Regional Fact Sheet

Otago/Ōtākou and Southland/Murihiku

June 2025

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Te Uru Rākau New Zealand Forest Service

Current state of the forestry and wood processing industries in the Otago and Southland regions. The Otago and Southland regions cover the southernmost part of New Zealand. They extend from the southern alpine areas of Mount Aspiring National Park in the west, to the dry inland Central Otago basins in the east and the glacial lakes of Wakatipu, Wānaka, and Hāwea. The Southland region includes 3 territorial authorities: Gore, Invercargill City and Southland. The Otago region includes 5 territorial authorities: Central Otago, Clutha, Dunedin City, Queenstown Lakes and Waitaki.

Southland **$8.8 billion**
Otago **$18.2 billion**
Regional GDP for year ended March 2024 (2% and 4% of national GDP respectively)

Southland **$542 million**
Otago **$374 million**
GDP in forestry, fishing and mining for year ended March 2023 (4% and 3% of national GDP respectively)

Southland **$83,620**
Otago **$71,113**
GDP per capita for year ended March 2024 (National GDP per capita $78,323)

Southland **100,143**
Otago **240,900**
Estimated regional population, 2023 Census (2% and 5% of New Zealand's total respectively)

Southland **321**
Otago **2,338**
Number of new dwelling consents for all construction in 2024 (-1.5% and 18.8% change from 2023 respectively)

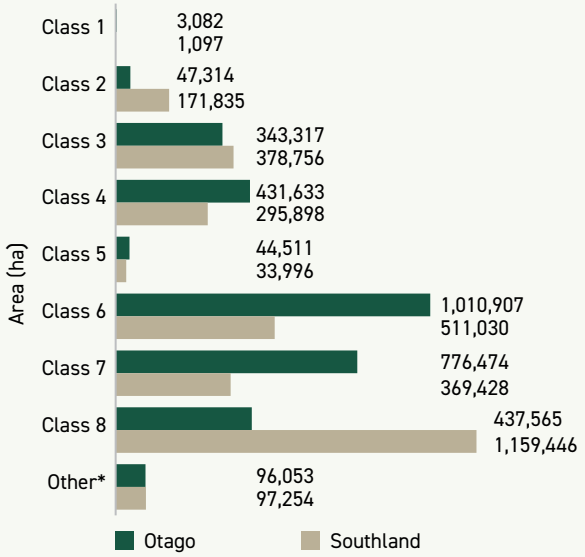
Southland **17%**
Otago **10%**
Population that identifies as Māori, 2023 Census (19.6% nationally)

Source: Gross domestic product (GDP) – Stats NZ

Land use capability

The Land Use Capability (LUC) system classifies land into 8 categories based on its ability to support various productive uses over time, considering physical constraints and specific management requirements. Classes 1 to 4 are generally suitable for all ranges of cultivation. Classes 5 to 7 tend to be suitable for pastoral farming and forestry. Class 8 has severe limitations for primary production or forestry use.

Figure 1. Area in hectares by LUC class. Source: LUC database 2021



**Other: Estuaries, lakes, quarries, rivers, towns.*

- 12.3% and 18.3% of the land area in the Otago and Southland regions is classified as highly productive land (LUC 1 to 3).
- 57.1% and 30.3% of the land in the Otago and Southland regions is classified as LUC 5 to 7.
- 13.7% and 38.4% of land in the Otago and Southland regions is classified as LUC 8. In the Southland region, Fiordland National Park and Mount Aspiring National Park in the Southern Alps are classified as LUC 8, this land is not suitable for any uses other than native trees.

Sources: Our Environment - Manaaki Whenua Landcare Research and Target land and land use capability classes - MPI (PDF, 756 KB)

