

Main types of heating used to heat dwellings

This factsheet presents data on the main types of heating used to heat dwellings in 2018. The main types of heating include heat pumps, electric heaters, wood heaters, gas heaters, and coal burners.

Key facts



One-third of private dwellings in New Zealand used a wood burner or a pellet fire as their main type of heating in 2018.



The type of heating used to heat dwellings varies across the country, wood burner or pellet fires were more common in the South Island, whereas gas heaters were more common in the North Island.



The use of coal burners ranged from 0.1% of dwellings in Christchurch City to 42.0% in Grey District.

Home heating emissions are a major source of air pollution

In 2015, home heating emissions from burning wood or coal were the largest source of New Zealand's key air pollutant, particulate matter (PM_{2.5} and PM₁₀). Other home heating emissions from wood and coal fires include gases such as nitrogen dioxide and carbon monoxide, heavy metals such as arsenic and lead, as well as organic matter (Ministry for the Environment and Stats NZ 2018). Apart from contributing to outdoor air pollution, home heating emissions can also worsen air quality within the home.

In New Zealand, air pollution due to PM peaks in the winter months. Calm and frosty conditions require the extended use of home heating and allow air pollutants to become trapped close to the ground (Ministry for the Environment and Stats NZ 2018).

Short-term and long-term exposure to air pollution, especially PM₁₀ and PM_{2.5}, is associated with a wide range of health impacts. Mild impacts include shortness of breath or coughing. More severe impacts include premature death from cardiovascular and respiratory problems, and an increased risk of lung cancer (Ministry for the Environment and Stats NZ 2018; WHO 2013).

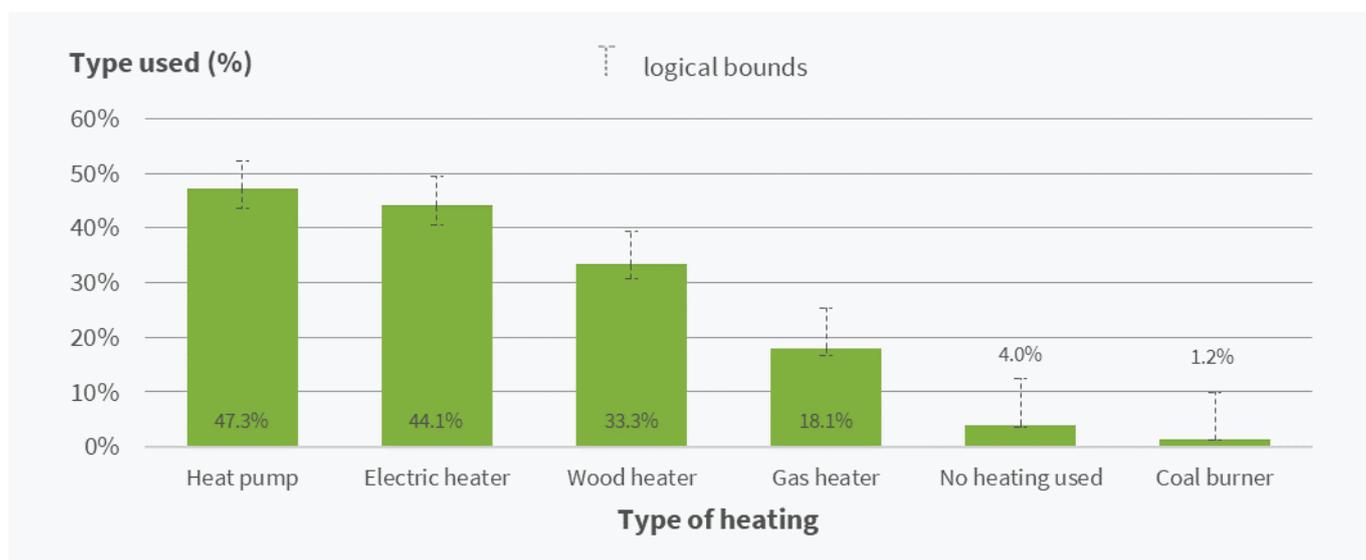
Children, the elderly, and people with pre-existing conditions such as cardiovascular or respiratory diseases are particularly vulnerable to health impacts from air pollution (Ministry for the Environment and Stats NZ 2018).

