

Organic peat / sand soils

Soil types in this group

- Parore peaty sandy loam (PZ)
- Ruakākā fine sandy peat (RKu)
- Ruakākā loamy peat (RKd)
- Ruakākā peaty fine sandy loam (RKL)
- Ruakākā peaty sandy loam (RK)
- Ruakākā peaty silt loam (RKv)

This fact sheet uses NZ Soil Bureau map series soil type names and abbreviations.



0-15 cm
black fine sandy
peaty loam

15-60 cm
black to reddish
brown fine sandy
peaty loam

>60 cm
black loamy
peat, with wood
fragments and ash
layers

Ruakākā peaty sandy loam (RK) soil profile

Features of organic peat / sand soils

- These soils are categorised according to the depth of peat and proportion of sand
- They are part of the Ruakākā soil suite
- These soils are formed from peat and windblown sand adjoining sand dunes or downstream of old dune terraces
- Over time, moving sand dunes and changes in sea level blocked off basins and valleys
- Partially decayed vegetation accumulated in these water-logged areas, forming peat
- This results in a soil that is very high in organic matter and very low in pH (acidic)

Structure and drainage management

Issues	Management tips
Over-cultivation of peat and sand soils, particularly when dry, causes break down of organic matter and shrinkage	Over-cultivation must be avoided; pasture may be a better option than cropping for many sites
Shrinkage of peat leads to an extremely uneven surface and disturbed drainage patterns	Carefully managed drainage can protect fragile soil structure, but drains need to be wide and shallow to prevent shrinkage and avoid creating a dust mulch
Dry conditions can result in the formation of a dust mulch (30cm or deeper) that repels water and on which vegetation can't survive	Managing ground water levels can help maintain soil structure and prevent dust mulch formation
Drainage is necessary because these areas are low-lying and very poorly drained	Note , many existing wetlands are protected under regional plan rules, so check before starting any work in a wetland

Erosion control

Erosion risks	Soil type	Specific problems	Possible solutions
Gully erosion	All these soils, especially Parore peaty sandy loam	Upper reaches of valleys are prone to gully erosion Steeper gradients are more at risk Gully erosion can occur rapidly, especially during high rainfall events	Control eroding sections with paired willow planting Shrubby pussy willows tolerate salt spray and acidic soils better than other species Retain upper valley swamps in steep country as sediment and nutrient traps to mitigate erosion effects
Wind erosion	All these soil types	Exposed sand and fine dust can be easily transported and hard to stabilise	Maintain a permanent vegetation cover and take care when siting tracks to avoid creating wind tunnels Seek advice on establishment of salt tolerant wind breaks to reduce wind erosion



Ruakākā soils in basin between old dunes, Karikari Peninsula

Nutrient management

Soil type	Nutrient status	Management strategies
All peaty sand soils	Cultivation, along with heavy dressings of nitrogen, can accelerate peat oxidation and shrinking	Careful use of nitrogen is necessary, avoid heavy dressings Including clovers into pasture can be useful
All peaty sand soils	Extremely low pH restricts plant growth	Lime is essential. Seek advice from your fertiliser consultant for nutrient requirements
All peaty sand soils	These organic soils have no rock base, and therefore are deficient in all the major trace elements needed for plant growth	Trace elements may need to be supplemented. Get advice from fertiliser representatives and your vet

Drainage classes

Soil symbol	Full name	Drainage class
RUAKĀKĀ SUITE Basement rock: peat and sand with some ash where swamps have been burnt		
PZ	Parore peaty sandy loam	1 - Poorly drained
RK	Ruakākā peaty sandy loam	1 - Poorly drained
RKd	Ruakākā loamy peat	1 - Poorly drained
RKu	Ruakākā fine sandy peat	0 - Very poorly drained
RKI	Ruakākā peaty fine sandy loam	0 - Very poorly drained
RKv	Ruakākā peaty silt loam	0 - Very poorly drained

Northland soil factsheet series

- Northland's climate, topography, historic vegetation and mixed geology have combined to form a complex pattern of soils across the region. There are over 320 soil types in Northland. Other regions in New Zealand average only 20 soil types per region.
- The information in this fact sheet is based on a 1:50,000 mapping scale. Therefore, it is not specific to individual farms or properties. However, it may help you to understand general features and management options for recent alluvial soils.
- Knowing your soils' capabilities and limitations is the key to sustainable production in Northland. Northland Regional Council (NRC) land management advisors are available to work with landowners to provide free soil conservation advice, plans and maps specific to your property.
- Regular soil tests are recommended. If you are concerned about your soil structure or health, the Visual Soil Assessment test could be useful. Contact the land management advisors at Northland Regional Council for more information.
- Further background information about the processes that have formed these soils can be found here: www.nrc.govt.nz/soilfactsheets

Contact a land management advisor on
0800 002 004 or visit www.nrc.govt.nz/land