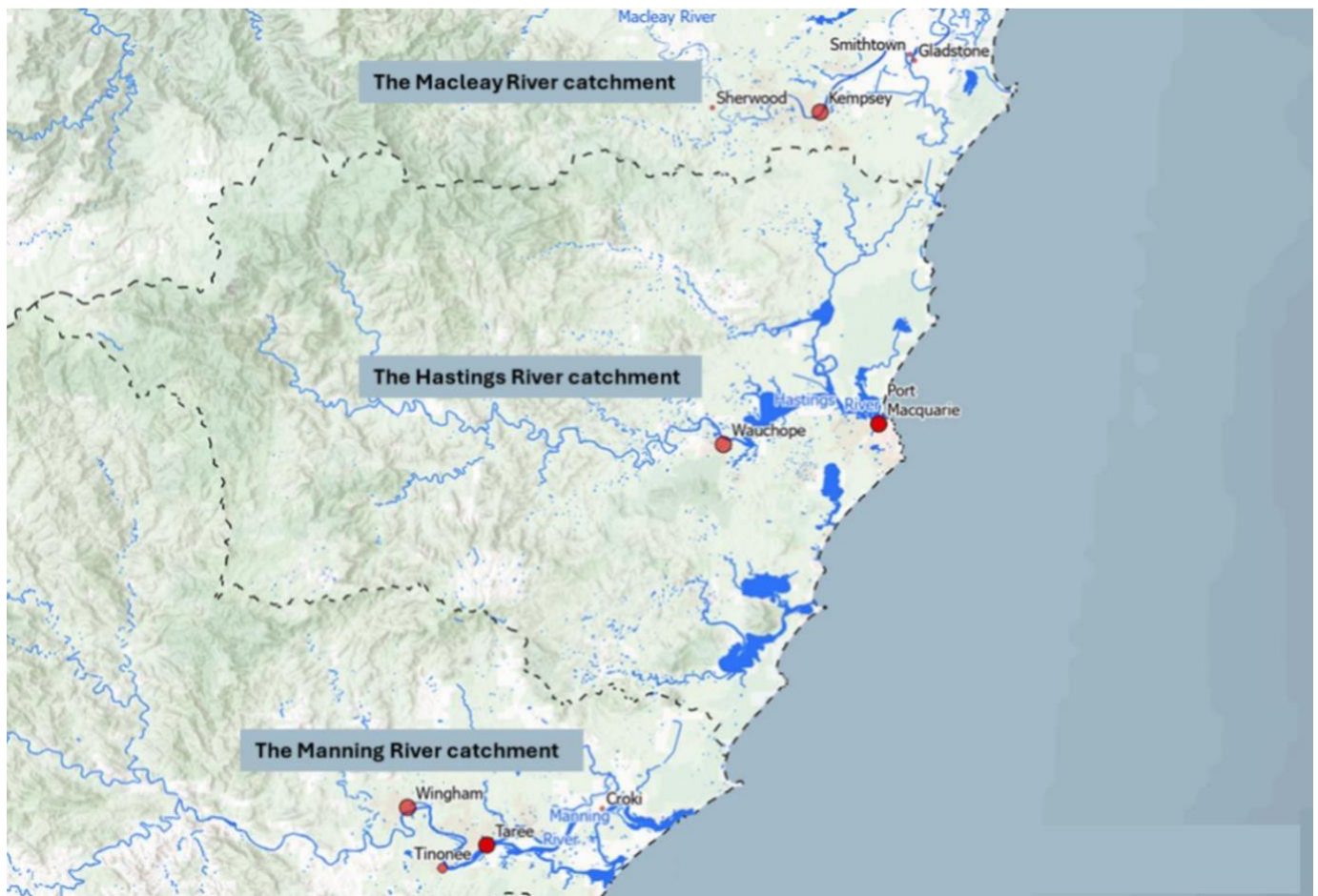




# **Flood Impact & Community Resilience Research, June 2025 [Part II]**

**Steven George, Fiona Lord, Stefi Montoya & Vicki Chen**

**Macleay and Hastings River Catchments** Between 19 and 25 May 2025, severe flooding occurred across the NSW Mid North Coast when an Easterly Trough Low (ETL) combined with warm, humid conditions to produce intense rainfall, gale-force winds, and major flooding. The event affected the Manning, Hastings, Macleay, and Nambucca catchments, leading to five confirmed fatalities, an estimated 10,000 homes damaged, 50,000 people evacuated, and widespread power outages and transport disruption (Figure 1).



**Figure 1.** The three Mid North Coast, NSW catchments most impacted by severe flooding between 19 – 25 May 2025 – The Manning River, The Hastings River and The Macleay River.

This briefing note is Part Two of a two-part series, summarising Risk Frontiers’ flood impact and resilience field survey to the Mid-North coast conducted in June 2025. It focuses specifically on the Macleay River Catchment locations of Kempsey CBD, West Kempsey and Smithtown, and the Hastings River Catchment locations of Port Macquarie (Settlement Point Drive) and Wauchope. This research documents the impacts to housing, businesses, agriculture, and community recovery, while also summarising local experiences, lessons for resilience, and key challenges for managing future flood risk.

## Macleay and Hastings River Catchments: Flood Event and Community Impacts

### Event Overview

#### Macleay River impacts

- Severe levee breach in Kempsey: The Macleay River breached the town’s levee, inundating the Kempsey CBD and West Kempsey with flood depths approaching 2 metres (Figures 3 & 4)
- Widespread property damage: Smithtown experienced severe flooding with Rawson Street water depths reaching 1.4 metres (Figure 6); extensive farmland inundation occurred near Pola Creek (Figure 5)

- Sustained community need: The Kempsey Recovery Centre consistently recorded 200+ daily visits, highlighting extensive housing, food, and financial stress
