Edition 304

NOVEMBER 2025

NEXT TRIPS

Lenard Track overnighter
Christmas Party
Trip planning Meeting
Australia Day Weekend

Next Meeting
November 26

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CLUB CONTACT DETAILS
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Secretary: secretarypeel4x4club@outlook.com
Treasurer: peel4x4.treasurer@gmail.com
Magazine Email: peel4x4magazine@gmail.com

2025—2026 COMMITTEE
President Aaron Crane
Vice President Julie Power
Secretary Gary Mayes
Treasurer Dave Knudsen
Insurance Officer Julie Power
Environmental Officer Duane Buckenara
Trip Coordinator Steven Power
Magazine Editor Brian Tanner
Property Officer Jacob Yardley
Delegate Ray and Sharron Warry
Webmaster Gary Mayes

NEXT GENERAL MEETING
26/11/2025
GENERAL MEETING VENUE
Secret Harbour Surf Lifesaving Club
Downstairs
Doors open 7.00 pm
Meeting starts 7.30 pm
NEXT COMMITTEE MEETING
10/12/2025
COMMITTEE MEETING VENUE
Nuddo's place

Membership Fees $140.00 for the first year then $90.00 per annum. Pro rata fees will be charged depending on your joining date.

PEEL 4X4 CLUB BYLAWS

1. The trip leader will delegate the position of Safety/Recovery officer to another member prior to trip departure.
2. All members and visitors are to follow the Safety Officer's instructions at all times
3. No pets allowed on club trips.
4. Each club member is to be responsible for the safety and whereabouts of their own children.
5. Trip Leader responsibilities and Tail End Charlie role to be read out before each trip.
6. After 2 trips you must have adequate front and rear recovery points fitted to your vehicle and must have a UHF CB radio.
7. Vehicles without adequate front and rear recovery points are limited to scenic/social and easy rated trips.
8. All trips are to be rated scenic/social; easy; medium; hard and extreme. Visitors are not permitted on hard and extreme trip. Membership of the WA4Wd Assoc is required for attendance on hard and extreme trips.
9. Proceeds from fundraising will be used for club purposes.
10. A limit of 15 vehicles per trip will apply. Trip leader has the discretion to increase or decrease this number.
11. First in best-dressed, if in excess of 15 vehicles wish to attend a trip, based on prior confirmation.
12. Club bank account to hold a minimum of $1000 balance. A portion of this amount may be used to purchase urgent items at the committee's discretion.
13. Whilst every care is taken, no responsibility is accepted.
14. Visitors must attend at least 2 trips, rated easy and/or medium, to qualify for membership. Scenic/social trips will not be counted.

PEEL 4X4 CODE OF ETHICS

1. Keep to the laws and regulations for 4wd vehicles. They may change from state to state.
2. All vehicles must have either comprehensive or third party fire and theft insurance.
3. Keep the environment clean. Carry your own and, maybe, other people's rubbish home.
4. Obey restrictions on use of public lands. Respect national parks and other conservation areas.
5. Obtain permission before driving on private land. Leave livestock alone and gates as found.
6. Keep your vehicle mechanically sound.
7. Take adequate water, food, fuel and spares on trips. In remote areas travel with another vehicle.
8. Respect our wild life. Stop and look but never disturb or chase animals.
9. Respect other recreationalists rights to peace and solitude in the bush.
10. Obey all fire restrictions. Extinguish your fire before leaving. Don't let your exhaust emit sparks.
11. Help in bushfire emergences and search and rescue but only if you are properly equipped and able.
12. Support 4WD touring as a responsible and legitimate recreational activity.
13. All members should behave in a socially acceptable manner at all times.

This code is valuable only if you observe it

PEEL 4X4 CLUB TRIP RATINGS

SCENIC / SOCIAL: *Sealed roads & some good unsealed roads or tracks.*
Road tyres are acceptable.
No 4WD experience required.

EASY: *Unsealed roads or tracks. Expect some corrugations.*
Road tyres are acceptable. Little or no 4WD experience required.
Front & rear recovery points at the Trip Leaders discretion.

MEDIUM: *Off road tracks, with some obstacles expected (rocks, ruts, mud, etc…).*
All Terrain tyres are preferred.
Low range may be required, with a snatch strap recovery possible.
Front & rear recovery points are required, along with basic recovery gear.
Tracks may be a little bit scratchy.

HARD: *Steep terrain and / or rutted tracks.*
All terrain tyres are acceptable; however mud tyres are preferred. Road tyres are not acceptable.
Snatch strap and / or winch recovery may be required.
Front & rear recovery points are required, along with basic recovery gear.
A winch & full recovery gear is preferred.
Some scratches to panel should be expected.

EXTREME: *Very steep, deeply rutted tracks or rock hopping will be encountered.*
Mud terrain tyres are essential, with appropriate driver training preferred.
Adequate front & rear recovery points, and full recovery gear required.
Winching will be expected, and a winch is compulsory on all vehicles.
Expect scratches to body work, along with panel damage.

Basic Recovery Gear: Snatch strap, 2x rated shackles, and gloves.
Full Recovery Gear: Snatch strap, rated shackles & gloves, tree trunk protector, winch extension.

PLEASE NOTE

Whilst every attempt will be made to accurately describe & classify all trips, weather & other conditions can alter a trip significantly.

The Trip Leader may alter the trip classification at any time, depending on the prevailing weather conditions.

Please confirm your attendance by contacting the Trip Leader a few days prior to the trip. This also gives them the opportunity to advise you of any last minute changes.

Vehicles without adequate front & rear recovery points are limited to Social / Scenic & Easy rated trips.

Visitors are always welcome on Scenic / Social, Easy & Medium rated trips.

CONVOY PROCEDURES

1. Trip leader is to call a group meeting prior to start and remind members of convoy procedure.
2. Leader is to appoint a tail end Charlie and safety officer for each trip.
3. Observe road rules at all times.
4. Leader to appoint a trip reporter.
5. All drivers are responsible for their passengers at all times.
6. All vehicles are responsible for the following vehicle when turning off the road and at cross roads.
7. Vehicles leaving convoy for any reason wave on the remainder of the convoy and inform the Tail End Charlie of their intentions.
8. Keep a safe distance behind the vehicle in front of you. Drive within braking distance especially when wet.
9. When off road allow the vehicle in front of you to get over the crest of a hill before you attempt to follow. Wait for the all clear.
10. No vehicle is to pass the trip leader unless directed or in an emergency.
11. Drive with headlights on at all times. Daylight run lamps are not sufficient as tail lights are required to be on to aid visibility
12. All cars to maintain position/order in convoy at all times.
13. Collect magnetic numbers at designated point of dispersal.

TAIL END CHARLIE RESPONSIBILITIES

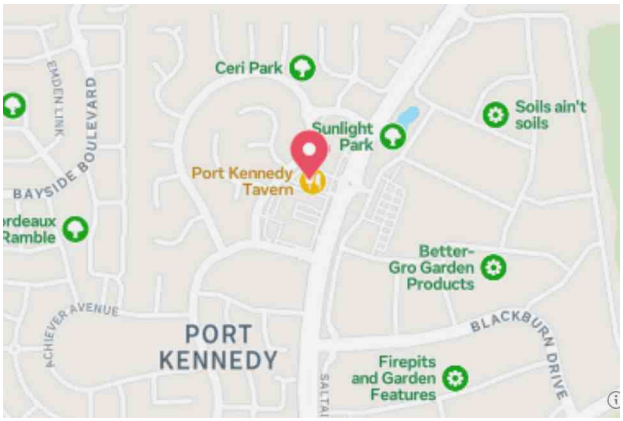
1. Assists trip leader with convoy as directed.
2. Advises when - Convoy is mobile
   Change in direction is completed
   Member leaves convoy
3. Stays with a vehicle that may leave the convoy for a short stop. Advises trip leader when mobile again.
4. Closes gates etc if advised by trip leader.
5. Ensures cleanliness of area at all stops before leaving.

TIPS TO BECOMING A TRIP LEADER

1. A Trip: If there is somewhere you would like to go and would also like to drag the club along with you, why not approach the trip coordinator or another club member and discuss your ideas. Failing that, choose a trip from the club's varied range of notes and maps available.
2. What Experience Must I Have? This depends largely on the grade of trip (scenic/ social, easy. Medium, hard, extreme) and area you wish to conduct you trip in. As a rule of thumb, if you, the trip leader feel confident in your abilities, yet realize your limitations, you're in.
3. Should I Have An Assistant? YES. An assistant is invaluable in helping to bridge the gaps in your experience and to help balance the decision making, someone who is experienced in 4WD is a good choice. They would normally fill the position of tail end Charlie, providing backup from the rear.
4. How To Plan A Smooth Trip: Your trip will only run as smoothly as you plan it. Your pre trip briefing should include convoy procedures, identify tail end Charlie, safety officer, allocation of magnetic numbers, give brief description of what the group may encounter, (the element of surprise doesn't enhance the element of a good trip) and any safety tips eg use of flag.
5. Flexibility: At some stage during your trip, things may go wrong such as running behind time, countless recoveries, trapped or lost. Don't despair, things are never as bad as they seem. Don't be afraid to come forward and consult with the group as they are in it just as much as what you are. Pool your ideas and something always comes of it. Flexibility is the key, never be afraid to change your plan.
6. How To Get Started: Formulate your intention on paper – where you want to go, time and date and any special features of land marks you wish to include. See the trip coordinator who can help out with maps and advice or give you the name of someone who has been there before. You may also need to contact relevant authorities', eg DBCA, caravan parks, road conditions and property owners for further information. The trip coordinator will place your trip on the calendar and organize a sheet to go out at the meeting.
7. What's The Hardest Task? Giving It A Go!!: con, bribe, coerce or draw straws to pick some unfortunate soul to write up a trip report for the magazine (definitely the hardest part). So when you reflect back on your trip your hearsay adventures and yourself, umpteen grueling hours up to your neck in mud and leeches, grueling hours of gut wrenching recoveries and those dribble sessions around a campfire. A trip report ending in the words, "Good time had by all" is well worth giving trip leader a go.

NOTE – If you have ever been a trip leader, you will know how frustrating it is when people put their name on the trip sheet then don't turn up! If you put your name down to go on a trip make note of it and if you are unable to attend for any reason (or no reason at all) let the trip leader know so they are not waiting for you. Be punctual too as you being late can cause frustration when we have to meet up with other people along the way or set tour times! If you are running late phone the trip leader.

Peel 4x4 Club - Trip Planning Meeting
NOTE: Preceded by the January General Meeting.
As we move towards the end of another year, it opens up more opportunities to set the scene for 2026.
Please come to the meeting with any trips & potential dates that you would like to lead a trip.
If you would like to lead a trip, but are a little apprehensive due to never having done it before, please come and see one of the more experienced members prior the end of this year.



We are more than happy to guide you through the process, including mentoring as required.
We are also open to ideas for trips that you would like to see.
The Peel 4x4 Club Committee will provide Pizzas and other available nibblies.

Peel 4x4 Club – Trip Suggestions

From Ian & Ann Arbuthnot

- St Marys Inlet in Fitzgerald River National Park
- Bush Camp. Alexander Bay, East of Cape Le Grand
- Bettys Beach. East of Albany.
- Mt Trio Bush Camp. Stirling Ranges.
- Quobba & Gnaraloo Stations. 4x4. Caravan Suitable.
- Gibb River Road. 4x4. SFC.
- Lucky Bay. Kalbarri. 4x4. SFC.
- Francois Peron National Park. Gascoyne. 4x4. SFC.
- Great Central Road. 4x4. SFC.
- Gregory National Park. Northern Territory. 4x4. SFC.
- Canning Sock Route. 4x4. SFC.

Additional locations

- Lancelin Dunes.
- Julimar.
- Lennard Track.
- Captain Fawcett.
- Jennacubbine
- Pingelly
  Recreation & Cultural Centre. Open up bowling for larger groups. Can stay on oval.
- Morowa
  Looking to get more people out there.
- Moondyne
  Moondyne Track is meant to be really good.
- Pickering Brook
  Has a sports club that is meant to be really good.
- Lake Towerrinning, Moodiarrup
- Army Museum of Western Australia
  Another club has used this for an AGM. Was really good, and can put vehicles on Parade Ground.
- Lennard Track & Collier Powerlines
- Orleans Bay; Israelite Bay; Telegraph Station – All Esperance

- Also, don't forget about the maps which are available on the Peel 4x4 Club Website.

CLUB SHIRTS

PILBARA COTTON SHIRT

AVAILABLE IN FULL & HALF BUTTON LONG & SHORT SLEEVE

$55 ALL STYLES

RAZOR POLO

AVAILABLE IN MENS, LADIES & KIDS SIZING

ADULTS $40
KIDS $35

ALL PRICES INCLUDE EMBROIDERY OF CLUB LOGO

NAMES OPTIONAL EXTRA $7

**** ORDERS CAN BE PLACED THROUGH THE WEBMASTER****

PEEL4X4.WEBMASTER@GMAIL.COM OR AT A GENERAL MEETING

PEEL 4X4 CLUB
Property Register

* 1x Space Case (900L x 390W x 400H
* 4x 490mm Black Plastic Sand Pegs
* 1x ARB Gazebo
* 1x Wanderer Gazebo
* 1x Heatlie BBQ (~880mm x 540mm)
* 1x Plastic Peel 4x4 Club sign (Folding Triangle Core Flute Type)
* 1x 5.33kg Gas Bottle (Empty)
* 1x Wanderer single wall for gazebo
* 1x wanderer half wall for gazebo
* 1x 600mm diameter collapsible bin
* Gavel & block (President)
* Trophy – Most talked about event of the year (1998 – 2014) (Broken)
* Trophy – Burnt pot award (2000 – 2014)
* 4x metal Peel 4x4 signs (staked flag design)
* Various large paper & laminated maps
* 1x 2.9m Snatch Strap
* 1x Red & Yellow Peel 4x4 Club Flag / Banner (1940mm x 970mm)
* 1x Tennis Net in bag (no racquets)
* Heap of old Peel 4x4 Club magazines, hard floppy disks, and stuff…
* 1 orange safety vest

* GME MT610G GPS PLB (with cover)
  UIN = 3EEEAA4E8AFFBFF
  Batch Expiry = 12/2029
  Serial No. = 2206617244

* GME MT610G GPS PLB (with cover)
  UIN = 3EEEAA4E8CFFBFF
  Batch Expiry = 12/2029
  Serial No. = 22066200345

* GME MT610G GPS PLB (with cover)
  UIN = 3EEEAA4E78FFBFF
  Batch Expiry = 12/2029
  Serial No. = 2206620806

Containers for Change

*

After the AGM we made an account to donate the empty recycling containers to the club.

These funds can then be used towards our social functions or other agreed upon purchases for the club as something a little extra.

No obligation, and we understand people collect their own, but if you have any empty bottles or cans laying around please feel free to use the QR code or account

C11064407

Purchase an Entertainment Membership and get a FREE UPGRADE
Simply click on the link below:

https://subscribe.entertainment.com.au/fundraiser/84490n

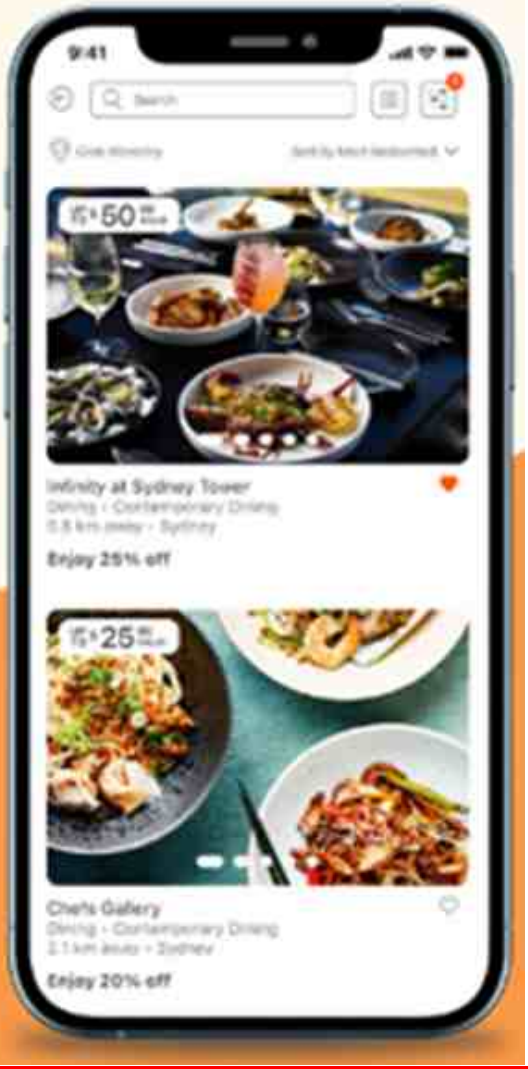
We're fundraising with
Entertainment

Discover more, everyday
with the Entertainment Membership

Bonus Upgrade to
Multi City Membership*

12 months		24 months	
Pay	Save	Pay	Save
$70	$50	$120	$110
We receive		We receive	
$14		$24	

*T&Cs apply.



