

The Wairarapa region

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Wai'ra'rapa – The place Maori called “Land of Glistening Waters”. Wairarapa is a region of big skies, wide valleys rolling hill country and rugged coastline. It has a total land area of 8423 square kilometres. The region is named after Lake Wairarapa, which situated at the bottom of the Wairarapa Plain, North of Palliser Bay. Wairarapa is located on the South Eastern Corner of the North Island bounded by the Pacific Ocean in the East, Tararua district in the North and the Tararua Ranges in the west.

Wairarapa farming was established in 1840, by William Deans and in 1844 the first sheep runs were established around Lake Wairarapa. Getting to the Wairarapa was perilous with sheep run holders droving sheep around the South Coast of Pencarrow and Turikaire Heads into Palliser Bay. Early farmers braved the long walk around the south coast to find a land of swampy flats and rolling hills.

Wairarapa has a current population of 47 000 people predominately based in the main townships Masterton, Carterton, Greytown, Featherston and South Wairarapa. The townships were settled in 1854 by the Small Farms Association headed by Masters and Carter. There are three Territorial Authorities and the Wairarapa is part of Greater Wellington Regional Council.

The Wairarapa is home to a mix of primary industries with sheep and beef farming being the main land use. There are dairy farms in the higher rainfall zones and also seed growing and arable operations. Viticulture has expanded rapidly since the late-1990s especially around the Martinborough Region. Forestry is a large land use with large areas of farmland planted in the mid-1990s.

Geography

The Wairarapa has two distinct landforms, the first being the the plains which run from north of Masterton down to Palliser Bay. The main townships are all based on the plains located alongside State Highway 2 and the railway line. The plains area is ca. 20 km wide by 50 kms long. The hill country is between the plains and the sea and is the predominant landform in the Wairarapa. This is heart of sheep and beef farming and also contains large areas of production forestry. There are no National Parks, however the State Forests in the Tararua, Ruahine ranges and the Haurangis are large areas of natural forest and mountain areas managed by The Department of Conservation.

The Wairarapa is made up of many catchments. The largest is the Ruamahanga which rises in the Tararua Ranges in the north-west of the province and is also fed by three eastern hill country river systems. The balance of the catchments all drain towards the coast and generally are small river systems with high flows in winter and low flows in summer. The river systems in the hill country are generally sedimentary-based with the Western rivers being stony.

There are no built harbour areas on the coast with few safe launching and boating areas. Castlepoint is the only area that has a naturally protected area, although the Gap through the reef is also a very popular surfing spot. Coastal launching spots, such as Ngawi on the South Coast have a unique line up of old retired Bulldozers launching fishing vessels, and is well worth a visit. The fishing industry is very productive and important to the region, both commercially and recreationally. The main catches are Paua and Crayfish, with fin fish occurring off the South Coast at Ngawi. Beaches are generally rocky with reef barriers and big swells from the Southern Ocean and South-western Pacific. The largest areas of open beach are Riversdale in the east and Palliser Bay in the south.

Wellington and Wairarapa are two of the most earthquake-prone regions in New Zealand. Wairarapa's landscape has been affected by many large earthquakes with four recorded quakes being greater than magnitude 7. It is understood that the large pre-European earthquake – Haowhenua – “land swallower” had a substantial impact on Wairarapa's plains area. This connected the Miramar peninsular to Wellington and would have uplifted the low-lying areas around Palliser Bay. The Wairarapa fault has triggered the biggest earthquake in New Zealand in 1855, magnitude 8.2. This resulted in the uplift of the Wellington foreshore and in the Wairarapa land rose 6 metres in many places, while the lateral movement was up to 12 metres. The main Wellington quakes that altered the foreshore were ruptures on the Wairarapa Fault. It is said that the 1942 Earthquake did huge amounts of damage in the Tararua Ranges and that the river gravel supply from that is now tailing off, (river levels degrading) over 70 years later.

Climate

Wairarapa would be characterised as having cool wet winters and settled dry summers. It is generally

windy especially during spring. Average temperatures are 20–28°C in summer and below 10°C in winter. Annual rainfall ranges from 800–1200 mm with the Tararua Ranges receiving considerably more than that. The valley plain is open to the Southern Ocean and the southerlies roll up through the valley during winter bringing cold wild weather. Snow is expected at least once or twice a year in the hill country with the last big fall being 2010 where it settled for 3 days. The climate has a split personality with two distinct climatic zones. The high rainfall zone that is located west of State Highway 2 and the Ruamahanga River in the north is where most of the dairy farms are located. There are fingers of rain areas that reach out over the highway and generally if there is a Fonterra number on the gate then this is an area that gets a higher rainfall.

The eastern hill country is the largest area of the province and this is a totally different climatic zone. Here the Nor-Wester builds in strength and in summer sucks moisture from the soil. Wind speed increases and can reach over 170 km/h at Castlepoint.

Our most damaging climatic features are unseasonal dry or cold springs and autumns. Summer is generally dry unless there are remnants of tropical cyclones. However these weather patterns combined with southerly rain bands can be our most damaging leading to flooding on the valley floor.

