



The Terania-Keerrong Flood Observation Project

Prepared by: Anna Conley, Project Manager / Consultant
31 October 2023

FORWARD

After the catastrophic flood of February 2022, I investigated the flood monitoring system for our community and for Lismore. What I discovered shocked me. I was told that the failure of the Terania rain gauge on 3rd February was 'not a big deal'. But it was a big deal - because on 27th and 28th February a metre of rain fell up there, unmonitored. And it was a big deal - because people who live in The Channon and Keerrong need to know what's coming for them. At The Channon the flood was more than two metres higher than any in recorded history. People nearly died here and in the Keerrong valley. And of course, the lack of data on the Terania system was consequential for Lismore, as noted in the CSIRO flood report.

This is why we initiated The People's Catchment - a system of citizen rain and creek sentinels to provide data for those downstream, in collaboration with the Institute for Climate Energy and Disaster Solutions (ANU). Locally, the project is known as *Terania-Keerrong Flood Safety*. Here we're developing the system on the ground - through action learning - with the wonderful people willing to collect rain and creek data during big rain events.

We are glad to have grown a new kind of relationship with the SES, whereby they can use our data to provide evidence-based flood warnings to our community. This has not been possible before. But meaningful flood warnings require an understanding of how a volume of water translates to flood on the ground, and that's why this Flood Observation project was important. We thank all who contributed their observations and photos.

We extend our warm thanks to the Northern Rivers Community Foundation for the grant which made the flood observation project possible, and enabled us to engage Anna Conley as project manager. What a superb job she's done!

From here we look forward to working constructively with all organisations that share responsibility for flood safety in our rural community. For this work, the Flood Observation project provides an excellent foundation.

Annie Kia
Coordinator, Terania-Keerrong Flood Safety
The Channon Resilience Inc.

EXECUTIVE SUMMARY

Objective

The objective of this project was to gather and share local flood knowledge, increase awareness and improve flood safety for residents of The Channon and Keerrong valley.

Goals

- Collect local flood knowledge - obtain flood stories, photographs and videos and build a repository of local flood height & peak data to provide a baseline for future flood emergencies.
- Develop a Terania-Keerrong safety network to manage emergencies.
- Build resilience and capacity to make decisions during flood events.

Measurable Outcomes

- A collection of flood knowledge stories for Tumble, Terania, Rocky Creek & Keerrong valley residents.
- A survey of how people in flood risk zones look for information on risk.
- Create a sub-domain on The Channon Hub website for Terania-Keerrong flood knowledge.
- Create a YouTube channel to showcase our local flood knowledge stories.
- A repository of GPS-enabled photos that capture the flood extent from local knowledge. This will help provide reference points for flood warnings to downstream people.
- A database of people who want to participate in the Terania-Keerrong safety network.
- A contact list of those who would like to join the Terania-Keerrong Flood Safety project - either providing rain/creek data, or receiving catchment information.
- Increased capacity to seek out information about flood risk, and increased understanding that the alerts for Rocky Creek Dam are not flood warnings, and cannot be relied on as an indicator of flood risk.

Methodology/Approach

- Conduct an online survey & seek community participation.
- Obtain flood photos from community which show peak/extent of flood.
- Interview residents to capture flood stories.
- Measure & record flood height data.
- Build a map to show flood prone roads & bridges.
- Build a database of flood heights/peaks at different locations across the catchment.
- Host a community event to share findings, learnings & build resilience.
- Update The Channon Hub website and Youtube page

PROJECT OUTLINE

1. ONLINE SURVEY

In February an online survey was created. Broken down into 6 sections the survey sought to;

- Obtain consent.
- Understand the impact of flooding at the residents location.
- Capture residents observations and flood height records.
- Understand where residents look to obtain flood information and warnings plus the actions they take in a flood situation.
- Learn how residents share their flood knowledge during an event.

A copy of the survey can be viewed [here](#)

In addition to the online survey, paper copies were made available at the general store in The Channon, Dunoon and Goolmangar.

To advertise the survey, posters with take away cards were placed at the local general stores and The Channon Tavern. Leaflets were created and mailed to residents of Keerrong, Tuntable, Terania and The Channon. Adverts were placed on The Channon Hookup's and Resilience Facebook page and an email was sent to The Channon Resilience database. In addition the survey was promoted at a large community gathering, a dedicated page was created on The Channon Hub website and an article was placed in the Terania Times and the Nimbin Good Times. Marketing materials can be viewed in the Appendix.

29 residents completed the online survey and 3 completed the paper survey. A summary of the online survey results have been shared in the appendix.

In summary flood knowledge in the community is very varied. Some residents have lived in the catchment for 75 years, as such they have experienced many floods. However, during COVID new residents have settled in the community, with no flood experience they are vulnerable when it comes to understanding roads/access that becomes flooded and how long it can take for flood water to recede. Knowledge of the creek systems is also varied, and often limited.

Residents trust the BOM, ABC and local Facebook groups for flood info, yet find Facebook and neighbours the most useful source. Those who have lived here for a while have learned how to observe the landscape and also relied on knowledge from the 2017 flood. 75% of those surveyed felt that they did not have enough info about the severity of the flood, with 41% feeling that they did not have enough time to prepare.

For those who did prepare, they mainly prepared to isolate by stocking up on supplies and communicating with family, friends and neighbours. No one in the community had prepared to evacuate, in fact 67% of the community does not have an evacuation plan.

The community was impacted in many different ways. From isolation, loss of essential services to loss of property and assets, not to mention the fact that some residents were in severe danger (trapped in their homes with rising flood water).

If more information had been made available, residents would have stocked up on more food, medication and fuel, moved livestock and possessions, joined the CB radio network, evacuated well in advance and let family and friends know there were ok.

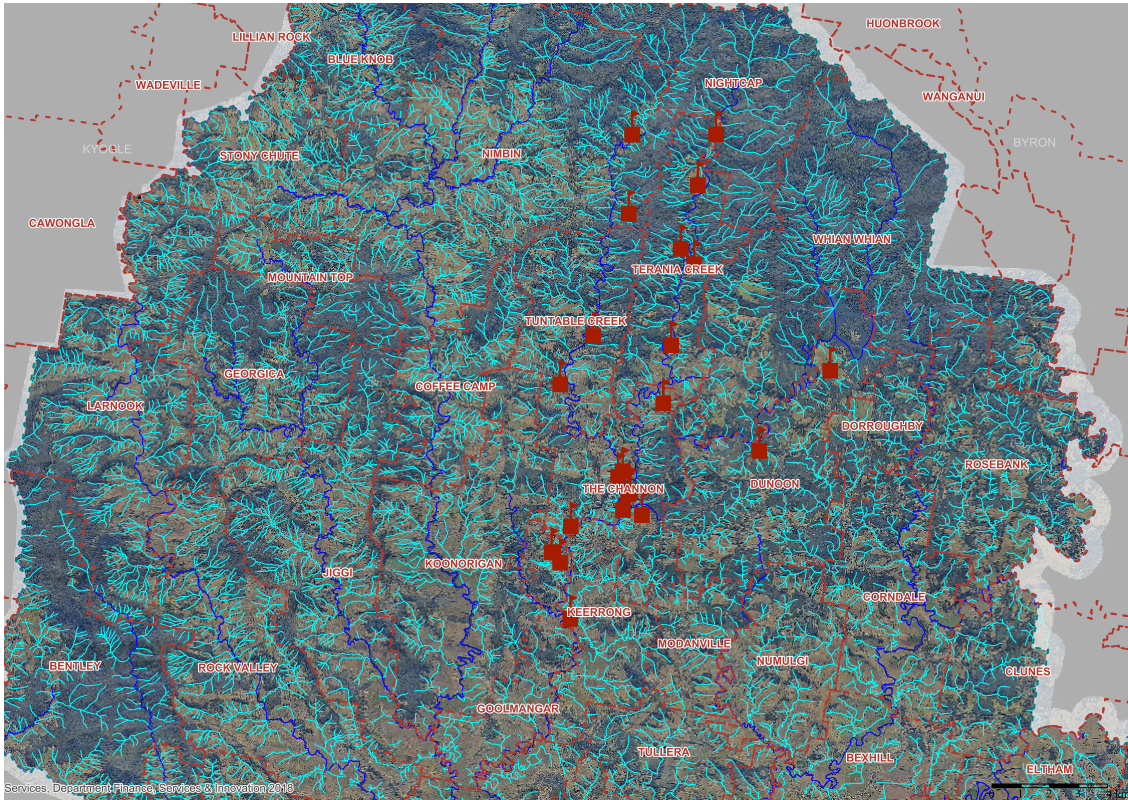
As part of the survey residents were asked if they would like to participate in the flood observation project. By sharing their stories, photo's and flood height data, 89% said yes. 93% of residents wanted to have more information on the size of floods in the catchment and 97% wanted to help those downstream by providing information about the creek levels in the Terania Catchment.

2. SITES VISITS

Post survey, willing respondents were contacted to arrange site visits. Up to 2 hours was allocated for each visit to allow for the following agenda to be covered:

- Provide an overview of the project and explain how residents observations help.
- Obtain a signature on the media release and project participation form.
- Show a detailed map of the creek systems in the catchment and how they may effect their property.
- Capture the residents story and observations made during the 2022 flood and any previous significant floods. (An example story/interview notes can be seen in the appendix).
- Visit flood locations on the property and record GPS data and flood height at location.
- If applicable help residents to identify benchmark spots for the future.
- Obtain flood photos and show residents how to add date/time stamps on photos. Guides were created this, they can be viewed [here](#).
- Information about the CB radio network was shared.
- Residents were informed that there would be a community event later in the year to share the results and build flood resilience.

