

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: **Venlaw**

Overview

Venlaw soils occupy about 300 ha on hilly and steepland in the Hokonui Hills and the Kaiwera district, in upland areas above 300m altitude. These soils also occur on hilly areas in southern Southland that are outside the Topoclimate survey area. They are formed in stony colluvium from tuffaceous greywacke, on predominantly shady slopes. Venlaw soils are well drained, with a high water-holding capacity and slightly deep rooting depth that is limited by gravelliness and/or presence of bedrock. Venlaw soils are strongly leached, with P-retention of >85% and pH of <5.5 typical in the subsoil. Present use is native forest with some areas used for extensive grazing with sheep. Climate is cool, with exposure to prevailing winds. Regular rainfall occurs.

**No
profile photo
available**

Venlaw profile

Physical properties

Venlaw soils have a slightly deep (45–60cm) rooting depth that is limited by the subsoil gravelliness and/or presence of bedrock. The soils have a high plant water availability, with good drainage, aeration and permeability throughout the profile. Textures are loamy clays and clay loams. Topsoil clay content is about 40%. The soils are gravelly throughout, and typically have at least 35% gravel within 45cm depth.

Fertility properties

Topsoil organic matter levels are about 20–25% and are relatively high in the subsoil. P-retention values are very high (>85%) with pH low (<5.4). Cation exchange levels are high and base saturation very low. Available calcium levels are low and magnesium and potassium levels moderate to high in the topsoil, but very low in the subsoil. Soil reserve phosphorus levels are low. Micronutrient levels are generally adequate.

Associated and similar soils

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

- Rosemarkie: formed in moderately deep to deep loess

Some soils that have similar properties to Venlaw soils are:

- Kaiwera: lowland equivalent of the Venlaw soil
- Waiarikiki: moderately deep soil formed in gravelly colluvium, but the very gravelly horizon with >35% gravel occurs deeper, at between 45 and 90cm depth
- Pukerau: strongly leached shallow soil on tuffaceous greywacke bedrock within 45cm depth

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	minimal	These soils have a minimal vulnerability to structural degradation by long-term cultivation, or compaction by heavy stocking and vehicles. This rating reflects the good drainage, high clay, organic matter and P-retention.
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 and high organic matter 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	nil	These soils have a nil vulnerability to waterlogging during wet periods. This rating reflects the good drainage and hilly to steep slopes.

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.

VeS3 (Venlaw steep deep)

Versatility evaluation for soil VeS3		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Unsuitable	Steep slopes
Arable	Unsuitable	Steep slopes
Intensive pasture	Limited	Steep slopes
Forestry	Limited	Steep slopes; restricted rooting depth

VeH3 (Venlaw hilly deep)

Versatility evaluation for soil VeH3		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Unsuitable	Hilly slopes
Arable	Unsuitable	Hilly slopes
Intensive pasture	Limited	Hilly slopes
Forestry	Limited	Restricted rooting depth

Management practices that may improve soil versatility

- Careful management of forest. Logging operations can cause erosion on steep slopes.