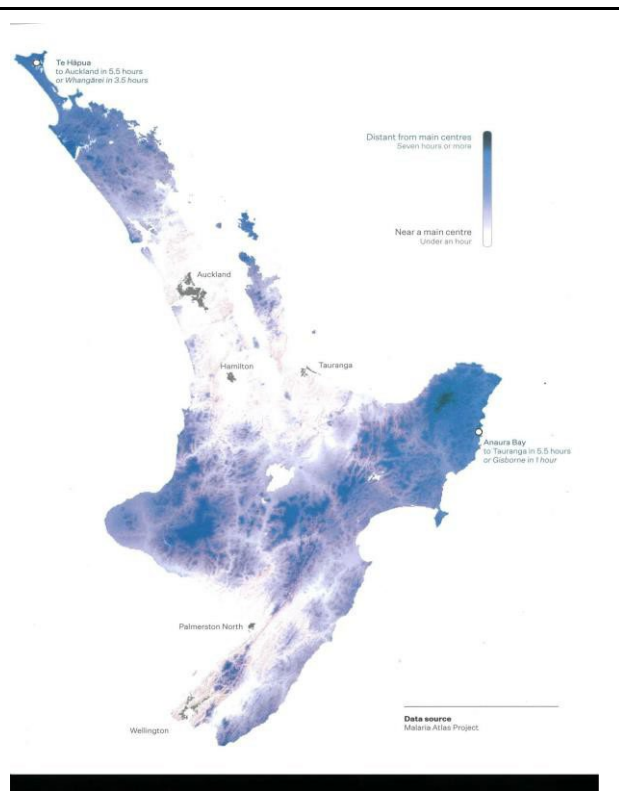


**Achieved**  
 NZQA Intended for teacher use only

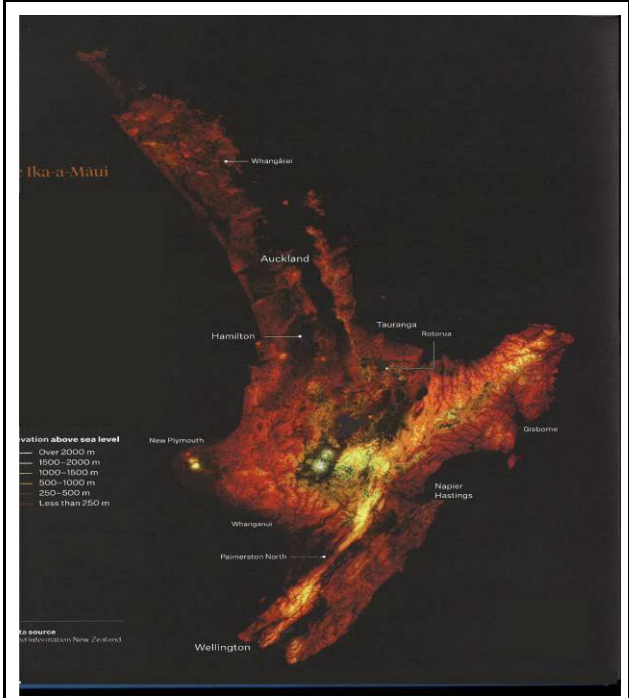
The figures show the spatial distribution of New Zealand’s population (Figures 1 & 4). In the figure, black represents where people live, and white represents where people don’t live. New Zealand has a population of 5.1 million across the country. The population is not evenly distributed. People tend to live near the necessary resources to live, such as food, water, and medicine. Therefore, the population density in cities is much higher in urban areas than in rural ones. There is high population density along the coastline, where many of the cities and towns are found. For example, about 30% of the New Zealand population lives in Auckland. Auckland is a coastal city and is much more populated than Wellington, another coastal city. These two bay cities are major cities in New Zealand. The population is clustered and nucleated along the east of both islands, with a few large towns on the west coast. Most of the New Zealand population live near the main centres on the Northeast side of the North Island and the South Island's east coast (see Figures 2 and 5). Secondly in the North Island, 54% of the population currently live in the top four locations, Northland, Auckland, Waikato and Bay of Plenty. 77% of the population live in the North Island. Most of the population live in low elevation like in coastal towns/cities (Figures 3 & 6). The maps show us where people live but don’t tell us why they live there. Many people are concentrated in and around the coastal towns and cities.



