



Understanding Flood Risk for New South Wales Property Transactions



Introduction

"If we're to learn a lesson from the catastrophic flooding that we are now seeing happen in Australia every few years, it's that we are severely underprepared. We urgently need to address the root cause of the heightened storm threat – climate change."

Elly Bird, Councillor, Lismore City Council

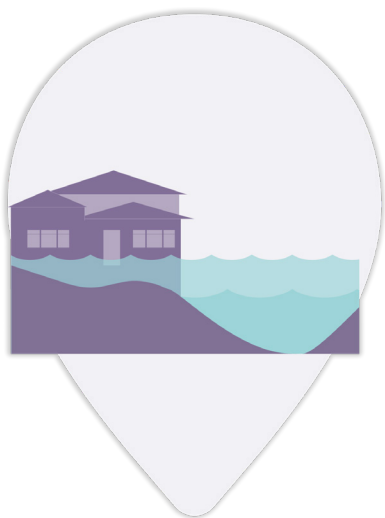


Australia and the climate crisis

Direct economic losses resulting from natural disasters in 2022 around the globe are estimated at \$313 billion*, with Australia experiencing its worst ever natural disaster*.

The overall cost to Australia of not meeting the Paris Climate Agreement from now to 2050 is \$1.19 trillion* – due to infrastructure & property damage, agricultural & productivity losses, biodiversity loss and human health.

About 3.5 per cent* of dwellings in Australia already fall under an international definition of being at "high risk" from climate damage.



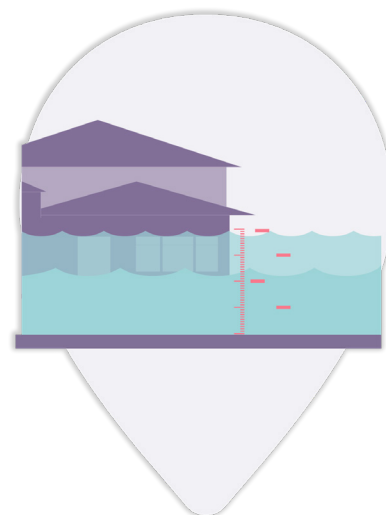
\$9.6 Billion

Total estimated cost of East Coast flooding 2022



240,000

The number of flood insurance claims submitted between January and October 2022



14.4 metres

The height of the flood waters in Lismore CBD, NSW

Flooding - what are the risks?

Flooding from rivers, estuaries and sea level rise poses the single greatest physical climate risk to properties in Australia. This is being driven by ever more frequent weather systems dumping record breaking rainfall amounts, especially across NSW and Queensland.

In 2022, Sydney received a staggering 8 months of rainfall in just 4 days, resulting in some 50,000 homes being evacuated. It became the 4th most costly weather event in history with an estimated insurance bill of some \$4.3 Billion. By 2050, the average cost to each property in flood prone areas could be as high as \$45,000.

This has inevitably meant huge increases in insurance premiums, with many areas close to rivers and coasts now finding effective and affordable cover impossible. This can also have the knock-on effect that securing the mortgage can become a real challenge.

Top 20 NSW suburbs at risk from flooding

We have examined which NSW suburbs could be most at risk of flooding both now and in 30 years time. This exclusive research has been built from our ClimateIndex analysis module. You can find out more details on how the data is derived on page 5.

In summary, the top suburbs will remain highly exposed both now and in 30 years time, with Cronulla, Port Macquarie and Yamba being among the most affected in terms of numbers of lots.

Lismore, whose case study follows, would be 3rd in the Top 20 but it is made up of a number of suburbs that are separately reported and by the number of lots. Therefore bordering suburbs that share the same flood plain could have a similar flood risk, but it depends on how dense the population is, in terms of community impact.

