

## Geographic and area unit data available in the NZAVS

Sibley, C. G. (2015). Geographic and area unit data available in the NZAVS. *NZAVS Technical Documents*, e25.

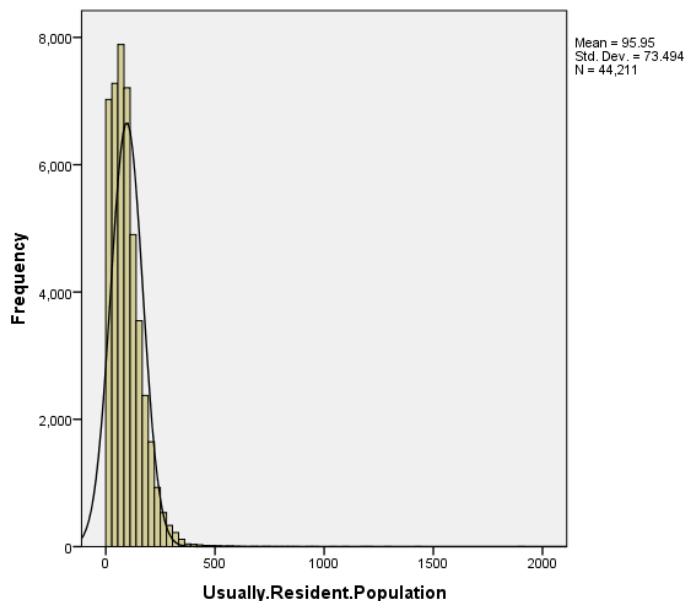
Available at: <http://www.psych.auckland.ac.nz/uoa/NZAVS>

Document last updated 27 February 2016

**\*\* Note.** This document is in two parts. This document (Part A) provides an overview of the structure of geographic data files used by the New Zealand census and linked to the NZAVS. Part B (the associated excel file) provides an exhaustive geographic key and variable names for aggregate information from the 2001, 2006 and 2014 census about area and regional characteristics included in the NZAVS).

### *Geographic structure*

New Zealand is unusual in having rich census information about each area unit/neighborhood of the country available for research purposes. The smallest of these area units are meshblocks. The geographic size of these meshblock units differs depending on population density. Each unit tends to cover a region containing a median of roughly 81 residents ( $M = 95.95$ ,  $SD = 73.49$ , range = 0-1899). In 2013, at the time of the latest census, there were a total of 44,211 meshblocks for which data were available. The distribution of usually resident population of the 44,211 meshblocks for which data were available from the 2013 New Zealand National Census is presented in Figure 1.



**Figure 1.** Histogram showing distribution of Usually Resident Population of 44,211 meshblocks based on the 2013 New Zealand National Census.

Statistics New Zealand (2013) define a meshblock as “a defined geographic area, varying in size from part of a city block to large areas of rural land. Each meshblock abuts against another to form a network covering all of New Zealand including coasts and inlets, and extending out to the two hundred mile economic zone. Meshblocks are added together to ‘build up’ larger geographic areas such as area units and urban areas.” These units (in order of their size) are presented in Table 1. The mean and median usually resident population of these areas based on 2013 census data are also reported. The organization of these and other geographic areas used in New Zealand is presented in Figure 1.

**Table 1.** Mean and median resident population of geographic areas based on 2013 Census Data.

	Num. Units	Usually resident population		
		M	(SD)	Median
Meshblock	46637	96	(74)	81
Area Unit	2020	2210	(1673)	1977
Ward	257	16506	(27036)	6378
Territorial Authority	67	63314	(175249)	30138
Regional Council	16	265095	(345776)	151401

