(NIWA, n.d)

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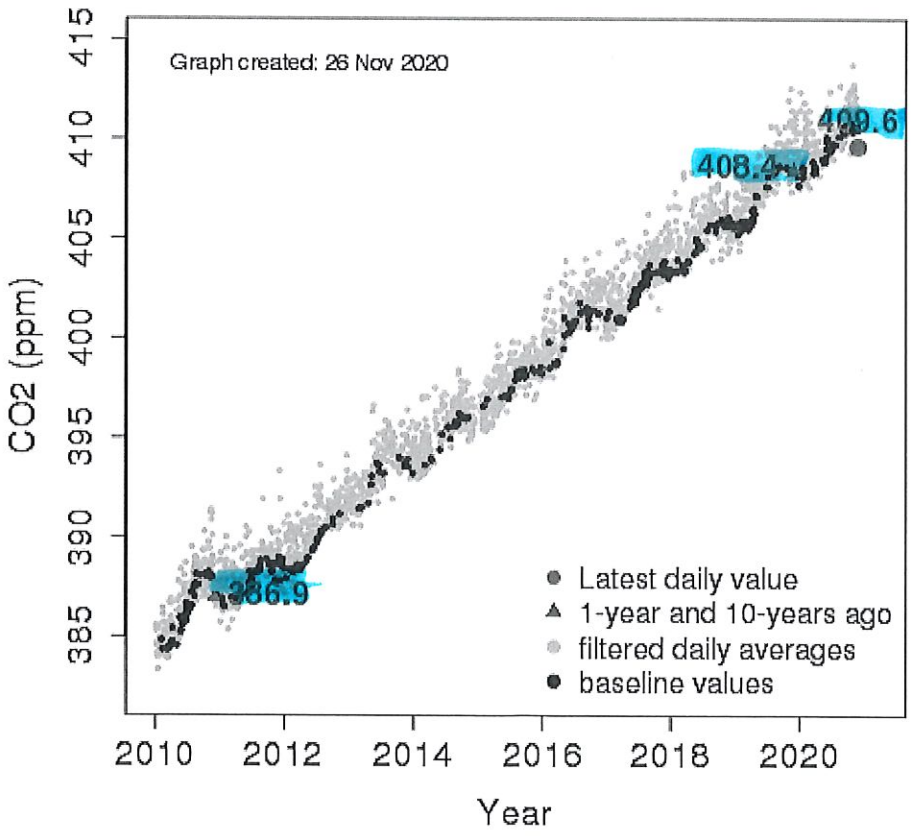
Science

Carbon Watch NZ

Daily CO2 measurements from NIWA's atmospheric monitoring station at Baring Head



The graph shows carbon dioxide (CO_2) levels measured at Baring Head, NIWA's clean air station, near Wellington. This station has been running since 1972 and is home to the longest running continuous CO_2

measurements in the Southern Hemisphere.

The red shows the latest daily average (the most recent day for which we obtained reliable data), and the levels on the equivalent days one year ago and 10 years ago. The gray filtered daily averages show all hourly measurements, filtered to remove outliers. The black points labelled baseline values show our most reliable and quality-controlled measurements, taken when the wind is coming from the south and not influenced by passing over nearby land. These baseline values form our ongoing historical records.

All of these values fluctuate with the seasons – with higher levels of CO_2 produced in winter when energy use typically increases and CO_2 uptake by forests through photosynthesis slows.

For comparison, the pre-industrial level of CO_2 in the atmosphere was 280 ppm. The Paris Agreement, signed by 197 countries, is aiming to keep global average temperature **to well below** 2°C above pre-industrial values. Scientists estimate that there is a 50% chance of attaining this if CO_2-equivalent emissions stabilise next century at 450 ppm. However, CO_2-equivalent emissions are different to CO_2 levels as they also take into account other greenhouse gases such as methane. You can read more about this here.

Mauna Loa Laboratory in Hawaii, the oldest continuous monitoring station in the world, also publishes its latest CO_2 levels online. You may notice that these are several ppm higher than the levels at Baring Head. This is because of the Northern Hemisphere's much higher land area, population and emissions. However, over time, Southern Hemisphere CO_2 levels will catch up to Northern Hemisphere levels as air circulates around the globe.

Research subject: Atmosphere Climate change Greenhouse Gases

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