



wheatbelt
natural resource
management

Makuru - Djilba

Wheatbelt NRM quarterly newsletter

Issue 23 Winter 2015



Our 3 year plan

Forage shrub systems

Get the 101 on 1080 baits

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Front cover photo: Natarsha Woods, Wheatbelt NRM CEO at Yorkrakine Rock.



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This document is printed on 100% post production recycled paper using vegetable-based inks.

Written and designed by Wheatbelt NRM.

This publication is produced by Wheatbelt NRM through funding from the Australian Government's National Landcare Programme.



Wheatbelt NRM 3 Year Plan

By Natarsha Woods, Chief Executive Officer



■ Cunderdin Rotary Club Tree Planting

In 2014, Wheatbelt NRM produced the Regional Natural Resource Management Strategy for the Avon River Basin – a 'state of the environment' report with recommended priority actions for the next five years. The Regional NRM Strategy was produced with intensive community engagement and input from the broader scientific community. The report shows that only 17% of bushland remains in the Eastern Wheatbelt which is less than the 30-40% threshold that it needs to be sustainable. As a result, maintaining and increasing areas of native vegetation is a high priority for this area.

But whose job is it?

And what are we going to do?

The first answer is simple – its everyone's job. The majority of land in the Wheatbelt is privately owned, so any action needs to be collective to make a difference. For this reason, Wheatbelt NRM's overall plan is to engage 25% of the Wheatbelt community in actively improving the Wheatbelt's environment, via our multi-disciplinary strategies and programs. However, we are not the only players this field – local governments and various state agencies are legally required to care for and manage various aspects of the environment.

Wheatbelt NRM are an independent, not-for-profit

group working with community, to create healthy environments and livelihoods via quality natural resource management. While our main support

“ The report shows that only 17% of bushland remains in the Eastern Wheatbelt which is less than the 30-40% threshold that it needs to be sustainable.

over the next three years will come from the Australian Government's National Landcare Programme, it isn't our only means of funding to activate the community. We also generate revenue through competitive State

and Australian Governments grants, via donations, and from philanthropic grants. We have also recently branched out into business ventures with our new online shop (www.wheatbeltnrm.org.au/shop).

The Wheatbelt 3 Year Plan (2015-18) outlines the work that Wheatbelt NRM intends to undertake over the next three years to improve the current 'state of the environment'. It looks at the work we will be doing as part of the Australian Government's National Landcare Programme, and also covers the additional areas that we will be seeking funding for.

The Wheatbelt 3 Year Plan encompasses soil health improvement, waterways revegetation, and endangered species protection – on-ground work that is quickly associated with being 'environmental'.

The plan also includes the other work that we do to engage and enable the community – sharing knowledge, running workshops, supporting researchers, supporting other community groups, and bringing a Wheatbelt perspective to government events – work to effectively expand our workforce to 25% of the Wheatbelt community.

“ The plan also includes the other work that we do to engage and enable the community ... work to effectively expand our workforce to 25% of the Wheatbelt community.

Basing the Wheatbelt 3 Year Plan on the Regional NRM Strategy ensures that the work we are doing is what the community wants. The plan serves as an accountability tool too. When we say we are going to plant 40,000 hectares of native vegetation, we will be able to report each year on how much we have achieved towards that goal. The plan is designed to capture a further aspect of accountability – not just a measure of what we said we would do, but also what difference has been made.

The Wheatbelt 3 Year Plan has been written by our community Board with great support from staff. It will be launched at our Annual General Meeting on 22 October 2015, along with the inaugural Resilient Wheatbelt Dashboard. This dashboard contains data on the thresholds of potential concern for the Wheatbelt and brings together information from diverse sources such as the Department of Agriculture and Food, Western Australia (DAFWA) and the Australian Bureau of Statistics (ABS). Where we don't yet have the data, surrogates will be sought. The dashboard will be updated annually and presented at the AGM each year to showcase how the Wheatbelt environment is changing and being changed.



Looking out over Yorkrakine Rock

Strategic Theme Areas

Wheatbelt NRM has developed a series of organisation-wide strategic objectives to realise its strategic position by 2018. To ensure a holistic and balanced scorecard approach to planning, each strategic objective has been developed in alignment with one of the following four key strategic theme areas:



Strategic Objectives for 2015 - 2018

There are nine strategic objectives for the 2015-2018 period categorised by strategic theme areas, as defined in the following table. Each strategic objective contributes to the overall succinct strategy statement

Healthy Environments	SO 01	Deliver NRM programs that protect and enhance the Wheatbelt environment
Sustainable Industry and Livelihoods	SO 02	Support industry practice for the sustainable use of natural resources
Productive Relationships	SO 03	Ensure Wheatbelt NRM has a strong relationship with its community
	SO 04	Support Aboriginal participation in NRM
	SO 05	Grow the connection our youth have with the Wheatbelt environment
Organisational Excellence	SO 06	Actively input into the government policies that shape natural resource management, for the benefit of the Wheatbelt
	SO 07	Provide an adaptive management framework for delivering the Regional NRM Strategy
	SO 08	Secure funding and new business opportunities for delivering environmental solutions to the Wheatbelt
	SO 09	Ensure Wheatbelt NRM has a strong governance framework that is supported by efficient and effective business systems and processes

A detailed overview of each Strategic Objective including their respective outcomes, targets and outputs can be found at:

www.wheatbeltnrm.org.au/3yearplan



Forage shrubs a lifeline for sheep

By Kate Raston

■ Saltbush row plantings

Last week's rainfall couldn't have come soon enough for Kellerberrin farmer Murray Clements.

