

Creating a healthy farm dam

"Healthy dams" workshop

On the 26th February, we held a "Healthy dams" workshop at Bethungra as part of our Cross Property Planning project. Alison Elvin (from 'Natural Capital') spoke about cost-effective strategies that can be used to obtain maximum water quality and biodiversity from farm dams, creeks and wetlands, in every season. By improving water quality, there are lots of flow-on benefits for both production and conservation - you can improve stock health, spend less on drenches, increase productivity, provide essential habitat for aquatic life, and contribute to a healthy landscape.



Alison Elvin (centre) talks to land holders at the workshop about cost-effective ways to create a healthy biodiverse dam



The dam at Bill and Maria Muller's property, where the workshop was held. The Muller's are working to turn this into a biodiverse dam

Dam restoration project

The "Healthy dams" workshop was held at Bill and Maria Muller's property, "Nunlong". Here we had a look at an existing dam which Bill has fenced off, and plans to turn into a biodiverse dam by enlarging and re-shaping it, and planting vegetation to connect to nearby areas of remnant native vegetation.

The overall design of the existing dam is excellent, with a well-vegetated in-flow area including a form of silt trap prior to the water entering the dam. The outflow is also cleverly designed to meander the excess water downstream in as slow and steady a manner as possible, allowing the water to soak into the soil as it moves along.

There has been a substantial area of the paddock fenced-out from stock access, creating the potential for a wetland to establish here in and around the dam. Along the north/north-western boundary of the paddock, the soil has been ripped in preparation for tree-plantings that will continue across the paddock to near the adjacent grey box woodland remnant.

Alison's recommendations included creating 'shelves' on the steep dam walls, using logs (or similar) laid along the contour. The logs can initially be held in place with small pegs. Over time, the 'shelves' will collect sediment, and plants appropriate to the water regime will eventually grow, protecting the sides from erosion and creating a mini-habitat. Alison also recommended creating habitat for fauna by including scattered fallen logs around the edge of the dam, and in the dam itself, as well as occasional piles of rocks at the edge.

A planting guide was prepared for Bill and Maria, with recommended species to use in the different zones around the dam (see following pages). These species are obviously chosen for the specific location, but the list may provide a useful starting point for others interested in similar works.

In terms of planting layout, while planting in 'clumps' will provide a more natural look, it is obviously always simpler to plant in straight lines, so the design really comes down to personal preference and practicalities. However it is important to always ensure that you'll have easy access throughout the site for slashing and weed spraying.



Looking east from the dam into the inflow area and remnant grey box woodland on the farm



Looking southwest from the dam to scattered grey box and box gum grassy woodland trees. Note the vegetation growing in specific zones around the dam

Planting guide for Bill and Maria Muller's dam, Bethungra

Non-riparian grey box woodland species for revegetation within the paddock surrounding the dam

Species		Approx number to plant
Trees	Grey box (<i>Eucalyptus microcarpa</i>)	Clumps of 3-5, total 20
	Yellow box (<i>Eucalyptus melliodora</i>)	Clumps of 3-5 in drier soil, total 15
	White box (<i>Eucalyptus albens</i>)	Clumps of 3-5 in drier soil, total 15
	Bull oak (<i>Allocasuarina luehmannii</i>)	Clumps of 3-5 in drier soil, total 15
	Kurrajong (<i>Brachychiton populneus</i>)	Clumps of 3-5 in drier soil, total 15
Smaller trees and shrubs	Golden wattle (<i>Acacia pycnantha</i>)	20
	Kangaroo thorn wattle (<i>Acacia paradoxa</i>)	20
	Golden dust wattle (<i>Acacia acinacea</i>)	20
	Sticky wattle (<i>Acacia verniciflua</i>)	20
	Western silver wattle (<i>Acacia decora</i>)	20
	Silver wattle (<i>Acacia dealbata</i>)	20
	Hickory wattle (<i>Acacia implexa</i>)	15
	Grevillea (<i>Grevillea floribunda</i>)	15
	Hop-bush (<i>Dodonea viscosa</i>)	15
Forbs	Handsome flat pea (<i>Platylobium formosum</i>)	15
	Ruby saltbush (<i>Enchlaena tomentosa</i>)	10
	Climbing saltbush (<i>Einadia nutans</i>)	10 (may already be there naturally)

Species		Approx number to plant
Forbs	Sida (<i>Sida corrugata</i>)	May already be there naturally
	Eastern cotton bush (<i>Maireana microphylla</i>)	15
	Flax lily (<i>Dianella revoluta</i> , <i>D. laevis</i>)	15
	Matt rush (<i>Lomandra</i> sp)	15
Native grasses	Kangaroo grass (<i>Themeda australis</i>)	May appear naturally over time
	Red grass (<i>Bothriochloa macra</i>)	May appear naturally over time
	Wallaby grass (<i>Austrodanthonia</i> sp)	May appear naturally over time
	Weeping grass (<i>Microleana stipoides</i>)	May appear naturally over time
	Curly windmill grass (<i>Enteropogon acicularis</i>)	May appear naturally over time
	Wheat grass (<i>Elymus scaber</i>)	May appear naturally over time
	Windmill grass (<i>Chloris truncata</i>)	May appear naturally over time

Riparian species for revegetation in soil which is intermittently damp or has poor drainage

Species	Approx number to plant
River she oak (<i>Casuarina cunninghamiana</i>)	15 in wetter soil, northwest of dam
Red stemmed wattle (<i>Acacia rubida</i>)	15 - scatter throughout, include NW
Native blackthorn (<i>Bursaria spinosa</i>)	25 - plant throughout
Prickly tea tree (<i>Leptospermum continentale</i>)	20 - plant throughout, especially damper spots
River bottlebrush (<i>Callistemon seiberi</i>)	20 - plant throughout, especially damper spots
Sedges (<i>Carex</i> sp)	Already growing there
Tussocky poa grass (<i>Poa labillardieri</i>)	20 - plant upstream of sedges
Rushes (<i>Juncus</i> sp)	Already growing here
Matt rush (<i>Lomandra longifolia</i>)	30 - plant in rows at top of banks (slows and filters water flow)
Water couch grass (<i>Paspalum distichum</i>)	Encourage throughout dam to bind soil

Riparian species for revegetation along the water's edge (in relatively permanent water)

Species	Approx number to plant
Prickly tea tree (<i>Leptospermum continentale</i>)	10 - plant to overhang water
River bottlebrush (<i>Callistemon seiberi</i>)	10 - plant to overhang water
Spike rushes (<i>Eleocharis</i> sp)	May appear naturally over time
Club rushes (<i>Bulboschoenus</i> sp, <i>Schoenoplectus</i> sp)	May appear naturally over time
Jointed twig rush (<i>Baumea articulata</i>)	May appear naturally over time
Water couch grass (<i>Paspalum distichum</i>)	May appear naturally over time
Knotweed (<i>Persicaria</i> sp)	May appear naturally over time
Pondweed (<i>Potamogeton</i> sp)	May appear naturally over time
Swamp lily (<i>Ottelia ovalifolia</i>)	May appear naturally over time