The savvy way to give back

Buy today and 20% of the purchase price goes directly to our fundraising cause.

Support us now

Aaron's words of wisdom were not available at time of publication

Where's Craney?

It's come to that time of the year with November being the last meeting and the last magazine of the year. Hopefully everyone enjoys the festive season and do whatever you are going to do safely.

One of our daughters has been talking about using AI to write essays for her uni course so I thought it was about time to investigate it myself and use it to research and write something for the magazine. For my first attempt I simply asked Google Gemini to "write an article about suspenion lifts". A few minutes later the results were pretty good with a short article of about 5 paragraphs, it also had a clickbox to research deeper which I clicked on. The result was quite a good in-depth essay that I have included in this magazine Enlightening Eludications section. I must say I am impressed with the results so in coming editions I will occasionally be AI-ing some topics, I just have to remember how I did it. Let me know what you think.

Remember the club events that are coming up over the next couple of months with the Secret Harbour Surf Carnival on this Sunday November 23, the Lennard Track overnighter November 29 to November 30, Christmas party at the King Road Brewery December 14, the January meeting combined with the trip planning meeting at the PK Tavern January 11 and the Australia Day Trip to Windy Harour January 23 to January 26.

I'm looking forward to Australia Day trip and will lead a day trip, probably on the Saturday, to the mouth of the Gardner River then east to Coodamurrup Hut (Moores Hut) and West Cliff Head, which some of my favorite places in the Southwest.

Cheers Brisey

AGENDA - GENERAL MEETING OF THE PEEL 4X4 CLUB

Date: Wednesday 26th November 2025

Venue: Secret Harbour Surf Life Saving Club

MEETING OPENING:

1. TRIPS SINCE LAST MEETING:

2. CONFIRMATION OF MINUTES FROM PREVIOUS GENERAL MEETING:

3. BUSINESS & ACTIONS FROM THE PREVIOUS MINUTES

- No business from the previous minutes.

4. PRESIDENTS REPORT: (Aaron Crane)

5. SECRETARYS REPORT: (Gary Mayes)

6. TREASURERS REPORT: (Dave Knudsen)

7. INSURANCE OFFICERS REPORT: (Julie Power)

8. PROPERTY OFFICERS REPORT: (Jacob Yardley)

9. ENVIRONMENTAL OFFICERS REPORT: (Duane Buckenara)

10. DELEGATES REPORT: (Ray & Sharon Warry)

- Delegates meeting was cancelled.

11. MAGAZINE EDITORS REPORT: (Brian Tanner)

12. WEBMASTERS REPORT: (Gary Mayes)

13. TRIP COORDINATORS REPORT: (Steven Power)

14. GENERAL BUSINESS:

- Raffle

15. TECHNICAL:

- Trip Preparedness

AGENDA - GENERAL MEETING OF THE PEEL 4X4 CLUB

Date: Wednesday 26th November 2025

Venue: Secret Harbour Surf Life Saving Club

16. NEXT MEETINGS:

GENERAL MEETING – Trip Planning Meeting. Sunday 11th January 2026

COMMITTEE MEETING – Wednesday 10th December 2025. Hosted by Dave & Sarah Knudsen.

DELEGATES MEETING – Monday 15th December 2025. TBC

16. MEETING CLOSURE:

GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: Wednesday 22nd October 2025

Venue: Secret Harbour Surf Life Saving Club

Meeting Opened: 7:31pm

Safety Briefing.

ATTENDEES & VISITORS. As per attendance register.

APOLOGIES / PROXIES. As per attendance register.

1. TRIPS SINCE LAST MEETING

- 26th September. Westonia Wildflowers.
- 1st October. Private Trading / Information night.
- 10th, 11th & 12th October. Mandurah Boat, Caravan, 4WD & Camping Show.

2. CONFIRMATION OF MINUTES FROM PREVIOUS GENERAL MEETING – 24th September 2025

Chairperson Aaron Crane has accepted & signed the previous minutes.

No objections as to the accuracy of the minutes, therefore unanimously accepted.

3. BUSINESS & ACTIONS FROM THE PREVIOUS MINUTES

- Gary was to follow up with Bush Barriers in regards to the Mandurah 4x4 Show. Gary mentioned that he did not end up contacting Bush Barriers, as there was not going to be any vehicles on display with them on.
- Gary to follow up with Jacob to grab the Gazebos for the Mandurah 4x4 Show. Completed.

4. PRESIDENTS REPORT (Aaron Crane)

- Nothing to report.

Business for the President:

- No business for the President.

GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: Wednesday 22nd October 2025

Venue: Secret Harbour Surf Life Saving Club

5. SECRETARY'S REPORT (Gary Mayes)

- Gary responded to two website enquiries sent through from the Webmaster. No further response received.
- Gary advised that the pamphlets have been updated (old ones had previous email address), and were printed off for the 4x4 show. These ones were printed off in A6, but should have got been A5. They still look good though 😊
- It was discussed about two clubs leaving the WA4WDA last meeting. These clubs have actually completely disbanded primarily due to being able to keep a Committee, but also due to people not attending meetings, and trips not being organised. It was asked who the two clubs were. Gary said it was the Western Patrol Club, and he believed it was the Southern Suburbs 4WD club.
- Email received from the WA4WDA in regards to the Perth 4WD Show. Gary asked if anyone was interested in manning a tent for the duration of the show. There was no interest, with the opinion that we were best off utilising the Mandurah Boat, Caravan, 4WD & Camping Show.
- Bank statement received from Westpac.
- Mail from ATO stating our Not For Profit self review return is now overdue.

  Business for the Secretary:
- No business for the Secretary.

6. TREASURERS REPORT (Dave Knudsen)

- CREDITS: $90: Saket & Santoshi Membership
  $14.71: Square pay deposit
  $14: Square Pay deposit
  $14.70: Containers for Change. Gary thanked whomever made this donation.
  Total of $133.41
- DEBITS: $90: Refund to Leon Castle (Paid membership twice)
  $28.50: Mandurah 4x4 Show sweets
  $38: New pamphlets
  Total of $156.50
  PENDING: $0
- Communication from Containers for Change advising that they are now accepting a larger variety of containers, including some wine & spirit bottles.

  Gary also discussed that those wanting to donate their proceeds from the Containers for Change, can do so via the QR Code in the magazine.
- No news from the ATO in regards to ABN & TFN.
- CLOSING BALANCE ($6,539.55 on 22/10/2025):

  Business for the Treasurer:
- No business for the Treasurer

GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: Wednesday 22nd October 2025

Venue: Secret Harbour Surf Life Saving Club

7. INSURANCE OFFICERS REPORT (Julie Power)

- Nothing to report.

  Business for the Insurance Officer:
- No business for the Insurance Officer.

8. PROPERTY OFFICER (Jacob Yardley)

- Jacob did not send anything through.

  Business for the Property Officer
- No business for the Property Officer.

9. ENVIRONMENTAL OFFICERS REPORT (Duane Buckenara)

- Duane made mention of there potentially being another mine site coming to the Julimar area.

  Business for the Environmental Officer
- No business for the Environmental Officer.

10. DELEGATES REPORT (Ray & Sharon Warry)

- WA4WDA have paid the National fees (which includes insurance) & the tax bill.
- The old building at Kaarakin has now been demolished.
- Calcup Hill track has a few large trees across it. Unsure how they got there, but will be investigated.
- It was mentioned to look at the website for Adventure Smart → https://www.adventuresmart.org.au/
- Clubs can now get annual grants of up to $1300 via the Department of Creative Industries, Tourism and Sport (DCITS)
- WA4WDA will follow up with Albany to see how the discount is being used. Memebrs of the WA4WDA (our club) can get 20% off retail price.

  Business for the Delegate
- No business for the Delegates.

11. MAGAZINE EDITORS REPORT (Brian Tanner)

- Brian mentioned that he accepted the challenge from Mark Skeels of doing a BIIIIG magazine – and ended up at 164 pages. The next one will be back to the standard 80 to 100 pages.
- Brian also mentioned that the information book (Red Book) has been sent out.

  Business for the Magazine Editor
- No business for the Magazine Editor.

GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: Wednesday 22nd October 2025

Venue: Secret Harbour Surf Life Saving Club

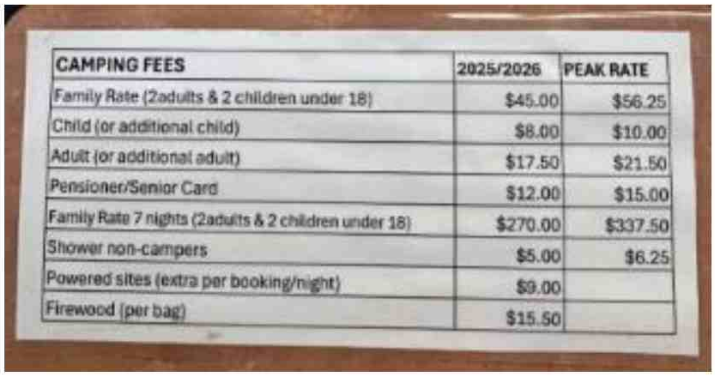
12. WEBMASTERS REPORT (Gary Mayes)

- Gary let everyone know that the Public Magazines & Trip Reports are now on the website. Please make sure we start doing trip reports, and send them through to myself (peel4x4.webmaster@ghmail.com) & Brian (peel4x4magazine@gmail.com)
- 201 website visits in the last 30 days, with 65 of those in the last 7 days.
  277 social views in the last 30 days, with 54 of those in the last 7 days.
- Gary reminded members of the content available on the website. If you cant access it, please contact the webmaster.

  Business for the Webmaster
- No business for the Webmaster.

13. TRIP COORDINATORS REPORT (Julie Power; on behalf of Steven Power)

- 17th to 25th October. Koorda Drive-In & Karrara Ranges. Trip Leader: Mark Skeels.
- ~~Saturday 15th November. Surf Club Carnival. Potentially only a small one.~~ Gary advised that this one has now been cancelled. Surf Club are able to manage it in-house being a small one.
- 16th November. Lancelin Dunes. Dave Knudsen.
- Sunday 23rd November. Surf Club Carnival.
- 29th to 30th November. Lennard Track Overnighter. Trip Leader: Gary Mayes. Camping at Honeymoon Pool. Need to book own sites. Welcome to do day trip only.
- Sunday 14th December. Christmas Party at King Road Brewery. Trip Leader: Peel 4x4 Club Committee.
- Sunday 11th January 2026. Trip Planning Meeting at PK Tavern. Trip Leader: Peel 4x4 Club Committee.
- Friday 23rd January to Monday 26th January. 10 sites have been booked. Need to finalise by December. Prices below.



CAMPING FEES	2025/2026	PEAK RATE
Family Rate (2adults & 2 children under 18)	$45.00	$56.25
Child (or additional child)	$8.00	$10.00
Adult (or additional adult)	$17.50	$21.50
Pensioner/Senior Card	$12.00	$15.00
Family Rate 7 nights (2adults & 2 children under 18)	$270.00	$337.50
Shower non-campers	$5.00	$6.25
Powered sites (extra per booking/night)	$9.00	
Firewood (per bag)	$15.50	

- Saturday 7th February 2026. Surf Club Carnival.

  Business for the Trip Coordinator
- No business for the Trip Coordinator.

GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: Wednesday 22nd October 2025

Venue: Secret Harbour Surf Life Saving Club

14. GENERAL BUSINESS

- Raffle was conducted. Many prizes were won (but not by some, including me ☹)
- Sarah has agreed to make the Christmas Cake.
- Peel 4x4 Club now has a total of 37 members. This includes 4x Life Mmebers
- Membership renewals were discussed, as raised by Gary. The will be a clear cut off date determined by the Committee each year. If you do not renew, you will need to go through the new membership process. This was put to the members, with no objections.

  It was also mentioned that you need to be a financial member to participate in the AGM.
- Brian mentioned that he stumbled across how to plot a map on Google Maps, then save as a gpx file for mapping software.

  He mentioned that you can also plot a map in Google Earth, save as a gpx file, then use software like gpsbabel to convert to other formats.

15. TECHNICAL SEGMENT

- There was no technical segment as such at this General Meeting, however Gary discussed how to be an effective Trip Leader. Items such as planning, having a mentor, reccy trips, social events, etc.... were all discussed.
- A list of trip suggestions was read out by Gary, which was provided by Ann Arbuthnot at the last Trip Planning Meeting. A list (with extras) will be provided for people to consider places to plan a trip to (hopefully when these minutes are sent out).

NEXT GENERAL MEETING: Wednesday 26th November 2025. Downstairs Wet Training Room.

NEXT COMMITTEE MEETING: Wednesday 10th December. Hosted by Dave & Sarah Knudsen.

NEXT DELEGATES MEETING: Monday 17th November. Gosnells RSL Hall.

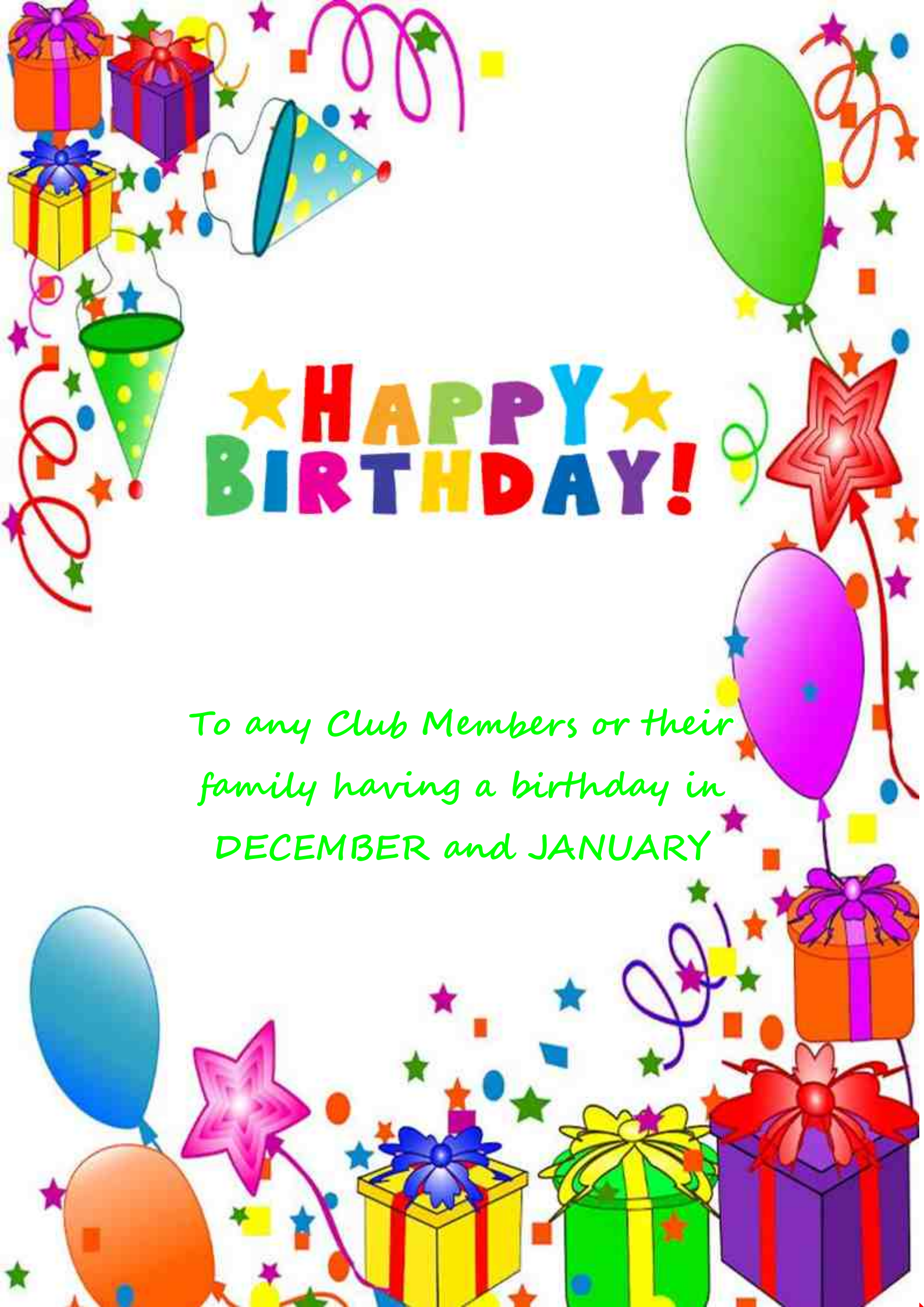
Meeting closed at: 8:49pm

The minutes from this meeting have been verified as true & correct.

