

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: **Tuatapere**

Overview

Tuatapere soils occupy 6,500 ha on the slowly accumulating floodplains and low terraces of the Waiau and Aparima river catchments. They are formed in mixed alluvium derived from the Takitimu, Fiordland, and Livingstone Mountains. The soils are well drained, with good rooting depth and water holding capacity. They are silty to loamy textured soils, and contain variable amounts of gravel below 45 cm. Tuatapere soils are suitable for a range of farming activities and receive regular summer rain.



Tuatapere profile

Physical properties

This soil has a good rooting depth and high water-holding capacity. The soil is well drained and has good aeration. Soils have a silt loam texture in upper horizons, with topsoil clay percentage of 20–30%. Varying amounts of gravel occurs below 45cm, with occasional stones in the topsoil.

Fertility properties

Topsoil organic matter levels are 5–8%; P-retention values 30–60%; pH values are high (>5.8) in all horizons; moderate to high cation exchange and high base saturation values. Reserves of phosphorus, potassium and sulphur are low and soils respond well to these nutrients. Micro-nutrient levels are generally satisfactory.

Associated and similar soils

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

- Drummond: occur on low to intermediate terraces; commonly have subsoil pH <5.5; and more clayey textures
- Waiau: shallow soils with gravel at less than 45cm depth.
- Upukerora: occur on the active accumulating floodplain; mostly shallow soils, but are variable due to the flood history

Some soils that have similar properties to Tuatapere soils are:

- Winton: Pallic soils with clayey textures on slowly accumulating floodplain and low terraces of the lower Oreti River
- Ardlussa: Brown soils from schist and greywacke alluvium on the slowly accumulating floodplain and low terraces of the upper Oreti, Mataura, and Pomahaka rivers
- Mataura soils: Recent soils from schist and greywacke alluvium on the accumulating floodplain of the Oreti, Mataura, and Pomahaka 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
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, moderate P-retention, and topsoil clay content.
Nutrient leaching	Severe	These soils have a severe vulnerability to leaching to groundwater. This rating reflects the moderate total available water. Deep phases are likely to have moderate vulnerability.
Topsoil erodibility by water	Slight	Due to the silty clay texture, 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 good drainage and moderate permeability. The imperfectly drained variant will have a moderate vulnerability.

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.

TjU1 (Tuatapere undulating deep)

TjU1vi (Tuatapere undulating deep imperfectly, drained variant)

TjU2 (Tuatapere undulating moderately deep)

TjU2vi (Tuatapere undulating moderately deep, imperfectly drained variant)

Versatility evaluation for soil TjU1, TjU1vi, TjU2, TjU2vi		
Landuse	Versatility rating	Main limitation
Non-arable Horticulture	Moderate	Intermittent flooding and vulnerability to leaching to groundwater
Arable	Moderate	Intermittent flooding and vulnerability to leaching to groundwater
Intensive Pasture	Moderate	Intermittent flooding and vulnerability to leaching to groundwater
Forestry	Limited	Flood risk over rotation of forest

Management practices that may improve soil versatility

- Mataura soils would benefit from flood protection for intensive landuses.
- Management of nutrient applications that minimise leaching losses.
- Organic matter levels should be carefully maintained and enhanced