

Land & Environment Plans for Small Block Holders

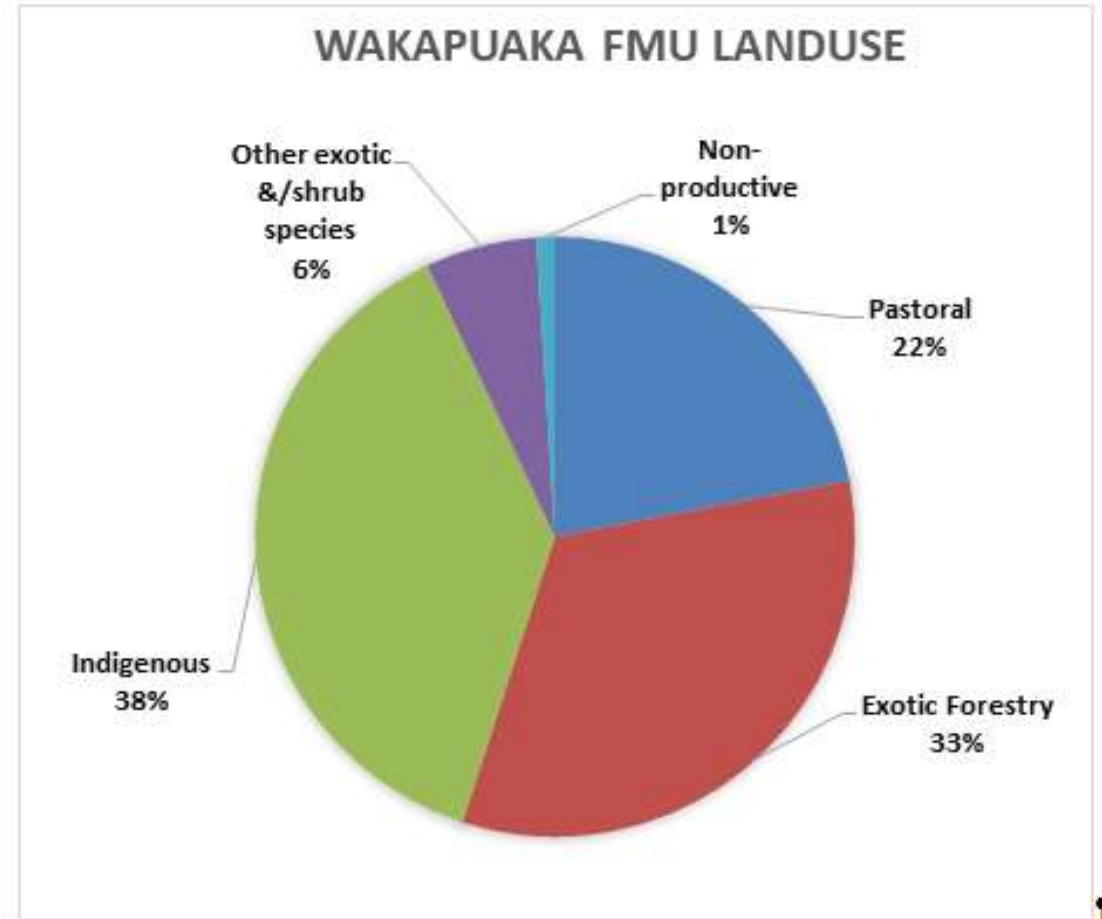


Wakapuaka FMU Survey

9,276 ha (2,100 ha in pasture, 3,600 ha in exotic forestry)
Of the pastoral land only 4 properties with more than 100 ha

The big issues are:

- Elevated faecal contamination from livestock & wildfowl
- Periodically elevated Nitrogen (DIN) & phosphorus (DRP) levels
- Periodically elevated sediment levels
- Water temperature
- Periphyton growth



Critical Source Areas (Point Source and Diffuse Source)

Examples of critical source areas from small block holders

- Septic tanks
- Stock yards
- Livestock access to waterways
- Erosion
- Fertiliser runoff and nutrient leaching
- Siting of troughs, pig pens, chook houses, silage stacks, offal holes
- Runoff from tracks and roads
- Stormwater control

Land Environment Plan (LEP)

What **Land Resources** do I have?

What **Land Uses** am I undertaking?

Are they well matched?

How can I improve my land management?





Land Management Units

- Topography / Slope
- Aspect
- Parent Rock / soil
- Erosion
- Current Vegetation



Land Resource Information (LRI)

Rock - Soil - Slope
Erosion – Vegetation

Land Use Classification (LUC)