Top 20 NSW Suburbs effected by Flooding

			Today Risk		30 Year Risk				
30 Year Rank	Suburb	Count of Lots	Count of Lots with Very High Assessment	Percentage of Lots with Very High Assessment	Count of Lots with Very High Assessment	Percentage of Lots with Very High Assessment	Today Rank	30 Year Rank	Change in Rank
1	Narrabri	5231	3748	71.65%	3749	71.67%	1	1	▲ 0
2	Moree	6771	2878	42.50%	2879	42.52%	2	2	▲ 0
3	Forbes	7018	2803	39.94%	2803	39.94%	3	3	▲ 0
4	Walgett	3093	2393	77.37%	2393	77.37%	4	4	▲ 0
5	Moama	4995	2363	47.31%	2363	47.31%	5	5	▲ 0
6	Walcha	5300	2265	42.74%	2268	42.79%	6	6	▲ 0
7	Nyngan	2738	2149	78.49%	2149	78.49%	7	7	▲ 0
8	Yamba	3223	1905	59.11%	1913	59.35%	8	8	▲ 0
9	Hillston	2771	1866	67.34%	1866	67.34%	9	9	▲ 0
10	Bourke	1942	1815	93.46%	1815	93.46%	10	10	▲ 0
11	Merriwa	3696	1794	48.54%	1794	48.54%	11	11	▲ 0
12	Grafton	4796	1634	34.07%	1654	34.49%	12	12	▲ 0
13	Condobolin	4264	1634	38.32%	1636	38.37%	12	13	▼ -1
14	Swansea	2102	1467	69.79%	1534	72.98%	14	14	▲ 0
15	Port Macquarie	17080	1401	8.20%	1401	8.20%	15	15	▲ 0
16	Coonamble	3113	1390	44.65%	1390	44.65%	16	16	▲ 0
17	Cowra	7285	1313	18.02%	1313	18.02%	17	17	▲ 0
18	Tenterfield	4520	1293	28.61%	1293	28.61%	18	18	▲ 0
19	Wentworth	1315	1281	97.41%	1281	97.41%	19	19	▲ 0
20	Dubbo	19840	1262	6.36%	1262	6.36%	20	20	▲ 0

Data Rationale

Baseline flood model

- Built using the 'Australian Rainfall & Runoff' best practice using a proprietary simulation tool (Flowroute-I) that is trusted by major insurers and governments internationally.
- We then use flood hazard mapping to categorise the risk (e.g. low, moderate, high etc.) based on projected depths and likelihood of floods occurring.
- Our flood assessments provide a comprehensive view on the risk of river flooding, tidal flooding, as well as surface water flooding
- Considerations have been made for known active flood defences providing protection of flooding from rivers and seas.

Key parameters

- LiDAR (Light Detection and Ranging) and photogrammetry used to consistently model with 5m resolution across the state.
- Other key parameters included river flow data taken from gauges (where available), precipitation and soil data.

Climate data

- CORDEX (Coordinated Regional Downscaling Experiment) Region 9: Australasia
- An 'adjusted baseline' calculated for peak river flows, rainfall volume and storm-surge peak

Additional features

- The Groundsure ClimateIndex™ report also provides a FloodScore™ view, which is an insurance rating matrix that gives a steer on the insurability of the Lot based on the risks of flooding.
- Flood mapping allow users to visual the risk of flooding to their property

More information about The ClimateIndex™ analysis and reports for your clients

Case study: Lismore's Long term Trauma

A sequence of weather events that connected a cyclone off Madagascar, a blocking high pressure off the west coast of New Zealand and polar air drawn up from Antarctica, conspired to create a major rain event across the Australian east coast.

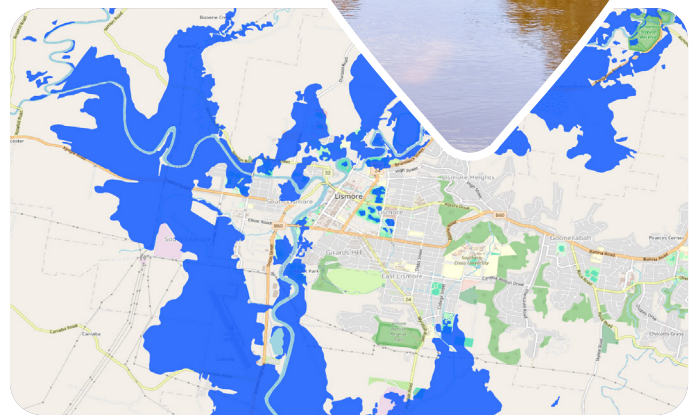
The ground was already saturated after higher than average rainfall, triggered by the La Niña ocean current pattern. Three weather episodes one after the other would usually have created a notable but not record breaking flood, but the fourth and final wave of rain was so intense that it created a catastrophe.

