

The value of trees in the landscape



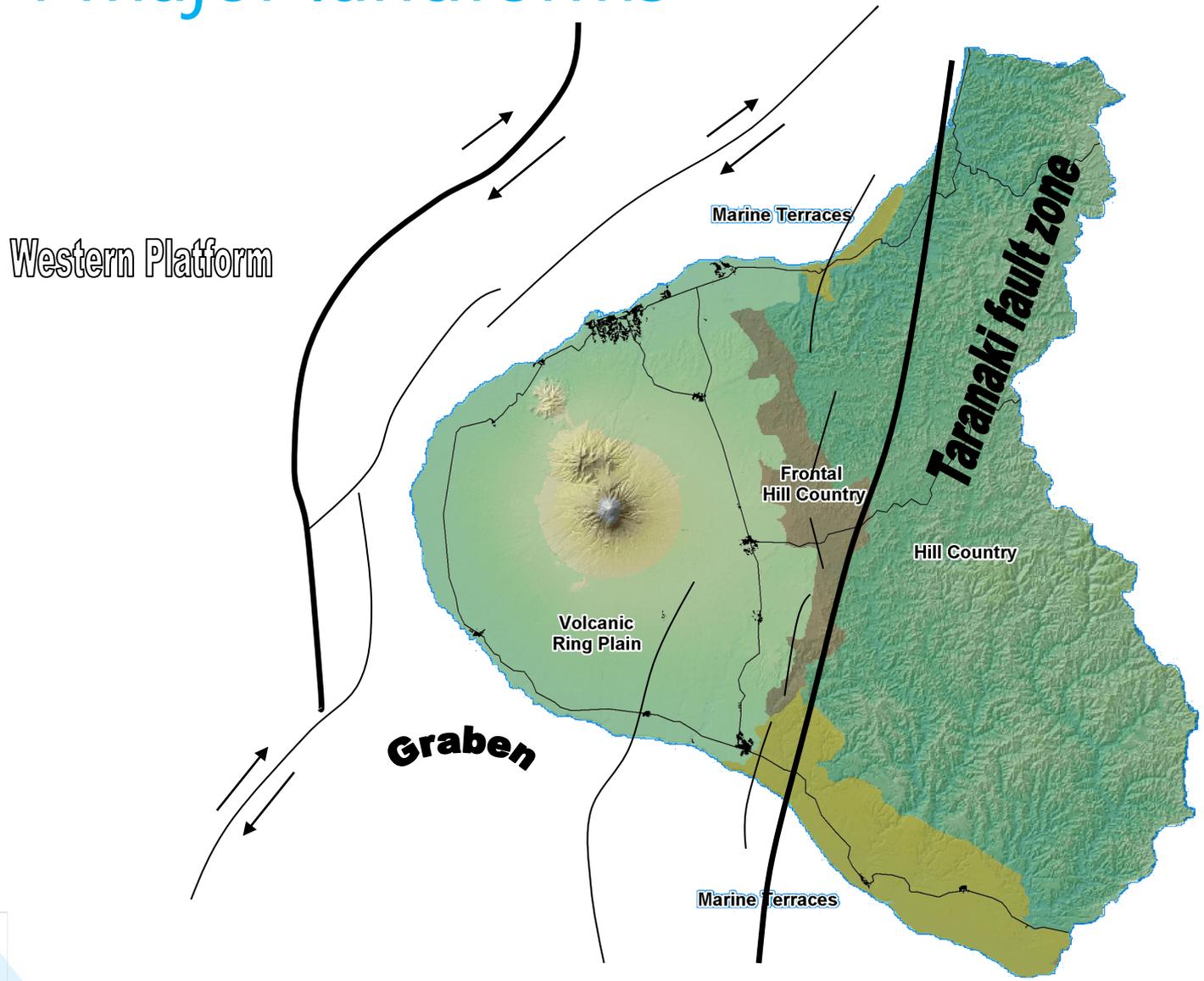
Don Shearman
Land Services Manager

#2827277

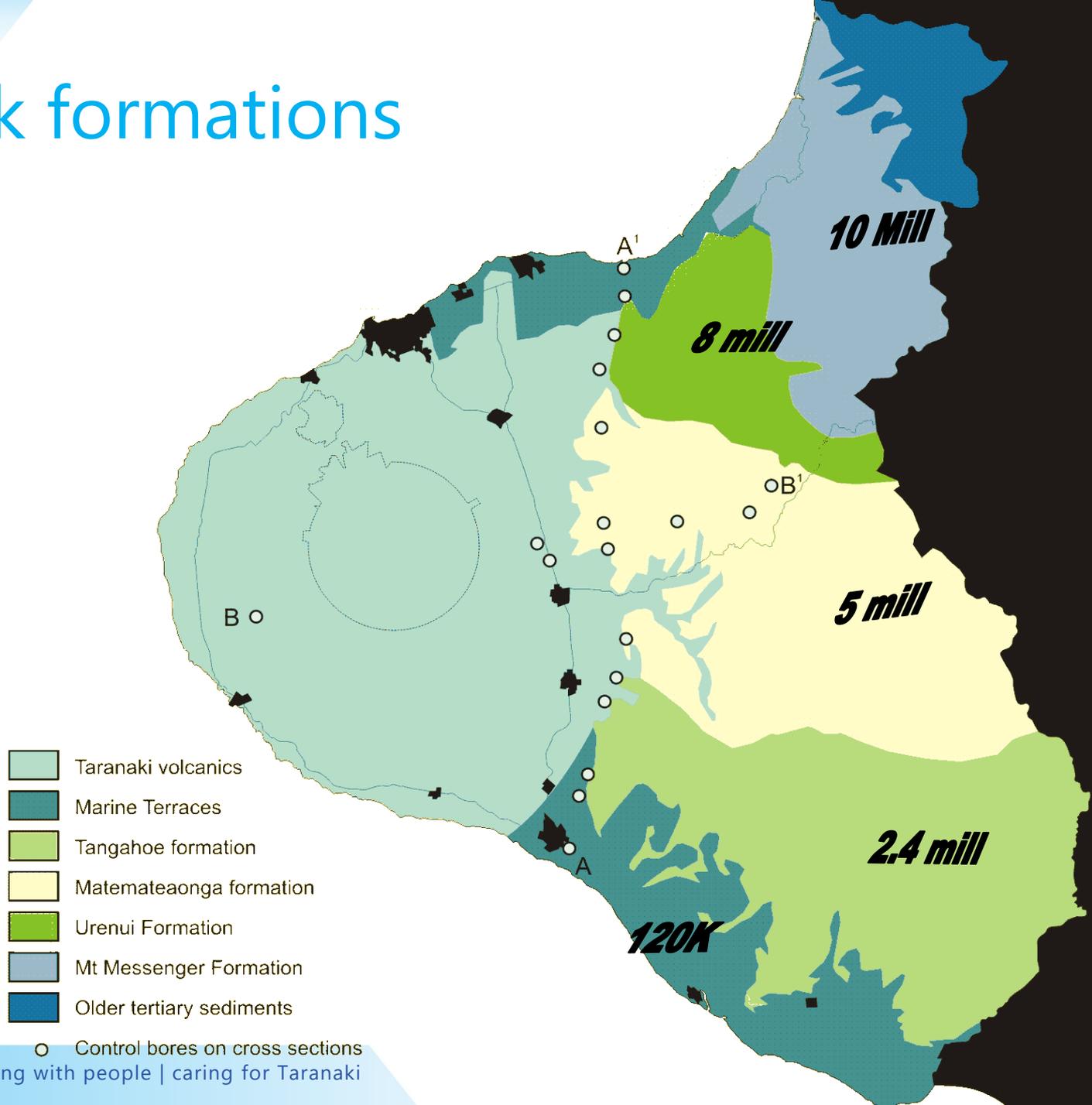
Summary

- The issue and TRC's statutory role
- The value of trees in the landscape
- What is the right place for the right tree?
- New regulations for hill country
- How TRC can help you

4 major landforms



Rock formations



-  Taranaki volcanics
-  Marine Terraces
-  Tangahoe formation
-  Matemateaonga formation
-  Urenui Formation
-  Mt Messenger Formation
-  Older tertiary sediments