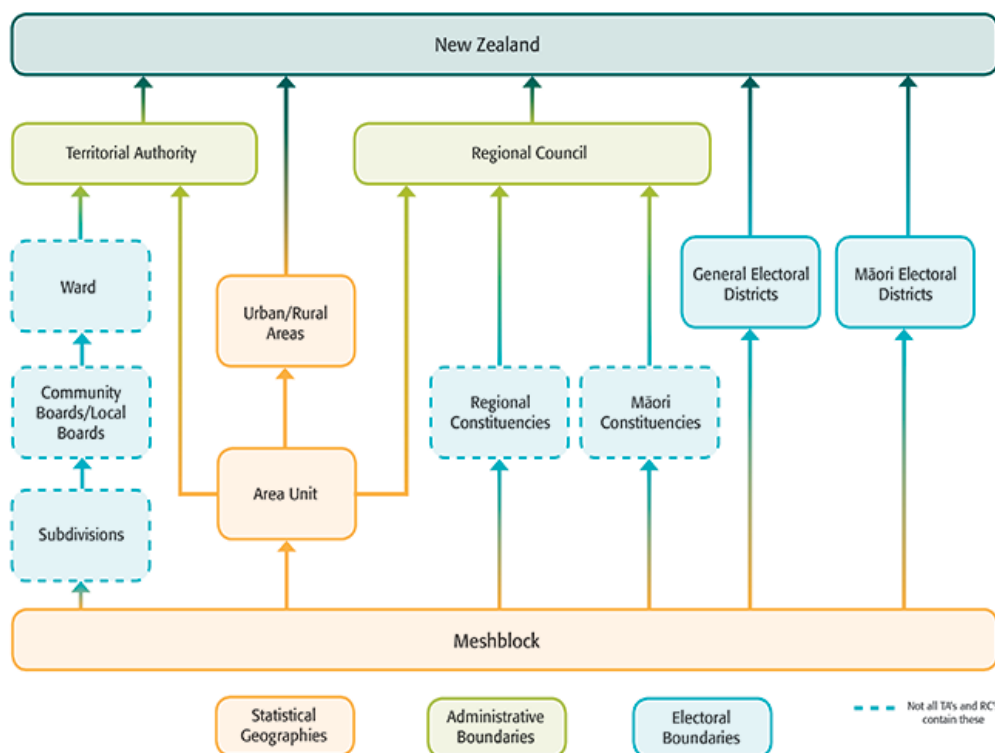


Figure 1. Geographic hierarchy of areas in New Zealand. (Available at: <http://www.stats.govt.nz/methods/classifications-and-standards/geographic-hierarchy.aspx>)

The NZAVS includes meshblock area unit information for each participant. Building up from these meshblock codes, the NZAVS also includes information for the complete set of geographic areas presented in Figure 1.

