

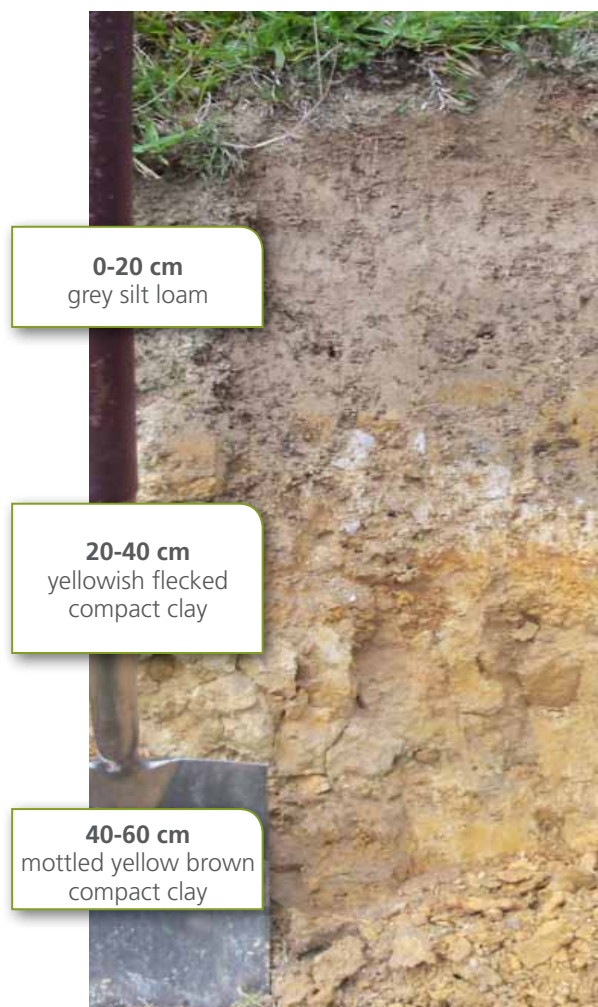
# Old mudstone soils

## Soil types in this group

- Hukerenui silt loam - HK, HKH\*
- Hukerenui gravelly silt loam - HKg, HKgH\*
- Otaika silt loam - OP, OPH\*
- Pokapu gravelly silt loam – PPH\*
- Waikare silt loam - YK, YKH\*
- Waikare silty clay - YKI

\*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 (HK, HKH) soil profile*

## Features of old mudstone soils

- These soils formed on easy to rolling country on remnants of sedimentary rock
- They are part of the Omu soil suite
- Most soils are pale in colour due to iron leaching and loss of clay
- On flat or easy sites, soil horizons are distinct and there is a grey layer just under the soil surface with little clay left in the topsoil
- These soils are acidic and have low natural fertility

## Structure and drainage management

Issues	Management tips
Old mudstone soils have very little clay left in topsoils	Careful winter grazing management can minimise pugging and compaction and protect soil structure
Because clay has leached through to the subsoils, drainage is impeded making these soils winter wet and prone to pugging, while in the summer they can be hard and drought prone	
Less clay in the topsoil makes it easier to prepare a good seed bed with a fine tilth	Maintaining good pasture covers helps build soil organic matter and improve soil structure
Cultivation can turn these soils into structureless dust	Consider no-till methods (such as direct drilling) to establish pasture following summer crops to reduce time the land is not protected by vegetation
Hill variants of the Pokapu and Hukerenui soils have extremely shallow and structureless topsoils	Consider retiring steep or marginal pastoral land from grazing if pastoral returns are poor

## Erosion control

Erosion risks	Soil type	Specific problems	Possible solutions
Gully erosion	All old mudstone soils	These soils are prone to gully erosion because they have a strongly developed columnar subsoil	Plant willow poles in a zig-zag pattern along the gully  Netting dams or other grade control structures may be needed to control gully erosion before planting trees  Increase planting density of erosion control trees in gully heads
Sheet erosion	Hukerenui silt loam and gravelly silt loam, Pokapu gravelly silt loam	Cultivation can turn these soils into structureless dust because podzolisation has broken down soil structure leading to sheet erosion	Maintain a dense grass sward to reduce the chance of sheet erosion  Consider retiring very steep or marginal pastoral land from grazing if pastoral returns are poor
		Sheet erosion washes topsoil, nutrients and new grass/forage away making revegetation difficult	



Hukerenui silt loam soils, Mata

## Nutrient management

Soil type	Nutrient status	Management strategies
All old mudstone soils	These soils are acidic and have low natural fertility including micro nutrients	Little and often applications of fertiliser are recommended on these low fertility soils. Seek advice from your fertiliser consultant and vet for nutrient requirements
Hill variants, particularly HKgH	Low fertility is exaggerated by loss of topsoil on steep slopes	Consider retiring very steep or marginal pastoral land from grazing if pastoral returns are poor and/or weed invasion is a problem

## Drainage classes

Soil symbol	Full name	Drainage class
<b>OMU SUITE</b> Basement rocks: mudstone, claystone and silica-rich shale–mudstone complex		
PPH	Pokapu gravelly silt loam	4⇒3⇒2 - Well to poorly drained
Kg, HKgH	Hukerenui gravelly silt loam	3⇒2⇒1 - Moderately to poorly drained
YK, YKH	Waikare silt loam	3⇒2⇒1 - Moderately to poorly drained
YKI	Waikare silty clay	2⇒1 - Imperfectly to poorly drained
OP, OPH	Otaika silt loam	2⇒1 - Imperfectly to poorly drained
HK, HKH	Hukerenui silt loam	1 - 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](http://www.nrc.govt.nz/soilfactsheets)

Contact a land management advisor on  
0800 002 004 or visit [www.nrc.govt.nz/land](http://www.nrc.govt.nz/land)