He was continuing to hand feed all of his 1400 Merino ewes and Poll Dorset Cross lambs, in the hope the weather would soon turn.

"In the lead up to this rain it was a dust bowl," Murray Clements said.

"We've been relying on our forage shrubs including saltbush and rhagodia as well as feeding out grain and hay."

He poured out 32 millimetres of rain for the week, which he said came just in the nick of time.

Helping him through the dry times has been an investment into forage shrubs with more than 200,000 planted over the past ten years on his property south of Doodlakine.

“ Without them we'd be farming a real dust bowl, the forage shrubs also control erosion from the wind, so the countryside would be in a sorry state if we didn't have them.

Murray Clements has been a strong proponent of planting forage crops, particularly on saline and unproductive land, and has come out in support of a new incentive program encouraging others to grow the trees.

"I'll now continue to use the forage shrubs until my pastures are ready to sustain sheep grazing on them," Murray Clements said.

"They're a valuable part of my farming system.

"Without them we'd be farming a real dust bowl, the forage shrubs also control erosion from the wind, so the countryside would be in a sorry state if we didn't have them."

Natural resource management group Wheatbelt NRM has launched the

Perennials for Profit program this week.

The project coordinator Dr Fiona Brayshaw said

FORAGE SYSTEMS

Perennial forage shrubs consist of a range of palatable native shrub species, particularly Chenopods. Wheatbelt NRM lists six forage species: five species of Atriplex and one Rhagodia species suitable for planting. It is grown both in belt-alley systems and contiguous blocks. The Enrich program (Future Farm Industries CRC) also identified a range of high quality forage species which, in many cases, provided substantial habitat (Norman et al. 2008, Collard et al. 2011, Lancaster et al. 2012). Given that the shrub layer is such an important habitat, particularly for a large number of declining bird species, it is worth considering the habitat value of shrub-level foraging systems along with brushwood systems.

RECOMMENDATIONS FOR SHRUB BASED SYSTEMS: SALT BUSH AND BRUSHWOOD

- Introduce element of canopy (e.g. scattered eucalypts).
- Encourage diversity of herbs under shrubs.
- Consider incorporation of other native shrub species in order to improve diversity.

Source: Wheatbelt Agroforestry Biodiversity Values, <http://goo.gl/m0HkUn>

the program worked by offering subsidies on forage shrubs like saltbush and rhagodia, as well as sandalwood host trees.

"We will be directing approximately \$120,000 from the Australian Government's National Landcare Programme over the next three years into community grants and will be supporting advocates like Murray to mentor successful applicants."

"A recent DAFWA report in the northern agricultural region suggested that on average eight per cent of cleared farming land was consistently unproductive," Dr Brayshaw said.

"These are the areas that might be more profitable under forage shrubs or sandalwood, rather than cropping."

"The program will also involve master classes that will focus on how and where to implement these systems on farm to boost overall farm profitability."

Animal nutritionist and farming systems research scientist Dr Dean Revell agreed forage shrubs could

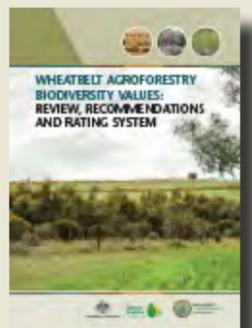
help turn around unproductive land.

"Saltbush and other species combined can help meeting the energy and nutrient requirements in autumn and early winter where the current annual pastures are lacking," Dr Revell said.

"Forage shrubs are most valuable when you have just had rain because you want to keep the sheep off the pasture to give it a chance to grow and set itself up for the rest of the year."

Wheatbelt NRM's new publication 'Wheatbelt Agroforestry Biodiversity Values' online at:

<http://goo.gl/m0HkUn>





1080 baiting

By Anika Dent, Biodiversity Project Manager

■ Fox caught on camera trap

Why are we controlling ferals?

Here in the South-West, we live in a Biodiversity Hotspot. This means that we have a very large variety of native species and ecological communities that are only found in this part of Australia, many of which are under threat of extinction from a range of environmental pressures.

In a country with the world's highest mammal extinction rate, we can help to protect our unique animal and plant species by reducing the number of threats they are facing.

Feral animals have been linked to the decline of a large number of Australian species through predation and competition for resources.

By reducing the populations of feral pests across your bushland you can decrease the impact they have on vulnerable native species.

There are many options for feral control, including trapping, shooting and habitat modification.

One of the most effective broad scale control options for feral control is poison baiting.

Why 1080 baiting?

The two main options for poison baiting available to landholders in WA are 1080 and Pindone.

Pindone is a synthetic poison that will kill both native and non-native species, making it very difficult to reduce the chance of non-target species dying from bait uptake.

1080, also known as sodium fluoroacetate, is a chemical naturally found in almost 40 native plants in Australia. In the South-West, 1080 is found mainly in a group of plants called Gastrolobiums.

Here in the Wheatbelt, we are lucky that most native animal species have evolved alongside these plants and developed a relatively high tolerance for the poison. This means we can lay individual baits containing enough poison to kill a pest animal, whereas most native animals will need to eat several baits to be poisoned.

However, not all native species have the same tolerance to 1080 poison. It is important to be aware of how you are baiting and the impact it may have on the environment, native species and non-target domestic animals.

