

Old greywacke soils

Soil types in this group

- Hukerenui silt loam with yellow subsoil – HKr, HKrH*

*The H denotes the hill variant of this soil type, which occurs on slopes over 20° and has a shallower profile.

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



Hukerenui silt loam (HKr, HKrH) with yellow subsoil

Features of old greywacke soils

- This soil is generally found on Northland's east coast hill country
- It is part of the Marua soil suite
- Greywacke basement rock is a hard, compacted mix of sandstone and siltstone that provides a majority of roading and building aggregates
- This soil type developed under kauri forest on ridge tops and lower slopes
- It is a mosaic of varying degrees of podzolised soils, depending on slope and density of past kauri forest cover
- Podzolisation has resulted in compromised soil structure and high susceptibility to winter wetness problems and gully erosion

Structure and drainage management

Issues	Management tips
Podzolisation/weathering has broken down topsoil structure and subsoils have a strongly developed columnar structure Organic matter in topsoil is generally low	Maintaining good pasture covers helps build soil organic matter and improve soil structure
Poor soil structure leads to pugging and soil surface sealing in wet conditions	Careful winter grazing management can minimise pugging and compaction and protect soil structure
Old Hukerenui greywacke soil is shallow and drought prone	Consider retiring very steep or marginal pastoral land from grazing if pastoral returns are marginal and/or weed invasion is a problem
Cultivation can turn this soil into a structureless dust in summer and a mud slurry in winter	Where suitable, no-till options for cropping and regrassing will help retain soil structure and productivity

Erosion control

Erosion risks	Soil type	Specific problems	Possible solutions
Sheet and slip erosion	Old greywacke soil	Soils are shallow and dry out quickly in windy, dry weather Topsoil on steeper land with sparse, shallow-rooted vegetation is susceptible to sheet erosion and shallow slipping	Maintaining dense pasture cover, including well managed kikuyu, reduces risk of slip and sheet erosion Consider retiring very steep or marginal pastoral land from grazing if pastoral returns are poor and/or weed invasion is a problem Poplars and willows can be established to control erosion
Gully erosion	Old greywacke soil	Columnar subsoils increase risk of gully erosion Weak, podzolised soil structure makes gully sides more prone to collapse	Fencing to exclude stock from conservation planting will support long term stabilisation of gullies Tracks and roads should be constructed to shed water in small volumes; frequent siting of culverts, and crowning of roads and tracks can prevent gullying of roadside drains and culvert outfalls



Hukerenui silt loam (HKR) with yellow subsoil, Opuawhanga

Nutrient management

Soil type	Nutrient status	Management strategies
Old greywacke soil	Topsoils are acidic	Lime may be needed to raise pH, but ensure application rates are based on soil test results
Old greywacke soil	Soils have low natural fertility; however, lack of clay in topsoil means that whatever nutrients can be found are readily available to plants	Little and often applications of fertiliser are recommended on these low fertility soils; seek advice for your soil nutrient requirements

Drainage classes

Soil symbol	Full name	Drainage class
MARUA SUITE Basement rock: greywacke		
HKr, HKrH	Hukerenui silt loam with yellow subsoil	2⇒1 - Imperfectly to 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