○ Control bores on cross sections

Working with people | caring for Taranaki

Rainfall

NEW PLYMOUTH

KEY

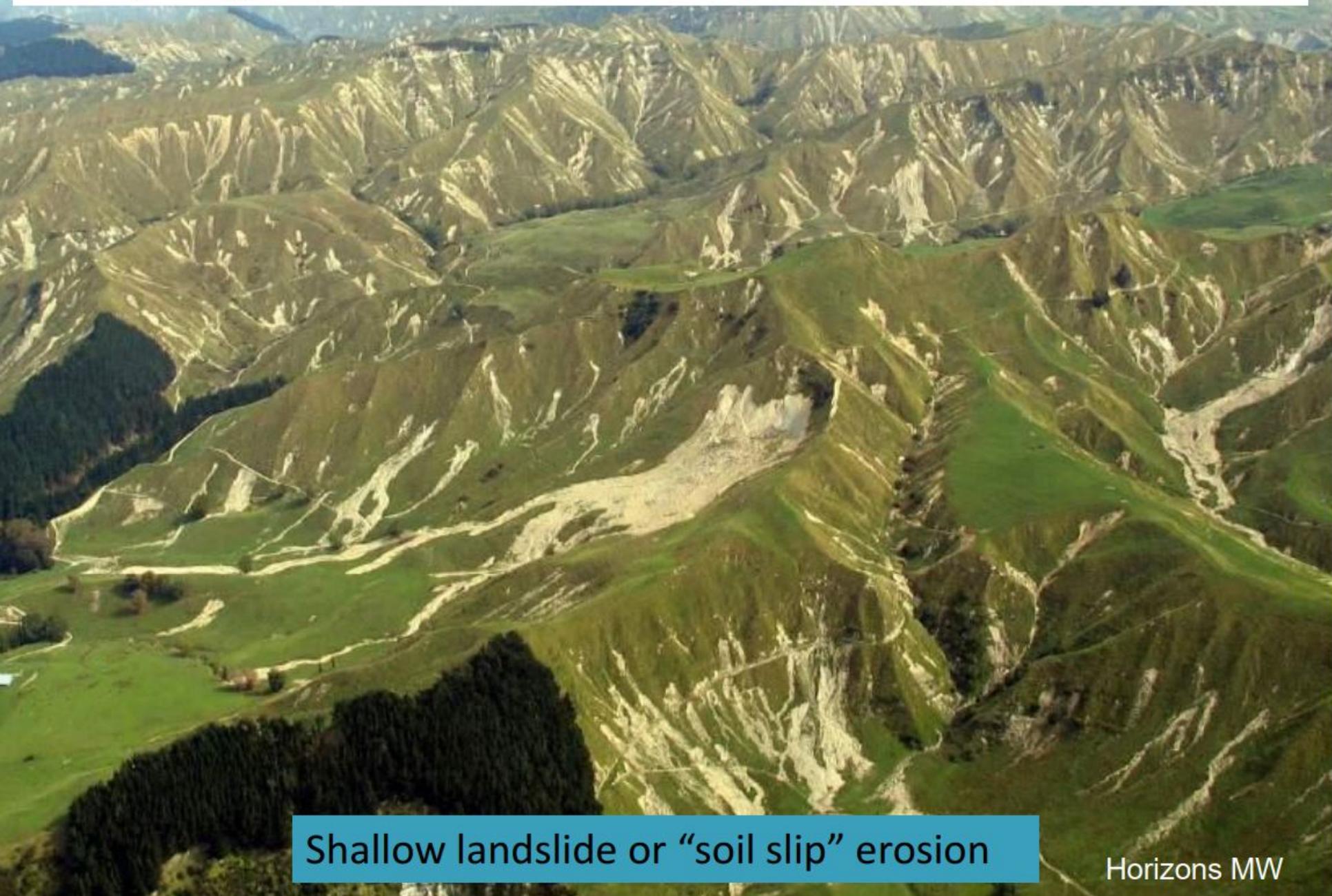
Rainfall (mm)