1080 is also leached out of the baits over time and broken down completely by microbes in the soil, meaning that you won't have residual 1080 poison sitting in your soil for months or years to come.

Tips for 1080 baiting & reducing non-target poisoning

When using 1080 meat baits to control foxes, you should:

- Bury or tether the baits. Foxes will easily find and dig up baits while non-target native animals are unlikely to find them. This is particularly useful in preventing birds from picking up baits and dropping them near your dam or house and

potentially poisoning non-target animals.

- Use no more than five baits per 100ha – this will save you money and stop animals from picking up the baits and burying them in a cache.
- The most effective time of year to bait is during late winter and early spring, when foxes are having young. Baiting at this time of year will have the biggest impact on fox populations.
- Follow up with a second baiting round in late summer and early autumn, when foxes are migrating. While this is not the best time of year to bait, it will reduce the chances of foxes coming in from neighbouring properties and recolonising your property after your spring baiting program.
- Leave your baits out for no longer than two weeks. After two weeks on the ground, 1080 will start to leach out of the bait and degrade. Any baits out on the ground for much longer than two weeks are likely to contain a sub-lethal dose of 1080. If a fox takes a bait with a sub-lethal dose of 1080 they will only get sick and then will never take another bait, making it harder to catch it in the future.
- At the end of each baiting program, pick up any baits that you have laid that weren't taken and dispose of them by deep burial and/or burning to ensure sub lethal doses of 1080 aren't available to your neighbourhood foxes.

Rabbit baiting

Baiting for rabbits is much more effective when other food options are rare. There are two types of 1080 oat baits for rabbits:

1. Conventional oat baits

Each individual oat contains a small amount of poison meaning the rabbit needs to eat many oats in order to be poisoned. A period of seven days 'free-feeding' (putting out unpoisoned baits) gives the rabbits a chance of getting used to eating oats, before introducing the poisoned oat baits. Failure to free-feed can result in rabbits only taking a few oats, then stopping once they get sick, never to touch another oat again.

2. One-shot oat baits

A small percentage of oats contain enough poison to kill a rabbit, with the remaining oats being unpoisoned. This method does not require free-feeding as the rabbits will keep eating oats until they get one oat with poison in it, which will have enough poison to kill it.

Rabbit bait stations

Rabbit bait stations can significantly reduce the chance of non-target animals taking poisoned baits. They are designed to safely and efficiently feed poisoned oats to feral rabbits. They also save you time and money by protecting the bait from weather and allow easy monitoring of bait uptake.

Once oats have been placed in the station, it is best to leave the oats and rabbits undisturbed for 10 days. This gives the rabbits enough time to become comfortable with the station and learn to eat enough oats for the poison to be effective.

Applying for 1080 baiting permits

If you are interested in applying for a 1080 permit, please contact Biodiversity Project Manager Anika Dent for assistance with the application process (Anika Dent, ph: (08) 9670 3104, anika@wheatbeltnrm.org.au). You can also contact your local Biosecurity Officer or your local Shire's Environment Officer, or Natural Resource Management Officer.

Wheatbelt NRM currently has rabbit bait stations available for sale for \$30 each. Please visit our online shop or call us directly on (08) 9670 3100.

<http://www.wheatbeltnrm.org.au/product-listing>

TIPS FOR YOUR BAITING

Use as many control options at the same time as possible – you will always have some individual animals not taking baits or not going into traps.

Organise your baiting to line up with your neighbours – this helps reduce the chance of animals from your neighbours' properties migrating onto your property and vice versa.

Bait for foxes in spring – this is when they breed and you have the biggest impact on their population.



Revegetation

It's time to get your trees in the ground

By Rachael Major, Biodiversity Project Manager

■ Tree planting equipment

Now that the rain has arrived, it is time to get planting. By following a few simple rules you will increase the success of your tree planting and ensure good survival rates.

Site preparation

Once your seedlings have been delivered or collected it is crucial to keep them damp. Seedlings may need watering up to twice a day in dry weather and will dry out very quickly once the cell trays have been 'popped'. To make things easier for you and the seedlings, arrange for them to be delivered onsite, just prior to planting.

Hand planting

Hand planting seedlings is a good option for smaller projects or difficult terrain. It is also a great opportunity to get family, friends and community involved, and all it will cost you is the barbeque afterwards. There are various tools for making life easier when hand planting, including the pottiputki (a planting tube from Finland) and the kidney bucket. These two devices allow you to work in an ergonomically correct manner and are simple to use and easy on the back. Depending on how well your site has been prepared you may also need gloves, a planting bar, a sedge planter, spades, picks, and rakes.

Pottiputki planters have a hollow tube with a duckbill end that is driven into the ground and levered open to create a hole suitable for the seedling. The seedling is then dropped down the tube into the hole and pressed into place with foot pressure. Wheatbelt NRM is able to hire Pottiputki planters to community groups for their tree planting needs.

Step 1. Ensure the duckbill is closed. Push the planter into prepared ground, by standing on the footplate and pushing it in as far as you can. This allows the rootball of the seedlings to be planted as deep as possible.

Step 2. Place seedling in the hollow end and push lever with foot to open the duckbill.

Step 3. Lift the pottiputki up and over the seedling. Make sure not to close it before it is clear of the seedling.

Step 4. Push the earth in around the plant to ensure it is straight with no roots exposed.

