

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: **Mataura**

Overview

Mataura soils occupy about 53,000 ha on the accumulating floodplains of rivers in southern, northern and eastern Southland and west Otago. They are formed in moderately deep to deep fine alluvium derived from schist and greywacke rock. Mataura soils are typically free draining, with occasional depression areas that have imperfect drainage. They have a good rooting depth, and typically loamy silt to silt loam texture. Mataura soils are suitable for a wide range of farming activities but can be dry over summer in northern Southland in some years, which would restrict pasture or crop growth.



Matura profile

Physical properties

Matura soils have deep rooting depth, and high plant available water. Textures are typically silt loam to loamy silt, with 10-20% clay in the topsoil. The moderately deep phase will have gravel between 45 and 90cm depth, and will have lower water holding capacity and increased permeability.

Fertility properties

Topsoil organic matter levels are 4-7%; P-retention values 10-20%; pH values above 5.5 down the profile, with an occasional slight increase below 55cm. Cation exchange is low and base saturation high, indicating high availability of nutrient cations that are present. Reserves of phosphorus and sulphur are low, and moderate levels of reserve potassium were indicated from one profile analysis. Micro nutrient levels are generally adequate.

Associated and similar soils

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

- Riversdale: Recent soil on the floodplain, but has gravel at less than 45cm depth
- Jacobstown: moderately deep to deep, poorly drained soils due to high groundwater
- Howe: on active floodplain; variable soils due to active flooding

Some soils that have similar properties to Matura soils are:

- Ardlussa: on slowly accumulating floodplain; show significant B horizon development
- Otikerama: Recent soils formed into tuffaceous greywacke alluvium from Hokonui Hills
- Pomahaka: formed in dominantly schist alluvium on the Clutha River

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	Very Severe	These soils have a very severe vulnerability to structural degradation by long-term cultivation, or compaction by heavy stocking and vehicles. This rating reflects the low clay and P-retention in the topsoil, which results in low structural stability.
Nutrient leaching	Moderate	These soils have a moderate vulnerability of leaching to ground water. The vulnerability reflects the moderate permeability and high water holding capacity.
Topsoil erodibility by water	Moderate	Due to the low clay content, the topsoil erodibility of these soils is moderate. Erodibility is highly dependent on management, especially 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., cultivation practices and crop residue management)
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 moderate vulnerability to waterlogging.

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.

MaU1 (Mataura undulating deep)

MaU1vi (Mataura undulating deep, imperfectly drained variant)

MaU2 (Matura undulating moderately deep)

MaU2vi (Mataura undulating moderately deep, imperfectly drained variant)

Versatility evaluation for soil MaU1, MaU2, MaU1vi, MaU2vi		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Limited	Risk of flooding in some rivers.
Arable	Moderate	Vulnerable to nutrient leaching and structural degradation by long-term intensive cultivation
Intensive pasture	Moderate	Vulnerable to nutrient leaching and structural degradation by compaction
Forestry	Limited	Risk of flooding in some rivers.

Management practices that may improve soil versatility

- Mataura soils would benefit from flood protection for intensive landuses.
- Cultivation and intensive stocking or vehicular traffic should be minimised during wet periods
- Long-term cultivation should be carefully managed to minimise structural degradation
- Organic matter levels should be carefully maintained and enhanced
- Management of nutrient applications that minimise leaching losses