Aaron Crane

Peel 4x4 Club Chairperson

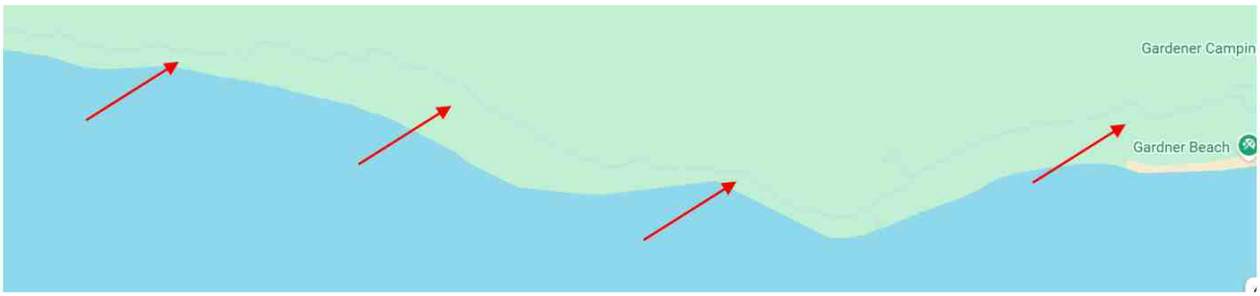
Date: 29-10-25



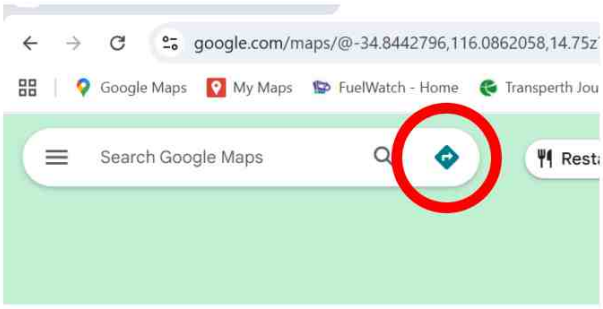
To any Club Members or their family having a birthday in DECEMBER and JANUARY

PLOTTING A TRACK ON GOOGLE MAPS AND CONVERTING TO GPX FILE

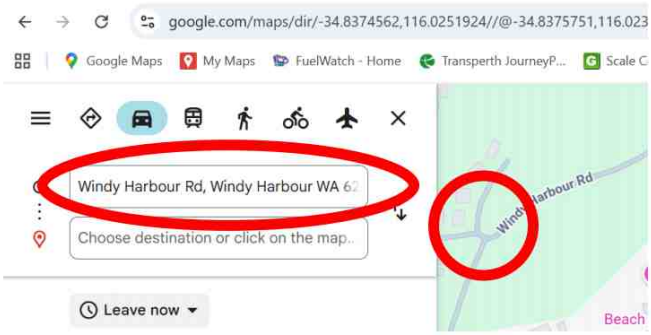
Open Google Maps and check Google is showing a track of some description where you wish to plot. In this example I am using the track from Windy Harbour to the mouth of the Gardner River. You can see the faint track following the coast. I know this is a sand track through the dunes so there is a good chance Google will plot it and the Maps to GPX app will convert it



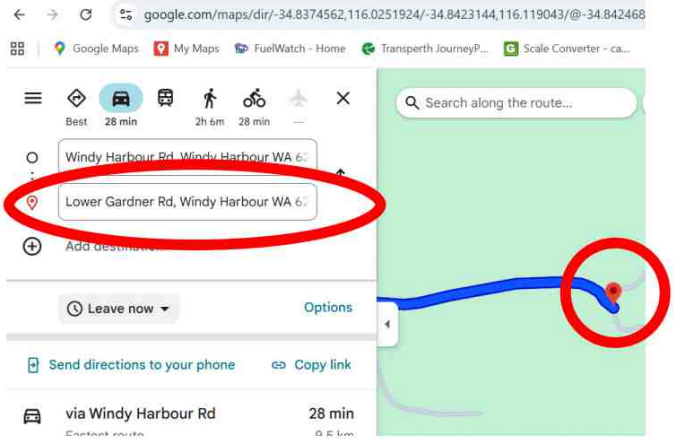
Next click on the Directions button



Click in the Choose starting point box then click on the starting point for your track



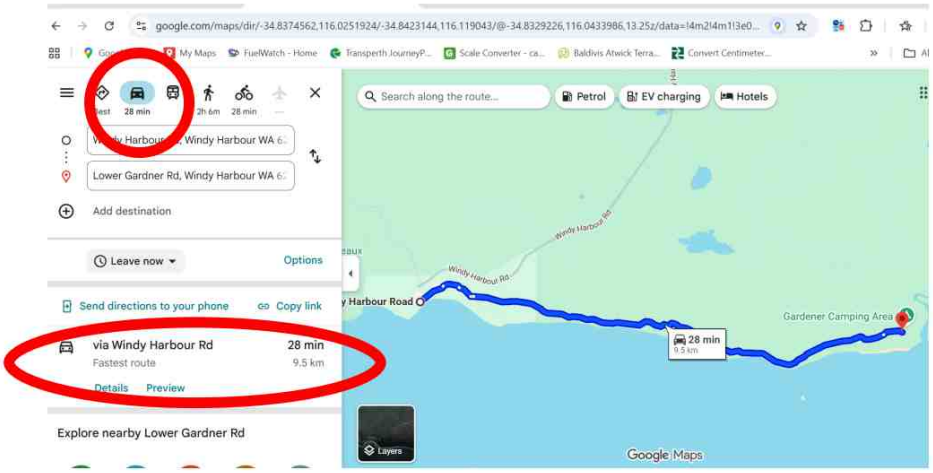
Click in the Choose destination point box then scroll the map to the destination point then click on it. You may need to add a few of these points.



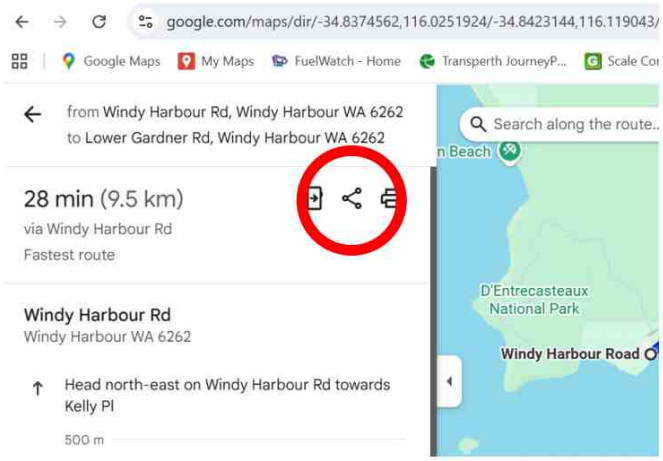
The blue line showing the route will appear.

Make sure you click on the car button, selecting best won't work with the software

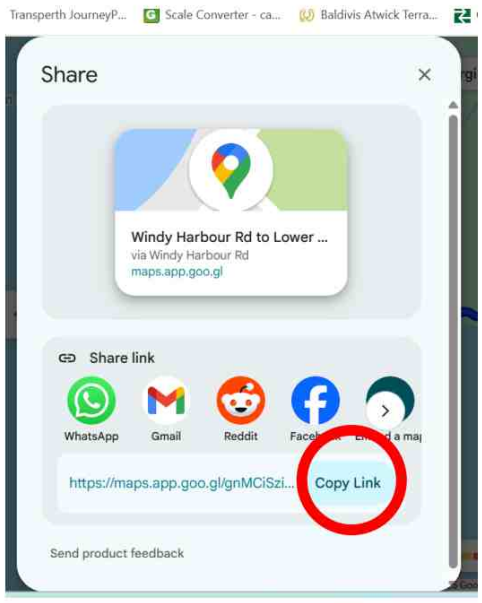
Click on the route, if there is more than one route click on the one you want



Click on the share symbol



Click on the copy link button

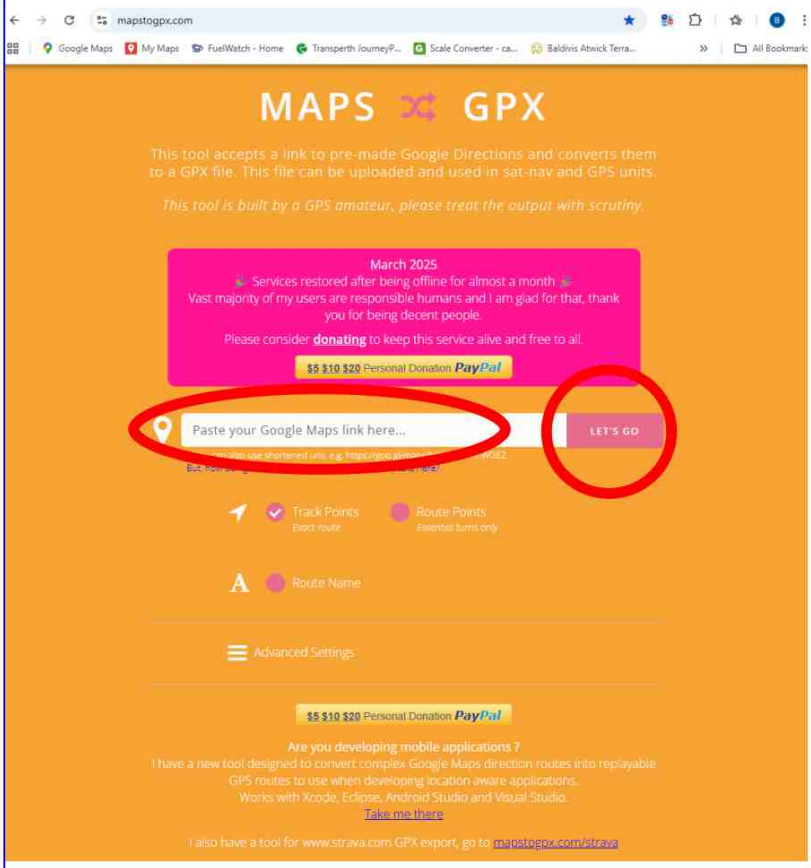


Open the Maps to GPX website

https://mapstogpx.com/

Paste the link from Google maps into the dialogue box

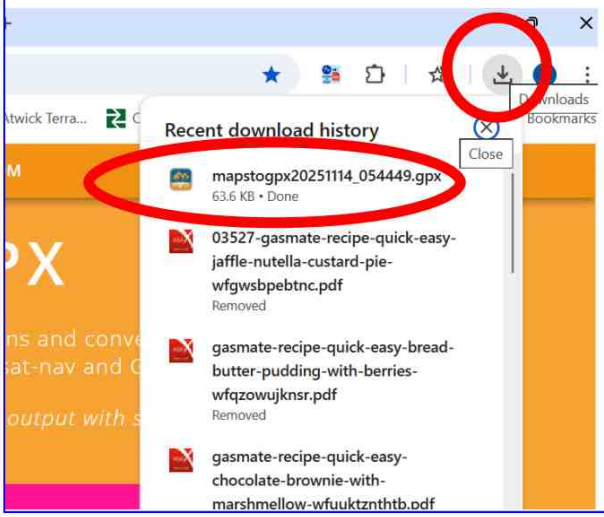
Click Let's Go to generate your GPX track



Your GPX file will be downloaded to your Downloads Folder.

The GPX file can be used with most navigators such as Garmin Hema HX 1, Hema HX 2, Hema HX 2+, Oziexplorer PC and Android versions. For use on Hema 5, 6 and 7 the GPX file will need to be converted to a PLT file with software such as GPS Babel.

Please be aware the software doesn't always work you may have to recheck some of your selections in Google Maps



A Definitive Technical Analysis of Suspension Lift Systems: Engineering for Performance and Integrity

I. The Strategic Role of Vehicle Elevation: Context and Fundamentals

1.1 Defining the Suspension Lift: Principles of Frame Elevation

A suspension lift kit is an aftermarket modification engineered to increase the vertical distance between a vehicle's axles and its chassis or frame.[1] Unlike modifications that purely augment the appearance, a suspension lift achieves a critical functional outcome: raising the lowest structural points of the vehicle higher off the ground.[2] This direct increase in ground clearance is paramount for enhancing off-road performance, specifically enabling the vehicle to traverse challenging terrain such as logs, rocks, and deep ruts without sustaining damage to vulnerable undercarriage components.[3] By elevating the entire suspension system and the vehicle body relative to the axles, the lift ensures greater clearance for improved performance and maneuverability.[3]

1.2 Suspension Lift vs. Body Lift: A Comparative Analysis of Cost, Clearance, and Handling Dynamics

The decision between a suspension lift and a body lift fundamentally determines the modification's impact on vehicle dynamics, cost, and functional utility.

From a functional standpoint, the distinction is straightforward: a body lift raises the body away from the frame but yields no additional ground clearance.[1] Consequently, only a suspension lift, which raises the frame itself, ensures added ground clearance necessary for active off-roading.[1]

Kinematically, the elevation mechanism affects the vehicle's center of gravity (COG). A suspension lift raises approximately 90% of the vehicle's total weight, resulting in an increase in the COG that is nearly proportional to the lift size (e.g., a 3-inch suspension lift translates to a 3-inch increase in COG).[1] This inherent elevation of mass is the causal link to compromised on-road handling, specifically increased body roll, reduced stability in turns, and a heightened risk of tipping.[4] Conversely, a body lift only raises about 20% of the vehicle's weight, causing a minimal COG increase (e.g., a 3-inch body lift results in only a 0.60-inch COG increase), thereby maintaining closer to factory handling characteristics.[1]

From an economic and complexity perspective, body lifts generally consist of simpler kits and are less expensive upfront, though they often require professional installation.[4] Suspension lifts are more complex, involve more components, and always mandate a post-installation wheel alignment to correct the altered geometry.[4] Generally, the taller the desired suspension lift, the more likely professional installation will be required.[4]

1.3 Off-Road Performance Metrics: Ground Clearance, Approach, Departure, and Breakover Angles

Suspension elevation transforms a vehicle's capability by substantially improving its geometric metrics, which are critical for navigating obstacles.

The most immediate benefit is the increase in ground clearance, which minimizes the risk of damage from rocks, logs, and other obstacles contacting the lowest chassis parts.[3] Furthermore, a quality suspension lift is specifically engineered to increase the range of axle articulation—often referred to as cross-axle ability.[2] Articulation refers to the maximum angle the suspension can flex on opposite corners, which maximizes the ability of the tires to maintain contact with the ground over severely uneven terrain, ensuring traction where a stock vehicle would lift a wheel.[2]

Critical to maneuverability are the approach, departure, and breakover angles.[3] A suspension lift significantly improves the approach angle (the steepest incline the front of the vehicle can handle without collision) and the departure angle (the corresponding angle at the rear).[8] Optimizing these angles prevents

potential hang-ups and allows for the aggressive negotiation of rugged trails.[8] However, it is essential to understand that while the lift raises the frame, the lowest point on the differential or axle housing remains fixed unless the wheel size changes. Therefore, realizing maximum obstacle clearance requires combining the suspension lift with appropriately larger tires, which further augment these angles by lifting the lowest point of the bumper and the axle relative to the ground.[10] This establishes that the modification process is holistic; maximizing functional off-road gains necessitates the synchronized deployment of both suspension modifications and larger rolling stock.

II. Taxonomy of Suspension Lift Architectures

Suspension systems are classified based on their complexity, method of lift, and ultimate performance capability, ranging from simple spacers to highly adjustable long-travel components.

2.1 Leveling Kits and Spacer Lifts (Budget Systems)

Leveling kits are the simplest and least invasive form of suspension modification. They are primarily front suspension lifts designed to raise the front end of a raked vehicle (where the front sits lower than the rear) to match the height of the rear, improving appearance and stability.[1]

Spacer lifts achieve elevation by inserting a component above or below the factory coil spring or strut assembly.[14] This approach is affordable and accessible, increasing ride height (typically 1–3 inches) without altering the internal characteristics of the original equipment manufacturer (OEM) shocks or springs.[14] While spacers allow for larger tires and a more aggressive stance, the analysis shows significant limitations regarding performance durability. Spacers do not improve articulation or the ability to absorb bumps.[14] In critical cases, they can limit the available suspension travel, as the factory shock length remains unchanged.[14] Raising the vehicle height without lengthening or adjusting the suspension members introduces geometry challenges that prematurely strain components like CV axles and ball joints, translating low upfront costs into potentially high long-term maintenance expenses.[14]

2.2 Full Replacement Lift Systems (Mid-Range Solutions)

Full replacement kits supersede factory components, offering improved performance, greater heights, and better load management capacity.

These kits often utilize longer, potentially higher-rate coil springs or complete aftermarket strut assemblies to achieve greater lift (2–6 inches or more), fundamentally altering the ride quality and handling profile compared to stock.[15]

Methods for rear axle lift vary depending on the suspension architecture:

- **Rear Block Kits** are widely popular for their affordability and ability to afford the best ride quality, though they may introduce axle wrap issues on some vehicles.[18]
- **Add-a-leafs** are supplemental leaf springs utilized to strengthen weak factory springs. They are highly recommended for vehicles frequently subjected to heavy hauling or towing.[18]
- **Full Replacement Rear Springs** are necessary when factory springs are damaged or overly fatigued, providing the most reliable long-term solution for maintaining load capacity at elevated heights.[18]

2.3 High-Performance and Long-Travel Systems (Premium Solutions)

These architectures represent the highest level of suspension engineering, aimed at maximizing dynamic performance, tunability, and articulation.

