

a dam to stop a gully headcut

Landholder	Joshua Quinn & Kylie Brady
Map reference	13
Land use	Grazing
Soil Erosion Solutions Grant	\$8,500 (fencing contractor and materials, float for earthmoving equipment, fuel, plastic dam liner, gypsum, seed and fertiliser)
Landholder's in-kind contribution	\$9,250 (excavator and bulldozer work, labour)

The site

The landholders of this remote grazing property with dispersive subsoils were concerned about several active gullies. One of the worst gully heads had already cut its way over a kilometre up a broad valley, cutting a gully over 5m deep and often over 25m wide. We wanted to stop the advance of the headcut into productive pastures.



Looking down the gully

The project

- A dam was designed to reduce the risk of tunnel erosion and deliver most water flow to the gully floor via pipe.
 1. Grass and topsoil were taken off the dam site and stockpiled.
 2. The base of the dam wall was keyed in to an excavated trench.
 3. Soil for the dam wall was mixed with gypsum to reduce dispersion.
 4. The dam wall was built in 200mm stages and track rolled.
 5. A large tricklepipe was set into the dam wall to take flows up to greater than a 1 in 10 year flood event.
 6. A 3mm black plastic lining to prevent tunnelling was laid on the inside face of the dam wall, then covered with 1½ m of soil and track rolled.
 7. Topsoil was respread over the finished wall, then fertilised and seeded with perennial grasses and a cover crop of oats.
- The pipe outlet in the base of the gully was armoured with rock.
- The dam site and much of the downstream gully line were fenced off.



Spreading seed and fertiliser

The benefits

- The gully head has stopped progressing, protecting upslope farmland.
- Innovative techniques used to protect the embankment from tunnelling allow the dam to be used for water storage.
- Fencing off the flow line will allow increased vegetation to establish on the gully walls downstream of the dam, and reduce soil loss.

Landholder's experience

What was the **best thing** about this project?

"The dam gives us extra water for dry times and has helped prevent the erosion from getting worse."

What was the **most difficult** aspect of the project?

"Finding enough dry weather to place the dam in the gully."



The finished dam