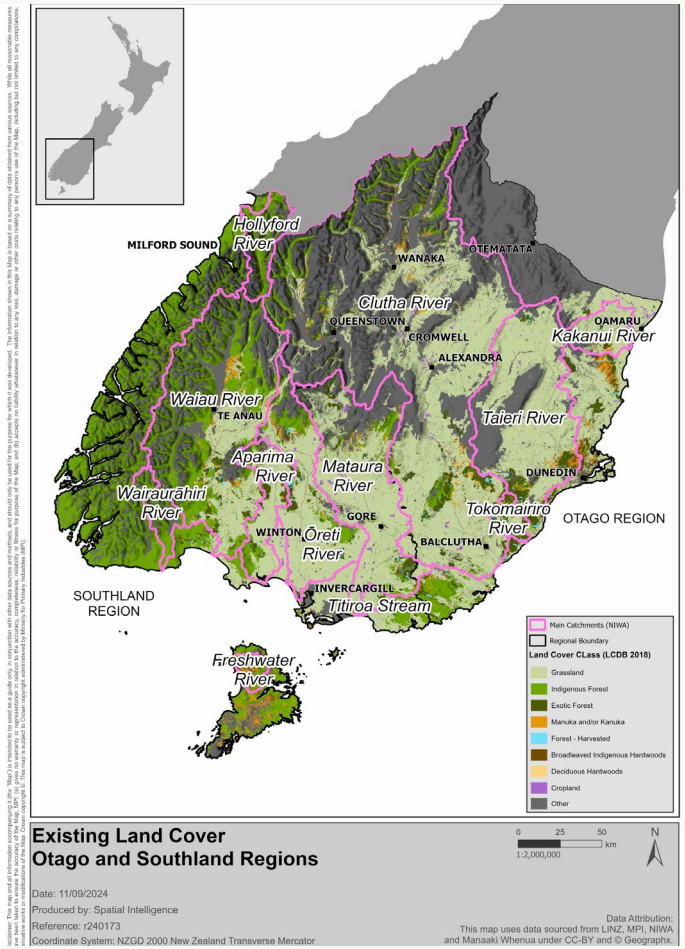
Existing land cover

Southland's total land area is 3,121,896 hectares (ha), 12% of the total area of New Zealand. 1,202,034 ha (40.3%) is covered by indigenous forest, while 82,967 ha (2.8%) is exotic forest.

Otago's total land area is 3,538,155 ha, 13% of the total area of New Zealand. 180,243 ha (6%) is covered by indigenous forest, while 139,492 ha (4.7%) is exotic forest.

New Zealand's regions are primarily determined by areas of water collection into rivers, known as catchments. The largest catchment in the Southland region is the Waiau River catchment (824,596 ha). The other 5 major catchments are the Mataura River (527,689 ha), the Oreti River

Figure 2. Map: Land cover in Otago-Southland. Source: Land Cover Database (LCDB5) – LRIS.
View a high-resolution version of the land cover in Otago-Southland map.



(352,988 ha), the Aprima River (156,010 ha), the Hollyford River (110,136 ha) and the Wairaurahiri River (71,226 ha). All other catchments in the region are less than 40,000 ha.

The largest catchment in the Otago region is the Clutha River catchment (2,095,456 ha). The other 2 major catchments are the Taieri River (570,437 ha) and the Kakanui River (89,648 ha). All other catchments in the region are less than 40,000 ha.

Sources: NZ large river catchments - NIWA
NZ large river catchments - ArcGIS Hub

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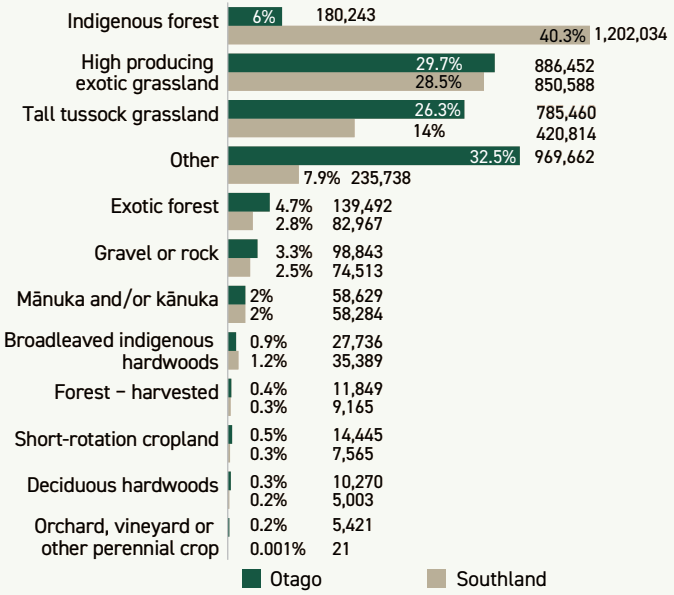
Figure 3. Percentage and area (ha) of different land covers in the Otago and Southland regions. Source and forest type definitions: Land Cover Database (LCDB5)

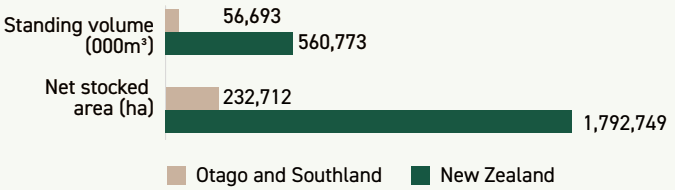


National Exotic Forest Description (NEFD 2024)[1]

The Otago and Southland regions make up the Otago and Southland wood supply region. The wood supply regions are areas grouped by the National Exotic Forest Description (NEFD).