Coilover Conversions

A coilover system combines the shock absorber and the coil spring into a single integrated assembly.[14] This design is paramount in high-performance applications, as it allows for specialized design features that significantly increase suspension travel and improve articulation, making them superior for challenging off-road conditions.[13] Premium coilovers are highly desirable because they offer adjustability; features like threaded preload collars and Dual Speed Compression (DSC) adjusters allow serious enthusiasts to fine-tune the suspension response to account for varying loads (such as accessories or towing duties) or changing terrain.[14] This capacity for adjustment is an essential engineering countermeasure to the vehicle's elevated center of gravity, allowing the driver to stiffen damping settings to mitigate instability during aggressive maneuvering.[14]

Long Travel Systems

Long travel systems are specialized for high-speed off-road racing and pre-running. These modifications dramatically increase both wheel travel and track width.[20] These systems, which typically utilize extended A-arms, upgraded shocks, and coilovers, allow the vehicle to absorb major impacts, maintain stability through deep ruts, and move confidently across terrain that would destroy a conventional suspension setup.[20]

Table 3: Comparative Analysis of Suspension Lift Types

Lift Type	Mechanism	Articulation Gain	Damping Quality	Geometry Correction	Primary Application
Spacer / Leveling Kit	Spacers on OEM components	Minimal / None	Retains OEM quality	Minimal (High risk of component wear)	Aesthetics, Minor Tire Increase, Rake Elimination
Full Coil Spring Replacement	Taller aftermarket springs/dampers	Moderate (Determined by shock length)	Improved, fixed performance	Requires external correction components	Balanced Off-Roading, Heavy Loads, Towing
Coilover Conversion	Integrated, adjustable spring and damper	Significant	Superior (Tunable, Serviceable)	Optimized/Integrated	Optimized Performance, Adjustability, Serious Off-Road
Long Travel System	Extended A-arms, Custom components	Dramatic	Highest (Absorbs major impacts)	Integrated (Increases track width)	Extreme High-Speed Racing/Pre-running

III. Engineering Integrity: Components and Geometry Correction

Achieving a successful suspension lift, particularly beyond 3 inches, necessitates a comprehensive approach to correcting altered suspension geometry. This mandates the replacement or addition of specialized components to ensure safety and preserve vehicle longevity.

3.1 Core Kit Components: Springs, Dampers, and Structural Replacement

For major lift kits (typically 4 inches and above), the modification requires extensive structural component replacement.[19] This complexity confirms the inherent cost difference between budget and quality systems. Essential structural components often include:

- **Crossmembers:** Lower control arm crossmembers are replaced with heavy-duty, robust units (often 1/4" thick steel).[19] These are typically arched to maximize ground clearance despite the functional necessity of lowering the control arm pivot points to maintain proper geometry.[19]
- **Steering Knuckles:** Extended length ductile iron Steering Knuckles are often provided to replace the stock units. These are engineered specifically to retain zero bump steer throughout the full suspension travel range.[19]
- **Dampers:** High-performance shocks, coilovers [24], or performance shocks [19] are integral to managing the vehicle's sprung and unsprung mass at the new ride height.[25]

3.2 Maintaining Axle Alignment: The Crucial Role of Track Bar Relocation Brackets

In vehicles equipped with solid axles, lifting the suspension geometrically shortens the track bar (or Panhard rod) relative to the frame mounting point. This shortening causes the axle to shift laterally, resulting in handling issues and an uncentered axle.[26]

Track bar drop brackets or relocation brackets are therefore essential components included in quality lift systems.[27] These brackets relocate the factory track bar to help keep the axle centered under the vehicle and maintain correct geometry.[26] Failure to properly correct the track bar angle can directly result in steering instability and uneven tire wear.[26]

3.3 Control Arm Management: Upper Control Arms (UCAs), Radius Arms, and Drop Brackets

Control arms are fundamental in dictating critical alignment parameters, including caster and camber. Lifting the vehicle rotates these geometry angles out of OEM specifications.

- **Upper Control Arms (UCAs):** Replacing the stock UCAs is vital for leveled and lifted applications. Aftermarket UCAs, often built from high-strength tubing, are specially designed with adjusted length and geometry to increase wheel travel and successfully restore proper caster and camber settings.[28]
- **Radius and 4-Link Arms:** For vehicles like certain Ford and Ram trucks, heavy-duty replacement Radius Arms or 4-Link arms are used to upgrade weak factory stamped components, adding strength and functionality to manage axle movement under strenuous conditions.[29]

3.4 Steering Linkage Optimization: Drop Pitman Arms and Tie Rod Relocation

Improper steering geometry after a lift can lead to dangerous and unpredictable handling, primarily through a phenomenon known as "bump steer." Bump steer occurs when the suspension cycles (compresses or droops), causing the tires to suddenly toe-in or toe-out, making steering unpredictable.[30] This movement is caused by a misalignment between the arc of the steering linkage and the arc of the suspension control arms.

Corrective engineering measures include:

- **Drop Pitman Arms:** These lower the steering linkage connection point at the steering box, bringing the steering linkage angle closer to the ideal position parallel to the control arms.[26]

- **Tie Rod Relocation Kits:** These kits reposition the tie rod mounting points, further ensuring proper alignment with the control arms to reduce the bump steer effect.[30]
- **Lower Control Arm Drops:** In large lift kits, these brackets help return the lower control arms to a more level position, restoring geometry.[30]

3.5 Safety and Driveline Security: Extended Brake Lines and Auxiliary Components

The structural changes imposed by a lift necessitate ancillary safety components to prevent failure under dynamic use.

- **Extended Brake Lines:** Extended brake lines are not accessories; they are vital safety components.[32] Lifting a vehicle alters suspension geometry, and when the suspension reaches full articulation or droop off-road (especially with sway bars disconnected), factory brake lines can exceed their designed operational range and risk catastrophic failure.[4] Extended lines are critical for maintaining brake system integrity, generally for lifts exceeding 3 inches.[33]
- **Auxiliary Components:** Lift kits also include components like differential mounts, sway bar mounts, and rear bump stop spacers to ensure all components work in harmony and articulation is optimized.[19]

Table 4: Suspension Lift Components and Their Function in Geometry Correction

Component Type	Example Component	Primary Problem Solved by Component	Consequence of Neglect
Axle Alignment	Track Bar Drop Bracket	Lateral shift of solid axle relative to frame	Steering instability, Uneven tire wear
Steering Geometry	Extended Steering Knuckles, Drop Pitman Arm	Incorrect tie rod angle relative to control arm	Bump Steer, Unpredictable handling
Suspension Alignment	Upper Control Arms (UCAs)	Altered Caster and Camber settings	Poor steering return, Premature tire wear
Safety	Extended Brake Lines	Stress/stretching of factory lines at full droop	Catastrophic brake failure

IV. Addressing Handling and Driveline Dynamics

4.1 Stability Compromise: Analyzing the Effects of a Raised Center of Gravity on Handling and Body Roll

The fundamental consequence of increasing ground clearance with a suspension lift is the elevation of the vehicle's center of gravity (COG), which inherently affects stability and handling.[5] This elevated mass contributes to increased body roll, which is pronounced in sharp turns and at highway speeds.[4] Furthermore, a higher stance increases the vehicle's profile, leading to greater wind resistance, which may slightly impact fuel efficiency.[5] If a lift exceeds approximately four inches without the necessary component upgrades, the vehicle's lateral stability can be significantly compromised, leading to a higher risk of tipping.[6]

Performance lift systems must counteract this fundamental trade-off by employing sophisticated damping control to limit the excessive movement of the raised mass.

4.2 Driveshaft Angle Stress: Causes of Vibration and Premature Wear

Lifting the vehicle increases the operating distance and angle between the transfer case and the differential, placing added stress on the driveshafts.[34]

The mechanical source of the resulting vibration often heard after a lift (particularly after adding rear lift blocks) [36] lies in the universal joints (U-joints). When the driveshaft angle becomes too steep, the U-joint on the driveshaft accelerates and decelerates slightly during each rotation relative to the transmission output.[37] If the opposite U-joint at the differential does not perfectly cancel this effect, the fluctuating rotational speed is transferred to the axle, leading to vibration, noise, and premature component wear throughout the driveline.[34] Addressing this vibration is critical not merely for comfort but for ensuring the long-term mechanical integrity of expensive components like transfer case output bearings and U-joints.

4.3 Driveline Correction Strategies

Mitigating driveline stress and vibration requires adjusting component angles to maintain the necessary mechanical synchronization.

- **Slip Yoke Eliminators (SYE) and CV Driveshafts:** The most robust solution for major lifts is the installation of a Slip Yoke Eliminator (SYE) kit, which converts the transfer case output from a sliding slip yoke to a fixed yoke.[38] This allows the installation of a longer, double cardan (CV) driveshaft. This configuration minimizes the working angle of the driveshaft and utilizes the CV joint to manage the steep angle while maintaining vibration-free power transfer.[38] An ancillary benefit is a slight increase in ground clearance compared to a transfer case drop.[39]
- **Transfer Case Drops:** A less ideal, budget-friendly strategy involves installing spacers to drop the entire transfer case lower relative to the frame.[38] This shallows the driveshaft angle but sacrifices the ground clearance gained by the lift, partially counteracting the primary goal of the modification.[39]

4.4 The Necessity of Post-Installation Wheel Alignment

The alteration of suspension geometry imposed by a lift kit mandates an immediate and professional wheel alignment.[7] This step is crucial for maintaining safe operation, reducing component stress, and maximizing tire life.

Suspension modifications fundamentally change the vehicle's camber, caster, and toe settings.[40] Without proper alignment adjustment, the vehicle's handling can become unpredictable, reducing stability and increasing the risk profile associated with the raised COG.[40] Furthermore, inconsistent geometry leads to uneven tire wear—for instance, negative camber may cause excessive wear on the outer edges of the tires.[40] Considering the significant expense of large aftermarket tires, periodic alignment checks (recommended every 6,000 miles or 6 months after the initial installation) are essential for maximizing tire longevity and preventing unnecessary costs.[7] Correct caster settings, achieved through professional alignment and geometry components like new Upper Control Arms, are particularly important as they restore the necessary self-centering force to the steering system, preventing wander and maintaining directional stability at highway speeds.

V. Mandatory and Recommended Ancillary Modifications

A suspension lift is typically the enabler for a series of cascade modifications required to achieve full functionality, safety, and performance with larger tires.

5.1 Integrating Larger Tires: Clearance Modification Requirements

The desire to fit larger tires often drives the lift kit purchase.[3] Generally, increasing tire diameter by 2.5 to 3

inches over stock requires a suspension lift.[11] However, achieving functional clearance for very large tires (e.g., 35 inches and above) often requires structural modification beyond simple suspension work:

- **Fender and Liner Trimming:** Minor trimming of plastic fender liners or removal of factory mud flaps is frequently necessary to stop rubbing in the wheel wells.[11] For more aggressive setups, extensive fender trimming or replacement of fender flares may be required to push clearance beyond the firewall.[41]
- **Body Mount Chops (BMC):** A necessary structural modification on many truck and SUV platforms involves cutting and welding the body mounts near the firewall pinch weld to prevent the tire from contacting the chassis under full suspension compression or maximum steering angle.[11]

5.2 Re-Gearing Differentials: Restoring Power and Correcting Final Drive Ratio

Larger diameter tires increase rotational mass and alter the final drive ratio, severely degrading the vehicle's original performance characteristics. The increase in leverage the engine must overcome leads to sluggish acceleration, reduced torque (harming towing/hauling capabilities), increased transmission "gear hunting," and reduced fuel economy.[11]

Re-gearing—replacing the differential ring and pinion sets with a numerically higher ratio (e.g., swapping a 3.91 ratio for a 4.88 ratio)—is mandatory for vehicles running significantly oversized tires.[11] This process restores the mechanical advantage lost to the larger tire circumference, allowing the vehicle to operate within its original performance curve, especially critical for towing and maintaining off-road power delivery.[11] The total budget must therefore account for not only the lift kit but also the specialized parts and labor required for differential re-gearing.

5.3 Calibration: Ensuring Safety and Functionality

Electronic systems must be accurately calibrated to account for the new vehicle dynamics.

- **Speedometer Recalibration:** Because vehicle speed is often measured via tire revolutions, changing the tire height alters the rotations per mile, leading to inaccurate speedometer and odometer readings.[43] This requires recalibration, either electronically via specialized tuning tools or, on older vehicles, mechanically using calibration gear kits, ensuring legal compliance and safe operation.[43]
- **Advanced Driver Assistance Systems (ADAS) Recalibration:** A critical consideration for modern vehicles is the impact on active safety features. Systems utilizing radar, sonar, or cameras (e.g., collision avoidance, lane keep assist) rely on factory ride height and geometry for accurate aim and function.[27] Lifting the chassis changes these sensor angles. Failure to re-calibrate ADAS systems using OEM dealer service tools and factory-trained technicians can compromise the vehicle's intended safety functions, representing a severe, hidden risk.[27]

VI. Investment, Durability, and Regulatory Compliance

6.1 A Cost-Benefit Analysis: Budget vs. Premium Suspension Systems

The initial price differential between budget and premium suspension lift systems reflects vast differences in engineering sophistication, material quality, and long-term durability.

Budget suspension kits offer an accessible entry point for owners prioritizing aesthetics or light off-road capability.[17] However, these kits often employ basic, rigid components and may use materials with a limited lifespan, leading to premature wear, especially under demanding conditions.[17] Critically, budget systems frequently lack the necessary geometry correction components, transferring strain to factory drivetrain parts like CV axles and tie rods.[17] The initial savings are often ultimately consumed by accelerated maintenance costs and a significantly harsher ride quality.[17]

Premium suspension systems (e.g., utilizing coilovers or comprehensive replacement kits) represent a higher investment based on engineered performance.[17] They provide superior ride comfort and responsive

performance both on-road and off-road, achieved through high-quality materials, better articulation, and advanced damping control.[45] These systems are designed to properly correct suspension geometry, ensuring components work in harmony, maximizing longevity, and providing reliable performance under heavy use.[17]

6.2 Legal and Regulatory Constraints: A Case Study in Compliance (Australia)

Vehicle modification is subject to complex jurisdictional regulations intended to maintain safety and compliance with the Australian Design Rules (ADR) and the National Code of Practice (NCOP).[46]

In several Australian states (including Western Australia, Victoria, and Queensland), the maximum total lift permitted without requiring formal engineering certification is **50mm**.[48] This limit is cumulative, encompassing all forms of elevation: suspension lift, body lift, and tire diameter increase.[49] If an enthusiast installs a 50mm suspension lift and then fits larger tires, the total elevation often exceeds this threshold, immediately mandating certification.[49]

Raising a vehicle beyond 50mm (up to 150mm) requires certification under the LS Codes for Steering and Suspension modifications.[50] Achieving an Engineering Certificate confirms compliance with the NCOP and often necessitates rigorous dynamic assessments, such as a Lane Change test or Electronic Stability Control (ESC) simulation.[46] This regulatory barrier significantly increases the complexity and cost of major lifts, transforming legal compliance into an essential engineering constraint.

6.3 Warranty Considerations

It must be noted that any alteration to a vehicle's suspension system, particularly major modifications involving component replacement, carries the potential to void certain portions of the manufacturer's factory warranty.[35] Consumers should thoroughly review warranty terms and understand the potential financial risks associated with complex aftermarket modifications.

VII. Conclusions and Recommendations

Suspension lifting is an intricate engineering endeavor that must be approached holistically. Success is defined not merely by height achieved, but by the successful management of the resulting kinematic trade-offs.

1. **Prioritization of Geometry over Height:** The analysis confirms that the primary engineering challenge lies in correcting suspension, steering, and driveline geometry to maintain integrity and predictable handling, especially for lifts exceeding 3 inches. Components such as extended steering knuckles, specialty control arms (UCAs), and track bar relocation brackets are not optional accessories but mandatory structural replacements necessary to mitigate bump steer, maintain alignment, and center the axle.
2. **Driveline and Safety Mandates:** Driveline vibration, a direct result of driveshaft angle stress, must be addressed via the installation of Slip Yoke Eliminators and CV driveshafts for high lifts, treating this modification as a necessity for longevity, not merely a comfort upgrade. Crucially, extended brake lines and immediate, professional wheel alignment are non-negotiable safety requirements.
3. **Holistic Budget Planning:** The true cost of a functional lift system extends far beyond the price of the lift kit. Enthusiasts must budget for the entire ecosystem of necessary ancillary modifications, including larger tires, structural trimming (Body Mount Chops), and the significant expense of differential re-gearing to restore performance. Failure to integrate re-gearing risks severely degrading drivability.
4. **Long-Term Value in Premium Systems:** While budget systems offer initial savings, the compromised geometry and lower-quality materials often lead to accelerated wear on factory drivetrain

components, effectively consuming the upfront savings through increased long-term maintenance. Premium, engineered suspension systems provide superior ride quality, durability, and better geometry correction, offering greater long-term value and reliability for serious performance applications.

