

This Information Sheet describes the *typical average properties* of the specified soil. It is essentially a summary of information obtained from one or more profiles of this soil that were examined and described during the Topoclimate survey or previous surveys. It has been prepared in good faith by trained staff within time and budgetary limits. However, no responsibility or liability can be taken for the accuracy of the information and interpretations. Advice should be sought from soil and landuse experts before making landuse decisions on individual farms and paddocks. The characteristics of the soil at a specific location may differ in some details from those described here.  
No warranties are expressed or implied unless stated.

## Soil name: **Waimatuku**

### Overview

Waimatuku soils occupy about 7,600 ha on high terraces of the southern Southland Plain between the Longwoods and the Oreti River and in the Merrivale district of western Southland. They are formed in deep wind-deposited loess derived from greywacke and schist rocks. Waimatuku soils are moderately well to well drained with a moderately deep rooting depth, moderately high water-holding capacity, and have silt loam textures. They are high producing soils currently used for intensive sheep, dairy and deer production, with limited cropping. They have a cool temperate climate and receive regular rain over the year and seldom dry out.



*Waimatuku profile*

### Physical properties

Waimatuku soils have moderately high plant available water and moderately deep rooting depth that is limited by the dense lower subsoil. The soils are moderately well drained but the compact subsoil is slowly permeable, and may cause short-term waterlogging after heavy rainfall. Texture is silt loam in all horizons, with topsoil clay content of 25–30%. Waimatuku soils are typically stonefree.

### Fertility properties

Topsoil organic matter levels are 6–8%; P-retention values 40–70%; pH values are moderate in all horizons. Cation exchange, base saturation, and major cations are moderate in the topsoil, but are low in the subsoil. Reserve phosphorus levels are low. Micro nutrient levels are generally adequate although boron responses in brassicas and molybdenum responses in legumes can occur.

### Associated and similar soils

Some soils that commonly occur in association with Waimatuku soils are:

- Woodlands: occurs on the same landforms, but has imperfect drainage
- Aparima: imperfectly drained soil with a fragipan
- Oteramika: shallow soil occurring on shoulder and sideslopes where loess has been eroded away
- Dacre: poorly drained soil on floodplains of streams and minor drainage channels.

Some soils that have similar properties to Waimatuku soils are:

- Waikiwi: Very similar soil, but the Waimatuku soil is thought to have a consistently firm subsoil fragipan that provides a barrier to root growth. If further analysis doesn't confirm this subsoil fragipan, then the Waimatuku series may be correlated into the Waikiwi series.
- Edendale: occur on intermediate terraces in lower Matakura and Oreti river valleys
- Lyoncross: occur on high terraces in the Eastern Bush district of western Southland
- Pourakino: occur on the flanks of the Pourakino Valley; paler colours; P-retention 70–85% throughout profile.

## Sustainable management indicators

**Note:** the vulnerability ratings given in the table below are generalised and should not be taken as absolutes for this soil type in all situations. The actual risk depends on the environmental and management conditions prevailing at a particular place and time. Specialist advice should be sought before making management decisions that may have environmental impacts. Where vulnerability ratings of Moderate to Very severe are indicated, advice may be sought from Environment Southland or a farm management consultant.

Vulnerability factor	Rating	Vulnerability compared to other Southland soils
<b>Structural compaction</b>	slight	These soils have a slight vulnerability to structural degradation by long-term cultivation, or compaction by heavy stocking and vehicles. This rating reflects the good drainage, and the topsoil clay and P-retention values.
<b>Nutrient leaching</b>	moderate	These soils have a moderate vulnerability to leaching to groundwater. This rating reflects the moderately high water-holding capacity and slow subsoil permeability
<b>Topsoil erodibility by water</b>	slight	Due to the moderate clay and organic matter content, topsoil erodibility in these soils is minimal. Erodibility is highly dependent on management, particularly when there is no vegetation cover.
<b>Organic matter loss</b>	minimal	Vulnerability to long-term decline in soil organic matter levels is partly dependent on soil properties and highly dependent on management practices (e.g., crop residue management and cultivation practices).
<b>Waterlogging</b>	slight	These soils have a slight vulnerability to waterlogging during wet periods. This rating reflects the good drainage, but slowly permeable subsoil

## General landuse versatility ratings

**Note:** The versatility ratings in the table below are indicative of the major limitations for semi-intensive to intensive land use. These ratings differ from those used in the past in that sustainability factors are incorporated in the classification. Refer to the Topoclimate district soil map or property soil map to determine which of the soil symbols listed below are applicable, then check the versatility ratings for that symbol in the appropriate table.

### WkU1 (Waimatuku undulating deep)

Versatility evaluation for soil WkU1		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Moderate	Risk of short-term waterlogging after heavy rain.
Arable	Moderate	Risk of short-term waterlogging after heavy rain
Intensive pasture	Moderate	Vulnerability to leaching to groundwater; risk of short-term waterlogging after heavy rain
Forestry	High	Few limitations

### WkR1 (Waimatuku rolling deep)

Versatility evaluation for soil WkR1		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Moderate	Risk of short-term waterlogging after heavy rain.
Arable	Limited	Rolling slopes
Intensive pasture	Moderate	Vulnerability to leaching to ground water; risk of short-term waterlogging after heavy rain.
Forestry	High	Few limitations

### Management practices that may improve soil versatility

- Careful management after heavy rain and wet periods will reduce the impact of short-term waterlogging. Intensive stocking, cultivation and heavy vehicular traffic use should be minimised during these periods.
- Installation and maintenance of subsurface mole and tile drains will reduce the risk of short-term waterlogging.
- If compaction occurs, aeration at the correct moisture condition and depth can be of benefit.