

Student 3_Low Merit

Research question: How does relief interact with vegetation, climate and soil elements of the ecosystem model at two different locations on Mount Taranaki.

The student recorded data at two different locations at different altitudes. At each of these locations data was gathered from three sites.

The findings from the wind speed data: At location 1 our three recording sites were calm. At location 2 the average wind speed was 3.3 km/hr – at sites 1 and 2 it only ranged between 0-1km/hr but at site 3 it got quite windy, gusting between 6-8km/hr (1).

The change in several factors impacted on this aspect of climate:

- Change in altitude by about 600m.
- Change in overall weather conditions from the morning data collection at location 1, when it was sunny and calm to gusty and drizzling when we were at location 2.
- Change in type of vegetation from trees higher than 2.5m e.g. beech and ponga at location 1 to mostly shrubs and tussock at location 2, which meant we were more exposed at location 2 (2).

The findings from the vegetation data include diversity of tree species, height and circumference of trees. Location is an important concept when we examine the characteristics of the soil and the climate at one location and how this results in a special type of vegetation (3).

The table shows that the average tree height at each location is very different and this can be explained by the higher altitude. Location 1 had taller trees species, including beech trees

	Location 1	Location 2
Site 1	2.2 metres	0.3 metres
Site 2	0.47 metres	0.6 metres
Site 3	1.7 metres	0.6 metres

(2+metres) and ponga, but location 2 was mostly shrubs e.g. leatherwood and mosses which are only half a metre tall. These higher altitude plants can survive the harsher conditions as they are largely ground covers and have small leathery leaves like the hebes (4). Height of tree also relates to soil and slope. Location 2 had thin rocky soils and steep slope so trees weren't able to extend their roots into the ground. The plants here had spreading roots and were mostly ground covers. Being low to the ground also protected them from the wind...

Conclusion:

To answer our research question, it is clear that relief influences the other elements of the ecosystem and this is shown through reference to the altitude of each site. At the higher altitude the wind speed was recorded at 8km/hr, but at location 1 it was calm. This is partly relating to altitude because it was more exposed at the higher altitude and at location 1 we were in the bush. The temperatures were also cooler at the higher altitude showing...

There was also a big change in the vegetation from trees to tussock higher up the mountain... Soil varied also being coarser higher up the mountain (5)...

In conclusion there is evidence of interaction between the elements we gathered data for. For example, air temperature interacts with soil temperature and this explains the similar data for both elements, but moisture is another factor that influences this interaction ...