Planting bar & sedge planter

Move the planting bar or sedge planter from side-to-side as you punch it down into the ground. Place the tree seedling against flat side of hole, then use your foot to firm the earth down around it.

Machine planting

When doing larger plantings you can use machinery to save time. There are many different commercial and homemade machinery options for mechanical tree planting. The 'one pass tree planter' is the most commonly used one in the Wheatbelt.

Most shires have a one pass tree planter for hire. Bookings are often required as it is likely everyone will want to use them at the same time. Make sure you have access to a tractor of the appropriate size, and someone to plant with you.

Features of the **one pass tree planters**, include:

- ability to scalp away weeds and their seeds by removing the top few centimetres soil



■ Using a pottiputki

- option to mound soil for waterlogged sites
- shelves for the seedlings to rest on
- covered seat for the planter
- press wheels to press seedlings in
- adjustable chain to measure distance between seedling rows.

While setting up the tree planter correctly can be time consuming it is vitally important to get it right. This ensures that the rip is deep enough and that seedlings are planted at the correct depth. Adjustments to the tree planter will need to be made for each site where the conditions vary. If in doubt, ask someone for advice.

Direct seeding

Direct seeding often gives a more diverse result and can be cheaper than seedlings alone, however it does require specialist skills and equipment. Ensure that your seeds are thoroughly mixed so you don't end up with patches of the same species in one spot. Some seeds are lighter than others and will float to the top of the mix with movement of the machinery.

TIPS FOR YOUR REVEGETATION

Manage weeds, rabbits and other pest prior to planting

Mix up the different species

Water seedlings well prior to planting

Make sure each seedling is adequately covered with soil and all of its root are in the ground

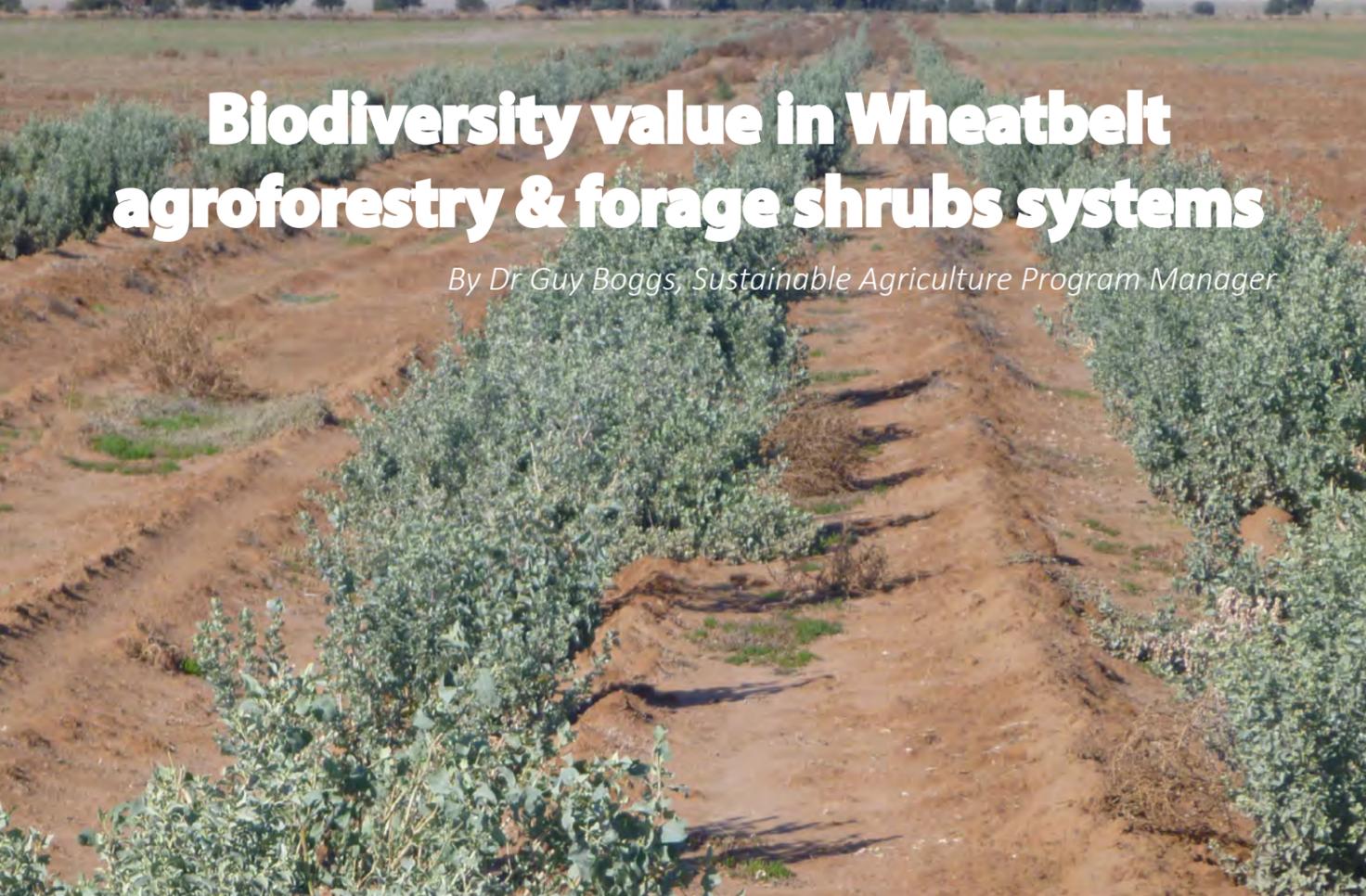
Cover up to a third of plant's lower stem to ensure its roots remain in contact with soil moisture year round

Plant only when soil moisture is present and rainfall is forecast in the days following planting

Enjoy your planting and watch your forest grow!

