CYCLONE GABRIELLE: NOT AS BIG, NOT AS WET, BUT DID NIWA FAIL TO JOIN THE DOTS ON FATAL FLOOD RISK?

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By Ian Wishart

Apparent errors in NIWA's database may have caused the climate agency to fatally underestimate the threat Cyclone Gabrielle posed to Hawke's Bay residents.

Four massive flooding events hit the region between 1893 and 1938, but NIWA has wrongly coded the two biggest as 1 in 150 year events even though they were only 30 years apart and appear from reports to be as or even more destructive than Gabrielle.

The classification appears in NIWA's historical weather events database and raises questions about whether Hawke's Bay authorities properly appreciated the risks.

Questions emailed to NIWA this morning have not been responded to.

Not only was Cyclone Gabrielle nowhere near our strongest storm, but a new data analysis reveals it's not our wettest storm either.

Both claims are central to the argument from NIWA that Gabrielle is our first cyclone supercharged by climate change. A fortnight ago NIWA published a report that Gabrielle was New Zealand's biggest storm since 1850, with a minimum barometric low of 963 hPa. The climate change agency also claimed it was carrying 10-15% more rain because of human caused global warming, and scientists described it as a 1-in-250 year event. "Climate change is here, now," said Climate Change minister James Shaw.

The "biggest storm" claim crashed and burned with the release of the Climate of Fear report last week. That report found at least five storms bigger than Gabrielle that hammered NZ between 1868 and 1890.

The report also found a huge number of extreme storms bigger than Bola are missing from NIWA's extreme historical weather events database, making the agency's constant claims of modern events being the "biggest since records began" highly dubious: if historical big storms aren't in the database then modern claims about record-breaking are meaningless, even false.

At the weekend, NIWA released a new summary, quietly walking back the previous barometric low of 963 – Gabrielle was now adjusted weaker to 968 hPa, the same low as 1968's Wahine storm, Cyclone Giselle:

"Extreme low pressure readings speak to Cyclone Gabrielle's power," NIWA said. "14 February saw air pressure dip to 968 hPa at Whitianga in the Coromandel Peninsula – the second lowest daily minimum value observed in the North Island since 1960."

In the space of just four days since the Climate of Fear report was released, Gabrielle had gone from New Zealand's biggest storm since records began to merely the second biggest storm in the North Island since 1960.

As the biggest storm narrative collapsed for everyone – except James Shaw, the mainstream media and climate activists – the latter tried to hide the downgrade by hyping up Gabrielle's huge rainfall, supposedly caused by global warming.

Glengarry station in Hawke's Bay was all the buzz on social media, with Hawke's Bay Regional Council provisionally reporting total rainfall of 546mm (21.5 inches) for the duration of Gabrielle. Although HBRC initially reported 400mm had fallen in 12 hours, those figures straddled two days and the LAWA database now records just under 250mm on Feb 13 and just under 300mm on Feb 14.

The highest 24 hour rainfall total for Gabrielle anywhere in New Zealand, says NIWA, was actually 316mm, recorded at Tūtira, Hawke's Bay, Feb 13.

So how does supercharged, warm ocean, "15% more rain thanks to climate change" Tongan-eruption-fuelled Cyclone Gabrielle actually compare to the intense rainfalls of earlier storms, from a time when CO2 concentration was well below 350ppm?

In science, observational data is used to prove or disprove hypotheses. If theories turn out not to fit the observed facts, it's time to abandon the theory. When Italian scientist Galileo observed that it appeared Earth was orbiting the sun, rather than the other way around, he was laughed at for daring to challenge the 97% consensus among leading scientists at the time that the sun orbited the earth. Regardless of how much the 97% of scientists and fact-checkers mocked Galileo and de-platformed him for spreading #disinformation, the truth eventually broke through. Slowly, at first, as a few brave souls dared to read Galileo's evidence and say, "hang on a sec, I think he may be onto something", but the trickle eventually became a flood when the public realised the 97% consensus was a crock.

The current dominant hypothesis pushed by the news media and climate activists using the 97% "consensus" claim is that climate change will cause more extreme weather. It's still a theory, because it's uncharted territory – no one alive today has experienced how the planet will react if temperatures reach 2C above pre-industrial temperatures.

