Landcare-led Landscape Resilience Tools and data for restoration decisions

Farm Dam and spill way enhancement

OBJECTIVES

Since the 1920's, Aussie farmers have tackled dam erosion and water quality dramas using rock walls and silt traps. The Soil Conservation Service (Soil Con) stepped in during the 70's with contour banks and new dams. To compliment these works, a dam and its spill way near farm forestry blocks was identified as a suitable to trial the Sustainable Farm Dams method of Dam enhancement. Coupled with an open woodland planting along the extensive dams spillway, this will reduce sediment inflow and stop erosion on the out flow of the dam.

WHAT IS SUCCESS

By using very dense plantings of grasses at the inflow, a significant reduction in erosion and sedimentation will be seen. Water quality will improve, and the ecosystem will flourish, providing a model for sustainable dam management in similar environments. While at the other end of the system, the very long spill way will further improve biodiversity by being planted in a way such as would mimic a Box Gum Grassy woodland in the area.



Wood ducks common visitors to the dam.



Note the turbity of the water and the Red Watermilfoil (Myriophyllum verrucosum) which is the only emergent species currently present.

KEY STEPSFARM **DAM** ENHANCEMENT

- Fence the Dam: Exclude livestock from the dam area to prevent trampling, grazing, and direct contamination.
- Provide Alternative Water Access: Install a pipe and trough system to supply clean water to livestock.
- Revegetate Surroundings: Plant native vegetation around the dam to stabilise soil, filter runoff, and improve water quality.
- Enhance Habitat Features: Add elements like submerged logs, shallow areas, or islands to support biodiversity (e.g., frogs, birds, and turtles).
- Manage Grazing: Reduce grazing intensity in the dam catchment to minimise sediment and nutrient runoff
- Monitor and Maintain: Regularly check water quality and manage weeds or competing grasses in the revegetated area.
- This approach improves water quality, supports biodiversity, and enhances farm productivity

WATER ACCESS

While fencing off a dam can be great for Biodiversity and water quality, the question becomes how to create access to water for stock.

- Hardened access points are cost-effective and simple to implement, offering flexibility if trough systems fail. However, it can compromise water quality through livestock contamination, cause nutrient build-up and algal blooms, and lead to erosion and vegetation damage, ultimately reducing the overall health of the dam ecosystem.
- **Solar-powered pump** to troughs provides cleaner water and protects the dam by excluding livestock, reducing erosion and sedimentation. It is environmentally friendly and ideal for remote areas but has higher upfront costs and relies on sunlight, requiring planning and maintenance for reliability during cloudy periods or low sunlight.

Enhanced dams support biodiversity by providing habitats for native species, increase water quality.



PLANTING AN OPEN WOODLAND

In periods of extreme wet the dam can and will overflow as part of the original Soil Con works in the 70's a large flat spill way was created. Trees near me indicates the area should resemble Blakley's Redgum- Yellow Box grassy woodland.

- Plant selection was based off the PCT and with most tubestock planted came from the ground cover and shrub levels. Along with scattered direct seeding sites across the site.
- The area already has substantial native grass species, so a double helix set of rip lines were used to minimise impact erosion of future overflows.
- Habitat Features: Retain fallen timber, patches of bare ground, and other natural features to support fauna like invertebrates and reptiles.
- Ongoing Management: Monitor progress, control pests and weeds, and manage fire regimes to maintain ecosystem health.

RESOURCES

- Revegetation Guides are a great place to start to learn about how to build wetland and open woodland projects: <u>www.revegetation.org.au</u>
- Trees near me: <u>https://www.treesnearme.app/</u>
- ANU Sustainable Farms Enhanced Dams <u>https://www.sustainablefarms.org.au/on-the-farm/farm-dams/</u>



Spill way planting note the lake of straight lines in the planting