**Figure 1: The spatial map of population distribution, North Island of New Zealand.**



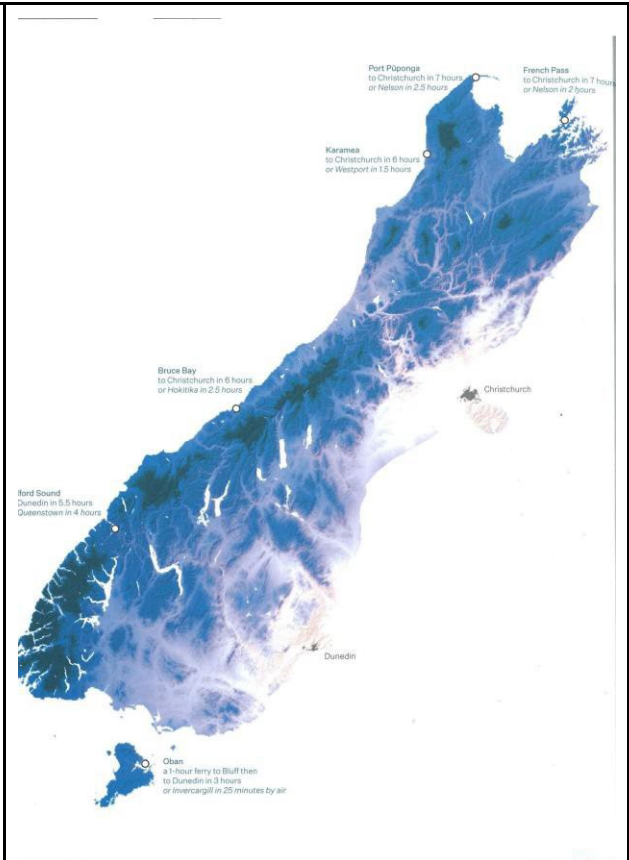
**Figure 2: The spatial map of the North Island for how long it takes to reach a main centre.**