Biodiversity value in Wheatbelt agroforestry & forage shrubs systems

By Dr Guy Boggs, Sustainable Agriculture Program Manager



■ Saltbush row plantings

Within the Western Australian Wheatbelt, agroforestry plantations are producing timber, firewood, sandalwood, brushwood, biomass, carbon, and forage. These plantation systems are helping revegetate degraded land or poorly performing paddocks and improving overall, whole-of-farm profitability. The plantations also play a vital role in helping maintain the Wheatbelt's biodiversity value, where some regions have lost more than 95% of the original vegetation.

But, is the biodiversity value of a saltbush-based, forage shrub system the same as that of oil mallee belts? What about sandalwood production systems planted with biodiverse host species, versus a single host species (e.g. *Acacia acuminata*)? And, how do these compare to environmental plantings? How can we compare or evaluate the biodiversity value of these production-based, re-vegetation activities?

These questions have been explored in a new report produced by Wheatbelt NRM – 'Wheatbelt Agroforestry Biodiversity Values: Review, Recommendations & Rating System'. The report has reviewed over 80 studies and produced recommendations on how the biodiversity values from a production-based planting can be maximised.

Maximising your plantation's biodiversity value

The best way to increase the biodiversity of your plantation is to attempt to mimic a natural woodland in modified landscape, or at least reproduce some of its components. The key elements of doing this can be broken into: 1) within-site variables; and 2) landscape scale variables.

Within-site variables

Management of within-site variables concentrates on increasing the site's habitat complexity. Different species have specialised niches, and increasing the habitat's complexity provides more ecological space and allows for the 'packing' of more species. We recommend you split habitat complexity into three layers and manipulate each of these separately.

Ground layer

Leaves, branches, rocks and ground level vegetation such as grasses provide important habitat for species and also provide micro-niches where seed germination is increased. Think about which elements you could retain or enhance in your plantation without significantly impeding its production.

Understorey layer

Many animals such as birds feed in the shrub layer or perch there to hunt prey on the ground. They also make their homes there. For tree-based agroforestry systems, plan to include shrubs while maintaining access to trees and allowing for tree growth. Consider keeping the shrubs that naturally germinate in these systems. Shrubs generally live shorter than overstorey tree crops, so aim for self-sustaining and self-propagating shrubs that will successfully re-establish over the entire life of the tree crop.

Overstorey layer

- i. **Canopy** – an important source of nectar, an important feeding and shelter habitat for insects, and consequently an important foraging habitat for birds.
- ii. **Tree trunks** – provide habitats for insects, reptiles, and specialised foraging birds.

Many shrub-based systems, such as brushwood or saltbush, benefit from strategically placed trees for wind control, shade and shelter. For a further boost in biodiversity, consider locating your plantation next to or around existing remnant trees. As a tree's habitat value increases with age, integrating older trees near your plantation significantly increases the biodiversity value of your system

Landscape scale variables

Landscape variables are larger in scale and need to be considered in the planning stages.

Size and shape of revegetation/plantation:

a bigger planting area means a larger habitat value. In Wheatbelt agroforestry systems, block plantings provide greater value than belt plantings. Block planting areas over 20 hectares provide the greatest value while those under one hectare provide the least. When belt plantings are used, the optimal width is 20 metres.

Planting context relative to other vegetation:

Agroforestry systems are valuable for biodiversity because they create wildlife corridors which allow plants, animals and birds to move through the landscape. Where possible, plan to locate your plantation against existing or connecting areas of existing vegetation.

Management & harvest

Since agroforestry systems are designed to be productive and profitable, time should be spent designing their management and harvesting regimes.



■ Acacia hosts for Sandalwood

Management techniques such as burning or grazing should be undertaken with consideration for the impact it will have on the biodiversity value of ground, shrub and tree layers. The techniques should also be considered as part of the 'within-site variables' described above.

Harvest regimes should be 'staged' to allow biodiversity to continue utilising the plantation, with a mosaic pattern that leaves corridors of vegetation connecting unharvested areas. This allows terrestrial (land) and arboreal (tree-dwelling) species to move around the plantation. If a clearfell harvest regime is used, the long term biodiversity values are largely negated.

Wheatbelt NRM's new publication 'Wheatbelt Agroforestry Biodiversity Values' online at:

<http://goo.gl/m0HkUn>

Gould's wattled bat

Chalinolobus gouldi

Extract from: *Mammals of the Avon Region*, by Mandy Bamford, Rowan Inglis and Katie Watson

■ Gould's wattled bat

Identification

The back and underside fur of the Gould's wattled bat is brown, with contrasting blackish fur on the head and shoulders.

The snout is short and the ears are short and wide, extending to form a wattle (fleshy lobe of skin) at each corner of the mouth. The lower lip also has a long, fleshy lobe of skin. Bare areas of skin are pinkish-brown to blackish.

