

Trip Reports

JF-237 Niggly Cave connection Trip report summary

23-26 May 2019

Compiled by Stephen Fordyce

Party: Serena Benjamin, Patrick Eberhard, Rolan Eberhard, Stefan Eberhard, Stephen Fordyce, Alan Jackson, Fraser Johnston, Gabriel Kinzler, Chris Sharples, Petr Smejkal

Trip Summary

Yes, finally the connection between JF-237 Niggly Cave and JF-36 Growling Swallet is confirmed, as just one of the exciting accomplishments of a large team who spent up to 4 days underground recently. As Alan put it "everything turned to gold" and as such, multiple reports for various highly successful missions within the trip will be detailed separately.

The connection in particular is an achievement which was made possible by, and belongs to, everyone on the trip, as well as everyone on previous trips going back 50 years or more. By taking the lowest point of Growling Swallet (at the 25 m deep point in the Dreamtime Sump) and the Niggly entrance (top lip method), the depth record of 397.7 m (after recent data fandangling following the 395 m claim immediately after the trip) is claimed. A survey error of about 36 m over the 5 km between main entrances is testament to many surveyors over the years (and particularly impressive considering the 700 m of knotted line/dive compass survey at the bottom). A through trip next summer

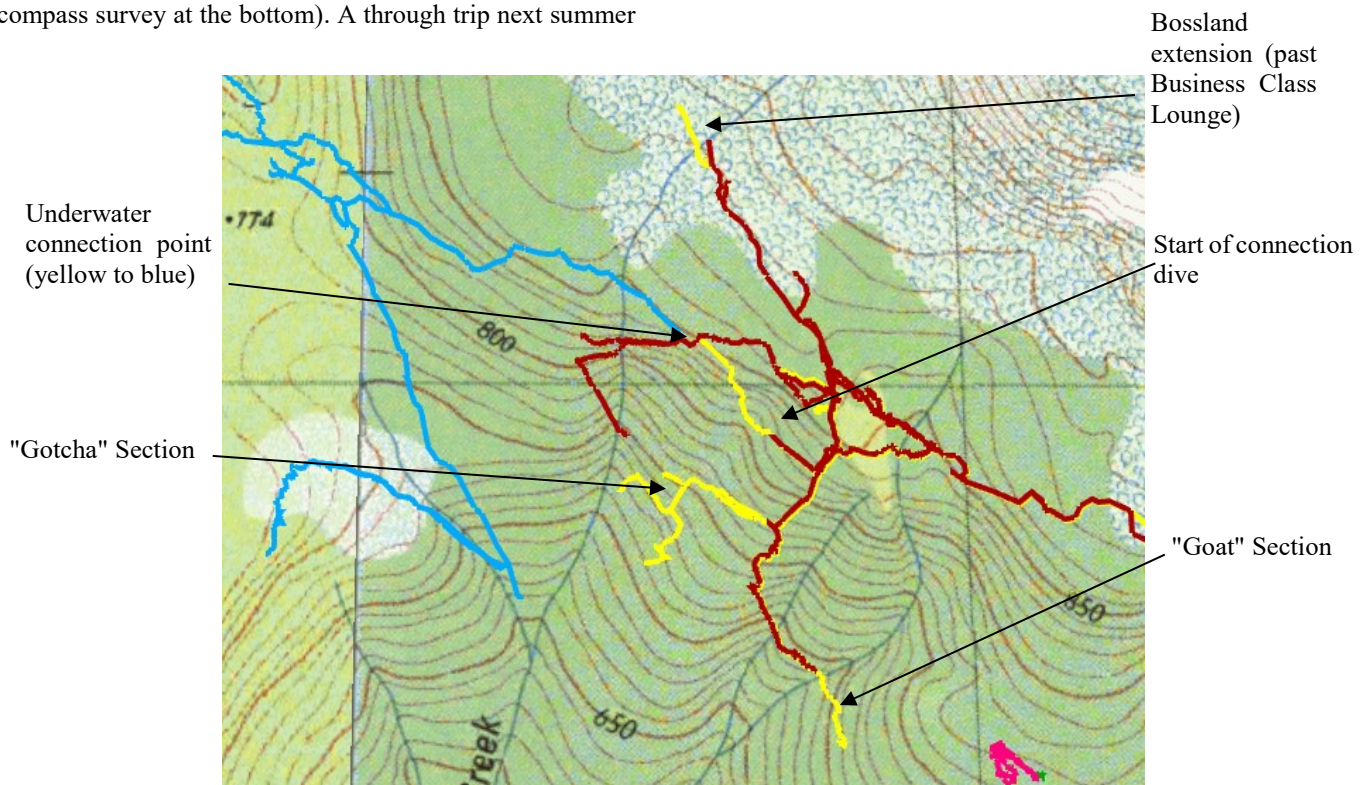
is being contemplated, if enough cavers think it's worth the effort.

