

Mature sands

Soil types in this group

- Houhora sand - HO, HOH
- Red Hill sand - RLs, RLaH
- Red Hill sandy clay loam - RLI, RLIH
- Red Hill sandy loam - RL, RLH
- Tangitiki sandy loam and sand - TT, TTH

*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.



Red Hill (RLa, RLaH) soil profile

Features of mature sands

- Mature sands are older, consolidated dunes
- They are part of the Pinaki soil suite
- They are moderately leached to moderately podzolised
- There is extreme variability and intermixing of soils in this group
- Exposed subsoil sand is highly erodible and difficult to revegetate
- Podzolised (Tangitiki soils) patches exist where kauri used to grow
- These soils are generally drought prone, but subsoil pans can impede drainage, for example Redhill soils formed on iron-rich sands on easier slopes or basins may have an iron pan
- Some basins, old swamps or lake beds have peaty soil
- Landscapes are highly variable and range from easy and rolling consolidated dunes to steeper erosion-prone hills and gullies

Structure and drainage management

| Issues | Management tips |
|---|--|
| Over time organic matter and clay content have built up in these soils, improving their structure and water and nutrient holding capacity | Maintain dense vegetation cover to help build organic matter in the topsoil, prevent soil loss and reduce leaching |
| However, structure is still weak, water retention is low and soil horizons are not distinct, with the exception of Red Hill soils. Some areas of Redhill or Tangitiki soils that are podzolised or have an iron pan are poorly drained | Avoid compaction from stock and heavy machinery to preserve fragile soil structure |
| Over-cultivation, heavy machinery and heavy stock can cause a dust mulch in summer due to the fragile soil structure | Avoid cultivation where possible and consider no till or over sowing options |

Erosion control

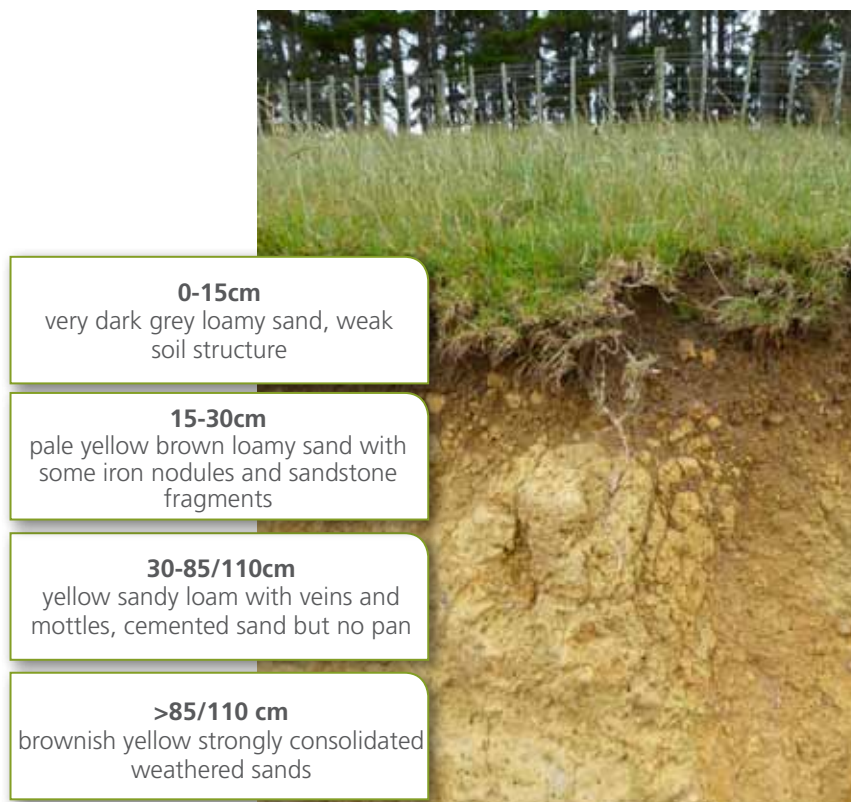
| Erosion risks | Soil type | Specific problems | Possible solutions |
|-------------------------------|--|--|---|
| Sheet & wind erosion (severe) | All mature sands, especially Tangitiki | Weak soil structure increases the risk of sheet erosion and the possibility of sediment-bound phosphate washing into water bodies (particularly sensitive dune lakes) Finely textured Houhora sand topsoils are particularly erosion prone under intensive land use | Maintain dense vegetation cover at all times Soil needs to be moist when undertaking land disturbance works such as tracking or earthworks Align tracks across rather than with the prevailing wind Seek advice on establishment of salt tolerant wind breaks to reduce wind erosion |
| Gully erosion (severe) | All mature sands, especially Red Hill and Tangitiki soil types | When loose subsoils are exposed, they are very susceptible to wind channelling and gully erosion and are difficult to revegetate | Consider creating detention dams to slow water flow in drainage channels Appropriately engineered flumes or armouring may be required to stabilise severe gully erosion and enable conservation plants (e.g. salt tolerant willows, sand kanuka, flax) to establish |



Houhora sand (HO, HOH) landscape, Aupouri Peninsula

Nutrient management

| Soil type | Nutrient status | Management strategies |
|---------------------|--|---|
| Red Hill soil types | These soils are high in iron and contain allophanic clays which can fix surplus phosphate that is less available to plants | Test soils regularly and seek advice from your fertiliser consultant |
| All mature sands | Being free draining, these soils are susceptible to nutrient leaching, which is a particular issue in dune lake catchments | Little and often applications of fertiliser are recommended; test soils regularly and seek advice from your fertiliser consultant |



Tangitiki sandy loam and sand (TT, TTH) soil profile



The intermixing of soils can be seen here, where Tangitiki sand (TT, TTH) surrounds a path of podzolised Te Kopuru soil (described in Podzolised soils, Factsheet 7.0)

Drainage classes

| Soil symbol | Full name | Drainage class |
|---|-------------------------------|--------------------------------------|
| PINAKI SUITE Formed from sands deposited by ocean currents | | |
| RLa, RLaH | Red Hill sand | 5 - Excessively drained |
| HO, HOH | Houhora sand | 4 - Well drained |
| RL, RLH | Red Hill sandy loam | 4 - Well drained |
| RLI, RLIH | Red Hill sandy clay loam | 3⇒4 - Moderately to well drained |
| TT, TTH | Tangitiki sandy loam and sand | 3⇒2⇒1 - Moderately 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