On February 28 2022, the biggest flood in modern Australian history inundated Lismore, and the rest of the Northern Rivers catchment. Over the next two days, about 670 millimetres of rain fell in the region, and the waterways surrounding Lismore rose to a peak of 14.4 metres.

Lismore, in northern NSW, is located on a floodplain at the intersection of the Wilsons River and Leicester Creek and lay in the crosshairs. As the river levels rose, official warnings from the State Emergency Service (SES) and Bureau of Meteorology gave no real hint of what was to come.

The majority of homes on the Lismore flood plain are two storeys high, which if residents retreated upstairs would have put them above the previous 1974 record flood level of 12.15 metres.

"People moved their vehicles to land that had always been above the flood levels. Families moved possessions upstairs in their two-storey homes, expecting that they would be safe - only to find themselves engulfed in rising water, two metres higher than expected," a NSW Flood Inquiry submission said.



Case study: Lismore's Long term Trauma

Lismore's CBD was cut off, with major roads in and out of the area experiencing closures. Twenty-four hours after the floods topped out at Lismore, residents downriver at Woodburn, Coraki, Broadwater and Wardell were inundated and a major rescue plan had to be initiated here after already stretched resources were dealing with events in Lismore.



The SES response was heavily criticised, pointing to a lack of coordination, local knowledge and inadequate training by teams that were dropped in, as well as the failure to evacuate the lower river towns earlier.

The northern rivers floods were Australia's biggest natural disaster since Cyclone Tracy in 1974. It was the second-costliest event in the world for insurers in 2022, and the most expensive disaster in Australian history. Many residents had found premiums unaffordable and had no insurance at all. Some estimates suggested that up to 31,000 people were impacted, not just from the total loss of or damage to their homes that became uneconomic repair, but from a huge collective emotional trauma.

A year on from the event, The Northern Rivers Reconstruction Corporation (NRRRC), funded by the federal and NSW governments, was assessing over 6,000 flood-impacted residences for buyback, raising or retrofit.

A survey by Southern Cross University highlighted that, at the end of 2022, almost 52% of flood victims were living in the shells of homes that had flooded; 26% were living in temporary accommodation such as caravans, sheds or pods, or with friends or family; 18% were living in insecure accommodation such as tents or temporary rentals; and 4% were no longer living in the region.

The community is going through a painful process of rebuilding not just the fabric of the town, but also their community spirit. Having initially been motivated to seek repair, it quickly dawned on many residents how slow the recovery process would take. Many were in limbo, unsure if they could get an insurance or government payout, families forced into caravans or single hotel rooms. Thousands have lost heart and disconnected from the recovery process and support.

Case study: Lismore's Long term Trauma

Most concerning from the survey was evidence of low levels of mental health. Twenty percent of people said they were coping with the stresses and challenges of recovery and 60% said they were not coping, underlining the apparent longer-term effects of Post Traumatic Stress Disorder (PTSD)

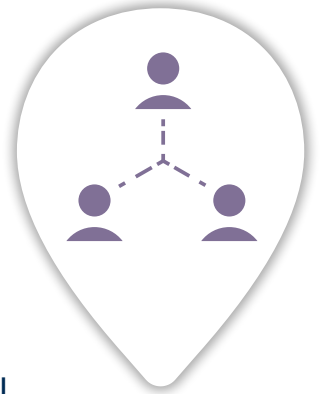
For those able to get insurance and were drawing to the end of their temporary accommodation, there was concern as to whether they could access any of the 11 pod villages built by Resilience NSW across the region. The villages are designed to house 1,800 people for up to three years.

The frustrations remain palpable, but it's important to stress that the Government has recognised this and made extraordinary provision from an unprecedented event. The problem is that this will not be unprecedented and will become just "normal". Indeed, during the current summer of 2023/24, Lismore and the rest of the Northern Rivers towns have once again experienced heavy rains and flooding, reopening old wounds again.



Advising clients on Flood risk

Conveyancers and lawyers are acting in their clients' best interests and to advise where decisions that could be made are exposed to significant risk. For this reason alone, the homebuyer has a right to know what could lie ahead as they make the most expensive financial decision of their lives.



