Improving drought resilience by rehydrating the landscape and planting native vegetation

Quick Snapshot

Farmer: Jack Woods

Location: Shire of Toodyay

Farm size: 377ha

Enterprise: Livestock

Soil: Sandy earths

For the past five years, the Woods family have applied rehydration and regenerative agriculture techniques to build drought resilience into their farming landscape.

Having seen the work carried out on another property, Jack Woods, who also runs an earthworks company, *Ringa Civil*, was eager to see this method used on their 377ha family farm, southwest of Toodyay.

The system is designed to hold water in the landscape for longer, where it is caught in a chain of pools starting high in the landscape and naturally slowing the water velocity as it moves down the slope. This method can lead to extra water being available to grow more native vegetation and perennial pastures, increasing plant diversity and assisting with drought resilience.

Figure 1. Contours across paddock to capture and hold water in the landscape

Bringing water back into the system is a catalyst for recharging the ecosystem function of the landscape and building drought resilience in a drying climate.

Landscape design

A series of earth steps and leaky weirs were constructed within contours, creeks and a pre-existing drainage line to capture rainfall and hold it in the landscape (Figure 1).

Additional near-level contour banks were built alongside the drainage line, leaky weirs and dams to spread water out and over more of the land, allowing more water to infiltrate into the soil and not run off the paddock, increasing the landscapes buffering ability and drought resilience.

The South West Regional Node Lead is engaged through the South West NRM and supported by the South-West WA Drought Resilience Adoption and Innovation Hub, through funding from the Australian Government's Future Drought Fund.

Figure 2. Fenced off saltbush revegetation along waterway restoration

This also led to improved water function of a creek line that had patches of salt scalds throughout which have since reduced in size and number.

Self-sown native plants are now emerging from the seed bank along the creek including couch grass, which have provided soil protection and stability, habitat for biodiversity, and reduced salinity. Most notably, when faced with a heavy 220ml rainfall event in 24hrs, the earthworks held up with no signs of erosion.

The on-ground activities that the Woods's family is implementing to address their own drought resilience goals are similar to the priorities the South West WA Drought Resilience Adoption and Innovation Hub (the Hub) program are delivering, as outlined in their regional priorities (https://hub.gga.org.au/resources/drought-resilience-priorities/).

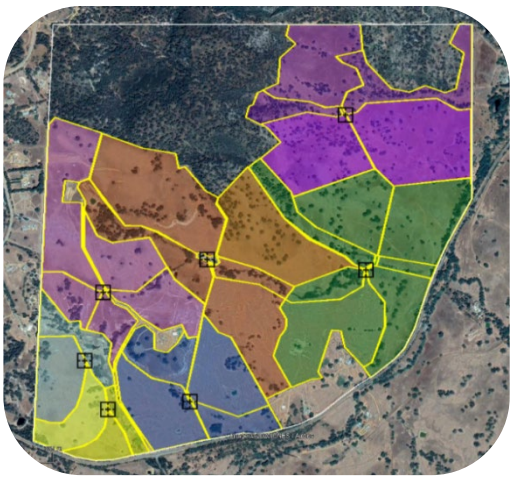

Figure 3. Whole of farm plan for rotational grazing through 31 paddocks based on 7 watering hubs.

The Hub's Node partner David Broadhurst highlights "the on-ground projects demonstrate how the Hub is providing farmers with the necessary tools and options needed to keep farming during drought conditions".

Fencing, drought tolerant plants and livestock management

With the new earthworks completed, the Woods's have fenced off the waterways to reduce impact from livestock on the water quality and revegetation (Figure 2).

The native fodder shrubs used are ideal species for tough, dry conditions. They survive off much less water than other species and provide food for livestock when other pasture supplies become low. They also provide additional nutrients.

Figure 4. Jack showing off his successful revegetation in a creek line.

With more variable rainfall starts to the growing season, the need for more effective rotational grazing is a key practice the Woods have implemented. To demonstrate this, Jack and his family have erected more fences and installed additional water hubs across the property (Figure 3).

A RegenWA Farmer Field Day was hosted on the Woods's family farm in 2021 to demonstrate their work done to other farmers and landholders who may want to implement similar strategies on their properties (Figure 4). The day also brought in local science experts from CSIRO and DPIRD to talk about other research projects happening in this space.

Future proofing

Jack and his family aim to deliver improved agricultural and environmental outcomes (productivity) whilst reducing any impact from wildlife.

The Woods's plan to keep records on their progress and are open to sharing their work with others.

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