

## LAND MANAGEMENT

### **SUSTAINABLE LAND**

### **Slips and their effects on pasture productivity**

#### **Main Points**

- Slip erosion limits pasture production in Wairoa hill country.
- Similar trials in summer dry Wairarapa and ash-covered Taranaki hill country give similar results to Wairoa.
- To get the best long term production from hill country, management systems are needed to reduce the risk of slips.
- Best achieve this by space planting poplars, willows or other deciduous hardwood trees on slopes steeper than 15 to 20 degrees, at a planting rate of 100 trees a hectare.

#### **Do slips reduce the long term productivity of pasture on our soft rock hill country?**

Productivity trials in Wairarapa, Taranaki and Wairoa have shown there is a rapid recovery on slips. Pasture growth rates on slips of different ages show a rapid recovery from the bare scar to 70 – 80% of uneroded sites within 20 to 40 years. There is no further recovery up to 100 years.

*A pasture productivity cage on a lower hill slope.*



*Site of the Wairoa pasture productivity trial. Pasture measurement cages were sited from top to bottom on different aged slip scars, identified from old photography. (Photo: N Trustrum)*

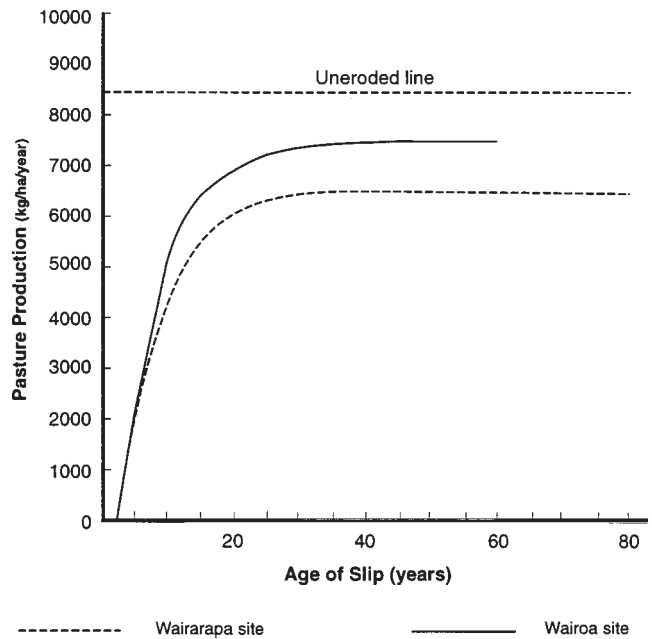
**How do we know?**

The Wairoa trial on steep hill country at Clydebank, 20km north-west of Wairoa, ran for three years from 1982. Four ages of slips, pre 1942, 1942, 1970 and 1977, as well as stable ridges and footslopes were identified using aerial photos. Pasture measurements using cages were made every three to eight weeks, and the results shown in the graph.

Wairarapa trial information is also included. In Wairoa none of the trials included uneroded land.

**What are the key issues?**

- Production on slip scars will never get back to within 20% of an equivalent uneroded site.
- Production on slip scars increases rapidly from 0 to 20 years.
- After 30 years production is about 98% of considerably older slip scars.
- The greatest difference in production on slip scars of different ages is in summer when the older scars (with more soil) produced more.
- Grass content increases with the age of scar, and legume content drops.
- Rainstorms causing slips occur, on average, once every five years around Wairoa and once every 10 years in central and southern Hawke’s Bay.



Results of the Wairoa pasture productivity trial. For comparison those from Wairarapa are included.

**For further information**

For information on sustainable land management, ask for the other titles in this series, or contact Land Management staff at Hawke’s Bay Regional Council for advice.

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