

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.

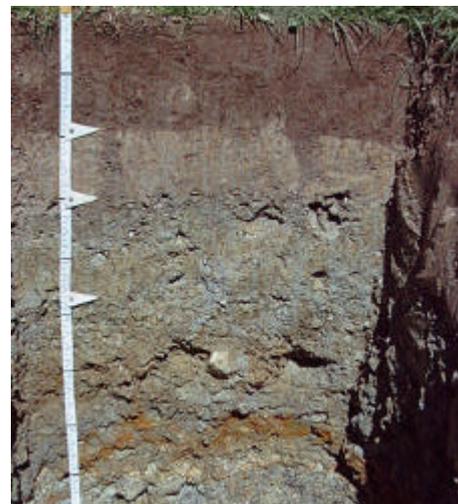
Soil name: Longridge

Overview

Longridge soils occupy about 2,400 ha in hollows and toe slopes of fans in northern Southland between Balfour and Athol and south of Tapanui in west Otago. They are formed into alluvial fan gravels mixed with a thin mantle of loess derived from greywacke. They are shallow, silty, poorly drained soils that have a high water table. Present use is pastoral grazing with sheep, beef cattle and deer. Climate is cool temperate with regular rain.

Physical properties

Longridge soils have a slightly deep rooting depth and moderate plant available water that is limited by the subsoil gravelliness. Permeability is slow, with poor aeration due to the high water table. Textures are heavy silt loams to silty clay, grading to coarser loamy textures in the gravels. Topsoil clay content is 25–40% with a slight to moderate gravel content. Subsoils are very to extremely gravelly.



Longridge profile

Fertility properties

Topsoil organic matter levels vary between 5 and 12%; P-retention 20–30% and pH values moderate (high 5s). Subsoil pH values are about 6.0. Cation exchange values are moderate and base saturation high. Available calcium and magnesium levels are moderate and potassium low. Reserve phosphorus levels are also low. Micronutrient levels are generally adequate although molybdenum responses in legumes can be expected.

Associated and similar soils

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

- Jacobstown: moderately deep to deep poorly drained silty soils formed in alluvium on the floodplains of major streams.
- Makarewa: moderately deep to deep poorly drained clayey soils formed in alluvium on the floodplains of major streams.
- Glenure: moderately deep to deep poorly drained gley soils formed into loess on fans and terraces.
- Lintley: well drained shallow soil forming in fan gravels.

Some soils that have similar properties to Longridge soils are:

- Dipton: shallow, poorly drained soil due to water perching on clay-bound gravels of intermediate to high terraces.
- Lumsden: shallow, poorly drained soil of floodplains and low terraces; due to a high groundwater table
- Caroline: shallow to moderately deep poorly drained soil on low terraces; due to a high groundwater table, with a cemented ironpan

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	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 poor drainage and low P-retention.
Nutrient leaching	moderate	These soils have a moderate vulnerability to leaching to groundwater. This rating reflects the moderate water holding capacity, offset by the slow permeability and poor drainage.
Topsoil erodibility by water	minimal	Due to the moderate to high clay content, topsoil erodibility in these soils is minimal. Erodibility is highly dependent on management, particularly when there is no vegetation cover.
Organic matter loss	severe	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	severe	These soils have a severe vulnerability to waterlogging during wet periods on undulating and rolling slopes with a moderate and slight rating on hilly and steep slopes respectively. This rating reflects the poor drainage and slow 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.

LnU3 (Longridge undulating shallow)

Versatility evaluation for soil LnU3		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Limited	Inadequate aeration during wet periods; restricted rooting depth
Arable	Limited	Inadequate aeration during wet periods; short-term waterlogging risk after heavy rain.
Intensive pasture	Limited	Short-term waterlogging risk after heavy rain.
Forestry	Limited	Inadequate aeration during wet periods; restricted rooting depth

LnR3 (Longridge rolling shallow): as above, but rolling slopes replace short-term waterlogging as a limitation for arable landuse.

LnH3 (Longridge hilly shallow) and LnS3 (Longridge steep shallow): unsuitable for non-arable horticulture and arable landuse due to hilly or steep slopes; limited versatility for intensive pasture due to slope and risk of short-term waterlogging after heavy rain, and for forestry due to inadequate aeration during wet periods and restricted rooting depth (hilly phase) and steep slope and restricted rooting depth (steep phase).

Management practices that may improve soil versatility

- Careful management after heavy rain and wet periods will reduce the impact of short-term waterlogging. Intensive stocking, cultivation and heavy vehicular traffic use should be minimised during these periods.
- Installation of tile drains will reduce the risk of aeration limitations and short-term waterlogging.