

## Climate Change and Its Impacts on New Zealand

Globally, 2016 was the [hottest year on record](#) and a new high for the third year running- an unprecedented phenomenon since 1880. Global warming has resulted in serious climate disruptions, the melting of sea ice, droughts, floods and mega storms. Many more (1.5 times) [extreme weather catastrophes](#) occurred in 2016 than the average over the past three decades. Human health and food security are also under threat. [World Meteorological Organisation](#) figures show global temperature is already 1.2<sup>0</sup>C above pre-industrial levels.

The Ecuadorean president described the climate change situation as “[a planetary emergency](#)” that demands global action and “an ecological debt” that must be paid. Lawyers, [faith leaders](#) and grassroots movements worldwide are [calling](#) for [moral duty of care](#) for Earth, legal liability for climate crime, climate justice and the end of ecocide. The New Zealand Parliamentary Commissioner for the Environment has called for [bold leadership on climate change](#) – the biggest environmental issue of our time.

The NZ government, along with 200 others, have signed and ratified the 2015 [Paris Agreement on Climate Change](#), to keep global warming well below 2<sup>0</sup>C, pursue a target of 1.5<sup>0</sup>C, and invest in climate-adaptation, low-emissions and climate-resilient development. Greenhouse gas emissions from the [burning of fossil fuels and industrial processes](#), transportation, agriculture (especially associated with meat production) and deforestation for agriculture and other landuse, have been the [key drivers of climate change](#).

In addition to carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) from ruminants and nitrous oxide (N<sub>2</sub>O) from urine, dung and synthetic fertilisers, are also major greenhouse gases of concern. Their concentrations in our atmosphere today are unprecedented in the last 800,000 years. In NZ, a largely agricultural nation, [methane and nitrous oxide](#) account for 43% and 11% of our greenhouse gases respectively. The rapid and widespread land conversion for industrial dairying and increasing stocking rates are to blame.

NZ is heating faster than global average and our [hottest records could become the new norm](#) by 2025. It will [impact](#) our agriculture and other climate-sensitive industries likely skiing, our native ecosystems, infrastructure, health and biosecurity, as well as having broader social and economic impacts. Extreme storms, droughts, heavy rain, floods, coastal erosion and unusual frosts and wind patterns are likely to increase in frequency and become more pronounced over time.

[Sea level is projected to rise by about 30 centimetres](#) between 2015 and 2065. We could expect extreme high water levels that are currently considered ‘100-year event’ to occur every year in Wellington and Christchurch, every two years in Dunedin and every 4 years at the port of Auckland. Coastal buildings, roads, airports, wastewater systems and other infrastructure are all at risk.