

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: **Chatton**

### Overview

Chatton soils occupy 4000 ha on rolling downlands north of Gore. They are formed into windblown loess overlying old and strongly weathered gravelly alluvium. They are moderately deep, moderately well drained soils, with silt loam texture. Present use is pastoral farming with sheep, dairy and deer with some cropping. Regular rain occurs though soils can be seasonally dry in some summers.

### Physical properties

Chatton soils have a moderately deep rooting depth and moderately high plant available water. The soils are moderately well drained, but have slow permeability in the lower subsoil. Textures are silt loams, with clay loams occurring in the gravelly subsoil (below 45cm depth). Topsoil clay content is 20-30%. Stones and gravel are present in the subsoil and can occasionally occur in the topsoil.



*Chatton profile*

### Fertility properties

Topsoil organic matter levels are 5-6%; P-retention values 30-40% and pH values low (mid 5s). Cation exchange values are moderate in the topsoil, but base saturation is low. Available calcium levels are low and magnesium and potassium levels moderate. Natural reserves of phosphorus are low. Micronutrient 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 Chatton soils are:

- Waikoikoi: has no gravels within 90cm depth; poorly drained with a subsoil fragipan.
- Benio: shallow soil with gravels through the profile.
- Jacobstown: poorly drained floodplain soil
- Arthurton: imperfectly drained soil formed in deep loess; shows Brown-Pallic intergrade properties

Some soils that have similar properties to Chatton soils are:

- Oteramika: predominantly shallow soils forming on terrace shoulders and sideslopes in southern Southland
- Wairaki: occurs on high terraces and fans from the Takitimu mountains. Formed in tuffaceous greywacke alluvium

## 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
Structural compaction	moderate	These soils have a moderate vulnerability to structural degradation by long-term cultivation, or compaction by heavy stocking and vehicles. This rating reflects the moderate clay content and P-retention values.
Nutrient leaching	moderate	These soils have a moderate vulnerability to leaching to groundwater. This rating reflects the good drainage that is offset by the moderately high water-holding capacity.
Topsoil erodibility by water	slight	Due to the moderate organic matter and clay content, the topsoil erodibility of these soils is slight. Erodibility is highly dependent on management, particularly when there is no vegetation cover.
Organic matter loss	slight	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).
Waterlogging	slight	These soils have a slight vulnerability to waterlogging during wet periods. This rating reflects the moderate drainage and slow subsoil 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.

### CtH2 (Chatton hilly moderately deep)

Versatility evaluation for soil CtH2		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Unsuitable	Hilly slopes
Arable	Unsuitable	Hilly slopes
Intensive pasture	Limited	Hilly slopes
Forestry	Moderate	Hilly slopes; restricted rooting depth

### CtU2 (Chatton undulating moderately deep)

Versatility evaluation for soil CtU2		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Moderate	Risk of short-term waterlogging after heavy rain; restricted rooting depth
Arable	Moderate	Risk of short-term waterlogging after heavy rain
Intensive pasture	Moderate	Restricted subsoil root penetrability
Forestry	Moderate	Restricted rooting depth

**CtR2 (Chatton rolling moderately deep):** as above, but versatility of arable landuse is limited due to rolling slopes

**CtS2 (Chatton steep moderately deep):** steep slopes render the steep phase of these soils unsuitable for non-arable horticulture and arable landuse; intensive pasture and forestry landuses have a rating of 'limited' due to steep slopes

### Management practices that may improve soil versatility

- Care with intensive grazing to minimise pugging when soils are excessively wet.
- Management of nutrient applications that minimise leaching losses