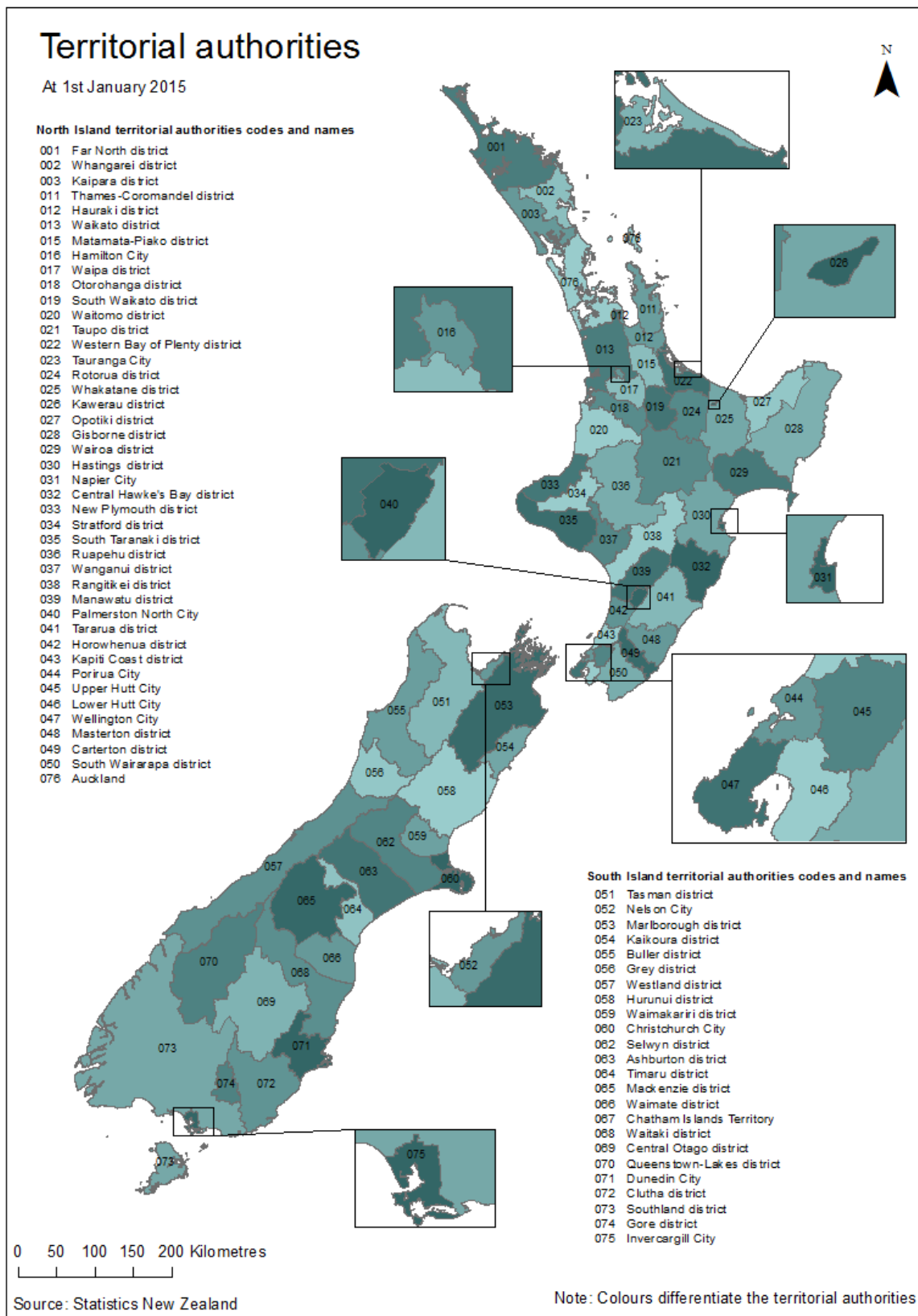


Figure 2. Map of New Zealand with territorial authorities (source: Statistics New Zealand [http://www.stats.govt.nz/browse\\_for\\_stats/Maps\\_and\\_geography/Geographic-areas/digital-boundary-layers.aspx](http://www.stats.govt.nz/browse_for_stats/Maps_and_geography/Geographic-areas/digital-boundary-layers.aspx)).

## *Census information*

New Zealand is also fairly unusual in that extensive aggregate demographic data from our national census is available for each area unit. At its most fine-grained this information is available for all meshblock area units (with rounding or missing data for areas in which a very small number of people reside in order to protect individual privacy). The NZAVS dataset also includes the full and complete set of publicly available data from the 2001, 2006 and 2013 New Zealand national censuses about the geographic area of each participant. This information is included for two area classifications:

- Area Units (2020 units, median = 1977 residents per unit)
- Wards (257 units, median = 6378 residents per unit)

We opted to include information about these two area classifications because such information provides viable-sized samples when estimating regional clustering effects using multilevel random coefficient models, and so forth. The geographic unit of interest will of course depend on the nature of the theoretical question aiming to be answered, but we generally recommend that Area Units are appropriate for analyses seeking to look at the links between NZAVS sample responses and fine-grained information about immediate area units (and where one is modelling fixed-effects). In contrast, for research questions focused on the broader overall contextual effects of neighborhoods, we recommend that Wards be used as the grouping variable. The NZAVS sample size provides enough participants nested within each ward to pursue viable estimates of random effects (something not always viable when analyzing area unit clustering due to the limited number of participants per area unit).

The completed list of demographic information available in the NZAVS dataset at both the Area Unit and Ward level is provided in Part B of this document.

## *Notes*

Further information about available census data and geographic area files is available on Statistics New Zealand website:

[http://www.stats.govt.nz/browse\\_for\\_stats/people\\_and\\_communities/Geographic-areas/geographic-area-files.aspx#customisedgeog](http://www.stats.govt.nz/browse_for_stats/people_and_communities/Geographic-areas/geographic-area-files.aspx#customisedgeog)

Note that the New Zealand Attitudes and Values Study (NZAVS) is not associated with the Census or with Statistics New Zealand. The views in the document are the opinion of the NZAVS research team. Data from the New Zealand census about geographic areas are publicly available and we have integrated them with the NZAVS at the meshblock and area unit level. NZAVS data, however, are not publicly available.

