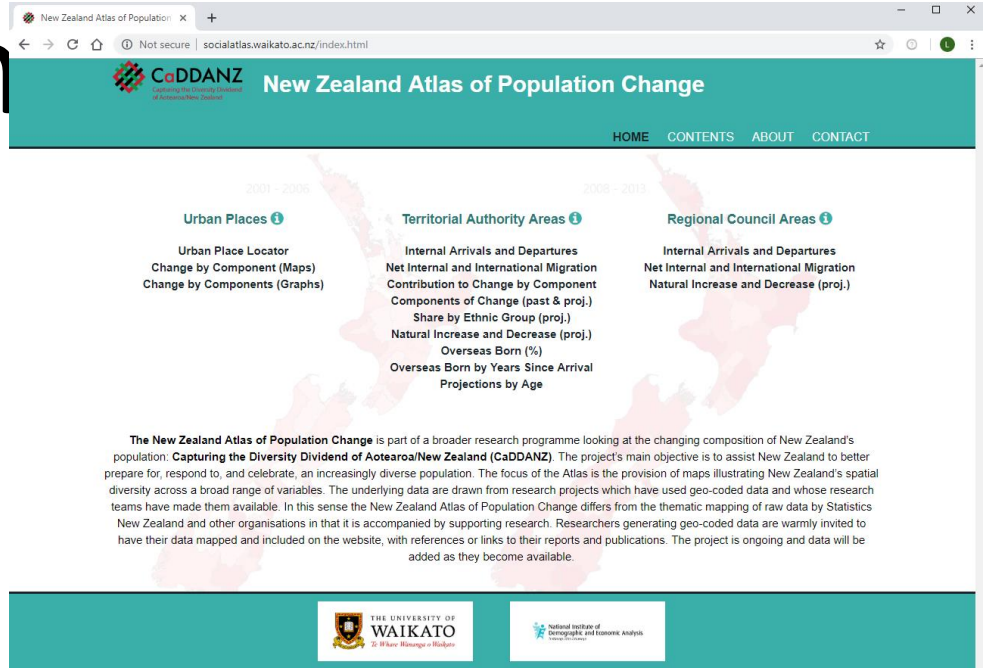
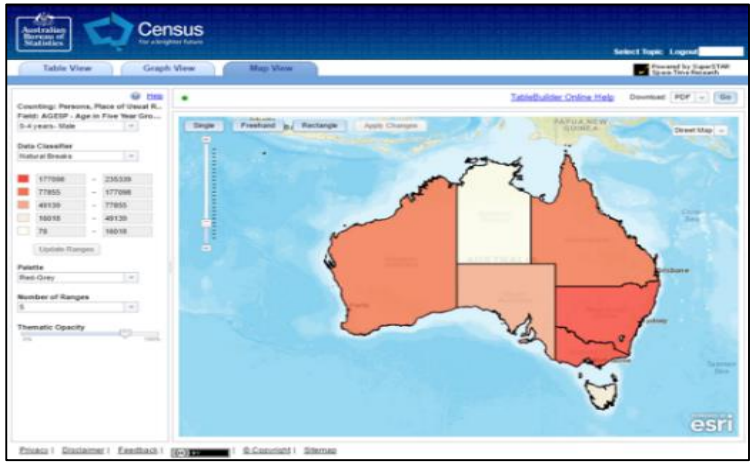
The New Zealand Atlas of Population Change

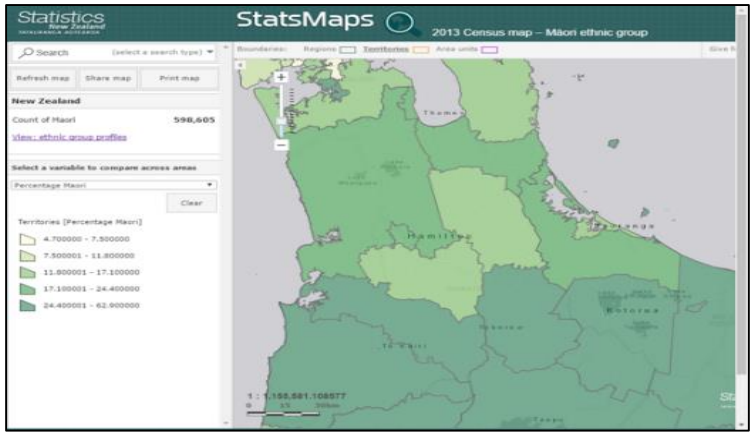
Lars Brabyn and
Natalie Jackson

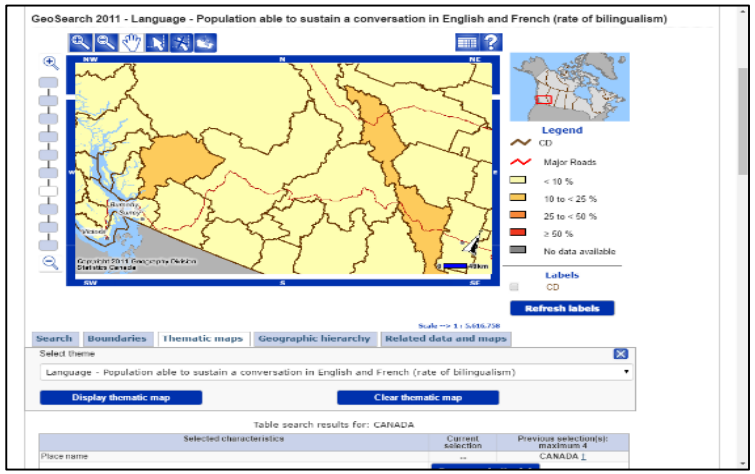


The NZ Atlas of Population Change is not just another online map server visualizing population census data.

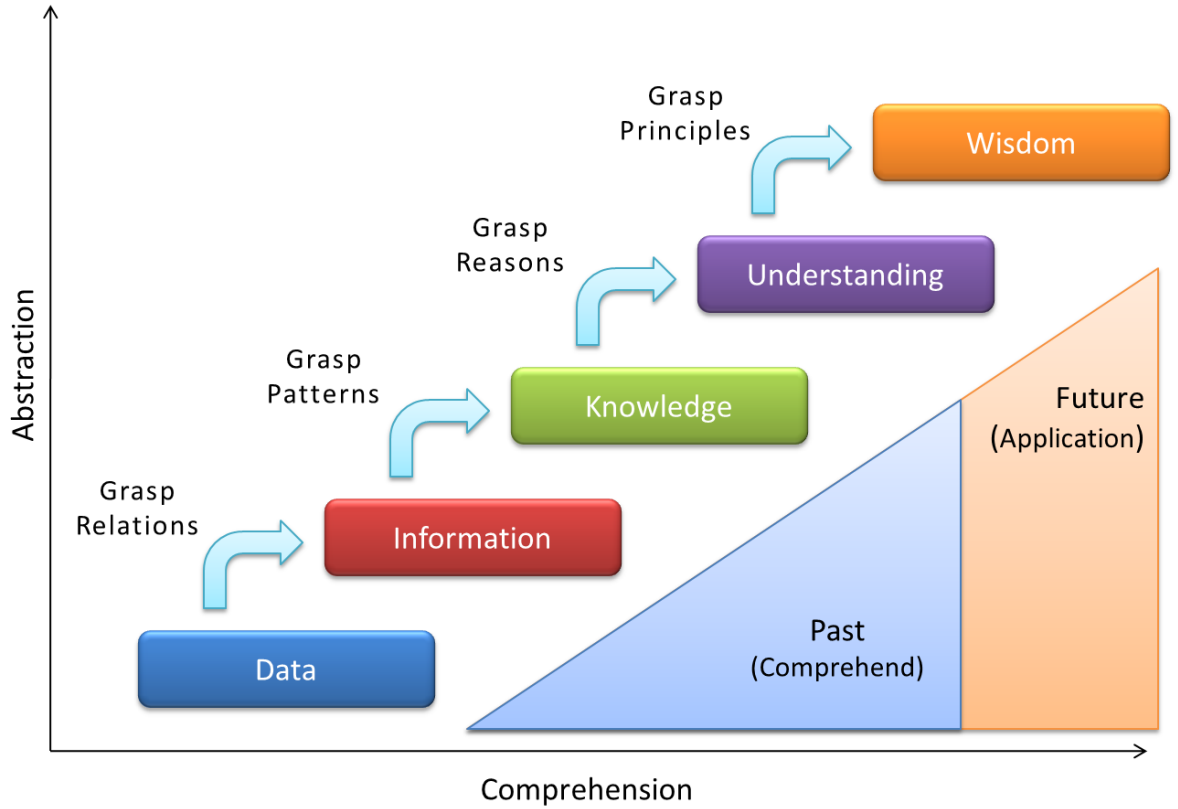
Before developing the NZ Atlas of Population Change a review of demographic maps servers was undertaken.