Apart from the connection to Growling Swallet on day 1, over 1 km of new base level passage was found and surveyed from Atlantis, keeping the dry caving/dive support crew well occupied. Leads are heading towards Tiger Mountain (current gap 220 m), so perhaps a dry caver through trip will also be possible! The Goat section which follows the Game of Thrones has turned away from Tachycardia, but some leads remain to be pushed. Al Warild's waterfall climb above the tyrolean was surveyed, sketched and the rope retrieved, and a return dive to the Business Class Lounge yielded going master cave passage heading towards Living Fossils in Growling Swallet, and then to JF-387 Porcupine Pot.

A media strategy had been workshopped with the team, the STC committee and others, and was very successful in its aims, with particular thanks to Fraser for his footage and organising, Stefan for his still images and my new wife Nadia for her professional expertise in media. We gained great exposure for caving (and cave diving), for STC, and for *Australian Geographic* (who provided money for the rigging in the cave) as well as for the Tartarus documentary. There were 3 TV interviews, which broadcast across the country, 5 radio interviews and 4 newspaper articles, with plenty of online articles also.

The current state of play

An overlay of the caves is shown below (and at time of publishing, almost certainly outdated). JF-237 Niggly Cave is maroon, with the new data from the trip in yellow. JF-36 Growling Swallet is in blue. JF-270 Tachycardia Cave is bottom right in magenta.



JF-237 Niggly Cave: Serena's view of day one

23 May 2019

Serena Benjamin

Having picked Fraser up and a Banjo's stop we were getting ready at the start of the Niggly track when the others rocked up. My ambition (delusion?) of just having one large pack and one small pack this trip was quickly quashed when Steve revealed the amount of gear that needed to go in. This guy doesn't pack light. His puppy dog eyed pleading looks won out and I quickly upgraded to two large packs. The other lads fared worse. A steady and uneventful walk up the hill preceded a steady and mostly uneventful descent. While I belligerently adopt the attitude that I'll just do Tigertooth once each way, others like Alan, prefer to run shuttles. I can't remember how many times Alan went past. Lots. And especially appreciated by the others as there was a surfeit of packs. Passing rebelay's with heavy packs was fun. Alan and I also got some extra excitement when Steve's ability to wrangle his posse of packs became insufficient to counter some rocks' desire to be free. Several fairly large ones had a fair bit of airtime on the big pitch.

All were on the bottom by about 18:00 where we regrouped, repacked and Alan shot off to dump things at camp. On his return we all proceeded across the flying fox and to the sump. My first view of it - and a beautiful sight it was. With water levels lower than when it had been discovered, Steve was keen to get in. By about 20:30 Steve began his dive and the rest of us began the task of waiting. Waiting and more waiting, distracting ourselves with DistoX calibration and the exciting task of choosing between hot soup or hot choc.

Niggly-Growling Connection Dive Report

23 May 2019

Stephen Fordyce

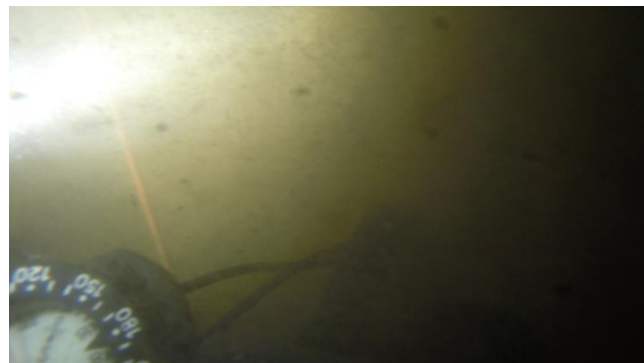
Acknowledgements

The connection is an achievement which was made possible by, and belongs to, everyone on the trip (Steve, Alan, Gabriel, Stefan, Serena, Fraser, Petr, Pat, Chris, Rolan), as well as everyone on previous club and private trips in both caves going back 50 years or more. Particular credit goes to Andreas Klocker for his drive by instigating trips and interest in both Growling Swallet and Niggly. 6 of us were there for the connection attempt, with 5 support crew waiting a cold and tense 100 minutes while I did the dive. Petr and Pat came in for a day trip and took a heroic amount of gear out, while Chris and Rolan walked up the hill in rather awful conditions, just to make 2 trips dragging horribly heavy bags through the Tigertooth Passage and down the hill. Thanks to Fraser and Stefan (and everyone who stood around patiently lighting, modelling and talking) for recording the historic moments.

History

The link between JF-36 Growling Swallet and JF-237 Niggly Cave was proven in the early days of Niggly exploration, when Rolan Eberhard dumped a whole lot of dye into Growling Swallet while Stefan Eberhard and Vera Wong were exploring Niggly. The timing was excellent, and

Stefan reported being able to physically see the dye, part way through the rockpile/streamway just before the large Mother of God passage. While people were busy with pushing the far end of the cave into the unknown, not much energy was expended in the mid sections, and with other exciting prospects, no further discoveries were made.



Surveying in challenging underwater conditions.