This factsheet uses a variable from the New Zealand Census of Populations and Dwellings, Stats NZ, 2018 with a moderate data quality. For more information about Census data issues, please see Data for this indicator and the [Metadata](#).

Heat pumps and electric heaters were the main types of heating in New Zealand in 2018

In 2018, heat pumps (47.3% (lower and upper logical bounds: 43.5% - 52.3%)) and electric heaters (44.1% (40.6 - 49.3)) were the two main types of heating used to heat private dwellings in New Zealand (Figure 1). Wood-fired heaters such as wood burners or pellet fires were used in 33.3% (30.6-39.4) of private dwellings as the main source of heating. Coal burners were used in just over 1.2% (1.1-9.9) of dwellings as the main heating source.

Figure 1: Main types of heating used to heat dwellings, 2018



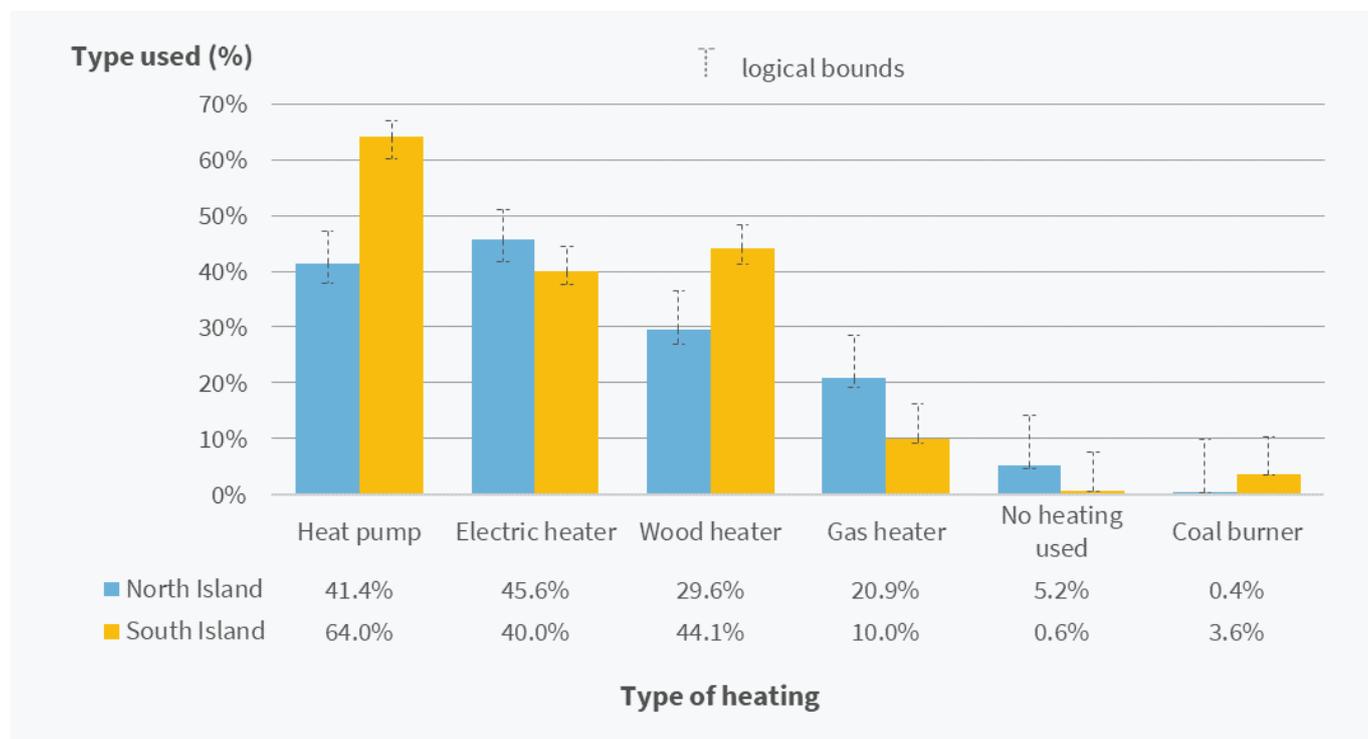
Note: Values do not add up to 100% as more than one main type of heating can be selected. Logical bounds give the lower and upper bounds of what the percentage could be, allowing for the missing data due to implementation problems with the Census.

