



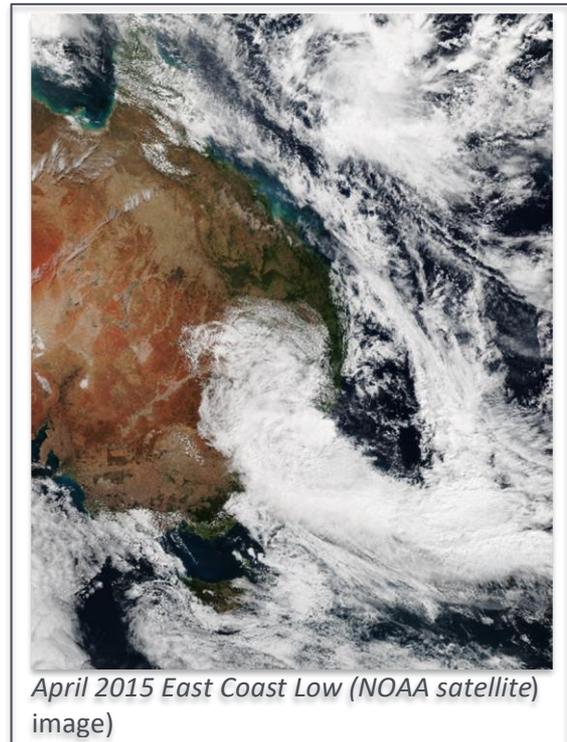
Cause and impact of the February 2020 east coast low in Sydney

Not an ordinary rainstorm

East coast lows may develop from ex-tropical cyclones, in a pre-existing trough of low pressure or after a cold front moves across Victoria into the Tasman Sea. They can occur at any time of year and are particularly dangerous because they develop more quickly than cyclones and can linger along the coast, causing widespread damage from heavy rain and strong wind.

Past east coast low disasters

- December 1998 Sydney to Hobart race: six sailors died, 55 sailors had to be rescued by helicopter, five yachts sank and more than 60 retired from the race.
- June 2007 Pasha Bulker container ship washed up on Nobbys beach in Newcastle. Nine people died due to storms along the central coast.
- April 2015 storm caused widespread flooding and three deaths. Sydney recorded 119 mm of rain in 24 hours.
- June 2016 storm with heavy rain caused coastal erosion, obliterated beachfront yards and famously caused a Collaroy swimming pool to fall into the ocean. Five people died and impacts stretched from Queensland to Tasmania.



The February 2020 event

February 4: After a summer of drought and fire, a large high pressure system over the Tasman Sea sent moisture-laden easterly winds toward eastern Australia and a surface trough over central Queensland and New South Wales combined to produce welcome rainy conditions in eastern Australia.

February 7: An intense coastal trough developed off the north coast of NSW and forecasters confirmed that there was a chance of an east coast low developing. A severe weather warning was issued for the NSW coast, with torrential rainfall and flooding predicted in some areas. King tides on Sunday and Monday were predicted to increase the erosion of beach areas.

February 9: Flash flooding warnings were issued as it became clear that the storm was similar to that in June 2016. Residents near Narrabeen Lagoon, Moorebank, Chipping Norton and Milperra were ordered to evacuate.



February 10: The Insurance Council of Australia declared the storm to be a catastrophe, as more than \$45 million in claims were received by 7 am. More than 110,000 homes and businesses were left without power due to trees falling on power lines.

The damage to ecosystems was enormous. Ausgrid estimated that more than 3,000 trees fell onto power lines. Thousands more fell throughout the greater Sydney area. Sydney received 392 mm of rain from 7 – 10 February; more than it received during the entire second half of 2019 and the highest amount of rain in up to 30 years.

There was major flooding in the Hawkesbury-Nepean and Georges Rivers as well as local flooding and coastal erosion. There were landslides along rivers and on hillsides, including a landslide in Artarmon. Sediments from erosion poured into waterways, causing widespread turbidity.



A supercell storm with thunder, lightning and high winds on 18 February caused additional damage to areas that were still battered after the east coast low.

Future east coast lows

Climate modelling by the New South Wales Government suggests that there will be more extreme east coast lows in warmer months, but little change in cooler seasons. This modelling is important because east coast lows not only cause coastal erosion and flooding, but also provide valuable input to water storage areas. Modelling is used to prepare infrastructure for storm events and water capture.

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