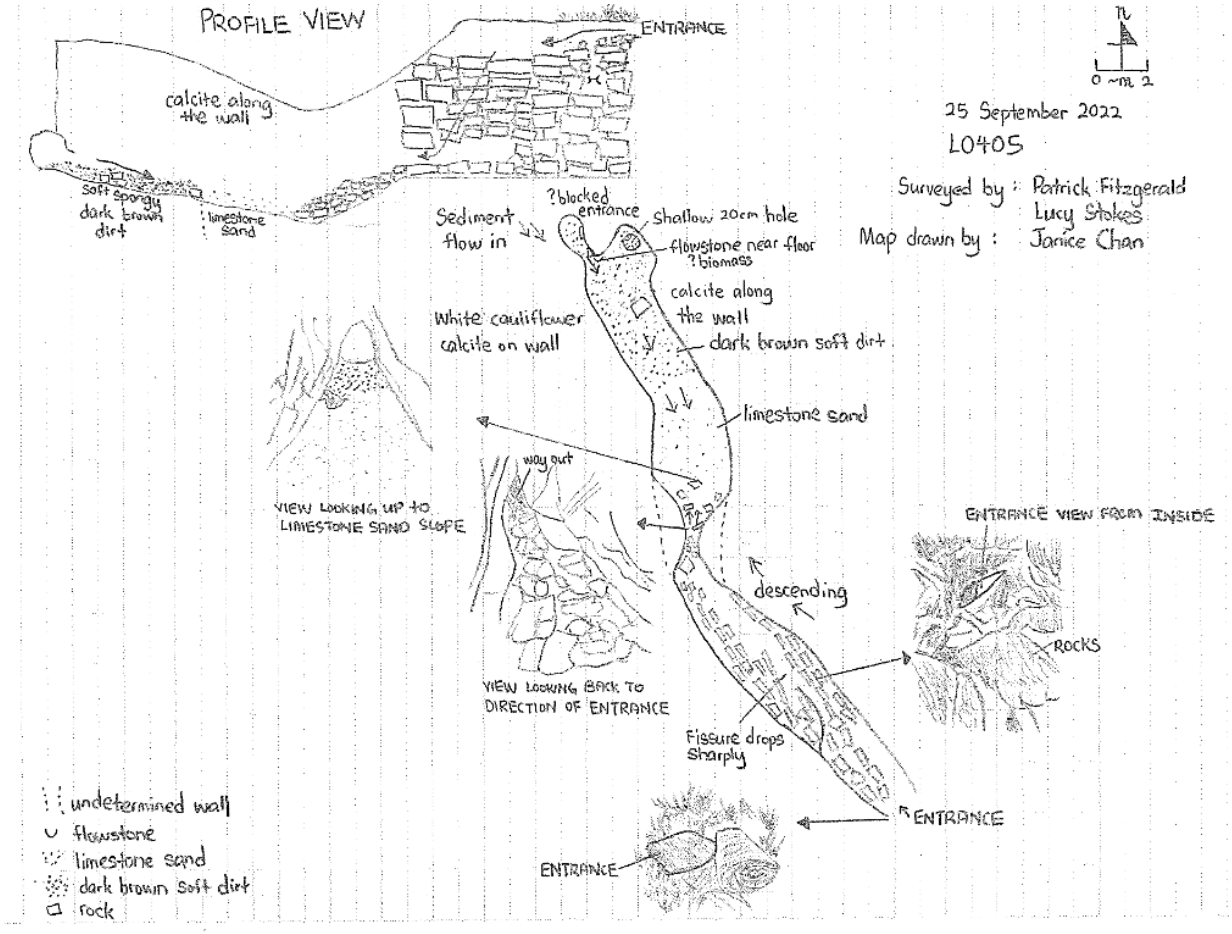


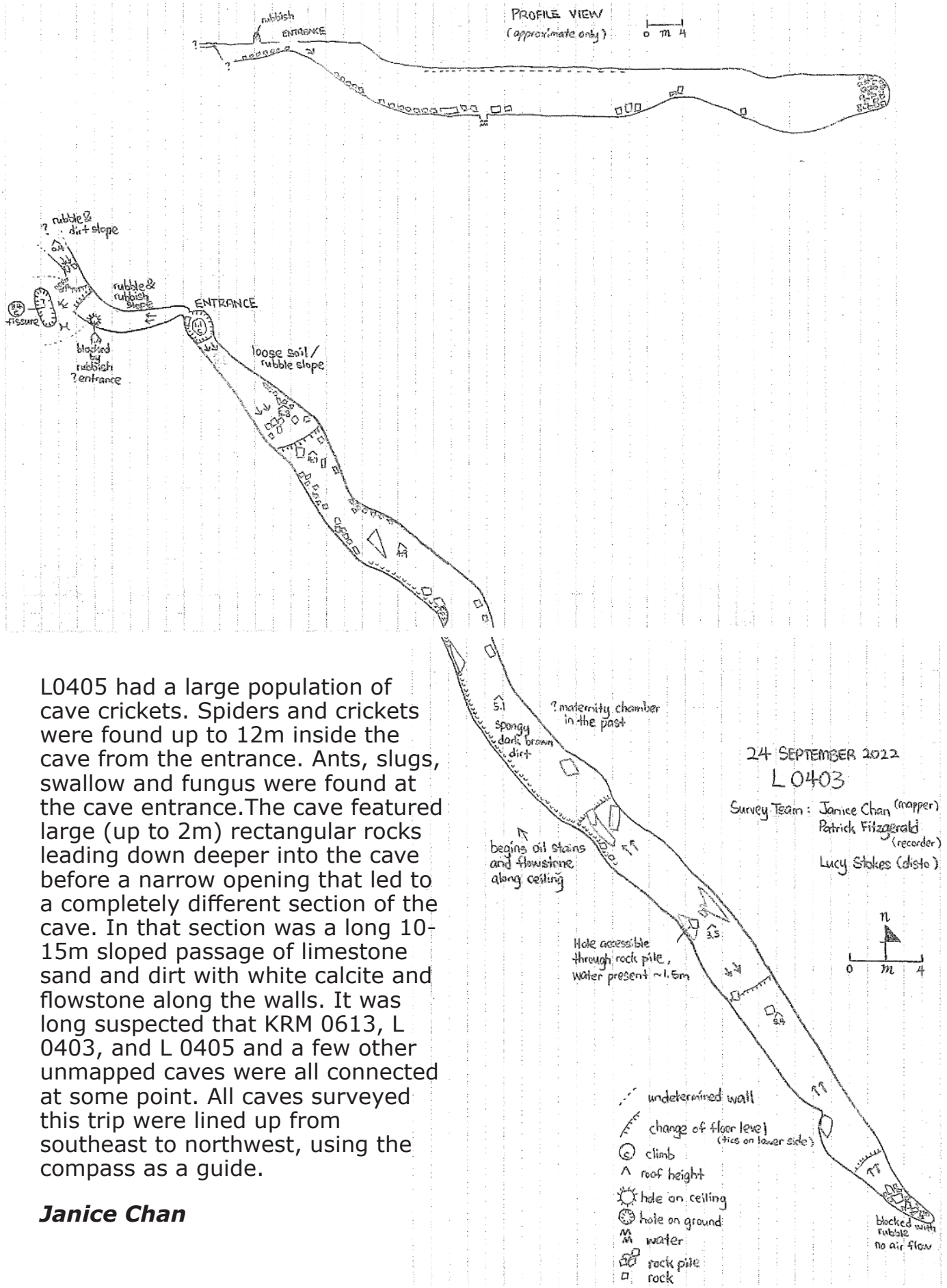
The cave featured lots of limestone and possible large rock collapses in the past, one could peer down to a lower level with visible water present at the bottom between the rock crevices. Water depth unable to be determined but might be roughly less than one metre deep.

The group found a swallow nest near the cave entrance, bone piles along the cave floors (most likely from fallen livestock), and white hair-like filaments growing along the ground beside the cave wall near the end of the cave passage. The cave passage eventually led to a premature end filled with rock piles.

L0403 (? Railway tunnel cave) was the longest available cave passage at time of survey, about 74m with possibility of more passage to be explored if rock piles were removed. Cave crickets were noted near the cave entrances. A large pile of dirt has fallen into the entrance on the ground, separating the southeast passage from the northwest passage which were easily navigable by climbing over the dirt pile. The southeast passage was long and spacious, with dark oil stains found along the very top of the ceiling of the cave. It was suspected that L 0403 might have been inhabited by bats once upon a time. The walls were littered with graffiti names, most of them crafted in the past decade. The passage came to a premature end with rock piles similar to KRM 0613, it was believed the passage would have led into the blocked end of KRM 0613.

