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Cyclone Gabrielle

After Cyclone Gabrielle, New Zealand wonders how - and if - to rebuild

As people dig their houses from the silt, the country faces questions over where to rebuild, as the climate crisis heralds more and more extreme weather



Tess McClure in Hawke's Bay

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t was a tsunami from the hills. It was bigger than the tides. The noise it was like Huka Falls." Rikki Reed gazes at the wall for a moment, and you get the impression he can still hear the sound of water flooding into Esk Valley. His five-year-old son Parker sits nearby, quietly playing.

Reed was part of a night-time road crew that came in to help when Cyclone Gabrielle struck - blocking off parts of the state highway, where huge trees had fallen. At around midnight, as waters started rising fast, they began evacuating people - but then he realised the truck he was in was stranded. "There were waves over the highway. The rapids were on both sides," he says. He saw the road itself start to ripple, as the water forced its way underneath the asphalt.

Sitting in the marooned truck, he took a moment to write a message into his iPhone notes app, farewelling Parker. As the truck filled with water, he climbed out, into the branches of a nearby tree. Water roared through the valley. The first tree snapped in half, but Reed grabbed on to another. He clung to that trunk for hours, up to his neck in water, knowing if he climbed any higher the trunk might be too thin to bear his weight, and he would be carried away.

"I just held on there all night thinking about him, his smile," he says quietly, nodding toward Parker.

Reed's home was flooded, and he doesn't yet know when he can return or what its future will be. As a worker on drainage infrastructure and catchments, he has thought about the valley's vulnerability to flooding, and the changes that might be needed to protect it.



A house lays destroyed by Cyclone Gabrielle in the Esk Valley near Napier Photograph: AFP/Getty Images

"We definitely have to rethink. If you look at the way the valley's shaped, that's where water has been - so it's not the first time."

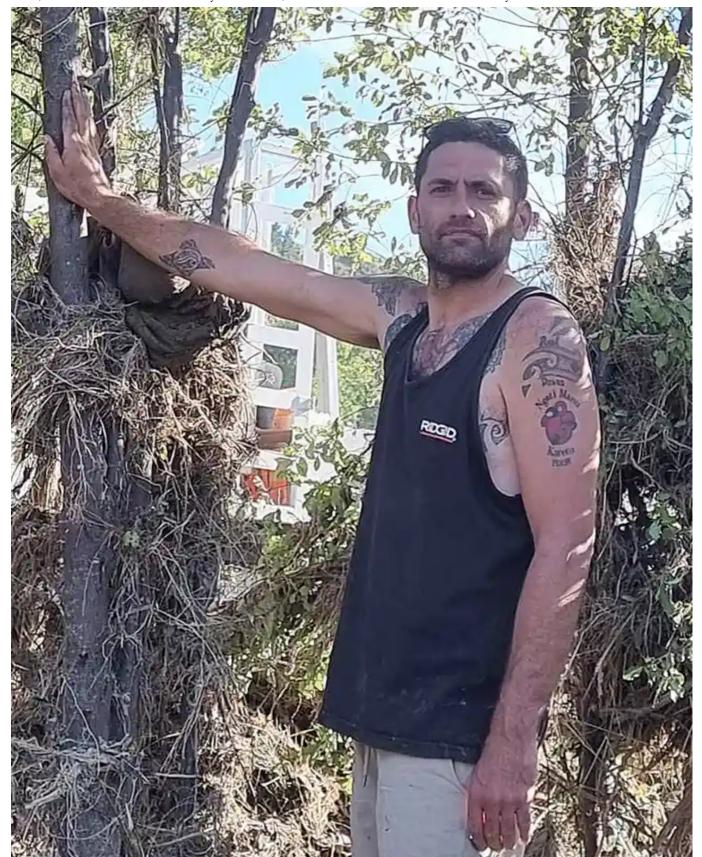
Then again, he says. "I don't want to leave - it's my home. Once I can get back here, I'll get back out there."

