

North Otago Freshwater Management Unit Economic Snapshot



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Economic Snapshot

Summary

The North Otago Freshwater Management Unit ('FMU')¹ is located on the east coast of the Otago Region. It extends from Waitaki bridge, down through the Oamaru, Moeraki and Palmerston townships to the mouth of the southern branch of the Waikouaiti River².

The North Otago FMU is the second driest area in Otago (after Central Otago) with an annual rainfall averaged around 500 – 700mm across most of the FMU. This part of coastal Otago typically records fewer days with a maximum air temperature above 25°C and a minimum temperature below 0°C than inland Otago.

The local communities and economy in the North Otago area are especially reliant on water resources. The FMU contains the largest proportion of primary production land uses (89%) amongst all of Otago's FMUs and both primary production and food processing require water as a necessary input. Local tourism is also dependent on water's aesthetic value and ecosystem services (e.g., being part of the natural landscape and maintaining green spaces).

This Economic Snapshot covers an area smaller than the North Otago FMU. The reason for this is that the communities at the southern end (i.e., Buckland's Crossing, Waikouaiti and Karitane) have closer socio-economic ties with Dunedin than Oamaru. These areas are included in the Economic Snapshot for Dunedin and surrounds. Therefore, the analysis in the North Otago Snapshot focuses on communities located in Waitaki district who have economic ties with Oamaru. For the purpose of this analysis, this area is referred to as Otago North.

In 2018, Otago North was home to around 20,000 residents (or around 9% of the population of Otago). In the 12 years between 2006 and 2018, there was a 10% (or 2,000 people) increase in population. Although this growth is lower than the average for Otago (+16%) or New Zealand (+17%), it is still sizable for a small population base. Most residents (nearly two in three) live in Oamaru, while over one-quarter of the population lives in rural areas. The remaining 10% is settled in smaller rural service centres, i.e., Palmerston, Kakanui, Hampton, Maheno, Moeraki, and Herbert.

Compared to the average for Otago as a whole, a higher share of the population in Otago North does not have formal qualifications or is not earning a higher income (\$70k and above per annum). Furthermore, Otago North residents are less likely to migrate elsewhere and there are fewer international migrants moving into the area.

¹ The National Policy Statement for Freshwater Management (NPSFM) requires regional councils to identify Freshwater Management Units in the region. A freshwater management unit (FMU) is defined in the NPSFM as "all or any part of a water body or water bodies and their related catchments, that a regional council determines (under clause 3.8 in the NPSFM) is an appropriate unit for freshwater management purposes.

² <https://www.orc.govt.nz/plans-policies-reports/developing-a-new-land-and-water-regional-plan-for-otago/north-otago-fmu>



Image 1. Moeraki Boulders, Moeraki

Source: <https://www.farmstaynewzealand.co.nz/waitaki-valley-kurow/walks-tracks/>

There are six main industry sectors in Otago North, providing more than two thirds of all jobs here. The Manufacturing industry and Tourism Related industries³ provide around 21% and 19% of all jobs respectively. Agriculture (10%), Health Care and Social Assistance (8%), Education and Training (7%), and Construction (7%) account for another one third of the employment in the area.

An understanding of Māori history and the Māori economy is essential for policy development and policy impact assessment. Not only does pre-European Māori history help shape modern day New Zealand, but the Māori economy is also integral to the New Zealand economic system. ORC is partnering with Aukaha⁴ and Te Ao Marama⁵ to develop an overview of Kāi Tahu history and economy. This work will be included in the economic impact assessment.

Geography and Climate

The North Otago FMU extends from Waitaki bridge, down through Oamaru, Moeraki, Palmerston townships and to the mouth of the southern branch of the Waikouaiti River. There are high natural character values in the upper catchments off the Kakanui, Waianakarua, Trotters Gorge and the South Branch of Waikouaiti.

Figure 1 below provides a map of the North Otago FMU with its topography.

³ Tourism is represented by a range of industries including (but not limited to) accommodation, cafes and restaurants, and scenic and sightseeing transport.

⁴ Aukaha is 'a Rūnaka based consultancy service with Governance from five Rūnaka owners: Te Rūnanga o Waihao, Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou, Hokonui Rūnanga' <https://aukaha.co.nz/about/>

⁵ Te Ao Mārama Inc represents Ngai Tahu ki Murihiku tangata whenua for resource management and local government purposes. <https://www.facebook.com/Te-Ao-Marama-INC-1669235646693199/>



Figure 1. Map of the North Otago FMU

In total, the North Otago FMU has a land area of around 300,000 hectares (or roughly 9% of the Otago Region), making it a mid-sized FMU in Otago by land area. The largest FMU is the Clutha/Mata-Au FMU (or 65% of the region), which is divided into five rohe (Upper Lakes, Dunstan, Manuherekia, Roxburgh and Lower Clutha); the smallest FMU is the Dunedin & Coast FMU (or 3% of the region).

Generally-speaking, the North Otago FMU has a mild climate with oceanic influences. This part of Otago typically records fewer days with a maximum air temperature above 25°C and a minimum temperature below 0°C than inland Otago. During summer, temperatures usually range from 10 to 20 °C but can sometimes reach up to around 30 °C. Winter temperatures typically range from 3 to 12 °C, with some frosts and occasional snowfall⁶. This FMU is the second driest area in Otago after Central Otago. Between 1981 and 2010, annual rainfall averaged around 500 – 700mm in most of the FMU area with around 800 – 100mm in the north-west. Perhaps due to the dryer climate, irrigation schemes are a feature of this area.

