

Young mudstone soils

Soil types in this group

- Aponga clay- AP, APH*
- Omu clay loam - OM, OMH*
- Te Tio clay loam - TF, TFH*

*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.

Features of young mudstone soils

- These soils have developed on fine textured silt and clay rocks which are soft and easily weathered and eroded
- They are part of the Omu soil suite
- These soils are derived from different basement rock which affects their fertility and stability
- Soils are light coloured as they have little iron content
- Topsoils contain high amounts of clay
- They are prone to gully, slump and especially earthflow erosion

Omu clay loam soil (OM, OMH) on mudstone, also known as claystone



0-7.5 cm
grey brown crumbly
clay loam

7.5-40 cm
cream mottled clay
loam

>40 cm
cream stony clay

Omu clay loam (OM) soil profile



Structure and drainage management

Issues	Management tips
These soils are susceptible to pugging due to poor drainage and high clay content	Careful winter grazing management can minimise pugging and compaction and protect soil structure Consider subsoil drainage in wet pasture
Soil structures vary due to different basement rock and hill gradients	Management needs to be specific to different soil properties Consider retiring very steep or marginal pastoral land from grazing
Because of high clay content in topsoils, these soils are difficult to cultivate	Oversow or direct drill for pasture renewal where clay content makes cultivation difficult

Erosion control

Erosion risks	Soil type	Specific problems	Possible solutions
Gully erosion	All these soil types, especially AP, APH	Gully erosion is common especially during high intensity rainstorms	Retain trees within gullies Where vegetation has been removed, plant poplar or willow poles in a zig-zag pattern along the gully
Slips and earthflows	All young mudstone soils	Slip erosion can be triggered by gully erosion which removes support from adjoining slopes Road and track cuttings across slope can also remove slope support	Consider retiring very steep or marginal pastoral land from grazing For slips on actively eroding areas, densely plant at 5m spacings at the foot of slips, expanding to 8-10m spacings upslope For active earthflows, plant poplars at 4-6m spacing to stabilise actively eroding land Open plant poplars across hillsides at 15m spacing as a preventative measure Site roads and tracks carefully to avoid undercutting slopes

Nutrient management

Soil type	Nutrient status	Management strategies
All young mudstone soils	Differences in basement rock types means that soils have different soil nutrient levels	Seek advice from your fertiliser consultant and vet for nutrient requirements
All young mudstone soils	High clay content locks up macro and micro nutrients	Achieving optimal pH (by liming) unlocks nutrients bound to clay and makes them available to plants

Drainage classes

Soil symbol	Full name	Drainage class
OMU SUITE Basement rocks: mudstone sandy mudstone and white siliceous mudstone		
OM, OMH	Omu clay loam	4⇒3⇒2 - Well to imperfectly drained
AP, APH	Aponga clay	2⇒1 - Imperfectly to poorly drained
TF, TFH	Te Tio clay loam	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 estuarine 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 staff 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