Natural versus accelerated erosion



Weak geology/thin soils + lots of rain + steep slopes = landslides/debris flows



Shallow landslide or “soil slip” erosion

Horizons MW

Hill country and accelerated erosion

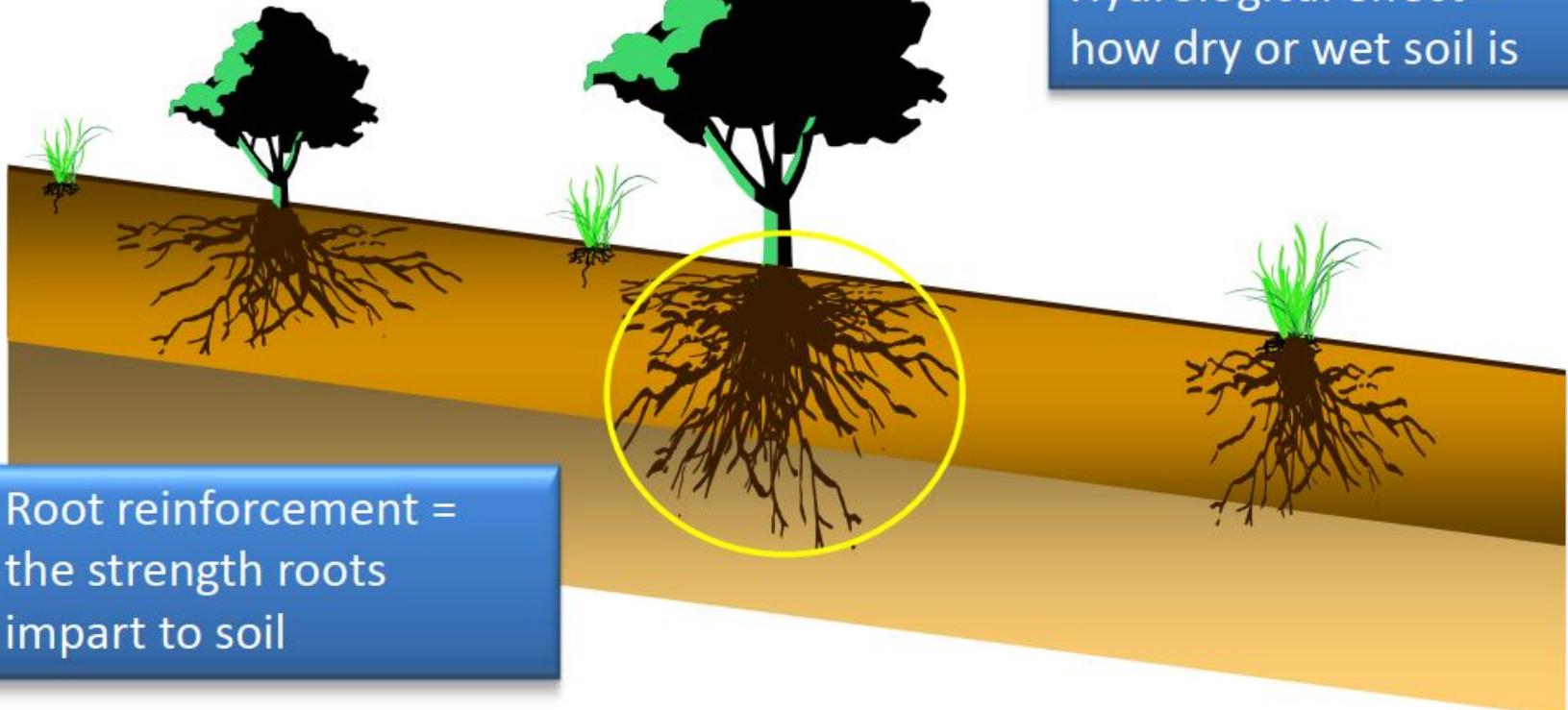
- 55% of the region's land area (400k ha)
- 306,000 ha in private ownership
- 43,000 hectares of highly erodible land
- Waitotara Storms
1869, 1891, 1903, 1904, 1924, 1936, 1971, 1990,
1999, 2004, 2006, 2015

31 1'90

How forests work to prevent shallow landslides



Hydrological effect =
how dry or wet soil is



Root reinforcement =
the strength roots
impart to soil

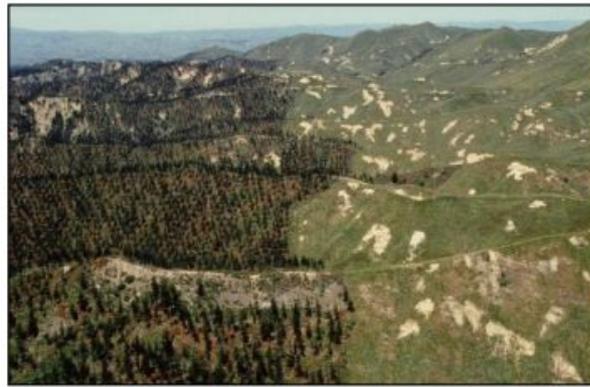
Root reinforcement of soil



“Big things from small beginnings”

a 34-month-old Veronese poplar tree

Benefits of forests



“The greatest benefit of plantation forests is in reducing shallow landsliding, the most common and extensive form of mass movement in New Zealand.” - LR Basher



