

Soil Erosion Solutions

Helping North Coast landholders
reduce soil erosion



Soil erosion projects completed
in the Northern Rivers, NSW 2005/06

Funded by Northern Rivers Catchment Management Authority



Project locations



Soil Erosion Solutions supports work to repair, reduce and prevent soil erosion on agricultural land in the northern rivers region.

How SES works

SES is funded by Northern Rivers Catchment Management Authority and delivered by NSW Department of Primary Industries (NSW DPI) and Landcare. Technical panels assess applications from landholders and NSW DPI and Landcare work with successful applicants to finalise technically sound project plans. Landholders do the onground works.



SES 1

At the end of the first year of Soil Erosion Solutions, 17 landholders had completed works on their properties. Eight field days were held, and four newsletters and seven erosion fact sheets produced, available on the web at www.agric.nsw.gov.au/reader/soil-erosion or as hardcopies by request.

Richmond/Tweed projects

In the Richmond/Tweed catchments two macadamia farmers reshaped their orchard floor drainage and established shade-tolerant groundcover, and other landholders have stabilised mass movement, tunnel erosion and active gullies.

Coffs/Bellinger projects

In the Coffs/Bellinger catchments steep lands were the focus, with landholders funded to safely remove bananas, remove noxious weeds, establish groundcover, revegetate gullies and stabilise roads.

Clarence projects

In the Clarence catchment the focus was on stabilising gullies and repairing cultivated land.

Nambucca/Macleay projects

In the Nambucca/Macleay catchments an active gully was stabilised, a former banana plantation was reshaped and replanted with pasture on the flatter terrain and trees on the steeper slopes, and an indigenous group rehabilitated a creekside former banana slope with native tree planting.

SES 2&3

The initial Soil Erosion Solutions program has been so successful in helping landholders control severe soil erosion that the Catchment Management Authority has now funded the NSW DPI to manage two further programs. SES2 is funding projects in the Richmond and SES3 will address gully erosion in the mid-upper Clarence and Casino areas, and steep land erosion in the Tweed and Byron local government areas.



Information and support

The Soil Erosion Solutions team will continue to help landholders with erosion project planning, and to run field days and training events to share knowledge about how to reduce soil erosion on farms. The team is currently compiling a technical manual for landholders to provide more detailed information on soil erosion management and rehabilitation. For more information about Soil Erosion Solutions contact Abigail Jenkins on 6626 1357 or abigail.jenkins@dpi.nsw.gov.au.



EROSION FACTS

Worldwide...

Each year, wind and water clear
75 billion tons of soil from the land,
most of which comes from **agricultural land**.



abandoned farmland - china

1cm of soil lost to sheet erosion
= 100 cubic metres
of soil per hectare.

30% of the world's
farmland has
become unusable
in the last 40 years
due to erosion.

productive farmland - africa



farmland lost to erosion - africa



Locally...

In New South Wales soil forms at
0.04 to 0.4 tonnes
per hectare per year.

On the North Coast,
erosion rates of more than
50 tonnes per hectare per year
have been recorded.

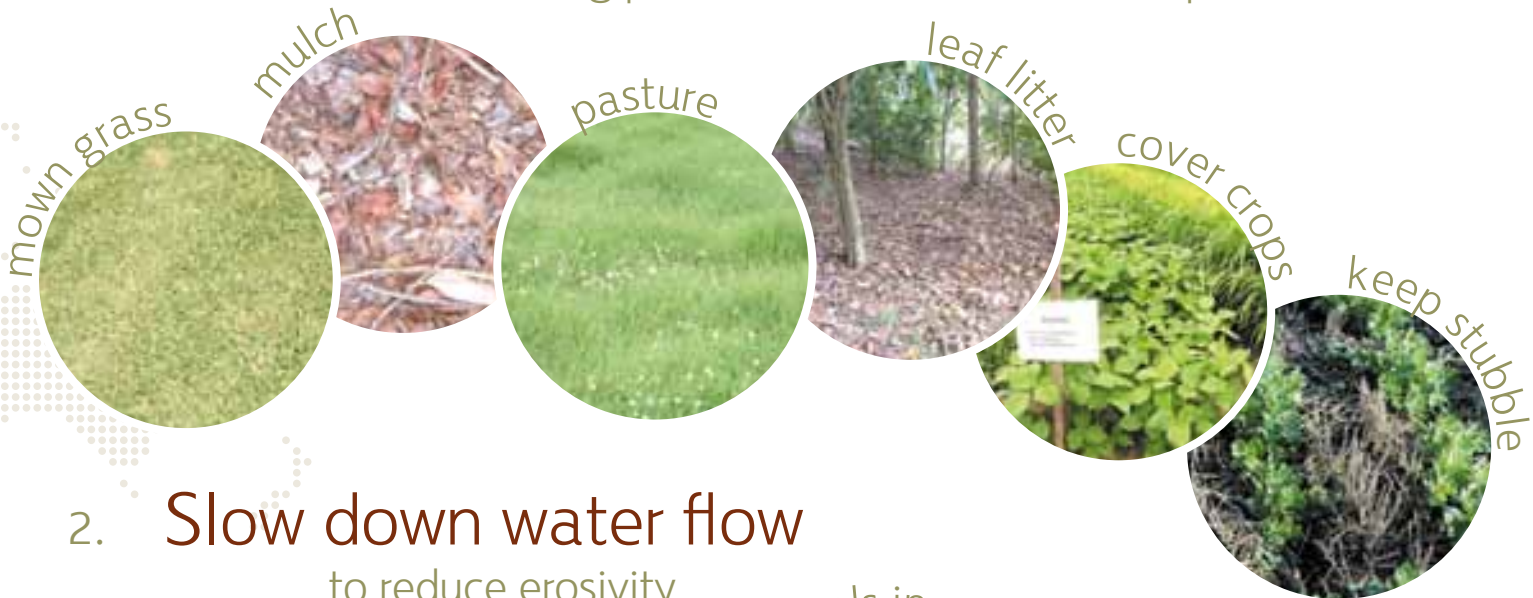
sediment plume, richmond river, ballina



EROSION MANAGEMENT

There are two basic strategies to control soil erosion on the North Coast.

1. Maintain **95% groundcover**, with living plants and mulches, for example...



2. **Slow down water flow** to reduce erosivity and increase infiltration



EROSION FACT SHEETS

The following fact sheets are available from the Department of Primary Industries by calling 02 6626 1294 or online at www.northern.cma.nsw.gov.au/publications

1. Types of erosion
2. Indicators of erosion
3. Monitoring erosion
4. Groundcover
5. Gully erosion
6. Roads and tracks
7. Planning your erosion project

Soil Erosion Solutions

erode *v.tr & intr.* wear away, destroy or be destroyed gradually [based on Latin *rodere* 'to gnaw']

Do you have soil erosion on your property?



Splash

erosion: raindrops hit bare soil and the impact breaks up soil aggregates mobilising particles and forming a surface crust.



Sheet

erosion: raindrop impact and shallow surface flow removes soil in thin layers. Soil loss is gradual and often goes unnoticed.



Gully

erosion: expands as concentrated flows of water undercut and collapse the head and side walls of watercourses.



Rills

erosion: shallow gullies less than 30cm deep, common in agricultural land and freshly cultivated soil.



Tunnel

erosion: water moves into the soil through cracks, burrows or tree root cavities and creates a tunnel as dispersive clays wash away.



Landslips

steep slopes, intense rainfall and gravity can weaken the soil so that it collapses in large amounts. Early signs of potential landslips are cracks and scars running across the slope.

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