In total 23 site visits were arranged and 2 additional locations were surveyed for flood height data. The map below shows the location of property visits.



Key information from the residents flood stories were captured during the interviews such as how they prepared, where they looked for flood info, how they were impacted and the risks they faced, details of any warnings they received, time they felt the flood peaked and the learnings they have taken.

Rainfall data was collected from residents who recorded it and date and time stamped flood photographs were obtained.

The GPS location of the flooded spots were recorded against photographic evidence and the flood heights were measured based on the residents observations or water/debris marks that were still present. (See example photo). In addition the AHD flood levels for 2022 have been professionally surveyed at 6 of the properties.



For each site visit a property map was created to pin point the locations of the flood observations and measurements.

Many learnings were garnered from the site visits. Residents who had recently moved to the area were really shocked;

“We are new to the area, we didn’t know it flooded here, we thought only Lismore flooded”

For others they relied on their knowledge of the 2017 flood;

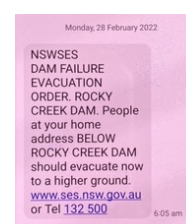
“We prepared to the 2017 level, we thought we’d be ok”

Whilst some who were closely observing the landscape sensed major flooding;

“I called council on Thursday to alert them of flooding, high saturation levels and blocked drains. My concerns were not heeded and the response was dismissive”

High up in the catchment residents recorded 930mm of rain in an 18hr period, but with communications down there was no way of passing on this vital information. Critical flood monitoring infrastructure on Terania Creek was not working and the Channon gauge flooded and stopped working. Residents in this small catchment have never received flood warnings, which by definition must be based on information about the size of the flood coming down the creek system. Those below the Rocky Creek Dam receive dam alerts which relate to potential risk of dam failure if water level above the spillway exceeds 1.8m. Some of the people below the dam received a phone call between 2 & 3am to evacuate but by this point it was too late. Residents were either already trapped with no way out, their house was already flooding and they were in harms way, whilst others headed the evacuation order and ended up putting themselves in more danger. This situation demonstrates the problem with ‘dam alerts’ in the absence of proper flood warnings.

At 6am a wider group of residents received a Dam Failure SMS. This message created major confusion as it was received by people who live above the Dam. For those below the Dam, who were already trapped, anxiety, stress and panic ensued.



Major flooding impacted the community with lives endangered, homes destroyed and assets damaged. During the time of the project some residents were still suffering from trauma and several impacted residents have since left the community. Homes were also lost to major landslides, communities become isolated and some feared for their safety as the ground continued to move, access became restricted and conservation habitat was lost. The response to this flood event was very much community driven, food drops & health checks, access restoration and road repair was conducted by community members. The social impact ranges from trauma, anxiety and fear, guilt, strain on relationships, anger/frustration with the authorities and a concern for the natural environment.

The Channon Resilience Inc has determined that the flood height in The Channon for the Feb 2022 flood was 30.31AHD, or 14.32m. This effort from community was necessary because the creek gauge failed when it was submerged. The Flood Observation Project has provided valuable data that shows the first peak at The Channon occurred around 3am on 28/2/22, followed by two additional peaks at 9am and approximately 12:45pm. This information now becomes part of the flood records held by Lismore City Council, SES, and DPE.

3. Database

As a result of the site visits, flood height and peak data has been obtained across the catchment, from high up Terania Creek and Tuntable Falls, throughout The Channon Village and down through the Keerrong valley.

A database has been created, using secure software which consists of;

- A contact list of everyone who participated in the project & highlights those who are interested to participate in the peoples catchment project and or receive further information.
- Detailed Interview notes and flood height data.
- Detailed property maps.
- Flood photos with GPS, date & time.
- Professional surveyors report (where applicable).
- Rainfall data if obtained.

In addition a summary of flood heights at the different locations has been entered into a spreadsheet and shared with ANU and CSIRO.

4. Community Event

On the 27th August a community event - a system for flood safety for the Channon & Keerrong - was held at Keerrong Hall. The SES, Rous County Council and Lismore City Council were invited to give presentations.

Everyone who participated in the project was invited and asked to register their attendance.

To advertise the event signage was placed on entry roads in and out of The Channon and The Keerrong valley and an advert was placed in The Terania Times.



A SYSTEM FOR FLOOD SAFETY IN THE CHANNON & KEERRONG

COMMUNITY MEETING & WORKSHOP *Save the Date* **SUN 27TH AUGUST 1:30 - 5:00PM**

IMPORTANT INFORMATION FROM GUEST SPEAKERS

- Rocky Creek Dam Manager - (Rous County Council)
- SES (Lismore Unit & Regional Zone Command)
- Terania - Keerrong Flood Safety System
- Outcomes of Flood Observation Project

Afternoon Tea Provided.

ROUND ROBIN WORKSHOP - CHOOSE YOUR INTERESTS:

- Where to find info on creek levels & rainfall
- Making sense of precipitation rates
- CB radio network - ask the tech experts
- How to strengthen our neighbour networks
- Improve your citizen flood intel skills

REGISTER YOUR PLACE

Via our website at: thechannonhub.org/whats-on-now
Or email us at: safeterania@gmail.com
Or by text message to: 0490 088 676

A leaflet was also mailed to residents to encourage wider participation

JOIN THE COMMUNITY MEETING
A SYSTEM FOR FLOOD SAFETY
IN THE CHANNON & KEERRONG
27th AUGUST 2023
 1:30pm - 5:00pm at KEERRONG HALL
 926 Keerrong Road

LEARN ABOUT
 Terania - Keerrong Flood Safety System
 Outcomes from the Flood Observation Project
 Rocky Creek Dam Safety Measures & Warnings
 SES Hazard Warnings & Flood Warning Systems

SPECIAL GUEST SPEAKERS

TOM LLOYD ACTING GROUP MANAGER OPERATIONS	JOANNA JONES DEPUTY ZONE COMMANDER
NIKKI TREANOR COMMUNITY RECOVERY OFFICER	JANET PETTIT COMMUNITY CAPABILITY OFFICER
JUSTIN WALL COMMUNITY RECOVERY OFFICER	ED BENNETT FLOOD INTELLIGENCE OFFICER

Please register your attendance as space is limited:
thechannonhub.org/keerrong safeterania@gmail.com 0490 089 676

This project is managed by The Channon Resilience Inc. made possible by a grant from Northern Rivers Community Foundation.

MEETING AGENDA

- Welcome & Intros**
- Terania-Keerrong Flood Safety Project**
 Updates on the community led project inc. rain & creek sentinels, the CB radio network and how the system works.
- Flood Observation Project**
 Results of the flood survey, flood impact on community, key findings from flood observation studies & flood awareness map for local bridges.
- Lismore City Council CRO**
 Meet our local community recovery officers. Learn about the initiatives they have already completed and the support that is available.
- Rocky Creek Dam**
 Dam safety measures, emergency plan functions, community risks & safety procedures.
- SES North Eastern Zone & Lismore Unit**
 Meet our local SES team. Learn how to plan and prepare for a flood emergency, the new hazard warning categories and how the warning system works.
- Round Robin**
 Pick your topic
 Chat with Tom Lloyd about Rocky Creek Dam
 Ask your questions to SES & Council
 Strengthen neighbour networks
 CB Radio Network
- Community Reflection**
 • What will we do differently next time?
 • What do we need to be flood safe here?

15min TEA BREAK

10min Q&A

Please register your attendance as space is limited:
thechannonhub.org/keerrong safeterania@gmail.com 0490 089 676

In total 56 people registered for the event with 54 people attending.

During the event Annie Kia explained how the Terania-Keerrong flood safety system works to gather flood intelligence from community rain and creek sentinels, and how, for the first time, the SES will receive comprehensive data on the whole Terania catchment. This presentation included information for how people can view catchment data on the BoM website, and what to look for. The full 10 minute presentation can be viewed [here](#).



Anna Conley presented the results of the flood survey and the impact the flood had on the community. Key findings from the flood observation studies were shared along with key focus areas for how the community and local government can build flood resilience. The full 10 minute presentation can be viewed [here](#).



James Sun from Rous County Council, talked about the role and responsibility of Rous County Council during flood events, the dam safety measures that are in place and how the emergency plan functions in relation to alerts, surveillance, communications and public safety procedures. James explained which parts of the community are at risk in the event of dam failure and shared the downstream release hazard inundation maps which detail indicative flood extent and travel times. The full 20 minute presentation can be viewed [here](#).



Ed Bennett from the Lismore SES unit shared his historical flood knowledge and explained how flood waters move through the catchment and the travel times to Lismore. The full 5 minute presentation can be viewed [here](#).



Superintendent Joanna Jones and Janet Pettit from the SES North Eastern Zone talked about the recent changes to the zone and how the Lismore SES Unit operates within it in the local area. They explained how the SES is now able to provide flood warnings to rural areas, and discuss how to plan and prepare for a flood emergency and the type of response our community can expect to receive during a flood event. They talk about the new hazard warning categories and how the warning systems work. Plus they answered various questions posed by the community. The full 40 minute presentation can be viewed [here](#)



In addition a senior strategic planner from Lismore City Council was on hand to answer questions, as well as two community recovery officers who provided information about resources available to local flood impacted residents.