The northwest passage was littered with farm equipment waste such as metal sheets, rusted wire bundles, old bottles and cans, radiator, etc. Avens and blocked solution tubes filled with rubbish were notable in the cave. Unlike the southeast passage, this passage was narrow and small due to the rubbish and dirt that was piled into the cave. Past the rubble and rubbish was a dusty white passage into a fissure leading further down the cave (~3.4m). The group decided not to explore the bottom of the fissure due to equipment limitation and individual comfort levels.





L0405 had a large population of cave crickets. Spiders and crickets were found up to 12m inside the cave from the entrance. Ants, slugs, swallow and fungus were found at the cave entrance.The cave featured large (up to 2m) rectangular rocks leading down deeper into the cave before a narrow opening that led to a completely different section of the cave. In that section was a long 10-15m sloped passage of limestone sand and dirt with white calcite and flowstone along the walls. It was long suspected that KRM 0613, L 0403, and L 0405 and a few other unmapped caves were all connected at some point. All caves surveyed this trip were lined up from southeast to northwest, using the compass as a guide.

Janice Chan

December 10th 2022: Delamere Cave Dig

On Saturday 10 December 2022 Grant and I ventured to the cave site to see if the water level had dropped enough to be able to get down into the cave and do some more work. *Neville Skinner also came on that trip, arriving an hour or two later and being smart enough not to change into his mud-digging gear. Neville has dug a great deal of mud in the past and will doubtless do so again in the future, so has earned the right to be afforded the luxury of remaining mud-free on that occasion.*

The week previously the dam was half full of water and not accessible, on this trip the dam had completely drained and there was just a small flow of water down the creek and a small pondage in the bottom. A quick dam stopped the flow for a while and the rest of the water drained down into the cave to expose about a metre of mud and dozens of yabbies who were not happy when I hopped in and started moving some mud around.

Transferred a lot of yabbies out to the dam (*in a manner befitting the oldest known residents of the cave, they were not cooked and eaten, but were treated with a high degree of respect, and for their own safety were relocated humanely out of the digging zone to the steadily replenished pool in the doline, in which they could choose to burrow out their days, or more likely eventually return to the cave, where one day we may meet them again*) and then started to try and move some of the mud to see if it was possible to do a bit of digging however it was soon found that the mud was too thick to mount a proper attempt but it was good to see that there was not too much debris in the cave and there water could be heard gurgling deeper into the cave.

Next time hopefully the mud will be dry and we can do a proper dig.

Ben Coventry (SCG)

(with additions from Grant Gartrell)

December 17th 2022: Punyelroo & Gloop Cave in Flood

With record floods hitting the South Australian section of the Murray River, a small group of adventurous Scout Caving Group leaders (including one CEGSA member) decided it would be a good idea to check the conditions of the caves during this potentially once in a generation event. The author had visited these caves during the last flood in 2016, at which point the Lock 1 Downstream was approximated 4.5m mAHD. At this time 5M1 Punyelroo Cave was much the same as normal, however 5M18 River Road Cave (otherwise known as "Gloop") featured quite a significant amount of water within.

On the date we visited the river level was recorded at 6.5 mAHD - significantly higher than than in 2016. The impact of this was much more noticeable on the upstream cave (5M18) where the water level we observed suggested that the cave would, if not entirely inundated, certainly high enough to prevent entry. Fig 1 shows the water level reaching the water pump sheds - in normal summer conditions there is ~5 of climbing down to reach the base of the cliff.

Fig 1. Usually perched high on the cliffs, the pumping sheds are now waterfront property! Photo: Matt Smith

We spent a little time debating whether to get into the rapidly flowing water, however with discretion being the better part of valour, we decided this was unnecessary as in all likelihood this cave is, for the time being, accessible to divers only!

5M1 Punyelroo also proved to be quite interesting - located in a wider section of the Murray near Swan Reach, the river level was high enough to enforce a swim for the

participants, but not so high that the cave was significantly impacted. Entrance to the cave is typically gained by a 300m walk along a path at the base of the cliff. This time around most of this was swimming, and to increase the "fun", this swim was through 20cm of bark chip mulch and duck weed (Fig 2).

Fig 2. Type 2 fun as the Scout Caving Group throw caution to the wind and risk countless river diseases to bring you this report! Photo: Ben Coventry

Inside the cave it was noted that generally soil seemed a little damper than usual, especially as we got closer to the bore, however for the most part the cave was as dusty and humid as normal. The lake however was quite a bit higher, with the lower chamber inaccessible. The water level has risen so that the small corkscrew-like passage to the chamber is filled, leaving only small lake visible in the preceding room.

In summary, it was a fun day and no one appears to have contracted Japanese Encephalitis (yet). It will be interesting to see what the condition of Gloop cave is when the waters recede, and I think is worthwhile a crew of cavers heading back there when the river levels drop below 5mAHD in 2023.

Matt Smith

References

https://riverdata.mdba.gov.au/lock-1-downstream

Past Trips from General Meeting Minutes

January 2022

- **Graham Pilkington**: Corra-Lynn trip with the Pilkington Clan on January 26, 2022 - Damien took the group into various sections of the cave including Bushwalkers Chamber and Crystal Maze.

- **Matt Smith**: A group of Scout Caving Group leaders visited a variety of sites in the South East, including Ewens Ponds, caves in the Mt Burr area and Cathedral & Brownsnake Caves at Naracoorte.

- **Steve Milner**: Yalata lands & eastern Nullarbor - collecting invertebrates with scientists. Targeted 16 sites of interest in the area - 46 different cave and karst features. Finds include a quite recent Bilby skeleton and a population of blind spiders - not a well documented species, so a great find.

- **Heather Siebert**: M18 Gloop Cave was visited by the Scout Caving Group in December. Despite river levels being approximately 1m higher than usual, the water level inside the cave wasn't noticeably higher.

February 2022

- **Grant Gartrell**: Grant, Frank Hankinson and Peter Hawkes visited an entrance to a potential cave in Delamere. They continued to remove rocks from this hole, where water sinks. The landowner is supportive of this project.

- **Neville Skinner**: Neville, Dan Dingwall and several FUSSI cavers spent several days in late January at the Eyre Peninsula where they visited Honeycomb Cave, Homestead Cave and several sea caves.

- **Steve Milner**: Steve investigated a small patch of limestone at the far western edge of South Australia. Several new features were found, including some very impressive sea caves.

- **Edwina Virgo**: Investigated several small caves in the Watiparinga Reserve (Eden Hills).

March 2022

- **Grant Gartrell**: more work has been undertaken to open an entrance to a potential cave at Delamere.

April 2022

- **Neville Skinner** described a trip led by Grant Gartrell to Delamere. The dig being undertaken there has broken through the muddy layer and reached clean rock pile through which the water sinks. The dig continues to look promising.

- **Matt Smith** reported on the recent search and rescue exercises at Morialta and then at Punyelroo cave. The exercises included stretcher setup and the use of Cave Link and Michie Phone communications.

- **Graham Pilkington** gave a detailed summary of a SUSS-led trip to the Nullarbor which he attended. They visited numerous caves including Thampanna

(now 13 km in length), Prostrate Pit (9 km), Skases Delight and Goat Cave in which a significant new extension was found. Exploration, track marking and surveying was conducted in many of these.

May 2022

- **Grant Gartrell** showed photos of the dig at Delamere. This stream entrance leads to epiphreatic development but more rock removal is still needed to make further progress.

- **Peter Kraehenbuehl** described a recent diving trip to the Nullarbor, visiting Tommy Graham and Weebubbie caves. Some underwater mapping was conducted and a deposit of charcoal was found at a depth of 12 m in the first sump of Tommy Graham Cave.

- **Matt Smith** gave a presentation, with photos, of progress at Kelly Hill on Kangaroo Island during the recent trip there. The program of physical tagging and georeferencing of entrances is virtually complete. The updated map of Phoenix Cave was also displayed and there are still several leads to be explored there.

June 2022

- **Grant Gartrell**: more digging at Delamere has been undertaken but the accumulation of mud during recent wet weather has been a problem.

- **Matt Smith**: The Scout Caving Group trip to Naracoorte at the end of May included a trip to Victoria Fossil Cave. They observed an unusually high number of cave crickets in Little Vic Cave.

- **Stan Flavell** visited the Gammon Ranges area in the northern Flinders Ranges over April and May. He investigated several areas and there are still more to look at here.

- **Graham Pilkington**: a Mercedes College trip was conducted on the 26th May to Corra-Lynn Cave. There were 12 students present, almost half of the original number were forced out by the flu or Covid. The small number made for an efficient trip with the group being divided into four separate teams.

