

Over the last few decades the Marlborough region has made a name for itself in the winemaking industry. Wine grapes or *Vitis vinifera* are hugely successful in the region of Marlborough; contributing a total \$1.02 billion export dollars in 2014 alone.

Student 5: Low Achieved  
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The winery and vineyard are located in the Awatere valley, Marlborough at the north eastern tip of New Zealand's South Island and expanding over 1000 hectares of vines. Opened in 2008 - the winery was created to operate sustainably on every level, and was the first winery in the world to be accredited CarboNZeroCERT™ from inception.

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Expanding over 1000 hectares of vines. The winery building is designed to blend into the landscape with no disruptive contours. Rainfall run off from the roof of the winery is collected via ribbed roofing and then swale drains on either side of the building, and either recycled or piped out to the wetlands located in the vineyard.

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Occasionally, when walking around the vineyard, you may spot Royal Spoonbill, black swan, teal duck, and white heron, pied stilt, Bell bird, Tui and fantail.

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The company have also introduced other species which all add to the biodiversity. They have roughly 100 free range chickens - most of them ex-battery hens.

As well as adding to the diversity, they also provide fresh eggs and act as a natural form of pest control by eating bugs from plants and finding them in the dirt, reducing the need to use sprays and pesticides within the vineyard.

Between some of the vines, lupins, buckwheat, mustard and phacelia are planted which also help attract beneficial predatory insects which will eat the insects on the vines that the winery wants to get rid of.

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Along with the biodiversity, the physical aspect is also an extremely significant part of the environment. The immense number of sunshine hours, moderate temperatures, and soils and water are the most significant parts of the physical environment.

The vineyard faces some of Marlborough's harshest conditions; strong coastal winds, low rainfall, high sunshine and cool nights. Because of the terrain, it produces a vast array of flavours; vines and fruit exposed to the strong coastal winds producing smaller more intense berries, whilst the vines in the hollows show more lush growth and fruit. Near the estate is the Awatere River, it is a large river flowing through Marlborough.

It runs northeast through a straight valley to the west of the Inland Kaikoura mountains. The Awatere River is the winery's main source of water – with them having A, B and C rights. The annual rainfall for the area is 600ml a year.

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Seaview soil is primarily made up of silt loam soil; it is usually composed of silt, sand and small traces of clay. It contains nutrients and moisture while still being free draining and having good infiltration of water. The high content of organic matter found within the soil makes it ideal for food production.

However, this soil can lose its desirable characteristics when depleted of organic matter. The soil in which the vineyard is on is 'Silt loam'. Loam is considered ideal for gardening and agricultural uses because it retains nutrients well and retains water while still allowing excess water to drain away. Loam is found in a majority of successful farms in regions around the world known for their fertile land. Loam soil feels soft and crumbly and is easy to work over a wide range of moisture conditions.

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In contrast to conventional thinking, the winery has developed over 25 wetlands and planted over 75,000 native trees and flaxes on the vineyard. The strategically placed wetlands are designed to capture water run-off, and slowly release the water back into the soil, whilst also providing a safe haven and food source to encourage native bird species back into the area.

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Improving biodiversity by wetland development and using biocontrol are the most effective measures to ensure the biophysical environment is sustained. Preserving natural wetland is important, as is encouraging biodiversity in the soil.

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