That's where historic weather patterns become important. They are crucial to help us work out if our weather is genuinely getting more extreme and dangerous, or if extreme weather has always been around regardless of lower CO2 and cooler temperatures.

If extreme weather has always been around and it's not actually worse in our warmer world, then that torpedoes climate activists' current obsession with lowering emissions - because it's pointless, we've all been sold a pup! If New Zealand's climate was 20 times worse in the low carbon, colder 1800s than it is now, why would we want to rub the lamp and summon back the low carbon cold Genie that tormented our ancestors so frequently a century ago?

Instead of pouring hundreds of billions into emissions reduction that – even if it lowered CO2 – wouldn't have a climate effect for another 300 years, the evidence suggests the money is better spent on making roads, comms and cities more resilient to the big extreme events that have always been part of our climate mix: Adaptation.

So, as I asked a moment ago, was Gabrielle our most rain-soaked storm, as climate emissions activists want you to believe, or have we seen similar or higher rainfall in the distant past?

The most soaked station, Glengarry, recorded 546mm from Gabrielle.

JULY 1928, 508mm RAINSTORM, WAIHI

In July, 1928, a four-day storm over the upper north island dumped "nearly 20 inches of rain" (508mm) on Waihi, followed not long after by another storm that deluged nearby Te Aroha with 12 inches (305mm) over five days. But the same Auckland Star report noted that Waihi had also experienced the "old man flood" in 1910 when 12.56 inches (319mm) had fallen in 24 hours. Remember: according to NIWA, Gabrielle's highest rainfall anywhere in NZ was 316mm.

Again, it's clear evidence that modern warm storm Gabrielle was not "unprecedented" in terms of rainfall.

APRIL 1924, 356mm IN 5 HOURS, KAIPARA

A massive storm over the upper North Island in 1924 caused huge flooding and damage to road, rail and comms infrastructure when 14 inches (356mm) of rain fell in five hours, just north of Kaukapakapa, in Auckland:

"Isolation had been made complete by the destruction of the main bridges on West Coast Road (now SH16), and it is considered that the main road communication will not be restored for months to come."

Land was "covered with sand, silt and timber to a depth of six feet".

MARCH 1924, 432mm in 48 HOURS, PICTON

Another big storm system in 1924 over Cook Strait caused flooding in both islands, Picton drowning in 17 inches (432mm) of rain over two days.

MARCH 1933, 432mm in 12 HOURS, TONGARIRO

In March 1933, Ruapehu district recorded 17 inches (432mm) in just 12 hours, exceeding Gabrielle's peak intensity of 400mm over the same time period.

While there's no doubt Gabrielle was a decent storm system, with 546mm dropped, a cold winter storm in August 1941 dumped 22 inches of rain (559mm) on Banks Peninsula, and it wasn't fuelled by warmer oceans, volcanoes or CO2. There is no historical weather event listed for this date in NIWA's HWE database.

APRIL 1939, 559mm in 24 HOURS, MILFORD

In fact, in PapersPast, the Christchurch Press helpfully reported on New Zealand's highest rainfall events up to 1950. The biggest ever rainfall was 22 inches (559mm) in 24 hours at Milford Sound on 17 April 1939, a figure authenticated by the Met Service. There is no historical weather event listed for this date in NIWA's HWE database.

MARCH 1924, 512mm in 10 HOURS, HAWKE'S BAY

The biggest North Island event is extremely interesting. It wasn't Esk Valley in 1938 – it was nearby at Rissington on 11 March 1924, when the Mangaone River rose at least six metres and washed away the 60 metre Rissington Bridge – the predecessor of the now "100 year old bridge" just washed away by forestry slash in the Gabrielle storm. In that 1924 event, 20.14 inches of rain (512mm) fell in just ten hours, eclipsing Gabrielle's 400mm in 12 hours. At Rotorua, the barometer was 28.9 inches of mercury, which makes the storm bigger than Cyclone Bola on the barometric scale.

What makes Rissington 1924 so interesting is not just that it was Ground Zero for Gabrielle 99 years later, but that no one remembered it as media interviewed locals after Gabrielle – it was outside living memory even though the widespread destruction was similar to Gabrielle.