- **Neville Skinner** and **Pam Payne** described their recent trip to Kangaroo Island. They found four sea caves at West Bay and mapped two of them. Pam described a 290 m long tufa cascade following a creek bed that had been uncovered by the recent fires. On Sunday they visited the tourist cave which is being rewired and took photos there.

July 2022

- **Scout Caving Group** visited Naracoorte in late June. Trip included visits to S102 and VDC Caves.

- **Grant Gartrell, Mark Corbett, Ben Coventry** (SCG) and **Peter Hawkes** visited the cave near Delamere, however rains the day before resulted in a very wet and somewhat unproductive trip.

August 2022

- **Neville Skinner**: The multi-agency search and rescue exercise held three weeks ago at Naracoorte was extremely successful. It was attended by 22 people. A horizontal cave rescue exercise was conducted in Blackberry Cave on the Saturday and a single-pitch rescue exercise was conducted in VDC cave on the Sunday.

- **Mark Sefton** described the activities of the Annual Bullita expedition which was also attended by CEGSA members Graham Pilkington and Andrew Stempel. Surveying and exploration was conducted in several caves and the total length of cave passages in the park is now over 320 km. Afterwards, Mark, Graham and Andrew joined a SUSS-run trip in the Kimberly where several new caves were found and mapped.

- **Matt Smith** reported that the survey course led by Phil Maynard of SUSS at Naracoorte was very successful and CEGSA members are keen to carry out their newly developed skills. The survey training was run mostly in Wet Cave

- **Neville Skinner** attended a FUSSI-led trip to Naracoorte to practice surveying skills.

- **Mark Corbett** ran a Scout Caving Group to Corra Lynn on the weekend of 13/14th August.

September 2022

- **Grant Gartrell** visited his 'dig' at Delamere but the recent wet weather had completely flooded the cave.

- **Ken Smith** described a diving trip to Little Blue Lake Cave. Visibility was excellent and the absence of leads in the cave was confirmed. On another trip, Ken also dived through the recently established connection between Tank Cave and Fossil Cave.

- **Matt Smith** reported a recent SCG trip to Naracoorte where participants visited several small caves.

- **Heather Siebert** described a trip to Gloop Cave on the Murray River. There was plenty of water in the caves.

- **Graham Pilkington** outlined a recent trip to Corra Lynn for 26 Mercedes College students.

October 2022

- **Heather Siebert** reported the most recent visit to Grant Gartrell's his 'dig' at Delamere but the entrance is still flooded as a result of the continuing wet weather.

- **Matt Smith** described the recent Cave Survey Expedition to Kelly Hill Caves from the 15th to the 23rd of October. Surveyors from around Australia joined the group and 18 cavers took part. The group split up into several teams each day and around fifty small caves, were surveyed. These encompassed most of the recent finds made at Kelly Hill. Photos of the activities and some draft maps

were shown by Matt. Stan Flavell commented that during a recent visit to Kangaroo Island he noticed a number of entrances and dolines around Pelican Lagoon and wondered what was already known about these.

- **Janice Chan** reported that she and two others had surveyed three small caves at Mt Gambier. The entrances to these were all aligned in a row but there were no apparent connections between them. The caves were on private property.

Future Trips

December 27th 2022: Corra-Lynn Cave Family Day

Do you want to introduce your Children, Grand Children and Friends to caving.

Haven't been to Corra Lynn for a while or want to familiarise and remember parts of the cave

December 27th 2022

Meet 10am behind the Curramulka bowling club Cnr of Power line and Boundary roads Curramulka

The day is for you to bring along your family and friends to explore and enjoy caving activities. The trip is designed for beginners and children.

We can split up into groups at the cave.

For beginners and those who don't have enough equipment we recommend a headlamp, bike helmet, long sleeve shirts and pants. It is recommended to bring your own supplies water food ,etc.

,

Please rsvp to Damien Pilkington your intention to attend

damien@coolchem.com.au (preferred) or sms 0411 690 805

Normal caving membership rules apply for your respective club

32nd Conference - Secrets of the Nullarbor

Ticket purchasing open - so make sure to grab your early bird ticket!

https://asfconference2023.com/

Conference camping has been confirmed at the beautiful Shelley Beach caravan park; the dunes and beach there are gorgeous and the caravan park owners are friendly and helpful.

If you want to jump in and book a campsite, make sure to mention you are coming to the ASF caving conference and they will put you in our allocated area.

There are also a limited number of powered sites available.

Merchandise, photo competition and speaker abstracts will be up soon; keep a lookout for updates on our Facebook page and website.

We are really looking forward to seeing all of you in person next year and we'll keep you updated as planning progresses.

I know I said it already, but: Don't forget to get your early bird tickets!

Have a question?

Contact event organisers at registration@asfconference2023.com

Technical and Other Articles

Caves, Surveying and Kangaroo Island

What a year it has been on Kangaroo Island with cavers out in force with caulking guns, steel tags and taking on the ever-growing scrub to find cave entrances that, last year were easily walked to. Tagging was the priority for this year's work, and this, facilitated by the Partnership Grant of $80,000.00 allayed some of the costs. The physical tagging of caves on the western end of the island was a management request that aimed to provide them with a degree of certainty about what cave was what. Given that the project involves three types of cave identification, physical tagging, GPS locating and photo identification of the entrance areas, it can only be hoped that when the next bush-fire comes through, we do not have to repeat this whole exercise.

The tagging trips were then followed up with a 10-day survey trip in Oct with cavers coming over from NSW and Tassie for the event. Mind you, some had to run the gauntlet of flood waters in NSW and those from Tassie had to deal with weather that postponed their boat crossings.

All in all, sixteen people surveyed 60 caves, and there remains another hundred or so to go in the Kelly Hill section of the project alone. This means of course that the sea caves in the West Bay area, and the karst areas to be explored when the next lot of LIDAR is flown in December this year, will also be on the cave surveyor's radar. As with all new cave surveying processes names for caves, their passages were invented. So we now have, K159, Named, Cavern Measureless to Man. Surveyed by Lucy Stokes, Jim Crockett, Megan Pryke, well sort of. Megan Pryke states that:

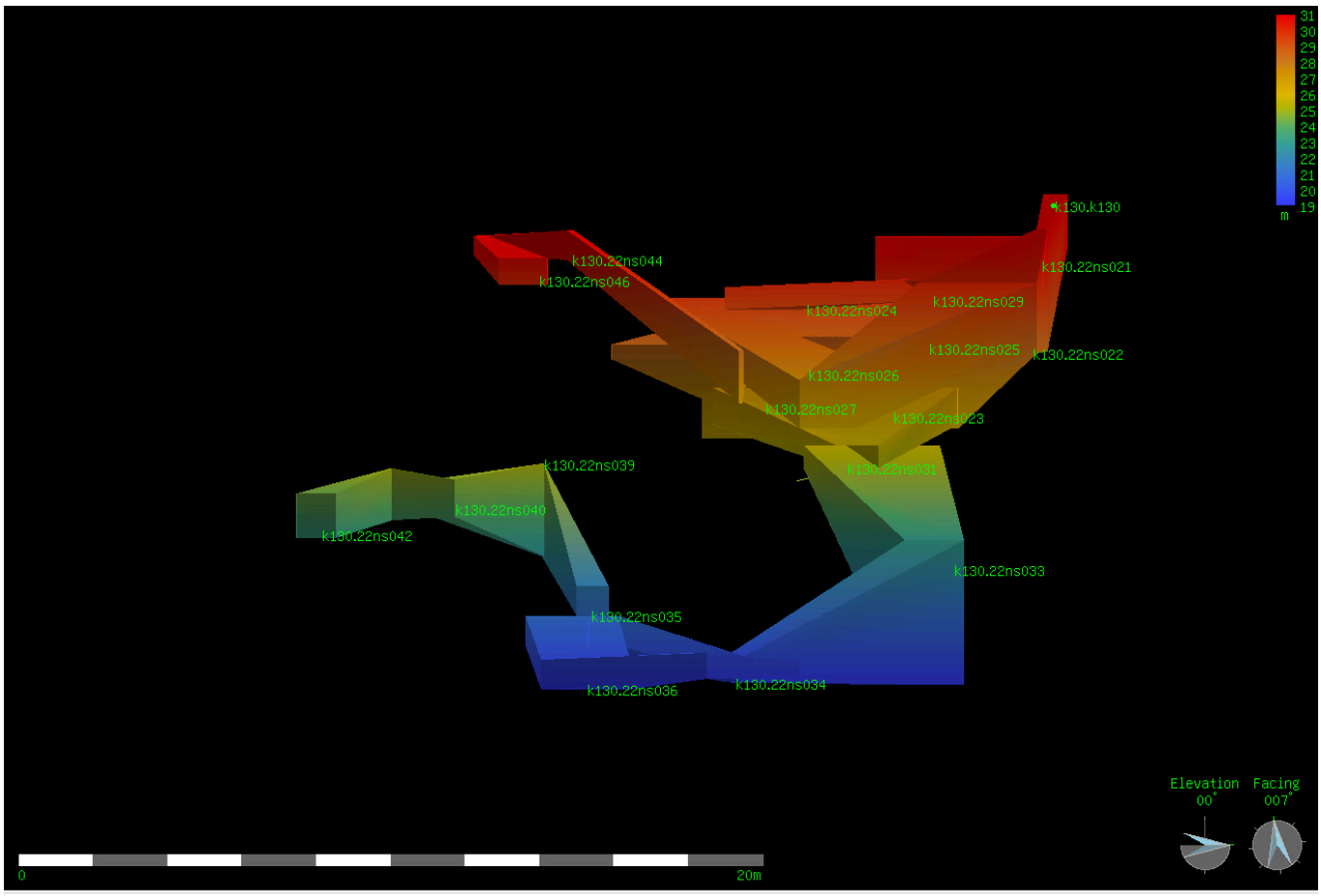
The description was:

> *two too-tight solution tubes, one was 30 cm in diameter or less, the other 40 cm and 1.6m deep'. Using a hand-line to help scramble down and up, I lowered myself into the bigger tube. By sitting down and finding space to survey, I found a chamber and a bit more cave. Lucy and Jim stayed on the surface. Thus Megan, a woman, solo surveyed the small cave. A bit later Jim got in nonetheless he did not help with the survey as the cave was pretty small, thus the cave was measured by a woman and remains "measureless to man."*

The project has eight components and we have been successful in starting, six of them: LIDAR, Cave Tagging, Cave Fauna Surveys, Cave Surveying and Surface verification, and Archaeology. We still have a lot of work to do on training people in the dark arts of ArcGis, Survex, and data wrangling. Thus, next year some of this will start in January so we can sit out the heat ensconced at the desk.

The new LIDAR flight will provide us with hours of fun examining images for any possible shadow that looks like it could be a hole in the ground. Then of course, we have to surface trog to verify that it really is a cave.

In terms of financial dealings, those who attended the 4 trips this year contributed close to 1500 hours of volunteer labour time. This was costed out at the Friends of Parks rate of $45.10/hr, which comes in at $67,650.00. If we were to cost out the cave surveying time at commercial rates and get paid for that, then we could all afford overseas holidays whenever we want!



Elevation profile of 5K130 - entrance is the yellow dot at the top right of the diagram. Survex data entered and processed by Heiko Maurer

The last two years of work has supplied enough material to start on the interpretive trail's App, which aims to promote the caves, karst and cultural heritage of the western end of KI. Finding a major Tufa flow and springs along some of the coastline, has begun, for example, to give some indication of what the hydrology is doing. This coupled with the cave surveys, which are beginning to show the depth of the cave systems, is helping to understand the area's geomorphology. The work of Keryn Walsh, in examining the wallaby skin trade that supported many of the islanders on the western end of the Island, from the early 1800s to the 1960s is adding yet another layer to the heritage story of this end of the island.

Drone photograph of the Western Kangaroo Island tufa flow. Photo courtesy of David Gillieson

Exciting times lay ahead, and my thanks go to all those who have so generously given their time and dedication to this project. If you wish to be involved, then please contact me. You will be most welcome.

Clare Buswell

Nullarbor hydrogen development: Summary of the issues covered 2022

The ASF and CEGSA were approached in March by a company known as Terra Rosa Consulting who wished for information concerning the caves of the Nullarbor. They were undertaking a cultural heritage study. Ann-Marie Meredith followed up, a letter was sent but no further requests from Terra Rosa Consulting have been forthcoming.

The request by Terra Rosa Consulting facilitated a discussion on how much information would we be prepared to hand over and the monetary value of this data. That is, data held by individuals of the ASF, Karst Index Database and in club records. A back of the envelope calculation came to about $10 to $15 million.

It was further discussed that any information and or dealings that we have with consultants, should be addressed in a formalised, legal fashion. For example, we could offer to share 1sq km of data, without location information, with an estimation of the cost involved to obtain it. We then outline that the rest will cost considerably, per square kilometre. The aim here is to get fair value, security of location information, copyright, and ongoing land access to continue the work. We will have to address the issues of confidentiality agreements.

This formal approach stems from the fact that consultants seem to expect data to be handed over freely. Such formal agreements would also cover us in the event that an alternative native title group or faction accuses the entity of handing over 'sensitive' material without appropriate authority.

Strategies

National and World Heritage listings

It was decided to put together the documentation for a new application to list the Nullarbor on the National Heritage Register and then work on a World Heritage listing application. Members of both ASF and ACKMA have been approached to start on this. This work coordinated by Sue White involves David Gillieson, Jon Woodhead, Nick White and others who have been involved with these listings before. The zoom session with Garth Humphries and representatives from ICE on Monday 21 November, has given us a timeline to work towards. Note: each country is allowed one World Heritage nomination per year.

Media

There is a need to publicise the work that cavers do, as we need to convince a wide section of the public of the value of Australia's caves so we can garner its support. It was decided that a short 5-minute film should be made showing the value of the Nullarbor Caves juxtaposed with the damage that will occur if this development goes ahead. The film making will be coordinated by: Jim Crockett, Sil Ianello, Alan Pryke, Alan Green and scriptwriter, Michael Burge. The film will have several talking heads, such as Matej Lipjar, Gavin Prideaux, Terry Reardon, Liz Reid, Jess Marsh, and others talking about their expertise in relation to the Nullarbor Caves. The intention is to have this film completed by the April ASF conference.

On Monday 26th September 2022, the Kalgoorlie Miner published an article on the Nullarbor development. ($750,000 allocated for early planning study of $70 billion proposed green hydrogen project at Eucla). Three people, Clare Buswell, Dennis Marsh, Norm Poulter wrote letters to the editor outlining our concern about some of the issues raised. Ann-Marie Meredith then approached the editor directly with the idea of running a feature on the issue. On the 29th Oct, the Kalgoorlie Miner ran the feature, Energy Plan threat to Fragile Caves. This feature contained information supplied by Ann-Marie, Gavin Prideaux, Terry Reardon with photos by Alan Pryke. The impact was such that the Bunbury Regional Channel 7 TV Station picked up the story. They requested an interview directly with the ASF.

An interview was recorded with Ian Eddison, as Sarah Gilbert was not available due to work commitments. Photographic material Provided by M. Lipjar, R. Anderson, S. Milner and Alan Pryke was forwarded to the journalist involved. But to our knowledge, this has not gone to air.

Economic Modelling

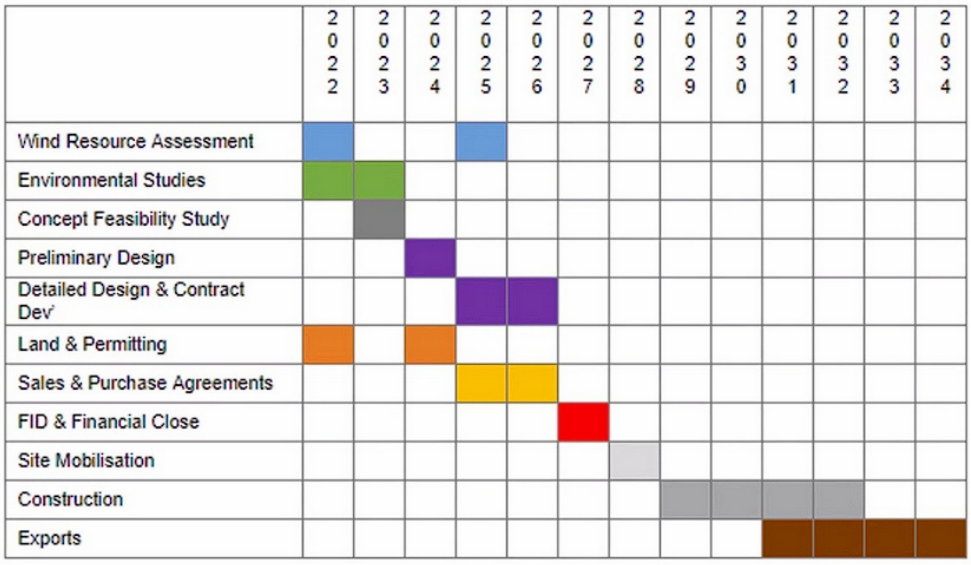
This needs to be done, perhaps via links with existing conservation organisations (e.g., CCWA) that may have this skill-set up and running.