The Otago and Southland wood supply region has the second largest area of exotic forest in New Zealand after the central North Island wood supply region.

Figure 4. Comparing the Otago and Southland wood supply region with New Zealand on exotic forestry facts. Source: NEFD 2024

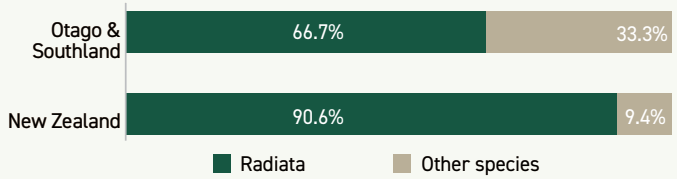


The average age of the exotic forest in the Otago and Southland wood supply region is 20.2 years compared to 18.6 years nationally.

1 The 2024 National Exotic Forest Description (NEFD) – MPI provides a detailed description of New Zealand's planted production forest.

Compared to the rest of New Zealand, the Otago and Southland wood supply region has a lower proportion of radiata pine in their exotic forest estates (Figure 5). Radiata pine comprises 66.7% (155,259 hectares) of the exotic forest in the wood supply region. Other exotic forestry species include 24.6% Douglas-fir (57,359), 0.6% cypress (1,450), 4.9% eucalyptus (11,314), 2.8% softwoods (6,423) such as redwoods and 0.4% and hardwoods (890) such as acacia and blackwood.

Figure 5. Proportion of exotic forest species in Otago and Southland in comparison to New Zealand. Source: NEFD 2024



Of the total planted area of radiata pine forest in Southland and Otago wood supply region, 21.8% (33,806 hectares) is of potentially harvestable age (26-30 years). This compares to 20.8% of the national total planted area in the same age range.

Figure 6. Number of hectares of pruned and unpruned regimes of radiata pine in the Otago and Southland wood supply region. Source: NEFD 2024

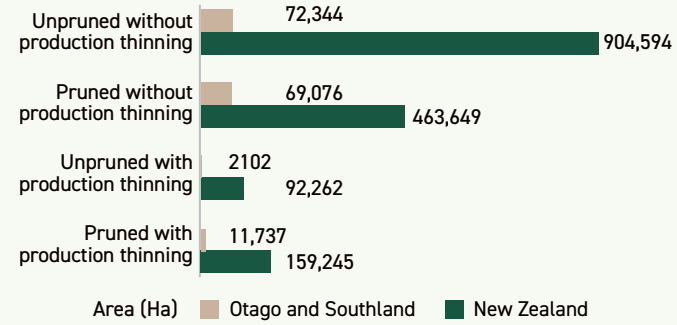


Table 1. Number of forest owners and area by national size class in the Otago and Southland wood supply region. Source: NEFD 2024.

	<40	40–99	100–999	1,000–9,999	10,000+
Area (ha)	43,388	8,842	27,346	36,374	116,747
No. of owners	NA	140	102	15	8

Composition of the estate

The Otago and Southland regions have the most diverse exotic forest estate in New Zealand, with a large share of the national Douglas-fir and eucalypts plantings. The regions have 60% of the national Douglas-fir forest estate and 51% of the national eucalypts estate. The main eucalyptus species is *Eucalyptus nitens*, which is purpose grown as short rotation forests (12–15 years) to produce hardwood chips. The majority of the forest estate is in the Southland and Clutha districts.

Hybrid pine species

Radiata pine is not well suited to Otago-Southland's hot dry climate and has less tolerance to frost and snow, therefore, a hybrid pine species has been introduced as an alternative.

The hybrid pine is a cross between two radiata species, *Pinus radiata x Pinus attenuata.* The hybrid features the same resistance to cold, and damage from wet snow, that *Pinus attenuata* has. It also has the faster growth of *Pinus radiata.* The hybrid performs well at altitudes of around 300–800 metres above sea level, in drought prone areas and in poorer soils, where neither individual parent species grows well. *Pinus attenuata* has an extremely tight seed cone, meaning it does not easily release seed. The open crown form of the hybrid helps them withstand the strong winds common to southern regions.