After the presentations a “Round Robin” commenced. Community members formed groups based on their locale and moved around the different tables.

On the **Community Reflection** table residents reflected on the flood event and talked about what works well, areas of concern and suggestions to improve resilience.

Some of the suggestions from this group included:

- Compile a list of vulnerable people in the community.
- Reactivate the Keerrong Community Facebook page.
- Improve community connection, it used to be much better 20 years ago.
- Seek funding to fix the septic tank in the hall which hasn't worked for years.
- Offer a support group to connect with emotions and others and encourage humour.
- CB radio network to become more active in the valley.
- Individuals to increase solar panels & batteries.
- Put out reminders during disasters and ensure a freezer, generator and first aid kit are available for the hall.
- Community carers & responders training with the Wallace Road Community - picnic of 80+ people to get to know each other and share info.



On the **CB Radio** table residents learned from the experts. Demonstrations were provided of the different handsets to include pro's/cons and prices. Resources were shared and information about the Community Emergency Radio Network and how to join was made available.



On the **Local Government** table which included Lismore, Rous and the SES. Residents were given the opportunity to ask their questions and express where they felt government needed to make improvements.

Some questions & suggestions were as follows:

- Advice was sought for DA requirements for rebuilding after the flood.
- Has any testing been done to see what would happen if the Dam wall failed? What water would come through the valley? (Rous showed the modelling maps)
- Where do people go if they are already isolated and then they get a dam failure warning?
- Residents on Koonorigan Rd expressed their concern about not getting Dam Failure warnings.
- Other residents spoke about the panic that was caused by the dam warning message.
- Work needs to be done to develop a pack for people in Keerrong (flood prone areas) to let them know the risks at the point when they buy a new home. LCC already does this for Lismore residents.
- How as a community can we help the SES to improve their support.? Response from SES was to contact council/bom for more rain gauges.



Everyone who attended the event was asked to provide feedback. A summary of the responses are as follows;

What went well?	What could be different
So much information. Thankyou	Had a gathering in a local hall at least once a month
Good to know that the community do care	Gathering for therapies, dance, art classes, music etc
It was good to listen to the community's concerns	If Lismores 2022 major flood is the biggest natural disaster so far, is the 3 tiers of government now meant to be recognising that.
Annie very good	Very useful but not enough time at the tables.
Presence & participation of Lismore city council, SES & Rocky Creek Dam Rep. Good to hear and be heard	Today was informative & helpful, would have been great to have more time at the tables.
Presence of CB's & prices	Would of been good to have separate tables for council, SES & Rous.
Good to hear that some improvements have been made i.e. SES: region coverage what SES does & not do	Hard to hear in small groups with everyone talking at adjoining tables
RC Dam re-classification of dam from C to A	The Channon community in general NEEDS to become more inclusive of ALL not just those who they are alike/like
Community connection	Help Keerrong Community
Learning where Keerrong is at & hope new connection happens	Great session but time was the enemy as always. Questions during.
Day well ran, very open people	Do it again
Preparedness	Not enough time at each table, very important things unfolded, these are all important focuses & areas that people need more depth & discussion with
Good Sharing	



5. Website Updates

Following the community event [The Channon Hub](#) website has been updated.

In the disaster response section, the old flood page has been rewritten to provide the community with improved, extensive flood information and resources. This page can be viewed [here](#)

Two new community groups and extra resources have also been added to the website:

- [Terania Keerong Flood Safety Group](#)
- [Citizen Flood Observers Group](#)
- [Flood resources](#)

All of the presentations from the community meeting have been edited and added to [The Channon resilience Youtube Channel](#)

An [interactive map](#) has been created to show how bridges/culverts flood during extreme weather events.

6. Budget

Expense Line	Budget	Actual	Variance
Contractor Costs	\$12,100.00	\$12,401.00	-\$301.00
Event Costs	\$585.00	\$431.08	\$153.92
Promotion & Marketing	\$950.00	\$810.63	\$139.37
Stationery	\$135.00	\$126.87	\$8.13
Total	\$13,770.00	\$13,769.58	\$0.42

FURTHER INFO & RESOURCES

[Terania - Keerrong Flood Safety Project](#)

[Disaster Response - Floods](#)

[Citizen Flood Observers Group](#)

[Interactive Flood Map](#)

[The Channon Resilience Youtube Channel - A System For Flood Safety Presentations](#)

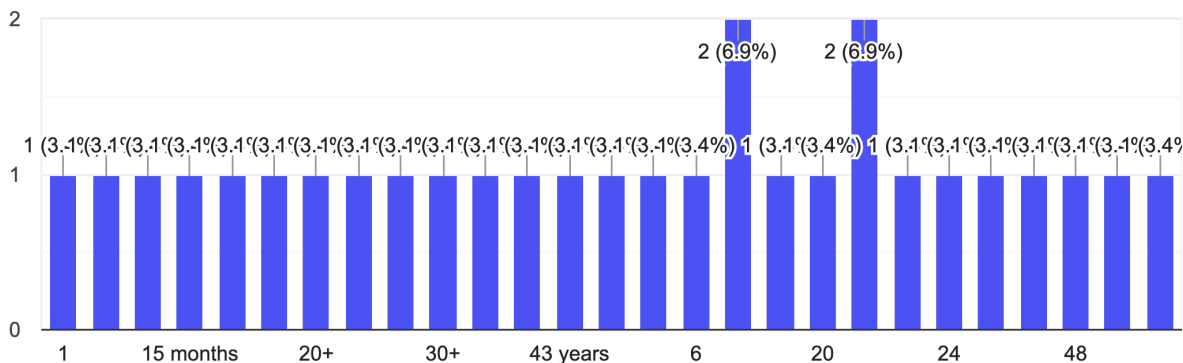
[Photo Album of Community Event](#)

SURVEY RESULTS

NB: Open text question fields have been omitted from this report,

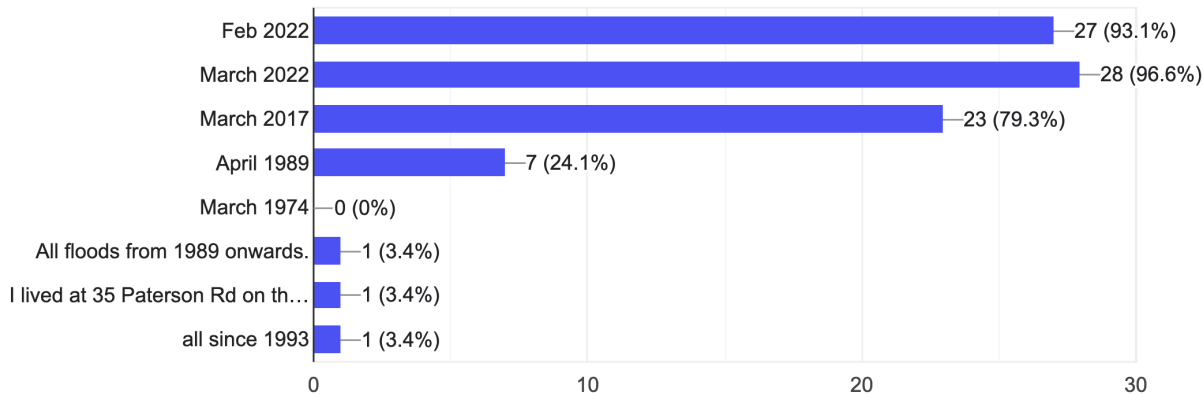
How many years have you lived in the Terania-Keerrong sub-catchment?

29 responses



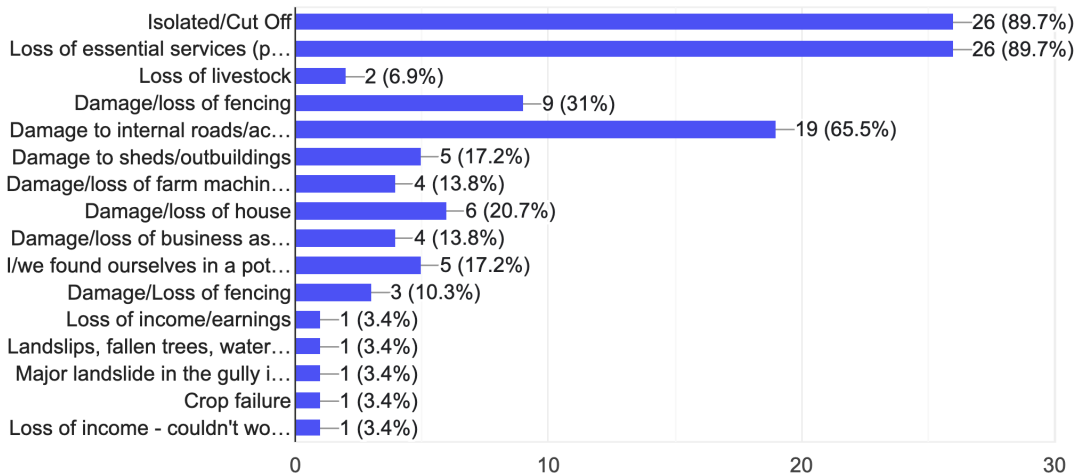
How many major floods have you experienced at the place where you now live? (tick all that apply)