- Significant rural disruption: Primary producers and aquaculture operations along the Macleay River suffered cumulative losses with long-term recovery challenges

### **Hastings River impacts**

- Port Macquarie's Settlement Point Drive faced repeat inundation, ferry service disruption, and property damage (Figure 9), while flood water at Wauchope's Railway Bridge peaked at 6.82 metres (Figure 10), causing major road closures
- Marine industry and rural disruption: Primary producers and oyster farming operations along the Hastings River suffered cumulative losses with long-term recovery challenges

## **Key Findings**

---

### **Emergency Warnings**

- Many residents and business owners reported that official flood warnings were delayed, inconsistent or unclear, undermining trust in the SES and BoM systems
- Communities often relied on local judgement and neighbour alerts instead
- In Kempsey, unclear evacuation guidance contributed to confusion and missed chances to protect property and stock.

### **Business Preparedness**

- Businesses with site-specific, flexible flood plans recovered faster than those bound by rigid protocols
- In West Kempsey, KempClean used a flood-resilient layout with modular shelving, which enabled rapid clean-up and continuity through online operation
- Limited access to resources like sandbags hampered some businesses' efforts to protect property, highlighting gaps in local preparedness and support.

### **Personal Preparedness**

- Prior flood events spurred residents in places like Settlement Point Drive, Port Macquarie, to raise slabs, reinforce fencing, and to source and maintain affordable flood insurance.

### **Limited Access to Flood Insurance**

- IGA Central Supermarket, Kempsey: Quoted \$250,000/year; suffered \$500,000+ in uninsured losses
- Insurance costs remain prohibitively high or unavailable for many in flood-prone communities (one Smithtown resident was quoted \$29,000 per year for flood cover -far beyond what most residents can afford)
- Settlement Point Drive: Some owners kept affordable cover (around \$5,000/year) which helped with fast recovery and encouraged neighbours to follow suit.