The hybrid seed is commercially available in several Southland nurseries. Forestry companies are increasingly planting the hybrid, especially in high altitude and snow prone areas. One of the forestry companies in the region has 20% of their estate planted in hybrid mainly in higher altitudes, with the oldest operational plantings of scale at 6 to 7 years age. Nationally, hybrid made up of 1.5% of total exotic afforestation in 2023 and it is projected to increase to 1.8% in 2024.

Source: MPI Afforestation and Deforestation Survey 2023

Wood Availability Forecasts (WAF)

Figure 7. Radiata pine Wood Availability Forecast (WAF) scenario 3 for the Otago and Southland wood supply region. Source: WAF 2021.

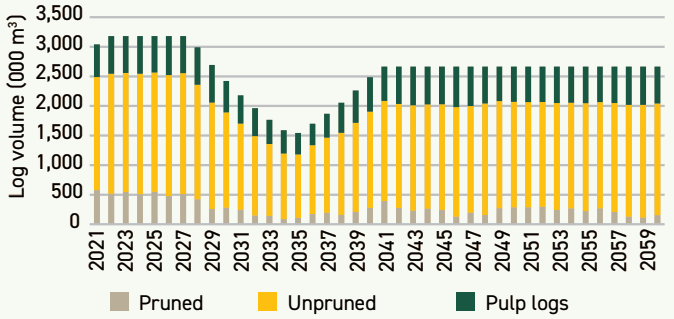


Figure 7 shows the availability of radiata pine logs which are forecasted to be harvested between 2021 and 2060, from the Otago and Southland regions. The region's wood availability is forecasted to drop from 3.1 million cubic metres in 2024 to around 1.5 million cubic metres in 2034-2035. It is forecasted to gradually increase from 2041 onwards to around 2.6 million cubic metres per annum. The wood availability trends in figure 7 are the result of the decrease in planting rates that happened in the year 2000s.

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Figure 8. Douglas-fir Wood Availability Forecast (WAF) for the Otago and Southland wood supply region. Source: WAF 2021.

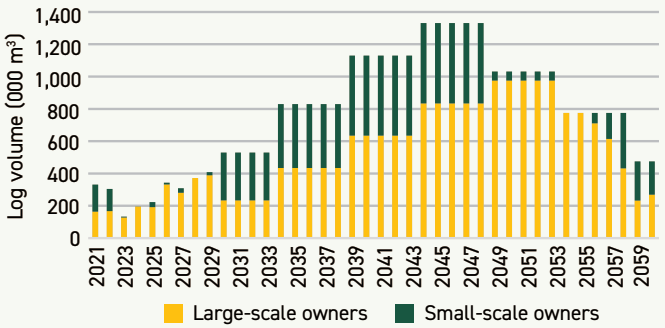


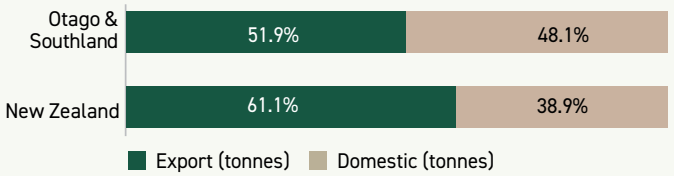
Figure 8 shows the availability of Douglas-fir that is forecast to be harvested between 2021 and 2060, from the Otago and Southland wood supply region. In the region, Douglas-fir resource has the potential to fill the gap in radiata pine wood supply from early 2030s to late 2030s.

Source: WAF August 2021 - Canopy

Markets for Otago and Southland wood supply region

Figure 9. Percentage of exports vs domestic processing of logs for the Otago and Southland wood supply region. Source: Levy trust data for year ended December 2024.

In 2024:



- 1.23 million tonnes of logs were processed in the Otago and Southland wood supply region contributing to 10% of the total log volume processed in New Zealand.
- 1.33 million tonnes of logs were exported from the Otago and Southland wood supply region contributing to 7% of the total log exports for New Zealand.

Forestry and wood processing supply chain

Nurseries
There are 3 major nurseries producing exotic and native species and several smaller ones across the region.

Wood processing – exotic
There are at least 20 sawmills in the region producing sawn timber and one medium density fibreboard manufacturing plant supplying domestic and export markets.

