

Chapter 2

THE WEST COAST REGION

The West Coast Region (Te Kaunihera Whakakotahi o Te Tai Poutini) extends over a distance of 600 km from Kahurangi Point in the north to Awarua Point in the south - greater than the distance between Auckland and Wellington. It is bounded in the east by the Southern Alps and in the west by the Tasman Sea and has a land area of 23,000 square kilometres, or 8.5% of New Zealand's land area (See Figure 1). By area this makes the West Coast the third largest region in New Zealand.

In addition to this, the Regional Council manages, in conjunction with the Minister of Conservation, the coastal marine area (which is the foreshore, sea bed, and coastal water and the air space above the water) from the line of mean high water spring tides out to the territorial (12 mile) limit. Fisheries utilisation and allocation within this area are managed by the Ministry of Fisheries, except Maori customary fisheries, whitebait or other unprotected indigenous species. The taking of whitebait and the protection of marine mammals is administered by the Department of Conservation.

LANDFORMS AND GEOMORPHOLOGY

The West Coast has been described as a region of mountains, rainfall and rivers. These features combined with the processes of uplift and erosion - have resulted in a landscape of unique character, two thirds of which is mountainous.

The Alpine Fault runs most of the length of the region. East of the fault are deeply dissected mountain ranges. To the west, rivers and streams are steeply graded - the distance from source to sea seldom exceeding 50 km. Towards the coast alluvial and beach deposits occupy a 10-15 km wide strip which extends inland along river systems. Plains areas are, with some exceptions, generally localised and composed of outwash silts and gravels. They are subject to frequent flooding.

The West Coast is composed of a variety of rock types of variable age. The old resistant granites and gneisses form the bulk of the mountainous terrain to the north of Greymouth. Younger schists and greywackes form the alpine sequences to the east. Outcrops of granite occur at isolated locations further south and west of the Alpine Fault.

Sedimentary rocks throughout the region comprise sandstones, siltstones, limestones and mudstones. These form scenic attractions including the Pancake Rocks, limestone caves, and karst landscapes.

Slope stability problems occur on a wide variety of formations throughout the region. Failures, sometimes catastrophic, may be induced by intense rainfalls or earthquakes or a combination of both.

Mineralisation is associated with many older rocks in the region where they have come into contact with adjacent granitic rocks. The Reefton goldfield, where the second largest gold mine in the country operated for over half a century, is the most significant example of this.

Detrital gold, which remains as a lag deposit in outwash gravels after glacial retreat, is an important resource which has sustained mining in the region for

over a century. Today, the scale of commercial operations varies from large dredges to small digger and trommel units.

Extensive bituminous and sub-bituminous coal-fields exist north of Greymouth. Currently extraction accounts for a significant amount of the national coal production. The low ash and low sulphur bituminous coal deposits offer future long term export opportunities.

Reserves of ilmenite are spread throughout the region in coastal beach sands. Potentially commercially viable deposits are concentrated near Barrytown and around Cape Foulwind. The mineral originates from widely dispersed plutonic and metamorphic rocks within the region.

Greenstone or *pounamu* is found east of the Alpine Fault, principally in the catchments that lie between the Taramakau and Arahura rivers, but also in the region's far south. It has traditionally featured as a tradeable commodity. Pounamu is considered by Poutini Ngai Tahu to be a taonga or treasure protected by the *taniwha* Poutini. It is prominent in their oral tradition and lore. Regional pounamu resources contribute significantly to the *mana* of Poutini Ngai Tahu.

A number of industrial minerals are found throughout the region. These include rock, gravel and sand for road and railway formation and the construction industry. Limestone is used for cement and clay for pottery and ceramics.

CLIMATE AND AIR QUALITY

By national and international standards the region receives a generous and reliable rainfall. Near the Main Divide this exceeds 8000 mm annually - declining to 2000 mm at the coast. At high altitudes there are snowfalls all year round. In the region's southern parts this contributes to glaciers that reach to within a few hundred metres above sea level.

However, away from these areas, the climate is generally mild and near the coast sunshine hours are similar to those experienced on the east coast.

Surface winds do not reflect the prevailing westerly flow at higher altitudes. More sheltered locations provide a variety of different microclimates.

Weather systems crossing the region produce marked changes in wind direction and air mass characteristics. The approach of fronts produces a warm moist airflow of tropical origin. The passage of a front is usually followed by a cold dry airflow of polar origin. In both cases the air travels considerable distances over the open sea, the nearest land mass being over 1600 km distant. As a consequence, the air quality is generally high.

A low pressure area to the east of the South Island may promote an easterly airflow over the region. On these occasions, particularly in winter, strong easterly winds may descend down major river valleys. In more sheltered inland locations, cold air may be trapped in valleys forming temperature inversions, fog and, in some cases, smog.

SOILS

With most of the region being mountainous or hilly and forested, soils are generally leached podsolised yellow brown earths or gley podsols which are shallow in depth and low in fertility. The combination of steep slopes, high rainfall and seismic activity commonly result in high erosion rates. At high altitudes the crests of the ranges are frequently bare. In the valley floors the soils are recent gley or organic soils. On higher terraces these are the poorly drained and badly leached *pakihi* soils. On lower lying sites closer to valley floors, the soils are more freely drained and have a higher natural fertility. These soils are more productive and form an essential element in the region's agricultural economy. Susceptibility to flooding and bank erosion can, however, be a constraint on their use.

WATER

The region contains a number of large rivers. As a direct reflection of the region's high rainfall, some, on a national basis, have the highest mean and flood flows.

Despite large sediment discharges, as a consequence of natural erosion and mountainous terrain, water quality is generally high. Degraded water quality is usually restricted to waters near river mouths that are adjacent to areas of urban settlement or where there is significant mining or agricultural activity.