Source: Census 2018.

The type of heating used in homes varied between the North and South islands

Winter conditions, local regulations around home heating options, as well as cost and ease of access to various types of heating, contribute to a mixed-use across the country (Ministry for the Environment and Stats NZ 2018). In general, almost two thirds of dwellings in the South Island used heat pumps, whereas electric heaters and heat pumps were the main type of heating for dwellings in the North Island (Figure 2).

Figure 2: Main types of heating used to heat dwellings, 2018



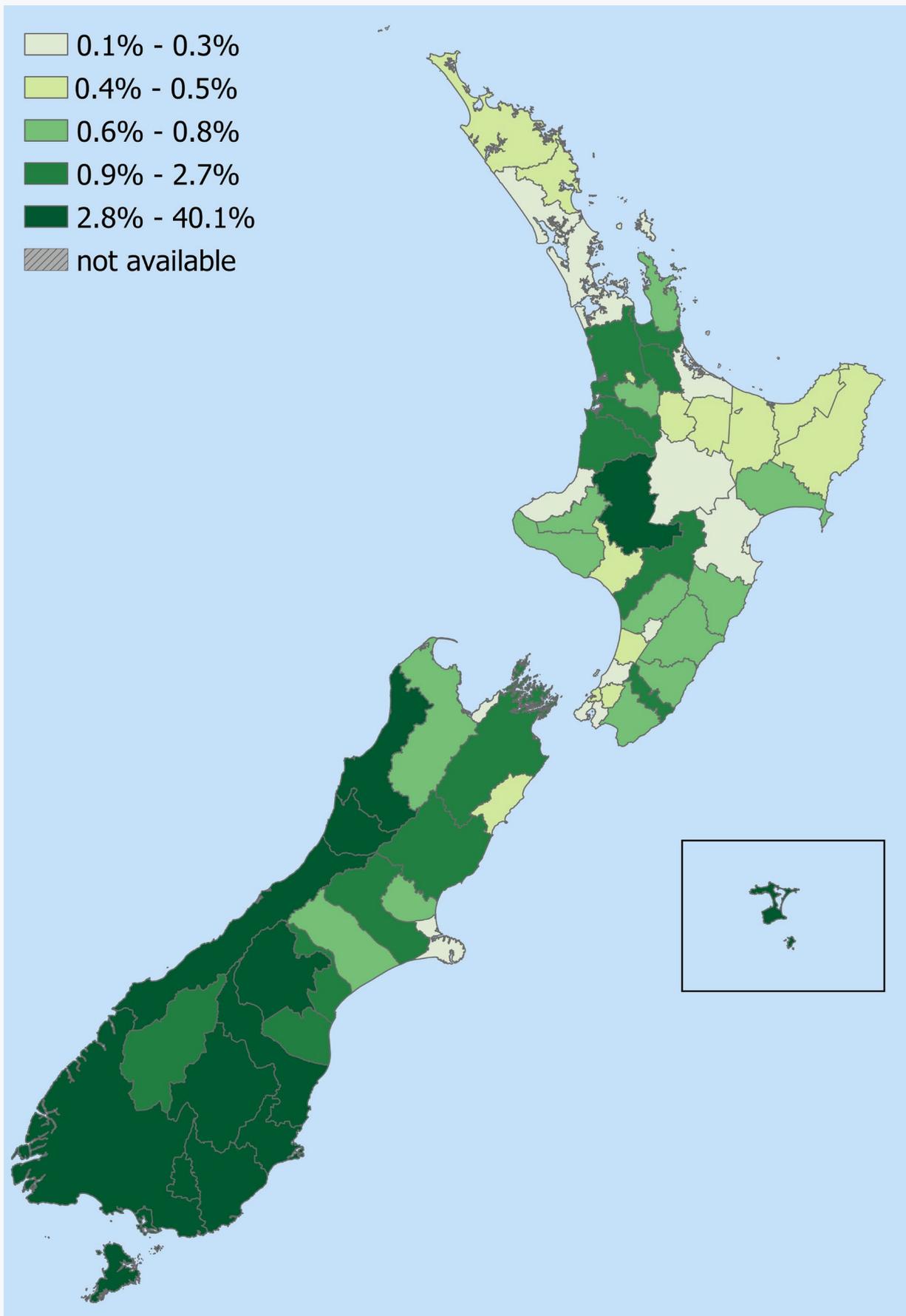
Note: Values do not add up to 100% as more than one heating type can be selected. Logical bounds give the lower and upper bounds of what the percentage could be, allowing for the missing data due to implementation problems with the Census.