⁶ <https://docs.niwa.co.nz/library/public/NIWAsts67.pdf>

Socio-economic background

Land use

Within the North Otago FMU, there are roughly 265,000 hectares (89% of the FMU's land area) of primary production land use, which is the largest proportion amongst Otago's five FMUs. Drystock farming (incl. sheep and beef, mixed stock, beef, deer and sheep) accounts for over half of total primary production land use. Dairy farming (including dairy support) takes up around 14% of the Rohe's agricultural land use (or 27% of Otago's dairy land use) and is mainly concentrated on the north-east side of the FMU. The proportion of dairy land use in this FMU is the second highest amongst all FMUs and Rohe in Otago, after the Lower Clutha Rohe where dairy land use accounts for 17% of the total agricultural land use. Other land (such as conservation land, rivers and lakes, and Otago harbour) cover an area of around 22,000 hectares (7%). Table 1 gives estimates of the extent of the main land use activities, while Figure 2 shows the distribution of these land uses within the FMU.

Table 1. The extend of Land use in the North Otago FMU
Source: Otago Land Use Map (Great South, 2021)

Land use in the North Otago FMU	Total land in this FMU (ha)	Share of land use in this FMU	Share of land use in Otago that is present in this FMU
Total land use	298,380	100%	9%
Primary Production-use	265,016	89%	12%
Sheep and beef	131,120	44%	10%
Dairy (incl. support and other livestock)	42,622	14%	27%
Mixed Livestock (incl. support)	24,640	8%	8%
Plantation Forest	18,224	6%	14%
Other Agriculture use (incl. other animals and grazing pasture)	15,719	5%	16%
Beef	10,077	3%	25%
Deer (incl. specialised and majority deer and mixed stock)	8,770	3%	16%
Sheep	8,557	3%	5%
Arable	4,761	2%	62%
Horticulture (incl. flower and bulb growers and nurseries, orchards, and vineyards)	526	0%	5%
Urban use	11,202	4%	10%
Other (incl. conservation land, rivers, and lakes etc.)	22,162	7%	3%

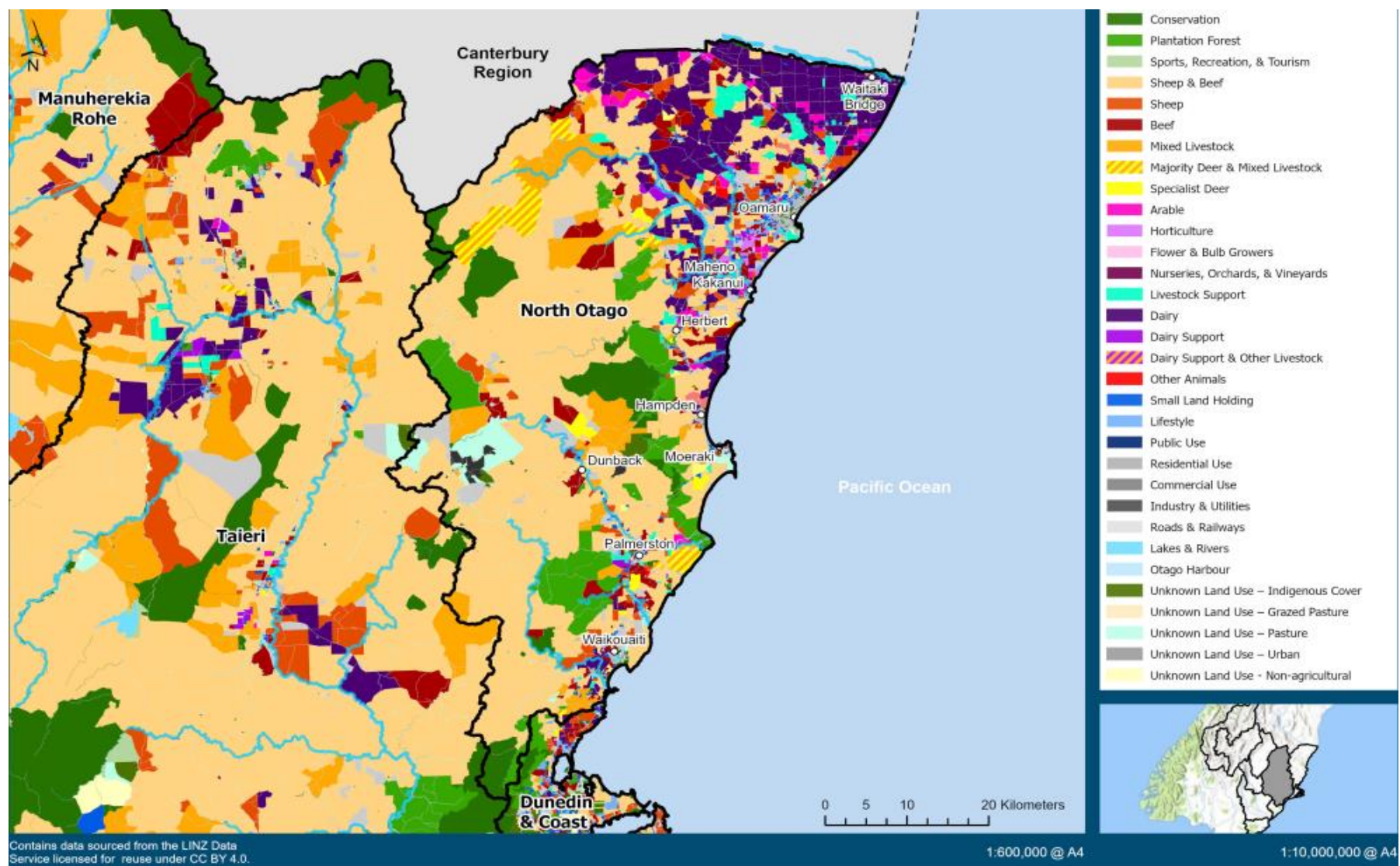


Figure 2. Land uses within the North Otago FMU
 Source: Otago Land Use Map (Great south, 2021)

The people and the economy⁷

The North Otago FMU lies mostly in the Waitaki District and the southern end of the Dunedin City. The communities that are geographically located in the Dunedin City, i.e., Buckland's Crossing, Waikouaiti and Karitane, have closer economic ties with Dunedin than Oamaru⁸. Hence these communities were included in the Economic Snapshot for Dunedin and surrounds. The analysis in this Snapshot is for the communities located in Waitaki district, who have more economic ties with Oamaru. The analysis refers to this area as Otago North, as opposed to the North Otago FMU.