## Community Resilience and Spirit

- Local volunteers, neighbours, and informal community networks were crucial to recovery
- Residents in Kempsey CBD, West Kempsey, and Smithtown depended on family and community support in the absence of timely government help.

## Impacts to Primary Production and Farming

- Primary producers in Kempsey faced severe stock and crop losses, with waterlogged paddocks delaying recovery and clean-up
- The aquaculture sector, especially oyster farming along the Macleay and Hastings Rivers, sustained heavy damage
- Many farmers remain uninsured, extending financial vulnerability and recovery timelines.

## Increased Reliance on Social Media and Local Networks

- As trust in official alerts declined, communities turned to social media and word-of-mouth for flood updates with informal information-sharing enabled faster self-directed responses.

## Recent Flooding Experience Enhances Preparedness

- The 2021 floods drove improvements in flood readiness for places like Port Macquarie, helping limit damage in 2025
- However, areas with limited prior flood experience, especially rural low-lying parts such as Smithtown, still faced unexpected impacts, reinforcing the need to update hazard mapping and planning.

## Macleay River Catchment – Kempsey and Smithtown

---

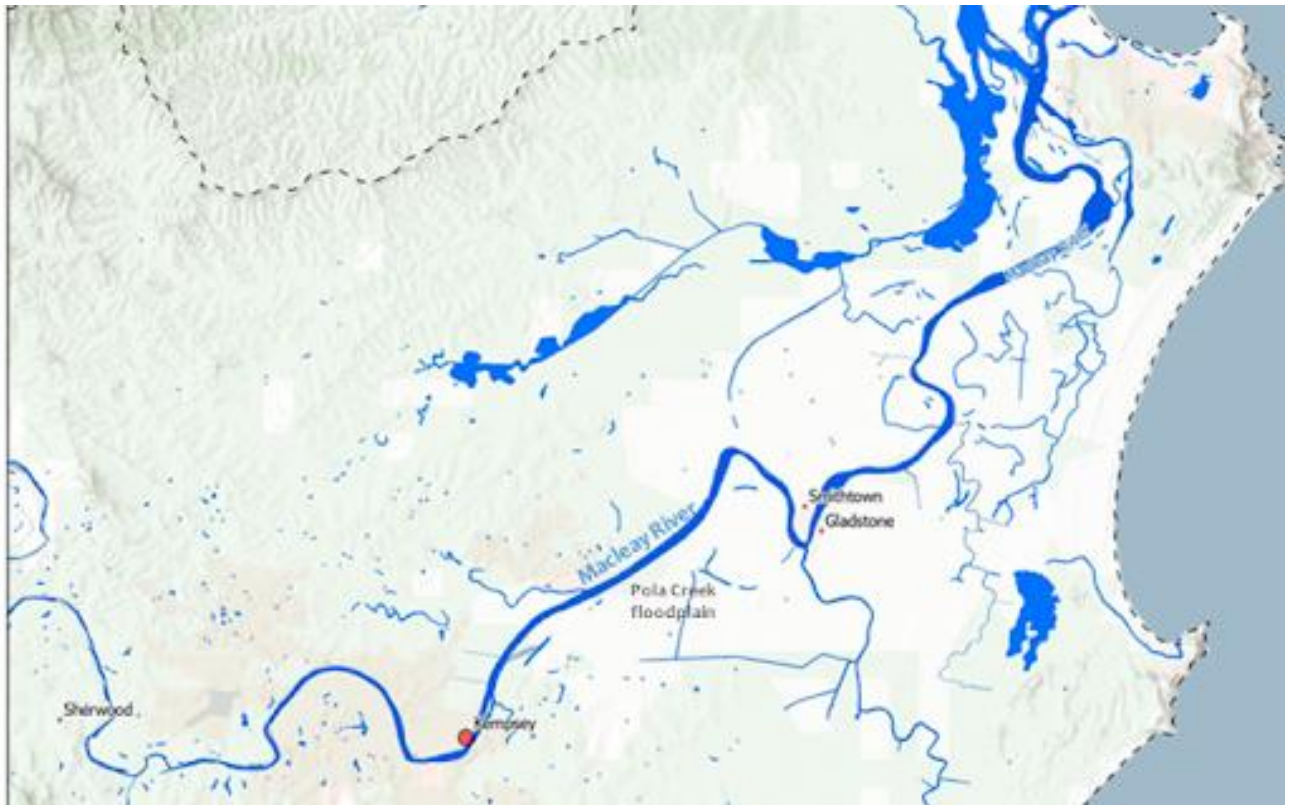
The Macleay River catchment experienced moderate to major flooding in May 2025, following periods of heavy rainfall across the region (Figure 18). The Bureau of Meteorology issued flood warnings as river levels rose at key locations, including Smithtown and Kempsey.

