

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.
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Soil name: Otahuti

Overview

Otahuti soils occupy about 1000 ha on low terraces on the central Southland plain south of Drummond. They are formed in moderately deep to deep fine alluvium derived from tuffaceous greywacke and volcanic rocks. The soils are well drained, with good potential rooting depth, high water-holding capacity and heavy silt loam to silty clay textures. Present use is intensive pastoral grazing with sheep, dairy and deer production and some cropping. They have a cool temperate climate and receive regular rain over the year, soils seldom dry out.

Physical properties

Otahuti soils have a deep rooting depth and high plant available water, with no major restriction to root growth. They are well drained, with good aeration and permeability throughout the profile. Textures are silty clay grading to silt loam in the subsoil, with a topsoil clay content of about 35–40%. Deeper soils contain no stones, but moderately deep soils contain gravel below 45cm that may limit the rooting depth and water holding capacity.



Otahuti profile

Fertility properties

Topsoil organic matter levels are about 7%; P-retention 50–80% with pH moderate (high5s). Cation exchange is moderate with base saturation high. Available calcium levels are high with magnesium and potassium levels low. Reserve phosphorus levels are low. Micronutrient levels are generally adequate.

Associated and similar soils

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

- Braxton: moderately deep to deep, poorly drained soil with no fragipan
- Pukemutu: deep, poorly drained soil due to water perching on a fragipan
- McLeish: shallow, poorly drained soil

Some soils that have similar properties to Otahuti soils are:

- Drummond: has soil properties that reflect a significant influence of Mafic parent material
- Ardlussa: has intergrade properties between Pallic and Brown soils; has silty textures throughout
- McGaw: imperfectly drained equivalent of the Otahuti soil

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	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, high P-retention and clay content.
Nutrient leaching	moderate	These soils have a moderate vulnerability to leaching to groundwater. This rating reflects the good drainage and moderate permeability, offset by the high water-holding capacity.
Topsoil erodibility by water	slight	Due to the high clay content, topsoil erodibility in these soils is slight. Erodibility is highly dependent on management, particularly when there is no vegetation cover.
Organic matter loss	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).
Waterlogging	slight	These soils have a slight vulnerability to waterlogging during wet periods. This rating reflects the good drainage and 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.

OuU1 (Otahuti undulating deep)

Versatility evaluation for soil OuU1

Landuse	Versatility rating	Main limitation
Non-arable horticulture	High	No major limitation
Arable	High	No major limitation
Intensive pasture	Moderate	Vulnerability to leaching to ground water
Forestry	High	No major limitation

OuU2 (Otahuti undulating moderately deep)

Versatility evaluation for soil OuU2

Landuse	Versatility rating	Main limitation
Non-arable horticulture	Moderate	Restricted rooting depth.
Arable	High	No major limitation
Intensive pasture	Moderate	Vulnerability to leaching to ground water
Forestry	Moderate	Restricted rooting depth.

Management practices that may improve soil versatility

- Management of nutrient applications so as to minimise leaching losses
- Clayey textures in the topsoil may be limiting for harvesting of root crops during wet conditions