



Case study: David

Property location: Wamboin, NSW
 Size: 16 hectares
 Owners: Fiona David & Jake Blight
 Project completion: November 2020

Initial site assessment

Small lifestyle property managed for wildlife habitat and conservation. The area has a history of grazing which has caused widespread degradation and erosion.

Gullies on the property are severely incised and eroded as a result of the grazing. During peak flow, water concentrates down these gullies causing further erosion and damage to infrastructure.

Project objectives

- Assess existing erosion then recommend appropriate remediation and prevention work.
- Improve landscape and ecosystem function through landscape rehydration.
- Improve aesthetic values of the system.

Top: After – Lower half of system following restoration works.
Right: Before – Lower half of system prior to on-ground works.

Take home message

Landscape rehydration works have far-reaching benefits to production, ecology and function and can be tailored to individual management objectives.



Services provided



Site assessment

Landscape planners visited the site and identified opportunities to replace degrading processes with aggrading ones in the creek system.



Farm plan and design

Landscape rehydration and repair works were designed using GIS and CAD software. This enabled Mulloon Consulting consultants to discuss the recommended approach with the landholder prior to implementation and was used as a basis for directing earthmoving equipment.



On-ground works

Earthworks were carried out on-site to reduce energy of water flows and to create a chain of ponds system. Ponds were created, rock flumes constructed and banks were battered back.



Vegetation

Revegetation was undertaken along riparian corridors to help to dissipate high energy flows and hold soil in place with roots, while providing habitat for native wildlife. Tubestock grasses and shrubs were planted along the gully and vegetation disturbed during on-ground works was transplanted back into the creek.



Materials

- Rock and earth – obtained on-site
- Coir mesh
- Seed
- Plants – landholder provided
- Transplanted grasses – obtained on-site.



Before – Highly eroded gully was unable to manage high energy water flows.



After – Banks battered and covered with coir mesh to facilitate plant growth and protect soil from further erosion. Instream rock structure (left) and rock ramp (top) work to slow water flow.



Rock ramp – Designed and installed to slow water flow before it enters the pond below.

Outcomes

The gully is once again able to manage high energy flows through a series of rock baffles along the gully. Extensive revegetation will dissipate high energy flows and knit the soil together. Habitat for native species has been established.

Since completion, the project site has experienced multiple high rainfall events that have left little to no damage in the system. This is particularly impressive considering the vulnerable nature of recently completed earthworks and the erosive history of the site.