**Figure 3: The spatial map of the altitude above sea level of the North Island.**



**Figure 4: The spatial map of the population of the South Island of New Zealand.**

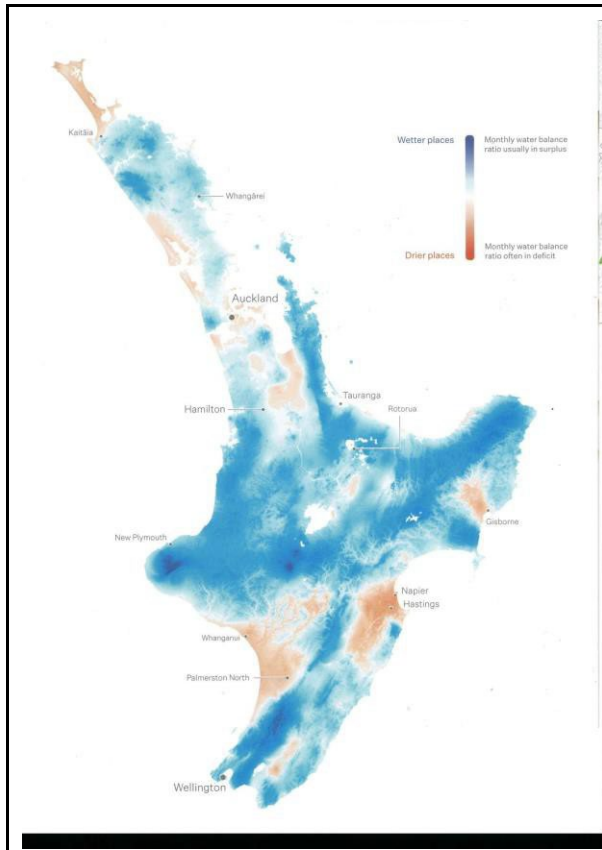


**Figure 5: The spatial map of the South Island for how long it takes to reach a main centre.**

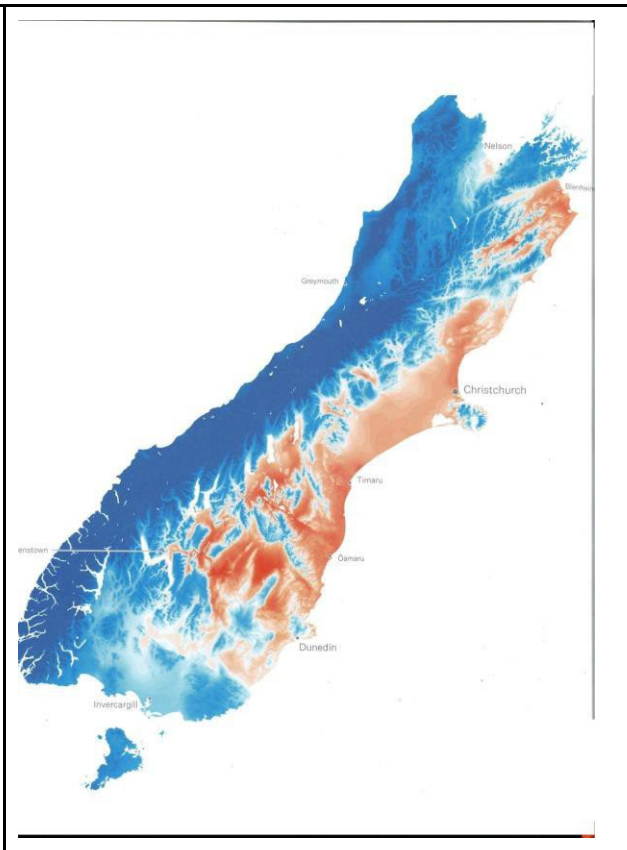


**Figure 6: The spatial map of the altitude above sea level of the North Island.**

People are attracted/repelled by specific characteristics of the environment. The two most important environmental characteristics to people are landforms and climate (Figures 7 & 8). The Southern Alps, a large mountain range, creates a barrier causing orographic precipitation. This process shapes the rain fall on the South Island, leading to a wetter West Coast and a drier East Coast. People are concentrated more on the East Coast because it is drier and easier to live there. The concentration of people on the East Coast offers access to food from fishing and transport from the calmer water and so more people live there. They offer several favourable environmental conditions such as less rain and more favourable weather conditions. The North Island has a less linear pattern than the South Island but is a similar characteristic. The orographic precipitation is different because the terrain is different. For example, Mount Ruapehu and Tāupo are some of the highest places on the North Island but are not linear. The map of the North Island shows that the vast majority of the population is concentrated in dry regions around the northeast of the North Island. People are repelled from living in high-altitude regions because the higher you go, the younger the soil gets, and it has less agricultural worth so it's harder to grow food. The weather tends to get colder and is less favourable for crops/animals.



**Figure 7: The spatial map wetness of the North Island.**



**Figure 8: The spatial map wetness of the South Island.**

Figure 9 shows that the North Island is mostly forest without human activity. Yet, Figure 10 shows us that where people live resulted in the deforestation of most of the North Island for agricultural use, resulting in significant changes to the environment. The very northern part of the North Island is a great example of this, as there are now orchards and vineyards which are not native bush. Where people live also caused agriculture to use nitrogen fertilizers that leech into the rivers and streams, poisoning them. The life stock also causes phosphate pollution and increases soil erosion. Figure 11 shows the South Island without human activity still looks reasonably the same as it is now (Figure 12), with most of the native bush standing. The few towns that are there are coastal and don't retreat inland. Again, agricultural use of the land increases where humans are. The native vegetation of New Zealand has been altered significantly by people to make way for agriculture and exotic vegetation. The very south of the South Island has been repurposed into resources; most of the forests there now are mixed exotic shrubland and exotic forests. There are about 100km<sup>2</sup> of mines and dumps and about another 100km<sup>2</sup> of harbours, train stations and roadways leading to an increase in pollution. There are also about 400km<sup>2</sup> of urban parks in the city reducing the natural forest. Without the forests,

the air quality drops and ways to slow environmental change are also damaged. Humans in New Zealand are clustered into high density regions causing a significant environmental impact.