## Impacted Areas

---

- Kempsey CBD and surrounding areas experienced direct inundation, with businesses in West Kempsey forced to close indefinitely due to flood damage and access issues.
- Smithtown was also heavily affected by rising waters
- Some West Kempsey businesses remain closed indefinitely due to major inundation and stock destruction
- Sherwood's Bridge recorded extreme flood levels, highlighting the intensity of the event at specific locations within the catchment.





**Figure 2.** The Macleay River catchment with areas most impacted in the May 2025 flooding

## Kempsey Recovery Centre

The Kempsey Recovery Centre was established at the Kempsey Showground on 28 May 2025, to assist residents affected by the severe flooding across the Macleay Valley. The centre quickly became a focal point for recovery efforts, consistently recording over 200 visits per day throughout its operation. This steady attendance highlights the significant level of community need and engagement, with some repeat registrations included in the count.

## Primary Needs Identified

As in Taree, residents accessing the Kempsey Recovery Centre most commonly sought help for:

- Financial insecurity
- Housing displacement and emergency accommodation needs
- Food insecurity
- Broader social vulnerability, with many individuals coming from low socioeconomic backgrounds.

## Housing Impact

Assessments of damaged homes in Kempsey are still underway. While final figures are not confirmed, the number of homes deemed uninhabitable is expected to be lower than Taree's 608, but the local housing impact remains a major concern for recovery.

## Rural Recovery Challenges

The centre has seen more primary producers seeking help for:

- Farm clean-up operations

- Disposal of destroyed or contaminated property.

In addition, severe impacts to the aquaculture sector have emerged, particularly to oyster leases along the Macleay River. The full extent of damage to primary production is expected to remain unclear for months due to:

- The delayed visibility of cumulative losses across farms and aquaculture operations
- Delayed clean-up efforts due to soaked paddocks hampering heavy machinery access
- The complexity of damage assessments in river-based industries.

These evolving conditions point to a prolonged recovery timeline for both agricultural producers and aquaculture operators in the Kempsey region.

## Kempsey – CBD

---

Kempsey faced major flooding on Saturday, 24 May 2025, when the Macleay River breached the town's levee. After its peak, the river level at the Kempsey gauge dropped below 4.50 metres AHD by 9 p.m. and continued to fall, while at Smithtown after evacuation warnings were broadcast with reaching the Macleay river reaching 3.92m, flood levels also fell below the minor threshold (3.40m). As a result, floodwaters caused significant inundation in the CBD, bringing widespread economic and structural impacts.

- An estimated 50 businesses in the Kempsey CBD were affected, many with extended closures and severe damage, with many reporting limited or delayed official warnings. Some parts of the CBD saw inundation up to nearly 2 metres (Figure 3)
- Most impacted businesses employed 2-3 staff, indicating a real effect on local jobs and economic activity
- The lack of affordable insurance and formal recovery support places long-term viability at risk, especially for independent retailers and SMEs
- Community support and informal networks – including neighbours, volunteers, and local sporting teams – played a key role in the immediate response
- Confusion around evacuation authority and timing, especially from SES staff, affected decision-making and led to early closures or missed preparation time
- Flood insurance coverage was almost universally absent among small businesses due to high premiums and limited options, leaving many exposed to major financial losses.