Habitat & distribution

Gould's wattled bat is found throughout Australia and on Norfolk Island in a wide range of vegetation types. It lives in deserts, forests, woodlands, alpine areas and even urban areas. It roosts in tree hollows, buildings and among leaves and will sometimes share roosts with other species of bats and even other small mammals. Single animals have even been found roosting in rolled up blinds and even in a tractor's exhaust pipe. Females roost in colonies of up to 30 individuals but males tend to roost alone. Individuals use several roost sites in an area, and usually use a site for two days before moving on. They will return to previous roost sites.

Diet

The Gould's wattled bat preys on flying and non-flying insects such as moths, caterpillars, grasshoppers, crickets, beetles, ants, cockroaches and plant bugs. Like most bats, this species locates its prey by echolocation. The bat emits ultrasound and assesses the vibrations that reflect from objects (including potential prey items) to determine their identity and position. They forage in open spaces

above and below the tree canopy and at the edges of remnant vegetation in paddocks. Gould's wattled bats will forage up to 15 kilometres from their roost site and are one of the first species to begin hunting in an evening. They become active just after sunset, when it is still light and some daytime predators are still hunting. Their natural predators therefore include birds such as butcherbirds and falcons as well as owls.

Reproduction

Males' testes enlarge in March and mating occurs about June. The female then stores the sperm and fertilisation occurs towards the end of winter. Pregnancy lasts three months and the young (usually twins) are born between late September and November, depending on the latitude (earlier in the north and later in the south). Young are adult size and independent in six weeks.

Threats

Feral cats and foxes will eat bats if they catch them but they are not a big threat to this species provided secure roost sites are available. Large scale use of pesticides is a potential threat for this species.

Management actions

This is a common species and no specific management is required other than the maintenance of suitable vegetation and regulations governing the use of pesticides. Roosting boxes are sometimes installed in rehabilitation areas and are used by Gould's wattled bats when tree hollows are scarce.



Chalinolobus gouldi

Family: *Vespertilionidae*

Conservation status: Not listed

Size (head & body length): 65 – 75 mm

Size (tail): 40 – 50 mm

Weight: 8 – 18 g

Habitat: Almost all terrestrial habitats in Australia.

Diet: Flying and non-flying insects. Hunts within and below the tree canopy.

Reproduction: Mating occurs in June. Females store sperm until the end of winter. Usually two young are born. Adult size and independence reached by six weeks.

Longevity: Up to eight years.

Source: Mammals of the Avon Region – <http://bit.ly/1GuHocN>

65 – 75 mm 40 – 50 mm



Bush tucker in the Wheatbelt



By David Grasby, Aboriginal NRM Project Manager

■ Participants at 'Looking after bushland' workshop, Bakers Hill

WA Sandalwood Nut Damper Scones (non-traditional recipe)



■ Sandalwood nuts and fruit

Wheatbelt NRM's Bush Tucker Project aims to build the capacity of Aboriginal Land Managers so they can trial bush tucker species on their properties.

The project focuses on bush tucker species that are endemic to south-west Western Australia and draws on a wealth of bush tucker knowledge amongst the local Aboriginal community.

The Aboriginal community have expressed enormous interest in Wheatbelt NRM's Bush Tucker Project with strong attendance at our workshops.



■ Mawson bush tucker inspection

Nguna Morrt, Mawson

The bush tucker trial site established at Nguna Morrt is managed by Elder and Aboriginal Land Manager, Theo Michael.

The farm is located at Mawson about 18 kilometres west of Quairading and covers approximately 600 acres, with 300 acres of native bush land.

Quandong and sandalwood seeds have been planted out as part of the trial, with acacia seedlings planted as the host trees.

Theo Michael has been interested in developing a bushfood operation on the farm for some time. Both he and his family are active participants in the current bush tucker trials, with plans to revegetate the property for future generations.

Coobabla, Bakers Hill

Site preparation is well underway at Coobabla Farm in Bakers Hill where the Woolah-Wah Aboriginal Corporation has ripped one paddock along contour in anticipation for planting. The acacia host seedlings are planned for July 2015, followed by quandongs seedlings between December 2015 and March 2016.

The Hayward family who own Coobabla Farm hosted our recent workshop, 'Looking after our Bushland', with Wheatbelt NRM staff presenting talks on establishing sites for native bush food, feral and weed control, carbon farming, sensor cameras, and the impact of weeds on Wheatbelt bushland.

Future

Further bush tucker sites are planned for 2015, including acacia plantings at Badjaling near Quairading, and a bush tucker garden at Northam Senior High School.

For more information

Please contact Kerry Collard at Wheatbelt NRM on (08) 9670 3116, or David Grasby on (08) 9670 3108.

kcollard@wheatbeltnrm.org.au

dgrasby@wheatbeltnrm.org.au

Ingredients:

- 4 cups self-raising flour
- pinch of salt
- 60g butter
- 1 ½ cups of milk
- 60g raw sandalwood nuts
- 30g dried cranberries
- 1/2 tspn cinnamon
- 1/2 tspn baking powder

Method:

1. Sift flour and rub in butter with finger tips, until it resembles bread crumbs.
2. Add nuts and cranberries.
3. Add most of the milk, and mix to a soft dough using a knife.
4. Add rest of milk.
5. Turn onto lightly floured board and knead until bottom is smooth.
6. Turn smooth surface to the top and roll out to about 2cm thick.
7. Cut out scones using a scone cutter.
8. Place on a warm baking tray lined with baking paper and baste top with milk.
9. Bake in a hot oven until golden brown, approximately 10-12 minutes.
10. Serve with cream and quandong jam.

