

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: Oreti

### Overview

Oreti soils occupy about 12,800ha on the intermediate terraces of the Waimea and Five Rivers plains, in the Mataura and Oreti river catchments. They are formed in gravelly alluvium derived from greywacke and schist rock. Oreti soils are well drained, with silt loam topsoil texture. The soils are stony in both the topsoil and subsoil, which limits the rooting depth and water holding capacity. Oreti soils are used for sheep production, with some dairying and cropping. Rainfall is evenly spread but can be deficient in summer, when these soils may dry out.

### Physical properties

Oreti soils have a shallow to slightly deep rooting depth, depending on the gravel content and depth to the cemented pan in the subsoil. Plant available water varies from moderate to low depending on the quantity of gravel present. The soils are well drained (sometimes excessively) with good aeration. Topsoil textures are silt loams to sandy loams grading to sand in deeper horizons. Topsoil clay content is 15–25%. Gravel content is often above 70% in the subsoil.



*Oreti profile*

### Fertility properties

Topsoil organic matter levels range from 5 to 10%; P-retention values are variable ranging from 30 to 70%; pH is moderate (above 5.5) and changes little down the profile. Cation exchange values are moderate in topsoils but low in the subsoil. Available calcium, magnesium and potassium values are low. Phosphorus and sulphur reserves are low and good responses are likely. Micro-nutrient levels are generally adequate, although boron responses in brassicas and molybdenum responses in legumes can be expected.

### Associated and similar soils

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

- Otama: low angle dunes with silty to loamy textures, and gravels below 45cm depth
- Crookston: formed in silty loess, with gravels below 45cm depth

Some soils that have similar properties to Oreti soils are:

- Kaweku: on high terraces; gravels moderately weathered and not cemented
- Gore: on low terraces; gravels not cemented
- Glenelg: on intermediate terraces of the Aparima and Waiau rivers

## 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 moderate p-retention in the topsoil.
<b>Nutrient leaching</b>	Very severe	These soils have a very severe vulnerability to leaching to ground water. This rating reflects the good drainage, low total available water, and rapid permeability.
<b>Topsoil erodibility by water</b>	Slight	Due to the low-moderate clay and organic matter content, the topsoil erodibility of these soils is slight. Erodibility is highly dependent on management, especially when there is no vegetation cover.
<b>Organic matter loss</b>	Moderate	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>	Nil	These soils have no vulnerability to waterlogging during wet periods. This rating reflects the good drainage and rapid permeability.

## 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.

### OeU3 (Oreti undulating shallow)

Versatility evaluation for soil OeU3		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Limited	Shallow potential rooting depth and vulnerability to leaching to groundwater
Arable	Limited	Shallow potential rooting depth and vulnerability to leaching to groundwater
Intensive pasture	Limited	Shallow potential rooting depth and vulnerability to leaching to groundwater
Forestry	Limited	Shallow potential rooting depth

### Management practices that may improve soil versatility

- Long-term cultivation should be carefully managed to minimise structural degradation
- Organic matter levels should be carefully maintained and enhanced
- Over cultivation of dry soils in summer may allow wind erosion
- Irrigation for intensive pasture and crop production to overcome summer moisture deficiencies.
- Management of nutrient applications that minimise leaching losses
- Ripping of subsoil pan may be possible for deep rooting plants