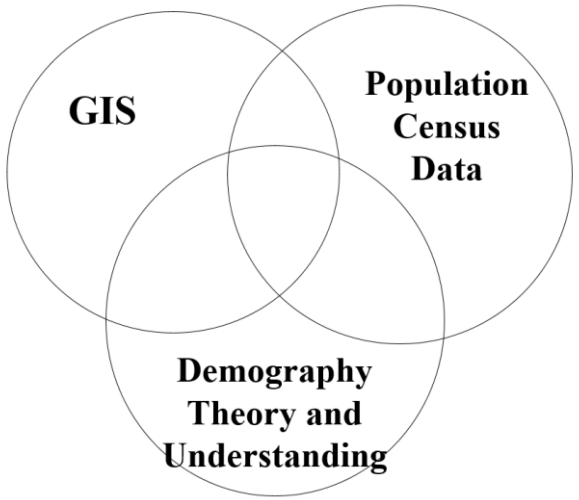
A goal of the NZ Population Change Atlas is to turn population data into wisdom (the ability to predict)



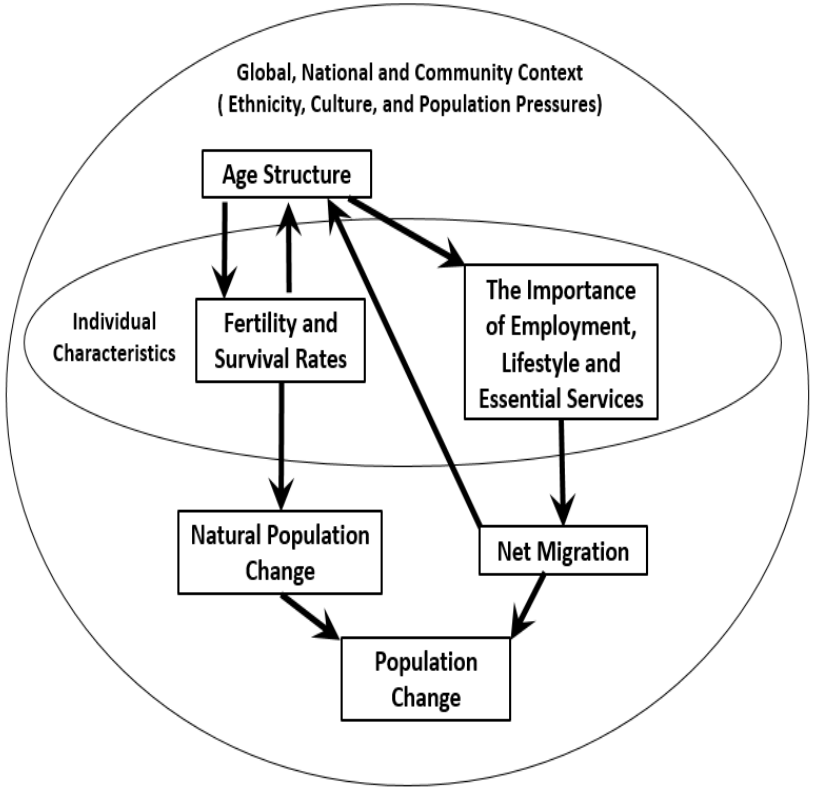
Most online population map servers only convert data into information.

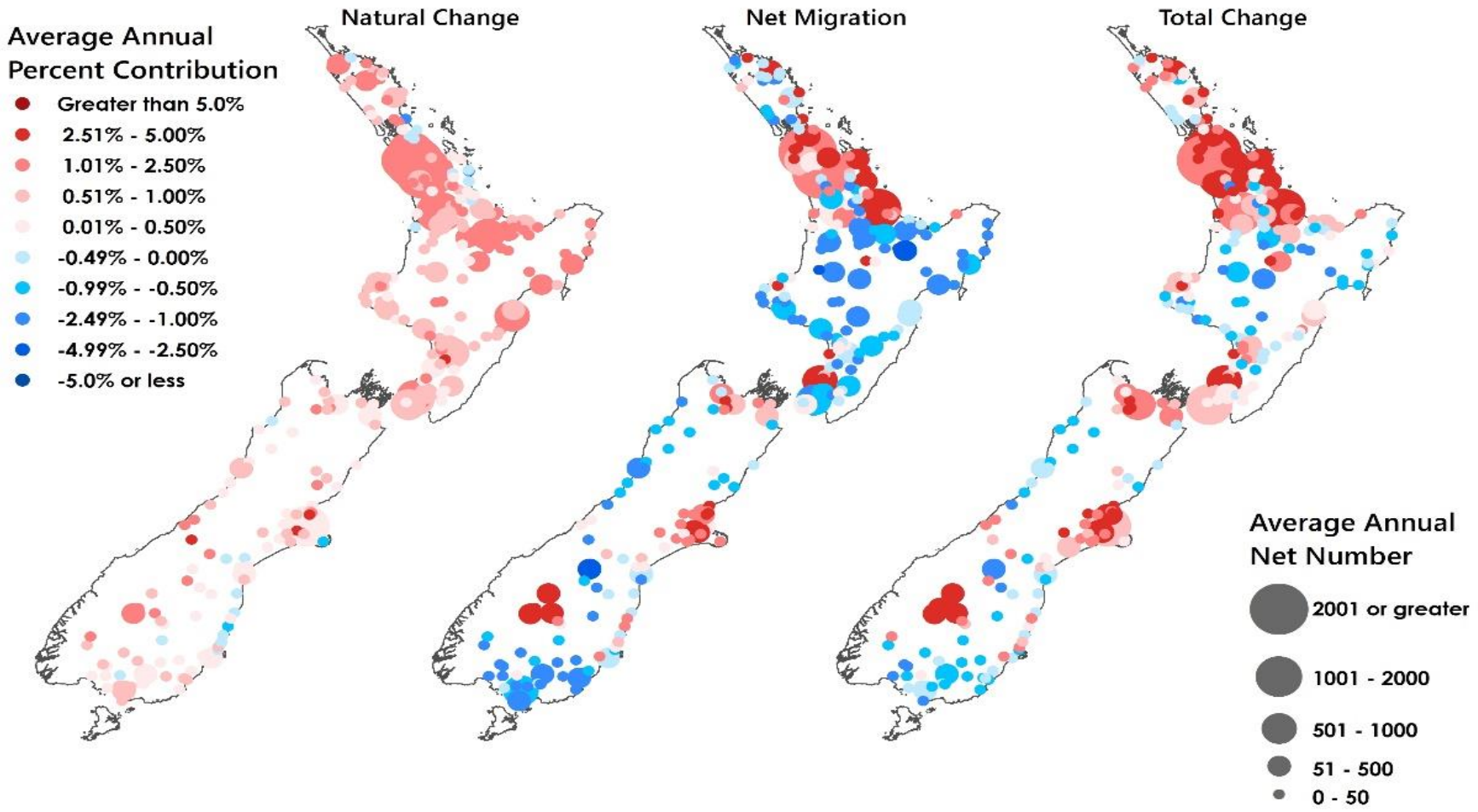
Another goal of the NZ Population Change Atlas is to provide an exemplary example of an online atlas to inform other developers of online map servers.