As of 2018, there were approximately 20,000 residents in Otago North (or 9% of the region's population), which was an increase of around 2,000 people (or 10%) from 18,000 residents in 2006. The population growth is slower than that of the Otago Region (+16%), and New Zealand (+17%) but is still sizable for a smaller population base. Most people in Otago North (close to two in three) live in Oamaru, while more than one in four people lived in the rural area. The remaining 10% of residents lived in smaller service centres⁹.

Oamaru is the main town in the Waitaki District. One of the best-known attractions of Oamaru is the architecture of the Victorian Precinct, where the original buildings were made from locally quarried limestone. Today, the Precinct is filled with restaurants and cafés, and artisan shops selling local products such as craft beer and whisky, cheese and limestone crafts. Adjacent to the Precinct is a steampunk-themed playground and bike park for the kids. It is a great facility for both local residents and tourists.



Image 2. Oamaru's Victorian Heritage Celebrations.

Source: 100% pure New Zealand <https://www.newzealand.com/in/oamaru/>

⁷ Most data in this section are based on the 2018 NZ Census.

⁸ These communities are closer to Dunedin than to Oamaru; residents are more likely to work and play in various places in Dunedin than in Oamaru.

⁹ Namely Hampden, Herbert, Maheno, Moeraki, Kakanui, and Palmerston.

Figure 3 below shows the population growth rates in Otago North over the period 2006 to 2018. The rural area in Otago North experienced the fastest growth (16%), followed by Oamaru (8%). The population in the smaller service centres in Otago North are mostly stable with a growth rate of less than 2%.

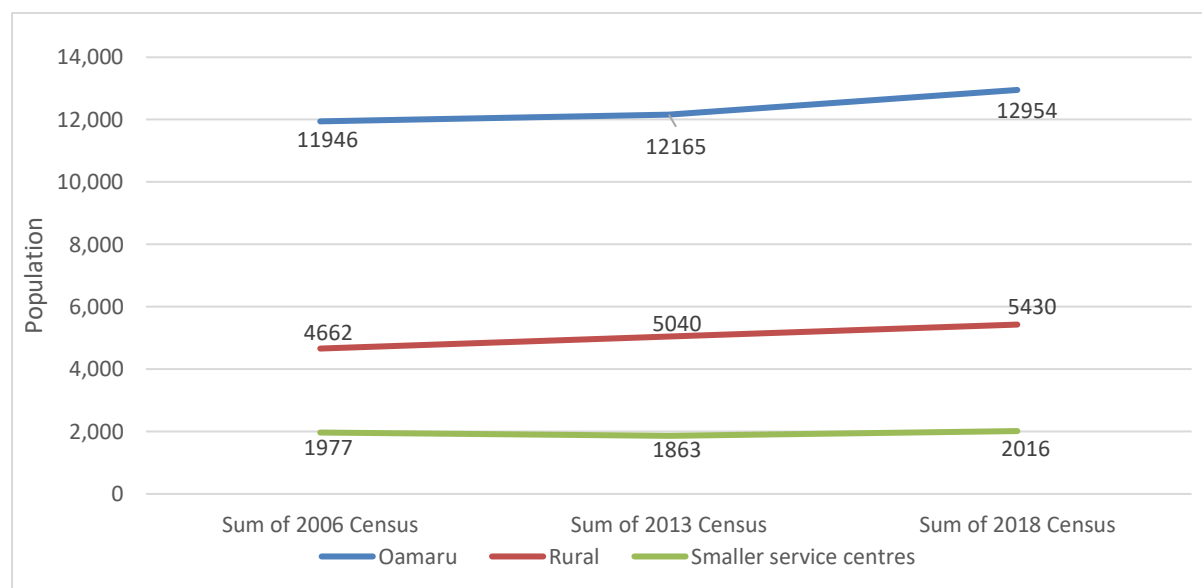


Figure 3. Otago North population by selected group, 2006 – 2018
Source: Stats NZ Census 2018

Figure 4 below shows the population in Otago North by broad age categories. Overall, rural residents tend to be younger. Over one in three people were under 30 years of age, while just under 15% residents were aged 65+. People living in smaller service centres, such as Palmerston and Kakanui, tend to be more mature, with one in four people being under the age of 30 while nearly 30% residents are aged 65+. Oamaru residents' age structure sits in between that of rural and smaller service centres in Otago North.