29 responses

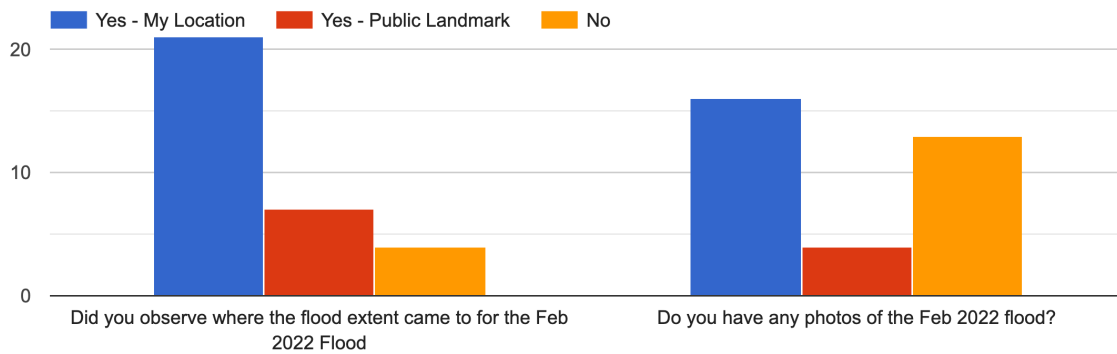


How did the Feb 2022 floodwaters impact you? (select all that apply).

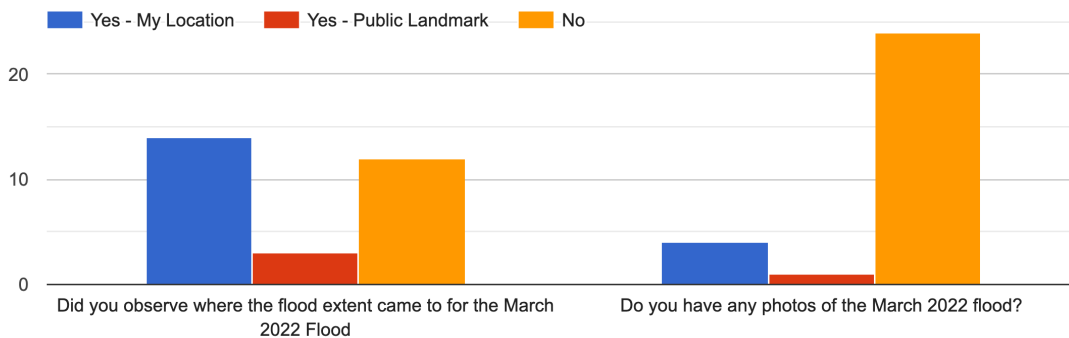
29 responses



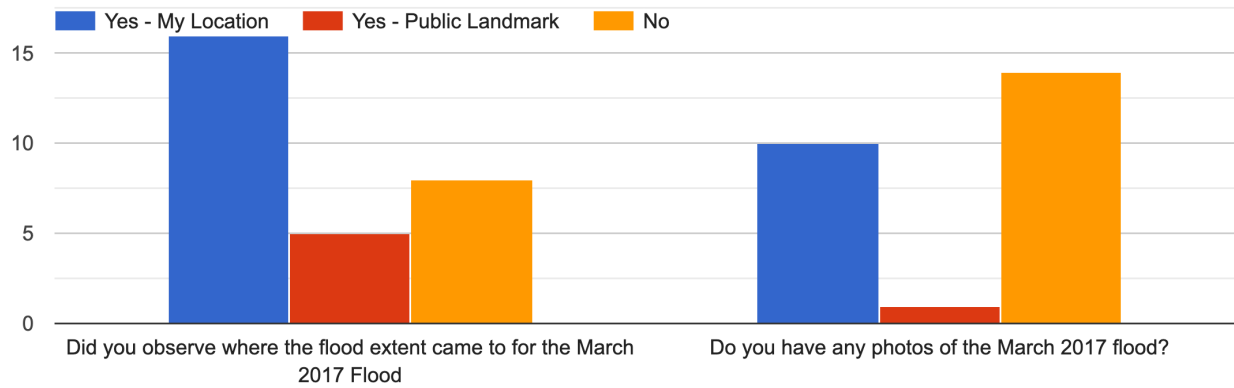
Flood Observations for the 28th February 2022



Flood Observations for the 30th March 2022

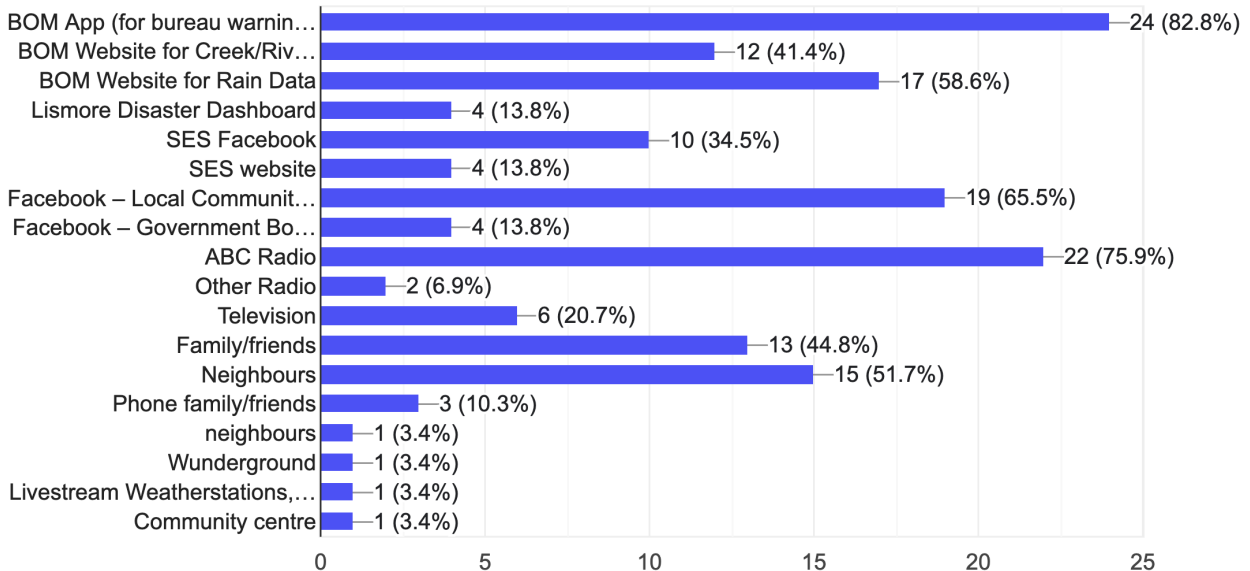


Flood Observations for the 31st March 2017



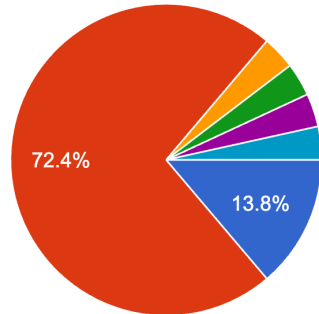
During a flood event where do you look for information? (tick which ones you use and know how to access)

29 responses



Did you have enough information about how big / severe the Feb 2022 flood was going to be at your location?

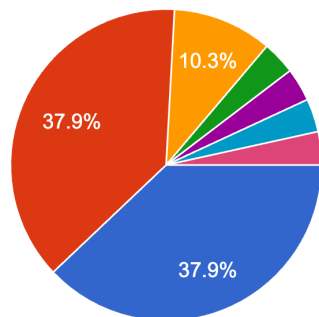
29 responses



- Yes
- No
- Always prepared for floods, the bridge goes under often & its "not my first rodeo" so ants, frogs, birds etc. all give indication of flood approaching.
- Was expecting similar to 2017
- Expected it to be big but not that big
- BOM always seem to under estimate rainfall for Terania Creek.

Did you have time to prepare for the flood in any way?