Source: Census 2018.

Territorial authorities in the South Island had a higher proportion of wood and coal fires as their main type of heating

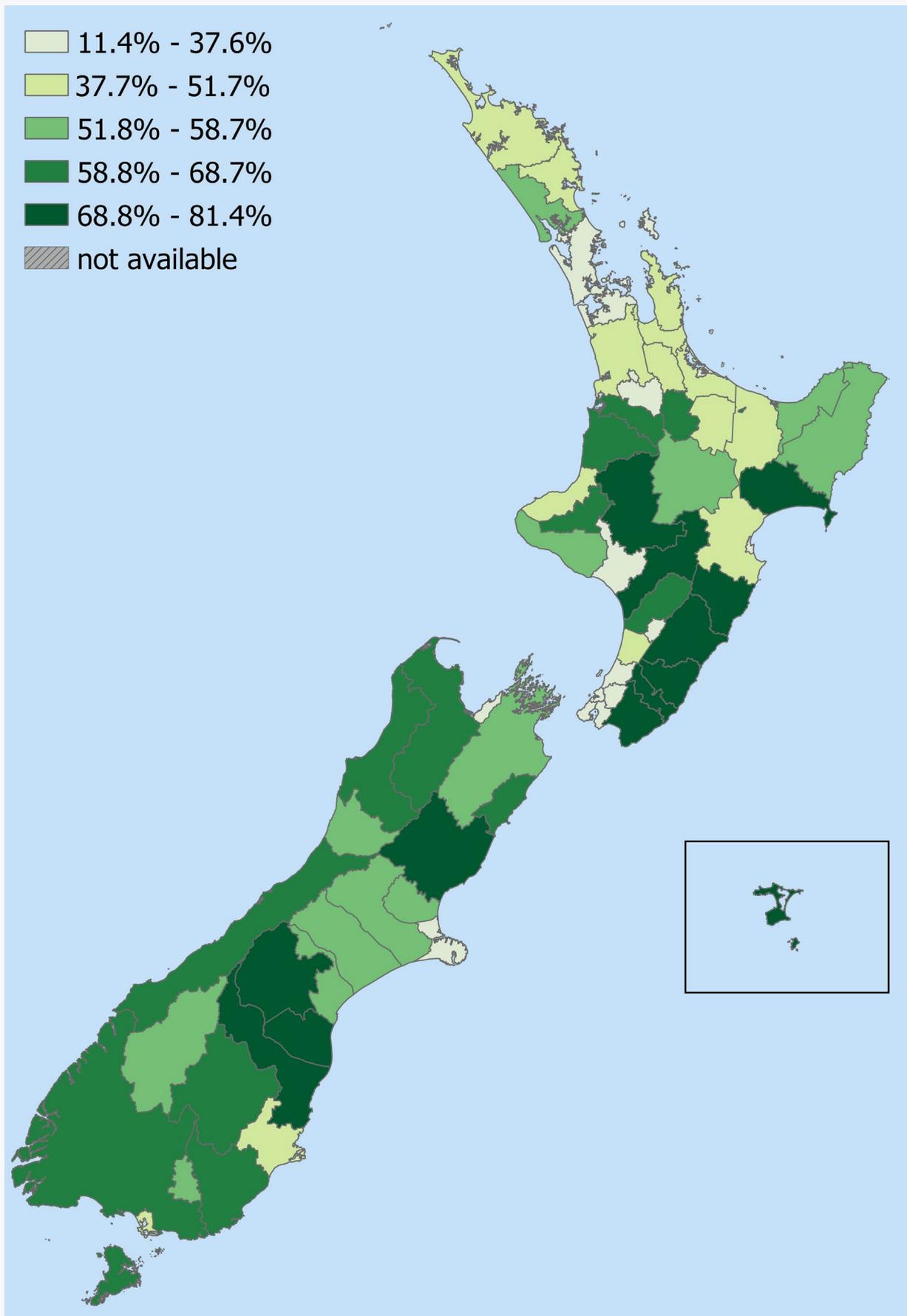
Grey District (41.0%, 37.9-46.5) and Buller District (34.9%, 31.1-43.1) had the highest proportion of coal fires as their main type of heating in New Zealand (1.2%, 1.1-9.9) (Figure 3). Similarly, Mackenzie District (81.4%, 72.5-84.0) and Hurunui District (81.0%, 74.7-83.4) had the highest proportion of wood fires as their main type of heating (33.3%, 30.6-39.4) (Figure 4).