"On every hand scenes of desolation meet the eye. The rivers are carrying enormous quantities of drift wood, dead stock, etc., down to the sea. Fences everywhere are broken down and the properties generally in Taradale are in a deplorable state. The damage to crops is extensive, and complete stock losses are very heavy. There has been a good deal of damage to various bridges, many of which are blocked with debris.

"Donald Strachan, who took refuge yesterday in a poplar tree, was rescued at 2 o'clock this morning by a youth, a son of Mr W. Kinross White, who performed a quite remarkable feat. In pitch darkness he swam his horse through the surging waters of the river, in which small boats could not live, and reached the tree. Strachan, almost exhausted, was put in the saddle by White, who then attached himself to the horse's tail, and ordered the trusty animal to set out again for dry land, which was made in safety. At least two bridges on the Taupo Road have gone. The body of the baby girl buried in a house in Shakespeare Road, Napier, on Tuesday, was recovered this morning. Further falls there during the night wrecked a second house completely.

"All telegraph wires from Napier to Putorino are down, but it is hoped to restore communication this afternoon. The lines to Taupo are also interrupted between Te Pohue and Eskdale, where the conditions are particularly bad.

"A report late last night states that it will be fully a month before the road is clear to Wairoa. In places near Tongio, the road has entirely disappeared, whilst there are hundreds of slips."

The bridge, 181 feet long, had its 90 foot centrespan destroyed:

"All the water has left the roads, which in some places are under two feet of silt. Rissington Bridge, which stood 27ft 10in above normal water level, had spans of 90ft washed away."

More eyewitness accounts can be read here.

APRIL 1897, 292mm, HAWKE'S BAY

NIWA's Historic Weather Events Catalogue has an excellent entry for this 1924 event, but perhaps wrongly concluded that rainfall this high was a 1-in-150 year storm. It seems NIWA has not properly analysed the data it actually does have in its system: a mere 27 years earlier in April 1897 the Hawke's Bay was flooded in another massive storm more intense than Gabrielle. NIWA's HWE database states: "Hawke's Bay received 11.5 in (29.21 cm) of rain in 2.5 hours."

Just let that figure sink in for a moment. Gabrielle's highest 24 hour rainfall was 316mm according to NIWA. But on 14 April 1897 an incredible 292mm of rain fell in just 2.5 hours! On my reading of both NIWA's limited data and PapersPast, that would appear to make 1897 the most intense rainfall event in recorded North Island history.

It beggars belief why NIWA labelled the 1924 rainfall a 150 year event (clearly the advice they must have also given local councils) when the evidence is black and white: a 1-in-30 year event. Then there was of course the 1938 flooding just 14 years later and another round in 1963.

So even if the data *has* been entered, it's next to useless if NIWA misinterprets it. Looking at the even bigger record rainfalls in the Hawke's Bay catchment, no one should have been taken surprise by Cyclone Gabrielle. But they were.

The 1897 flood was, from its description, even more destructive than Gabrielle. This report from the New Zealand Times could have been written this year:

“When one gets within a few miles or Hastings, one gets some conception, even in the dim light of a clouded moon, of what the force of the flood must have been. Even now, large areas are nothing but melancholy sheets of turbid water. Dwellings had been overturned, sheepyards, etc., overthrown, trees torn up by the roots and wire fences flattened to the ground for miles by the weight of debris of all sorts forced upon them by the resistless current. The whole face of the country presents a scene of pitiable yet indescribable desolation. Hundreds of acres of what were justly considered to be the pick of the pasture lands of New Zealand are now bestrewn with a slimy coating of yellow mud. That this will prove a ready fertiliser hereafter there is no room to doubt, but for the present the question with sheep-farmers is: How are we going to feed the stock?

“THE FORCE OF THE FLOOD. In one case a log of wood, driven by the current, entered the front of a house, passed clean through a double chimney and out through the back wall. The creeks from the hills overflowed and spread destruction in every direction.

“Many of the small settlers have suffered much more than the big flood of 1893. The whole road, from just beyond Mangaterotero to Clive is torn up and covered with wire fences, which appear to have been lifted bodily out of the ground and strewn in all directions.

“Roofs of houses, pigsties, and outhouses and haystacks are thrown holus bolus onto the gorse hedges, and for miles along the road may be seen fences (that is live fences) which have withstood the fury of the elements, and which are now piled high with turnips, onions, marigolds and other root crops, which have all been washed out of the ground. Pumpkins and similar vegetables may be counted on these live fences and along the roads in thousands.