Photo: Stephen Fordyce

Several decades (and some confusion over exactly where the dye was seen) later, this spot was where a hunch and some home-made dye tracing gear courtesy of Petr Smejkal lead to arguably the biggest discovery of recent caving times. After 3.5 years of Niggly pushing (with a few successes but most leads shutting down) by various parties, the project was losing steam and participants. Petr, Ben and I pushed Petr's "Ninja Streamway" through some unlikely rockpile/streamway passage before rising water saw a hasty retreat beaten. We also pushed to rockfall the passage accessed beyond the waterfall courtesy of Petr's epic aid climb and the now-rigged tyrolean. This is literally 5 minutes journey from the base of the pitches and the main thoroughfare, and the waterfall is obvious and well known.

A follow up last ditch trip by Petr and myself (with Ben having unfortunately just headed off for 10 months cave guiding in Vietnam) saw the Ninja Streamway break into spectacular passage named "Atlantis", and connect to the passage beyond the waterfall ("Vietnam") in a mind-boggling shortcut. The Pool of Promise was a sump with every indication of connecting to Growling, and there were leads galore. Including the Ninja Streamway, over 2 km of new passage have been discovered in this area and the cave overview looks distinctly different. Team morale and trip participants are at an all-time high!



Warming my hands looking towards the home sump pool in the Raptor Memorial Dry Chamber

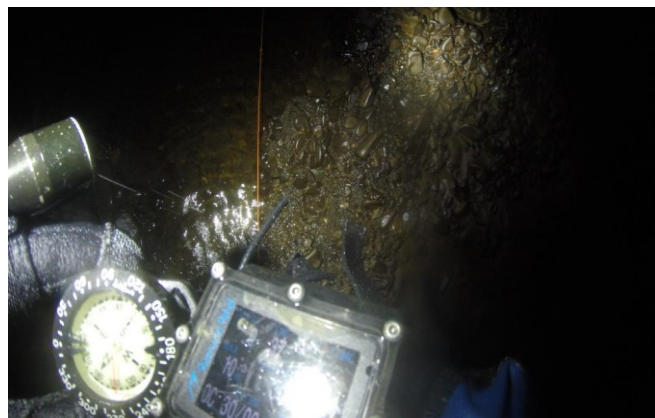
Photo: Stephen Fordyce

Back to the other side of the connection. The history of exploration in Growling Swallet requires an article in itself (*It is largely documented in the Tasmanian Explorations Journal published by Tasmanian Caverneering Club-TCC-in 1992, now out of print - Ed*) but the furthest reaches of downstream Growling were explored decades ago, with one dive attempt in the terminal Dreamtime Sump by Nick Hume, who was unable to get through the initial low flat section in a backmount cylinder. In early 2015, I was new to the Tassie caving scene but was fortunate to get a chance to dive the Dreamtime Sump - managing to get 500 m of penetration and survey data over the course of two dives, before we declared it a job for later. It was already at a 3-tank dive, and needed a sidemount rebreather, or a breakthrough from the other side - this was at least in part, Andreas Klocker's inspiration for driving the early years of the current Niggly project.

With the stage set and signs extremely positive (survey data, amount of water, cave characteristics, etc.), the connection attempt was unusual in pre-empting the outcome in a major way, with considered media strategy, etc. Knowing a new Australian cave depth record was likely, we felt this was a rare opportunity to provide a positive news story, raising the profile of caving and cave diving, as well as give exposure to *Australian Geographic* (who contributed significant money towards rigging gear) and the Tartarus documentary about the cave. Increased pressure on myself as the push diver was a significant worry that was continually assessed.

The Depth Record and Possible Through Trip

By taking the lowest point of Growling Swallet (at the 25 m deep point in the Dreamtime Sump) and the Niggly entrance (top lip method - as for the previous Niggly depth record), **an Australian record depth of 397.7 m is claimed.** Note that 395 m was initially claimed, but with some untangling of old survey data Rolan, Alan and myself have agreed on the updated figure, and an explanatory note will be included in the STC Archive. A survey error of about 36 m over the 5 km between main entrances is testament to the diligence of many surveyors over the years (and particularly impressive considering the 700 m of knotted line/dive compass survey at the bottom). A through trip next summer is being contemplated, if enough cavers think it's worth the effort. (*There is some repetition here, or I should say in the summary, but a little tolerance is to be allowed in recording this significant information – Ed*)



Surveying out through the Raptor Memorial Dry Chamber

Photo: Stephen Fordyce

The Dive

After extensive planning and preparation (not least of which was a full-dress rehearsal at my favourite local dive site the weekend before), excessive re-dive filming and much considered faffing-about setting up gear, it was eventually time to go. I set the GoPro running, stuck a reg in my mouth, grabbed the reel and started swimming in the direction of the fault the Pool of Promise Passage was following... only to reach a dead end.

Not a great start to the dive, although I'd noted an obvious way on, down dip to the left. I must admit this threw me just a bit, as I'd been imagining the dive going dead straight along the same fissure, all the way to the connection. I made sure the straight ahead lead didn't go - it pinched out with a small air space not big enough to get my head out of the water.