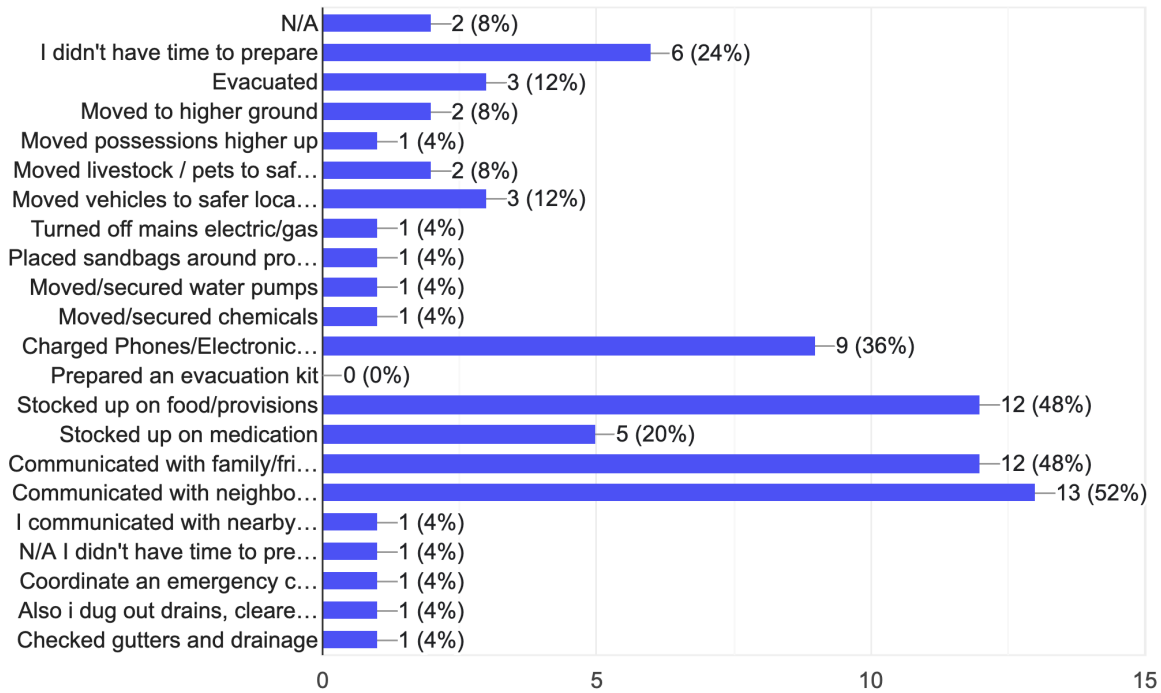
29 responses



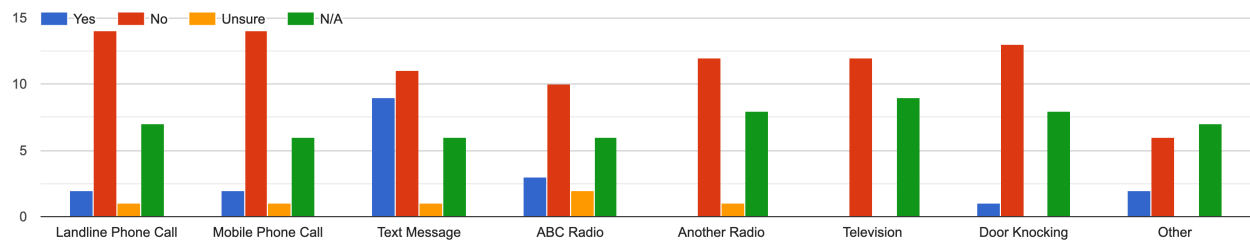
- Yes
- No
- N/A
- N/A flood was never going to reach our house which is on a substantial rise
- In terms of food shopper on the Saturday yes but the power and intern...
- Yes for general flood but not for what was coming
- prepared only by driving car over othe...

If you had time to prepare which of the following did you carry out (select all that apply)

25 responses

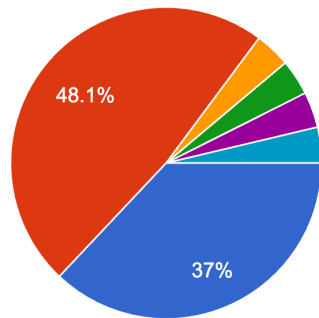


Did you receive any official warnings or notifications to evacuate?



Did neighbours or family point out the danger from flooding at your location?

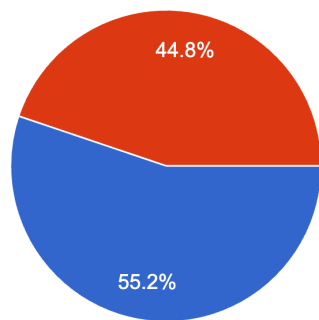
27 responses



- Yes
- No
- N/A at my house
- I told new neighbours downstream to get out before dark bc I knew the previous creek levels. I told them to check on neighbours and share the information...
- My Mum, but I know the location better than she does, so i already knew.
- N/A

If you had more information about the size of the Feb 2022 flood would you have behaved differently at your property?

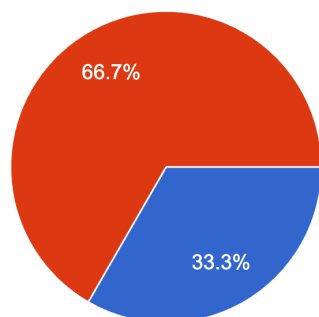
29 responses



- Yes
- No

Do you have a flood plan in place for your property?

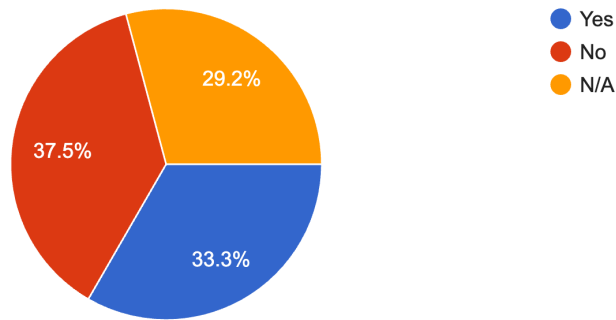
27 responses



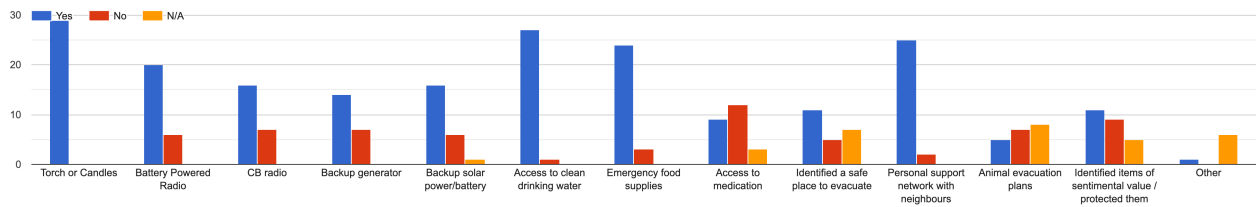
- Yes
- No

If you don't have a flood plan in place would you like to receive more information about how you can prepare a flood plan?

24 responses

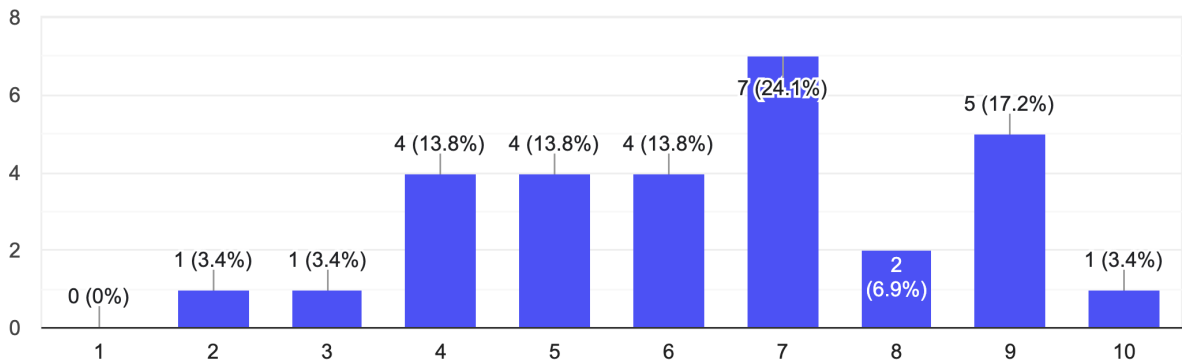


In the event of an emergency situation do you have any of the following?

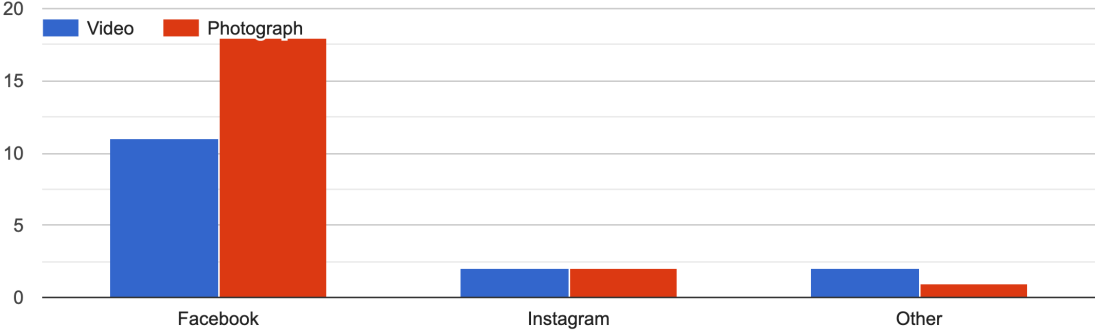


On a scale of 1-10 how knowledgeable are you about the river/creek systems in the Terania catchment? (i.e. Do you know the names of the cre...ere they rise, and how they feed into one another)

29 responses

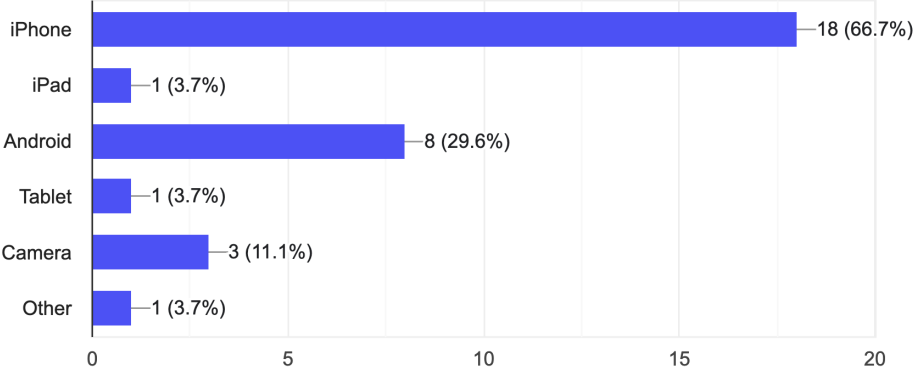


During big rain events do you share flood photos or videos on social media? (select all that apply)