“The water is still rushing along the road in many places and in some instances the deposits of silt are almost impassable. Near the Riverside Fellmongery I came upon an appalling sight. A dairyman in a small way named Riley had about 20 cows, all of which were drowned in the yard, together with pigs and sheep. One heifer in its desperate struggles forced its head and the greater part of its body through an opening in the shed not more than 12 inches wide, and the other cases show the fearful experience the animals must have undergone.”

Further in the Times report, details of how it was a sudden breach of the stopbanks, just like Gabrielle, that caught people unawares.

“The rain had ceased, and nobody anticipated further trouble, but just after dark the Tutaekuri broke its bank above Taradale, and an immense body of water poured through the township towards Napier. Almost simultaneously the Waitangi and Ngaruroro, backed up by a heavy sea, broke inwards through the railway line into the lagoon, joining the waters of the Tutaekuri. The result was a rise of four to five feet in a few minutes. The lower part of Napier was suddenly covered with water, which rushed through the streets in a raging torrent, flooding some of the houses to the extent of five or six feet. Practically all the houses and shops on the flats, except those on higher ground near the beach, were flooded. Boats were promptly manned to remove the people from the most threatened houses, and no lives were lost, though a good deal of property was destroyed. In the meantime, urgent requests for boats came from the country, where many settlers had had to take to the roofs of their houses to escape the flood waters. A number of boats went out and saved many lives, the rescued ones being carried to hotels and two-storied houses.

"The damage done by the floods through Hawke's Bay must be reckoned by tens of thousands of pounds. Hastings suffered severely, but accounts from all over the district tell of a devastation such as has never before been recorded. Worst of all the death-toll is very large, and at the time of writing 12 lives have been reported as lost. The drowning of 10 of the rescue party from Napier is particularly sad, all the victims being well known and highly respected, the majority of them being married men with families. THE FLOOD WATERS. The flood was at its highest at Hastings at 7 o'clock on Saturday night, by which time all the houses in danger had been vacated. Although the water fell rapidly, many houses are still flooded and it will be some days before most of the dwellings on the flat will be tenantable. The full force of the waters was felt at Clive, and, the damage there is tremendous.

"The flood is by far the highest in the memory of even the natives. Houses were swept away with all their contents. Bridges were completely cut out and the waters were dotted with drowned stock. A low estimate of the number of sheep lost would be 50,000. The small farmers have lost their all, and the big squatters have suffered to the extent of thousands of pounds. Hundreds of poor people have sustained cruel losses, and the whole effect is disastrous to Hawke's Bay. It will be some days before an estimate of the great damage can be even approximately made, but it is certain that nothing so disastrous has happened within the history of the colony."

Not only was much of Napier six feet underwater at peak, but Hastings was hit hard too, much of the city ten feet deep:

"From a few yards below the Catholic church towards Havelock was one sheet of water, for miles across which the waves were breaking LIKE AN INLAND SEA. Hundred of houses, in which the inhabitants had gone to rest the night before in peace and comfort, are now half covered with water, and the contents destroyed. Your correspondent went through to Havelock. The water on the main road was in places 5ft deep, and still rising. Crossing the Havelock bridge, the sight was simply appalling. In the direction of Pukahu was a vast sea of raging billows, with only the tops of the homesteads to be seen here and there, and it is stated that the water is in places 40ft deep.

"Looking from Mr Chambers' house at Temata with a powerful telescope, only the TOPS OF A FEW HOUSES at Clive could be seen, and the water covering the intervening country made it impossible to get within miles of Clive to get information or render assistance.

"One house was shifted more than a mile after the 1893 flood for safety, but it has been again inundated.. It is safe to say that the present flood is FULLY FIVE-FEET HIGHER than that of 1893. One of the most annoying phases is that people cannot communicate with their friends, although only half-a-dozen miles away, Hastings being completely isolated at the present time. Communication between Napier and Hastings is stopped, and the question of food is serious.

"A man named Broadbent is reported to have been swept to sea on his house. Tomoana is a sheet of water. There is 4ft on the bridge...Eleven and a half inches of rain fell during 24 hours...Hastings in parts is 10ft underwater."