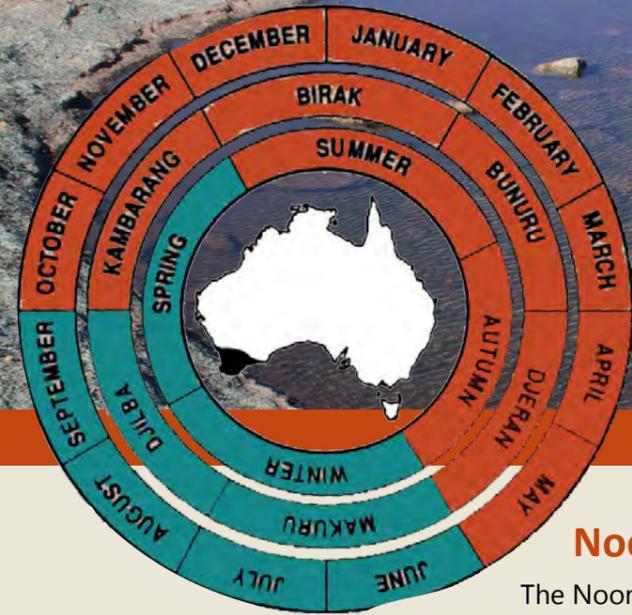
[adapted from WA Sandalwood Nuts' recipe, www.wasandalwoodnuts.com.au]

Noongar bushfood names

bayu / boyu	zamia nut
boyan	zamia palm seeds
djirridj / djirrdja	zamia palm
djubak / kona	bush potato
djoolbar	gum
kalyang	wattle tree gum
kudjat	mallee nut
kwolak	grain
kwolberi	berry
kwordiny / djabak / kuwin	blood roots
kwordiny	wild carrot
mandjarak	bush fig
mangatj	banksia / banksia flower
mindalong	wattle
nguk / djidjar	honey
purngep	saltbush
tjak	quandong / sandalwood
warrany	yam
wilarak / waan	sandalwood
wongrup	native peach
woorda	mushroom / fungus
yanjet	bulrush

Kids' corner

Know your Noongar seasons



■ Rain caught on Yorkrakine rock in Makuru

Noongar Seasons

The Noongar people of Western Australia traditionally hunted and gathered food according to six seasons – Bunuru, Djeran, Makuru, Djilba,

Kambarang and Birak – based on specific weather patterns. Knowledge of the seasons and how to effectively manage the land was handed down by Wargal the spirit snake/creator, and passed on by the Elders.

Noongar people lived in harmony with the surrounding bush and ate foods when they were abundant and in season. They took only what they needed so that that natural resources weren't depleted and to ensure there would be enough food for the following year.

Vegetable foods included roots, bulbs, tubers, seeds, nuts, fruit and fungus, as well as the nectar from banksia, dryandra and eucalyptus flowers and the gum from wattles. Some vegetable foods could be harmful to health if not prepared for eating in the correct manner, such as the fruit of the zamia palm.

Traditionally, sandalwood nuts were used for their oil which the men rubbed on their bodies. Sandalwood nuts were eaten occasionally.

Makuru

Cold and wet with westerly gales, from June to July

Tubers and native potatoes were dug. Noongars travelled with a smouldering branch of bull banksia for warmth and other uses.

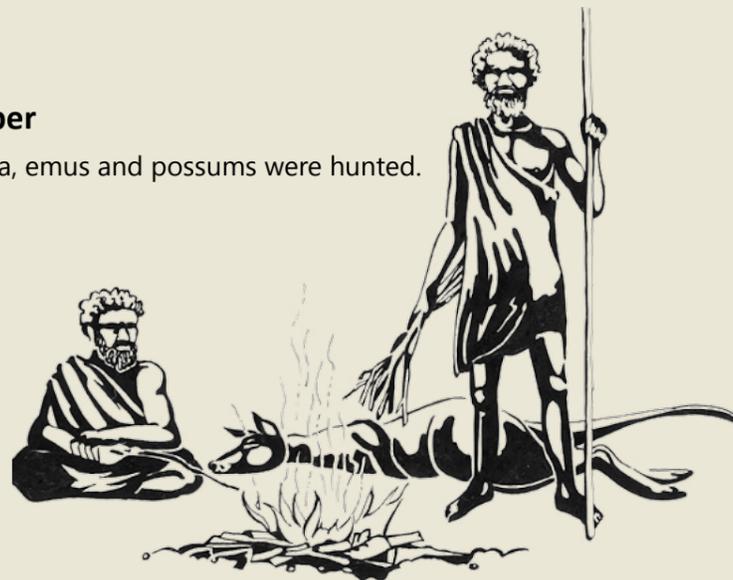
Djilba

Becoming warmer, from August to September

As Mukuru progressed into Djilba, kangaroo, quenda, emus and possums were hunted.

"In this season swans moulted, making them easier to catch. Tubers and native potatoes were dug. Noongars travelled with a smouldering branch of bull banksia for warmth and other uses."