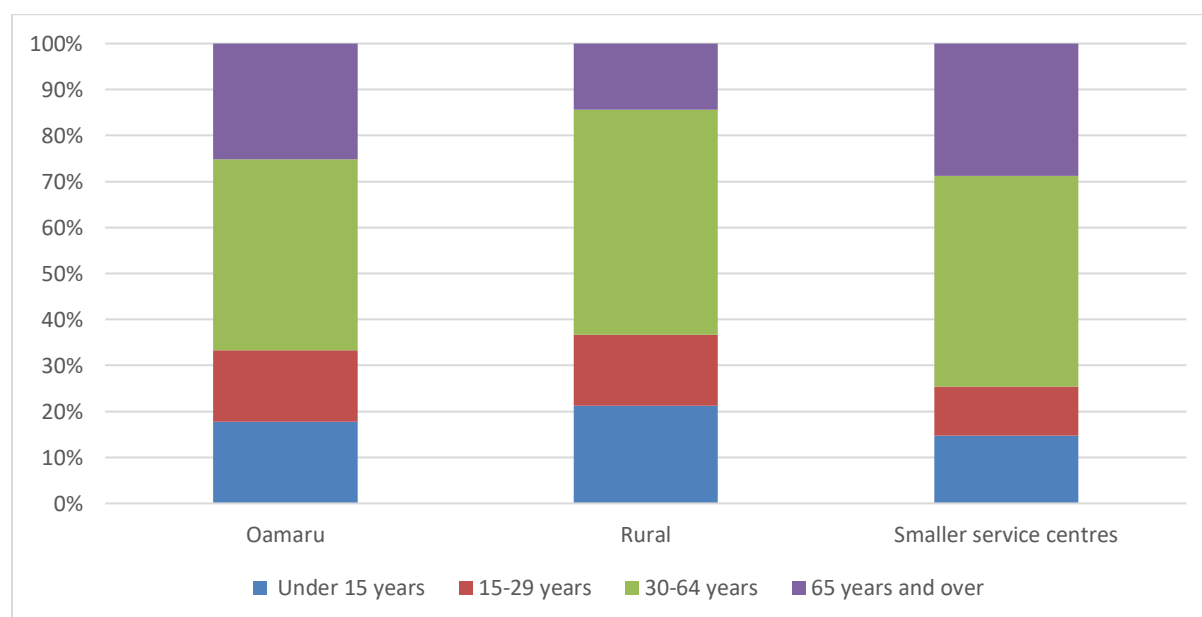


Figure 4. Otago North Population distribution by age group, 2018
Source: Stats NZ Census 2018

As of 2018, 8% of the population in Otago North self-identified as Māori. This proportion is gradually increasing over time (it was 5% in 2006 and 6% in 2013) and this reflects the trend in Otago as a whole. Around 70% of the population in Otago North lived in the same residence as one year ago, which is higher than the regional average of 65%. Roughly 1% of the population were from overseas, which is lower than the regional average of 3%.

The total business activities in Otago North accounted for around 9,500 'jobs' measured by employment counts, which does not include working proprietors¹⁰. In New Zealand, approximately 20% of all jobs are working proprietors¹¹. In 2020, the largest industries by employment (using ANZSIC 2006¹²) in Otago North were Manufacturing (mainly for food, 21%), Tourism Related industries¹³ (Retail trade (10%), Accommodation and Food Services (8%), Arts and Recreation Services (1%)). In addition, Agriculture (10%), Health Care and Social Assistance (8%), Education and Training (7%), and Construction (7%) were also large employers in the area. Together, these industries provide nearly three in four jobs in the area.

Some of the jobs are amongst the higher paying occupations while others are amongst the lower paying occupations. For example, in 2019, the median earnings for jobs in Public Administration and Safety and Construction were around \$64,000 and \$53,000 respectively, which were higher than the \$48,000 average median earnings across all industries. The average median earnings for jobs in the Health Care and Social Assistance and Education and Training sectors were both around \$49,000, which is on par with the average median earnings across all industries. By contrast, the average median earnings of the Tourism Related industries and Administrative and Support Services sector are amongst the lowest paid jobs. In 2019, the average median earnings of jobs in the Tourism Related industries were \$29,000 and \$27,500 per annum respectively¹⁴.

¹⁰ Employee Counts data are used by Stats NZ's Business Frame. Employment Counts is a head count of salary and wage earners for a reference period. It includes most employees but does not capture all working proprietors –people who pay themselves a salary or wage (or 'drawings').

¹¹ 2019 numbers according to Stats NZ Linked employer-employee data
<http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7240#>.

¹² Australian and New Zealand Standard Industrial Classification (ANZSIC) was jointly developed by Statistics New Zealand and the Australian Bureau of Statistics. ANZSIC system classifies entities based on their main business activity and is used to collect and analyse data across industries. The 2006 edition is arranged into 19 broad industry divisions and 96 industry subdivisions.

¹³ Tourism is represented by a range of industries including (but not limited to) accommodation, cafes and restaurants, and scenic and sightseeing transport.

¹⁴ <http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7108#>



Image 3. Whitestone cheese, Oamaru - store in the front and factory at the back
Source: google maps

When considering different income sources in Otago North, the proportion (66%) of the working age population (15 – 65 years) that earned a work-related income in 2018 was smaller than the Otago average (79%). At that time, the proportion of the population (16%) that received some type of government benefit¹⁵ was similar to that of Otago average (15%). The proportion of residents that received superannuation or a veteran's pension (33%) was considerably higher while the number of people who received no income (4%) was similar to the Otago average of 21% and 5% respectively. A lower proportion of the population received student allowance (1%) than the Otago average (4%).

Figure 5 below shows that, compared to the Otago average, Otago North has higher proportion of the population without a formal qualification (not necessarily an indication of skilfulness). In addition, fewer people (just under 10%) are in a higher personal income bracket (\$70,001 or more per annum) compared to the Otago average of around 12%.

¹⁵ The type of benefits includes ACC or private work accident insurer, job seeker, sole parent support, supported living payment, other govt benefits, govt income support payments, war pensions or paid parental leave, other sources of income including support payments from people who do not live in my household.

