Case study:
Teale

Property location:	Bellmount Forest, NSW
Size:	21 hectares
Owners:	Jim & Liz Teale
Project completion:	November 2020

Initital site assessment

A severely degraded property due to more than 100 years of set stocking sheep, coupled with sodic soils, low ground cover and dramatic erosion in the landscape.

Previous attempts at erosion control had resulted in concentrated water flows which quickly washed away in high rainfall events resulting in even further damage.

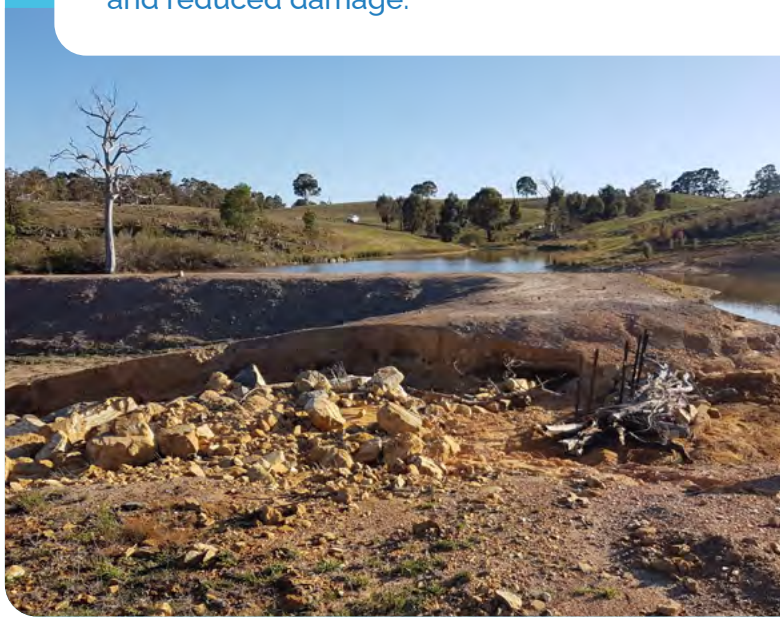
Mulloon Consulting saw an opportunity to recreate a permanent chain of ponds/wetlands in the creek.

Project objectives

- Repair main gully flowing through property.
- Repair highly eroded dam wall and spillway.
- Slow and spread water flow over property.

Take home message

Prior to on-ground works, water flow was concentrated with peak flows continuing to damage the gully, dam wall and spillway. The implemented design now deliberately spreads and dissipates water energy, increasing surface roughness via vegetation and armouring vulnerable locations, resulting in reduced peak flows and reduced damage.



Top: After – Lower dam spillway. Completed repair works.
Right: Before – Lower dam spillway. Site prior to on-ground works.

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Services provided

Site assessment

Identified drivers of degradational processes in the landscape. Landscape planners then used this information to develop detailed designs that would reinstate healing processes.

Farm plan and design

Detailed designs documented to address erosion and improve landscape function, biodiversity and habitat. These formed the basis of on-ground works and will be used by the landholder to implement a range of land management techniques to continue healing the property's landscape and water cycle.

On-ground works

Implemented to slow and disperse water flow, transforming high-energy degrading floods into low-energy aggrading events.

Vegetation

Established along riparian zone to further slow and disperse high-energy water flows. Tubestock grasses and shrubs were planted along the creek, disturbed vegetation was transplanted back into the creek bed and grass seed was dispersed.

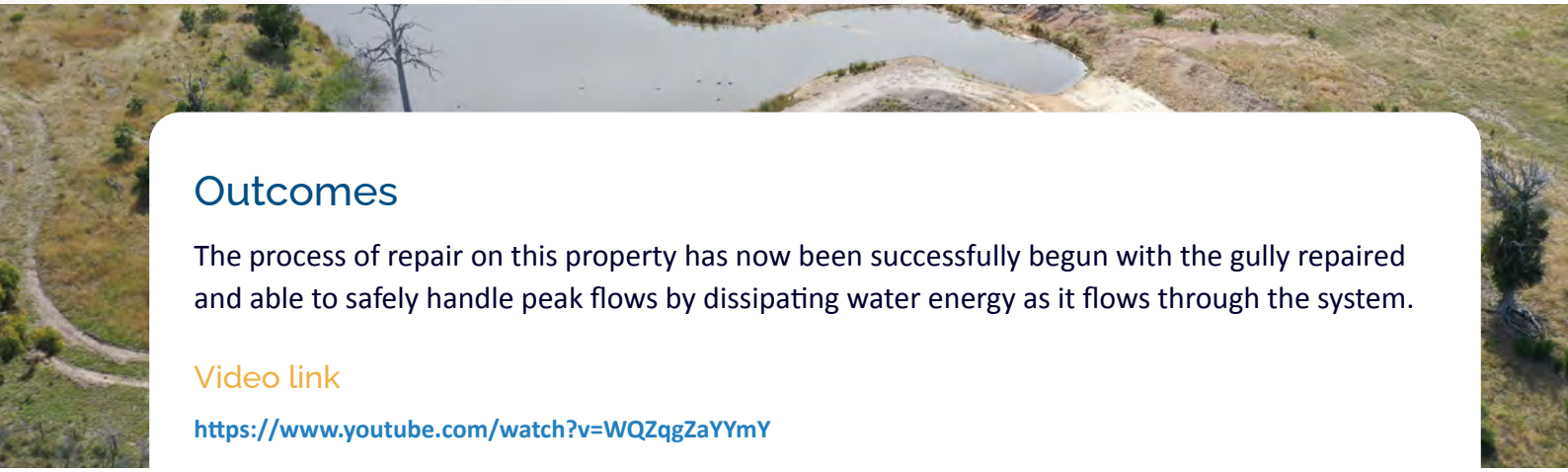
Materials

- Rock and earth – obtained on-site
- Coir mesh
- Seed
- Plants – landholder provided
- Transplanted grasses – obtained on-site
- Silage spread over fresh works – landholder provided.

Main gully, upper section – before
Previous erosion repair efforts had caused further, extensive damage.

Main gully, upper section – after
Series of rock steps armouring against high-energy water flows, with vegetation planted in between steps to further slow the water flow.

Other minor works included a hand built **rock ramp** to repair an eroded site and the planting of vegetation to slow water flow and capture sedimnent runoff.



Outcomes

The process of repair on this property has now been successfully begun with the gully repaired and able to safely handle peak flows by dissipating water energy as it flows through the system.

Video link

https://www.youtube.com/watch?v=WQZqgZaYYmY

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