3e2
Class – Subclass (limitation) - Unit

Topography / Slope

- Flat to undulating
- Rolling (cultivable)
- Moderately steep
- Steep

Aspect

- Hot and Dry – W, NW, N, NE
- Cool and Moist – E, SE, S, SW

Vegetation

Parent Rock - Soil Type



Imperfectly drained,
Orange mottles,
Loess



Well drained,
Stony,
Alluvium



Well drained,
Shallow topsoil,
Sandstone



Poorly drained
Mudstone

Erosion



Soil slip Erosion

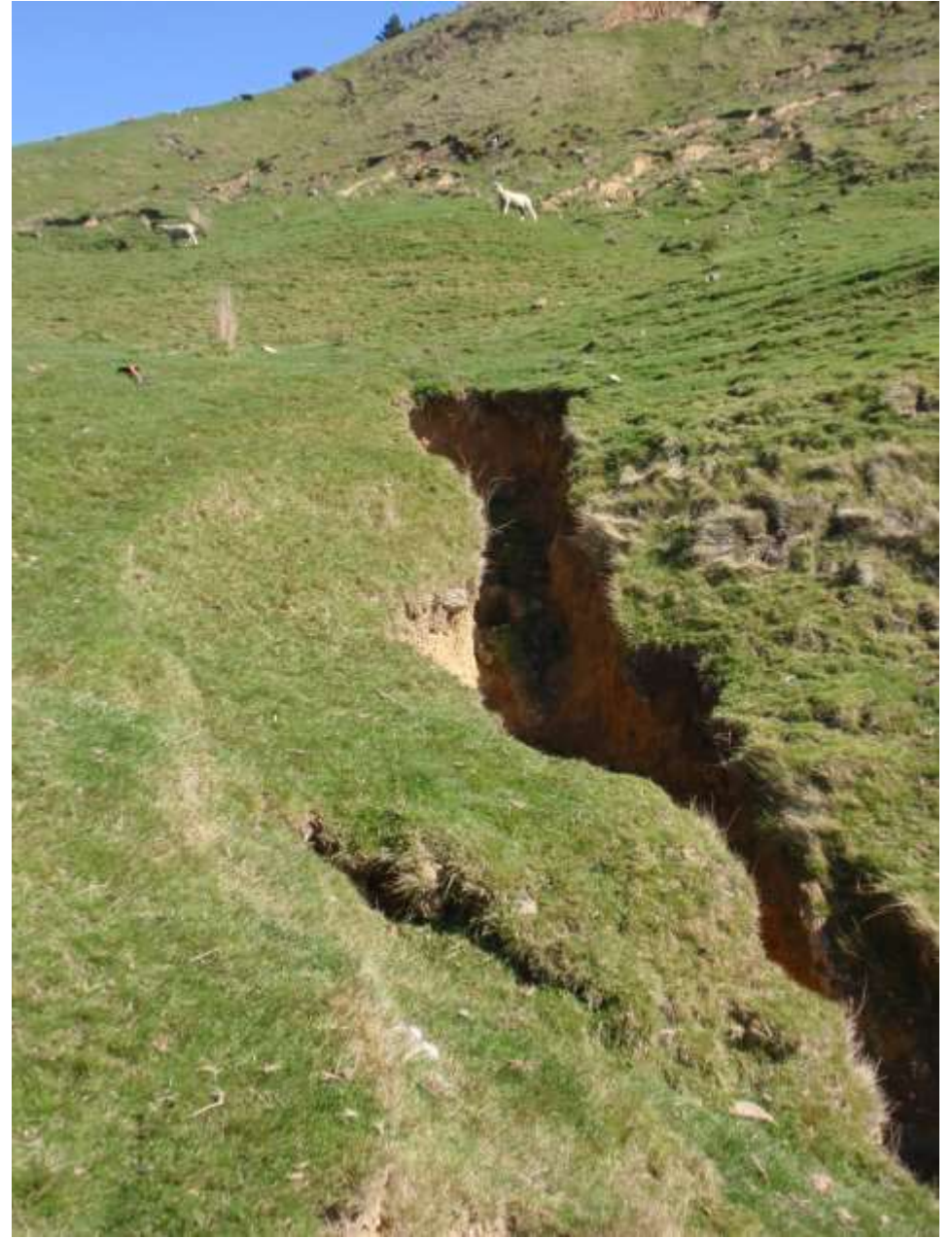




Earthflow Erosion



Gully and Tunnel Gully Erosion



Solutions

- **Space Plant** – poplars or other species

(eg. slight to moderate erosion, good topsoil depth, retain grazing)

- **Afforestation**

(eg. Moderate to severe erosion, good access, reasonable topsoil, sheltered)

- **Managed Retirement**

(eg. Minimal topsoil, poor access, steep)



Streambank Erosion

Deposition



Solutions

- Riparian Fencing (3 wire electric, 5-7 wire permanent, Cattle only exclusion)
- Riparian planting or retirement
- Alternative water supply
- Stock Crossings (eg. culvert, bridge, crossing)
- Escape route ...Taranaki Gate....!!
- Weed Management Plan



Sheet Erosion and Pugging



Solutions....Stock Management

- Maintain pasture cover and quality (eg. through grazing management, soil fertility, renew pastures, subdivision)
- Sacrificial areas during wet periods
- Temporarily fence off streams that are flowing (hotwires)
- Sensible stocking rate, especially heavy classes of stock
- Appropriate Fertiliser management
- Strip graze downhill
- Fence lines, gate locations, troughs important
- Avoid over cultivation and soil compaction
- Plant shade trees for fertility transfer





Where are the Critical Source Areas on your property....??

- ✓ Septic tanks
- ✓ Stock yards
- ✓ Livestock access to waterways
- ✓ Stock camps
- ✓ Erosion
- ✓ Fertiliser runoff and nutrient leaching
- ✓ Siting of troughs, pig pens, chook houses, silage stacks, offal holes
- ✓ Runoff from tracks and roads
- ✓ Stormwater control

Solutions...Track and culvert maintenance



Other benefits of growing a forest in a Critical Source Area..... (beyond Protection forestry)

Production – Income Stream - timber, posts, firewood.....

Shade and Shelter

Animal Health

Drought Fodder

Manipulating grazing patterns

Aesthetics

Biodiversity

Apiculture / other enterprises



Other Environmental Issues to consider.....

- *Soil health*
- *Biodiversity*
- *Plant & animal pests*
- *Indigenous bush & wetlands*
- *Shade & shelter*
- *Farm waste*
- *Irrigation efficiency*
- *Flooding*
- *Storm water control*
- *Riparian management*
- *Stock water*
- *Soil contamination*
- *Erosion control plantings*
- *Drought proofing*
- *Subdivision*
- *Green house gases*
- *Fire*

Nice Work!!