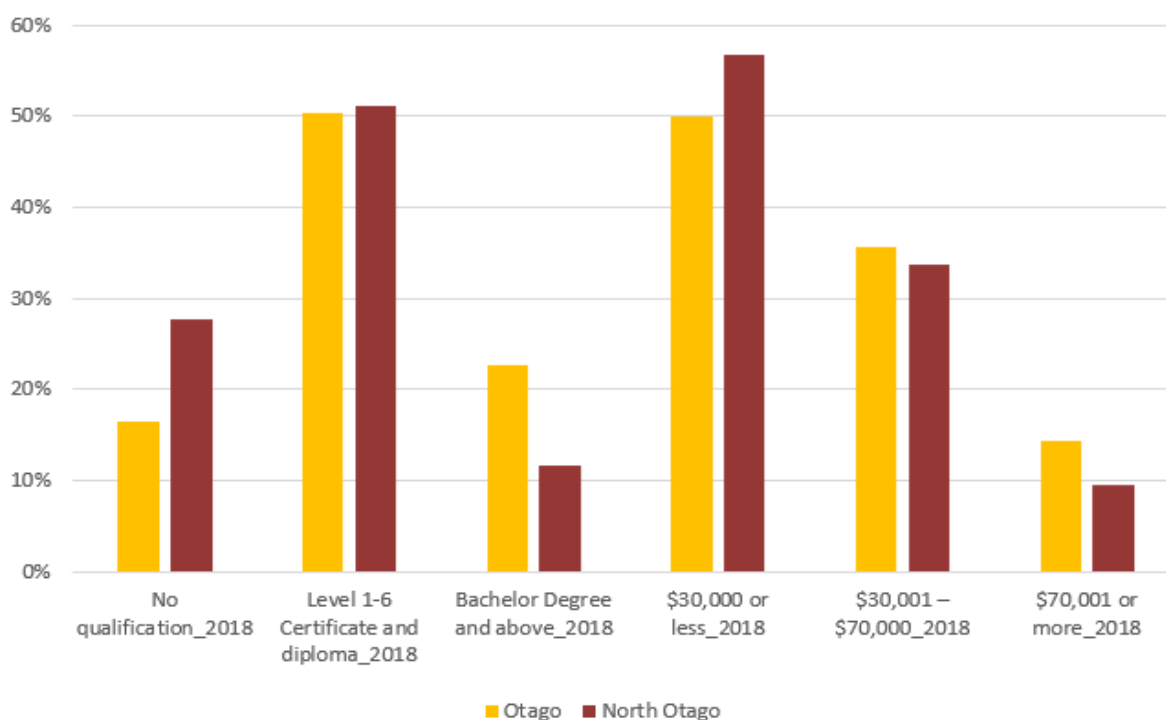


Figure 5. Academic qualification and personal annual income, North Otago vs Otago average, 2018

Source: Stats NZ Census 2018

University of Otago’s New Zealand Deprivation Index estimates the relative socio-economic deprivation of an area. The current version of the index is derived from 2018 census and combines census data relating to income, home ownership, employment, qualifications, family structure, housing, access to transport and communications, and access to internet¹⁶. In the Deprivation Index, decile 1 represents areas with the least deprivation while decile 10 represents areas with the most deprivation when measured using these factors.

Figure 6 shows the relative deprivation in 2018 by Census Statistic Area 1 (SA1, which ideally ranges between 100 and 200 residents and a maximum of about 500)¹⁷ in Otago North. The map only shows Census SA1 for agriculture and urban land developed land; conservation land and plantation forestry are shaded green because they are generally unpopulated.

Figure 6 along with Figure 6.1 – 6.4 show that, in general, rural areas towards the coast tend to have lower deprivation scores of below 5, rural areas further inland tend to have higher deprivation scores of 5 and above. Generally, the closer to the centre of a town/service centre, the higher the deprivation score. The area with the lowest deprivation score in Otago North is around the outskirts of Oamaru, especially around Weston.

¹⁶ <https://www.otago.ac.nz/wellington/departments/publichealth/otago830998.html>

¹⁷ SA1s were introduced as part of the Statistical Standard for Geographic Areas 2018 (SSGA18); <https://www.stats.govt.nz/assets/Uploads/Retirement-of-archive-website-project-files/Methods/Statistical-standard-for-geographic-areas-2018/statistical-standard-for-geographic-areas-2018.pdf>

