

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: **Riversdale**

### Overview

Riversdale soils occupy about 19,200 ha on the flood plains of the Mataura, Oreti and Pomahaka rivers and their tributaries. They are formed in gravelly alluvium derived from greywacke and schist rocks. Riversdale soils are shallow (<45 cm to gravels) and free draining soils that are still occasionally flooded. They are moderately fertile, with silty to sandy texture, but the rooting depth and water capacity is limited by the gravels. Riversdale soils are used for sheep and dairy production with some cropping, but their versatility is limited by the stoniness and flood risk. Summer rainfall is often sub-optimal and the soils tend to be droughty.



*Riversdale profile*

### Physical properties

Riversdale soils have a moderate to slightly deep rooting depth, depending on the gravelliness of the subsoil. Plant available water will vary from moderate to low depending on the amount of gravels present. The soils are well drained (sometimes excessively) and aerated. Textures are usually silt loams to sandy loams in the topsoil, grading to sand in deeper horizons, with topsoil clay content of less than 18%. Topsoils often are slightly to moderately gravelly, and moderately to extremely gravelly below.

### Fertility properties

Topsoil organic matter levels range from 3 to 7%; P-retention values mostly under 15%; pH values are moderate, with little change down the profile. Cation exchange values are moderate in topsoils but low in subsoils; base saturation values are moderate. Values for available calcium, magnesium, potassium and sodium are all low to very low. Phosphorus and sulphur reserves are also low, with good responses to these nutrients. Micro-nutrient levels are generally adequate.

### Associated and similar soils

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

- Mataura: gravels occur at greater than 45 cm depth
- Lumsden: also shallow, but poorly drained due to a high water table
- Jacobstown: poorly drained, and gravels occur at greater than 45cm depth
- Howe: on active accumulating floodplain; variable soils due to active flooding

Some soils that have similar properties to Riversdale soils are:

- Upukerora: shallow recent soil on the floodplain of the Aparima and Waiau Rivers (including tributaries), in gravelly alluvium from tuffaceous greywacke and volcanic rocks
- Waiau: shallow soil on floodplain & low terraces of the Aparima and Waiau Rivers (including tributaries); some limited B horizon development
- Gore: shallow soil on low terraces of the Mataura and Oreti Rivers (including tributaries); has a more developed profile.

## 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
<b>Structural compaction</b>	Severe	These soils have a 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 that results in low structural stability.
<b>Nutrient leaching</b>	Very severe	These soils have a very severe vulnerability to leaching to groundwater. This rating reflects the rapid permeability and low water holding capacity.
<b>Topsoil erodibility by water</b>	Slight	Due to the low-moderate clay and organic matter content, erodibility in these soils is slight. Erodibility is highly dependent on management, particularly when there is no vegetation cover.
<b>Organic matter loss</b>	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).
<b>Waterlogging</b>	Nil	These soils have little vulnerability to waterlogging during wet periods. This rating reflects the good drainage and rapid 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.

### RiU3 (Riversdale undulating shallow)

Versatility evaluation for soil RiU3		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Limited	Rooting depth and vulnerability to leaching to groundwater
Arable	Limited	Vulnerability to leaching to groundwater
Intensive pasture	Limited	Vulnerability to leaching to groundwater
Forestry	Limited	Rooting depth; risk of flooding

### Management practices that may moderate versatility limitations

- Riversdale 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