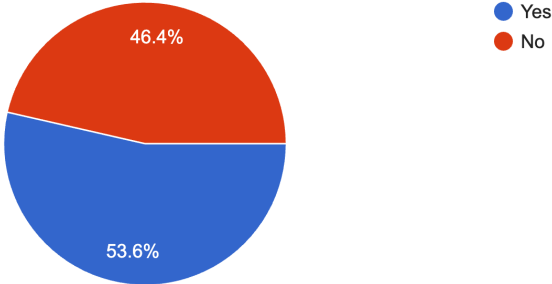
What device(s) do you use to capture images/videos?(select all that apply)

27 responses



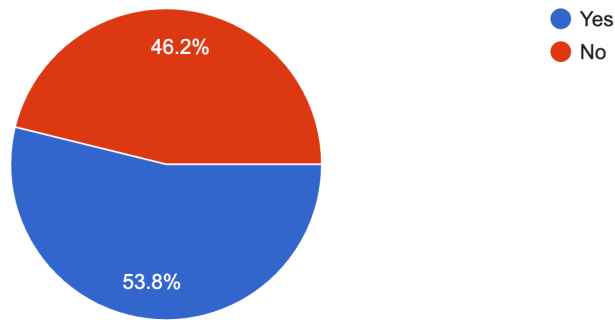
Do you know how to add text to your photos that gives date, time and location? This is called benchmark information, it can be done using simple editing tools in your smartphone.

28 responses



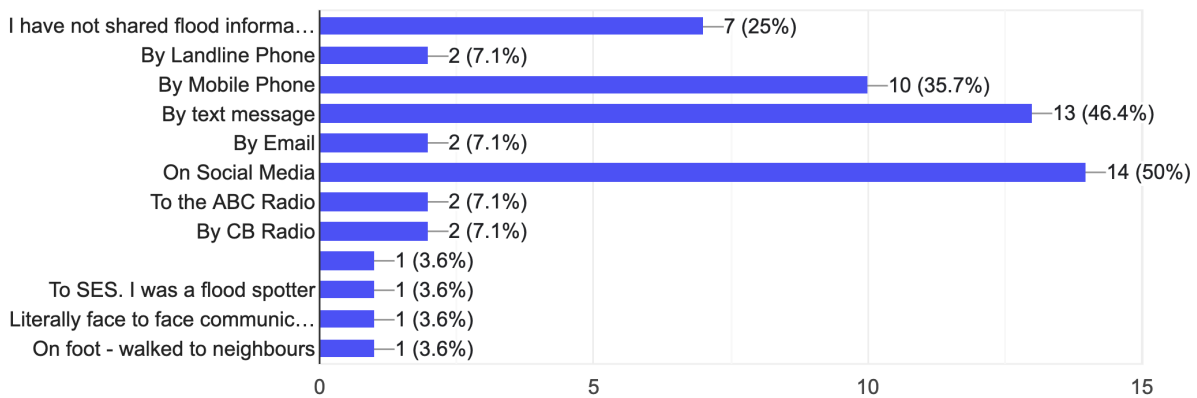
Would you like to learn how to add benchmark information to your photos so they are more helpful during flood events?

26 responses



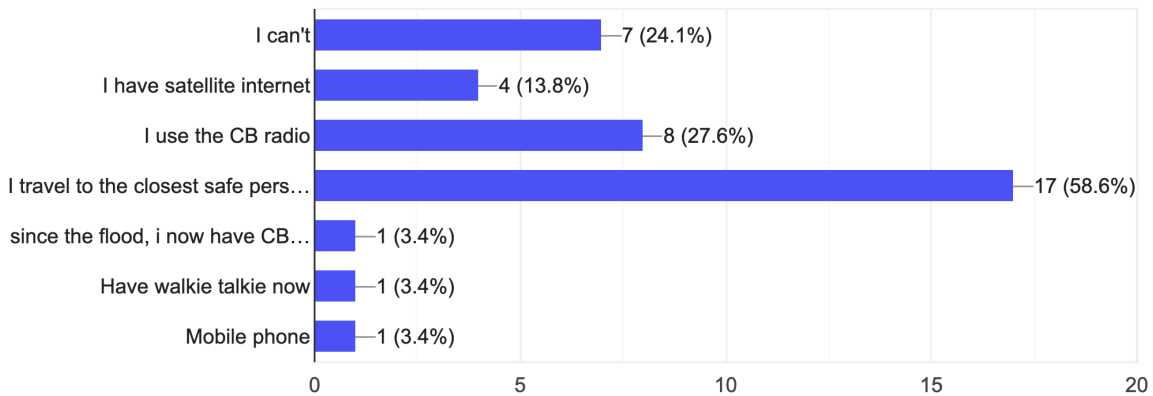
During a flood event have you ever shared flood information you thought might assist the wider community and If so, how did you do that? (select all that apply)

28 responses



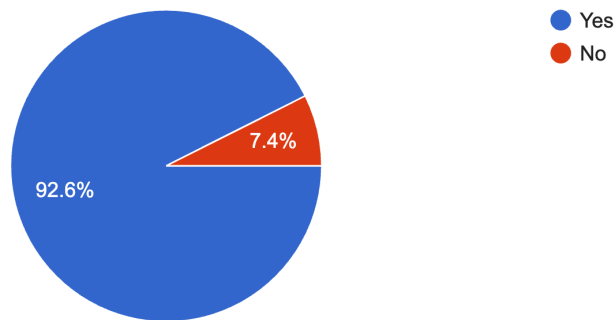
In the event of internet and/or phone failure how do you share/communicate your flood knowledge?
(select all that apply)

29 responses



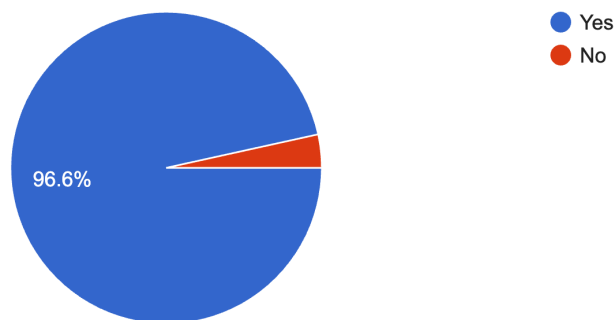
Would you like to have more information about the size of floods coming down the Terania catchment?

27 responses

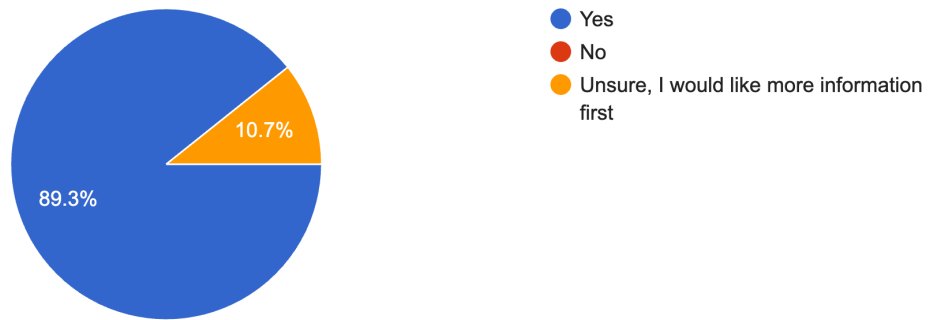


Would you like to help those downstream by providing information about rising creeks in the Terania catchment?