5. **Modern Systems Require Calibration:** The integration of Advanced Driver Assistance Systems (ADAS) introduces a new layer of complexity. Lifting a modern vehicle requires specialized electronic recalibration of ADAS sensors and the speedometer to ensure safety systems function as designed, confirming that professional post-installation technical service is mandatory.

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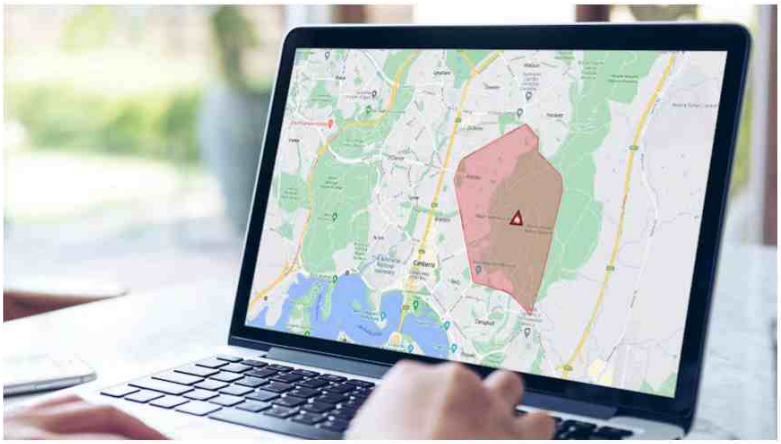
Emergency warnings explained



The Australian Warning System can help you quickly understand the level of risk in an emergency. *(ACT Emergency Services Agency)*

During an emergency, the Australian Warning System (AWS) can help you quickly understand the level of risk in an emergency.

It's used for all types of emergencies by state emergency services and local councils across Australia.

The AWS has three levels of warnings that are colour coded. They are:

- Advice (yellow) — There is a hazard in your area. There is no immediate danger. Stay informed, the situation could change.
- Watch and Act (orange) — There is a threat to lives and properties. Conditions are changing. Take action to protect yourself and your family.
- Emergency Warning (red) — This is the highest warning level. You are in danger. Take action immediately. Any delay will put your life at risk.

Read the definitions of some common terms you'll come across in the different types of warnings.

What you should do

Each warning has an instruction that tells you what you should do.

For example, an Advice warning may ask you to "Stay Informed", while an Emergency warning may ask for immediate action like "Leave Now".

Each incident may have multiple warning levels and instructions depending on where you are.

For example, some people close to a bushfire may have an Emergency Warning with the instructions to "Seek shelter", whilst others in the same town but further from the bushfire may have a Watch and Act warning with the instructions to "Prepare to Leave".

The instructions will change depending on the threat to lives and homes and the type of emergency.

Fire authorities urge all Australians to understand the official warning system and what life-saving action they should take in an emergency.

When will I see these warnings?

The AWS is used for all types of emergencies. You may see these warnings when there's a fire, flood, dangerous storm or other severe weather in your area.

Learn more about emergency services where you are in Australia. You can also find up-to-date information on the ABC's emergency warnings map.

Bureau of Meteorology warnings

The Bureau of Meteorology (BOM) issues information and warnings about weather events that could cause harm.

State emergency agencies, like fire agencies and the SES, and local councils use the information from the BOM warnings to inform when they need to issue the colour-coded Australian Warning System warnings.

In a real life event, it might look something like:

1. The BOM issues a severe weather warning and an alert for major flooding of a river.
2. As a result the state emergency agency may issue a Watch and Act (orange) alert for the area that's expected to experience flooding.

Here are the different types of warnings the BOM can issue:

Fire weather — The BOM will issue a fire weather warning if the weather is likely to make bushfire conditions dangerous. State fire agencies will use this information to plan and warn communities, this includes issuing fire bans.

Flood — Alerts to flooding in a particular river or creek. Flooding is broken into three warning categories:

- Minor
- Moderate
- Major

You may see river levels mentioned and comparison to previous big flood events.

Storm and Severe Weather — You may see different storm and severe weather alerts issued by the BOM. Sometimes there will be a broader alert for a wider area, followed by a detailed severe thunderstorm warning that gives more information about exactly where a dangerous storm is. The different warnings you may see in order of urgency are:

- Severe weather warning
- Severe thunderstorm warning
- Detailed severe thunderstorm warning

- Dangerous or very dangerous thunderstorm warning

Cyclones — Tropical cyclone warnings are issued when a cyclone is expected to produce winds of more than 90km/h over land. Cyclones are broken down into five category levels depending on wind strength. A category one cyclone has destructive winds with damages to houses likely to be minor, whilst a category five cyclone is extremely dangerous with widespread destruction expected.

Heatwave — A heatwave is when the temperature is much hotter than usual for three or more consecutive days. A heatwave will depend not just on how hot it is during the day but also how cool it gets at night. The BOM uses the excess heat factor or EHF to classify heatwaves by intensity.

In very basic terms the EHF measures how much of a shock to the body the forecast temperatures will be, compared to the weather over the past month. There are three types of warnings:

- Low-intensity Heatwave (yellow)
- Severe Heatwave (orange)
- Extreme Heatwave (red)

Earthquakes — Geoscience Australia monitors for earthquakes and provides data on strength or magnitude, location, depth and records "felt" reports from members of the public to gauge how widespread an earthquake in Australia may have been felt.

Depending on depth and the epicentre location, earthquakes with a magnitude above 5 can cause damage to buildings, and above 6 are more likely to cause serious impacts.

While Geoscience Australia provides this data, state and territory emergency services are responsible for issuing warnings after an earthquake. These warnings will be at advice, watch and act or emergency level and will also give information on what people should do in the aftermath of a damaging quake, this may include evacuation information or if power, roads and other infrastructure has been damaged.

Earthquakes often happen with little or no warning, you can read more on planning for potential earthquakes here

Tsunamis — While tsunamis are rare in Australia, they can happen and are most likely after a large earthquake in the Pacific region.

After an earthquake, the Joint Australian Tsunami Warning Centre (JATWC) run by the Bureau of Meteorology and Geoscience Australia will issue information to the media and public, including a 'No Threat' bulletin if there is no danger.

- A Tsunami Watch will be issued if there is possible Tsunami threat so people know to standby for more updates.
- A Tsunami Warning Marine Threat will cover threats to low lying coastal areas and those who may be impacted by dangerous waves, strong rips or currents
- A Tsunami Warning Land Threat is the most serious and will be issued when there is a confirmed flooding threat for low lying coastal regions as well as dangerous waves, rips and currents.

When there is no longer a threat the JATWC will issue a Cancellation advice

IN addition to this information the various State agencies will issue AWS warnings at Advice or Emergency level with recommended actions.

Glossary of emergency terms

A

Annual Exceedence Probability (AEP) — A 10 per cent AEP is a one-in-10 chance of rain this heavy happening during a certain time period, in a given year. The Bureau of Meteorology has a different AEP for each place in the country e.g. Melbourne vs Cairns and the AEPs are based on how much rain the BOM has seen fall in each place since we've had weather stations and records. A 2 per cent AEP indicates a one-in-50 chance, while a 10 per cent AEP indicates a one-in-10 chance. The Bureau of Meteorology uses this to determine the severity of rain and flood events.

Australian Fire Danger Rating System — The Australian Fire Danger Rating System (AFDRS) uses four levels to tell you how dangerous a fire could be if one starts in your area. The AFDRS is the same wherever you are in Australia, and it can help you

understand how dangerous the weather conditions are, the level of threat to your safety and what you need to do to stay safe.

Australian Warning System — A nationally consistent set of standards for emergency warnings used in every state and territory.

Amber alert — An amber alert is issued by police asking for public assistance to locate a child in either a child abduction or high-risk missing child case. It is part of the ABC's responsibilities to broadcast these alerts immediately.

B

Back burning — A technique used when a bushfire is already alight. Firefighters use small fires to create a space between the bushfire and unburnt land.

Bushfire plan — A plan for what you will do if a bushfire is in your area. A plan helps you to think clearly in a time of stress. Find out more about bushfire planning.

C

Cyclone — A large mass of potentially destructive winds that circle around a low pressure centre.

Cyclone — Tropical cyclone advice — Tropical cyclone advice warnings are issued when a cyclone is likely to cause winds in excess of 62 km/h over Australian land within the next 48 hours.

Cyclone — Tropical cyclone categories — Tropical cyclones are graded in categories from one to five. A category one cyclone may produce damaging winds with negligible house damage, while a category five cyclone is extremely dangerous with widespread destruction.

Cyclone — Tropical cyclone watch — The onset of gales is expected within 48 hours but not within 24 hours.

E

Earthquake — An earthquake is an intense shaking of the Earth's surface. Earthquake tremors are measured by Geoscience Australia.

Earthquake magnitude — The severity of an earthquake is measured by its magnitude. Anything less than 5.4 is likely to cause minimal damage, whilst anything measuring 6.2 or greater may cause major damage.

East Coast Low — An intense low-pressure system that can cause destructive winds, torrential rainfall and rough seas along the east coast of Australia.

El Niño — A natural weather cycle associated with warmer ocean temperatures in the central and eastern parts of the Pacific Ocean. El Nino affects global weather patterns and means hotter conditions in the southern half of Australia and drier conditions in the eastern and northern parts of the country.

Ember attack — When the wind carries small pieces of burning material, like leaves, ahead of the fire which can ignite new fires.

Ex-Tropical Cyclone — The name given when a tropical cyclone weakens. An ex-tropical cyclone is a low pressure system that brings with it rain, wind and storms.

F

Fire danger ratings — These give you an indication of what could happen if a fire was to start. There are four levels; moderate (green), high (yellow), extreme (orange) and catastrophic (red). You should use these ratings to help you decide when you will enact your Bushfire Survival Plan. Read more about the Australian Fire Danger Ratings system.

Fire Ban — or Total Fire Ban, depending on your state. These bans are issued by the state fire agency when weather conditions are dangerous and the fire danger rating is extreme or catastrophic. You must not light a fire outside or do any hot works like welding or grinding.

Flash flooding — Caused by heavy rain in a short period of time, you might see flash flooding mentioned within a storm warning. This is an issue for many urban areas where stormwater drains are unable to cope.

Flooding — Minor — Low-lying areas next to water are inundated which may require the removal of stock animals and farm equipment. Minor roads may be closed and low-level bridges submerged. There may be an associated AWS warning.

Flooding — Moderate — The area of inundation is bigger and the evacuation of some houses may be required. Main traffic routes may be affected. In rural areas removal of stock is required. There may be an associated AWS warning.

Flooding — Major — Extensive rural areas and/or urban areas are inundated. Properties and towns are likely to be isolated and major traffic routes likely to be closed. Evacuation of people from flood-affected areas may be required. There will be an associated AWS warning.

G

Grass fire — Grass fires can start easily and while they are usually less intense than bushfires and don't produce embers, they do create a lot of radiant heat and burn and spread faster than bushfires.

H

Hail — giant and large — As described by the Bureau of Meteorology, large hail is 2cm in diameter or more; giant hail is 5cm or more in diameter.

Harvest ban — Ban on harvesting, driving across paddocks and the use of heat-creating equipment due to the fire threat from sparks. Issued by local government in WA only.

Harvest warning — A directive to farmers to stop harvesting, check the conditions and only proceed when safe.

Hazard reduction burns — A controlled burn conducted by fire officials to reduce the threat of bushfire (not to be confused with back burning).

Heatwave — BOM issues warnings when the maximum and minimum temperatures are unusually high for a period of three or more consecutive days.

L

Landslip — Resulting from earthquakes or heavy or prolonged rainfall, this is the commonly used term in Australia for large amounts of earth, rock, sand or mud moving down an cliff or mountain. Rockfalls and debris flows are types of landslides.

La Niña — A natural weather cycle associated with cooler ocean temperatures in the central and eastern parts of the Pacific Ocean and warmer ocean temperatures to the north of Australia. La Niña impacts global weather patterns and can often mean wetter seasons ahead.

O

One-in-100-year events — This term means there is a one per cent chance of an event at least that size in any given year. It **does not** mean the event will occur exactly once every 100 years, or that it will not happen again for another 100 years.

P

Prepare now — This is a call-to-action that you might see with an Advice or Watch and Act level warning.

R

Riverine flooding — Flooding that causes rivers to break their banks. The Bureau of Meteorology issues flood warnings for rivers they monitor.

S

Severe weather warning — Issued by the BOM for potentially hazardous or dangerous weather. This could be related to thunderstorms, tropical cyclones, bushfires and other land or coastal weather events. Issued when severe weather is happening in an area or is expected to develop or move into an area.

Spot fire — The wind carries small pieces of burning material ahead of the fire which can ignite new fires.

Storm Surge — an abnormal rise in sea level above the normal tide levels often caused by the strong winds from a cyclone pushing water against the coast.

Storm tide — the water level that happens when a storm surge combines with the normal astronomical tide. Storm tides can impact low-lying areas, sometimes for kilometres inland.

Supercell — A simultaneous and intense updraught and downdraught within a thunderstorm. Supercells have the potential to be the most severe form of storm.

T

Thunderstorm asthma — A thunderstorm asthma event is when pollen is captured within brewing storm clouds and bursts, causing severe breathing problems, even in people who have never had asthma.

Thunderstorm — **Severe** — Issued by the BOM for thunderstorms that are likely to cause large or giant hail, damaging or destructive wind gusts, heavy rain and flash flooding or tornadoes.

Thunderstorm — **Detailed** — This is a warning for a specific dangerous storm cell. It will include observations of recent rainfall, wind and hail. It will also predict a path where the storm is heading.

Thunderstorm — **Dangerous or Very Dangerous** — This is the highest level of warning for a storm and will include specific observations, predictions and instructions on what to do.

Tornado — Tornadoes happen in Australia more than some people realise. Warnings are issued by the Bureau of Meteorology as part of a Severe Weather Warning. See the BOM's tornadoes page for more information.

Total fire ban — Tells you what you can or can't do on days when fire will spread rapidly and be out of control. Fire bans are generally issued the day before the actual ban but can be issued the same day.

Tsunami — **no threat** — An undersea earthquake has been detected, however it has not generated a tsunami, or the tsunami poses no threat to Australia.

Tsunami — marine and immediate foreshore threat — Potentially dangerous rips, waves and strong ocean currents in the marine environment and the possibility of only some localised overflow onto the immediate foreshore.

Tsunami — land inundation threat — Warning for low-lying coastal areas of major land inundation, flooding, dangerous rips, waves and strong ocean currents.

W

Warning level — **Advice** — This means that whilst there is a weather event happening in your area you are in no immediate danger, but please stay informed by keeping up to date with warnings as that could change.

Warning level — **Watch and Act** — A Watch & Act warning is issued when there is threat to lives and properties. This is a good time to take action to protect yourself and your family.

Warning level — **Emergency** — This is the highest level of warning and means you are in danger. Follow the call to action attached to the warning immediately. Any delay may put your life at risk.

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HOME / TRIP ESSENTIALS / CREEK CROSSINGS – WHERE WATER MEETS WILLPOWER AND WISDOM

Robert Posted on 12 November 2025

Creek crossings — Where water meets willpower and wisdom

Words Robert Crack Pics Supplied

Water crossings are one of four-wheel driving's purest thrills — and one of its quickest ways into a recovery job if you get complacent. Depth, flow, hidden holes and cranky electrics all wait beneath that glitter; preparation and patience keep your rig (and your ego) intact.

Crossing the Wonnangatta River, Eaglevale, Victoria

Love to make a splash through a water crossing?

I do.

Few offroaders don't.

Watercourse traverses can be thrilling. Downright invigorating, even.

I remember fondly my first water crossing as though it were yesterday. It was Eli Creek on K'gari (Fraser Island) in 1987. My vehicle was a 1964 CJ5 Jeep with no roof, no doors and the windscreen folded down, powered by a 186S Holden red motor straight out of an HK GTS Monaro. The distributor leads were held together with fencing wire. The fuel filler neck was immediately under my driver's seat so, without doors, as long as I parked close enough, I could fill up at the petrol bowser without even needing to get out of my seat.

Those were the days…

And, back in those days, fewer than 29,000 vehicle permits for K'gari (Fraser Island) were issued per year. Nowadays, almost double that number of vehicle permits are issued annually. It was fabulous not having to queue to cross Eli Creek. Looking at photos and videos online tells me that those days are long gone.

Only three years later I was doing high-speed water entries at Puckapunyal Military Area in central Victoria, only this time it was not behind the wheel of a CJ5 Jeep, but behind the steering control lever of a Leopard AS1 Main Battle Tank (the Aussie variant of the German Leopard 1A3).

The Leopard AS1 could traverse a trench 3m wide, scale a gradient of 60 per cent, climb a 1m vertical wall and wade 2.25m through water without preparation (and 4m prepared fording depth with snorkel).

Once you've driven a tracked armoured vehicle into the water at speed, you wonder why any offroad driver would ever attempt to do an unprepared high-speed water entry with their (non-tracked!) 4WD vehicle.

And yet, the internet is a veritable log jam of videos of some people who have done just that and, by-and-large, they've come a cropper. Especially when there have been onlookers to witness the damaged vehicle and the even more damaged ego of the driver.