Going back through my own silt cloud was disorienting, but I was able to drop down the slope, into comfortably-sized passage heading parallel to the dead end but at 3-4 m depth, presumably along the strike. Picking the well-defined left wall to follow (the right of the passage tended into silty, low flat areas, where a wall wasn't obvious) it was obvious the cave was "going" and made some good progress with a clean washed floor of cobbles and larger limestone flakes, before the left wall pinched away and the best option for forward progress was a dubious low flat thing with silty bottom and a whole pile of *Anaspides* (cave-adapted mountain shrimp) on a collection of washed-in organic matter.

This ~3 m long section of the cave was a classic cave divers' "line trap", where the guideline could easily get dragged sideways into impassably low passage, leaving a returning diver conscientiously following the guideline in zero visibility very puzzled as to why they could no longer fit. Two of my yellow plastic silt pegs were used at either end of the tightest section, and just when I'd made a fairly thorough mess of the visibility, the reel ran out. More mess was made in the still low section as I carefully fumbled with thick gloves while blindly trying to get the guideline off the spent reel and attach the correct next one. This is where experience and practise comes into play - and what could have been a highly stressful situation was just another part of cave diving.

Well, having applied considerable focus to this task, I was very surprised to confidently spool off 2 m from the new reel and surface into a large chamber, mostly filled by a lake of comfortable wading depth. This was later named the "Raptor Memorial Dry Chamber" (RMDC) after Ben Jackson's favourite rooster, which was sacrificed the night before the trip in the interests of peace and quiet for the residents of Moonah. The RMDC was again outside my expectations - although it was a solid 30 m of easy passage, and a good spot for a rest without consuming gas. The connection dive was going even less as expected.

A couple of leads were noted - an aven in the ceiling and an uninspiring side lead - probably being instrumental in the main streamway passage shifting above the water table. The floor of the lake was cemented dolerite pebbles the size of squash balls, a change from the silt floor I'd experienced in most of the dive to this point. I made a solid tie-off on a rock protrusion above the water, with an arrow - hopefully this survives high flows. In retrospect there is quite a lot of line hanging free in the water.

At the far end of the RMDC, straight on was a small cobble beach with indication of an uninspiring sump pool just beyond, and a much more promising lead around to the right in the water. Being dressed for it, I went right but was quickly disappointed as the passage pinched into flat, wide, silty obscurity. I did a fairly thorough job of checking (also of silting it out) and there was no obvious way on. The last option was the small pool beyond the beach - this required fins off and a walk of perhaps 5 m, which was very annoying.

The pool barely had room for me to put fins on, and an awkward flop was required to get into correct diving orientation. It was a pretty desperate lead as far as they go. Fortunately, once underway, the passage was low but negotiable, and quickly opened up into large square underwater cave. When the second reel ran out (and knowing the connection distance was 220 m, with 200 m of guideline used) I knew the moment of truth had to be coming, one way or another.



Another reel bites the dust!

Photo: Stephen Fordyce

The first two reels had 3 mm floating orange line, selected for its abrasion resistance. The third reel had 2 mm sinking white line, selected because a whole lot more fits on the reel. An arrow was also placed at the change in line, confirming the way home. This passage had trended much deeper (9.9 m maximum) than the initial part of the dive, and was of much different character, being 1-3 m wide with both walls usually visible, and at least 2 m high (often the ceiling was not visible).

As the line sang off the reel, I was a bit nervous - about being so far from home, about whether the connection had been missed, whether the line was gone (we had found none washed through into the downstream parts of the cave), and whether I would have to solve any more underwater puzzles in this remote place. Looking and hoping for that piece of string which would mark success, I got a shock to see something else - a fin!



The surprise fin. Photo: Stephen Fordyce

It looked old and like it had been there for a while, but it was a bit hard to tell - the style is still used today. The team thinks this is most likely left from Nick Hume's dive. For it to be washed through that far indicates current enough to damage the guideline - this is a major factor for any potential through trip. I left the fin, meaning to bring it out later, but alas, couldn't find it. Maybe next time - until then, it's on the GoPro footage.

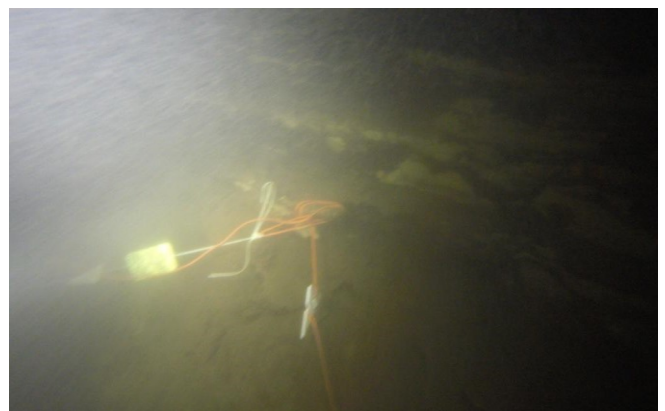
Still reeling (figuratively speaking) from the fin, I swam along and finally saw the orange guideline leading in the direction I was swimming. The connection was made! Or was it? I had expected to recognise the cave, or the line - but both seemed completely foreign. Could it be somebody else's line? Of course not, the survey was just about perfect. So I tied in, attaching back-to-back arrows to indicate the joining of the Pool of Promise and the Dreamtime Sump, and also installed the commemorative marker that the support team had written mostly inappropriate messages on.



