



## There's a lot happening in our backyard!



*Stand off at the waterhole - A Kangaroo and Echidna caught by Phil Lewis, WWF on camera trap*

### By Kate Raston

Over the past year landholders have helped protect and revegetate more than 4 million hectares of land in Western Australia.

That's almost 9000 individuals and nearly 700 groups, who have worked closely with the State's six regional natural resource management groups.

These six NRM groups are now celebrating their achievements in conjunction with World Environment Day (5th June), and are asking people to find out what's happening in their backyard.

The six regions are encouraging everyday people to take a closer look at natural resource management in their backyard, from houses to farms, rivers, bush land, desert and the coast.

By working in partnership with other community groups,

state agencies, supporting farmers and industry and investing government funds, the regions have helped to protect, revegetate and restore more than 4 million hectares of land across the state – that's a big backyard!

Some of these NRM managed projects include:

- The Wheatbelt NRM using motion sensor cameras to help discover rare and protected wildlife in the region.
- The Perth Region NRM planting more than one million plants, fencing 300 kilometres of riverbank and removing 200 hectares of weeds along the Swan River.
- The Rangelands NRM West Kimberley Nature Project helping to sustainably manage wildfires and weeds threatening the Peninsula Monsoon Vine Thickets and wetlands.

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- The South West Catchment Council protecting four Ramsar wetlands of international significance including the Peel Yalgorup, Vasse Wonnerup, Lake Toolibin and Lake Muir.
- The South Coast NRM protecting and revegetating the Ramsar wetlands of international significance Lake Warden and Lake Gore, home to the rare Hooded Plover and the Recherche' Cape Barren Goose.
- The Northern Agricultural Catchment Council protecting habitat for more than 50 EPBC threatened species and working with 200 farmers to improve soil condition and adapt to climate change.

Most of these projects have come about with the help of everyday people working closely with their local NRM group.

The majority of funding comes from the Commonwealth government's Caring for our Country program.

As part of World Environment Day, the six WA NRM groups will join with their 50 counterparts across Australia to raise the awareness of natural resource management.

To find out what's happening in your backyard click on [www.nrm.wa.gov.au](http://www.nrm.wa.gov.au) and find your local NRM group.

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# Nyungar Working on Country Workshop

A Noongar Working on Country workshop was held in York on 24th of May. The aspirations set 5 years ago in the Ballardong Noongar Budjar 'Healthy Country – Healthy People' document were reconfirmed and expanded upon in a workshop facilitated by Dr Liz Kington. Community members present were happy with the work done to date, but reinforced that much is yet to be done.

Indigenous Protected Areas and Natural Resource Management opportunities were also discussed by Paul Bowers, Australian Government WA Indigenous Facilitator and David Collard from the state NRM office who also assisted with facilitation.

Wheatbelt NRM will now use the outcomes from the workshop to underpin the progression of its Aboriginal NRM program. A second workshop is scheduled to take place in Kellerberrin in June.



*David Collard discussing the NRM aspirations with community members*

# Djeran - Makuru update

Thankyou for taking the time to read the Wheatbelt NRM newsletter for Djeran - Makuru (Autumn).

The past few months has seen the completion of round 4 & 5 of the Soil Conservation Incentives Scheme (SCIP), Community Small Grants and the Bushcare grants (of which you can read more about on page 7).

Wheatbelt NRM has also taken the lead for the region on a Nation-wide NRM awareness campaign called 'There's a lot happening in our backyard' celebrating the achievements and importance of the 56 regional bodies across Australia.

## Soil Conservation Incentives Scheme (SCIP)

The SCIP offers funding for farmers to demonstrate management practices that reduce the risk of soil acidification, soil loss through wind and water erosion and increase the carbon content of soils.

Applications are assessed in the suitability of proposed works and the applicants commitment to sharing knowledge and skills for the design, establishment and management of farm practices and soil quality.

Round 6 funding will open in July so if you have plans or would like to develop plans please contact your local Natural Resource Management Officer (NRMO) or call Georgina Troup, Program Manager Sustainable Agriculture on 9690 2258. Information can also be found on our website at [www.wheatbeltnrm.org.au](http://www.wheatbeltnrm.org.au) then click on Sustainable Agriculture.