We also need to get a handle on Inter Continental Energy, who they are, where are they based, who finances them, directors, assets etc. Basically we need to know who we are dealing with.

The Projects Construction Protocols

Whilst not yet decided by ICE, we now have an idea of what to expect and its time frames.

Aspirational Project Timeline



Construction of the full ~70GW project is intended to take between 15-20 years,

Footings for the wind turbines will be precast, so no concrete trucks. However, they have no idea yet as to where aggregate will be sourced. Two construction villages will form bases for the work force: Madura and Eucla. Construction will be set back from the escarpment by 15km. Desal plant, based on the coast near Eucla, will release its brine into the sea. Note, however, that there could be an issue here, with sea grasses that are known to grow from the remains of the Eucla jetty, then west to at least the beach south of Mundrabilla Station. (Norm Poulter, pers com)

There will be electrolysis plants situated within each of the solar farms. There appears to be around 32 solar farms. Piping of water from the desal plant to each electrolysis plant will mean lots of piping. All cabling will be overhead. This will destroy the visual amenity of the Nullarbor.

Eighty five percent of the energy produced will be used to produce hydrogen and ammonia within the project itself.

Cross Organisational Information Sharing

I have also been in contact with the Conservation Council of Western Australia (CCWA), discussing with them the legal protocols and processes involved when these sorts of developments are put to government agencies. This has proved useful. They are interested in maintaining contact with us over this development.

Very Brief Evaluation of the Year's Work

Media

If we are going to do a media gig, then we need to have all the ducks lined up before we start. This helps with spreading the organisational process/load and it gives people time to get material together.

We need several people to work on media material: Conservation Commission/ASF web pages, Facebook and develop material so we have it ready to go when we push for media coverage or put out media releases. Need to involve Corey on this.

Our Zoom meetings

These are important in keeping us all in the loop. On this issue the Commission has averaged one every month to six weeks. Post meeting discussions via emails have been productive and are read by many who do not necessarily attend the zoom sessions. The zoom sessions should be recorded.

Minutes of meetings have been a mixed bag. They are important nonetheless, as a record of meetings, and for those who don't attend, the minutes help keep information flowing.

ASF Clubs involvement

WASG members have been working hard on this issue, and I thank them for all their effort and time.

How much discussion is going on within other ASF clubs I am not in a position to know. I missed the last deadline for December issue of Caves Australia which is not good.

I have placed the issue on the January ASF Council Agenda and again as a workshop/forum for the Conference in April 2023.

We Need to Address

- Links with Mirning representatives on the WA side.
- Lobbying of Federal politicians: Pilbersek, Bowen and Patrick Dobson, Chair of Joint Standing Committee on Aboriginal and Torres Strait Islander Affairs.
- Plan for next year's work.
- Allocation of tasks/working groups.

I thank all those who have attended and value everyone's input as this issue is too big for one person to take on board on their own.

Clare Buswell

Conservation Commission, Australian Speleological Federation

Cave opening and fossil accumulation in Naracoorte, Australia, through charcoal and pollen in dated speleothems

Abstract

Caves are important fossil repositories which provide records extending back over million-year timescales. While the physical processes of cave formation are well understood, the timing of initial cave development and opening—a more important parameter to studies of palaeontology, palaeoanthropology and archaeology—has proved more difficult to constrain. Here we investigate speleothems from the Naracoorte Cave Complex in southern Australia, with a rich record of Pleistocene vertebrate fossils (including extinct megafauna) and partly World Heritage-listed, using U-Th-Pb dating and analyses of their charcoal and pollen content. We find that, although speleothem formation began at least 1.34 million years ago, pollen and charcoal only began to be trapped within growing speleothems from 600,000 years ago. We interpret these two ages to represent the timing of initial cave development and the subsequent opening of the caves to the atmosphere respectively. These findings demonstrate the potential of U-Th-Pb dating combined with charcoal and pollen as proxies to assess the potential upper age limit of vertebrate fossil records found within caves.

Weij, R., Woodhead, J.D., Sniderman, J.M.K. et al. Cave opening and fossil accumulation in Naracoorte, Australia, through charcoal and pollen in dated speleothems. Commun Earth Environ 3, 210 (2022). https://doi.org/10.1038/s43247-022-00538-y

Vandalism at Koonalda Cave

The ASF Conservation Commission have been working with the media on raising awareness towards vandalism on Koonalda Cave on the Nullarbor, and campaigning for better protection of these unique and important sites. Follow the links below to learn more, and get involved in the conversation, or get involved by contacting the ASF Conservation Commissioner

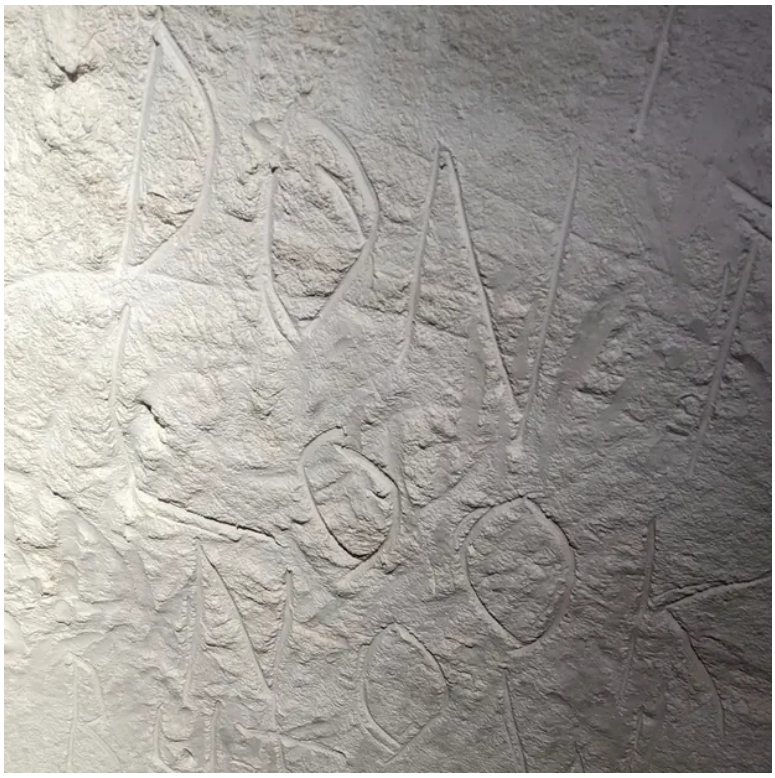


Photo credit: The Advertiser, December 20th 2022

The Advertiser Tuesday December 20th 2022

- Ancient cave art destroyed in shameful act
- https://www.adelaidenow.com.au/news/south-australia/indigenous-artwork-dated-as-30000-to-40000-years-old-has-been-destroyed-by-vandals/news-story/cbe5951cf4be00bb19553c196b88f6cb

The Guardian Wednesday December 21st 2022

- Ancient Aboriginal rock art destroyed by vandals in 'tragic loss' at sacred SA site
- https://www.theguardian.com/artanddesign/2022/dec/21/ancient-aboriginal-rock-art-destroyed-by-vandals-in-tragic-loss-at-sacred-sa-site

BBC News Wednesday December 21st 2022

- Ancient South Australia cave art destroyed by vandals
- https://www.bbc.com/news/world-australia-64049711

Caves Australia: 'Koonalda, Art and Governments'

- https://cavesaustralia.caves.org.au/archive/v198-/ca-221.pdf

A Few Reflections on 2022

As the year 2022 draws to a close it is time to reflect on its frustrations and successes. It has been known in some caving quarters as an extra-special International Year of Caves and Karst, that actually started back in January 2021, but because of Covid 19 was extended for a further twelve months, and is only winding up now. I had so many hopes for the IYCK, but my long list of "to do's" remains as long as ever and the main thing I have achieved is becoming a couple of years older, two for the price of one, so to speak. Perhaps I shouldn't forget, although I would quite like to, that I did achieve turning 80. I don't have to worry about slowing down. My body works that out for me automatically. But I am conscious that I have Buckley's chance of working my way systematically towards the end of that list, and I had better start only biting off the ones I can chew. I have never been too good at that.

Before I go any further down this particular rabbit burrow, I would like to acknowledge and thank Athol Jackson for all those years he put in as one of CEGSA's leaders, mentors, you name it. A very, very long time ago I edited the CEGSA News for a short period, so I know first-hand how much work is involved. It seems as though Athol did it for the next thousand years. Not only did he produce excellent publications on time, he did so year in, year out, and raised the standard so much that I very much looked forward to receiving the latest version each quarter. Athol, I salute you. You have more than earned the right to hang your boots up. On mature reflection, I have decided that far from actually being the triumphant conclusion of an extended International Year of Caves and Karst, 2022 could be best remembered as the Year of Mud.