The end of the Dreamtime Sump guideline!

Photo: Stephen Fordyce

Checking and recording gas I had oodles, so as planned, I continued swimming towards Growling, carefully inspecting the line as I went. Apart from a few lightly buried sections, it was in great condition, indicating that a good proportion should still be intact for a later through trip. Returning to the connection point and very glad to be heading for home, I turned off my glove heating (the electrical cable interferes with the compass) and commenced surveying out.



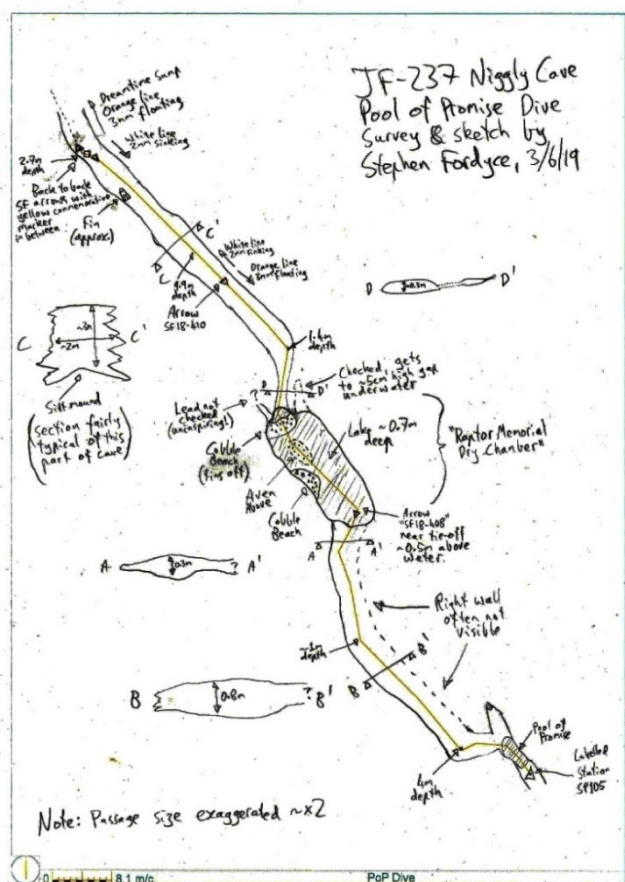
The back to back arrows and yellow commemorative marker

Photo: Stephen Fordyce

The trip out was reasonably uneventful, although punctuated by my spare reel generating a cloud of scary loose line, that eventually had to be bundled up to keep from tangling in

everything. I also discovered an empty reel (with stuck open clip) lying next to the line where it had fallen - and failed to find the fin. A longer than necessary stop was made in the RMDC to warm up my hands, but none of the restrictions were problematic on the way out. Just before the final leg up into the Pool of Promise, my helmet light cut back power to save battery, and it was lucky that I remembered that would cause flicker on Fraser's "triumphant return" video clip. Never stop thinking!

Sketch showing details of the Pool of Promise/Growing connection dive (Below).



Cave diver's nightmare - line everywhere

Photo: Stephen Fordyce

I took the opportunity to put one of my backup lights on the helmet and turn it onto full, also letting some bubbles and light go up to the surface as a reminder to the support team to be ready to catch the shot (it's impossible to recreate the surfacing and the first sentences!). A "mission accomplished" and a few cheers later, everyone was told to shut up so the surveying could be completed.

It was already about 10:30 pm by this point, and the jubilation faded fast in the face of cold, fatigue and heavy loads. We had made the decision to carry all the dive gear with us - depositing drysuit, undergarments and empty reels at the base of the pitches for exit from the cave, and the rest to camp for another dive through to the Business Class Lounge in the coming days. Getting the gear at least to camp meant that the dry caving crew didn't have to spend part of their valuable dry leads pushing time hauling dive gear the next morning.



Welcoming committee on surface

Photo: Stephen Fordyce

Although pretty shattered, I couldn't help but stay up to enter the survey data into TopoDroid and see how it matched. Waking some hours later with a dry throat as Alan stumbled past to pee, I croaked "36 m, the survey error is 36 m". He was suitably impressed but hid it well.

A video showing most of the push dive is available on YouTube as an unlisted video - not properly vetted for the public domain, email me at stephen.fordyce@tfmengineering.com.au with your request for access.