## Businesses Impacted

---

### IGA Central Supermarket

One of the most severely affected businesses in the CBD, the IGA supermarket experienced floodwater up to 1 metre deep within the store.

- Recovery efforts involved four rounds of thorough cleaning and sanitisation, with staff working around the clock to prepare for reopening

- The store reopened on Wednesday, 4 June, nearly two weeks after the flood.
- The owner reported:
  - Stock losses exceeding \$400,000
  - Freezer equipment damage worth \$100,000, currently undergoing repair.
- The supermarket had no flood insurance, as premiums were unaffordable quoted at \$250,000 per year
- No formal council safety checks were conducted prior to reopening, and unlike larger retailers (e.g., Coles in Wingham (Briefing Note 516(a))), the IGA was not subject to mandatory stock disposal policies. Store operators bore full responsibility for ensuring product safety.



**Figure 3.** Flood levels just below 2 metres in the Kempsey CBD from the flooded Macleay River catchment which peaked on Saturday 24th May

## Pool and Spa Retailer

- This business, with 19 staff, reported flooding to a depth of 1.2 metres inside the store and was closed for over a week
- Losses exceeded \$150,000, including floor stock worth up to \$15,000 per unit; does not have flood insurance
- The owner, who was away during the event, expressed frustration at the SES response:
  - A staff member was told by SES to evacuate immediately on Friday, 23 May
  - The early evacuation occurred 24 hours before flooding, leaving no time to protect valuable inventory.
- A mezzanine level could have been used to safeguard stock, and spas on the floor could have been moved off-site with better warning
- Despite this, the owner praised the local community, football team, and council water services manager for helping the store reopen quickly.

## KempClean – Vacuum and Cleaning Supplies Store

- Designed for flood resilience, the store had:
  - Stainless steel, modular shelving
  - A layout for rapid disassembly and cleaning
- Despite 1.2 metres of floodwater, the business was structurally prepared
  - Levels were about 30 cm lower than in the 2021 event

- The store remains physically closed while brickwork dries but continues trading online
- Owners were frustrated no sandbags were given to their rear-facing location, while the unaffected main street got priority
- They had given flood-preparedness advice to a new business across the street, which was ignored; that business then suffered preventable losses due to non-resilient fittings and carpets.

## West Kempsey

West Kempsey, part of the Kempsey CBD, experienced severe flooding, with floodwaters exceeding 2 metres in some areas. The extent of inundation has led to widespread business closures, with several premises appearing to be out of operation indefinitely.

- Numerous businesses in the area remain closed due to extensive water damage. Many have not yet commenced clean-up or recovery efforts.
- An abandoned Shell Service Station (Figure 4) remains cordoned off, with damaged fridges and freezers placed outside, awaiting removal near fuel bowsers
- The shop interior has been completely stripped of all shelving and stock, indicating potential long-term closure.
- The motel next door to the service station was also severely inundated, with no signs of activity or management presence during the flood assessment
- Water levels in the area suggest the business has likely ceased operations indefinitely (Figure 4).



**Figure 4.** A service station in West Kempsey remains closed with the remnants of fuel bowsers, fridges and freezers destroyed in the flood behind tape. Flood level at this location was > 2 metre



## Smithtown and Pacific Highway (near Pola Creek)

Extensive flooding across vast floodplains between Kempsey and the coast caused major road closures, cutting access to communities like South West Rocks, Hat Head, and the townships of Smithtown and Gladstone (Figure 5).