## Why not sign up as an associate?

Becoming an Associate is free and everyone is eligible. You will receive our fortnightly e-news and stay informed of Wheatbelt NRM activities in the Avon River Basin. This is also an opportunity to have your voice heard through your sub-catchment reference group (Avon, Yilgarn or Lockhart). These groups take your ideas, thoughts and opinions directly to the Wheatbelt NRM Board for consideration. Simply follow the link and register your details in the top right hand corner of the website.

## Tell us what you think!

Wheatbelt NRM and the WA State Government would like to know more about you and your opinions so that we can improve our service to the community. Please help us by going to the link below and filling in this quick and easy survey:

[www.wheatbeltnrm.org.au/about-us/local-survey](http://www.wheatbeltnrm.org.au/about-us/local-survey)

## Staff Changes

We regret to inform you that Dan Ferguson (Program Manager - Sustainable Agriculture), Michelle Kidman (Monitoring and Evaluation Coordinator) and Rod Garlett (Aboriginal NRM Facilitator) has left Wheatbelt NRM for new horizons and challenges. We wish them all the best in their new careers and sea changes and thank them for their exemplary work with Wheatbelt NRM over the years.

Kind regards,

Wheatbelt NRM

## Nyungar Seasons

**Djeran – becoming cooler with winds from south-west from April to May**

**Makuru – cold and wet with westerly gales from June to July**



# Saia oat cover crop smothers weeds and protects soil against wind erosion



*Geoffrey Marshall desiccates his Saia oat crop during August (pictured right) and leaves some unsprayed to harvest for seed.*

By Jade Dempster & Nicole Baxter, WANTFA

## Demographics:

Farmers' names:	Geoffrey and Vivienne Marshall
Farm name:	Warra Kairan
Location:	Hyden
Catchment group:	Lockhart
Average annual rainfall:	340 mm
Farm size:	3300 ha (arable)
Enterprise mix:	100% cropping
Soil types:	10% sand, 10% gravel, 80% loam over clay
Soil pH:	5.5 and above (calcium chloride)
Species sown:	Wheat, barley, canola, faba beans, lupins, peas and Saia oats
Total hectares sown 2010:	3000 ha
Crop rotation:	Saia oats-faba beans-wheat-wheat-barley-faba beans-canola
First year planted Saia oats as a cover crop:	2000

## Critical success factors required for the adoption Saia oats as a cover crop

1. Sow early to maximise crop growth
2. Ensure careful timing of the desiccate spray to kill the Saia oats and prevent any weed seed set
3. A disc seeder allows better capacity to seed through the Saia oats without disturbance

## What is your perception of Saia oats as a cover crop?

Geoffrey Marshall views Saia oats grown for soil cover and not for harvest as a useful tool for adding diversity to his crop rotation and assisting in the control of weeds. They have also offered an incidental benefit of mitigating wind erosion on his Hyden farm.

Each year he plants Saia oats on one or two paddocks where the population of ryegrass has increased. He uses the crop as the first in a three-year program (Saia oat-lupin or peas or faba beans (according to soil type)-canola) to reduce the ryegrass weed population to a very low level.

Geoffrey values the crop as a powerful tool to aggressively suppress weeds that have become problematic and to help counter herbicide resistance.

## What is your prediction of the future role of Saia oats as a cover crop?

According to Geoffrey, few farmers in his local area have trialled Saia oats as a cover crop. However, he believes there is more respect among farmers for some type

of low-cost, one-off crop or pasture to help lower the weed seed bank. Geoffrey suggests the main barrier to more widespread adoption of Saia oats as a cover crop is the perception that large quantities of biomass are a 'nuisance' when establishing the following season's crop. However, he believes residue can be managed and does add a financial benefit to farming systems.

## Background of Saia oats as a cover crop

The aim of incorporating cover crops into a farm system is to provide complete ground cover to retain moisture and prevent both wind and water erosion (Sullivan 2003). Prevention of erosion requires approximately 50% ground cover at seeding time. Cereal crops are the best option as a cover crop as they produce more biomass than legumes, with oats being the preferred option (Zaicou & Blake 2007). Saia oats (*Avena strigosa*) are a crop suited to acidic sands throughout the wheatbelt and are cheap to establish. They are a fast growing, tall variety and produce more biomass than annual legumes. They are able to compete well with weeds and provide an excellent disease break (Webb 2006).