Don't be one of those high-speed water entry offroaders. Chances are, you'll regret it.

Here at Hema Maps, we are not only all about being Prepared to Explore and Creating Forever Memories. Most importantly, we are all about safety.

Accordingly, we *strongly caution against unprepared high-speed water crossings in your vehicle. Unless, that is, you own a main battle tank …*

Preparation and patience

There's a moment every offroader knows (or, if they don't know it yet, they should make sure that one day they do!) — when the track suddenly disappears into a shimmer of water. The bonnet glints, the radio crackles and you can almost hear the outback or the bush holding its breath. Creek crossings look easy from the bank. But get it wrong, and a trip of a lifetime can turn into a recovery mission you'll never forget.

Australia's backroads aren't short on watery surprises. Of the country's 875,000+ kilometres of roads, more than 400,000 of those kilometres are unsealed — a labyrinth of dirt, sand, gravel, mud, clay and gibber. And those tracks are cross-stitched with fast-flowing creeks and rivers, washaways, sandy floodways, hidden causeways and puddles seemingly so deep that you'll expect whoever is sitting in your passenger seat to turn submariner and say, "All stations conn, proceeding to periscope depth … prepare to dive."

Water crossing Dargo River, Mayford (Credit: Tim van Duyl)

And somewhere in that maze, there's a creek waiting to test your judgement.

So, what's the secret? Preparation, patience — and a healthy dose of humility.

What to do before you leave home

In the inimitable words of French chemist and microbiologist Louis Pasteur, "Le hasard ne favorise que les esprits préparés."

English translation? "Chance favours the prepared mind."

Water crossings start long before you reach the water. Your first preparation happens in the driveway. Check your rig's wading depth in the manual — it's the factory's best guess at how deep you can go before things get wet where they shouldn't. In other words, the manufacturer's rated unprepared fording/wading depth tells you water won't lap at your door seals. That's pretty much it.

Modern 4WD vehicles can wade up to 700mm or 800mm, but that's only if everything's sealed and you haven't messed with your underbody setup. A tarp/radiator blind or water bra over the bullbar helps keep water out of the engine bay and should prevent your fan rotors being bent by the pressure of the water, thus mitigating the risk of finding out that a fan blade has struck the radiator. Fitting a snorkel, diff breathers and suspension lift will all add some margin for error. Think of it as waterproofing your adventure.

A snorkel is a good addition for water crossings (Credit: Tim van Duyl)

If you're towing, check your caravan's or camper trailer's fording height with the manufacturer. Most are fine to axle level — beyond that, you're risking water ingress through the seams, vents, exhausts and floor. Tape over any vents or door seals before you roll in and make sure camlocks are tight.

It also pays to look beneath the surface — literally. Creek crossings can pull at your 4WD's weakest points. Unsealed electrical systems don't mix well with creeks. A bit of preventive thinking goes a long way. Pack a can of WD-40 to spray around electrics and if you've fitted a snorkel, check that it's properly sealed — you'd be surprised how many factory snorkels leak straight from the dealer.

Know your limits (and those of the watercourse)

Assess the crossing

Every creek, river, washaway or causeway is different. Depth, flow, base — they all change daily. Even hourly. Yesterday's puddle could be today's torrent. That's why every good crossing begins on foot.

Whether it's your feet getting wet or someone else's depends on who is with you. If you've someone riding shotgun, lucky you. You're going to stay dry.

Your passenger, however, will not. Their job isn't confined to cradling the Hema Maps guide on their lap and navigating, opening and closing pastoral gates and unwrapping your meat pie. Their job also includes getting their legs wet to check your crossing is safe.

Thongs are a big no-no. Sandals, reef-walkers or sandshoes are the go.

If it's safe to walk, send your passenger/navigator out with a handheld UHF radio (or phone, if you're lucky enough to have reception) to gauge the depth and scout the line. Look for logs, holes, soft spots and underwater scrapes caused by previous four-wheel drivers who might have put a bit too much pedal to the metal. Watch how the water moves — those little ripples can betray hidden boulders. From the driver's seat, you can judge depth by how far the water reaches up their leg: knees mean manageable; hips mean it might just be high time to rethink.

Having someone test-walk your crossing is always the go-to … unless you're north of the Tropic of Capricorn. Up there, crocs rule the water, so keep your boots dry, watch other drivers instead and always be croc safe.

And don't forget the golden rule that state and territory governments have been telling us for years: if it's flooded, forget it! No photo, shortcut or bragging rights is worth your rig — or your life. Flowing water as shallow as 45 centimetres can sweep a 2.5-tonne 4WD downstream. That's not myth — it's physics.

Flooded rivers should never be crossed (Credit: Tim van Duyl)

Tips and tricks for a safe crossing

Before diving in, let your rig cool. Hot hubs and diffs suck water in as they contract, and that's how you end up with milky oil and fried bearings. While you're waiting, brew up a cuppa, check your recovery points and plan your exit. The smart driver's mantra? Slow down *before you get wet*.

Once you've picked your line, it's time to commit. Engage low range, second gear. Steady throttle, even revs. You're not trying to make waves — just one: a slow, rolling bow wave in front of the bull bar that keeps water away from the engine bay.

Never rush. Never change gear mid-stream. Keep the windows down (particularly important if they are electric!) so you can escape if things go pear-shaped. If you stall in deep water and suspect that water has reached the cylinders, don't restart. Get towed or winched out — a flooded motor can cost you tens of thousands of dollars.

Crossing the Pentecost River, Gibb River Road, WA

One vehicle at a time, always. If the driver ahead stalls, you'll need room to stop without getting stuck yourself. If the water's got real push to it, angle slightly upstream to compensate for current. Keep a light grip on the wheel — unseen rocks can twist the tyres without warning. And keep your eyes fixed on the far bank. That's your target. Don't get distracted by the spray.

Aberfeldy River Crossing, Victoria

If things go south and your rig starts to float, don't panic. Make sure the windows are open, stay calm and be ready to exit quickly if needed.

What to do once you reach the other side

Climb out onto higher ground and pause. Let the water drain back into the watercourse — you'll protect the track for the next driver. Check your fan, remove the water bra (if you have one) and let the motor idle for ten minutes to dry things out. Then test the brakes. A few gentle pumps will help them grip again.

If you've done everything right, you'll roll away with a grin — and a story worth telling around the next campfire. But don't rush. Check under the bonnet for splashes and leaks, make sure your air filter's dry and inspect the underbody for debris or branches. If you've got a trailer, pop the hubs and have a look when you're stopped for the night — even a little water in the bearings can turn into a big bill later.

And remember that good water-crossing etiquette keeps tracks open. Don't churn up the exits, don't spin your tyres and always let the water flow back before you drive off. It's about respect — for the country and for the next traveller who'll face the same crossing tomorrow, next week or even next month.

O'Shannessy River Crossing, not far from Riversleigh World Heritage Area, Boodjamulla National Park (Credit: Robert Crack)

Ritual beats recovery or rescue, hands down

- If you ever get tired of the pre-crossing preparation ritual, that's a very good thing.
- If the following checklist bores you, that's also a very good thing:
- Do I really, really need to cross this water? If no, don't. If yes, read on …
- Have your snatch strap/s and shackles easily accessible.
- Switch off your fridge and inverter to avoid circuit damage. Don't forget to switch them back on again after the crossing though! You'll be wanting your beer/s to be cold later.
- Unspool your winch rope and wrap it around your bull bar ready for quick release.
- Test your winch controller before entering the water.
- Pick your exit point and stick with it.
- Tape up the neck of your engine oil dipstick.
- Turn off your air-conditioning so that water doesn't get sucked in.
- Wind down your windows (especially if they're electric) to allow for a quick escape.
- Select second gear (both manual and automatic) to maintain smooth and sufficient torque. Give strong consideration to low range too, if you have it.
- Maintain a constant speed (walking pace is best, and never more than 20km/h) which creates a nice, gentle and even bow wave. Don't brake, and don't accelerate (unless you *really have to).*
- Angle into the upstream current gently.
- Keep your thumbs on the outside of the steering wheel. This is the only place you'll want them to be, just in case a hidden obstacle decided to turn your steering wheel into a thumb-breaker.

Final advice on safe water crossings

Creek crossings are one of offroad driving's purest thrills — equal parts nerves and technique. Preparation is the difference between drama and delight. So, before you nose into that next glinting waterway, stop, breathe and think it through.

Walk it if you can. Watch it if you can't.

If a person can't wade it, neither should your 4WD vehicle. If a person is out of their depth, your vehicle will be too. If a person starts to get dragged off the intended line by the current, chances are your 4WD will face a similar fate. Pretty simple, really.

And if it's flooded — forget it.

Cape York Peninsula (Credit: Matt Williams)

Get it right, and you'll know the rush — that surge of relief as you climb the opposite bank, sunlight flashing off a bonnet streaked with mud and victory.

Ready to tackle your next crossing? Grab your Hema HX-2 Navigator or Hema Map, plot your course and know exactly what lies beyond the waterline. Adventure waits on the other side — but only if you've done your homework.

ZUCCHINI FRITTATA WITH **SMOKED SALMON**

BBQ | Camping Stove

Café style breakfast, versatile for the whole family. Can be eaten on its own as a vegetarian option or topped with just about anything. It is also great for lunch with a side salad!

Serves 6 people

Prep Time 25 Minutes

	26cm fry pan
8 large	Eggs
1½ cups	Zucchini (grated)
¾ cup	Tasty cheese
130g	Philadelphia Chive & Onion cream cheese
½ tsp	Salt
100g	Smoked salmon
	Pepper to taste
	Canola oil spray (nonstick)

1. In a large bowl add eggs, salt and pepper to taste and whisk with a fork.
2. Add 2 Tablespoons of Philadelphia chive and onion cheese and mix through breaking down the cheese lumps as much as possible. It is ok for small lumps to remain.
3. Add grated zucchini and tasty cheese. Stir mixture until all combined.
4. Spray frypan with a generous coat of canola oil spray and pre-heat on stove top medium heat.
5. Pour egg mixture into fry pan, cover with lid or foil tightly (shiny side down) and reduce heat to low.
6. Let cook for approximately 20 minutes or until egg is cooked through to the center.
7. Once cooked, cut into 6 wedges and serve on plates. Top with smoked salmon, some chive and onion cream cheese and with any sides of your choice.
   - If you don't fancy smoked salmon some other suggestions: Bacon or chorizo Avocado or tomato or sauté mushrooms
   - The frittata can also be cooked in a hooded BBQ using a cast iron frypan. Set all burners to high heat and pre heat BBQ to approximately 200 degrees. Once egg mixture is in frypan, place it on the BBQ hot plate and reduce BBQ hot plate burners to low for those burners. Cook the frittata until it is cooked through to the center – approx. 10-15 minutes.

CHICKEN CACCIATORE

Camping Stove

This one pot meal is easy and versatile. Throw in any vegetables you have in the fridge to make it extra nutritious with minimal washing up!

Serves: 4-6 people
Prep Time: 65 Minutes

2	Garlic cloves (finely chopped) or substitute garlic paste
1 large	Red onion finely sliced
2	Tablespoons of olive oil
2 x 400g	Diced tinned tomatoes
2 tbsp	Tomato paste
1 tsp	Sugar
1 tbsp	Mixed herbs
1 large	Red or yellow capsicum
4	Chicken Maryland cut into 4 drumsticks/4 thighs
1 tbsp	Salt and pepper to taste
2 cups	Macaroni pasta
3½ cup	Boiling water

Directions:

1. Heat a large deep fry pan on medium heat with olive oil.
2. Add sliced red onion, finely chopped garlic and capsicum in fry pan. Sauté for a few minutes until just translucent.
3. Remove onion, garlic and capsicum from fry pan and set aside. Salt chicken and add to fry pan and brown on all sides. Remove chicken from fry pan and set aside.
4. Add onion, garlic and capsicum mix into fry pan and tinned tomatoes, tomato paste, olives, mixed herbs and ½ cup of water. Stir, scraping the bottom of the fry pan. Add sugar, salt and pepper to taste.
5. Bring to simmer and add chicken back into fry pan and any juice. Ensure chicken is submerged in sauce. Cover with foil (shiny side down) or saucepan lid.
6. Simmer for approx 40 minutes or until cooked through. Stirring every 10 minutes to ensure the bottom doesn't burn and chicken is cooked evenly.
7. Once cooked, remove chicken and sauce from fry pan into serving bowl.
8. Add 3 cups of boiling water to the fry pan and bring to boil. Add salt to taste and pasta. It doesn't matter if the water has residual sauce in it.
9. Once pasta is cooked, serve it onto dinner plates with chicken and sauce on top.

Tips & Serving Suggestions:

- Any vegetables can be added i.e. carrots, mushrooms, zucchini, spinach. Harder vegetables should be added with onion and capsicum. Softer vegetables when sauce with chicken is simmering.
- For a cheaper meal use only drumsticks – approx 10-12.
- Macaroni pasta can be substituted for any pasta, rice or couscous.

THE OUTDOORS MADE EASY.

JAFFLE - **NUTELLA AND CUSTARD PIE**

BBQ Camping Stove

This is delicious and a great simple dessert when cooking outdoors. Definitely a goodie for the sweet tooth.

Serves: 4 people
Prep Time: 5 mins to prepare meat plus jaffle cooking

400g jar	Nutella (you won't need the whole jar – just as much as you want)
5-6 sheets	Puff pastry sheets
900g tub or 6 pack	Pauls double thick vanilla custard
4 scoops	Vanilla ice cream
1 punnet	Strawberries

Directions:

1. Spray cast jaffle iron on both sides with canola oil.
2. Spread nutella (as desired) thick and evenly on puff pastry and then top with custard, evenly spread (not too thick).
3. Dab water around the edges using a pastry brush or your finger.
4. Cover nutella and custard with another piece of puff pastry pressing down on the edges.
5. Close jaffle iron and trim edges with a knife.
6. Place the jaffle iron over medium heat on a camping stove gas burner or BBQ grill burner. It will need approx 3 minutes on each side however check after a couple of minutes until you get the hang of it.
7. Once brown on each side remove from jaffle iron and cut in half.
8. Serve with vanilla ice cream and strawberries.

Tips & Serving Suggestions:

- Can substitute nutella for cooked fruit such apples or pears.

THE OUTDOORS MADE EASY.

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BLUESCOPE STEEL Colorbond

Lancelin Trip- We had a large number of cars, an awesome16 vehicles in total at the start. We all met at the Verge301 Cafe in Woodridge on the Indian Ocean Drive and headed off to Ledge Point for our entry point. Sadly we had 1 car leave but we continued on our trip heading to the Sand Bowl (well that's what I've named it). The track leading in was challenging for a majority of us but the lucky ones with diff locks made it look easy. The first hill especially that had wheels lifting up and having multiple attempts to conquer. A few had to resort to the chicken track.

Once we made the Sand Bowl I demonstrated how to descend safely down the dune with a few getting the little rush of going over the edge. Once we all had a few goes we then attempted the larger dune, with many facing there fears and building the courage they took the plunge which they should all be proud of themselves.

Unfortunately the wind had picked up a bit so it was time to head into Lancelin for a little lunch at the park near the Bakery.