- Flooding in the Pola Creek area beneath the elevated Pacific Highway caused widespread property impacts. Many farmers are only now seeking help at recovery centres, having prioritised immediate clean-up
- Smithtown (Figure 2), on the Macleay River floodplain, was severely impacted with widespread property damage and significant inundation, much worse than Gladstone on the opposite bank due to Smithtown's lower elevation and exposure to overland flow



**Figure 5.** Pola Creek Area Between Kempsey and Smithtown: (Left image-taken by person known to survey team) – taken on 24 May from the elevated section of the Pacific Highway, shows the extensive flooding across the floodplain below, looking in the direction of Kempsey.(Right Image) – the same approximate captured on 4 June from the floodplain itself on South West Rocks road, beneath the Pacific Highway, during a site visit by the survey team.

- Most Smithtown properties were affected, with some homes uninhabitable; Rawson Street saw floodwaters up to 1.4 metres deep (Figure 6), showing the extent of residential flooding
- Debris fields and sediment deposition across downstream paddocks show the high force and velocity of the floodwaters
- Gladstone, being slightly higher, avoided the worst impacts faced by Smithtown



**Figure 6.** Rawson Street at Smithtown showing abandoned homes and approximate flood height of 1400 mm (red line) determined from football field fence debris and flood water lines on homes

- Residents expressed frustration about river management and called for council dredging to reduce debris build-up and improve water quality during floods
- One resident with a home built to council-mandated elevation (one metre up) said it still wasn't enough to prevent damage in 2025
- Flood insurance remains costly but crucial in Smithtown; one homeowner noted that NRMA flood insurance was around \$29,000/year, highlighting the inaccessibility for many in high-risk areas.

## The Hastings River catchment – Port Macquarie and Wauchope

The Hastings River catchment experienced significant flooding in 2025 due to intense and sustained rainfall across the Mid North Coast region of New South Wales (Figure 7). While the overall severity was less than the 2021 flood event, the impacts were still considerable across key locations, disrupting transport, inundating homes, and prompting evacuation warnings.

### Areas Impacted

#### Port Macquarie

- The Settlement Point Drive area, adjacent to the Hastings River, experienced inundation, with several homes affected by floodwaters
- Both the Hibbard Point Ferry and Settlement Point Ferry were rendered inoperable, leaving the North Shore of Port Macquarie isolated for several days.

#### Wauchope

- The Hastings River at Wauchope Railway Bridge exceeded the major flood level of 6.82 metres, as reported by the Port Macquarie-Hastings Council.
- Evacuation warnings were issued, and several parts of the town were impacted, particularly in low-lying areas.



**Figure 7.** The Hastings River catchment including Wauchope and Port Macquarie (showing Settlement Point Drive)

## Port Macquarie, Settlement Point Drive

During the 2025 flood event, Settlement Point Drive in Port Macquarie was once again inundated, though to a lesser extent than in 2021. Water levels were approximately 250 mm lower than during the previous major flood, resulting in reduced physical damage but still significant disruption.

- Impacted residents said they learned from the 2021 event, now monitoring local flood indicators like river gauges and bridge levels to better anticipate impacts
- Many have made both temporary and permanent protective upgrades, such as elevated concrete slabs and stronger fencing with steel posts and timber bracing (Figures 8(a) and (b))
- The 2025 flood reflects a wider cultural shift toward individual preparedness and taking personal responsibility for managing flood risk in the local community.



**Figure 8.** Experience with flooding in 2021, these residents on Settlement Point Drive in Port Macquarie have increased their own personal resilience by making preparations to protect personal property. (Image on left) – shows a newly constructed elevated concrete slab and new motorhome which avoided inundation on this occasion. (Image on right) – after losing fences in 2021, this resident has reinforced fences with temporary timber bracing and galvanised steel poles with concrete footings (Image taken facing away from river)



- Residents praised the timely, coordinated clean-up by Port Macquarie-Hastings Council, a big improvement on the perceived unpreparedness in 2021; street sweepers, rubbish removal teams, and traffic control for sightseers were all promptly deployed
- As in 2021, floodwaters disrupted the Settlement Point Ferry and ruptured the Hibbard Point ferry cables, stranding the ferry and halting cross-river travel for about a week – again showing transport infrastructure vulnerability
- One resident has consistently maintained flood insurance for nine years at around \$5,000 per year with Shannon's (underwritten by Suncorp). After major 2021 impacts, claims were filed promptly, with quick assessor response. Their house is concrete and raised, letting water pass through the garage level while living areas stay on the first floor (Figure 9)
- This resident also referred neighbours to the same insurer, with several reportedly able to get coverage too – showing increased local awareness and uptake of private flood insurance.