Figure 3: Percentage of dwellings using coal burners as their main type of heating, by territorial authority (TA), 2018



Source: Census 2018.

Figure 4: Percentage of dwellings using wood fires as their main type of heating, by territorial authority (TA), 2018



Source: Census 2018.

Data for this indicator

Main types of heating used to heat dwellings

Data for these indicators comes from the New Zealand Census of Populations and Dwellings, Stats NZ, 2018. Main types of heating were classified as: no heating required, heat pump, electric heater, gas heater (fixed gas heater and portable gas heater), wood heater (wood burner and pellet fire), coal burner, and other types of heating. Main types of heating is a multiple response indicator, more than one type of heating can be selected. For additional information, see the metadata link below.

2018 Census data: Stats NZ has noted that the 2018 Census had a lower than expected response rate resulting in the introduction of new methods to produce the dataset, including using data from alternative sources. Stats NZ and the 2018 Census External Data Quality Panel (EDQP) have produced a rating system to help the users understand the quality-related issues and impacts of the 2018 Census dataset.

EHI have decided to update this factsheet based on the documentation relating to the 'Main types of heating and fuel types used to heat dwellings' indicator. The EDQP rating for this indicator was moderate and the response rate was 92.3%. Further details are in the metadata, and further information about the Stats NZ and EDQP documentation can be found in <https://www.stats.govt.nz/2018-census/data-quality-for-2018-census>

Logical bounds: The 2018 Census suffered from implementation problems, and as a result, had a lower than expected response rate resulting in missing data. We therefore present the lower and upper logical bounds of what the percentage could be, allowing for the missing data. The lower bound is calculated as the count among the total value, whereas the upper bound is calculated as the sum of the count and unknowns among the total value.

Time trend: There was a change in the census question; therefore no comparison with previous Census years can be made.

References

Ministry for the Environment and Stats NZ. 2018. *Our air 2018. Data to 2017*. Wellington: Ministry for the Environment.

WHO. 2013. *Review of evidence on health aspects of air pollution – REVIHAAP Project*. Copenhagen: WHO Regional Office for Europe.

Other related topics include:

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[Other air pollutants](#)

[Particulate matter](#)

[Health effects of air pollution](#)

Author

The author of this factsheet is Carolin Haenfling. [✉ ehinz@massey.ac.nz](mailto:ehinz@massey.ac.nz)

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Further information

For descriptive information about the data [🔍 Metadata Sheet](#)

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