The Year of Mud

There is a very special valley in Delamere with some sinks that are sufficiently impressive to make you think twice about what you are walking over or driving over. One of these sinks has been of special interest to me since my first visit many years ago because even in summer it had a trickle of water running into it, disappearing down through a nest of sticks and logs at the base of a small cliff. Almost 2 years ago I showed it to Mark Corbett, and was quietly thrilled that he also got quietly excited about it, to the extent that he even got out his spade (Figures 1 and 2)) and quietly started digging.

Fig 1. Mark Corbett quietly enthusiastic about a spade

Although interest in Delamere has never faded, not long after that we needed to turn our somewhat limited attentions for a while to Myponga to try to find an alternate entrance to a cave system which was blocked over 60 years ago by construction of the Myponga Reservoir dam wall.

I had even hoped last winter to get back to Myponga with a crew of enthusiasts to search through the sea of blackberry bushes in the bottom of a steep gully for a hypothetical small

Fig 2. Mark contemplates following water under a rock

bleed of warm air rising out of cracks in the limestone, and thus locate the most prospective location for what must eventually become an amazing dig. But cavers with unlimited spare time are hard to find, and anyway it has simply been too wet to think about it. The project still awaits us.

Myponga's loss has been Delamere's gain. CEGSA's limited resources for local exploration have been focused on Delamere, which should by now have become really, truly, un-put-down-ably exciting, but instead has given us a new respect for the stickiness of mud.

Many announcements about forthcoming trips have been made, and the hole that has since been dug (Figures 3 and 4) has surprised even those involved with the digging, but progress has been regularly interrupted by prolonged downpours which have filled the large entrance doline to overflowing (Figure 5) and generated cubic metres of the most glutinous, blackest, stickiest, muddiest, mud of which you could ever dream.

Fig 3. Peter Hawkes and Neville Skinner Halfway to China

What probably got Mark hooked was the tantalising noises coming from the hole. We are reasonably sure that the mud is only gumming up the top section of the hole. Inserting a crowbar and waggling it around is not always a straightforward exercise. If you can hit the right spot it temporarily unblocks the mud and rewards you with the encouraging echoing sounds of water splashing down a shaft. Experience tells us that these things may sound more promising

Fig 4. Many hands make light work

than they actually are, but it is still definitely the best game in town. If you would like to be involved in this project, then please contact either Mark or me, and we can introduce you to the joys of mud.

As the place finally starts to dry out and the opportunity arises to continue digging, and once the demands of the festive season are safely behind us, we hope to make good progress over the next few months. We would always welcome additional participants with spades and shovels, jemmy bars, crow bars, buckets and rope, and a bit of enthusiasm, to join us. You never know. The trip you attend might just be the one they will still be talking about 50 years from now.

What are we looking for and why do we expect to find it?

Water has been flowing down the valley and disappearing down the sink for a very long time.

The sink itself is over 30 metres in length and 20 metres in width. It is about 5 metres deep, ending in a fissure in the rock.

The continuous spring fed flow is about 30 litres per minute year round, except at times past when the drain has blocked with twigs and leaves, or when much larger quantities of water have come down the creek, such as after large rainfall events. On these occasions it has been known to fill to overflowing, but eventually return to normal flow rates.

It is hoped, with some reasonable chance of success, that by removing rocks from, and otherwise enlarging, the constricted entrance, negotiable passage and quite possibly an extensive cave system may be accessed below the sink entrance. There is a fair likelihood that once we remove the current constriction, and perhaps instead install a trash rack to stop the place filling up with sticks, logs and other debris, that it may no longer be prone to entrance flooding. Perhaps after we can

produce a survey we might be able to plan an alternate entrance. Things are looking promising at this stage.

Several things give us great encouragement. There are several sinks in the area, and in all of them there are clear indications that the limestone is amenable to solution, with a natural tendency to being sculpted by water. The limestone is of Cambrian age, around 500 million years, and was folded into its current configuration around about 490 million years ago during the Delamerian Orogeny, a significant mountain building event which has taken its name from the local region, and could perhaps be an indication that the spring itself which we are now observing could be of considerable age, even allowing that it might be affected over that period by a succession of climate variations including ice ages.

Estimates of cumulative volume of water flow combined with reasonable estimates of solubility of limestone are of necessity only estimates, but even erring on the most conservative side suggest that large cave volumes are quite possible. The key to this is that while the spring cannot be older than the rock itself, it may possibly have been in place either continuously or from time to time over much of that period. 30 litres per minute is only half a litre per second, hardly more than a trickle, but even a trickle can add up to quite a lot over a long enough period of time. Let us just suppose that the trickle has been there as long as the limestone. I did the sums, and then checked them a couple of times because I thought I must have made a mistake. The answer is…. Please don't laugh.

Fig 5. Work interrupted by flooded doline

Before I tell you the answer I must first tell you I have been doing these sums for quite a while, and up until now, my unit of choice has been the Olympic Swimming Pool. It is a reasonably easy concept both to grasp and to visualise. Most people have a fair idea of a volume of water if it is, say, 3 Olympic Swimming Pools. However, as a unit to describe this little trickle it fails miserably, and instead we need to learn a new unit as I did recently myself. That unit is particularly Australian in its flavour and is known as the Sydharb, named after, you guessed it, Sydney Harbour (Figure 6). I am not kidding. Look it up. A simple enough, easily visualised name for 500 gigalitres of water. At present about two or three of these are racing past Renmark and pouring out of the mouth of the Murray River each week while the river is in flood. That's impressive. Well, not especially, when the sums tell me that the little Delamere spring may possibly over its life have poured over 33,000 Sydharbs down that cave. Add to that possibility the likelihood that if the water only dissolved limestone at the rate of 1 part in 30,000 which is certainly not all that unusual, then the water could have over that time carved out a cave with a volume of 1 Sydharb. With figures like that, even if they happen to be out by a factor of 1000, that still indicates a cave that would be worth finding. Have a safe and happy Christmas, and maybe bring your digging tools to Delamere in 2023.

Grant Gartrell

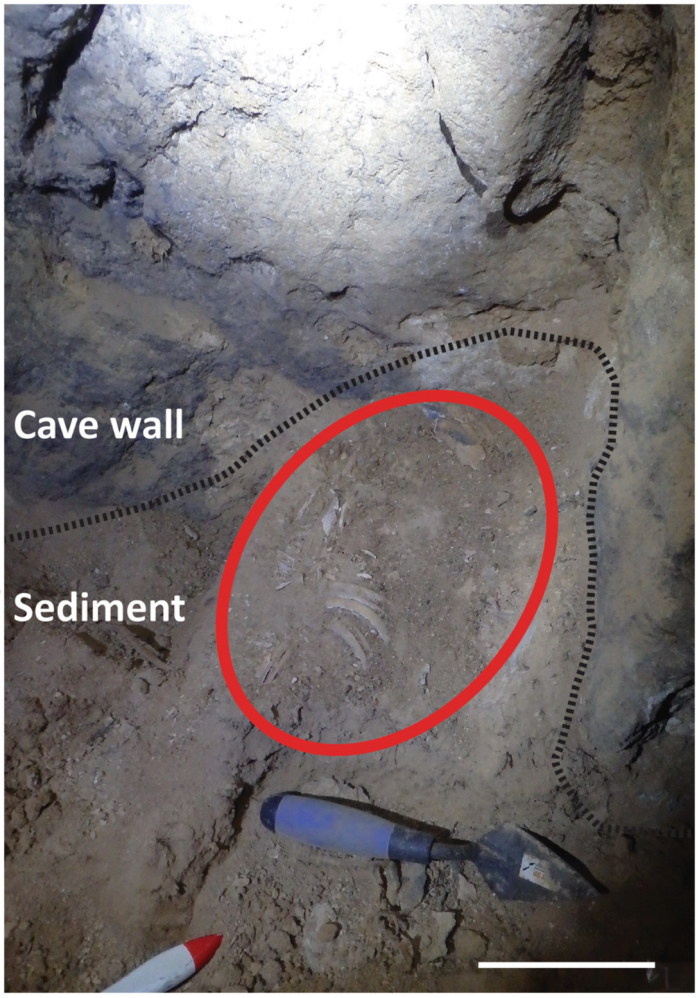
Fig 6. Rough Guide for visualising the Sydharb

Cranial remains of Ramsayia magna from the Late Pleistocene of Australia and the evolution of gigantism in wombats (Marsupialia, Vombatidae)