A cover crop should produce large amounts of biomass within a crop, which is then killed off before seed-set. Killing off the crop is done either from a knockdown herbicide or from knife-rolling. Knife-rolling is the use of blunt 'knives' rolled over a crop crimping the stems, not cutting them causing the plant to die off. Rolling the crop is easier to seed the following season as all stems are the same way, whereas herbicide applications cause stems to fall any direction (Flower 2008). Water can be added to the roller increasing weight usually in cases when the crop has height or produced large amounts of biomass (USDA 2002). An application of glyphosate can be applied after knife-rolling to prevent re-shooting.

The major benefits of cover crops include improved soil health and biology, prevention of erosion, suppress weeds and conservation of water and land (Bowman 1998). Sustainability and profitability are increased as N-fertiliser requirements are reduced (Vieira et al. 2008). Establishing cover crops can be cheap because they require minimal inputs, allowing the use of low cost seed and minimal chemical use.

## How did you adopt Saia oats as a cover crop?

Geoffrey Marshall started moving to high-residue, low-disturbance farming in the early 1990s. He sold his remaining sheep in 1996 and over the years has shifted gradually from a row spacing set at 150 mm to 300 mm for his tyned seeding rig. He now also uses a disc seeding system set on 600 mm row spacings.

Since moving to high-residue, low-disturbance farming, Geoffrey has noticed his soils are softer, organic carbon levels are on an upward trend, wind erosion is no longer an issue and the sowing window has widened.

He first learned about the value of Saia oats as a cover crop through the work of international no-tillage consultant Rolf Derpsch. He decided to trial Saia oats for two reasons. First, because trials in South America had shown Saia oat residue was more sustainable than that of other cover crops; and second because seed was available in Western Australia. Geoffrey was particularly interested in using Saia oats to manage weeds, lift organic carbon levels and to facilitate the movement of lime into deeper layers within the soil profile.

In adopting low-disturbance farming, the Marshalls have made every effort to develop a system that protects their soils against topsoil loss when the occasional windstorm occurs. During late May 2009, after 100 km/h winds moved across the Hyden district, Geoffrey noted most of his farm did not suffer any erosion. 'My wife was driving to Hyden at the peak of the windstorm and she had to stop because she couldn't see through the dust that had been picked up from other farmers' properties where high-residue, low-disturbance farming is not used,' he said.



*Geoff and Vivienne Marshall grew this high-yielding Saia oat cover crop in 2003. The residue provides excellent soil cover during summer and autumn, although the crop is mainly used to help suppress the problematic weed annual ryegrass.*

Originally, Geoffrey wanted to plant Saia oats in late March to early April to maximise ground cover during this high-risk period and then kill the crop during August using herbicide. He then wanted to plant the paddock to a warm season crop in late September to early October. However, he soon abandoned this approach after he discovered his rainfall was too low and unreliable to sustain the option of growing a warm season crop.

Now Geoffrey's strategy is to sow Saia oats in May and desiccate it with herbicide before any weeds set viable seed, usually during August.

Saia oats are planted after two to three years of wheat

or barley. To prepare the paddock for sowing, Geoffrey applies knockdown herbicide if summer rainfall is sufficient to produce a flush of weeds. However, this has not been necessary during the past few seasons.

After trialling sowing rates of up to 70 kg/ha, Geoffrey has settled on 40 to 45 kg/ha. 'While this rate sounds low, the seed is small,' he said. He sows the crop using a Conserva-Pak tynd seeding rig with knife-points set on 300 mm row spacings.

Phosphorus fertiliser rates are the same as what he uses when sowing wheat but nitrogen inputs are dropped to 10 to 20 kg/ha. A further 10 to 20 kg/ha of nitrogen is added to boost crop biomass production in a favourable season and test strips are used to fine-tune the specific application rates.

No money is spent on in-crop weed control while the Saia oats are growing as the crop's vigorous tillering and allelopathic (toxic) effects are all that are needed to suppress weed growth.

After desiccation with herbicide, the residue remains on the soil surface unincorporated. He leaves a portion of the crop unsprayed and harvests it for seed.

At present, although Geoffrey sprays the Saia oats and leaves it standing, he notes much of the crop falls over. During late spring and summer, the residue acts as a thick cover across the soil surface, reducing moisture evaporation and weed germination. 'Some guys who visited our farm just recently couldn't believe how soft the paddock was that had been planted to wheat on 600 mm row spacings after a faba bean crop in 2009 and a Saia oat crop in 2008,' Geoffrey said. 'The Saia oat residue was still there.'

His usual strategy is to plant two years of broadleaf crops such as faba beans and canola before swinging the paddock back to wheat.

