

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.

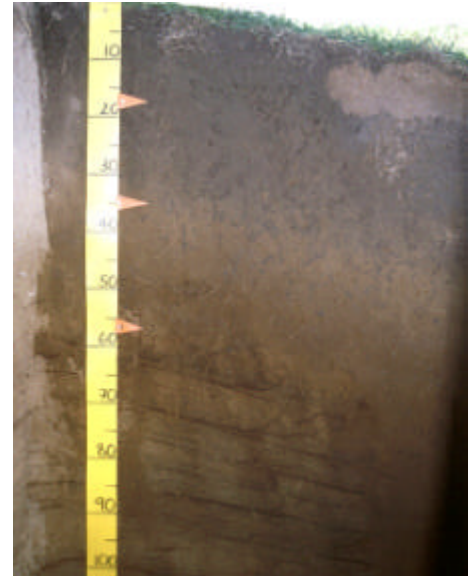
Soil name: **Otatara**

Overview

Otatara soils occupy about 3,400 ha on coastal land between Orepuki and Waipapa Point. They are formed in deep wind blown sand, and are formed on older more stable dunes. These soils have a deep potential rooting depth, moderately high plant available water, with good drainage and have sandy textures throughout. They are presently used for pastoral farming with sheep, beef cattle and dairy production. Climate is cool temperate with regular rain and a prevailing south to westerly wind.

Physical properties

Otatara soils have a deep rooting depth and moderately high plant available water capacity. Aeration and permeability are high throughout the profile. Textures are loamy sands in upper horizons grading to sand in the subsoil. Topsoil clay content is about 10–20%. Soils contain no stones.



Otatara profile

Fertility properties

Topsoil organic matter levels are 4–6%; P-retention less than 10–40% and pH moderate (high 5s). Cation exchange is low with base saturation high. Available calcium and potassium levels are low with magnesium and sodium levels moderate. Reserve phosphorus levels are low with sulphur levels high. Micronutrient levels are generally adequate.

Associated and similar soils

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

- Fortrose: imperfectly drained soil formed in deep loess; has loamy silt textures
- Invercargill: very poorly drained soils, formed in deep peat

Some soils that have similar properties to Otatara soils are:

- Riverton: occur on actively accumulating sandy areas, soils show little subsoil development
- Otaitai: poorly drained sandy soil, formed in interdune hollows

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 | very severe | These soils have a very severe vulnerability to structural degradation by long-term cultivation, or compaction by heavy stocking and vehicles. This rating reflects the low organic matter, clay content, and P-retention. |
| Nutrient leaching | very severe | These soils have a very severe vulnerability to leaching to groundwater. This rating reflects the good drainage and rapid permeability of the subsoil. |
| Topsoil erodibility by water | severe | Due to the low organic matter and clay content, topsoil erodibility in these soils is severe. Erodiability 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 | slight | These soils have a slight vulnerability to waterlogging during wet periods. This rating reflects the good drainage and 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.

ObU1 (Otataru undulating deep); ObU1vi (Otataru undulating deep imperfectly drained variant); ObU2 (Otataru undulating moderately deep)

| Versatility evaluation for soil ObU1, ObU1vi, ObU2 | | |
|--|--------------------|---|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Limited | Vulnerability to topsoil structural degradation and compaction; vulnerability to leaching to groundwater |
| Arable | Limited | Vulnerability to topsoil structural degradation and compaction; vulnerability to topsoil erosion by water and wind. |
| Intensive pasture | Limited | Vulnerability to topsoil structural degradation and compaction; vulnerability to leaching to groundwater |
| Forestry | Limited | Vulnerability to topsoil structural degradation and compaction; vulnerability to topsoil erosion by water and wind. |

ObR1 (Otataru rolling deep)

| Versatility evaluation for soil ObR1 | | |
|--------------------------------------|--------------------|---|
| Landuse | Versatility rating | Main limitation |
| Non-arable horticulture | Limited | Vulnerability to topsoil structural degradation and compaction; vulnerability to leaching to groundwater |
| Arable | Limited | Vulnerability to topsoil structural degradation and compaction; rolling slopes |
| Intensive pasture | Limited | Vulnerability to topsoil structural degradation and compaction; vulnerability to leaching to groundwater |
| Forestry | Limited | Vulnerability to topsoil structural degradation and compaction; vulnerability to topsoil erosion by water and wind. |

Management practices that may improve soil versatility

- Organic matter levels should be carefully maintained and enhanced
- Long-term intensive cultivation should be carefully managed to minimise structural degradation
- Management of nutrient applications that minimise leaching losses
- Careful management when paddocks are cultivated to minimise water and wind erosion. If a fine tilth is created these situations are aggravated

Copyright © 2002, Crops for Southland

www.cropssouthland.co.nz

This Information Sheet may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. Crops for Southland and Environment Southland would appreciate receiving a copy of any publication that uses this Information Sheet as a source. No use of this Information Sheet may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from Crops for Southland.