Abstract

Giant wombats (defined here as ≥70 kg) are found in the genera Phascolonus, Ramsayia and perhaps Sedophascolomys. Ramsayia is currently the most poorly known, having been described from mandibular and cranial fragments. Here, we report the most complete cranial remains attributable to the genus, identified as R. magna. The specimen provides new insights into the anatomy of the species and evolutionary adaptations to gigantism in Vombatidae. We record parietal sinuses in a vombatid for the first time, an adaptation to increased skull size relative to the braincase. The presence of a prominent premaxillary spine may indicate that the species possessed a large, fleshy nose. Both features are convergent on other large-bodied, non-vombatid extinct megaherbivores of Australia such as Diprotodon optatum. We use the cranial remains to examine the phylogenetic relationships of giant wombats to other vombatids. Phylogenetic analysis using maximum parsimony and Bayesian inference indicates that Phascolomys, Ramsayia and Sedophascolomys form a clade, suggesting a single origin of gigantism within Vombatidae. This origin may be related to the exploitation of poor-quality foods, and preceded extreme specializations observed in the cranial anatomy of the giant wombats. U-series and combined U-series and electron spin resonance (ESR) dating methods were applied to one fossil tooth. Age calculations systematically correlate the fossil remains to Marine Isotope Stage 5, and an age of c. 80 000 years can be proposed for this specimen. With only a single well-dated occurrence for this taxon, it is currently impossible to determine when and why R. magna became extinct.

Louys, J., Duval, M., Beck, R.M.D., Pease, E., Sobbe, I., Sands, N. and Price, G.J. (2022), Cranial remains of Ramsayia magna from the Late Pleistocene of Australia and the evolution of gigantism in wombats (Marsupialia, Vombatidae). Pap Palaeontol, 8: e1475. https://doi.org/10.1002/spp2.1475



Position of the fossil specimen (circled in red) in the field. The contact between the sediment and the cave wall is indicated by a dashed line. Scale bar represents 100 mm.

From the Internet

Southern bent-wing bat beats dingo for 2022 Australian Mammal of the Year award

The southern bent-wing bat has been crowned the 2022 Australian Mammal of the Year.

More than 50,000 votes were cast over six weeks, and the southern bent-wing bat and the dingo went head-to-head for the title in the final two days.

The bat emerged victorious with 60 per cent of the vote.

https://www.abc.net.au/news/2022-08-25/southern-bent-wing-bat-wins-2022-australian-mammal-of-the-year/101371206

Southern Bent-wing Bat
Photo: Steve Bourne

Celebrating the achievement deep underground
Photo: Stephen Fordyce

Explorers uncover Australia's deepest known cave in southern Tasmania

After more than six months of preparation and 14 hours underground, a group of cavers has uncovered Australia's deepest known cave, at a depth of 401 metres.

The newly discovered cave, named "Delta Variant", is connected to the Niggly/ Growling Swallet cave system north-west of Hobart.

Niggly Cave, at 397 meters, held the previous record for Australia's deepest known cave.

https://www.abc.net.au/news/2022-08-01/explorers-uncover-australia-s-deepest-cave-in-southern-tasmania/101286000

Additions to OP5

See also CEGSA News 22(4)p20, 29(2)p33, 32(4)p73, 33(1)p16 and 60(2)p41

This update covers additions made as a result of post fire surveys up to October 2022

Kevin Mott

K135	ent 1.2 x 0.7m leads to unexplored cave
K136s1	window 2.7 x 1.5 drops 1.5m to cave
K136s2	collapse1m diam x 1m deep 5m E of s1
K136s3	collapse2m diam in dirt
K137	doline 2 x 1.5 x 0.7m deep undercut on W side
K138	window leads to cave heading 235 deg for 5m
K139	doline 6m diam with hole 4m diam dropping into cave
K140	shallow doline with hole
K141s1	shallow doline with hole
K141s2	arm size hole , 0.5m deep located in W end of s1
K141s3	depression 3m x 1.5m on SW side of s1
K142	doline 3.2 x 2.3 x 1.5m deep. Ent on N side 0.5m wide and blocked with debris and leaf litter
K143	doline 1.2m deep with solution tube 0.4m diam in NW
K144	joint 5m long x 0.8m wide. W end 4.5m deep, E end 5.5m deep
K145	doline and cave
K146	doline 7m diam with 5 entrances leading off
K147s1	doline 11.4 x 6.5m with 4 sub features
K147s2	eroded tube 2m diam
K147s3	ent with cave extending 12m
K147s4	tube 3m deep
K147s5	tube 2.5m deep
K148	doline 7 x 5.5 x 2.8m deep
K149s1	tube 3m deep
K149s2	small tube 3m deep
K149s3	tube
K149s4	tube 4m deep
K149s5	doline containing s6, s7
K149s6	tube 7m deep
K149s7	tube 6.9m deep. s6, s7 drop into a cave heading 153 deg
K150	doline 11 x 5 contains a collapse 4m diam x 1m deep. Cave heads off from S edge. Map
K151	doline with tube 1.2m diam x 7m deep
K152	doline with tube 3m x 1.2m x 2.5m deep leading to a cave with decoration
K153	doline with joint 1m long x 0.3m wide x 2m deep. Cave heads NE
K154	doline 4m diam with tube 0.6 x 0.3m in NW cnr. Tube drops 3m to cave heading NE
K155	doline with hole 0.8 x 0.2m
K156	doline with hole 2.3 x 0.6 x 2.5m deep leading to cave heading SE for 6m

K157s1	tube 2m diam x 6m deep
K157s2	2m wide ent leads to low crawl
K158	window 2.5 x 1.0m leads to cave 4m long at 204 deg
K159	2 tubes. s1 is 0.4m diam x 1.6m deep. s2 is 0.3m diam x 0.8m deep. s2 is 7m N of s1
K160s1	doline
K160s2	ent 1.6m wide drops 2.2m to low cave
K161s1	doline 4.2 x 2. 6 x 1.4m sloping down from NE
K161s2	ent to cave in SW cnr of doline. Cave heads 7m at 269 deg
K161s3	small hole
K162s1	tube 2.5m. 4 tubes that appear to connect
K162s2	tube 2.3m wide x 2.5m deep
K162s3	tube 1.5m wide x 2.5m deep
K162s4	tube 2.5m deep
K163	tube 1m diam x 2.2m deep with cavity 2m x 1m
K164s1	**Seven Deadly Sins** collapsed sandy hole
K164s2	tube 1.4m wide
K164s3	tube 2.2m wide x 3.5m deep
K164s4	tube 2m diam x 0.5m deep
K164s5	tube 1.8m diam x 4m deep
K164s6	tube 2.3m diam x 1.5m deep
K164s7	tube 1.5m diam x 3.1m deep
K165s1	**Pineapple Cave** shaped ent 1.4 x 1.0 drops into a flattener cave 20m long
K165s2	tube 1.3m diam x 1.6m deep SE of s1
K166	doline 13 x 11.8 x 3m deep in fern gully
K167	doline 25m diam with several minor depression inside
K168	joint 0.15 long x 0.2wide in exposed rocky outcrop 2.5m long
K169	ent 0.6 x 0.4 x 2.4 deep
K170	tube 0.6 x 0.8 x 0.8 deep
K171	small hole 0.5 x 0.3 x 1.0m deep. Breeze
K172	hole 0.5 0.3 x 0.9m deep under rock
K173	small hole
K174s1	joint 7m x 1.0m x 0.4m deep. Map
K174s2	hole 0.3m diam x 0.3m deep ,covered by rock
K174s3	doline 5m diam x 0.5m deep
K175	collapse 5m x 1.5m x 0.75m deep
K176	doline 10m diam
K177	doline 10m diam
K178s1	ent 1.2 x 0.3 x 2.3m deep
K178s2	ent 0.7 x 0.3 x 2.8m deep
K178s3	ent 0.6 x 0.4 x 2.4m deep
K178s4	ent 1.5 x 1.0 x 4.8m deep
K179	doline 3.9 x3 .7x0.6m deep
K180	pipe in clay 0.7m diam
K181s1	tube

