

¹⁴CO₂ measurements from Baring Head, New Zealand

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Measurements of ¹⁴CO₂ have been made in Wellington, New Zealand, since December 1954, making this the longest ¹⁴CO₂ record of tropospheric air in the world. Cape Grim in Tasmania, Australia, is at a similar latitude to Baring Head and independent measurements of ¹⁴CO₂ have been made since 1987 by Heidelberg University. The sample collections at both locations are by the sodium hydroxide absorption method, integrating samples over a two-week period. Comparisons of these two datasets show that they agree well for the most part, but there are a few distinct periods where the records differ. Careful examination of the Baring Head data has been undertaken to identify possible reasons for these periods of difference and many samples have been extracted and measured again, where possible.

In order to identify and quantify the effect of any instrumental, systematic or procedural influences, a direct comparison between the two sites has begun. A Baring Head-style sampler has been installed at Cape Grim and sample collections using the static caustic soda method began in late January 2017. At Cape Grim the NIWA-method collections are co-ordinated with collections of the samples by the Heidelberg University method, allowing both methods to be directly compared through co-located sampling.