The region also has a stand-alone chipping facility at Awarua, near Invercargill, primarily to process short rotation eucalypts to chip. The chip is exported to Japan for manufacturing of high-quality writing and printing paper.

Wood processing – indigenous

Lindsay & Dixon Ltd is an integrated forest management and wood processing company based in Tuatapere in western Southland. It is the largest mill in New Zealand that processes indigenous wood, mainly beech, largely sourced from Longwood and Rowallan forests in western Southland. These forests are certified by the Forest Stewardship Council (FSC). The processing mill has a sawmilling operation, kiln-drying facility, and a remanufacturing plant. Lindsay & Dixon Ltd markets Southland beech under the brand names of Maple Beech and Cherry Beech, which are used for flooring, furniture, joinery, and panelling.

Source: Lindsay & Dixon Limited

Wood quality

In parts of the Otago and Southland regions, radiata pine grows more slowly in the cooler conditions, but produces timber of high-quality with valued characteristics, such as:

- lighter colouring (a preferred trait for appearance grade users)
- a relatively low incidence of resin pockets
- good basal area (diameter) growth relative to height
- long internodes between branch whorls.

Woody biomass

The Otago and Southland regions have well established woody biomass supply chains between forest owners, wood-fuel suppliers and end users. Some forestry companies in the regions have established "in-forest" storage and supply chains to recover forestry harvest residues from skid sites[2] for bioenergy from in-forest chipping.

In the regions, a substantial proportion of wood processing residues (sawdust and bark) are being used internally by wood processors as boiler fuel. A proportion of domestic pulp/chip logs are used for medium density fibreboard manufacturing at the Daiken plant in Mataura. Wood pellets are manufactured at Kennington in the Southland region from kiln-dried radiata pine shavings and sawdust generated from sawmilling.

The Regional Energy Transition accelerator program (RETA) is conducted by the Energy Efficiency and Conservation Authority (EECA). RETA estimates that, on average over the next 15 years, approximately 140,000 tonnes per year of Otago woody biomass (120,000 tonnes of harvest residues and 20,000 tonnes of minor species) is currently unused. It could be recovered for new boiler demands, without disrupting low grade export log markets or existing bioenergy consumers.

On average over the next 15 years, there is approximately 380,000 tonnes of Southland woody biomass that could be recovered and/or diverted to bioenergy annually, comprising:

- 76,500 tonnes of unused harvest residues
- 4,000 tonnes of wood processing residues
- 50,000 tonnes of divertible export chip
- 250,000 tonnes of divertible low-grade export logs.

Regional Energy Transition accelerator program - Energy Efficiency and Conservation Authority

Sources: Otago RETA report, Southland RETA report

Dunedin Energy Centre

Dunedin Energy Centre is New Zealand's largest district heating plant[3]. It is one of the biggest users of woody biomass for bioenergy (22,000 tonnes/year) in the Otago region. Energy in the form of hot water or steam is supplied to Otago District Health Board, the University of Otago and a number of small customers.

Woody biomass for dairy industry process heat generation

In March 2024, an 11-megawatt capacity coal boiler was converted to woody biomass. The boiler is used for processing heat generation at Fonterra's cheese manufacturing site in Stirling. The change from coal to woody biomass brings a reduction of 18,500 tonnes of carbon dioxide emissions per year.

Source: Cheese from trees: Fonterra Stirling site running on wood biomass - Fonterra

Open Country, another dairy processor in the Southland region, is planning to commission a 13 megawatt electrode boiler[4] in Awarua near Invercargill. The boiler will supply steam to a milk powder drier.

Sustainable Douglas-fir essential oils production in Otago

Various biochemicals and nutraceuticals can be produced from woody biomass. In the Otago foothills (Shag River Forest) essential oils are produced from a sustainably grown, dedicated Douglas-fir plantation forest. Douglas-fir is grown as hedge rows, where branches are harvested for essential oil manufacturing. The processing plant is located within the 4000 hectare Douglas-fir forest planted in 1997-1998. This means, the feedstock used to create the oils is not transported far, minimising the carbon footprint. Essential oils are used in many applications such as aromatherapy, fragrances, cosmetics, and household products.

A 2 megawatt biomass boiler has been installed to create the process heat needed to distil the oils, reducing emissions.