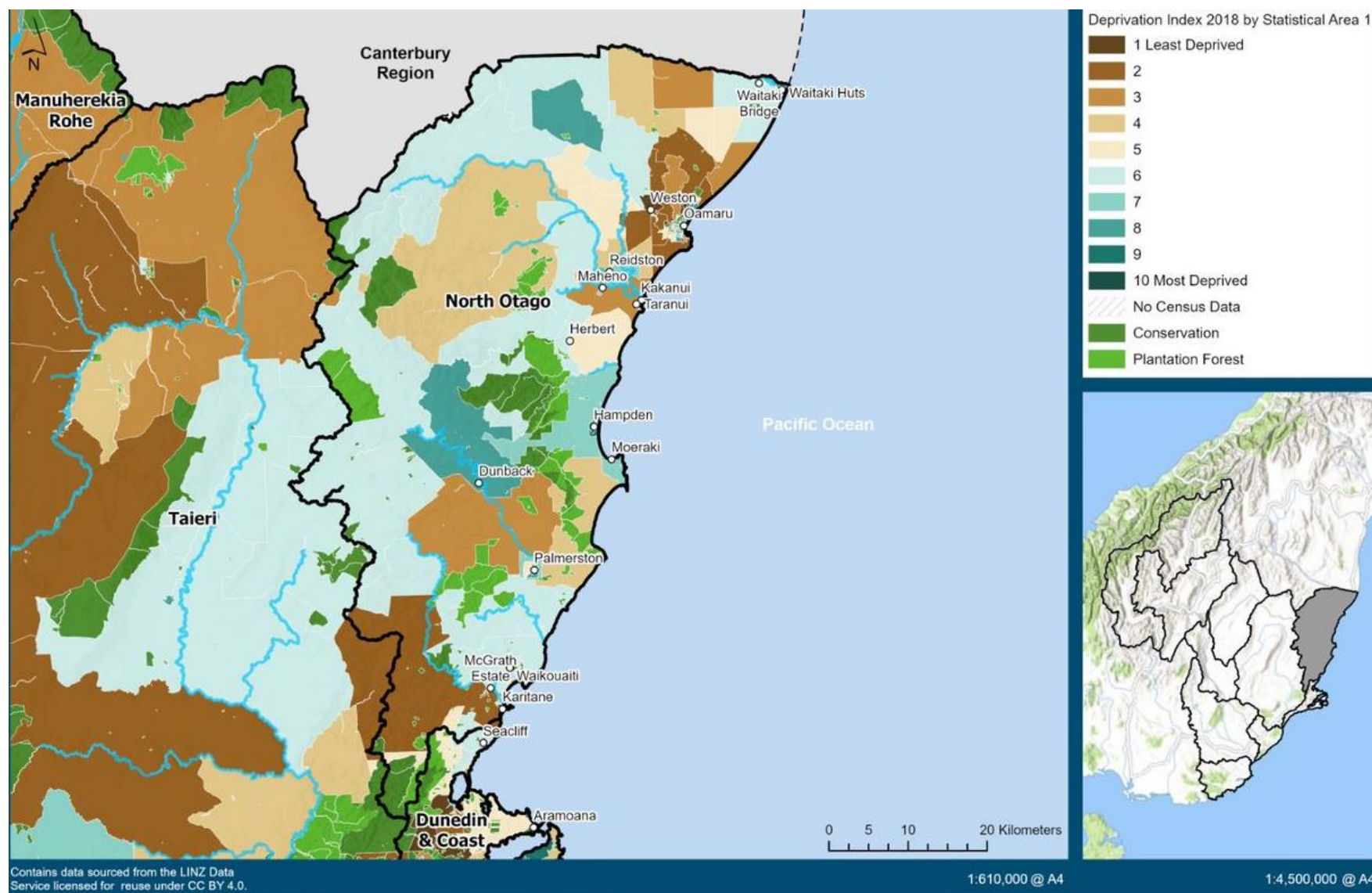


Figure 6. Deprivation Index (by SA1) for Otago North

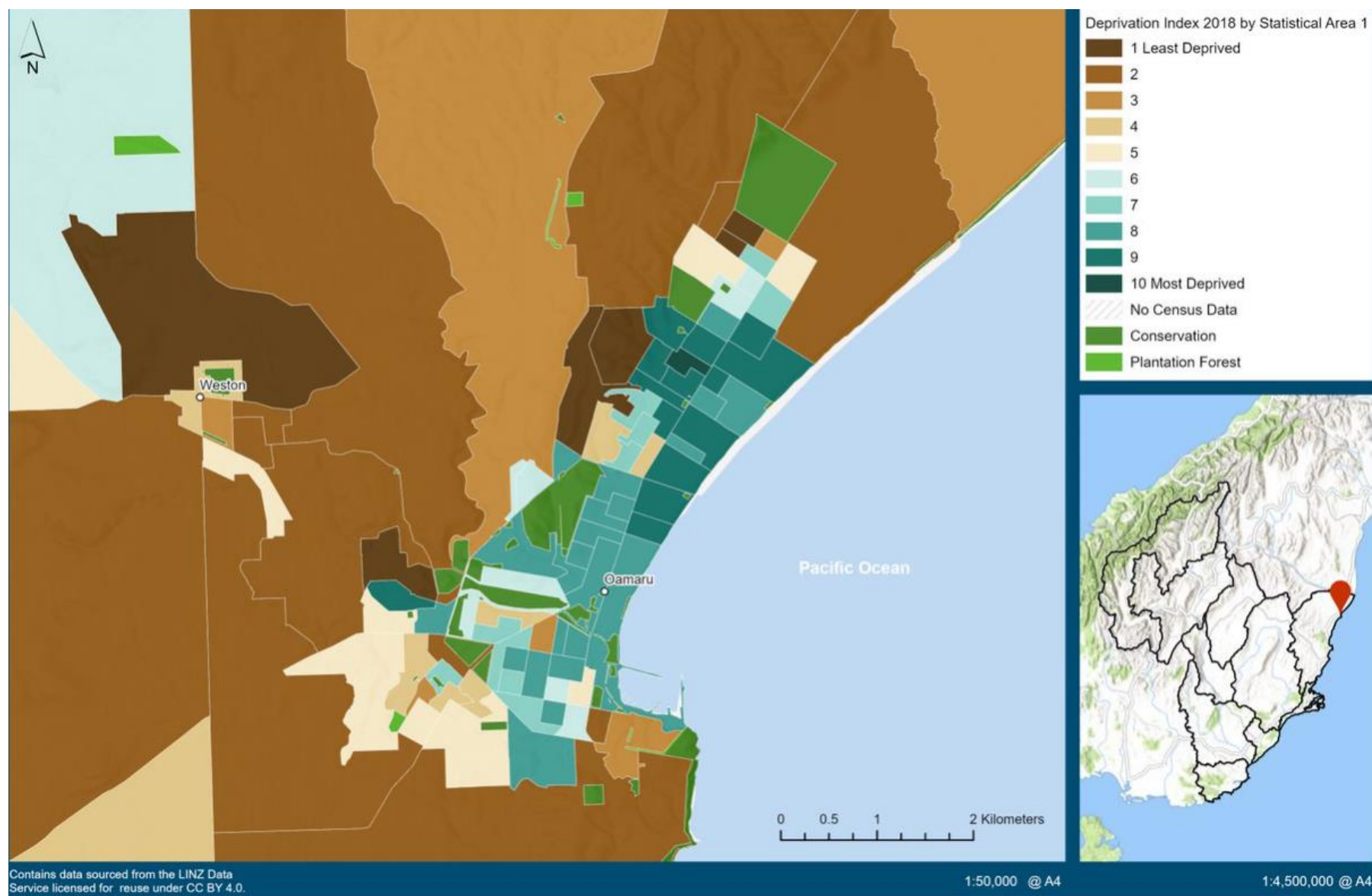