Geographic Information	Census Year Availability		
New Zealand Deprivation Index (Area Unit only)	2001	2006	2013
Census usually resident population count	2001	2006	2013
Census night population count	2001	2006	2013
Sex, for the census usually resident population count	2001	2006	2013
Age in five year groups, for the census usually resident population count	2001	2006	2013
Age in broad groups, for the census usually resident population count	2001	2006	2013
Years at usual residence, for the census usually resident population count	2001	2006	2013
Usual residence five years ago (2008) indicator, for the census usually resident population count			2013
Birthplace, for the census usually resident population count	2001	2006	2013
Years since arrival in New Zealand, for the overseas-born census usually resident population count	2001	2006	2013
Ethnic group (grouped total responses), for the census usually resident population count	2001	2006	2013
Six languages (total responses), for the census usually resident population count	2001	2006	2013
Māori descent, for the census usually resident population count	2001	2006	2013
Religious affiliation (total responses), for the census usually resident population count	2001	2006	2013
Cigarette smoking behaviour, for the census usually resident population count aged 15 years and over		2006	2013
Legally registered relationship status, for the census usually resident population count aged 15 years and over	2001	2006	2013
Partnership status in current relationship, for the census usually resident population count aged 15 years and over	2001	2006	2013
Tenure holder, for the census usually resident population count aged 15 years and over	2001	2006	2013
Number of children born alive, for the female census usually resident population count aged 15 years and over		2006	2013
Highest qualification, for the census usually resident population count aged 15 years and over		2006	2013
Study participation, for the census usually resident population count aged 15 years and over		2006	2013
Total personal income (grouped), for the census usually resident population count aged 15 years and over	2001	2006	2013
Sources of personal income, for the census usually resident population count aged 15 years and over	2001	2006	2013
Work and labour force status, for the census usually resident population count aged 15 years and over	2001	2006	2013
Status in employment, for the employed census usually resident population count aged 15 years and over	2001	2006	2013
Occupation (ANZSCO major group), for the employed census usually resident population count aged 15 years and over		2006	2013
Occupation (ANZSCO major group), for workplace address, for the employed census usually resident population count aged 15 years and over		2006	2013
Occupation (NZSCO99 major group), for the employed census usually resident population count aged 15 years and over	2001	2006	2013
Occupation (NZSCO99 major group), for workplace address, for the employed census usually resident population count aged 15 years and over	2001	2006	2013

Industry (ANZSIC06 division), for the employed census usually resident population count aged 15 years and over		2006	2013
Industry (ANZSIC06 division), for workplace address, for the employed census usually resident population count aged 15 years and over		2006	2013
Industry (ANZSIC96 division), for the employed census usually resident population count aged 15 years and over	2001	2006	2013
Industry (ANZSIC96 division), for workplace address, for the employed census usually resident population count aged 15 years and over	2001	2006	2013
Hours worked in employment per week, for the employed census usually resident population count aged 15 years and over	2001	2006	2013
Main means of travel to work, for the employed census usually resident population count aged 15 years and over	2001	2006	2013
Main means of travel to work, for workplace address, for the employed census usually resident population count aged 15 years and over	2001	2006	2013
Unpaid activities, for the census usually resident population count aged 15 years and over		2006	2013
Total households in occupied private dwellings	2001	2006	2013
Household composition, for households in occupied private dwellings	2001	2006	2013
Number of usual residents in household, for households in occupied private dwellings	2001	2006	2013
Total household income (grouped), for households in occupied private dwellings	2001	2006	2013
Sources of household income, for households in occupied private dwellings	2001	2006	2013
Tenure of household, for households in occupied private dwellings	2001	2006	2013
Sector of landlord, for households in rented occupied private dwellings	2001	2006	2013
Weekly rent paid, for households in rented occupied private dwellings	2001	2006	2013
Number of motor vehicles, for households in occupied private dwellings	2001	2006	2013
Access to telecommunications, for households in occupied private dwellings	2001	2006	2013
Total families in occupied private dwellings	2001	2006	2013
Family type, for families in occupied private dwellings	2001	2006	2013
Total family income (grouped), for families in occupied private dwellings	2001	2006	2013
Sources of family income, for families in occupied private dwellings	2001	2006	2013
Occupied private dwelling type	2001	2006	2013
Dwelling record type for occupied dwellings	2001	2006	2013
Number of rooms, for occupied private dwellings	2001	2006	2013
Number of bedrooms, for occupied private dwellings	2001	2006	2013
Fuel types used to heat dwellings (total responses), for occupied private dwellings	2001	2006	2013

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## References

Statistics New Zealand (2013). *Geographic Definitions*. Wellington, NZ: Statistics New Zealand. <http://www.stats.govt.nz/Census/2013-census/info-about-2013-census-data/2013-census-definitions-forms/definitions/geographic.aspx>