For effective seed placement into Saia oat residue, Geoffrey uses a Queensland-manufactured Austil single-disc seeder set on 600 mm row spacings. He noted seed placement accuracy is improved using 2cm differential global positioning system guidance. To those without a disc seeder, Geoffrey suggested using a pea roller to flatten the Saia oats and then sow the following crop in the same direction using an up-and-back tramlining system with 2cm DGPS guidance.

### Upcoming considerations

In the future, Geoffrey is keen to investigate how much stubble should be standing and how much stubble should be lying down when sowing a Saia oat cover crop. 'I suspect it would be ideal to have some lying down and some standing up,' he said.

### Costs of Saia oats as a cover crop

- Loss of cash crop income for one year

### Benefits of Saia oats as a cover crop

- Produces a heavy crop residue to help smother weeds and suppress weed seed germination
- Protects the soil from wind erosion
- Reduces evaporation of soil water over summer
- Increases organic carbon and soil microbes
- Enables an early sowing opportunity in the following season

### Ranking of issues associated with adopting Saia oats as a cover crop

	-2	-1	0	1	2
Required skills and knowledge	Very high level	High level	Medium	Low level	Very low level
Start up costs per ha	\$401 to \$500	\$300 to \$400	\$201 to \$300	\$101 to \$200	Less than \$100
Market risk	Very high risk	High risk	Medium	Low risk	Very low risk
Production risk	Very high risk	High risk	Medium	Low risk	Very low risk

### References:

Bowman, G. eds. (1998) *Managing Cover Crops Profitably*, Retrieved: 23rd August 2010, from <http://www.advancedagsolutions.com/resources/covercropsprofit2.pdf>

Flower, K. (2008) 'Cover cropping', *Conservation Agriculture Moving Beyond Adoption*, SANTFA, South Australia.

Sullivan, P. (2003) *Overview of Cover Crops and Green Manures*, Retrieved: 20th August 2010, from <http://www.attra.ncat.org/attra-pub/PDF/covercrop.pdf>

USDA (2002) *The Knife Roller (Crimper): An Alternative Kill Method for Cover Crops*, Retrieved: 23rd August 2010, from [http://soils.usda.gov/sqi/management/files/sq\\_atn\\_13.pdf](http://soils.usda.gov/sqi/management/files/sq_atn_13.pdf)

Vieira, F.C.B. He, Z.L. Wilson, P.C. Bayer, C. Stoffella, P.J. & Baligar, V.C. (2008) 'Response of representative cover crops to aluminium toxicity, phosphorus deprivation, and organic amendment', *Australian Journal of Agricultural Research*, vol. 59, pp. 52-61.

Webb, B. (2006) 'Saia Oats; Going Berserk in Pindar', *Agricultural Memo*, Retrieved: 30th August 2010, from [http://www.agric.wa.gov.au/objtwr/imported\\_assets/content/fm/novembernaragmemo2006.pdf](http://www.agric.wa.gov.au/objtwr/imported_assets/content/fm/novembernaragmemo2006.pdf)

Zaicou, C. & Blake, A. (2007) *Stabilise Paddocks with Cover Crops*, Retrieved: 20th August 2010, from [http://www.agric.wa.gov.au/PC\\_92237.html](http://www.agric.wa.gov.au/PC_92237.html)

# BUSHCARE GRANTS HIT THE GROUND



*Island of bush in Bencubbin, Mike Griffiths, WWF*

Wheatbelt NRM has recently finalised the assessment of the 2010/11 Bushcare Grants.

The Bushcare Grants program aims to assist farmers who wish to undertake biodiversity conservation work on native vegetation on their farm.

Funding was available for fencing of bush to keep livestock out, revegetation to rehabilitate the bush land as well as activities such as weed control and erosion control.

Fifty applications were received for work valued at almost \$500,000.

Following the assessment 24 of these projects were provided with funding which was valued at \$227,000.

Projects were received from all areas of the region - from Beacon down to Newdegate and as far east as the clearing line near Hyden. Most of the applications requested assistance with the cost of fencing materials

to enable the land holder to fence off important patches of native bush to keep livestock out.

Over 2300 ha of native vegetation on farms will be protected through this program with works to include 89km of fencing as well as over 50,000 seedlings of native species to be planted.

All the bush land protected with this funding has been determined to be high quality vegetation containing important vegetation types that are in decline across the region. Areas to be protected include granite outcrops, salmon gum woodlands and creeks and waterways. Some sites are also known to contain threatened species such as malleefowl and the red tailed phascogale.