Combining technology, data and theory to …

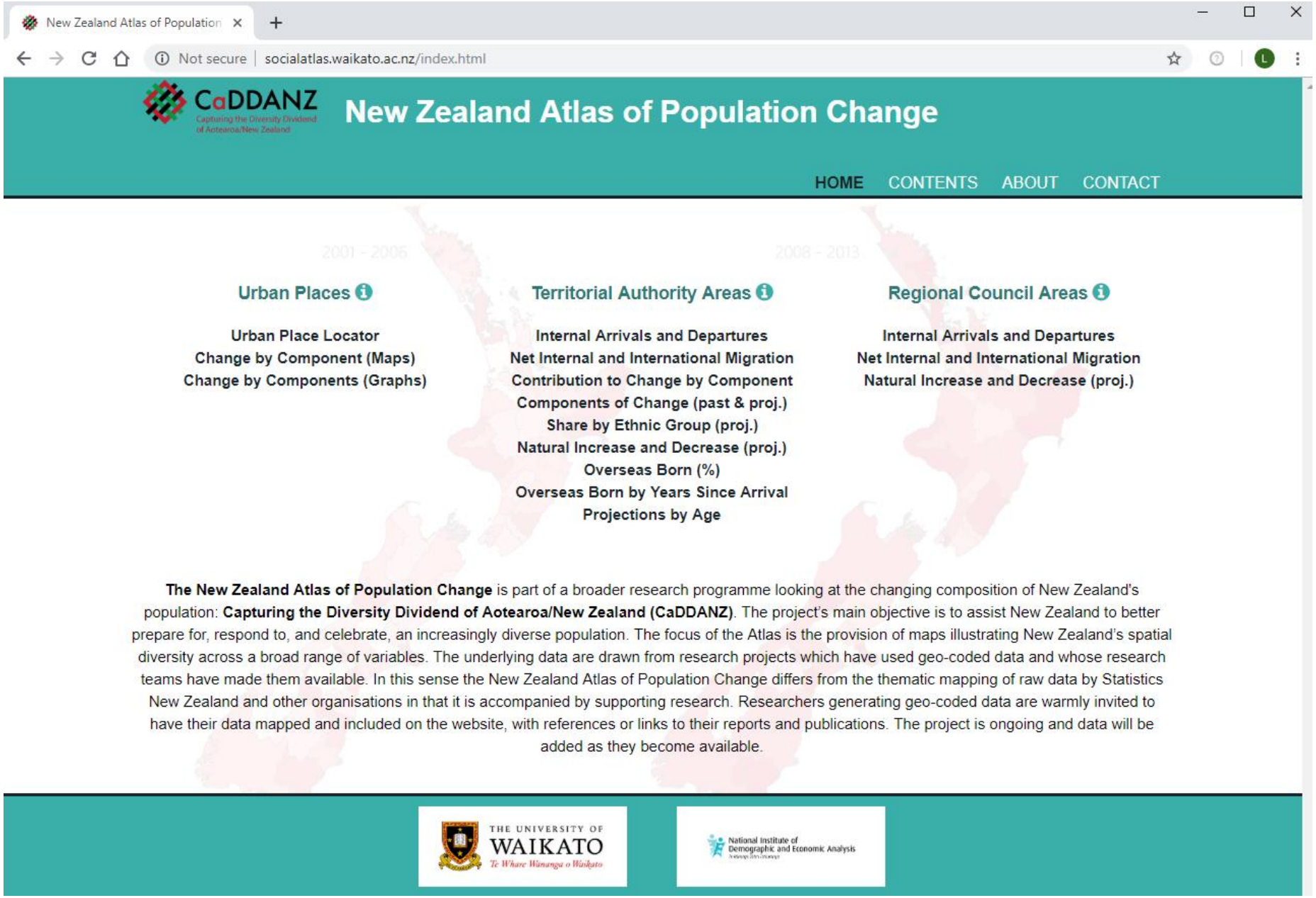


… tell a story using maps and graphs to show how the interaction of migration, aging, and natural change is shaping the population diversity of NZ's towns, cities and regions





Comparison of Natural Change, Net Migration, and Total Change for NZ Towns and Cities between 1976 and 2013


New Zealand Atlas of Population
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CaDDANZ
Capturing the Diversity Dividend of Aotearoa/New Zealand
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The New Zealand Atlas of Population Change is part of a broader research programme looking at the changing composition of New Zealand's population: Capturing the Diversity Dividend of Aotearoa/New Zealand (CaDDANZ). The project's main objective is to assist New Zealand to better prepare for, respond to, and celebrate, an increasingly diverse population. The focus of the Atlas is the provision of maps illustrating New Zealand's spatial diversity across a broad range of variables. The underlying data are drawn from research projects which have used geo-coded data and whose research teams have made them available. In this sense the New Zealand Atlas of Population Change differs from the thematic mapping of raw data by Statistics New Zealand and other organisations in that it is accompanied by supporting research. Researchers generating geo-coded data are warmly invited to have their data mapped and included on the website, with references or links to their reports and publications. The project is ongoing and data will be added as they become available.
THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato
National Institute of Demographic and Economic Analysis

Social Atlas | Urban Areas

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CaDDANZ

New Zealand Atlas of Population Change

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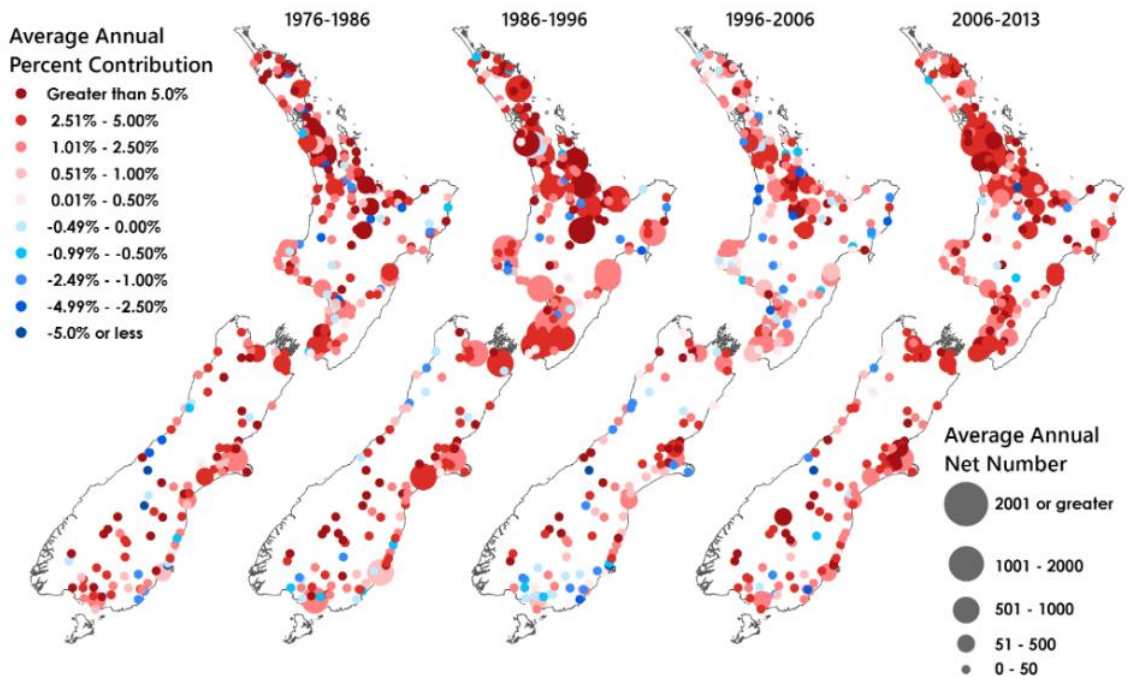
Retirement Zone (65+) Average Annual Total Change by Decade



Urban Places

Contribution of Natural Change and Net Migration to Total Population Change

Natural Change
1976-1986
1986-1996
1996-2006
2006-2013
Time-Series (Total)
15-24 Years Time Series
20-64 Years Time-Series
55-64 Years Time Series
65+ Years Time Series

Net Migration
1976-1986
1986-1996
1996-2006
2006-2013
Time-Series (Total)
15-24 Years Time-Series
20-64 Years Time-Series
55-64 Years Time-Series
65+ Years Time Series

