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Climate change costs to hit these Australian regions hardest

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The Gold Coast, Brisbane, the Sunshine Coast, Shepparton and the New South Wales Central Coast stand to pay the highest costs from extreme weather events by 2100 if global greenhouse gas emissions continue on their current trajectory, a major new study predicts.

The study, conducted by [climate risk analysis company XDI](#), uses a vast pool of data to estimate the risks of natural hazards such as coastal inundation, riverine flooding, bushfires, soil subsidence from drought and wind damage.

The study covers 15 million addresses across Australia's 544 local government areas, and is intended to be used by a wide range of parties, including local and state governments, investors and banks, to assess risks to existing and potential assets.



Queensland's Gold Coast is facing bigger costs as a result of climate change than any other local government area in Australia. **AAP**

Greater Shepparton in Victoria emerged as the local government area most at risk from riverine flooding both in 2020 and 2100, followed by the Gold Coast and Brisbane in Queensland, and Wangaratta in Victoria.

The Central Coast, Lake Macquarie and Blue Mountains areas of New South Wales were the most at risk of bushfires by 2100, followed by the Adelaide Hills in South Australia.

The Gold Coast, Sunshine Coast, Brisbane and Moreton Bay local councils in Queensland will face the highest costs from coastal inundation by 2100, followed by Tweed Heads in New South Wales, the report found.

Brisbane, Sydney, the ACT, Moreton Bay and the NSW Central Coast faced the highest costs from soil subsidence by 2100.

Local governments most at risk of natural disasters caused by climate change in 2100

	Overall		Bushfires		Coastal inundation		Riverine flooding	
1	Qld	Gold Coast	NSW	Central Coast	Qld	Gold Coast	Vic	Greater Shepparton
2	Qld	Brisbane	NSW	Lake Macquarie	Qld	Sunshine Coast	Qld	Gold Coast
3	Qld	Sunshine Coast	NSW	Blue Mountains	Qld	Brisbane	Qld	Brisbane
4	Vic	Greater Shepparton	SA	Adelaide Hills	Qld	Moreton Bay	Vic	Wangaratta
5	NSW	Central Coast	Qld	Sunshine Coast	NSW	Tweed	Vic	Port Phillip
6	Qld	Moreton Bay	Vic	Yarra Ranges	Qld	Fraser Coast	NSW	Central Coast
7	Qld	Fraser Coast	NSW	Shoalhaven	NSW	Central Coast	SA	Mid Murray
8	NSW	Tweed	Qld	Gold Coast	Qld	Mackay	Vic	Melbourne
9	Qld	Mackay	NSW	Mid-Coast	WA	Mandurah	Qld	Sunshine Coast
10	WA	Mandurah	NSW	Port Stephens	Qld	Redland	NSW	Newcastle



The Peregrian Springs bushfire on the Sunshine Coast in September

SOURCE: FINANCIAL REVIEW

Overall, Queensland is the state that will face the highest costs as a result of global warming.

The study used a measure called the "total technical insurance premium", which assigns an annualised cost of climate change-related costs for each council area.

Averaged across Australia, the report predicted the cost would be a seemingly modest 55 per cent higher in 2100 than it is today. But XDI chief executive Rohan Hamden said in the at-risk areas it would be far above that, saying in the Adelaide Hills the cost was expected to rise "100 fold".

The study found the number of "high risk" properties, which currently sits at 383,300, would double to 735,654 by 2100. That figure only referred to existing properties, with future developments potentially adding to that figure.

It's worse for coastal inundation where the worst 20 per cent of large councils will see a 400 per cent increase of risk.

— XDI report

The study assumes global greenhouse gas emissions will continue on trend, which scientists predict will result in an average global temperature rise of 4 to 6 degrees above pre-industrial levels. The international community is aiming to keep temperature increases below 2 degrees by 2100, but without a drastic globally-synchronised ramping up of emission reductions that target will not be met.

Mr Hamden said that meant businesses, governments and institutional investors would need to start factoring in the effects of climate change in earnest when making investment decisions.

He said the information in the report would be "invaluable for the private sector to understand the risks to their assets and investments", adding it could help state governments understand which council areas to prioritise for adaptation.

"Climate related risks are very unevenly distributed. While average risks from flooding may increase by about 30 per cent due to climate, in 20 per cent of large councils flood risk will double," he said.

"It's worse for coastal inundation where the worst 20 per cent of large councils will see a 400 per cent increase of risk over coming decades.

"With recent climate data companies being acquired by Moody's and MSCI, it's clear that climate risk data is becoming more and more available to insurers, banks and valuation companies and we need to better understand Australia's risk so that they can take steps to protect people, infrastructure and property."

He used the example of two companies that own petrol stations, one in high risk areas and one in low risk areas. Without reliable climate change risk modelling he

areas, and one in low risk areas. Without reliable climate change risk modeling, he said the two companies might look "the same on paper" to an investor. In reality their risk profiles are drastically different.

Mr Hamden said XDI would be marketing its data to companies such as banks and governments, but said it had decided to make this report public as a "call to action".

"If governments and communities act on this information now, many of the projected losses can be averted. Acting with a strategic focus on those communities most at risk will ensure that adaptation is achieved at least cost and can help protect people, infrastructure and assets from harm," he said.

The report answers a call from Australian financial regulators for more information on the nature of climate risk. Earlier this month the [Reserve Bank of Australia warned that climate change posed a significant risk to the financial system](#), and said more data was needed on the nature of those risks.

"To manage their own direct exposure to physical risk, insurers and banks need granular information on the location and physical risks faced by the assets they insure or the collateral they lend against," the RBA said.

Geoff Summerhayes, head of insurance at the Australian Prudential Regulation Authority, [earlier this year called for a "common taxonomy around the economic impacts of climate"](#).

He said such a taxonomy was "underdeveloped globally".

"For a risk that is so all-pervasive, that is a concern. My point is it requires multi-disciplined activity. And I think the view here in Australia is that we shouldn't necessarily wait for a global standard. We should get on and advance that case ourselves," he said.



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