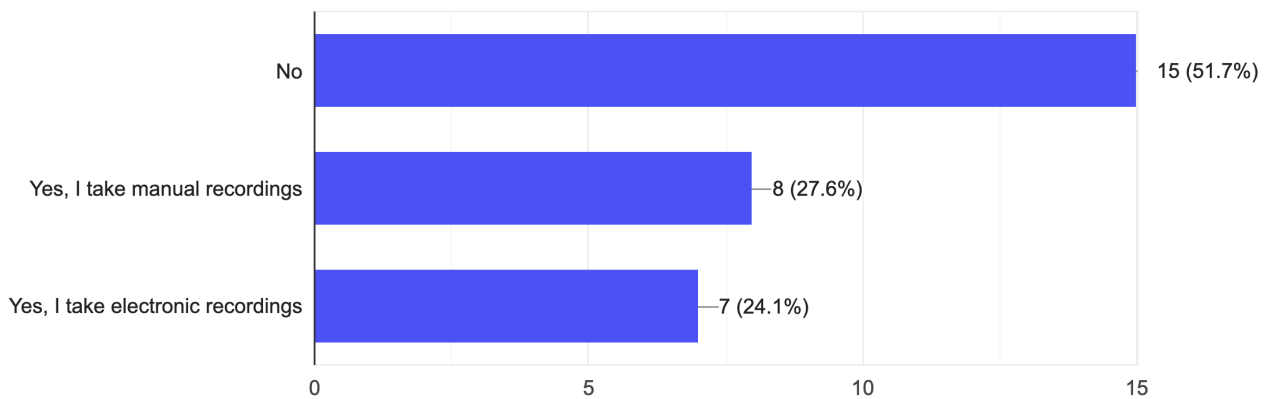
29 responses



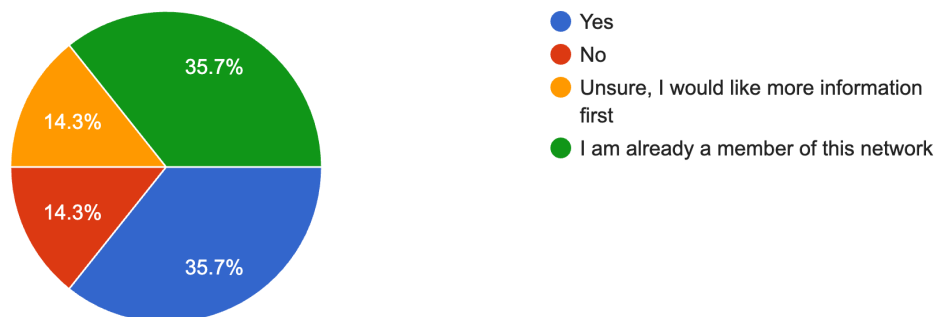
We may wish to contact people who have detailed information about where the flood reached. Would you be OK with us contacting you to ask if we...aw, and look at any photos you have of the flood.
28 responses



Do you have a rain gauge at your property and record rainfall data? If so select which type you have
29 responses

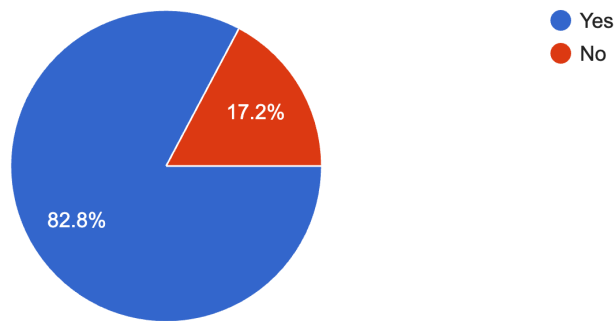


Would you be interested in joining the Emergency CB radio network for our community?
28 responses



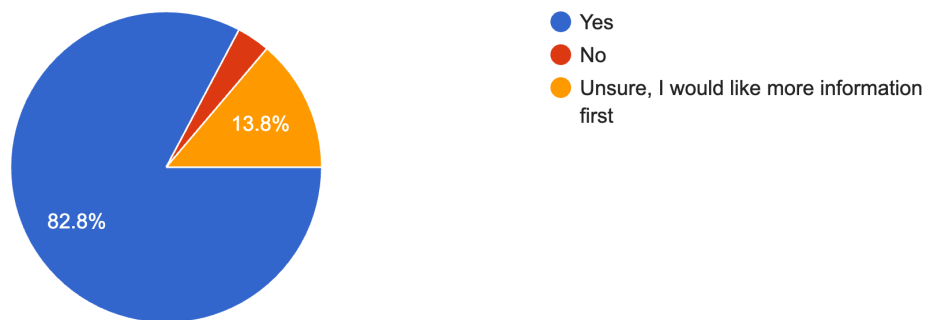
Would you like to receive occasional email updates from the Terania-Keerrong Safety Project?

29 responses



We have a partnership with the Australian National University to understand how floods develop in our catchment. If at some point in the future they ...ions about your flood knowledge would that be OK?

29 responses



APPENDIX

MARKETING MATERIALS

POSTER & TAKEAWAY CARD



PARTICIPATE IN THE FLOOD OBSERVATION STUDY

The Channon Resilience Inc. is working to improve flood safety in the Terania catchment - a key part of this is providing rain and creek information to those downstream. But first we need to tap into community knowledge. We'd like to gather your observations of where major floods have come to, and any photos you have that show the flood extent (peak).

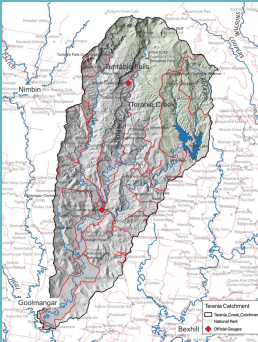


*example photo taken close to the 2017 flood peak

For more information visit our website or contact us:

- thechannonhub.org/flood-survey/
- safeterania@gmail.com
- 0490 089 676

To participate you must reside in the Terania sub-catchment which includes Tuntable Falls, Terania, Whian Whian, The Channon and the Keerrong valley between Koonorigan road and Dunoon Rd ridge.



WOULD YOU BE WILLING TO COMPLETE OUR SURVEY?

The survey aims to capture local flood knowledge;

- Location information and flood impact.
- Personal flood observations and flood height records.
- Flood information sources, warnings and resilience planning.
- Sharing / communication of flood information & knowledge.
- Expression of Interest for further participation in the Terania-Keerrong Flood Safety Project.

TO TAKE THE SURVEY

visit our website:

thechannonhub.org/flood-survey

Scan the QR code



SCAN ME

Paper Copy



Phone or email to request a paper copy

This project is managed by The Channon Resilience Inc. made possible by a grant from Northern Rivers Community Foundation.

TAKE THE SURVEY

Visit our website:

www.thechannonhub.org/flood-survey/

- safeterania@gmail.com
- 0490 089 676



EMAIL



It's one year since the big floods and it's important to

Connect & Share

This month we are seeking knowledge from the local community in relation to flood observations. If you have witnessed past flood extents/peaks and would like to help those downstream then please take [our survey](#).

We are also excited to announce the next Community Resilience Celebration at The Channon Hall, on Sunday 19th March with the Subhira Quinteto, it's a free event but it is essential to [book tickets](#).



Join us, Sunday 19th March, 5pm - 9pm at The Channon Hall

Come and gather "One year on" from the big flood/fandslides and enjoy this chance to get together, listen to world class music and celebrate resilience.

We are delighted to announce that Subhira Quinteto along with our local Raise the Roof Choir will be providing the evenings entertainment, where you will get to experience wild contemporary world music from Chile. Plus, ReAct Circus will be performing so make sure you arrive early.

Schedule:

- 5pm: Doors open & food available
- 5:15pm: Smoking ceremony outside
- 5:25pm: ReAct Circus performance
- 5:40pm: Intro by MC Tim Nicholson
- 5:45pm: Raise The Roof Choir
- 6:15pm: Subhira Quintet - First Set
- 7pm: Break & food/drink
- 7:30pm: Subhira Quintet - Second Set
- 8:30pm: "Viaje Ritual" 25min audio/visual quadrophonic cultural installation (film)
- 9pm: End of official program but fine to stay and mingle (and help pack up hehe!)

With the help of funds from Disaster Recovery at Lismore Council, The Channon Resilience Inc. are able to make this a FREE event for our community (with a \$5+ suggested donation if possible please).

Bookings are essential so please use the link below to grab your free ticket and to find out more about the event.

[Book Tickets](#)



Participate in the Flood Observation Project

The Channon Resilience Inc. is developing the Terania-Keerrong Flood Safety Project to increase the safety of people in The Channon and Keerrong valley during floods.

If you witnessed the extent/peak of the 2022, 2017 or any previous major flood, at either your residence or important public landmarks such as local bridges, culverts or public buildings etc. Then please participate in our project. By sharing your knowledge you can help those living downstream and in Lismore.

If you either:

- Live in the Terania-Keerrong catchment (Tuntable Falls, Terania, The Channon, Whian Whian or the Keerrong Valley down to Nimbin Road),
- Have flood extent/peak knowledge.
- Have any photo's showing the flood extent/peak.

Then please take our short 10 minute survey before 22/3/23.

By building our knowledge capacity as a community, we will become more resilient during future flood events and be able to provide reliable information to those down stream.

The survey completion deadline is Wednesday 22nd March 2023 @ 23:59

MAILED LEAFLETS

HELP IMPROVE FLOOD SAFETY

We are also interested in flood photos

Please email your photo's showing the flood peak to the email below.

photo's taken close to the 2017 flood peak

Survey Deadline
31/03/23

TO TAKE THE SURVEY

visit our website: <https://thechannonhub.org/flood-survey>

CONTACT US

- thechannonhub.org/flood-survey
- safeterania@gmail.com
- 0490 089 676
- facebook.com/thechannonresiliencehub

Scan the QR code

SCAN ME

Paper Copy

Phone or email to request a paper copy

This project is managed by The Channon Resilience Inc. made possible by a grant from Northern Rivers Community Foundation.

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[Take The Survey](#)

FACEBOOK AD'S

(Hover over image to play animation)

TAKE PART IN THIS IMPORTANT SURVEY

TO HELP IMPROVE FLOOD SAFETY IN OUR LOCAL COMMUNITY

<https://thechannonhub.org/flood-survey/>

SURVEY DEADLINE 31/03/23

HELP IMPROVE OUR LOCAL FLOOD KNOWLEDGE

thechannonhub.org/flood-survey

LOCAL PRESS

Terania catchment – seeking your flood observations

by Annie Kia

The Channon Resilience Inc. has a flood safety project for the Terania sub-catchment: we're bedding down a system whereby upstream sentinels provide rain intensity data during rain events.