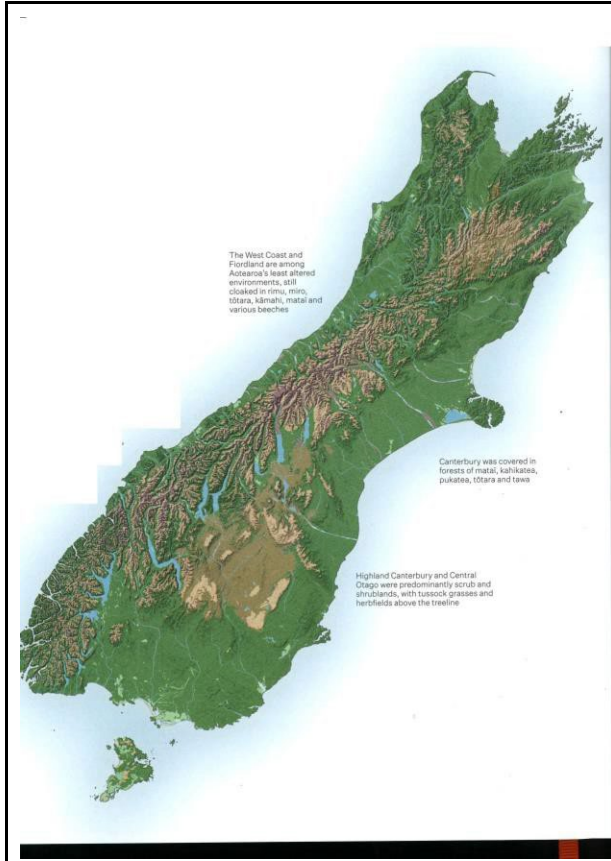


**Figure 9: Map of vegetation of the North Island without humans.**

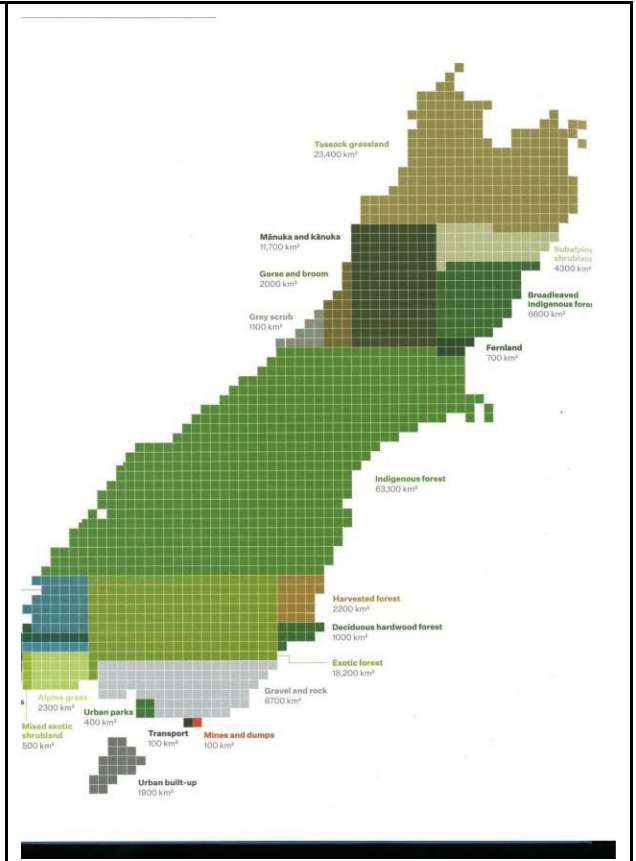


**Figure 10: Map of the vegetation and land use of North Island with humans.**





**Figure 11: Map of vegetation of the South Island without humans.**



**Figure 12: Map of the vegetation and land use of South Island with humans.**