Source: Douglas-fir essential oils – Port Blakely

Workforce

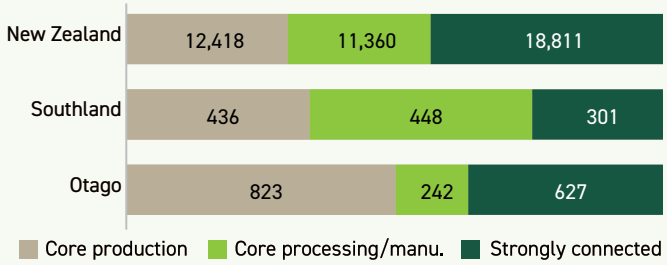
For the year ending March 2023, an estimated 42,589 people worked in the forestry and wood processing sectors in New Zealand. 1,692 (4%) people worked in the Otago region and 1,185 (3%) worked in the Southland region in forestry and wood processing sectors.

2 Skid site is an area that is cleared in the forest where the stems are cut into logs and are extracted for processing, storage, and subsequent loading onto trucks for transportation to market.

3 District heating is a system for distributing heat generated in a centralised location through a system of insulated pipes for residential and commercial heating requirements such as space heating and water heating.

4 Electrode boilers use electricity.

Figure 10. Comparing the forestry and wood processing workforce in New Zealand, Otago and Southland. Source: https://www.workforceinsights.govt.nz/reports/annual-workforce



Core production	Core production includes forestry, logging and forestry support services.
Core processing/ manufacturing	Core processing/manufacturing includes log sawmilling, wood chipping, timber resawing and dressing, veneer and plywood manufacturing, reconstituted wood product manufacturing and pulp, paper and paperboard manufacturing.
Strongly connected	Strongly connected activities include wooden structural fitting and component manufacturing, other wood product manufacturing, corrugated paperboard and paperboard container manufacturing, paper bag manufacturing, wooden furniture and upholstered seat manufacturing, timber wholesaling.

Erosion

Table 2. Number of hectares (ha) and the percentage of the total area in each of the Erosion Susceptibility Classes (ESC) in the Otago and Southland regions. Source: Erosion Susceptibility Classification MPI.

ESC	Otago		Southland	
	ha	%	ha	%
Low	1,847,902	58%	1,458,467	48%
Moderate	800,140	25%	194,826	6%
High	241,872	8%	319,583	11%
Very high	174,237	5%	928,025	31%
Other	125,318	4%	109,884	4%

Government funding

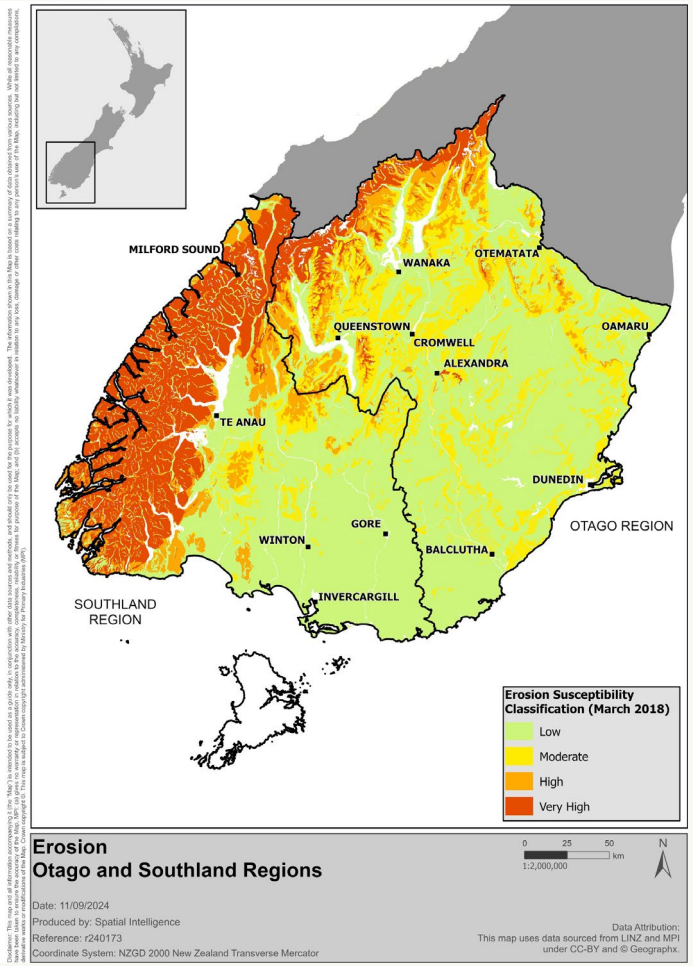
One Billion Trees: As of January 2024, $13 million in funding has been approved for direct landowner and partnership grants in the region. As a result of this investment, a total of 959 hectares has been planted in the region.