Figure 6.1. Deprivation Index (by SA1), Oamaru

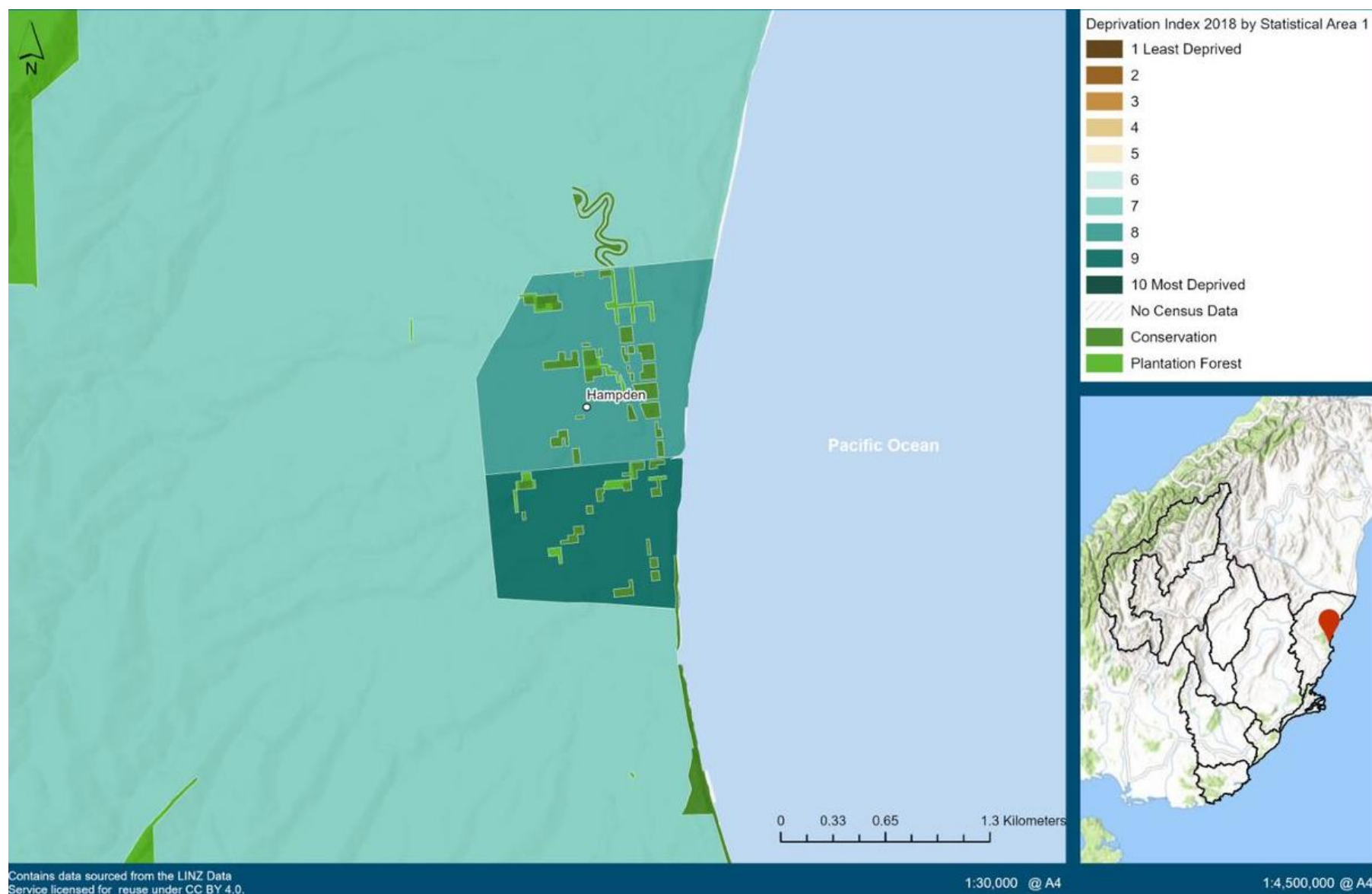


Figure 6.2. Deprivation Index (by SA1), Hampden

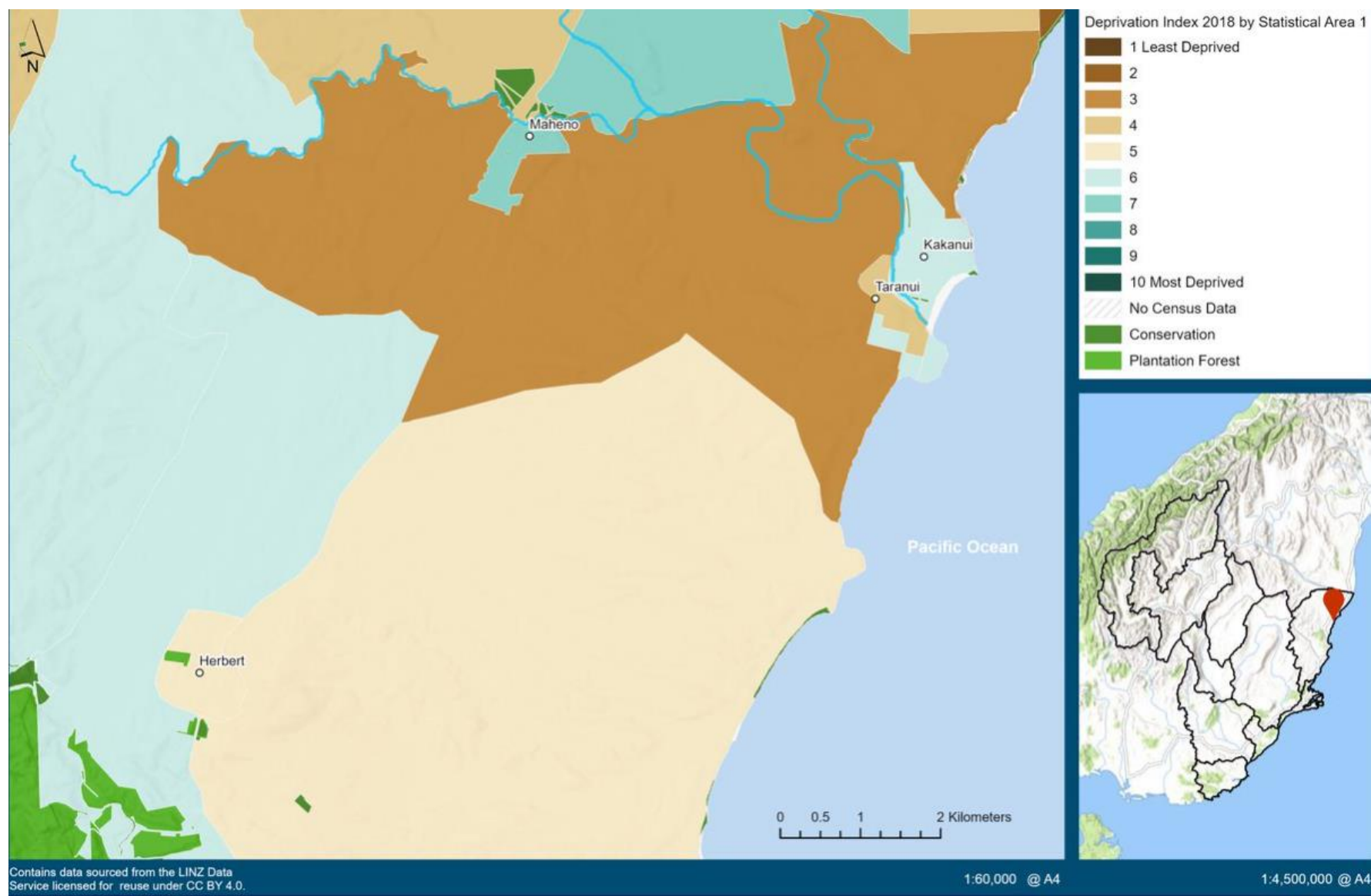