Technical Dive Notes

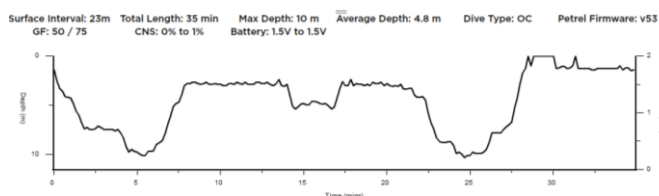
- Gas pressures and usage:
 - o Using 2x 9L composite cylinders, with Nitrox 30 in them
 - o Start: 270/270bar
 - o At RMDC: 270/230bar
 - o At connection point: 200/230bar
 - o After swimming along old Dreamtime line and then coming back to connection point: 185/230bar
 - o On return to PoP: 140/190bar
 - o So, gas used:
 - 360L getting to dry chamber
 - 630L getting from dry chamber to connection point
 - I.e. total 990L getting to connection point
 - And 765L from connection point to PoP while surveying
 - o NOTE: when it became apparent that the sump was shallow, and return gas would not be much, I deliberately conserved gas in one cylinder, to give the best option

for leaving it in the cave for a future dive (which we did).

- Thermal notes:
 - o Water temperature was logged as a constant 7°C
 - o Total time away and in the water was 110 minutes (apart from 5 steps over the dry section)
 - o Membrane drysuit with thin polypropylene thermals, explorer socks, 2-piece Fourth Element Arctic undersuit, 1-piece Fourth Element Halo3D, 7 mm hood, heated 5mm (uncoated) wetsuit gloves (a TFM special!)
 - o I was quite comfortable on body, and head. Feet maybe a little cold. Hands were great with heating active, becoming unpleasantly cold and clumsy on way back when heating off for surveying.
 - o Dexterity of hands with the 5 mm gloves was noticeably low (i.e. changing reels in zero vis, tidying loose line on a reel, were difficult)
- Lights/camera:
 - o Helmet light on full flood for GoPro
 - o My GoPro Hero 4 running in low light mode (720P). Footage was collected of the entire dive and this is currently an unlisted video on YouTube (contact me for the link), plus many GB are available in my personal archive for anyone interested.
 - o Hand light on full spot for penetration
 - o 4 spare lights on harness and in pockets, so 2 light failures could be tolerated and the dive continued
- Survey gear:
 - o All line knotted at 3 m intervals
 - o Aquasketch scrolling wrist slate for notes
 - o Dive compass with 10 deg increments
 - o Shearwater Petrel dive computer (set to fresh water, depth to 0.1 m)

Dive profile of **second section of dive only**

i.e. From the Raptor Memorial Dry Chamber to the connection, about 75 m towards Growling, and then back to the RMDC. Initial section of the dive, from Pool of Promise to RMDC was too shallow and quick to be very meaningful.



The escape, car excitement and breaking the news: Friday

24 May 2019

Fraser Johnston

Serena was up early Friday morning, eager to get going, I was a little slower to wake up, heeding Serena's threats to leave without me I eventually got up, had some breakfast and packed my gear. I can't remember the time we left base camp. I went first, followed by Serena who said that if she went first she would leave me behind, which was fair enough. Nothing too eventful happened on the way out unless my slower than usual slowness counts as noteworthy. We reached the entrance at dusk; it was dark by the time we started back down the hill. It was a fairly nice evening, I had to take a couple of quick rests on the way back which pissed Serena off no end, I guess it was justified as she was carrying some of my gear.

We got back to the car and the battery was flat, brilliant... at least it wasn't raining... we tried to roll start it using Alan's car to tow, about then it started pouring... the roll start didn't work, we didn't find out until later that you can't roll start an automatic! I drove Alan's car to Maydena where I borrowed some jumper leads from an old guy in the RSL, drove back out to where Serena was waiting in the car and tried to jump start it to no avail, we decided to drive Alan's car back to Hobart and Serena would return to pick up her car with the RACT in the morning. We swung by the RSL on the way through to drop off the jumper leads and buy a beer for the guy who helped us.

Good times...*(Or maybe not! – Ed)*

Waterfall Climb and Chamber

24 May 2019

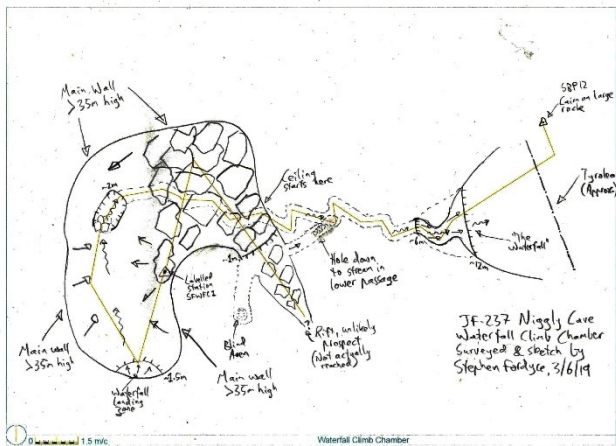
Stephen Fordyce

Al Warild and a crew from NSW installed almost all of the original version of the current rig, some 3.5 years ago. Al has been back a few times since and has focussed on a rather epic aid climb up next to the waterfall - this starts at the home side of the tyrolean, and goes up several overhangs and some scarily average rock to a Y-hang, and then another in a meander at the top of the waterfall. He pronounced it "finished", and it's been on the list to survey and de-rig for a while. The meander goes for a little way before breaking into a chamber of surprising proportions and soaring walls of uncertain height (the highest DistoX reading I managed was 36 m).