Total Change
1976-1986
1986-1996
1996-2006
2006-2013

Go to graphs

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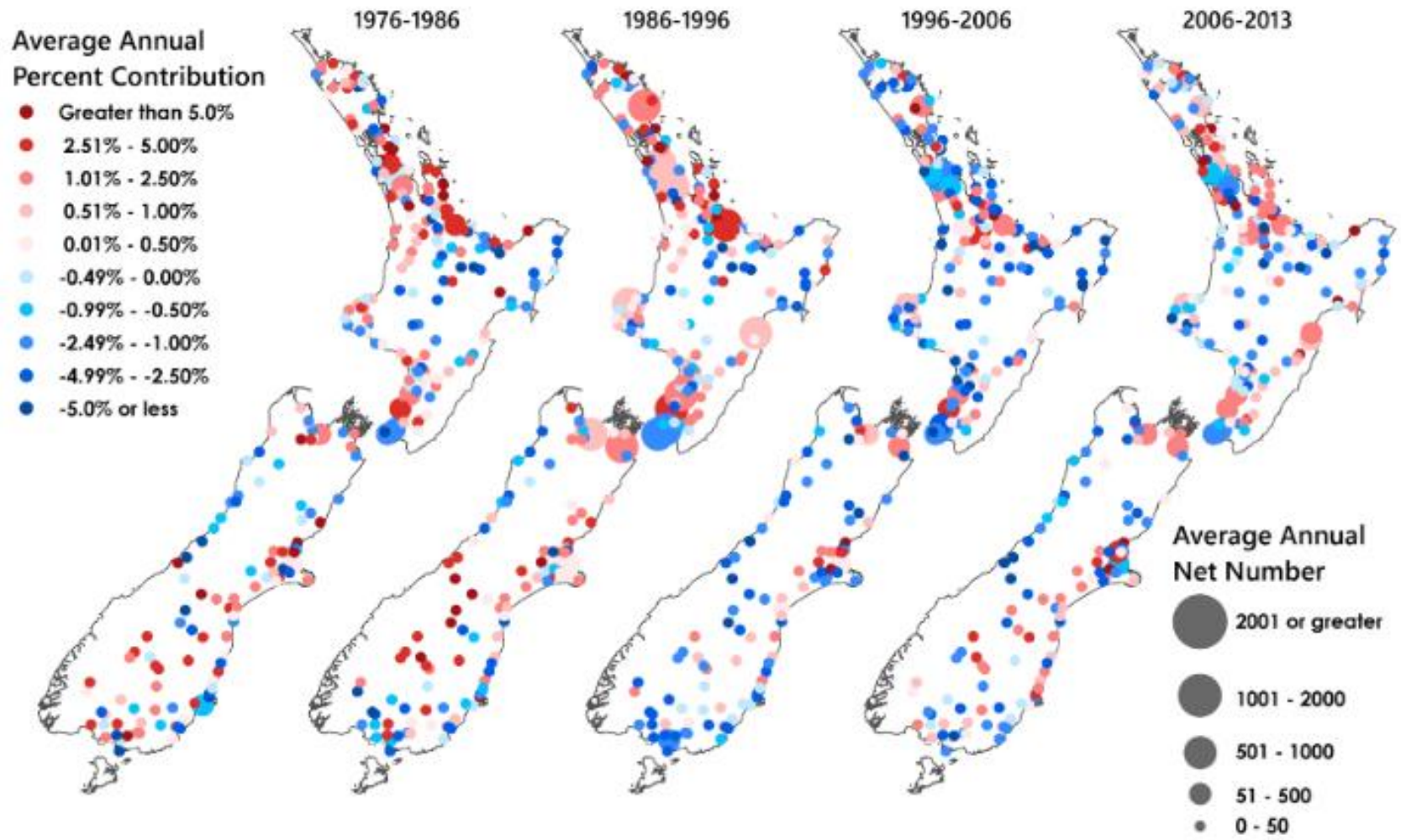
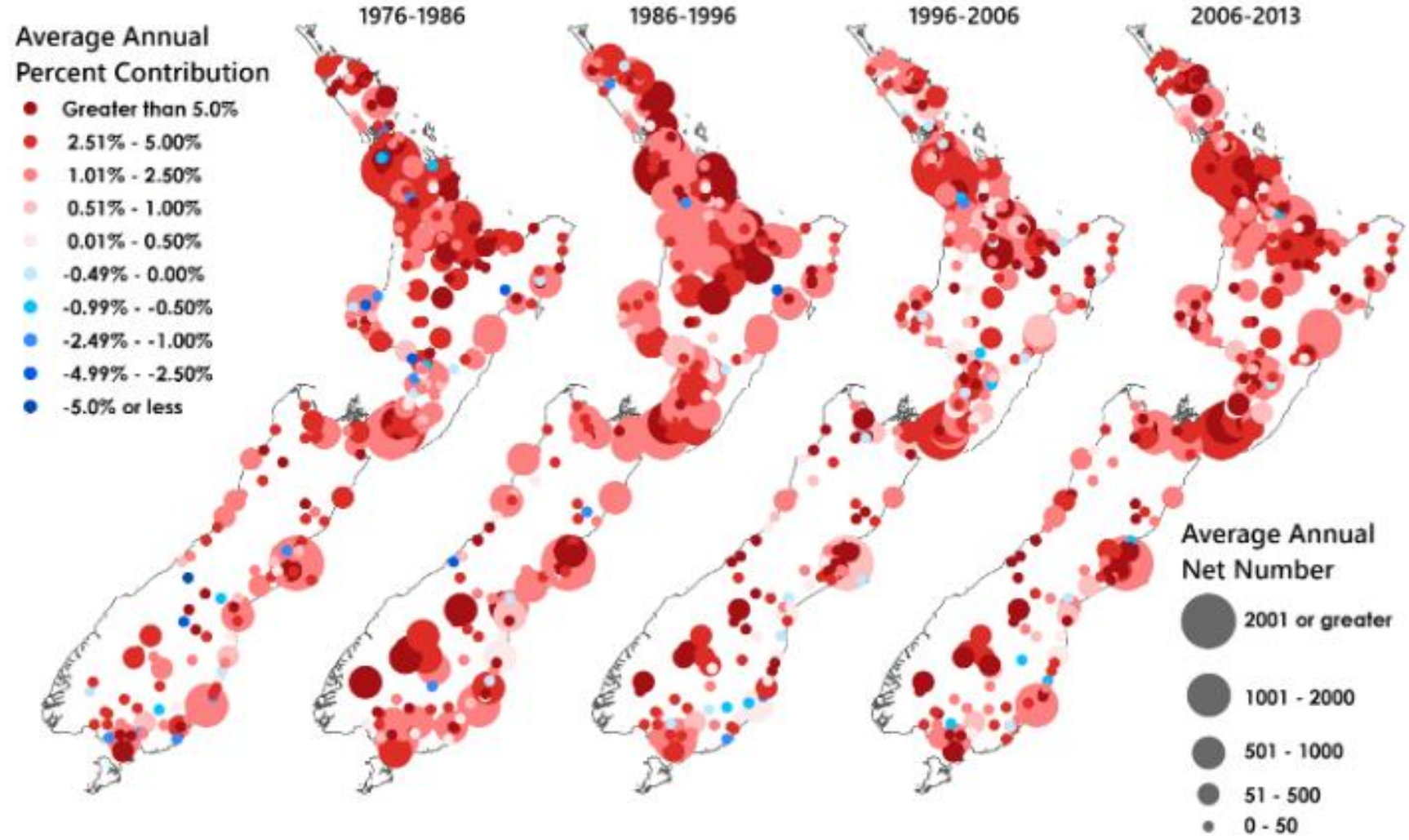
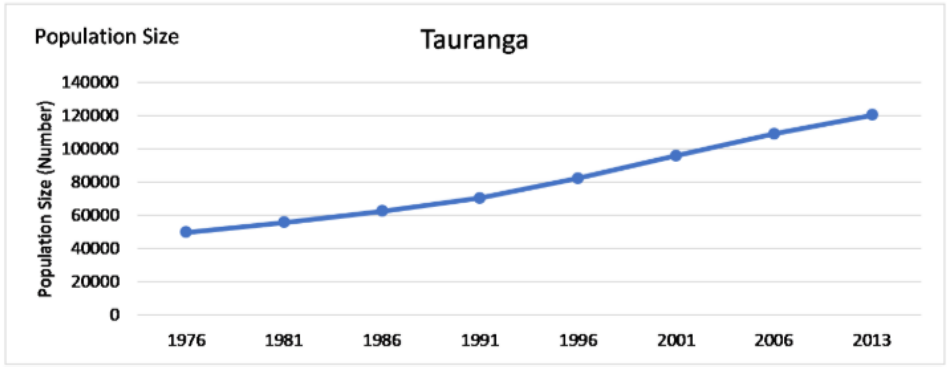
Period Maps: The **contribution of natural change** maps by **period** indicate the percentage of total population change for each area accounted for by natural increase (the difference between births and deaths). The **contribution of net migration** maps indicate the percentage of total population change for each area accounted for by net migration (internal and international combined). The **contribution of total net change** maps indicate the combined contribution of natural increase and net migration to total change for each area.

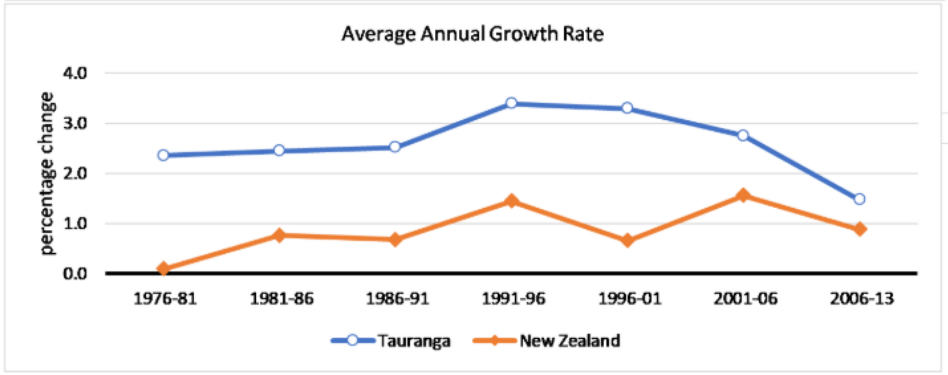
Retirement Zone (65+) Average Annual Net Migration by Decade



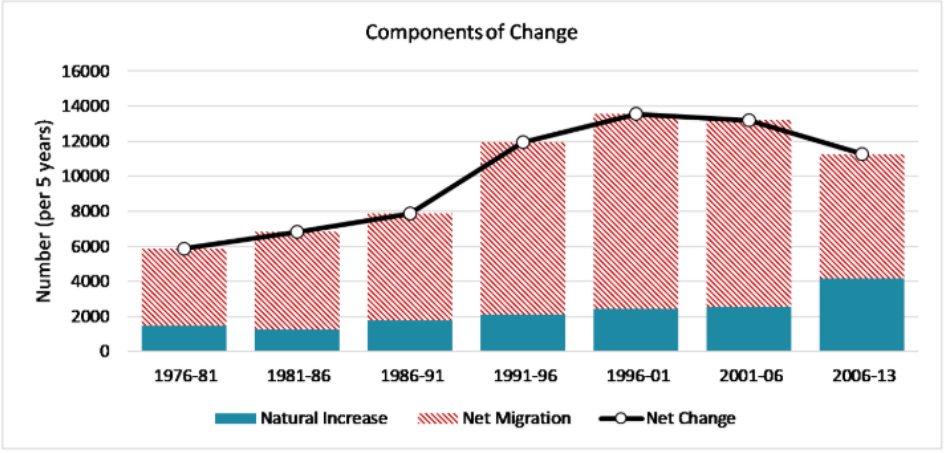
Retirement Zone (65+) Average Annual Natural Change by Decade







