

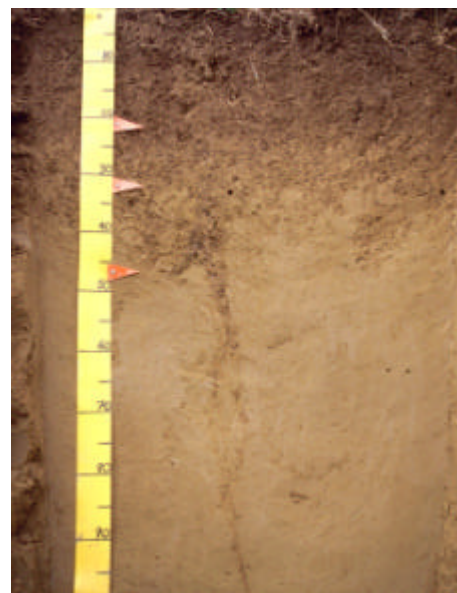
Soil name: Pourakino

Overview

Pourakino soils occupy about 4,200 ha on weakly dissected intermediate terraces in the Pourakino Valley and southern Longwoods north-west of Riverton. They are formed into deep wind deposited loess. These soils are well drained, have deep rooting depth, high plant available water and silty textures. They are used for pastoral grazing with sheep, dairy and beef cattle. Climate is cool temperate with relatively high rainfall. Soils rarely dry out.

Physical properties

Pourakino soils have a deep rooting depth and high plant available water, meaning there is no significant physical barrier to root growth. The soils are well drained but the compact subsoil is slowly permeable, and may cause short-term waterlogging after heavy rainfall. Texture is silt loam in all horizons, with topsoil clay content of 20–30%. Pourakino soils are typically stone free.



Pourakino profile

Fertility properties

Topsoil organic matter content is about 6–9%, P-retention 70–85% and pH moderate (mid 5s). Cation exchange is moderate and base saturation low. Available calcium, magnesium and potassium levels are low, as are soil reserve phosphorus levels. Micro nutrient levels are generally adequate.

Associated and similar soils

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

- Mokotua: occurs on the same landforms, but has imperfect drainage (tending to poor); has a structured subsoil to 90cm.
- Fairfax: occurs on the flanks of the Longwood Range; is well to imperfectly drained, with silty clay textures
- Te Waewae: occurs on coastal marine terraces flanking the Longwood Range, between Riverton and Clifden; is well to imperfectly drained and has P-retention of 50–70%

Some soils that have similar properties to Pourakino soils are:

- Waikiwi: have brighter colours and lower P-retention values (40–70%); have a similar soil profile and occur on high terraces across the Southland Plain.
- Edendale: have brighter colours and lower P-retention values (55–75%); have a similar soil profile and occur on intermediate terraces in the lower Mataura, Oreti and Aparima River valleys
- Waimatuku: have brighter colours and lower P-retention values (40–60%), and occur on the high terraces of the Southland Plain west of the Waimatuku stream. They have a distinct subsoil fragipan
- Papatotara: Allophanic soil with a P-retention of >85%; occurs on terraces in the lower Waiau Valley

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 and high P-retention. |
| Nutrient leaching | moderate | These soils have a moderate vulnerability to leaching to groundwater. This rating reflects the good drainage offset by the high water-holding capacity and slow subsoil permeability. |
| Topsoil erodibility by water | slight | Due to the moderate to high clay and organic matter, 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 | slight | These soils have a slight vulnerability to waterlogging during wet periods. This rating reflects the good drainage, but slowly permeable subsoil. |

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.

PoU1 (Pourokino undulating deep)

| Versatility evaluation for soil PoU1 | | |
|--------------------------------------|--------------------|--|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Moderate | Risk of short-term waterlogging after heavy rain |
| Arable | Moderate | Risk of short-term waterlogging after heavy rain |
| Intensive pasture | Moderate | Vulnerability to leaching to groundwater; risk of short-term waterlogging. |
| Forestry | High | Few limitations. |

PoR1 (Pourokino rolling deep)

| Versatility evaluation for soil PoR1 | | |
|--------------------------------------|--------------------|--|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Moderate | Risk of short-term waterlogging after heavy rain; rolling slopes |
| Arable | Limited | Rolling slopes |
| Intensive pasture | Moderate | Vulnerability to leaching to groundwater; risk of short-term waterlogging. |
| Forestry | High | Few limitations. |

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 and maintenance of subsurface mole and tile drains will reduce the risk of short-term waterlogging.