Deciding that I was too shagged for a proper dive attempt the day after the connection, I had a late start and figured this job was a worthy task for the day (it turned into a bit of a mission). I took a DistoX and phone with TopoDroid and did a detailed survey and sketch which is hopefully self-explanatory. I also recorded a detailed GoPro video tour. Of particular note - a stick the size of my little finger was found in the meander, possibly indicating a fairly direct surface connection.

Neither Al nor I noted any exciting prospects, so it's written off for now. The de-rig took a lot of time, and access to the meander from the top pitch-head is a bit exciting, but haul cord and at least one stainless anchor per pitch are left so that if anyone is ever inclined, it should be a whole lot easier to get up there again. There are two pitches, which use yellow markers 3 and 4. I made narrated GoPro videos of the top and bottom of each of these, which are securely backed-up in my personal archive and available to anyone who's interested. A report on all the climbs and a bit more detail on them will be done when the project is finished.

The video tour of this area is available on YouTube as an unlisted video - not properly checked for the public domain, email me at stephen.fordyce@tfmengineering.com.au with your request.



Sketch showing details of the Waterfall Climb and Chamber. Sketch by Stephen Fordyce

Niggly Cave - Business Class Lounge and Bossland

25 May 2019

Stephen Fordyce

History

About 18 months ago, I was able to dive the DIY Sump, which lies at the far upstream (north-western) end of Niggly Cave. The sump was first dived by Sandy Varin about a year earlier, and I extended her line and negotiated an exciting restriction to surface in the "Business Class Lounge". Despite a couple of hours that day and a subsequent entire day of hard upward pushing in rockpile, progress was desperate and slow - not worth dragging all the dive gear back for as sole objective. But given that it seemed like the only chance of continuing the master cave upstream, the chance for a return had been playing on my mind.

The Stars Align

With bulk dive gear coming into the cave for a push dive in the Pool of Promise, and plenty of dry caving leads to keep everyone else happy, I was excited to be able to give the Business Class Lounge one more go. Excited enough to convince everyone to let me bring a wetsuit - so that I could dive through the sump and spend the day in (relative) comfort and productivity, rather than in a highly restrictive (and hot) drysuit, or in soggy cold caving clothes as I'd done

previously. Some tools were also brought into the cave to further increase productivity.

Stefan and I had portaged all the gear from camp to the sump and set it up the day before, so it was a matter of donning my wetsuit at camp and walking down. After some morning faffing and an impromptu photography session, I got a somewhat late start (the dive began at 12:05 pm). I used the canister from my glove heater as a drytube for the DistoX, although the Micro Pelican case with survey gear in it also survived the dive. Next time I will replace the lid-with-cable with a blank. This, along with survey kit, dive spares, and some rope to rig a handline on "The Corporate Ladder" climb were in a caving bag that I dived through.

The sump hadn't been passed in a while, and some of the gravel had slumped on the initial slope (where flow goes against gravity) to a point where I had to shift it to get through. The line was in good condition (although loose), despite at least one major flood event. I looked at the final restriction and didn't bother trying to shift the rocks constraining it - they were pretty big, and it wasn't all that nasty as it was.

Down (up?) to Business

I'd been dwelling on this for ages and was sure the top end of the Business Class Lounge would go. But first nod to the to-do list - and do a check of a small pool surrounded by clean washed rock. I didn't bother dragging dive gear up and over an annoying little climb but took my hood and mask - it was a bit annoying to stick my head into the nastily small sump pool and see that it had some promise. It would need to be checked, but I would do it on the way back in the unlikely event the dry rockpile lead didn't go.

<8 hours later>

It didn't go and I was nearly spent. I'd surveyed up, even optimistically making a labelled tape station for the next explorers to tie into. I also rigged a permanent 11 m rope with loops on the Corporate Ladder climb, making it much less scary. The twisted and torturous wriggles up the top of the rockpile I'd named "Middle Management", but finally had to admit defeat in a final flat void named "The Glass Ceiling" - sadly, it appeared that more time or another generation was needed to crack that one. I'd made perhaps 15 m of bitterly difficult progress, with burning arms shifting sticky rocks around in tight and awkward positions. The wetsuit was comfortable to roll around in but my arms were eventually only good for a minute or two of effort before they had to be quickly brought back to my sides to recover. The Glass Ceiling showed some signs of being the top of the collapse, but there was nowhere even to start poking next. I was shattered but could sleep well knowing it was truly finished.

