

Neighbours making a difference to their environment at a landscape scale in the Goomalling and Dowerin Shires.



THE STORY SO FAR

Greening Australia's Living Mortlock project was developed to integrate conservation and sustainable agricultural activities to protect and restore waterways, bushland health and to improve productivity on environmentally degraded farmland.

The North Mortlock Catchment and surrounding area was chosen as a focus region to undertake landscape-scale activities due to the presence of high value biodiversity assets and the natural links between the Mortlock River, the Avon and Swan Rivers and the Swan Coastal Plain.

The program has been funded until 2017 through The Australian Government's *Clean Energy Future Biodiversity Fund*.

2014 was the project's first year to undertake on-ground works. Projects were and are currently being delivered across the catchment. A hotspot of neighbouring farmers had expressed an interest in undertaking works in the Goomalling and Dowerin Shires. Members of the Greening Australia team met with them to discuss their ideas. These farmers included Jemma Sadler, Nathan & Kylie Davey and Lyndon Bird in the Goomalling Shire, and Adam Millsted in the Dowerin Shire.

The landscape scale approach to this project was reinforced as a number of other environmental programs had been carried out

A dragonfly taking refuge from the rain on samphire at Millsted's



QUICK FACTS

Project Name: Living Mortlock

Year: 2014

Objective of the Project: A landscape scale project designed to revitalise and conserve the northern branch of the Mortlock River and the surrounding catchment.

Land Manager/s: Jemma Sadler, Adam Millsted, Lyndon Bird, Nathan Davey

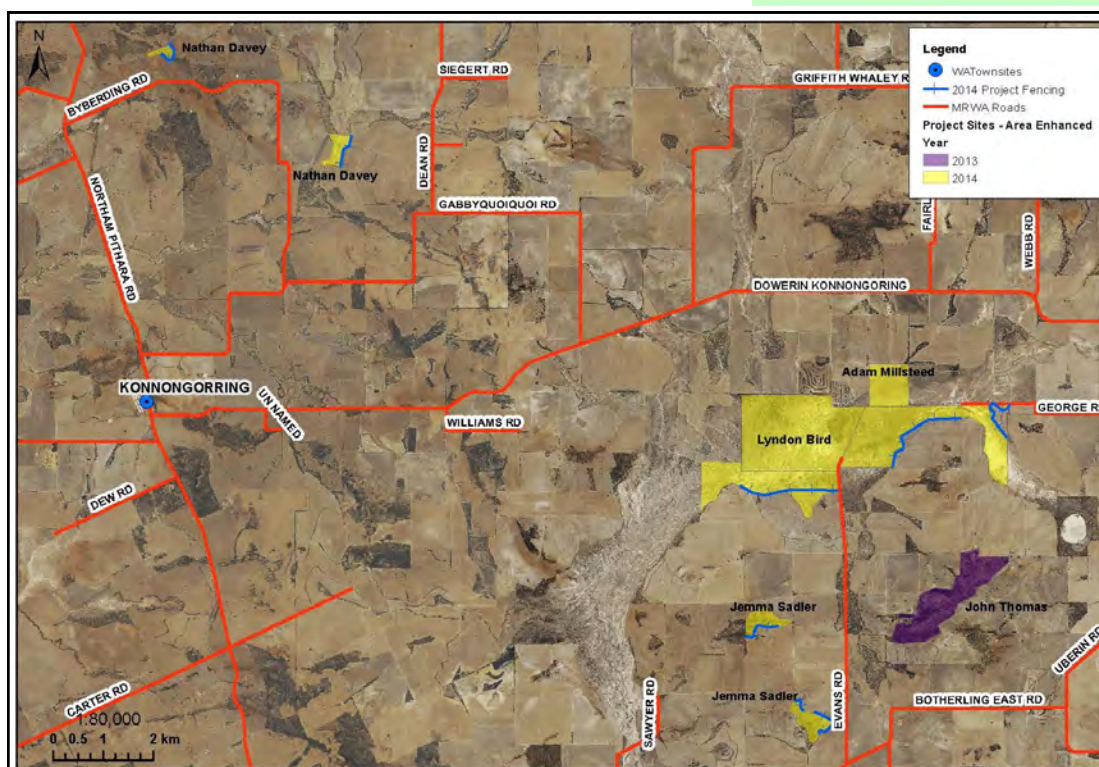
Catchment: North Mortlock

Enterprise Mixes: Mainly sheep and cropping

Average Rainfall: 366 mm for Goomalling

What was Funded:

- Number of seedlings planted in 2014: **13,200**
- Number of kilometres of direct seeding native seed: **37.2 km**
- Establishment of **39 ha** of a Sustainable Native Fodder System.
- Establishment of **5 ha** of biodiversity revegetation.
- Establishment of **2.2 km** of fencing to protect riparian remnant vegetation from grazing in the adjoining Sustainable Native Fodder System.
- Establishment of **7 km** of fencing to protect **635.9 ha** remnant bush and riparian vegetation from grazing.



LIVING MORTLOCK
Revitalising the Mortlock River



Australian Government

All photos by Amelia Glass,
Greening Australia



the previous year in 2013 with adjoining neighbours. These projects were funded under Wheatbelt NRM's Healthy Bushlands project and included 10 km of fencing to complete the enclosure and protect and improve the management of 435 ha near Emuming Rock and Oak Park. The fencing means stock will be kept out of biodiverse remnants, allowing for natural regeneration and providing invaluable habitat for local fauna.

WORKS UNDERTAKEN

Jemma Sadler	Establish 4 ha (within 22.6ha already partially completed) of a Sustainable Native Fodder System. Establish 5ha of biodiversity revegetation. 2.2km of fencing to protect riparian remnant vegetation from grazing in the adjoining Sustainable Native Fodder System. 2.2km of fencing to protect remnant vegetation.
Adam Millsteed	Establish 35.8ha of a Sustainable Native Fodder System.
Lyndon Bird	3.4km of fencing to protect and improve the management of 559ha of remnant vegetation.
Nathan Davey	Remnant 1: 0.7km of fencing to protect 9.7ha of remnant vegetation Remnant 2: 0.7km of fencing to protect 20.6ha of remnant vegetation.

The revegetation at Sadler's and Millsteed's was established within a couple of weeks between late June and early July 2014. There had been decent rains leading up to the time of planting.

Jemma's biodiversity revegetation site was a largely cleared and degraded remnant granite outcrop site. The area cleared was able to be direct seeded using Greening Australia's modified Chatfield's EGAD single-row seeder pulled by a ute using a mix of local provenance seed. Seedlings were then hand-planted into the rows to boost success, as well as scattered through the remnant. Jemma had also pre-ripped rows to be planted into and sprayed the site for weeds and pest insects which is particularly important for the direct seeded sites. Jemma planted the riparian area using a Chatfields Tree Planter and a mixture of native fodder shrubs.

Preparation for Adams site included flattening out old grade banks and pre-seeding insect control. Adam Millsteeds site was direct seeded using Geoff Woodall's double row ComVeg seeder in belts of 6 double rows. The ComVeg has a narrow scalper for weed control, avoiding the need for chemical control which would have affected naturalised bluebush on the site. A mixture of seedlings listed in the table were planted in the mounds formed by the seeder at 2-3m spacings.

Species Established at Jemma's Granite Outcrop Site

<i>Acacia acuminata</i> (jam)	<i>Calothamnus gilesii</i>
<i>Acacia assimillis</i>	<i>Calothamnus quadrifidus</i> (One-sided Bottlebrush)
<i>Acacia brumalis</i>	<i>Eucalyptus loxophleba</i> (York Gum)
<i>Acacia lasiocalyx</i>	<i>Kennedia prostrata</i> (Scarlet Runner)
<i>Acacia meisneri</i>	<i>Melaleuca radula</i> (Graceful Honey-myrtle)
<i>Acacia microbotrya</i> (Manna Wattle)	<i>Neurachne alopecuroidea</i> (Foxtail Mulga Grass)
<i>Allocasuarina campestris</i>	<i>Ptilotus divericatus</i> (Climbing Mulla Mulla)
<i>Allocasuarina huegeliana</i> (Rock Sheoak)	