The One Billion Trees Fund, part of the One Billion Trees Programme, is now closed to new applications. The programme's goal is to plant a billion trees by 2028.

Progress towards planting one billion trees – MPI

Figure 11. Erosion Susceptibility Classification (ESC) for Otago and Southland. Source: MPI.

View a high-resolution version of the Erosion Susceptibility Classification map.



Hill Country Erosion (HCE) Programme

The HCE Programme is a partnership between MPI, councils and landowners to support regional erosion control projects.

Since, 2015, $0.73 million in funding has been approved for projects in Otago and Southland. In 2024, the HCE Programme helped councils develop regional erosion control strategies for Otago and Southland. These strategies will underpin the councils' future work with farmers in protecting their erosion-prone land. Early pilot projects included planting native species, or strategically placed poplar and willow trees, on several farms in Southland's Orauea catchment.

Hill Country Erosion Programme for councils – MPI

Indigenous forestry

The Otago and Southland indigenous estate is mostly beech forests. Silver beech dominates the southern resource and is one of the easiest New Zealand beech species to work with. Beech is capable of regeneration, has relatively fast growth rates, and is suitable for high-quality end uses such as furniture. It offers some of the best prospects for sustainably managed indigenous timber in New Zealand.

New Zealand's largest sustainable indigenous harvesting of silver beech is in western Southland.

In total, the Southland region milled 8,290 cubic metres of indigenous timber in the 2022–23 financial year. Silver beech and pink pine *(Halocarpus biformis)* were the most common milled species for the same year. The forests are managed under an approved sustainable forest management plan with forest operations audited by MPI's Indigenous Forestry team.

Infrastructure

Roads

The Otago and Southland regions have an extensive road network. These roads are vital for the major forestry companies in the regions, who link into this network.

Table 3. The length of local roads and state highways in the Otago and Southland regions as of September 2024. Source: https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/transport-data/data-and-tools

Region	Local roads (km)	State highways (km)	% of local roads
Otago	9345.8	1299.7	88
Southland	6510.8	776.8	89

The state highways in the Otago and Southland regions are managed by the New Zealand Transport Agency – Waka Kotahi (NZTA). State Highway (SH) 1 runs north to south along the eastern coast of Otago, through key population centres in Southland, ending at the bottom of the Southland region at Stirling Point. SH6, SH8 and SH90 provide links between inland Otago and Southland, and West Coast and Canterbury.

Electricity

Transpower owns the transmission lines in the Otago and Southland regions which consist of:

- five 220 kilovolts (kV) double circuit towers
- three 220 kV single circuit towers
- three 110 kV double circuit towers
- four 110 kV single circuit poles

There are 15 sub stations in the region.

Source: Transmission map – South Island - Transpower (PDF – 753KB)

Hydro

The Otago and Southland regions have 2 of New Zealand's largest hydropower stations: Manapouri hydropower 850 megawatts (Meridian) and Clyde hydropower 432 megawatts (Contact Energy).

Wind

White Hill Wind Farm, in Southland, has 29 turbines which can generate up to 58 megawatts, enough to power 22,000 average New Zealand homes. White Hill is owned by Meridian Energy.

Rail

The railway line south of Christchurch, the Main South Line, mirrors the route of SH1 along the eastern coast. It links coastal towns and cities, including Timaru, Oamaru, Dunedin (with an extension to Port Chalmers), Gore, Invercargill and Bluff.

Ports

The Otago and Southland regions have 2 port facilities, Port Otago Ltd and South Port New Zealand Ltd.

Port Otago Ltd operates two wharf systems – Port Chalmers and Dunedin – both within Otago Harbour. Port Otago is 100% owned by the Otago Regional Council and offers bulk cargo, containerised cargo and cruise ship services.

South Port New Zealand Ltd is the southernmost commercial deep-water port in New Zealand, located in Bluff harbour. South Port offers a suite of marine services, bulk cargo, containerised cargo and warehousing including both cold and dry storage.

Neither of the ports have debarking operations. Logs are shipped with bark as underdeck cargo with fumigation. Deck cargos are usually sent to Korea which does not require treatment.