VEGETATION

Three quarters of the region consists of indigenous forests. Much of the indigenous forests, including habitats of indigenous fauna, are administered by the Department of Conservation. This is characteristically podocarp, beech or other hardwoods or a mix of all three. In the north, there is a preponderance of beech forest but between Greymouth and Bruce Bay, beech forest is entirely replaced by a pure podocarp or podocarp/hardwood mix. Large tracts of West Coast forests remain untouched by logging or fire. Intact altitudinal sequences of vegetation from valley floors or the coast to the mountain tops are represented in the region's national parks and numerous reserves. These mountain-to-sea sequences of unlogged vegetation are found in few other parts of New Zealand and are of major ecological importance and international significance. Wetland vegetation in the form of bogs and swamps is better represented on the West Coast than anywhere else in New Zealand.

West Coast vegetation is a major component of the region's natural beauty. A small area (7% of the total forest area) has been set aside for sustained production, as part of the 1986 West Coast Accord. This includes integrated use of podocarp, beech and exotic forests. The native timbers are particularly valued for their high quality wood.

FAUNA

The West Coast is the only breeding place of a number of native birds. These include the Westland black petrel and the white heron or kotuku. In addition, the region is home to a variety of rare and endangered bird species including the New Zealand falcon, the blue duck, various parakeet and kiwi

species, the fernbird, the yellowhead and the kaka. Native freshwater fish are well represented. The *inanga* provides the basis for a thriving whitebait fishery while other galaxiid species still maintain relatively high local populations. Introduced fish such as brown trout are widespread. A few rivers host rainbow trout and/or salmon.

Some introduced herbivorous mammals such as possums, deer and thar are causing severe damage to indigenous vegetation. Over recent years the numbers of possums have increased to such an extent that up to 90% of rata/kamahi forest in the central West Coast has been significantly modified. This parallels changes in other parts of the country.

Possoms are also carriers of bovine tuberculosis, which is of concern to the agricultural industry.

SOCIAL

According to the 1991 Census the resident population of the West Coast Region was 31,500. The importance of the visitor industry is shown by the fact that, on average, the number of visitors staying on any given night, represents 8% of the resident population. The majority of visitors are over the summer season.

Of the region's three districts, Grey has the greatest population and Westland the smallest.

While the population has fluctuated a little over the last 20 years, there was a decline between 1986 and 1991. This has been due, in part, to the restructuring of the state sector. The decline was particularly marked in the 15-29 age group: that is, those people who are most mobile. The departure of the young and able from the region is not a new phenomenon. There is, correspondingly, a high percentage of elderly people in the population.

Income is one of the most common indicators of socio-economic status. In recent years, the average income on the West Coast, already significantly lower than the national average, has fallen still further.

At the time of the last Household Labour Force Survey conducted on the West Coast in 1991, there were 1500 unemployed people. This represented an unemployment rate of 13.9%, - almost 3% higher than the overall national rate. However, in 1994/95 the number of unemployed on the West Coast declined.

The combination of a small and dispersed population, together with a high proportion of elderly and other beneficiaries, means that a high standard of health and social services are essential but difficult and expensive to deliver. More employment, including greater diversity of employment sources, would make a significant contribution to the region's social development.

ECONOMIC

The West Coast economy has historically been based on the utilisation of the region's natural resources: notably gold, timber and coal. Early this century farming came to occupy a pre-eminent place in the regional economy.

Tourism, long established at the glaciers, but now developing rapidly elsewhere, has recently begun to rival this.

A comparison of the national and West Coast economies based on employment patterns in 1991 shows significant differences. Substantially higher than national percentages were employed within the region in primary industries (eg farming, forestry, fishing and mining) and slightly higher percentages employed in some service sectors (eg retail, accommodation and social services). Far fewer locally than nationally, were employed in manufacturing and business services.

Consistent and reliable financial data for the West Coast economy are not readily available. However, estimates made by the Regional Council highlight the importance of resource-based industries to the regional economy. The estimated current annual value of the region's products as at 1996 are:

1. Mining and quarrying - \$90-100m.
2. Forestry - \$28m
3. Fishing - \$25-30m.
4. Pastoral Farming - \$100m
5. Sphagnum moss - \$12-15m.
6. Whitebait - \$5-7m

Substantial deposits of coal, gold and industrial minerals are found in the region. Certain of these deposits are of national strategic and economic importance and contribute significantly to the region's welfare by representing raw materials available for local consumption, direct employment and energy sources (see Chapter 16 Minerals).

The New Zealand Tourism Board estimates that in 1990-91 tourist expenditure on the West Coast was in the order of \$117m. This has since grown to almost \$130m. The economic importance of tourism to the West Coast continues to increase and, alone, it is a major industry. The conservation estate which comprises the bulk of the region's habitats and landscapes (see Chapter 9) is a major economic contributor to tourism. In 1993 97% of international visitors to the West Coast visited one or more of its national parks.

Other economic contributions by the conservation estate to the region's economy include grazing, sphagnum moss harvesting, mining and commercial hunting.

The recent establishment of chain retail outlets in Greymouth has increased opportunities for employment, particularly in the 20-29 year age group. Similar prospects exist with the potential to develop large nearby coalfields.

LAND TENURE

Compared with 40% for the rest of New Zealand, a total of 87% of the region's land is administered by the Crown. The Crown conservation estate accounts for 78% of the region's area - compared with 26% for the rest of New Zealand.

With only 21% of the land being fully or partly rateable, West Coast residents on the basis of regional rates paid per head of population, are the highest rated in the country. This places inordinate financial pressures on the region's local authorities and ratepayers alike.

There continues to be a reduction in the area of rateable land due to land transfers for protection purposes.