Due to the success of the program and the community demand for funding, the Bushcare Grants will be open again this year with application forms coming out in September 2011.

# New Conservation Plan for the Southwest Australia Ecoregion

This map (right) identifies the Zones for Conservation Action illustrated in sage green, located in close proximity to the existing conservation reserves (dark green). The buffer zone illustrated in grey is outside the SWAEI and is included in the analysis to provide context for the analysis.

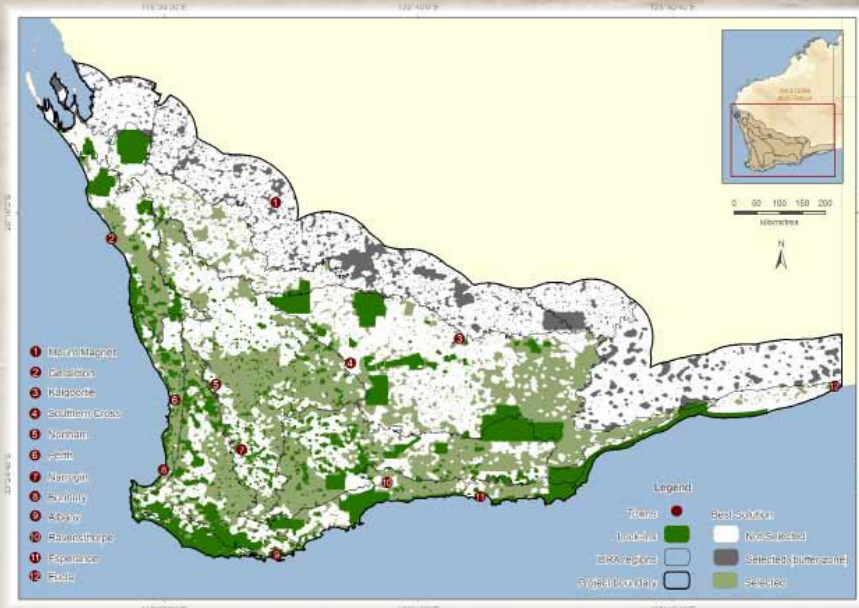
## By Tom Wilson

A cutting edge conservation plan has recently been completed for the entire Southwest Australia Ecoregion. This project has been led by WWF-Australia and the Western Australian Department of Environment and Conservation in consultation with stakeholders. Known as SWAEI (Southwest Australian Ecoregion Initiative), the project has delivered a systematically planned, coordinated and prioritised regional framework to provide for the long-term sustainability of the region's biodiversity.

The Southwest Australia Ecoregion is one of the 34 biodiversity hotspots in the world and is a primary focus for biodiversity conservation in the State. The SWAEI Initiative was formalized in 2002 with the inception of a Stakeholder Reference Group made up of agencies, non-governmental organisations, research centres, and other groups. After a major planning symposium in 2006, a systematic planning approach was adopted to achieve the SWAEI objectives.

The scale of threat, and the need to prioritise areas for conservation action in order to effectively utilise limited financial and human resources, are dual imperatives that drove the conservation planning process. "Rather than continuing to make conservation land use decisions in an ad hoc manner, this exercise in systematic planning sought to identify the best set of management areas that together achieve explicit conservation goals" said SWAEI co-chair Dr Ken Atkins from DEC.

Conservation planning involves the extensive use of data such as species lists or vegetation types (here over 300 data sets were used) and takes advantage of the power of computers to efficiently handle large amounts of information. 1391 biological features were decided on for setting conservation targets, including 862



vegetation types, 137 plant species, 100 bird species, 82 inland water bodies, and a number of mammal, reptile, amphibian, and invertebrate species. Surrogates for biodiversity, such as granite outcrops and south-facing slopes, were also used. MARXAN, the software employed, generated a map which showed where the areas for conservation action should be if each biological feature were to have its individual conservation target met. In generating this map, the software prioritized connectivity amongst areas for conservation action, and avoided 'threat' areas exhibiting characteristics such as urbanization, Phytophthora Dieback and salinity (places where it is generally more costly or difficult to get good conservation results). The resulting map of zones and areas for conservation action might be called the 'best solution' for conservation planning in the south west.