Basher LR (*in press*). Erosion processes and their control in New Zealand. In *Ecosystem Services and Trends in New Zealand*. Dymond, J (Ed), Manaaki Whenua Press, Lincoln.

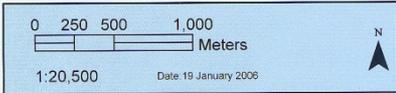
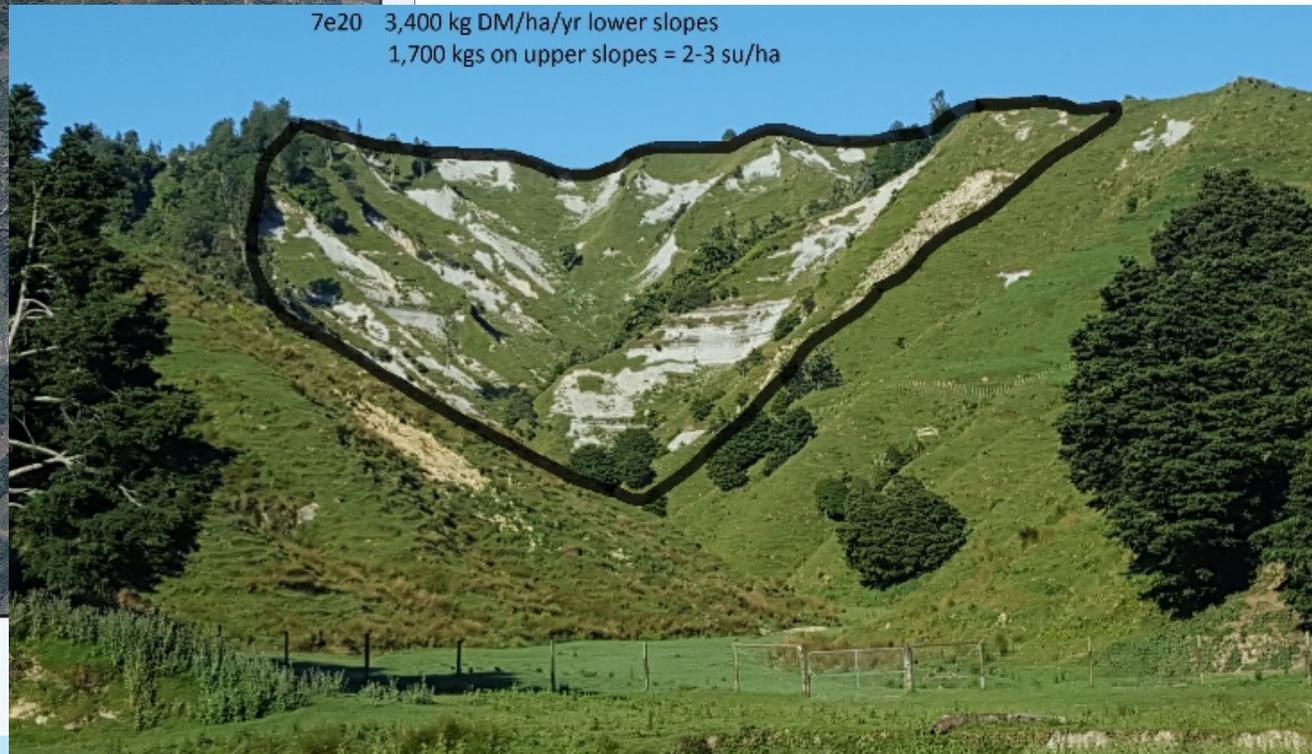
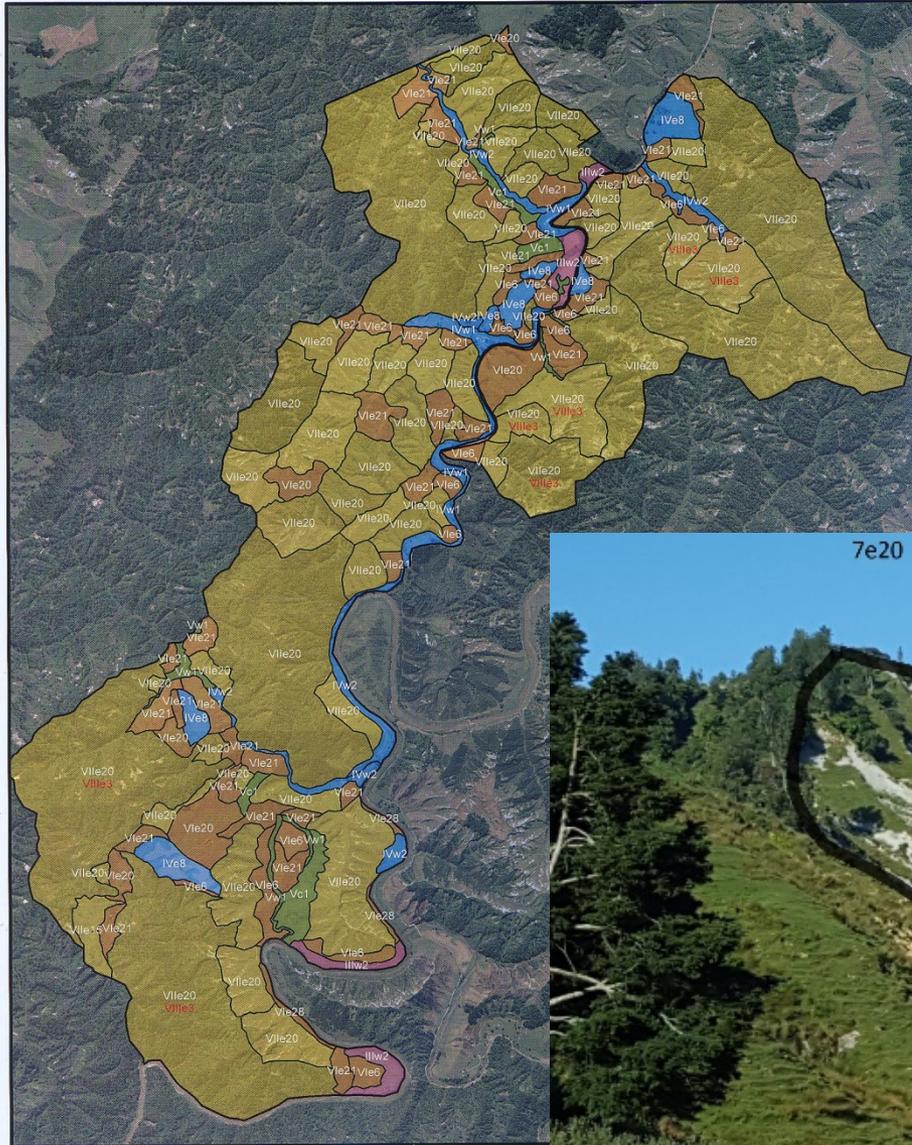