Species Established at Adam's Site

<i>Acacia acuminata</i> (jam)	<i>Kennedia prostrata</i> (Scarlet Runner)
<i>Acacia assimillis</i>	<i>Maireana atkinsiana</i> (Bronze Bluebush)
<i>Acacia brumalis</i>	<i>Maireana convexa</i> (Mulga Bluebush)
<i>Acacia ligustrina</i>	<i>Maireana georgei</i> (Satiny Bluebush)
<i>Acacia meisneri</i>	<i>Maireana glomerifolia</i> (Ball Leaf Bluebush)
<i>Acacia microbotrya</i> (Manna Wattle)	<i>Maireana platycarpa</i> (Shy Bluebush)
<i>Atriplex amnicola</i> (River Saltbush)	<i>Maireana pyramidata</i> (Sago Bluebush)
<i>Atriplex bunburyana</i> (Silver Saltbush)	<i>Melaleuca acuminata</i>
<i>Atriplex hymenotheca</i>	<i>Melaleuca brevifolia</i>
<i>Atriplex nummularia</i> (Old Man Saltbush)	<i>Melaleuca halmaturorum</i>
<i>Atriplex semibaccata</i> (Creeping Saltbush)	<i>Melaleuca hamata</i>
<i>Callistemon phoeniceus</i> (Lesser Bottlebrush)	<i>Melaleuca lateriflora</i> (Gorada)
<i>Calothamnus quadrifidus</i> (One-sided Bottlebrush)	<i>Melaleuca thyoidea</i>
<i>Casuarina obesa</i> (Swamp Sheoak)	<i>Melaleuca viminea</i>
<i>Eucalyptus loxophleba</i> (York Gum)	<i>Rhagodia drummondii</i> (Lake Fringe Rhagodia)
<i>Eucalyptus sargentii</i> (Salt River Gum)	<i>Rhagodia preissii obovata</i> (Sea Berry Saltbush)
<i>Eucalyptus salubris</i> (Gimlet)	<i>Rhagodia spinescens</i> (Spiny Saltbush)

Nathan, Jemma and Lyndon are all currently in the process of completing the fencing using 7-line ringlock.

SELECTION OF SPECIES

Some of the species selected for the Sustainable Native Fodder sites were selected from the CSIRO ENRICH Project and recommendations from the Department of Agriculture and Food. Seed orchards have been established at the Northam Greening Australia office to test and bulk up seed of key species.

The main aim of Greening Australia's Sustainable Fodder project is to use local species occurring in the Wheatbelt. Where seed of key species was unavailable or in short supply, cuttings were transplanted to the site as tubestock. The use of cuttings increased the diversity of species available and allowed us to incorporate a range of species that normally have low rates of viable seed.

LESSONS LEARNT

Some lesson's learnt from the project include:

- Good insect control is essential at seeding , red-legged earthmites being the main danger.
- Early rabbit control (bait, rip, fumigate) is required to avoid seedling loss.
- Kangaroos caused some damage to new seedlings at the Sadler's, seeming to favour the Acacia's and pulling them out, leaving them to dry out. One option would be to put guards around seedlings or try burying seedlings deeper.
- Direct seeding can be carried out successfully in July and August when temperatures are starting to increase slightly and preferably with good soil moisture.

FUTURE PLANS

There's scope for further revegetation works and to link remnants and waterways over the coming years. Rabbit and other pest animal control will need to be on-going at all sites to ensure the success of this years plantings and allow for natural regeneration.

There will also be on-going monitoring of the sites to determine successes and trends. Bird monitoring by members of Bird Life Australia at all of the sites in this report has been completed for year 1 and will be repeated each year of the project to see if there are any changes to the species diversity after the implementation of the project.

The Living Mortlock project is funded until 2017 so over the coming years we'd like to expand on this years works, make more connections with neighbours and other landholders in the North Mortlock Catchment to continue the delivery of native and sustainable fodder revegetation works and the fencing of bushland and waterways. From prioritisation works we've done we'd also like to be more targeted in the bushland we're protecting and the location of revegetation works. The long-term goal for Greening Australia is to continue and expand the project beyond the 2017 Biodiversity Fund time-frame.



Everlasting's on display in the project area at the Davey's.



Direct seeded belts at Millstead's with the Greening Australia team getting ready to plant seedlings in between rows.



Examples of riparian and remnant bush protected at Bird's.

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