Out of years of work by WWF, DEC and a range of stakeholders, as well as the input of many experts, has come a systematic conservation plan for the Southwest, as well as a demonstration of on-ground implementation in an area north-east of Perth. The results of SWAEI may inform targeted investment and acquisition strategies for a range of stakeholders, inform planning decisions made by local and state governments, and guide decision making and support for community initiatives. Funding for this project has come from the Australian Government's Caring for our Country initiative. For more information go to:

[www.swaecoregion.org](http://www.swaecoregion.org)

## Growing SantoriniA serradella creates a more sustainable farming system whilst filling a niche on sandy soils



*Rodney Rogers inspecting his Autumn Cleaning trial with David Ferris*

By Natalie Hogg, DAFWA

### Demographics:

Names:	Rodney and Jane Rogers
Farm name:	Wyola
Location:	Cunderdin
Catchment Group:	Avon
Rainfall:	350 mm
Farm size:	5400 ha (arable)
Enterprise mix:	65% crop / 35% pasture
Soil types:	50% Tammar sand plain 50% medium
Species sown:	SantoriniA Yellow Serradella
Year first sown:	1998
Total hectares sown to SantoriniA:	1150 ha

### Serradella for sustainability:

1. Grows well on sand plain soils where sub clover does not perform
2. Provides more soil stability over summer sub clover and lupin stubble
3. Have more spring feed from the serradella
4. Soil structure improvements can be seen where serradella is grown

### Perception of adopting serradella:

Rodney and Jane Rogers believe that serradella is a real winner in their farming system as it is helping to reduce wind erosion as well as helping to make their property more sustainable as it fills a niche that other species such as lupins and sub clover can not fill.

'We plant our pastures by soil type which helps us manage our stock and pastures well'. Rodney says that serradella is planted to the sandy soils in his farming system which works well as he doesn't like pasture mixes and each pasture is better suited to a different soil type. In the rotation SantoriniA is helping them to reduce the impact of wind erosion. It is also controlling weeds and providing good quality feed for stock for a longer period than traditional pastures.

### Prediction for the future value of serradella:

Rodney says that he is at the stage he wants to be at with his serradella. "It has a niche on the sand plain and we are happy with the stage where we are at now". For the future Rodney is concerned about weed control, even though he is applying integrated weed management. 'we are using the autumn cleaning technique, weed wiper and grazing in combination with each other'.

In the future Rodney says that he may need to consider Roundup Ready canola and growing hay after his cereal crop. With this said Rodney is not going to give up on serradella as it is working well in his system, as he makes decisions based on the serradella seed bank. 'By looking at my seed bank size I am able to determine whether I can afford to push out my crop rotation a few more years or decide to autumn clean a little later once more weeds are up and hence then are controlled. I have some flexibility that allows me to alter my rotation a little'.

### Background of serradella:

SantoriniA yellow serradella is a very deep-rooted, acid-tolerant and hardseeded species highly suitable for infertile acid deep sands. SantoriniA was released in 1995 and is suited to areas of medium rainfall (350-450mm). SantoriniA can be used in pasture/crop rotations on sandy soils and in long-term pastures on the poorest acid sandplain soils. It is important that the year after establishment of Santorini the paddock is cropped. SantoriniA has some tolerance to subsoil aluminium.



*Yellow Serradella flowers*

SantoriniA is an early maturing cultivar with flowering of 100 days from sowing (in Perth). It grows upright when ungrazed and the majority of its pods remain on the plant at maturity which is convenient to harvest with a conventional header. The pods are easily dehulled which makes it cheaper to establish over more areas of a farm. SantoriniA displays a prolonged period of germination (over about 40 days) which provides an insurance against a false break to the season because its seed reserve is depleted slowly. It also allows for a good knockdown for weed control, after a significant rain but prior to germination of a large percentage of the seed bank.

### Adoption of serradella, Roger's story:

The Rogers started growing serradella in 1998 as they needed to find a substitute for lupins as this rotation was coming to an end on Wyola. Rodney says that one of the principal reasons he began growing SantoriniA was for wind erosion. "Serradella adds soil structure to those sandy soils where other species haven't done as well".

In the beginning the Rogers started with 1 paddock of

serradella, but were soon impressed with how it was performing. Since then they have increased by a paddock a year. Rodney states that "it was easy to establish with press wheels and tyne and that it was a lot harder in the early days with the combine but we got away with it due to the wet starts".