- Meagher, 1974



Noongar bushfood word slueeth

B K K A R A J D N A M T R P D M W
M U M K L E E J K V Q V Y E P Y I
Q D N I I F S P Y V R H F E Y S L
W J D R N R M P G N Q V D V M D A
N A K S D D E N G U A E F G N U R
L T H A K U A B J D I R R I J D A
N X F U V Y P L L E J Y R S E A K
R Z G N L P Z T O O E L R A K L U
Y N W A D U T E K N W X K L W L A
D T K H J R L R Q A G K T A A G D
S E D N O N C R B O S C G Z J P R
X J U C O G J K W O R D I N Y T O
D N Y Y L E J T A G N A M I E G O
K A A N B P R U Q B O Y A N O O W
I Y B F A D M K A B U J D W E K P
T B O T R G A Z K A L O W K V R Q
C I E K W O N G R U P E I D N N X

Find: English name:

- bayu zamia nut
- boyan zamia palm seeds
- djirridj zamia palm
- djoolbar gum
- djubak bush potato
- kalyang wattle tree gum
- kudjat mallee nut
- kwolak grain
- kwolberi berry
- kwordiny blood roots / wild carrot
- mandjarak bush fig
- mangatj banksia / banksia flower
- mindalong wattle
- nguk honey
- purngepj saltbush
- tjak quandong / sandalwood
- warranty yam
- wilarak sandalwood
- wongrup native peach
- woorda mushroom / fungus
- yanjet bulrush

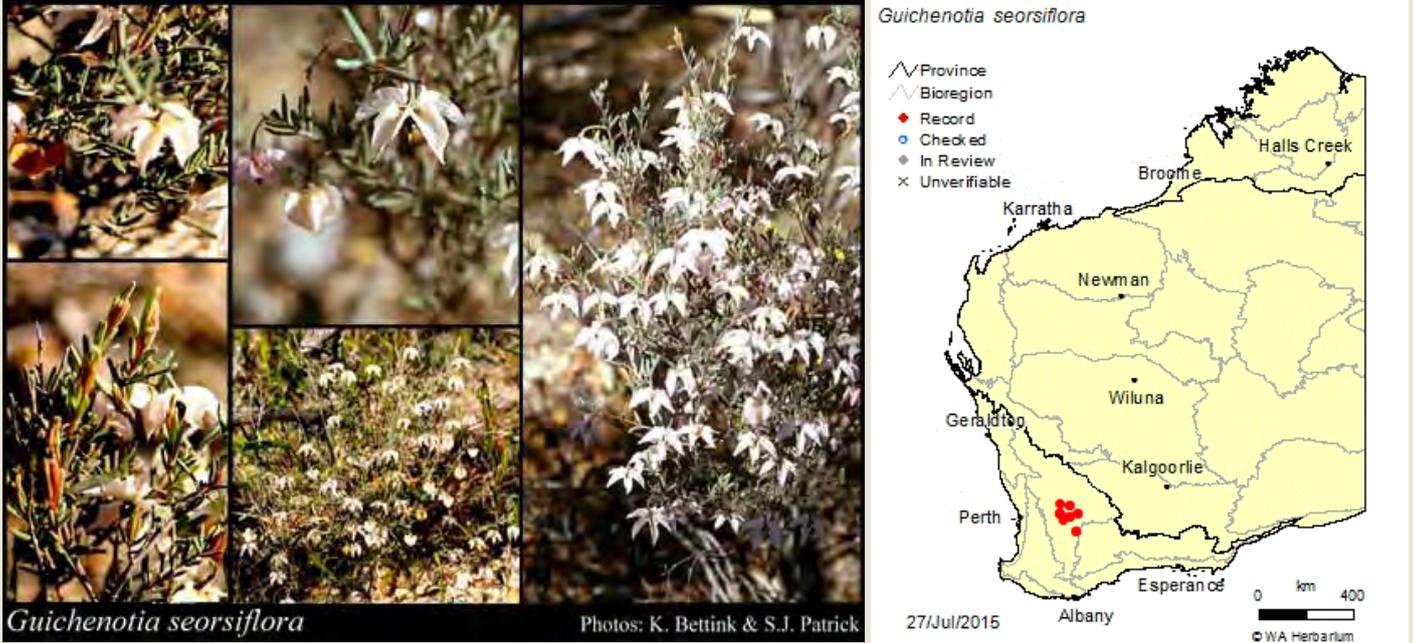


Colour-in the Wargal



DID YOU KNOW?
For Noongar people, throwing a handful of sand into the water shows respect for the Wargal and lets him know that you are there and do not mean harm.

Guichenotia seorsiflora



Plant – *Guichenotia seorsiflora*

Family – *Sterculiaceae*

Status – **CRITICALLY ENDANGERED**

Guichenotia seorsiflora is a critically endangered shrub endemic to Western Australia that survives in delicate patches of remnant vegetation in the Avon Wheatbelt.

A shrub within the kurrajong and hibiscus family, *G. seorsiflora* flowers from July to September with creamy salmon buds that become white (and sometimes pink) single flowers. It grows to 45cm high and has greyish-green oval leaves with stems covered in fine, soft matted hairs.

Approximately 110 mature *G. seorsiflora* plants remain scattered through the Avon Wheatbelt IBRA* region, occurring on private properties, road reserves and nature reserves around Cunderdin, Kellerberrin and Corrigin.

The main identified threats to *G. seorsiflora* are road maintenance works, fire frequency, soil erosion, weed invasion, and land clearing.

* Interim Biogeographic Regionalisation for Australia <http://www.environment.gov.au/land/nrs/science/IBRA>

REFERENCE:

Threatened flora of the Western Central Wheatbelt, (Collins, J., 2009) [State Species Management Plan].

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<https://florabase.dpaw.wa.gov.au/browse/profile/17289>