Tauranga



Jackson and Brabyn 2017

Urban Places

Population Trends and Components of Change (Numbers)

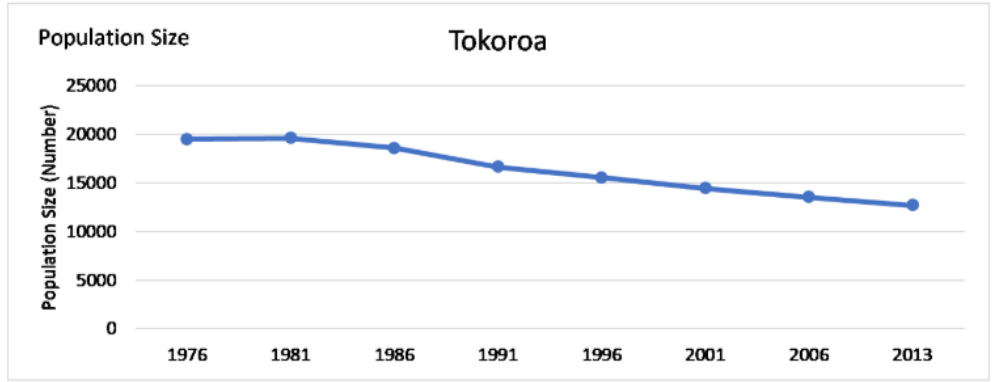
Choose Age Group/Total

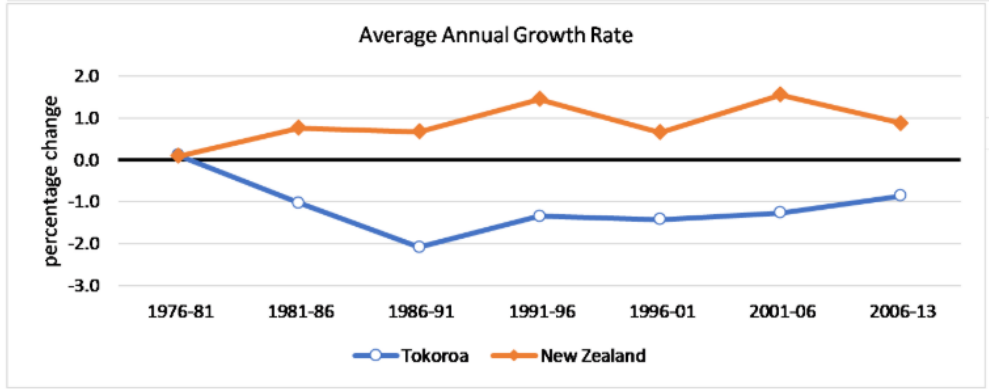
Total Population

Choose Urban Place:

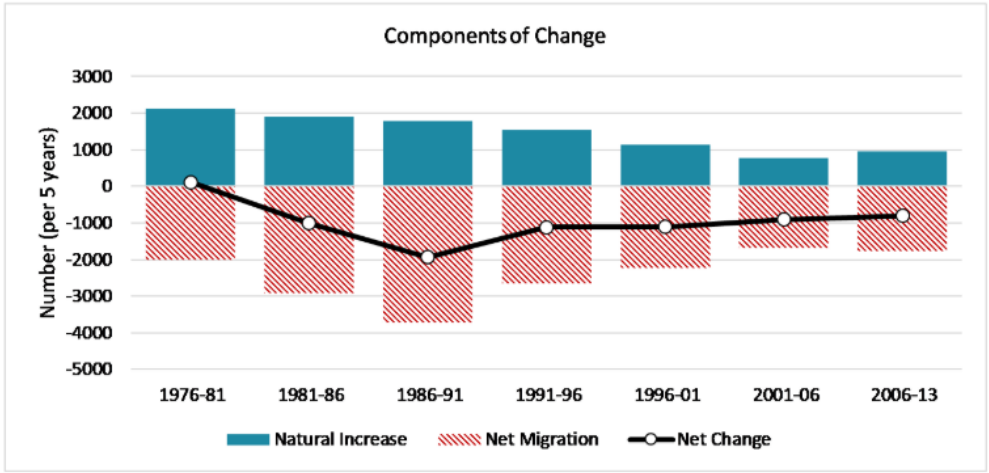
Rural Centre Wyndham
Shannon
Snells Beach
Stratford
Taihape
Taipa Bay-Mangonui
Tairua
Takaka
Taumarunui
Taupo
Tauranga
Te Anau
Te Aroha
Te Awamutu Zone
Te Kauwhata
Te Kuiti
Te Puke Community
Temuka
Thames
Timaru
Tokoroa
Turangi
Twizel Community
Upper Hutt Zone
Waiheke Island
Waihi Beach
Waihi
Waikouaiti

Go to maps





Tokoroa



Jackson and Brabyn 2017

Urban Places

Population Trends and Components of Change (Numbers)

Choose Age Group/Total

Total Population

Choose Urban Place:

Snells Beach
Stratford
Taihape
Taipa Bay-Mangonui
Tairua
Takaka
Taumarunui
Taupo
Tauranga
Te Anau
Te Aroha
Te Awamutu Zone
Te Kauwhata
Te Kuiti
Te Puke Community
Temuka
Thames
Timaru
Tokoroa
Turangi
Twizel Community
Upper Hutt Zone
Waiheke Island
Waihi Beach
Waihi
Waikouaiti
Waimate
Waiouru
Waipawa

Go to maps

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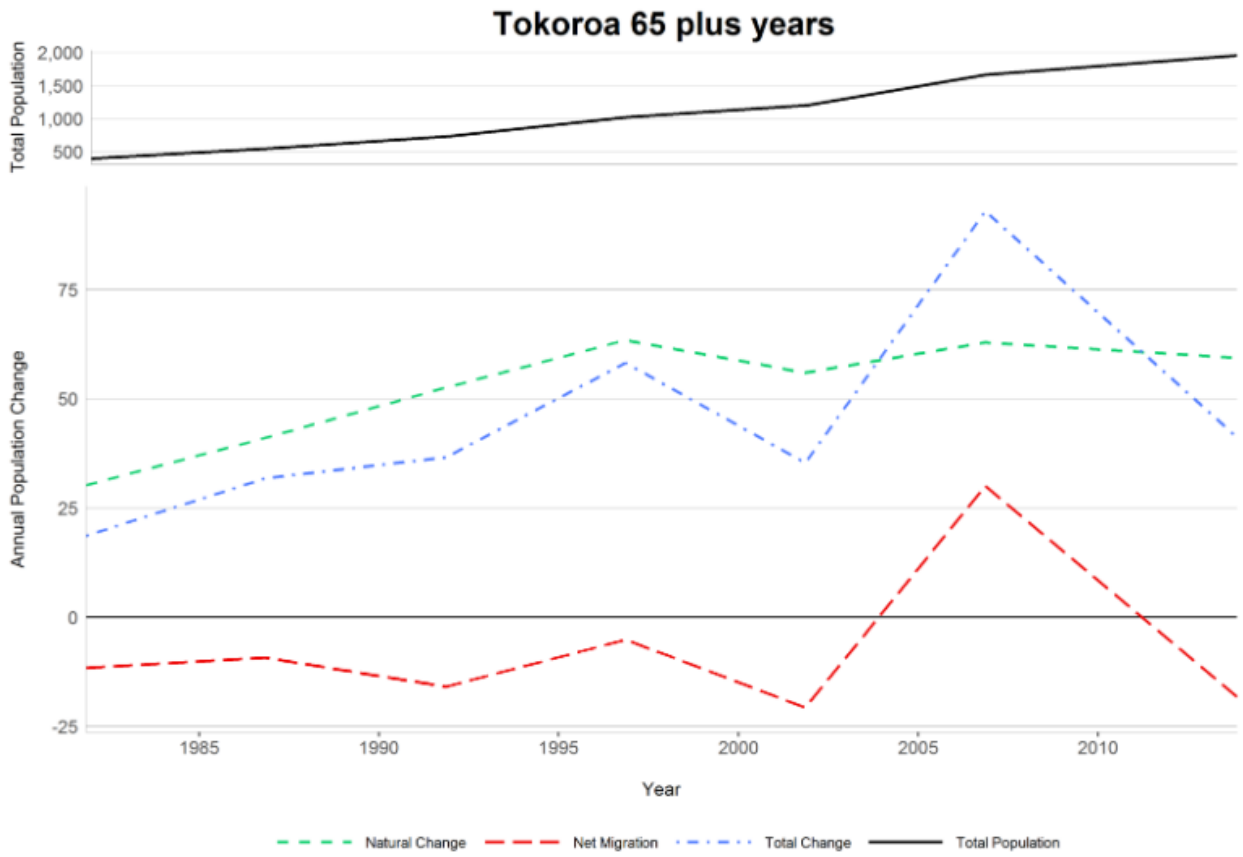


