

# Restoring the waterways of the Cudgen plateau



Minimising the loss of valuable topsoils is a significant and ongoing challenge for local farmers, especially where steep slopes, erodible soils, high intensity rainfall and intensive cultivation are involved. However, efforts are being made to improve sediment and erosion control practices, with added benefits for water quality and the broader environment.

A two-year project funded from the Environmental Trust, with in-kind commitments from Council, has been undertaken on the Cudgen Plateau to reduce soil loss and erosion by revegetating and restoring creek and drainage lines.

## Recommendations for producers

Agricultural industries that require intensive soil cultivation require the greatest range of soil conservation strategies to reduce soil loss and erosion. Best practice includes:

- Reduce flowing water reaching the cultivation area by creating well designed diversion banks.
- Establish wide, shallow grassed swale drains to capture water, minimising the potential for erosion. Avoid steep V-shaped drains with little vegetation.
- Establish temporary contour 'drains' during fallow periods to reduce rilling.
- Minimise bare soil during fallow periods by using cover crops which also add organic matter and nutrients to the soil.
- Establish vegetated buffers from waterways and encourage local native trees and ground covers, to help:
  - reduce sediment and nutrient discharge into waterways
  - reduce the need for herbicide use near waterways
  - improve bank stability (particularly during flood events)
  - improve biodiversity and habitat for beneficial organisms
  - lower water temperature
  - dissolved oxygen content
  - discourage weed and algae species
- Establish sediment detention basins in strategic locations to increase recapture of eroded soil and reduce runoff.
- If managing aquatic or riparian weeds, use waterways-approved herbicides such as Roundup Biactive® in accordance with label requirements.

## Background

Conventional sweetpotato farming involves significant soil cultivation and bare fallow periods, leaving paddocks susceptible to erosion and soil degradation. Large-scale soil loss can occur during heavy rainfall, especially if best practice soil management is not in place. Erosion of topsoil from the Plateau can pollute local waterways, degrade riparian habitat and impact on farm productivity. The historic loss of lowland rainforest from the area has also had long lasting impacts on biodiversity and the health of the nearby coastal creeks.

With funding from the NSW Environmental Trust, Council worked in collaboration with six landholders to restore riparian areas on farm. The project aimed to reduce topsoil and nutrient runoff and improve biodiversity and water quality.

On-farm soil management strategies were also encouraged to reduce soil loss and erosion from farms to areas of plantings and waterways.



## Results

- More than 8000 local native plants established along 1.5 km of waterways.
- Increased numbers and diversity of local native plants.
- Greater adoption of soil conservation strategies, including swale drains and internal roads under managed grass cover, and construction of four sediment detention basins.
- Improved fauna habitat, including habitat for beneficial insects and other organisms.
- Reduced maintenance costs and time burdens for farmers.
- Improved farm amenity.
- Creation of windbreaks to reduce windblown erosion.
- Improved natural resource management skills among landholders.



Community planting day (left) and a sediment detention basin (right), as a last line of defence to capture sediment.



Peter Menzies from Soil Conservation Service gives practical advice on managing soil erosion on farms, during the final workshop for 2017.



This project has been assisted by the NSW Government through its Environmental Trust. Special thanks to Soil Conservation Service, our bush regeneration teams and all the farmers for their involvement in the project.

**For further information or to participate in future projects, contact Council's Program Leader – Sustainable Agriculture on (02) 6670 2400.**