NZ'S WETTEST PLACES

NIWA's climate extremes list compiled from rain gauge readings tells only one story - the wettest place in NZ is the weather station at Cropp waterfall, near Hokitika. It holds seven of the nine rain records, including highest fall in 24 hours – 869mm (34.2 inches) on New Year's day 2013. The highest 12-hour record is held by another Hokitika weather station at Price's Flat, logging an

impressive 566mm (22.3 inches) on 11 May 1978 (just edging out the 1924 Rissington event of 512mm).

Cropp Hokitika also holds the record for biggest one hour rainfall, 134mm in January 2004. But when you look at the 117mm per hour rate for the 1897 Hawke's Bay flood (292mm over 2.5 hours), it's clear that if Hokitika is the wettest place in the south, then Hawke's Bay runs a close second in the North Island.

Cropp Hokitika holds the record for the most rain in 12 months, at more than 18 metres. Milford Sound experienced eight metres of rain in 1942 and nearly nine metres rainfall again in 1958, and topped nine metres in 2016.

Far away from tropical cyclone season, Waiho near Franz Josef experienced a one day rainfall of 19.3 inches (490mm) on 5 October 1949. There is no historical weather event listed for this date in NIWA's HWE database.

POSTSCRIPT

I was unable to find a newspaper source for NIWA's claim in its HWE database that 11.5 inches of rain (292mm) fell in 2.5 hours in the Hawke's Bay in April 1897. I did see multiple reports however that more than 11 inches of rain fell, one of which I have quoted above.

I also sought comment from NIWA as follows:

I am struggling to reconcile NIWA's statement that the 1924 Hawke's Bay flood where 20.14 inches of rain (512mm) fell in just ten hours (bigger than Gabrielle) was a 1 in 150 year event:

https://hwe.niwa.co.nz/event/March_1924_Hawke's_Bay_Flooding

...with the revelation that an equally big flood hit the same region in 1897 and a rainfall intensity of 292mm in just 2.5hrs had been recorded then:

https://hwe.niwa.co.nz/event/April_1897_North_Island_Flooding

Clearly on NIWA's own evidence massive rain dumps in the HB catchment are relatively common...maybe 1-in-30yr events in the 1800s and 1900s...how does NIWA explain its apparent failure to correctly assess the probability of extreme events like Gabrielle in the HB region?

How does NIWA respond to the inference that its advice to local councils on probability may be flawed because of a failure to fully document historical data and reports into an integrated intelligence database that allows any region to instantly know all the major events in their past and where pressure points were?

Given that fully entering all major event/system (sometimes systems don't create much damage by sheer luck, but they should still be recorded) data from the beginning of published news reports in NZ would provide a much better baseline from which to measure system frequency and intensity, why has this work not been completed in 31 years, and particularly since 2013 when all newspaper reports up to 1945 were digitised and available online?

I have a 5pm deadline for these questions, and will note that they have been asked if replies are not available by then.

Regards, etc

The answers were not provided.

CONCLUSIONS

Climate activists who claim that extreme weather is now proven to be fuelled by climate change are lying to the public, politicians and the news media.

The only scientific way to measure that hypothesis is by studying the frequency and intensity of extreme events now compared to those in our low carbon historical past. The Climate of Fear study and now this report appear to be the first of their kind this century in NZ to make that direct comparison.

For claims by activists and climate scientists to be true, we would need to see a definite trendline towards more frequent and more intense storms, but no such trendline exists. Cyclone Gabrielle, despite being our biggest storm in 60 years, was nowhere near as powerful as those in the 1800s and now we have established it was not the wettest either. Gabrielle does not, on any metric, rise above the statistical low carbon climate averages. And if Gabrielle is showing no sign of global warming-caused intensification, just how big will future storms have to be before they rise above statistical background noise?

Message to the news media, you could be waiting decades to find out whether warm climate change is more dangerous than cold climate change. Think carefully before you label extreme weather events “proof of climate change”, even if it’s someone from NIWA tempting you.

If you think what we are dealing with today is climate change, listen to the voices of those more than a century ago:

“The story of a most disastrous flood has to be told. Within the last eight or nine years floods have been of regular occurrence in Hawke's Bay, which for a time have crippled industry aud thoroughly disheartened settlers. The latter have no sooner had an opportunity of recovering from one flood than they are visited by another.”