K181s2	tube
K182	very tight tube
K183	joint 12m long x 0.4m wide x 6m deep
K184	doline with 2 blocked tubes and a window
K185	window leads to cave 15m x 5m
K186	collapse 0.5 diam x 0.3m deep on relocated walking track
K187	hole
K188	small unexplored hole
K189	digging hole
K190	very small joint
K191	hole 0.4 x 0.2 x 1.5m deep
K192	**Triple 1 Cave** doline 2m diam x0.8m deep
K193	window leads to cavity
K194	Now K240
K195	**Phoenix Cave** twin ent holes lead to extensive well decorated cave. Map
K196	doline 7m diam x 1m deep
K197	doline 35m dim with collapse 2.4 diam x 0.4m deep
K198	doline 6m diam x 1.4m deep with 2 cave ent. Cave breathes. Map
K199	limestone outcrop with 3 ent
K200	collapse window leads to cave. Contains possum skins. Map
K201	doline 6m diam
K202	doline 6 x 4 with hole 0.7 x 0.5 x 1m deep
K203	limestone outcrop with 6 ent
K204	doline 5.8 x 5.5m
K205	doline 2.5 x 1.5 with tube 1m deep
K206	doline 6.2 x 4.3 with 3 entrances leading to small caves
K207	doline 16.5m diam
K208	tube 1m diam x 2.2m deep with cavity
K209	shallow doline with ill defined S edge
K210s1	overhang cave 4.1m wide. Map
K210s2	ent 1.7m wide leads to cave 4.8m long
K210s3	ent 2m wide
K210s4	ent 4.5 x 3 leads to cave 9m long
K211s1	doline 8.6 x 8.1 x 1.7m deep with hole on SE
K211s2	hole 0.2m diam x 1.5m deep
K212s1	doline 7m diam
K212s2	3.2m diam tube within s1
K212s3, 4	twin tubes 1m diam
K212s5	doline 9 x 7m
K212s6	tube 3.3m diam within s5
K213	tube 1m diam x 1m deep
K214	collapse 0.7 x 0.3 x 0.3m deep
K215	doline 21 x 12 x 1.7m deep
K216	tube 2m deep
K217	small joint 1.9m deep

K218s1	blind valley and influx 230m x 200m x 15m deep
K218s2	collapse 2.9 x 1.5 x 0.6m deep
K218s3	collapse 4.4 x 3.2 x 0.9m deep
K218s4	collapse 2.5 x 1.8 x 0.4m deep
K218s5	collapse 2.4 x 1.0 x 1.3m deep
K219s1	doline 100 x 71m
K219s2	**Vennechar Blowhole** window 17 x 10m in s1 drops 10m to cave with ent in cliff
K219s3	entrance in coastal cliff
K220	sea cave extending back 5m
K221	doline 2 x 1.8m deep with overhang on SE side
K222	doline 3.1 x 1.5 x 2m deep
K223s1	collapse doline 2m diam. Low crawl heads NW for a few metres.
K223s2	tube 2m deep
K224	tube 0.3 x 0.2 x 2.2m deep
K225	angular depression in pavement 1.6 x 1.1 x 0.6 deep
K226s1	shallow doline 20m x 15m
K226s2	shallow depression on E side of s1
K227s1	window 11.5 x 8.3m drops 10m to sea cave
K227s2	ent in coastal cliff
K228	sea cave
K229	joint 1m long x 0.1m wide x 0.3m deep
K230s1	sea cave not explored
K230s2	small tube
K231s1	sea cave 25m wide x 10m high
K231s2	window into sea cave
K232s1	collapse 2m diam x 0.9m deep. Takes drainage.
K232s2	depression 4.5 wide x 1.2m deep
K233s1	sea cave with ent 15m wide x 30m high extends back 30-40m
K233s2-4	3 solution tubes near cliff edge
K234	joint 1.2 x 0.6 x 0.3m deep
K235	doline 1.2 x 0.8 x 0.7m deep
K236	shallow doline 4.5m x 3m, no rock
K237s1	shallow doline 3.5m x 3m. Rock on N side. Contains s2.
K237s2	ent 1m wide x 0.4m high leads to flattener cave extending back for 3m. Continues but needs digging
K238	**Coffin Cave** rectangular tube 1.2m x 0.8m drops 1.8m.
K239s1	doline 1.5 x 1.2 x 1.2m deep
K239s2	doline 3 x 2 x 1.5m deep
K239s3	collapse 3m diam x 0.5m deep
K240s1	doline 9m diam x 1.2m deep with hole in S end.
K240s2	hole 0.2m diam at base of burnt tree.
K241	doline 5m x 1.5m x 0.5m deep
K242s1	doline 9m diam x 8m deep. 3m sheer rock face on N & E. Contains ent to cave
K242s2	hole 0.5m x 0.4m drops 1m to cave which continues at 320 deg. Needs digging
K243	sea cave appears to be about 40m deep

K244	sea cave
K245s1	doline 5m x 2m with 2 entrances. Rock on SE side
K245s2	NE ent 0.7m x 0.2m drops 1m to cave.
K245s3	SW ent 0.5m x 0.15m drops 1.5m to cave.
K246	doline 2.5m diam x 0.5m deep
K247	tube 2.8 x 1.8 4m deep with cave ent 1.7m wide. Cave continues down rock-pile for 8m+
K248	doline 1.6 x 1.5 x 0.5m deep.
K249s1	doline 2.3 x 1.4 with hole in bottom.
K249s2	hole 0.5 x 0.4 x 2.7m deep
K250s1	doline 8m x 4m with hole in NW end
K250s2	tube 0.4 x 0.2 x 0.9m deep. Breathing
K251s1	doline 2.0 x 0.8m with tube at N end
K251s2	tube 0.5 x 0.2 x 1.0m deep. Cavity continues NNW
K252s1	doline 1.8 x 1.5 x 1.0m deep with hole in E end
K252s2	hole 0.2m diam x 0.6m deep
K253	doline 30m x 20m.
K254	sandy doline 17 x 12 x 1.3m deep.
K255	shallow ill defined doline 45m x 35m. No rock.
K256	doline 25 x 20 x 2m deep with no entrances and small amount of laterite.
K257	doline 8 x 7 x 0.5m deep
K258	shallow doline 20m x 8m. Sandy with boulders
K259s1	tube 1.5m diam x 0.7m deep
K259s2	tube 1m diam x 0.3m deep
K260s1	**Black Lung Cave** doline 5m x 4m . Contains s2, s3
K260s2	NW ent - 2m x 1.2m x 4m deep. Scramble down to cave 10m x 10m reaching depth of 8m. Cave breathes.
K260s3	SE ent 2m x 1m 3m deep connecting with the cave.
K261	collapse 2.4m x 1.6m x 1.6m deep with ent 1.0x 0.2m high leading to cave that continues for 2.3m at 200 deg. Cave may extend further- digging required.
K262	shallow doline 14m x 11.5m. Higher on SW side. Rocks on S side.
K263	doline 12m x 10m. Large rocks on NE side.
K264	**Ivan's Folly** small joint exposure. Barely enterable
K265	pit
K266	small cave that was originally intended to be allocated “K16”
K267s1	Ent 1.0 x 0.5m drops 1.8m to cave 5 x 3 x 2m high.
K267s2	Doline 2.3m diam x 0.5m deep with small hole on NW side.
K267s3	Small hole in K267s2.
K268	Hole 1.2 x 0.8 x 1.2m deep.
K269	Low flattener drops 2m and continue to the SE.
K270	Doline 2.7m diam with a solution tube.
K271	Square shaped ent 2m x 1.6m drops 2m to cavity.
K272	Tube 1.0 x 0.4m drops 2.8m to cavity 1m long x 0.5m high, extending SE.
K273	Tube 0.7m x 0.6m drops 1.4.

Calendar of Events

	Type of Event	Description	Contact
27/12/2022	Caving Trip	Family Caving Trip to Corra-Lynn	Damien Pilkington
25/01/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
29/01/2023	Annual Report	Articles due	Matt Smith
11/02/2023	AGM	143 Tyeka Drive, One Tree Hill BBQ 6pm AGM 7:30pm	Pam Payne
22/02/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
22/03/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
15-30/04/2023	ASF Conference	Secrets of the Nullarbor	
11/05/2023	CEGSA News	Articles Due	Matt Smith
24/05/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
28/06/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
26/07/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
09/08/2023	CEGSA News	Articles Due	Matt Smith
23/08/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
27/09/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
25/10/2023	General Meeting	SA Museum Royal Society Room 7:30pm	Ian Lewis
08/11/2023	CEGSA News	Articles Due	Matt Smith
22/11/2023	General Meeting/EOY Dinner	Venue TBC	Ian Lewis

Extra trips will be notified in the Calendar on the CEGSA website or at General Meetings

To be covered by insurance it is mandatory that caving trips involving club members must be registered as CEGSA Trips. To do this, the nature and timing of the trip must be entered in the Calendar of Events in CEGSA News, minuted at a General Meeting of Members, or entered into the Website Calendar. The member registering such a trip must be an accredited CEGSA Trip Coordinator and must agree to act in the capacity for the trip. There must also be an accredited Trip Leader with the appropriate skill endorsement to take a part caving.

Also, please ensure that a report of the trip is submitted to the Records Officer and CEGSA News Editor in a timely manner

https://www.cegsa.org.au/calendar/trip-application