Urban Places

Population Trends and Components of Change (Numbers)

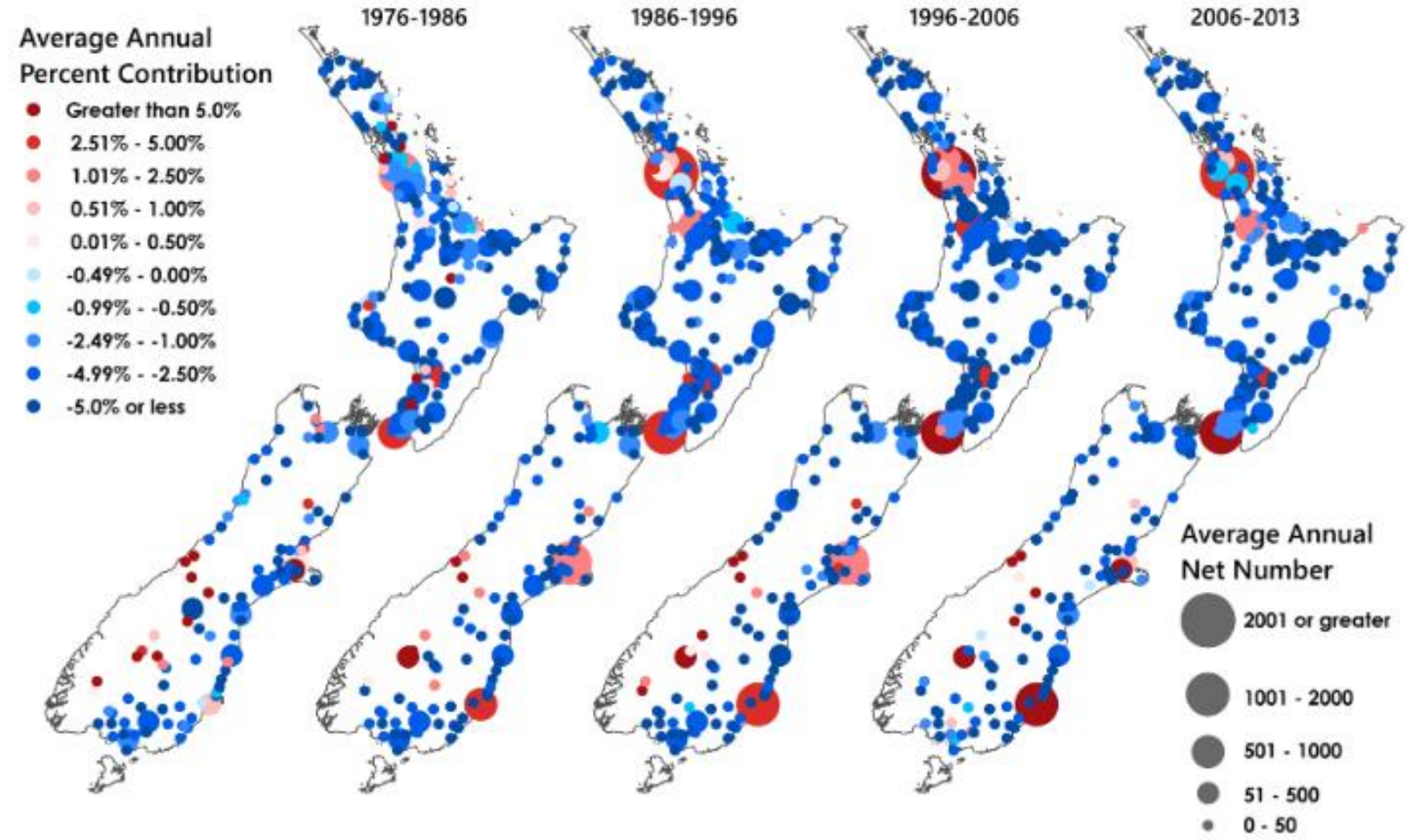
Choose Age Group/Total

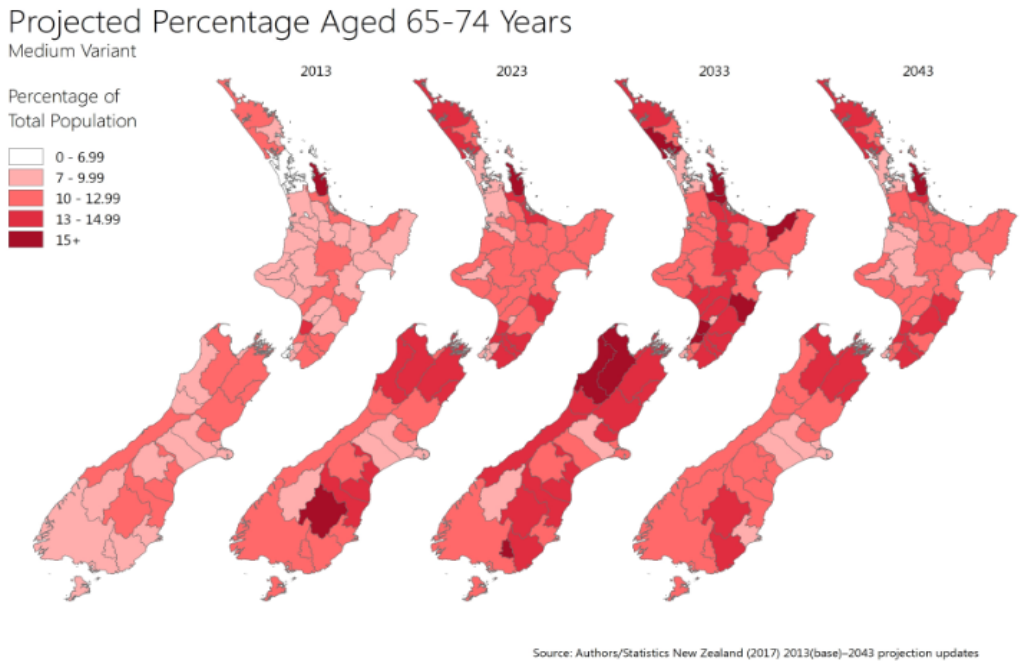
65+ Years

Choose Urban Place:

- Te Kauwhata
- Te Kuiti
- Te Puke Community
- Temuka
- Thames
- Timaru
- Tokoroa
- Turangi
- Twizel Community
- Upper Hutt Zone
- Waiheke Island
- Waihi Beach

Labour Market Entry Age (15-24) Average Annual Net Migration by Decade





Projected Population Share

by Territorial Authority

Variant

Low | Medium | High

Percent of Population

Up to 14 Years
15 to 24 Years
25 to 44 Years
45 to 54 Years
55 to 64 Years
65 to 74 Years
75+ Years
65+ Years
Working Age 20-69 Years