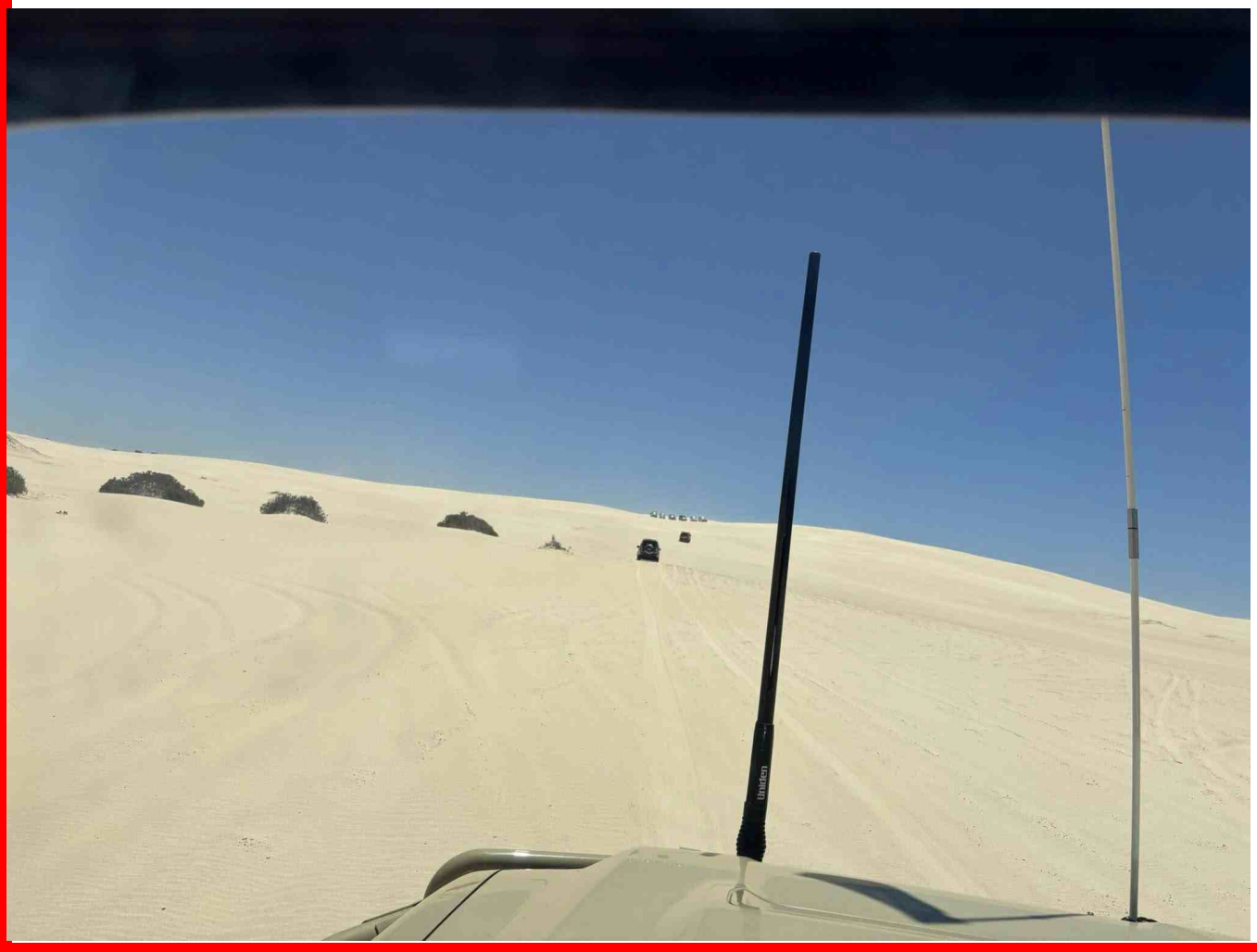
After a few laughs we went back the way we came in and aired up at Ledge.

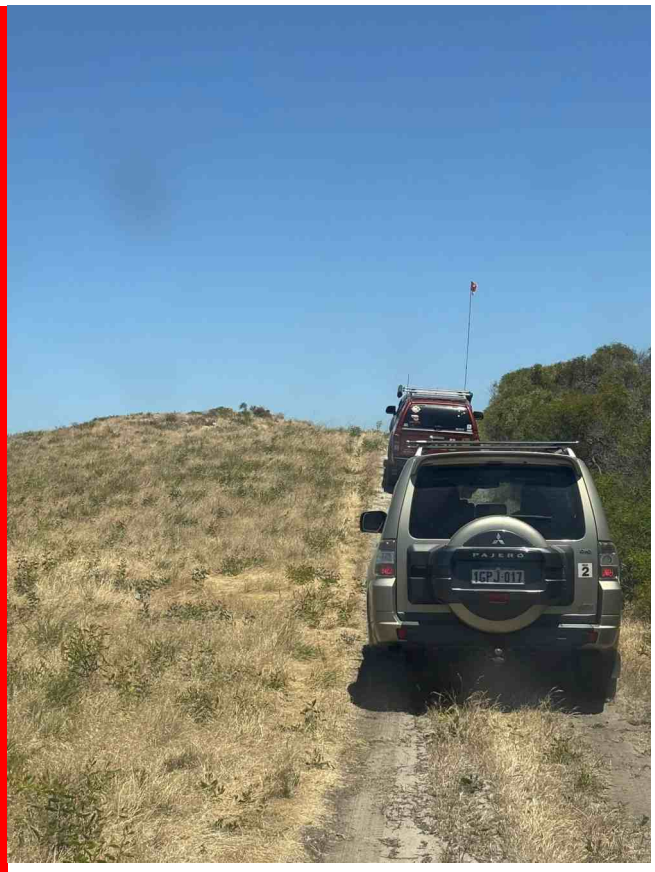
A few had to leave but we then headed to Moore River Brewing Co for a few beers, more laughs and it was great meeting some new members and catching up with the regular members.

Thank you from my daughter Ashley as she thoroughly enjoyed herself with the club and driving the tracks.

A big Thanks from me for everyone who came and hopefully you all had a good day.

Dave (NUDDO)

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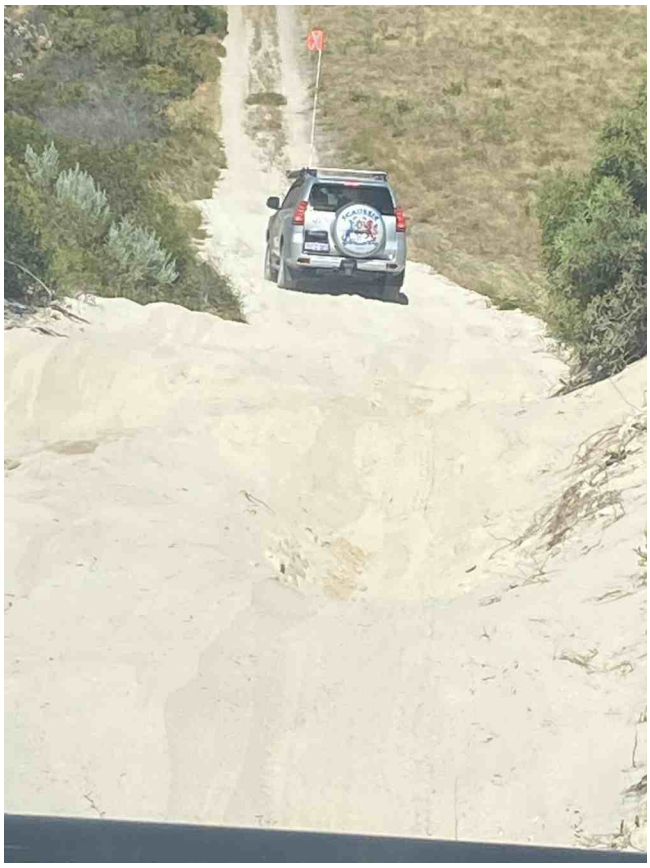

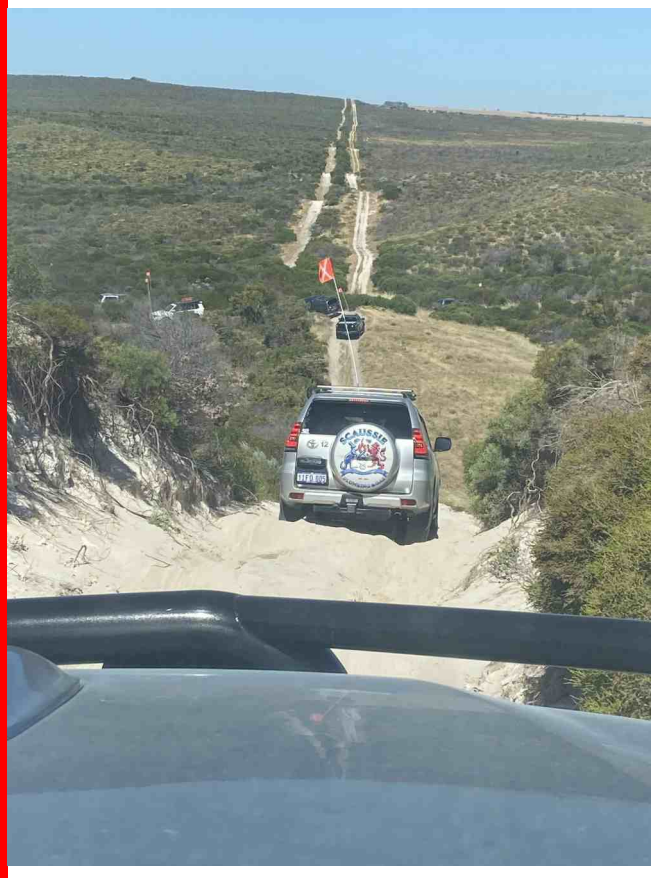
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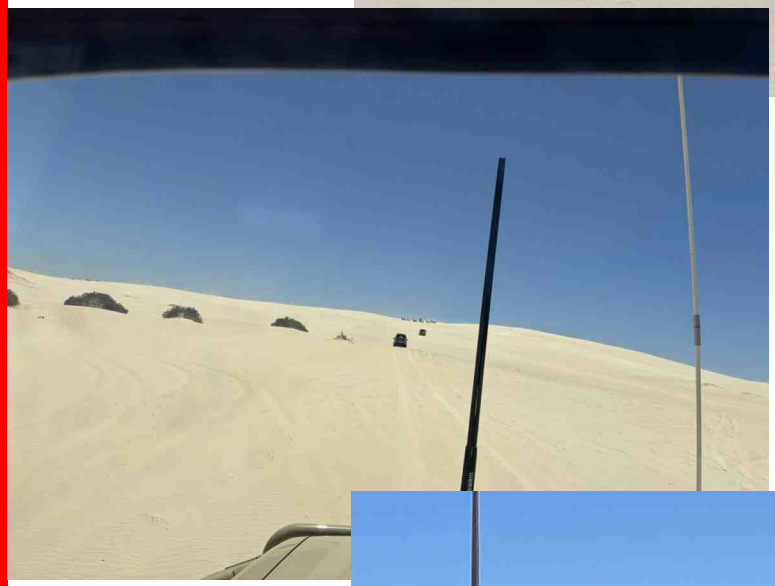

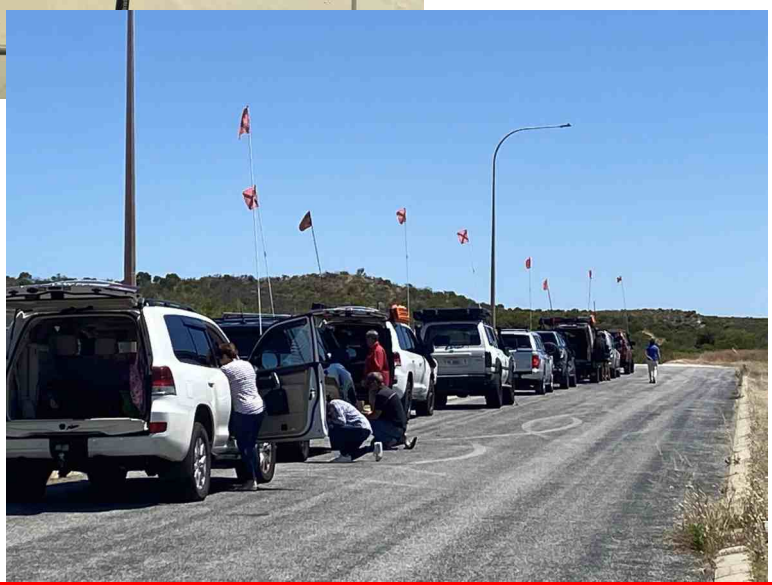

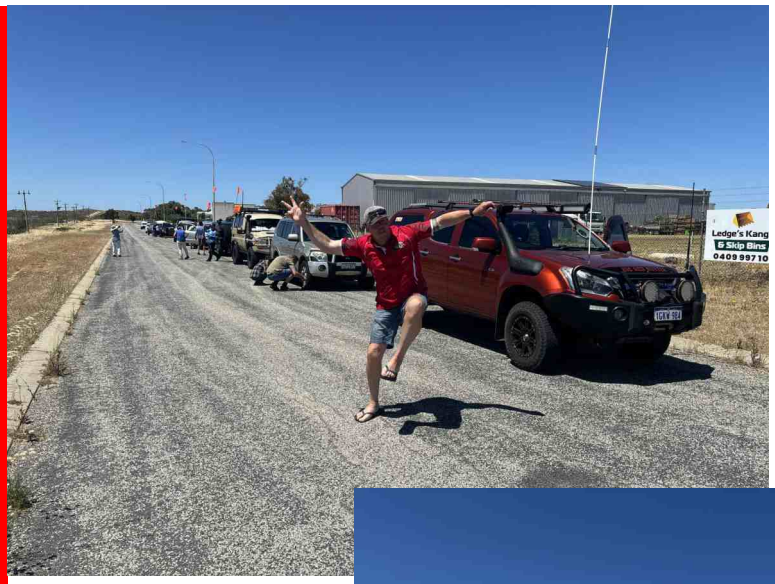
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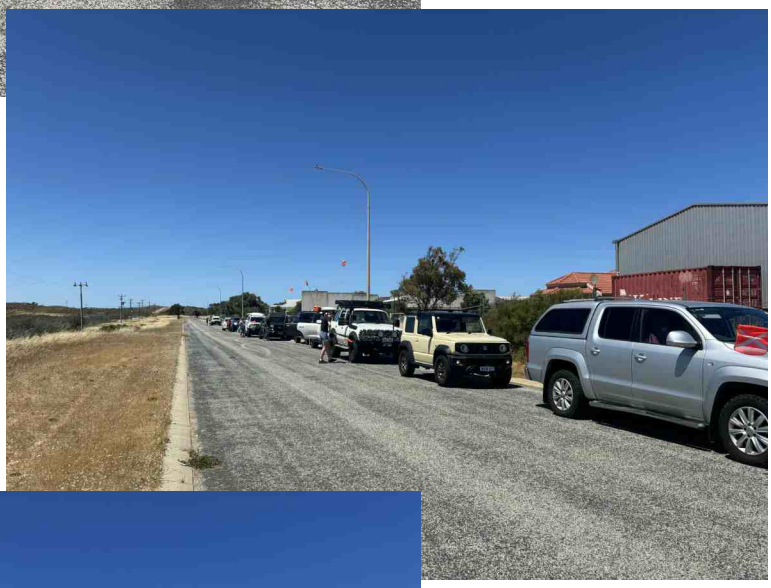

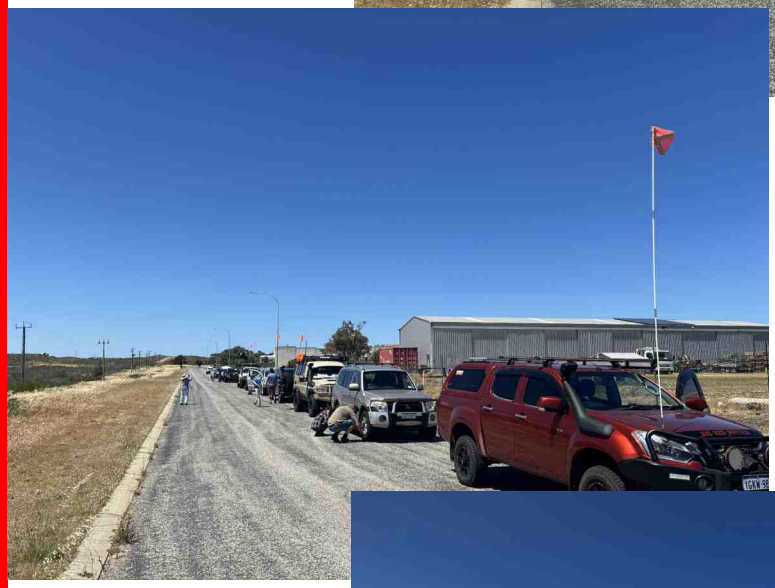

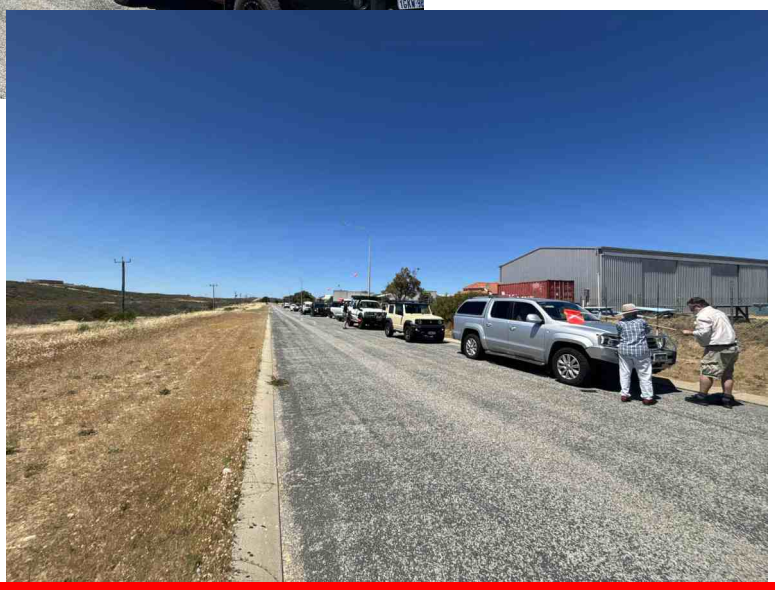


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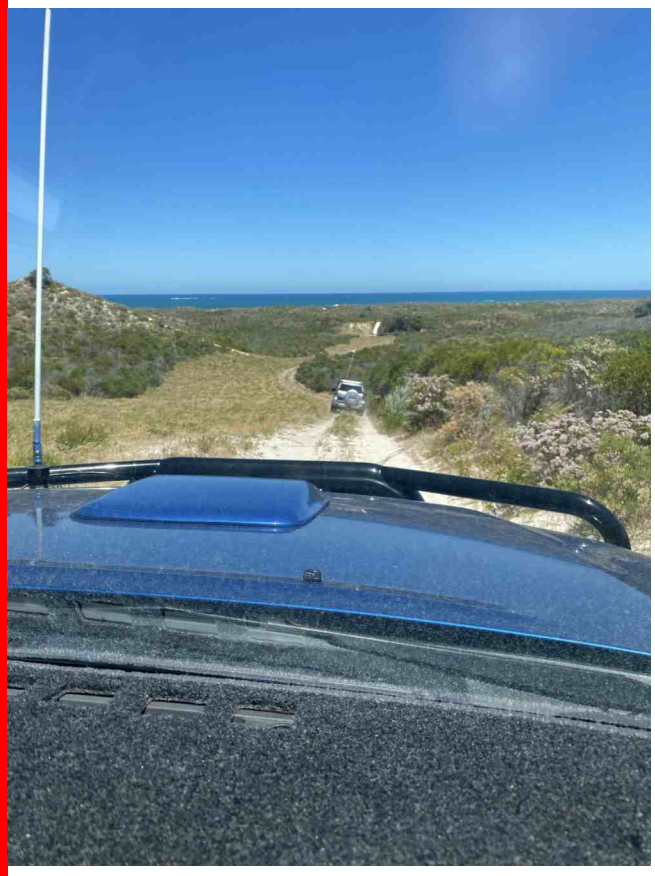