What is LRI & LUC mapping?

- Land Resource Inventory (LRI)
 - inventory of five physical factors (rock, soil, erosion type & severity, & vegetation type) which is the basis of assessing land resources.
- Land Use Capability Classification (LUC)
 - Assessment of the potential for sustained productive use (land use) in the long term taking into account:
 - Physical limitations
 - Management requirements
 - Soil conservation needs

FP219: Land Use Capability



10-15 yrs old

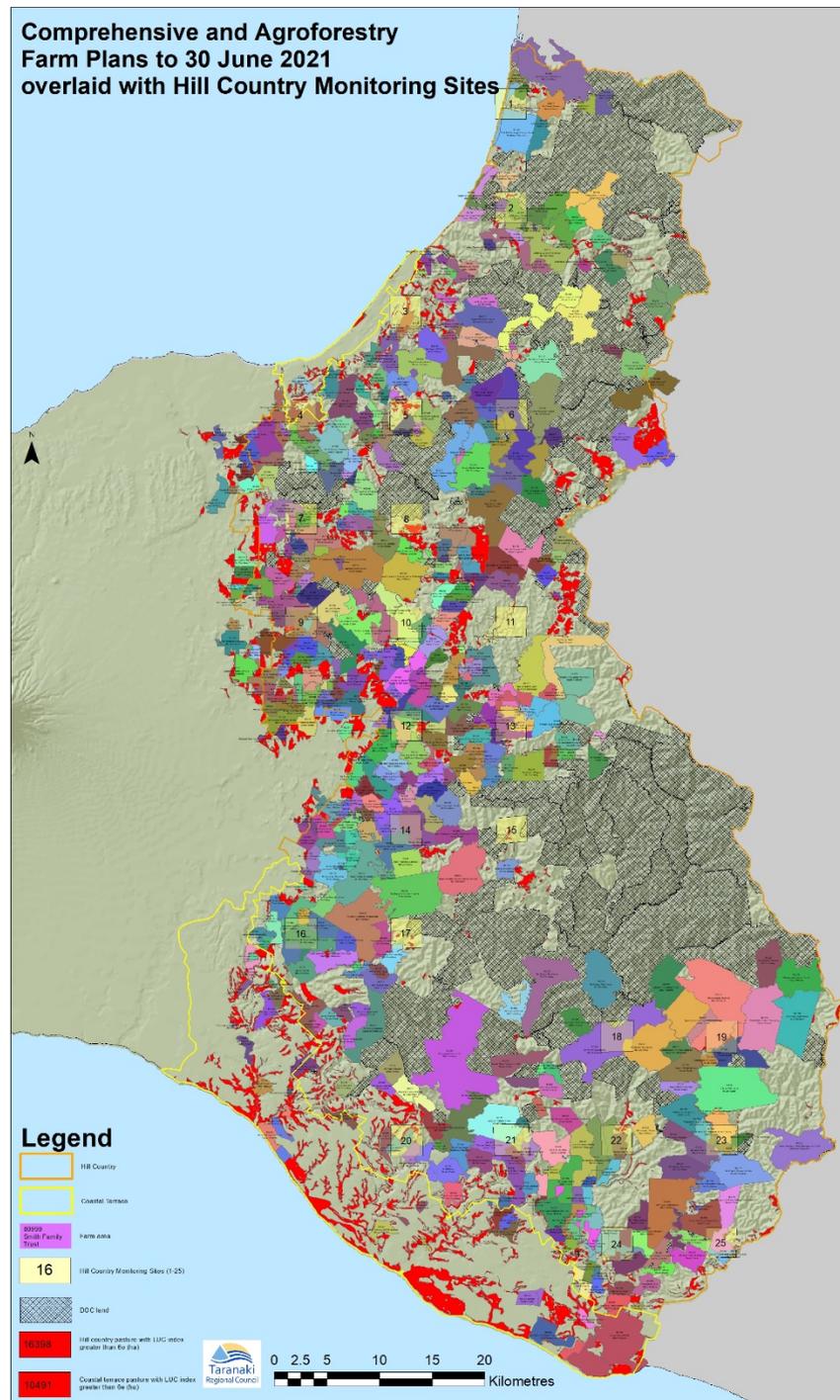


National Policy Statement -sediment

- September 2020 released
- New attribute for sediment
- National bottom line for hill country rivers
- Councils to develop plans – end of 2023
- Expand hill country farm plan for soil conservation
- More trees to mitigate erosion
- Everybody implementing soil con/tree cover

- Free plans
- Technical Advice
- Grants
- Access to plants
- Inform FWFPs

Comprehensive and Agroforestry
Farm Plans to 30 June 2021
overlaid with Hill Country Monitoring Sites



Transforming Taranaki

- > 16,000 kms streambank
- 4000 kms planted with 7.2 million plants
- 5000 ha of new habita
- 89% fenced & 77% vegetated
- Improved water quality, shade & shelter
- Biodiversity corridors mountain to sea
- Wide margins for tree crops



Conclusion

1. Value chain for trees starts with the **land & Soil**
2. Eroding land starts the value chain at (-\$250 million)
3. Trees are effective at preventing or reducing the effects of present and future accelerated erosion
4. Trees have \$ co-benefits for timber, carbon, honey production etc.
5. The right place needs to be identified first -LUC
6. Regulation in the future will require more trees and financially that's a win win
7. TRC can help you, talk to us now!