Ratios

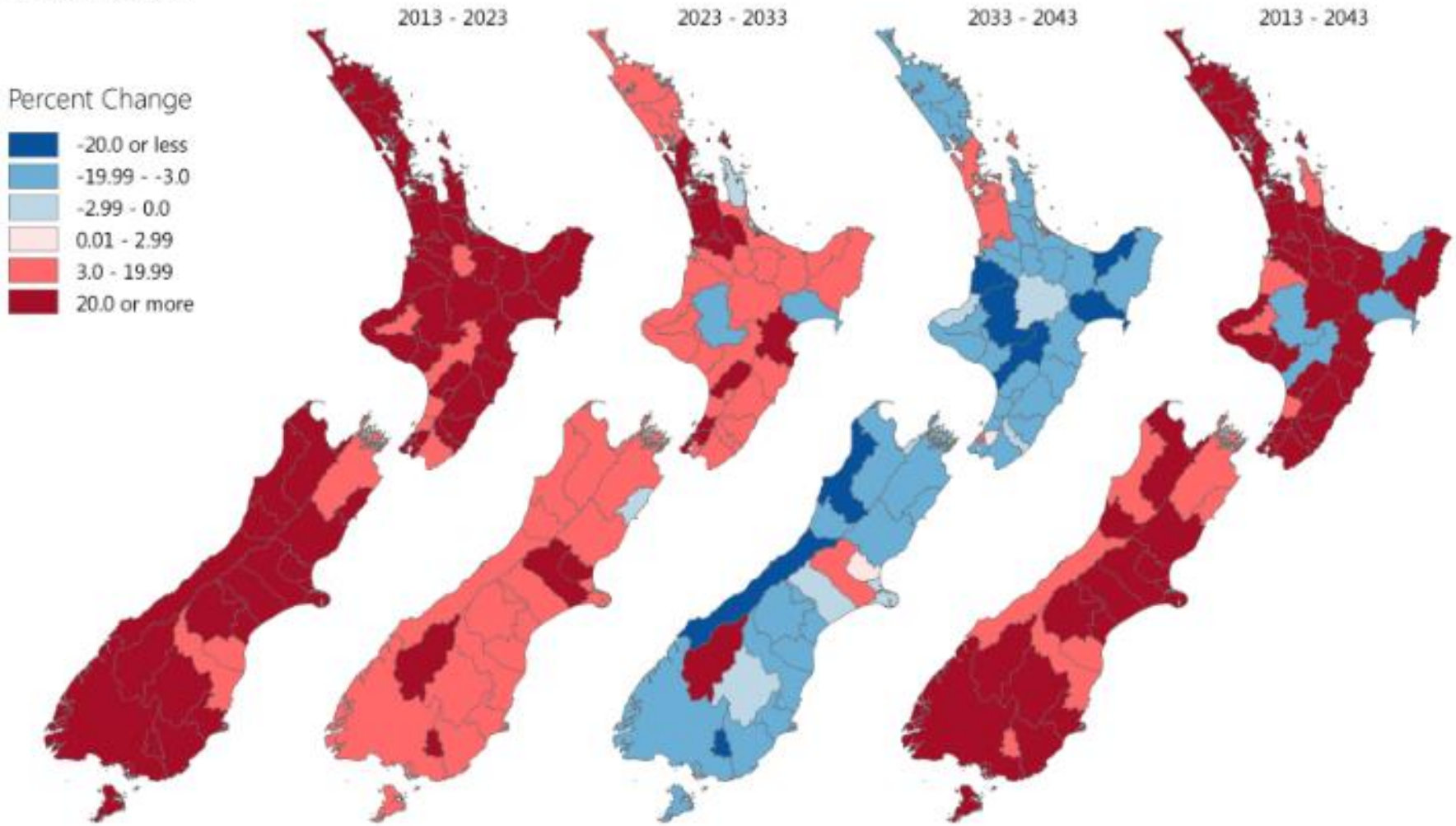
75+ Years : 65-74 Years
Labour Market Entry : Exit
Senior : Child

Go to Projected Percent Change

These maps show the percentage of each Territorial Authority Area's (TA) population by broad age group, according to Statistics New Zealand's High, Medium and Low Variant assumptions (Statistics New Zealand 2017, 2013(base)–2043 Update; data for key functional age groups are also given (such as the ratio of people at the main labour market entry ages to those approaching 'exit' age). The different indices illustrate the general progression of *structural ageing* (the general shift from lower to higher proportions at older ages and from higher to lower proportions at younger ages): at the older ages, the colours deepen over time, while at younger ages they lighten, but in each case do so differently for each TA. However, the generally progressive nature of the trends can also be confusing to interpret, as they are not strictly linear. The differences by variant also require some thinking about. For example, under the high variant assumptions there are *lower* proportions at older ages (and slower structural ageing), reflecting the greater impact of higher birth rates and higher migration at younger ages, while under the low variant assumptions, proportions at older ages are greater (and structural ageing is accelerated), reflecting the opposite (lower birth rates and migration at the younger ages). See for additional detail and important methodological notes