#NEVER GO ALONE


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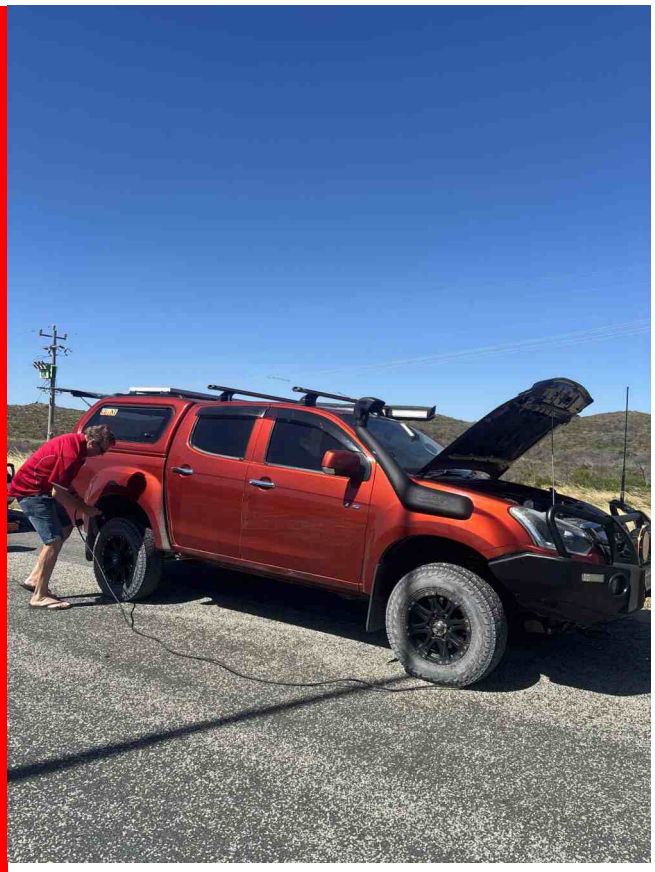
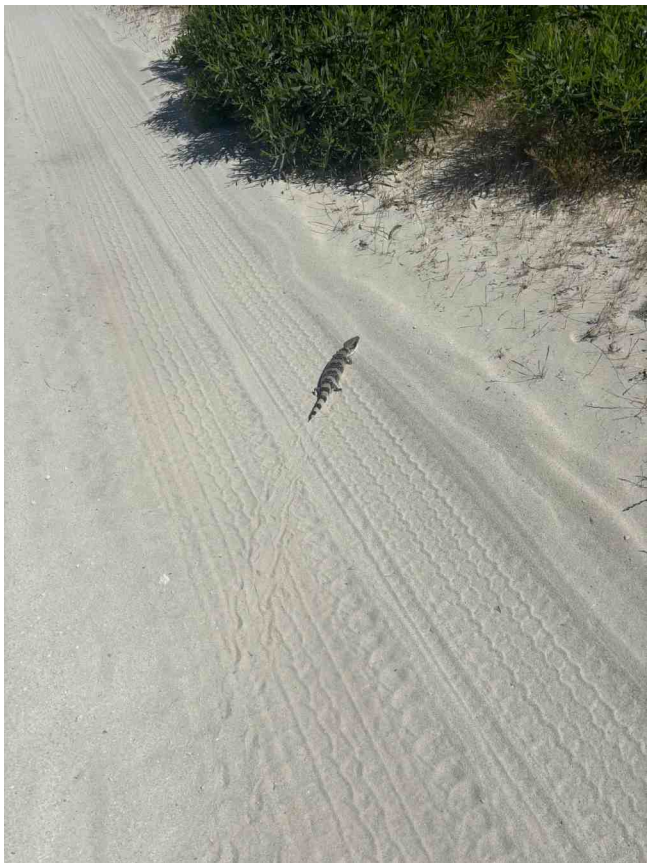
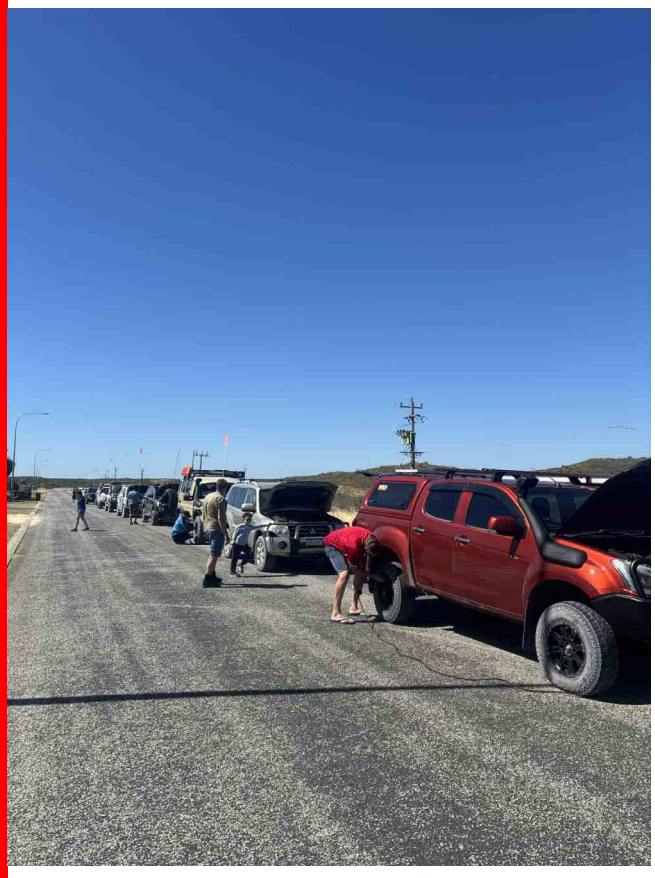
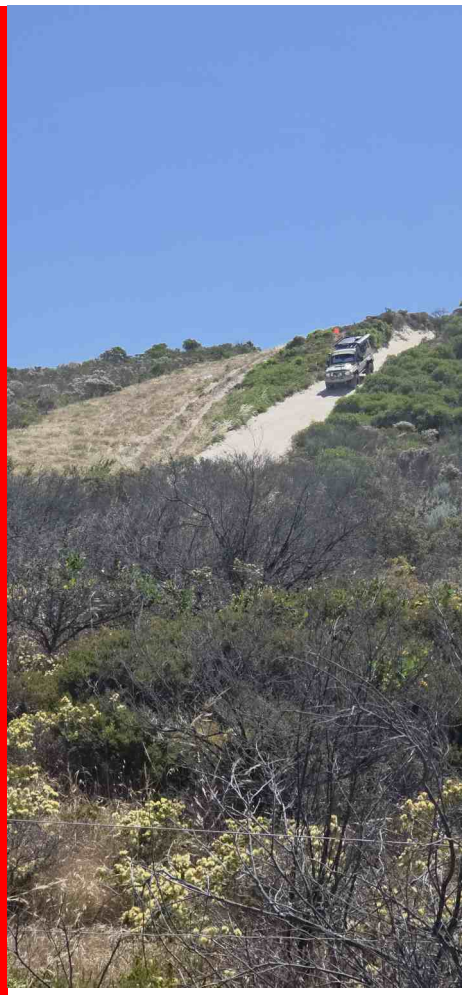
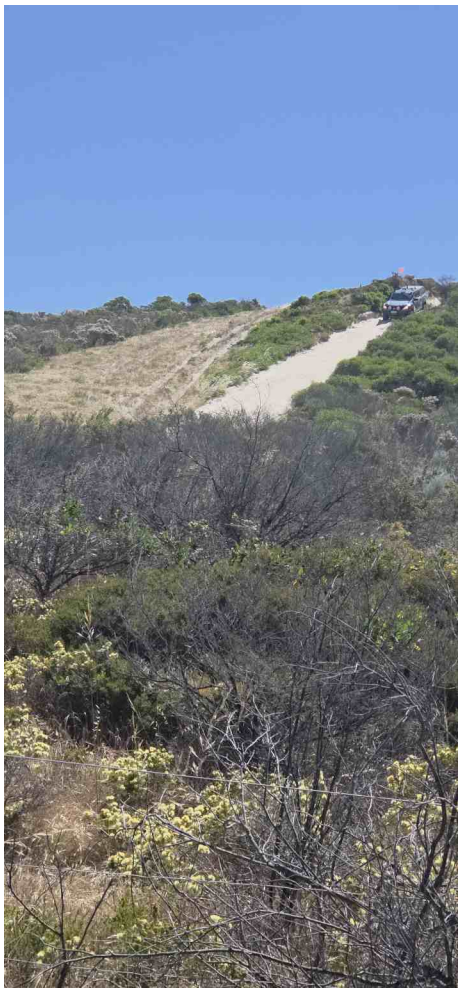






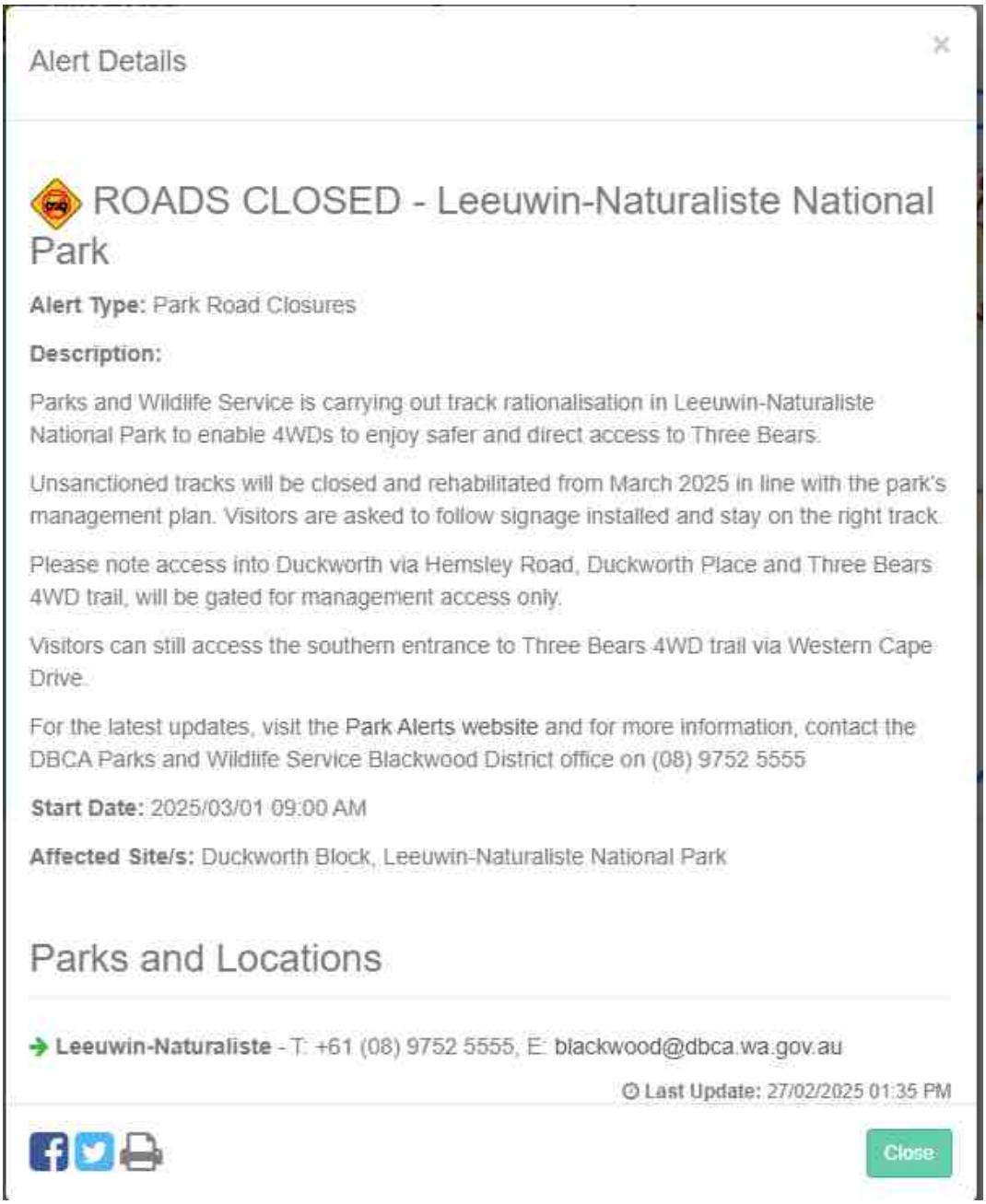




I have just found out that there are some closures in the 3 Bears Track area that may affect the trip notes on the club website. I have emailed Parks and Wildlife for more information and will modify the trip notes after I receive the reply.

A good excuse to do the trip again

Brisey



CAMPING FEES	2025/2026	PEAK RATE
Family Rate (2adults & 2 children under 18)	$45.00	$56.25
Child (or additional child)	$8.00	$10.00
Adult (or additional adult)	$17.50	$21.50
Pensioner/Senior Card	$12.00	$15.00
Family Rate 7 nights (2adults & 2 children under 18)	$270.00	$337.50
Shower non-campers	$5.00	$6.25
Powered sites (extra per booking/night)	$9.00	
Firewood (per bag)	$15.50	

Windy Harbour Australia Day Weekend
We have made a club booking 2 powered and 8 unpowered sites from Friday 23rd to Monday 26th with the option of additional nights the sites we have booked are all together (for those that went last year we have the corner and the powered sites closest to it. Please indicate if you wish to attend and if you want power or unpower and # of people trip sheet will be out the next meeting
Saturday Trip to the mouth of the Gardner River then east to Coodamurrup Hut and West Cliff Head
Sunday Trip and bbq Dinner
Details to come

— 2026 term dates

Term dates published in the Western Australian Government Gazette for primary and secondary students in public schools in Western Australia (all dates are inclusive).

Students

2026 Term dates

Semester 1	
Term 1	Monday 2 February to Thursday 2 April
Break	Friday 3 April to Sunday 19 April
Term 2	Monday 20 April to Friday 3 July
Break	Saturday 4 July to Sunday 19 July

Semester 2	
Term 3	Monday 20 July to Friday 25 September
Break	Saturday 26 September to Sunday 11 October
Term 4	Monday 12 October to Thursday 17 December

	2025	2026	2027
New Year's Day	Wednesday 1 January	Thursday 1 January	Friday 1 January
Australia Day	Monday 27 January	Monday 26 January	Tuesday 26 January
Labour Day	Monday 3 March	Monday 2 March	Monday 1 March
Good Friday	Friday 18 April	Friday 3 April	Friday 26 March
Easter Sunday	Sunday 20 April	Sunday 5 April	Sunday 28 March
Easter Monday	Monday 21 April	Monday 6 April	Monday 29 March
Anzac Day	Friday 25 April	Saturday 25 April & Monday 27 April	Sunday 25 April & Monday 26 April
Western Australia Day	Monday 2 June	Monday 1 June	Monday 7 June
King's Birthday	Monday 29 September	Monday 28 September	Monday 27 September
Christmas Day	Thursday 25 December	Friday 25 December	Saturday 25 December & Monday 27 December
Boxing Day	Friday 26 December	Saturday 26 December & Monday 28 December	Sunday 26 December & Tuesday 28 December

Secret Harbour Surf Carnival
Sunday November 23
Medium

Lennard Track Overnighter
Saturday 29th November to Sunday 30th November
Gary Mayes
Medium

Peel 4x4 Club Christmas Party
Saturday 13th December (TBC)
Peel 4x4 Club Committee
Social

January General Meeting and Trip Planning Meeting
Sunday 11th January 2026
PK Tavern

Australia Day Weekend at Windy Harbour
23rd to 26th January 2026
Steve and Julie Power
Medium