

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.

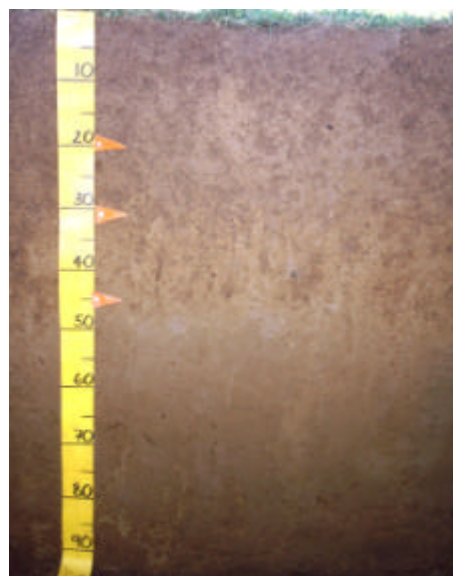
Soil name: **McGaw**

Overview

McGaw soils occupy about 500 ha on low and intermediate terraces in the Isla Bank to Waimatuku area of central Southland. They are formed in moderately deep to deep fine alluvium derived from tuffaceous greywacke and volcanic rocks, with a variable mixture of loess. The soils are imperfectly drained and have deep potential rooting depth, moderately high water capacity and heavy silt loam to silty clay textures. Present use is pastoral farming with sheep and dairy cattle and some cropping. Regular rainfall occurs and soils seldom dry out.

Physical properties

McGaw soils have a deep rooting depth and moderately high plant available water, with no major restriction to root growth. They are imperfectly drained, with slow subsoil permeability that may cause aeration limitations during wet periods. Textures are silty clay grading to silt loam in the subsoil, with a topsoil clay content of about 35–40%. Deeper soils contain no stones, with moderately deep soils containing gravel below 45cm, that may limit the rooting depth and water-holding capacity.



McGaw profile

Fertility properties

Topsoil organic matter levels are about 9%. P-retention 60–85% and pH moderate (high 5s) in all horizons. Cation exchange and base saturation values are moderate to high. Available calcium values are high, with magnesium and potassium values moderate, tending to low in the subsoil. Soil reserve phosphorus levels are low. Micro nutrient levels are generally adequate.

Associated and similar soils

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

- Braxton: moderately deep to deep, poorly drained soil with no fragipan
- Pukemutu: deep, poorly drained soil due to water perching on a fragipan
- McLeish: shallow, poorly drained soil

Some soils that have similar properties to McGaw soils are:

- Drummond: well drained soil with soil properties that reflect a significant influence of Mafic parent material
- Otahuti: well drained equivalent of the McGaw soils
- Woodlands: moderately deep to deep soil formed in deep loess on intermediate to high terraces

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	slight	These soils have a slight vulnerability to structural degradation by long-term cultivation, or compaction by heavy stocking and vehicles. This rating reflects the moderate to high clay, P-retention and organic matter content.
Nutrient leaching	slight	These soils have a slight vulnerability to leaching to groundwater. This rating reflects the imperfect drainage, slow permeability, and moderately high water-holding capacity.
Topsoil erodibility by water	minimal	Due to the moderate to high clay content and gentle slope, topsoil erodibility in these soils is minimal. 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	moderate	These soils have a moderate vulnerability to waterlogging during wet periods. This rating reflects the imperfect 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.

MwU2 (McGaw undulating moderately deep)

Versatility evaluation for soil MwU2		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Moderate	Vulnerability to sustained waterlogging; restricted rooting depth.
Arable	Moderate	Inadequate aeration during wet periods; vulnerability to sustained waterlogging.
Intensive pasture	Moderate	Inadequate aeration during wet periods; vulnerability to leaching to groundwater.
Forestry	Moderate	Vulnerability to sustained waterlogging; restricted rooting depth.

MwU1 (McGaw undulating deep)

Versatility evaluation for soil MwU1		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Moderate	Inadequate aeration during wet periods; vulnerability to sustained waterlogging.
Arable	Moderate	Inadequate aeration during wet periods; vulnerability to sustained waterlogging.
Intensive pasture	Moderate	Inadequate aeration during wet periods.
Forestry	Moderate	Vulnerability to sustained waterlogging.

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 subsurface mole and tile drains will reduce the risk of short-term waterlogging.
- Management of nutrient applications so as to minimise leaching losses.

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