**Figure 9.** One of only several houses on Settlement Point Drive Port Macquarie with flood insurance costing ~ \$5000 per year. Most houses on the street are raised on piers with living areas located on first floor and ground floor is largely a concrete shell / garage / storage which allows for waters to pass through

## Wauchope Railway Bridge and boat pontoon ramp

West of Port Macquarie, Wauchope experienced intense and prolonged rainfall. The event caused significant riverine flooding along the Hastings River, leading to disruptions in residential areas, road networks, and critical infrastructure.

At the Wauchope Railway Bridge, the Hastings River rose well above the major flood level of 5.50 metres, reaching 6.82 metres and potentially approaching 7 metres at the peak of the event, as reported by Port Macquarie-Hastings Council (Figure 10). These levels significantly exceeded major flood thresholds and triggered emergency response measures





**Figure 10.** The Railway Bridge at Wauchope showing flood height (as approximated by local resident)

- The flood particularly impacted low-lying areas adjacent to the Hastings River also experienced inundation. Flooding led to widespread road closures throughout Wauchope and surrounding low-lying areas, restricting movement and emergency access. Additionally, infrastructure such as beach areas at a nearby boat ramp at Rocks Ferry reserve were affected by bank erosion and flood damage including the total removal of the boating pontoon and ramp (Figures 11 (a) and (b)).



**Figure 11.** From L-R, (L) the boat ramp and pontoon in situ at the Rocks Ferry reserve prior to the 2025 flood, and (R), the pontoon and ramp washed away



## ABOUT THE AUTHOR/S

### Steven George Research Associate

Steven is a Research Associate with expertise in social research and community engagement, particularly in areas affected by natural hazards. He leads projects focused on disaster recovery, community resilience, and risk perception. His work includes conducting interviews, developing surveys, and evaluating programs aimed at improving preparedness and response. Steven holds a degree in Environmental Earth Sciences with a focus on natural hazards, and has collaborated with government agencies, emergency management sectors, and private organizations.



### Fiona Lord Principal, Resilience and Sustainability

Fiona is a Principal at Risk Frontiers with over 17 years of experience in resilience and sustainability research, policy analysis, and program evaluation. She has led projects across Australia and the Asia-Pacific, working with government and international organizations to deliver high-impact, socially focused research and evaluations. Fiona holds a PhD (submitted) in Sustainable Futures, a Master's in Environmental Management and Development, and a Bachelor of Environmental Management and Laws (Hons). Her work spans climate change, sustainable development, disaster resilience, and circular economy initiatives.



### Stefi Montoya Risk Scientist

Estefania is a risk scientist at Risk Frontiers, where she supports and contributes to the development of Risk Frontiers' models. She leverages her expertise in numerical modelling with the Weather and Research Forecast (WRF) model to simulate diverse weather events. Estefania earned her PhD in Science from the University of Melbourne, where she researched cloud microphysics over the Southern Ocean under varied synoptic conditions.



### Vicki Chen Software Engineer

Vicki is a Software Engineer at Risk Frontiers, where she contributes to transitioning software services to a SaaS platform and enhancing the Multi-Peril Workbench software. She brings a strong foundation in data science, risk analysis, and full-stack development. Vicki holds a Bachelor's degree in Actuarial Studies and Accounting from UNSW and a Master's in Information Technology with a focus on Data Science. Her interests include web development, data modelling, machine learning, and artificial intelligence.