Projected Change in Percentage Aged 65-74 Years

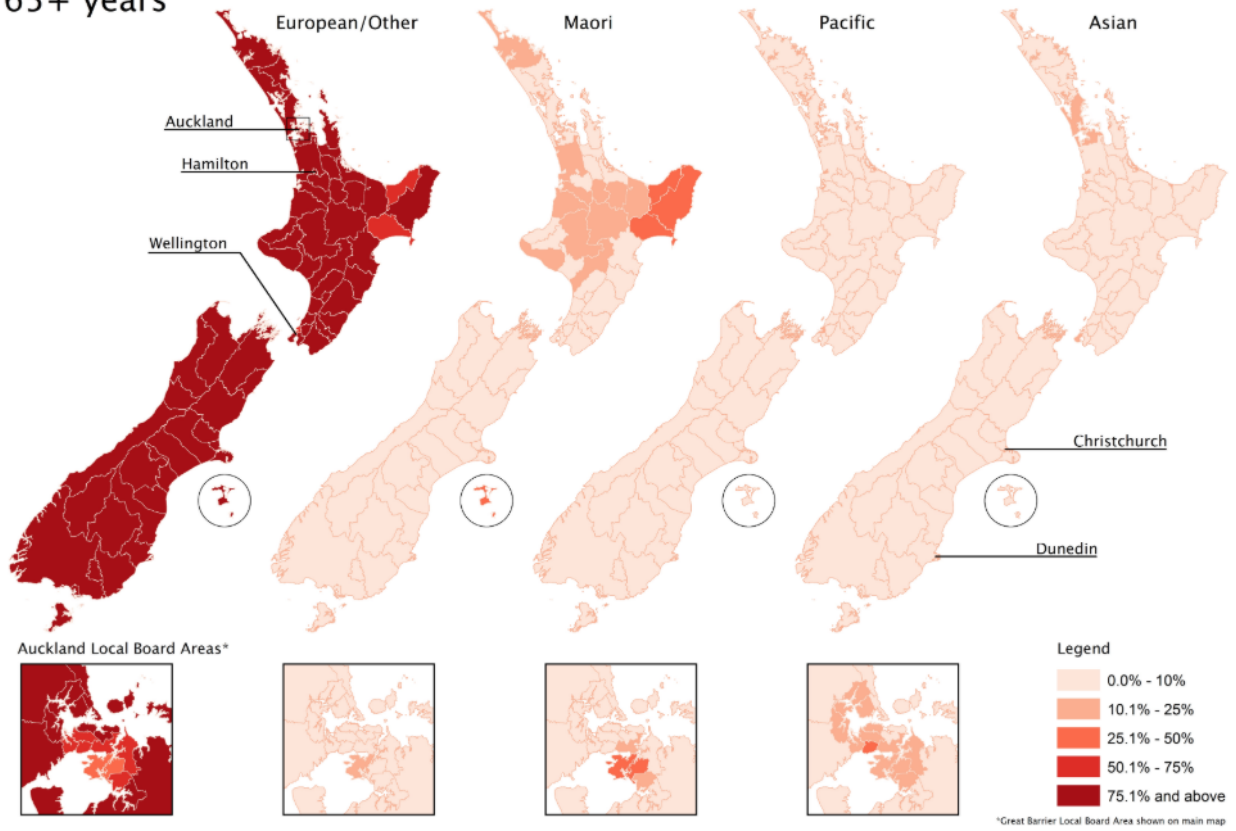
Medium Variant



Source: Authors/Statistics New Zealand (2017) 2013(base)–2043 projection updates

Major ethnic group percent share by age group, 2013

65+ years



Population Share (%) by Major Ethnic Group

2013 and Projected

2013

Previous Year | Projected

Age Share

0-14 years
15-24 years
25-39 years
40-54 years
55-64 years
65+ years

Ethnic Share

Asian
European
Maori
Pacific

Ethnic Overcount

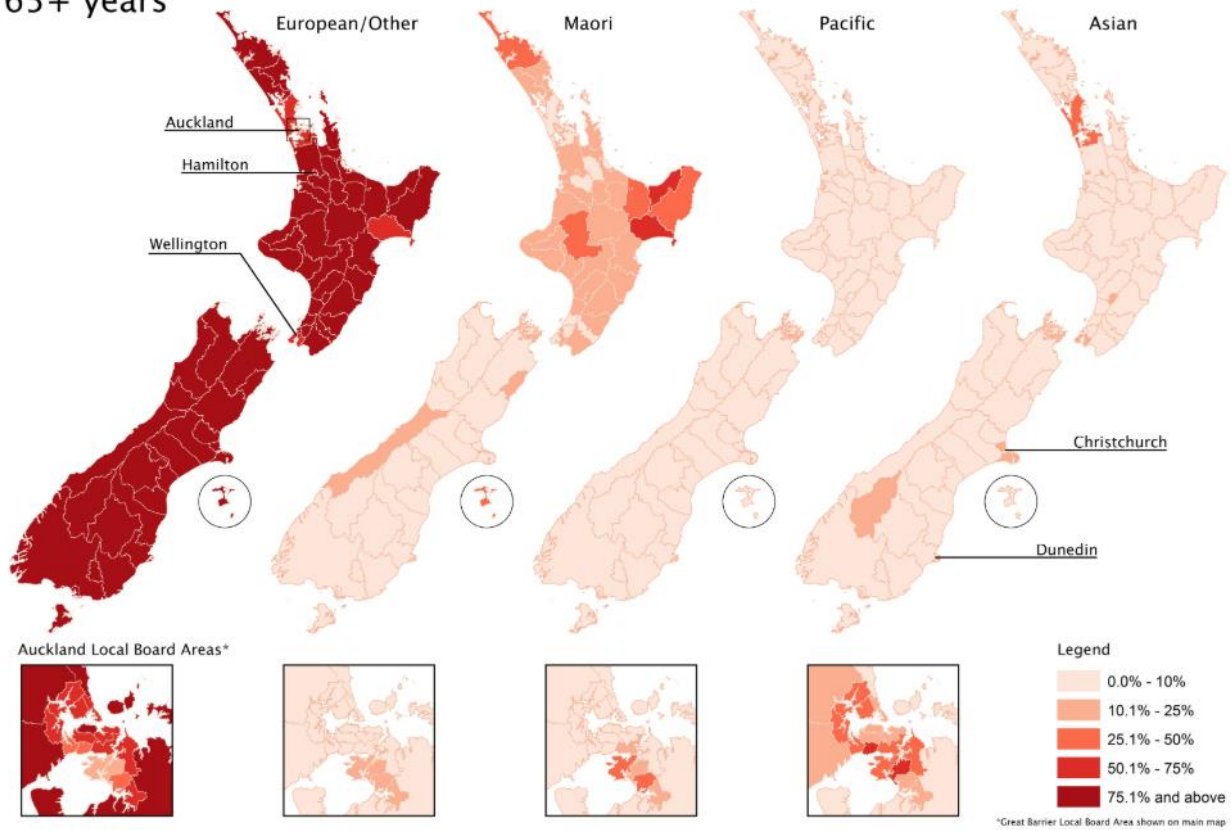
2013
2023
2038

The **share by age** maps show the percentage of each age group accounted for by each ethnic group. The **ethnic share** maps show the percentage of the total population accounted for by each ethnic group. The **ethnic overcount** maps show the extent to which **ethnic group responses** for each broad age group and each area exceed **head count** (that is, the extent to which people are counted into more than one ethnic group). Notably, the lower the age group, the higher the ethnic overcount, and vice-versa, reflecting increasing levels of intermarriage and partnering over time.

These data have been drawn from Statistics New Zealand NZStat (Subnational ethnic population projections 2013(base)-2038, medium variant) and converted for visualisation by the CaDDANZ Population Atlas research team.

Major ethnic group percent share by age group, 2038

65+ years



Population Share (%) by Major Ethnic Group

2013 and Projected

2038

Previous Year | Projected

Age Share

0-14 years
15-24 years
25-39 years
40-54 years
55-64 years
65+ years

Ethnic Share

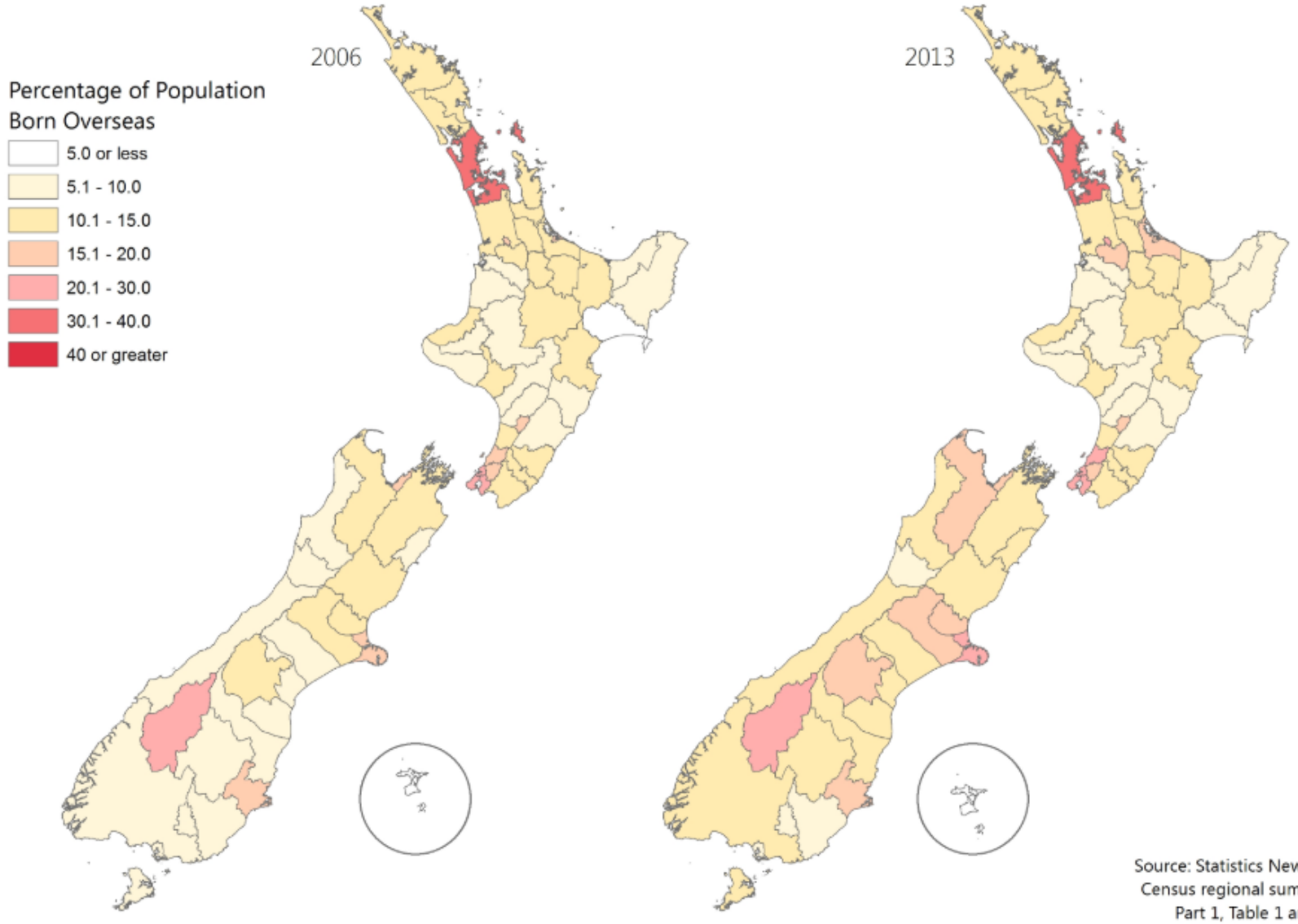
Asian
European
Maori
Pacific

Ethnic Overcount

2013
2023
2038

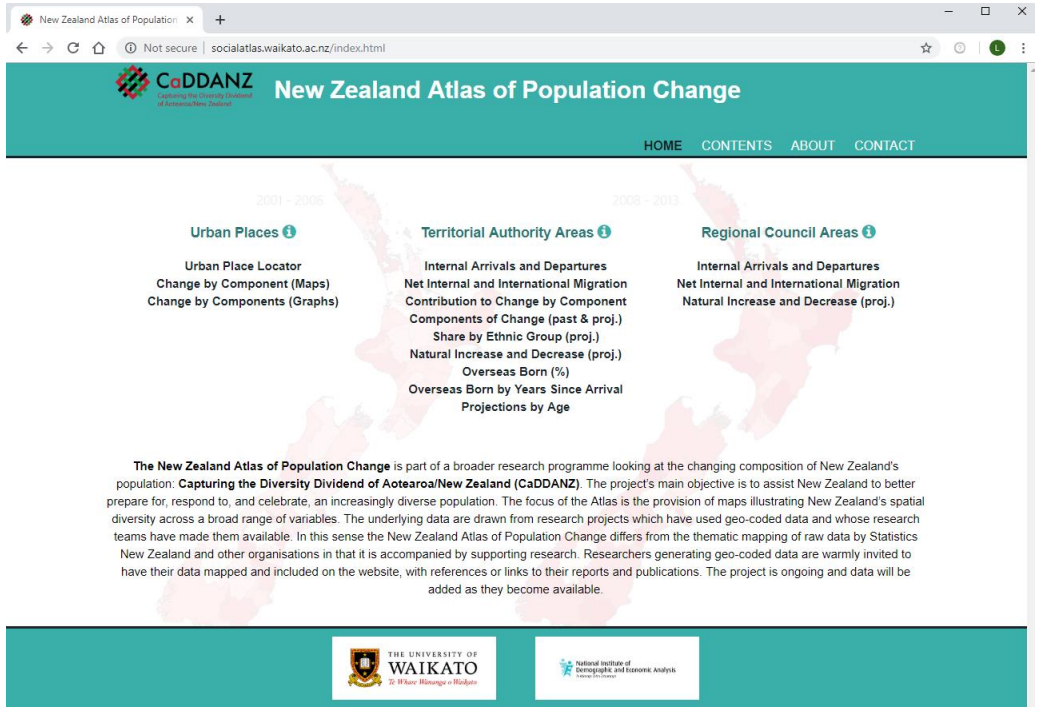
Percentage of Population Born Overseas

Usually resident population, 2006 and 2013, by Territorial Authority Area



Source: Statistics New Zealand 2013 Census regional summary tables – Part 1, Table 1 and Table 2

There are many more maps, graphs and explanations in the NZ Population Change Atlas

www. socialatlas.waikato.ac.nz

Thank You