

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: **Waituna**

Overview

Waituna soils occur in the The Key district of northern Southland on young fans from the Takitimu Mountains. They are formed into alluvium derived from tuffaceous greywacke and basic volcanic rocks. Soils have a slightly deep to shallow rooting depth, limited by the graveliness of the subsoil, and moderate to low plant available water. Present use is pastoral farming with sheep, deer and beef cattle. Climate is cold in the winter with warm summers. Regular rainfall occurs though some summers can be seasonally dry.

Physical properties

Waituna soils have a slightly deep to shallow (30–60cm) rooting depth that is restricted by the subsoil graveliness. The rooting depth is shallow in recent variant soils. Plant available water is moderate to low, with good aeration and rapid permeability. Texture is silt loam grading to sand below 35cm depth. Topsoil clay content is about 20%. Soils are very gravelly throughout the profile.



Waituna profile

Fertility properties

Topsoil organic matter content is about 20%, P-retention 80–90% and pH moderate (high 5s). Cation exchange values are high and base saturation moderate. Available calcium and potassium levels are high and magnesium levels low. Soil reserve phosphorus levels are low. Micronutrient levels are generally adequate.

Associated and similar soils

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

- Princhester: moderately deep to deep soils that occur on fans of the same age.
- Mararoa: moderately deep to deep soils that occur on fans of the same age, but are not allophanic and have P-retention of <85%

Some soils that have similar properties to Waituna soils are:

- Lintley: formed on fans from greywacke bedrock
- Dome: young, recent soil formed on the floodplain of fans from greywacke bedrock
- Monowai: formed on intermediate to high terraces

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 good drainage, with high P-retention and moderate clay content. The recent variant is likely to have severe vulnerability. |
| Nutrient leaching | very severe | These soils have a very severe vulnerability to leaching to groundwater. This rating reflects the good drainage, moderate to low water-holding capacity and rapid permeability. |
| Topsoil erodibility by water | slight | Due to the moderate clay and organic matter content, topsoil erodibility in these soils is slight. Erodibility is highly dependent on management, particularly when there is no vegetation cover. The recent variant is likely to have moderate vulnerability. |
| Organic matter loss | 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). The recent variant is likely to have severe vulnerability. |
| Waterlogging | nil | These soils have a nil vulnerability to waterlogging during wet periods. This rating reflects the rapid permeability and the well drained nature of the soil. |

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.

WiU3 (Waituna undulating shallow)

WiU3vr (Waituna undulating shallow, recent variant)

| Versatility evaluation for soil WiU3, WiU3vr | | |
|--|--------------------|---|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Limited | Vulnerability to leaching to groundwater; restricted rooting depth. |
| Arable | Limited | Vulnerability to leaching to groundwater; topsoil stoniness |
| Intensive pasture | Limited | Vulnerability to leaching to groundwater. |
| Forestry | Limited | Subsoil stoniness; restricted rooting depth. |

Management practices that may improve soil versatility

- Management of fertiliser nutrient applications that minimise leaching losses should be adopted. High application rates of fertiliser can be split into at least two applications; avoid applying very soluble fertilisers such as nitrogen if soils are excessively wet.