Some have on-line electronic weather stations. If these should fail, we rely on admirable and committed sentinels to make two-hourly observations to give us the precipitation rate (rain intensity). We are improving as we go, and during the October event were able to provide collated rain intensity data to the SES. We also provided this information to downstream members of our CB radio network.

If the internet goes down we'll need to provide this information via radio. Our Tech Development team is working on a way to show real-time rain and creek levels on our own website, but that's a work in progress.

Our partnership with the ANU Institute of Climate, Energy and Disaster Solutions has been most helpful. Dr Barry Cooke is developing a hydrological model for the Terania catchment, and their team is applying for a grant which, if successful, will enable us to get the creek monitoring and communication gear we need to get to the next stage.



Credlit level at a gate, taken close to the 2017 flood peak. Photo: A. Kia

includes Tuntabul, Branch and Rocky Creeks, and Terania Creek down to the junction with Goomimangar Creek. We seek community observations of where floods reached in 2017 and 2022. In particular, if you can point to where you think the flood peak came to. In addition, we're interested in photos that show flood extent or height against permanent structures such as poles, fences, big rocks or trees.

The on-line survey can be found at: <https://thechannonhub.org/flood-survey>. If you'd prefer to do a paper version email: SafeTerania@gmail.com or phone 0490-089-676. The survey closes on 22nd March.

How to give us your Terania catchment flood observations

First, check out the catchment map. The Terania sub-catchment

Search your phone images

If you find you have a useful photo for flood benchmarking, have a look at the image information to find

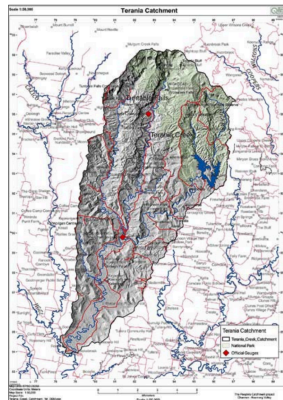
the date and time it was taken (if you don't know how to do this, ask someone who has a similar phone). Make a copy of good photos for safekeeping.

Following the survey, we will visit some locations where residents can point to flood extent so we can get GPS coordinates. This will help build our understanding of how rain translates to flood-on-landscape.

We'll also show interested people how to add text to images that goes year, date, time and location (when sharing images on social media it's important that people know what they're looking at).

After the survey we'll host a community meeting to share what has been learnt, and how citizen flood intelligence might help decision-making.

The Channon Resilience Inc would like to thank Northern



Map showing the Terania sub-catchment. Courtesy Greg Hall

Rivers Community Foundation for the grant that makes this flood observation project possible. We

know there's a treasure trove of community flood knowledge and we can't wait to gather it.

March 2023 **The Nimbin GoodTimes** Page 21

Seeking 2017 & 2022 FLOOD OBSERVATIONS

ANNIE KIA

Our Terania-Keremang Flood Safety project is taking shape. We're bedding down a system whereby upstream rain sentinels provide data on rain intensity during rain events. Some have online electronic weather stations. If these should fail, we rely on admirable and committed sentinels to make two-hourly observations to give us the precipitation rate (rain intensity). We are improving as we go, and during the October event were able to provide collated rain intensity data to the SES. We also provided this information to downstream members of our CB radio network by sending them an email rain summary, then a group text to look at their email, and a CB radio broadcast to remind them to check their inbox. If the internet goes down we'll need to provide this information via radio. Our Tech Development team is working on a way to show real-time rain and creek levels on our own website, but that's a work in progress.

Our partnership with the ANU Institute of Climate, Energy and Disaster Solutions has been most helpful. Dr Barry Cooke is developing a hydrological model for the Terania catchment, and their team is applying for a grant which, if successful, will enable us to get the creek monitoring and communication gear we need to get to the next stage.

This gets us to your flood

observation! We hope to tap into the wealth of knowledge in our community and seek your observations of where floods reached in 2017 and 2022. We will soon launch this project via social media and leaflets. If you are not on social media please reach out to us by emailing SafeTerania@gmail.com, or phone Anna Conley 0490-089-676.

The Terania sub-catchment includes Tuntabul, Terania, Branch and Rocky creeks. It covers Terania creek down to the junction with Goomimangar Creek, including Bowen gully and the unnamed creek that flows into Terania from Koonogin. This is what we're after:

- Your observations of flood extent on the land during the floods of 2017 and 2022. In particular, if you can point to the spot you think the flood extent came to.
- Photos that show flood extent or height against permanent structures such as poles, fences, big rocks or trees.

Search your phone images

Could you search your phone images? The most important dates are 30th March 2017, and the February and March floods of 2022. Once you find the photo, have a look at the information about the image (if you don't know how to do this, ask someone who has a similar phone). The image information will tell you the date and time it was taken. We suggest you make a copy of good photos for safekeeping.

Once our project is underway we will visit locations where residents can

point to flood extent so we can get GPS coordinates. This will help build our understanding of how rain translates to flood-on-landscape. We will also show interested people how to add text to images that gives year, date, time and location (when sharing images on social media it's important that people know what they're looking at). Photos with this information written on them are what we mean by 'benchmark photos'. Remember to always keep a copy of unmarked originals.

The Channon Resilience would like to thank Northern Rivers Community Foundation for the grant that makes it possible to engage Anna Conley on this flood observation project. We know there's a treasure trove of community flood knowledge and we can't wait to gather it.



Barry Cooke at the flood observation point.



Benchmarked photo of a creek/gate on 20/3/17. The 2017 flood peaked in the Channon at approximately 5pm. We've asked BOM for historical creek gauge data for this event.



Benchmarked photo of a box on a pole during 2017.



Benchmarked photo of Ford Bridge as the mega flood was developing. This was taken before the creek gate failed at 2am the next day when the creek was at 11.5m. The estimated maximum was 12m - 13.5m, the highest ever recorded in The Channon.

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DEDICATED WEBPAGE



Background

The Channon Resilience Inc. is developing the Terania-Keerrong Flood Safety Project to increase the safety of people in The Channon and Keerrong valley during floods. To date, residents in the Keerrong valley and The Channon have had minimal information about flood risks, and during the events of 2022 there were systemic failures of the official flood monitoring system.

Our goal is to fill the gap – to provide downstream people with information to help their decision-making.

With committed 'rain sentinels' at the headwaters of our creeks, we are able to collate accurate rain intensity data and share this with the SES and also with downstream residents who are in our CB radio network.

Our next step is to add vital information on the rate-of-rise of Tuntabla, Rocky and upper Terania creeks. We're also exploring how we might show real-time catchment data on The Channon Hub website.

Our partnership with the Australian National University (ANU) Institute of Climate, Energy and Disaster Solutions has been very helpful, and one of their hydrologists is now working on a hydrological model for the Terania catchment.

What is the Flood Observation Project

The flood observation project is about understanding floods within our local catchment. We hope to tap into the wealth of knowledge in our community and seek your observations in relation to where the floods reached in 2017 & 2022 at both your location and on public access roads/bridges. We are interested in being able to obtain date and time stamped photos that show the flood extent/height against permanent structures such as poles, fences, bridges, large rocks & trees etc.



*example photo taken close to the 2017 flood peak

The aim of this survey is to collect **local flood knowledge**. This will help build resilience, and our capacity to make informed decisions during flood events. To find out more about the Terania-Keerrong Flood Safety project please visit the [community pages](#).

The Survey

This survey is being conducted by The Channon Resilience Inc.

This survey aims to capture important local flood knowledge and will comprise of the following sections:

- Obtaining consent to participate in the survey.
- Location information and flood impact.
- Personal flood observations and flood height records.
- Flood information sources, warnings and resilience planning.
- Sharing / communication of flood information & knowledge
- Expression of Interest for further participation in the Terania-Keerrong Flood Safety Project.

To take part in this survey you will need to be:

- 18 years +
- Have been a resident of the Terania-Keerrong catchment during a major flood event.
- Consent to sharing flood level knowledge and images.
- Consent to the Information provided being stored and handled for the use of this project.
- A resident of the Terania-Keerrong catchment. This includes locations that drain into the following creeks: Tuntabla, Terania, Branch and Rocky creeks and their tributaries. The catchment includes the Keerrong valley down to Nimbin Road. It takes in Tuntabla Falls, Terania, The Channon, Whian Whian, Keerrong and parts of Goolmangar. Please refer to the map below to ensure you are in the catchment area.



[Click here to view larger map](#)

Please allow around 10-15 minutes to complete this survey. The survey completion deadline is Friday 31st March 2023 @ 23:59.

[START THE SURVEY](#)

Please note that recollecting aspects of a flood event and/or emergency situation can be emotionally distressing. If you encounter any distress or need help you can contact the Nimbin Recovery Support Services on 0488 144 647

[START THE SURVEY](#)

Survey Contacts

If you encounter any technical issues completing this survey or if you would prefer to complete a paper form please contact:

Email: safeterania@gmail.com

Phone: 0490 – 089 – 676

 **The Channon Resilience Inc.**
This Project is managed by The Channon Resilience Inc.

 **Community Grant**
This project has been made possible by a grant from the Northern Rivers Community Foundation

 **Recovery Support Services**
If you encounter any distress or need help you can contact the Nimbin Recovery Support Services on 0488 144 647