

Erosion

in Hawke's Bay Hill Country



What is erosion?

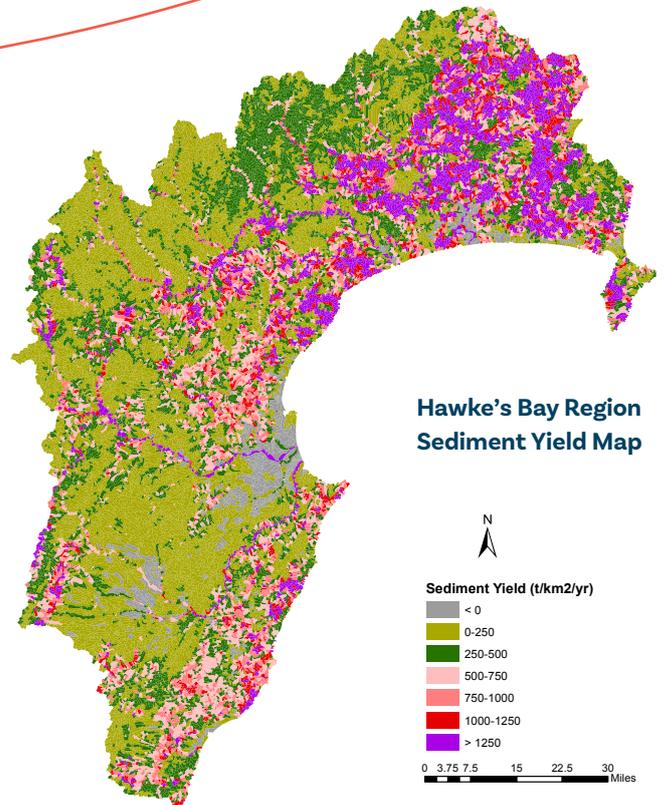
Retaining fertile soil on Hawke's Bay farms is a priority for Hawke's Bay Regional Council.

Erosion causes this valuable soil to be lost, it can cause damage to farm tracks and fences, and when it enters waterways reduces their flood carrying capacity. It also smothers aquatic habitats and decreases water quality. Approximately 252,000 hectares of Hawke's Bay hill country has been identified, using the SedNet model, as priority areas for treating erosion.

The SedNet map shows the potential locations and intensity of erosion at a regional scale. SedNet models the risk of erosion using features like slope and climate. The areas may not be currently eroding but have a high potential for it in the appropriate conditions.

What increases the risk of erosion?

- Most soil erosion happens on slopes steeper than 25 degrees.
- Most erosion happens in storms where more than 250mm of rain falls in only two or three days. (High intensity low duration rainfall). Smaller storms tend to clean out the debris left by larger storms.
- Tree cover significantly reduces the amount of soil erosion on steep country.
- Slopes over 25 degrees need some tree cover to increase slope stability. Without tree cover we can expect a severe erosion event once every 10 years.
- Sustainable management of steep slopes needs lots of trees or much of the soil will be lost over time.
- More than 50% of the sediment which moves in big storms enters streams and rivers, leading to silting in plains, lakes and coastal waters.



Case study

Sediment loss is
1.5 - 17x greater
on land without trees.



While erosion rates vary with slope, surface geology and intensity of rainfall, **repeated studies nationally and locally in Hawke's Bay have shown large reductions in erosion with tree cover.**

Local studies include a paired catchment study at Pakuratahi (Eyles, G. and Fahey, B. 2006) looking at forestry and pasture over a 12 year period, and Tutira studies (Orpin and Page 2009-2013) looking at sediment loss over a 7200 year timeframe.

These have found sediment loss 1.5 to 17 times greater on land without trees.

Remember the 80/20 rule:

Around **80%** of your sediment comes from **20%** of your farm.



Map out the areas where it is happening, you won't have to take action everywhere.

An easy way to do this is to get a Farm Plan done.

What can you do on your farm?

Resilient farming systems need to manage areas with existing active erosion as well as areas with future potential erosion. There is a lot you can do on your farm to take action:

- **Identify** areas of erodible land - see the 80/20 rule above.
- **Prioritise** and do what you can each year.
- **Maintain** pasture cover.
- **Plant trees** - Woody vegetation is better than pasture at holding soil on slopes at risk of erosion. Trees have other benefits of shade, shelter, diversifying farm income and adding additional value through carbon trading, timber products and honey etc.
- **Plant poles** - Pole planting reduces risk of slipping by 70% (Basher, L. 2016).
- **Exclude stock** from waterways, the pressure of cattle walking on streambanks increases erosion.
- **Consider retiring gullies or steep hillsides** that grow poor pasture and scrub, they may only need pest and weed control to naturally revert
- **Closed canopy forest** reduces soil loss by 90% compared with pasture. (Basher, L. 2016).

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Where can I get assistance with this?

Regional Council catchment advisors are able to provide advice and assistance on effective methods to manage erosion.

Regional Council's Erosion Control Scheme (ECS)

The ECS helps Hawke's Bay landholders keep soil on their hills and out of the water. It provides significant financial support for erosion control work such as non-commercial tree planting, fencing and land retirement.

Riparian Plants

Orders Open Now! We have a limited number of plants available for this season specifically for planting fenced off waterways on farms. Visit our website hbrc.govt.nz and search [#erosion](#).

Order Willow/Poplar poles through the Regional Council

Visit our website hbrc.govt.nz and search [#erosion](#).

Poplar and Willow Trust

They have guides and factsheets for farmers as well as videos starring HBRC's Peter Manson. poplarandwillow.org.nz.



Severe sediment erosion in Hawke's Bay hill country

Talk to HBRC Staff

Call one of our staff for advice and assistance:

Northern Office (Wairoa):

46 Freyberg Street, Wairoa 4108. Call: +64 6 838 8527

Central Office (Napier):

159 Dalton Street, Napier 4110. Call: +64 6 845 9210

Southern Office (Waipawa):

26 Ruataniwha Street, Waipawa 4210. Call: +64 6 857 8219