Table 4. Dunedin and Invercargill ports export volumes and values (Free on board-FOB) for forestry and wood products for the year ending 2024. Data source: MPI Overseas Merchandise and Trade

		Dunedin		Invercargill	
Product (SOPI)	Unit of measure	Quantity	Value (NZD)	Quantity	Value (NZD)
Chips	Bone dry unit	–	–	149,588	$45,670,253
Logs	Cubic metre	1,003,697	$149,709,077	567,890	$97,096,076
Panels	Cubic metre	110,645	$62,378,019	23,218	$13,488,945
Paper & paperboard*	Mixed	–	$1,164,284	–	$91,487
Sawn timber & sleepers	Cubic metre	134,316	$52,354,595	33,506	$19,496,662
Other forestry products*	Mixed	–	$3,989,302	–	$7,206,954
Total			$269,595,277		$183,050,377

*Quantity cannot be provided as products are reported in different units of measure.

Useful links

Forestry

Southern Wood Council

The sustainable management of indigenous forests – MPI (PDF, 3 MB).

Resource Management (National Environmental Standards for Commercial Forestry) Amendment Regulations 2023

New Zealand forest data – MPI

Afforestation and deforestation intentions survey 2023 – MPI (PDF, 943 KB)

Dodson and Trost 2016. Forest Growing and Processing Otago-Southland. New Zealand Journal of Forestry Vol 61 (3).

Otago-Southland Forestry Profile 2015 – Southern Wood Council (PDF, 792 KB)

Native Planting Guide – Otago Regional Council

Riparian plants for Southland – Southland Regional Council (PDF, 21.6 MB)

Wood processing

Invest in New Zealand wood processing (March 2020) – New Zealand Trade and Enterprise

Information releases – Overseas merchandise trade – Stats New Zealand

Regional statistics

Southland Regional Development Agency

Southland Economic Project – Agriculture and Forestry (PDF, 20 MB)

Regional Economic Activity Web Tool – Ministry of Business, Innovation and Employment

Otago Regional Economic Profile for Land and Water (PDF, 2.5 MB)

Otago-Southland Regional Land Transport Plan

Otago – Regional Economic Development & Investment Unit – Kānoa

Southland – Regional Economic Development & Investment Unit – Kānoa

Climate and Weather of Southland

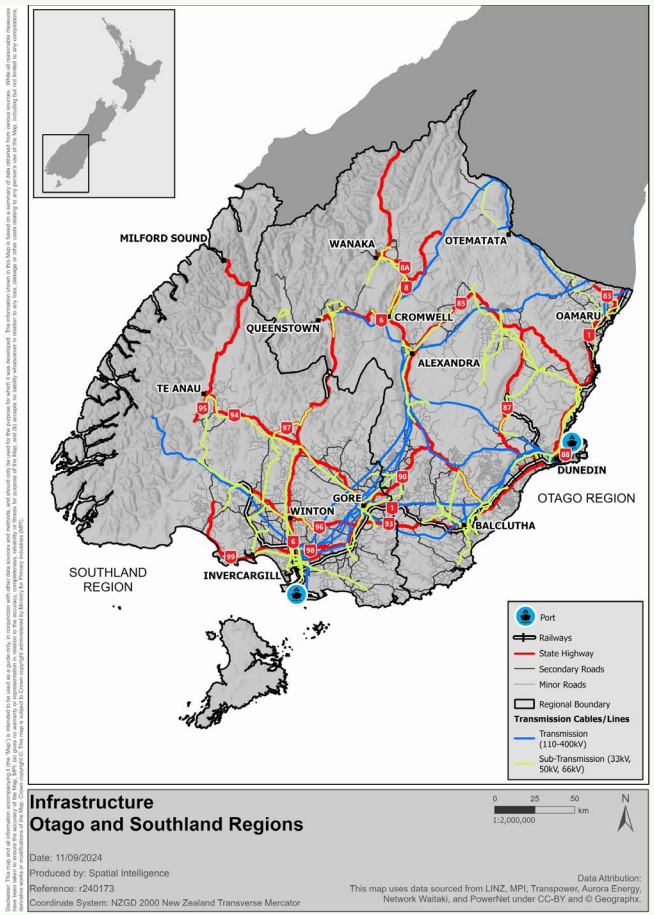
Climate and Weather of Otago

Infrastructure

Maps and geospatial data – Kiwirail

Transmission lines – Transpower

Figure 12. Map of key infrastructure across Otago-Southland.
View a high-resolution version of the infrastructure map in Otago-Southland.



The power lines information on this map may be incomplete. The information displayed is what MPI had authorised access to at the time of creating this fact sheet.

Feedback

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