Soils

The soils of the Wairarapa are classified according to their potential productivity in Table 1. Class 1 soils are free-draining, easily-cultivated, silt loam soils on river flats and terraces. These versatile soils are mainly intensively used and only have limitations of flooding near major rivers. Soils limited by drainage on the plains (Gleys with high water tables) and terraces (Pallic with dense sub-soils) are Class 2 soils and are not as suitable for horticulture or cropping. Soil moisture, especially in the summer, is the major limitation for Class 3 soils which are either Orthic Brown or Sand (low water holding capacity) or Rendzic Melanic (limestone) soils all of which are excessively drained. Viticulture has expanded here. Land Use Capability Class 4 and 5 land makes up most of the pastoral hill country. Brown soils (Class 4) formed from siltstones, fine sand-stones and greywacke in regions of moderate, well-distributed rainfall occurring just east and west of the Central Plains have only slight risks of erosion. The more erosion-prone and moisture-stressed Class 5 Brown soils derived from coarse sand-stones, argillite and bentonitic mudstone stretch from the eastern boundary of the Class 4 soils to the coast. Class 6 steepland soils mainly occur in the foothills of the Aorangi and Tararua Ranges and are most suitable for forestry or left for the conservation of water supplies and recreation.

Table 1 Soils of the Wairarapa

Land Use Capability Class	Major limitation	Landform	Major Land Uses	Soil Order or Sub-Order	Soil Family Name	Area (ha)
1	Flooding	Plain	Horticulture, cropping, dairying	Recent	Manawatu	36 000
2	Drainage	Plain and terrace	Dairying, dairy support, lamb and cattle finishing, viticulture	Gley Pallic	Tai Tapu Mairaki	140 000
3	Moisture	Terrace, rolling land, dune	Dairying, dairy support, lamb and cattle finishing, cropping viticulture	Orthic Brown, Sand, Rendzic Melanic	Balmoral Faraday Kourarau	24 000
4	Slight erosion and moisture	Rolling to easy hill	Dairy support, Sheep and cattle breeding and finishing	Brown	Atua	240 000
5	Moderate erosion and serious moisture	Easy to steep hill	Sheep and cattle breeding	Brown	Ngaumu	220 000
6	Serious erosion	Very steep hill	Exotic forestry, native bush	Raw	Makara	160 000

Stock

Wairarapa is home to 3 000 000 (10% of the New Zealand flock) sheep, 230 000 dairy cattle (3.5%) and 257 000 beef cattle (7%).

Land use changes

Land use in the Wairarapa has had three major changes in in the last 20 to 30 years. These are loss of hill country sheep farms to forestry, stony sheep land to viticulture and productive land to lifestyle blocks especially surrounding the towns and in South Wairarapa.

The dairy land area has been relatively stable but there has been a large increase in production. Surprisingly this has not resulted in any measurable changes in water quality trend lines.

Irrigation area has increased with more water being accessed from groundwater systems. Currently around 12 000 ha of land is irrigated and this is the maximum area allowable with the current water resource availability.

Future irrigation

The Wairarapa Water Use Project is currently underway and is a joint venture between Greater Wellington Regional Council and Government. This is a storage project relying upon dams to collect water for distribution during the irrigation season. This project is currently in the feasibility stage and is undertaking detailed assessments on two storage sites, Black Creek west of Masterton and Tividale North East of Masterton. These two dams will provide water for

30 000 ha of potentially irrigable land. Wairarapa has suitable land types that mean up to 60 000 ha of land could be irrigated if there was water available and up to 42 000 ha at a cost comparable to other New Zealand storage schemes.

This will result in changes to land use in the Wairarapa and is shown in Table 2. This compares the current percentage of land that could be irrigated (existing) with the assumptions the project uses for future land use with 30 000 ha of irrigation.

The project is due to complete feasibility in mid-2016 and will then move into the consenting and tendering phase of the project.

Management changes

Farm management change has been prevalent in all industry sectors in the Wairarapa. There has been increased use of irrigation water. Also the use of herbs (chicory, plantain) and new forages in animal finishing programme and a greater intensity of measurement to predict utilisation and animal performance for new crops and cultivars. Dairy production has tripled from 1990–2012, while cow numbers have doubled but are still largely on the same area.

In the sheep industry it has been about becoming resilient to unseasonably dry periods. Wairarapa farmers are used to dry conditions during summer and farm for these. Our biggest challenge is when spring or autumn is dry as it is difficult in a dryland system to generate feed. This is especially so with planting new crops when they have a stressful establishment period which affects yields.

REFERENCES

- Agricultural Production Survey 2012, Statistics New Zealand
 Butcher Partners Ltd – Report for Wairarapa Water Use Project
 Destination Wairarapa <http://www.wairarapanz.com/>
 Masterton District Library and Wairarapa Archive - Wairarapa Stories [www.library.mstn.govt.nz/Wairarapa Stories](http://www.library.mstn.govt.nz/Wairarapa%20Stories)
 Regional Economic Impact Analysis of the Proposed Wairarapa Water Use Project
 Te Ara – The encyclopaedia of New Zealand. <http://www.teara.govt.nz/en/search/teara?keys=Wairarapa>

Table 2 Pre- and post-irrigation land uses

	Existing Dry Land %	Irrigated %	Irrigated ha
Dairy	22	45	13 500
Arable and Mixed	40	30	9 000
Sheep and Beef	24	12	3 600
Dairy Support	14	10	3 000
Horticulture	0	3	900
Total			30 000