I slowly repacked the caving bag and slithered back down to the main chamber, where the nasty little hole mocked me. Motivation for push diving was at an all-time low, but tomorrow we would be heading out of the cave and there might never be another chance to check that lead. Some chocolate and a mental stocktake of reserves tipped the balance and I kitted up in the main pool to see if there was a way around from there. Between the wall and a large rock, I could see through, but it was a tight vertical squeeze with ribs of rock sticking out and I couldn't fit. Maybe with some work it might be possible. So being pretty cold and grumpy,

I climbed out, up, over and down into the nasty little hole - named the "Lateral Hire Sump" in line with the corporate theme.

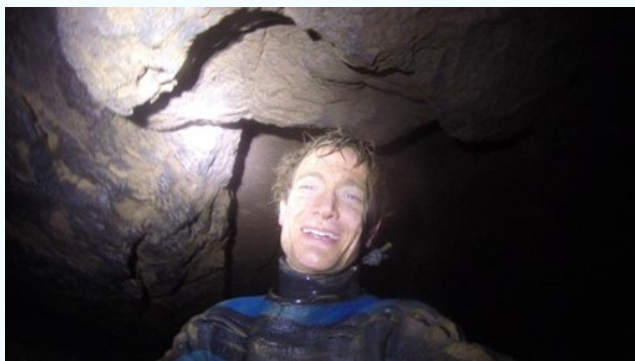


The nasty Lateral Hire Sump pool entrance measures about 40 cm x 30 cm

Photo: Stephen Fordyce

This turned out to be a rather exciting exercise and on the way back I elected to carry each tank and the pair of fins over individually - much better. The sump pool, if you can call it that, was bounded by sloping rocks and not very big. I don't often go feet first because you can't see and it's often game over straight away, but in this case it was the only option. I immediately got jammed as I tried to crawl in backwards, and after some struggle was able to unclip a cylinder and get it above my head. I was then able to get into the water and submerge, turning around in zero visibility with relative ease and getting tidied up to dive on.

The passage was of reasonable swimming size and a bit exciting. In fact, after a few metres I surfaced into a pool with ongoing passage and the sound of running water - this meant the sump pool was finished and the way on was in streamway passage. Quite exciting now! A little awkward to get the gear off again in limited space, but I was soon skipping off along easy walking streamway passage. It was pretty clean, with no major rockfall, although a few leads heading up towards Middle Management and the rockpile (none particularly promising, given the enticing dive and being perfectly dressed for it). After enough small but well-proportioned streamway passage to get me really excited, I was in knee deep water, which turned into a very nice sump in clean passage free of breakdown. The way on was found, what looked to be a major sump needed a proper dive, and I had about 20 m of line left on a small spool, an excellent excuse to leave it for a well justified next time.



My "I almost don't feel wrecked any more" face

Photo: Stephen Fordyce (selfie)

I recorded a GoPro tour and a rough (dive compass and pacing) survey of the dry passage back to the line and marker I left - looks like the streamway passage is well and truly past the collapse. As the final piece in the corporate theme, the breakthrough passage was named "Bossland" and the new dive the "Bossland Sump". The Glass Ceiling might need another generation to be broken, but via the Lateral Hire Sump, Bossland could be reached. Probably game, set, match on the corporate theme, but who knows... (perhaps a tennis theme is next?!)

The very short and shallow (almost a duck-under) Lateral Hire Sump was surveyed on the way out and linked into the main survey. Further investigation could potentially yield a bypass of that, for what it's worth. The return dive through the DIY Sump began at 10 pm, and after deconstructing and packaging the dive gear, I rolled into camp with a load of water at 11:30 pm. It had been one epic day, where karma nearly got the better of me, and I learned a valuable lesson about checking the most obvious leads first.



Enticing view of the Bossland Sump

Photo: Stephen Fordyce

It's a bit complex to say how to approach a dive in the Bossland Sump, which is now the 3rd consecutive sump in the upstream direction. If the sump goes a long way, and is complex, a drysuit is much better for comfort and optimal underwater problem solving (and underwater surveying). But a drysuit is terribly restrictive and hot if there's any dry caving - even the 100 m walk from the Lateral Hire Sump to the Bossland Sump would be quite annoying. On balance, I recommend the next dive be done in a wetsuit, with a focus on finding out what the cave does (underwater survey should still be possible, above water survey will be much more likely).

If it turns out to be an epic dive with exposure the limiting factor, that exercise can be combined with the through trip, when the gear will be down there anyway. After the last 2 trips with epic loads, a wetsuit dive will be much less gear as well. A cylinder with 190 bar remaining, the rigging gear and weightbelt and the wing were left in the cave with this in mind - the next dive trip should only need 3-4 relatively modest bags of dive gear. This can also be used to check the new Gallantry Sump, which is likely to be short and have dry caving on the other side.

The immediate goal will be to push the master cave into the vicinity of the Living Fossils Extension of Growling Swallet, so that dry cavers can hopefully push through and all can ultimately continue pushing towards Porcupine with access via Growling.