Figure 6.3. Deprivation Index (by SA1), Maheno, Kakanui and Herbert

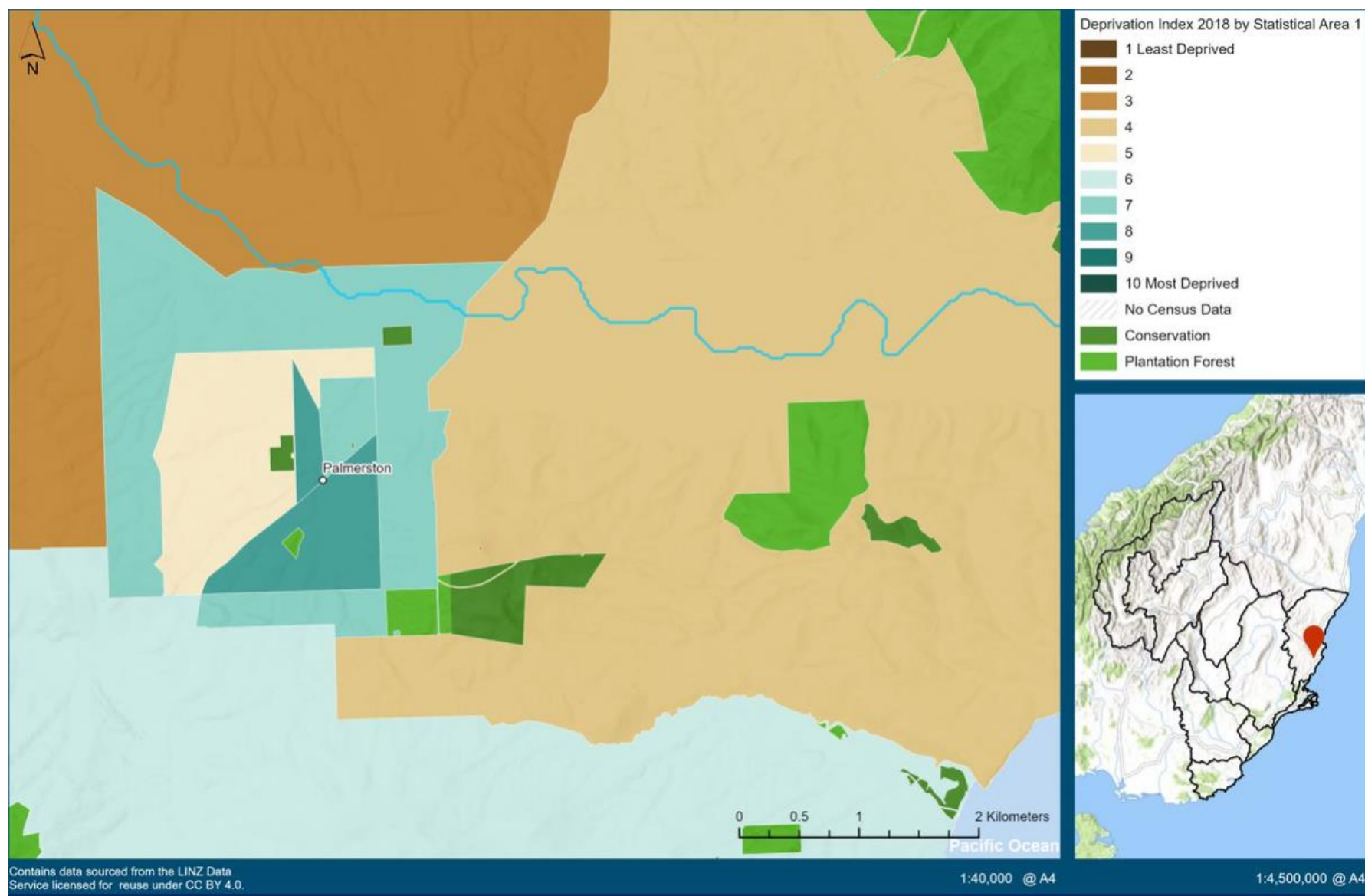


Figure 6.4. Deprivation Index (by SA1), Palmerston