That combination: the keen desire to preserve a home, and awareness that some of those homes are critically vulnerable to future floods - is now in the minds of tens of thousands of New Zealanders, and a government that faces extremely tough questions in the coming weeks. Reed is one of hundreds of thousands of New Zealanders who lives in a region at ongoing risk from flooding and extreme weather events. As people begin to dig their houses from the silt and assess the damage, the country faces looming questions about where and how to rebuild, and whether it even should, with the knowledge of a climate crisis that will bring more storms, flooding and extreme weather in the years to come.

'We need to adjust our societies'

"There are difficult conversations ahead for New Zealand about exactly where we all live," finance minister Grant Robertson said on Sunday, shortly after walking through the remains of a ruined power station. "And the infrastructure that's required to get us to and from all of that."

As the climate heats, scientists agree that extreme weather events - including flooding and cyclones - will happen more frequently, and with greater intensity. According to the government's national adaptation plan, one in seven New Zealanders, or 675,000 people, live in areas prone to flooding, and another 72,065 live in areas projected to be subject to extreme sea level rise. Some of those areas can be protected by extensive mitigation measures - sea walls, stop-banks, stilts, early warning systems for flooding. In others, however, those measures will be cripplingly expensive, or simply impossible - leaving an intolerable risk to the lives of any who live there.



"If those communities go back and rebuild today, are we responsible for letting them do that?" Robertson said in a <u>television interview</u> on Sunday. "Two words New Zealanders are going to get used to hearing over the next few years are: 'managed retreat'."

While some may be forced into retreat in a haphazard way - as insurance companies refuse to cover flood-prone properties - it is a question that will also fall to the central government, which must decide what level of risk to life is tolerable, and whether to continue funding and rebuilding the crucial infrastructure that sustains those towns. "If we're going to build back quickly, some tough calls will need to be made," prime minister Chris Hipkins said on Sunday.

Some of those calls need to be made extremely quickly, says prof Ilan Noy, chair of the Economics of Disasters and Climate Change at Victoria University - before people start to repair and rebuild. "As painful as it is - it's much less painful in this kind of situation where your house has already been destroyed [to be] told: we think it's not viable for you to remain there," he says. "It's less painful to do that than to take someone who has a beautiful house and no damage to tell them: you know what, the science is suggesting that this is no longer safe."

New Zealand's government has forced communities to retreat from natural hazards before. After Christchurch's earthquake, about 8,000 houses were "red-zoned" - the land they were built on designated too unstable to ever sustain residential development. The government bought out the land, converting much of it into public parks. Noy says that this could offer a kind of model to the response to Cyclone Gabrielle.

"It's painful to ask people to leave. Especially from areas that potentially they've lived in for a very long time, maybe generations," Noy says. "But we live in a world which is changing. We cannot ignore the fact that the climate is changing and we need to adjust our societies to those changes."

For New Zealand's government, other question marks hover - over a vast network of public-owned infrastructure shattered by the storm. At Redclyffe electrical substation's control centre buildings, water is still pooling in some of the buildings. The control room has been drained of water and mud, revealing its innards: vast twisting ropes of black wires, which typically control distribution of power to almost all of the city of Napier and Hawke's Bay.

The substation lies at the centre of a Napier flood plain, and during Cyclone Gabrielle, the storm sent metres of water and silt through its buildings, shorting its transistors. When the first worker arrived to check on it, the sludge was at hip height. In terms of returning power to capacity across the region, "We are talking weeks," says Ken Sutherland, chief executive of Unison, which runs much of the network. "It's extensive damage - trees in lines, flooding, access issues. This is a long game. You have areas [where there's] just devastation - weeks to get through to them, months to get everything up and going."

An asset of state-owned enterprise Transpower, the substation is just one fragment of a vast network of infrastructure, spread across the North Island, that has been catastrophically damaged. State highways have crumbled into fragments, roads blocked by enormous landslides, traffic bridges washed away in pieces, drains cracked, powerlines snapped and wrapped into tangles around piles of debris.

On Monday afternoon, the government announced an initial \$250m for emergency repairs to the road network, and \$50m for immediate business support. Robertson stressed that both figures were only for initial, emergency work, and the government would be making rolling assessments and new financial commitments. He expected the costs to be in the billions. "This is only the beginning. There is a massive programme of work required," Robertson said.

"We've got enough gear to rebuild," says Transpower chief executive Alison Andrews. "But we need to have a cup of tea and think ... what is the long term plan?"

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