Lawyers have an automatic duty of care to their client – it is fundamental principle of the contract, but it goes wider than that. [*A legal opinion from Norton Rose Fulbright*](#), one of Australia's pre-eminent environmental law practices, was published in Spring 2023. The Opinion identifies that not only do lawyers and conveyancers have a duty of care, but they also have a duty to disclose and to warn on the basis that information is readily available for them to do so in an easy and accessible way.

There have been a number of prominent legal experts and associations that have also spoken out to this effect. Justice Brian Preston, Chief Judge of the Land and Environment Court of NSW, published a 2020 paper on adopting "*A climate conscious approach to legal practice*". He stated that it requires lawyers to have "an active awareness of the reality of climate change and how it interacts with daily legal problems" and to "*giving advice and litigating or resolving the legal problem or dispute in ways that meaningfully address the climate change issues.*"

In 2021, The Law Council of Australia published their climate change policy. In the summary, they stated that "*lawyers should be alive to the unfolding legal implications of climate change and its consequences, and they should be informed, skilled and ready to assist clients on climate change-related legal matters, within their areas of skill and competence.*"

The New South Wales Law Society is perhaps the most proactive Lead Association to date and has established a Working Group to consider how best to support members and to develop its advocacy work on how to respond to the climate challenge from a legal perspective. We understand that the Society continues to review the UK Law Society Guidance and its core principles, as well as a newly published legal opinion from the pre-eminent environmental law team at Norton Rose Fulbright.

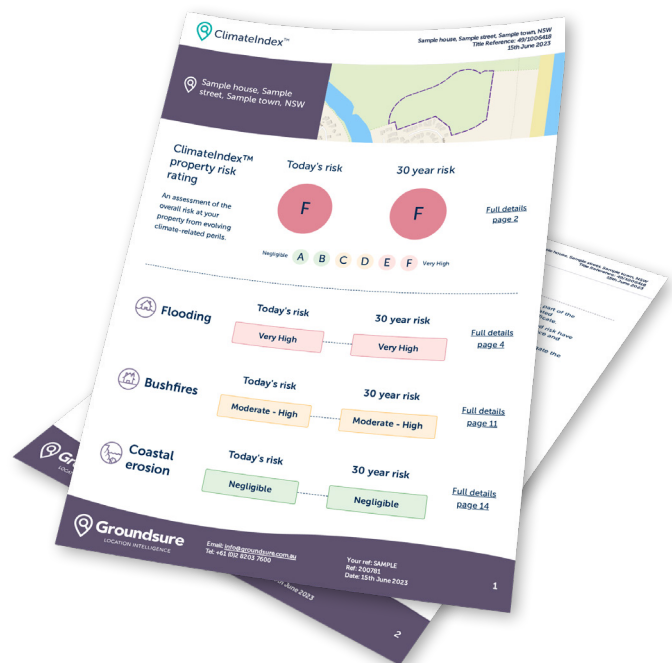
We understand that the NSW Law Society reviewed the [*UK Law Society Guidance*](#) and its core principles, as well as the legal opinion from the [*pre-eminent environmental law team at Norton Rose Fulbright*](#). Formal climate risk guidance is anticipated to come out in 2024 which will aim to advise firms on the best way to communicate risks to clients, including the use of available data tools.

A simple way to meet future climate compliance

The Climateindex™ report provides a clear, simple way to support your client care and fulfil your duties, while preparing for new Guidance. Through careful modelling and plotting a prediction based on current trends for the 3 key physical risks in one location. This makes it cheaper and more efficient for the lawyer and provides improved insight to support the prevailing 10.7 Certificate that typically looks at past events without signposting to what the future trend could be.

It provides property-specific assessments for individual residences, instead of broad regional ratings. They are specifically designed for property lawyers and conveyancers to do their due diligence and better inform buyers.

Find out more about ClimateIndex™:



Watch our video:



How to order

The Groundsure ClimateIndex™ Report is **available to order now through InfoTrack** for New South Wales properties.



For more information on ClimateIndex, speak to your InfoTrack account manager or email us at info@groundsure.com.au.





Groundsure is a leading environmental and climate data authority. We give land and property professionals expert information on risks including land contamination, flooding and ground stability, as well as forward guidance on potential climate risks, to advise their clients in the transaction. We provide high value, property-specific opinions and analysis of land use, turning data into practical, actionable insight.



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