

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: **Wendon**

Overview

Wendon soils occupy about 6,400 ha on undulating to steep slopes of hilly land in northern and eastern Southland. They are formed into thin loess overlying bedrock or stony colluvium from greywacke. Wendon soils are well drained, with a shallow rooting depth and moderate water holding capacity that is limited by the graveliness and bedrock that commonly occurs within 45cm depth. They are used for extensive pastoral grazing with sheep and beef cattle. Climate is cool temperate with regular rain, though these soils can dry out in summer because of their shallow depth and good drainage.

Physical properties

Wendon soils have a shallow rooting depth, restricted by the graveliness and bedrock in the subsoil, and moderate available water. These soils are well drained, with good aeration and permeability throughout the soil. Textures are typically silt loam, with topsoil clay content of 15–30%. The soils are gravelly throughout, and typically have at least 35% gravel within 45cm depth. Bedrock also typically occurs within 45cm depth.



Wendon profile

Fertility properties

Topsoil organic matter levels are 6–9%; P-retention values <25% and pH values moderate (typically below 5.5 in the subsoil). Cation exchange is moderate throughout the profile. Base saturation is high in the topsoil but low in the subsoil. Availability of calcium, magnesium and potassium is moderate to low. Natural reserves of phosphorus and sulphur are low. Micro-nutrient levels are generally adequate but molybdenum may be required for legumes.

Associated and similar soils

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

- Waikoikoi: poorly drained, deep soil with a fragipan; formed in deep loess
- Glenure: poorly drained deep soil without a fragipan; formed in deep loess
- Josephville: well drained soil formed in a mix of stony colluvium and a significant proportion of loess; is gravelly but has <35% gravel within 45cm depth
- Waikaka: well drained Brown soil formed into deep loess

Some soils that have similar properties to Wendon soils are:

- Taringatura: moderately leached Brown soil; formed on tuffaceous greywacke and greywacke bedrock and stony colluvium of the Taringatura Hills
- Tyneholm: moderately leached Brown soil with tuffaceous greywacke bedrock within 45cm depth
- Mandeville: Melanic soil with tuffaceous greywacke bedrock within 45cm depth
- Pukekoma: strongly leached Brown soil with pH <4.8 formed on greywacke and subschist 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 | 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 low P-retention and moderate to low clay percentage. |
| Nutrient leaching | very severe | These soils have a very severe vulnerability to leaching to groundwater. This rating reflects the good drainage, rapid permeability, and moderate water-holding capacity. |
| Topsoil erodibility by water | slight | Due to the silt loam 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 | 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). |
| Waterlogging | nil | These soils have a nil vulnerability to waterlogging during wet periods. This rating reflects the good drainage, permeability, and the rolling 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.

WeR3 (Wendon rolling shallow)

| Versatility evaluation for soil WeR3 | | |
|--------------------------------------|--------------------|--|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Limited | Restricted rooting depth |
| Arable | Limited | Rolling slopes; restricted rooting depth |
| Intensive pasture | Limited | Vulnerability to leaching to groundwater; restricted rooting depth |
| Forestry | Unsuitable | Shallow rock depth |

WeU3 (Wendon undulating shallow)

| Versatility evaluation for soil WeU3 | | |
|--------------------------------------|--------------------|--|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Limited | Shallow rock depth. |
| Arable | Limited | Vulnerability to leaching to groundwater; restricted rooting depth |
| Intensive pasture | Limited | Vulnerability to leaching to groundwater; restricted rooting depth |
| Forestry | Unsuitable | Shallow rock depth |

WeH3 (Wendon hilly shallow); WeS3 (Wendon steep shallow)

| Versatility evaluation for soil WeH3, WeS3 | | |
|--|--------------------|--|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Unsuitable | Hilly and steep slopes |
| Arable | Unsuitable | Hilly and steep slopes |
| Intensive pasture | Limited | Hilly and steep slopes; restricted rooting depth |
| Forestry | Unsuitable | Shallow rock depth. |

Management practices that may improve soil versatility

- Management of nutrient applications that minimise leaching losses

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