*Sheep grazing Santorini*

It hasn't all gone by without any mishaps, "we had a few letdowns in the early years when we were trying to establish the SantoriniA with full cut on sandplain". This is not good for wind erosion, however the Rogers no longer have this problem as they have changed their machinery.

Expanding serradella sowings to 1000ha can be an expensive process, however this was reduced as the Rogers harvested their own seed with a conventional header. "the main cost we had with sowing serradella to the whole 1000ha was the need to clean and de-hull our harvested seed". The Rogers have harvested and stockpiled Serradella pod in good seasons. "We have harvested the serradella about 5 times in the last 15 years when conditions have been right, that is when it is tall enough to harvest conventionally with our cereal harvester". In doing this Rodney said that pod yields have been good at around half a tonne per hectare, which is saving him money in buying in seed. 'Producing our own seed and selling the surplus to licensed seed suppliers has made re-establishing pastures on the farm at the least cost neutral' says Rodney.

### Major changes to the farming enterprise:

Since planting the serradella the Rogers have noticed that there is better soil stability, especially during summer and autumn. "It has added structure over the last 10 or so years". Rodney puts this down to the vines that the serradella produces which he believes hold the soil together. He also says that the biomass produced provides more ground cover resulting in less 'blows' (wind erosion) events. One of the principal reasons the

Roger's began growing SantoriniA.

In their rotation SantoriniA is helping them to control some weeds, through a technique called autumn cleaning (exploiting SantoriniA's delayed germination, of up to 6 weeks, by getting a post emergent knockdown in prior to the germination of the SantoriniA). Rodney says "there is a trade off between grazing and weed control, but what is lost in grazing at the beginning of the season is picked up in spring and summer". Rodney stats that 'If it is used in a system, like ours, where there are several different pasture species, sown to soil types, it works better as we can graze other paddocks until these paddocks are ready'.

Serradella is also helping Wyola become more sustainable as it fills a niche on light sandy soils where traditional legumes can not. The reason it is working so well for the Rogers is that they are not sowing it on soil types where other pastures are better suited "by sowing our pastures by soil type we are able to have an improved pasture/ grazing system that works in with our crop rotations".

Rodney's rotations have moved away from a lupin-wheat rotation and into a serradella-wheat rotation. However this rotation has now become more variable and Rodney says "we have a serradella-wheat-barley rotation or a serradella-wheat-oaten hay rotation". The Rogers have a flexible rotation as they are able to check the seed bank of the serradella to determine whether they have a big enough seed bank to be able to fit in another year of crop before going back to serradella. It also allows them to decide whether to autumn clean in a year where weed germination is staggered, they are able to autumn clean and get those later emerging weeds. Rodney also described the following rotations as others that he uses on his property: serradella-wheat-lupins-wheat-serradella, serradella-wheat-canola-barley-serradella and a wheat-serradella(hayfrozen)-wheat-serradella.

"The serradella provides good quality feed later in the season, spring and summer as well as soil stability over summer" says Rodney. Stocking rates are fairly conservative on the Rogers property. "Stock have a trampling affect on the yellow serradella, however if you don't graze it, it is almost as if you get too much bulk and this can sometimes lead to limited seed set if you get a dry finish" and that is why the Rogers always graze their serradella pastures.

### **Costs associated with serradella:**

The Rogers believe that the serradella in combination with other things is making their farm more sustainable for the future. They have managed to sow just over 1000ha of serradella in a cost neutral system. The small associated cost, of harvesting, de-hulling and

stockpiling their own seed is covered by selling excess seed in the 'good' years. At the minimum Rodney believes that by harvesting his own seed and selling the excess is making establishing the pastures cost neutral.

"Wheat establishment costs are very similar to lupins grown in a wheat /lupin rotation, so it is no more expensive growing the serradella. It can also be said that the serradella is not reducing input costs for wheat in the rotation". So serradella in a rotation rather than lupins has no cost difference.

"Similar ongoing costs are associated with growing serradella in rotation rather than the traditional legume lupins" says Rodney. These costs are grass selectives as well as glyphosate which is used in the autumn cleaning technique. "In regards to controlling other weeds we use a weed wiper in patches over the serradella paddocks and a broad leaf spray is used during establishment".



*Autumn Cleaning in action, with the SantoriniA dominant pasture (left) versus a non Autumn Cleaned cape weed pasture (right) dominant*

Insect control is infrequent "on rare occasions budworm has an impact on the Santorini, not like Cadiz where it will desimate the crop, so we do spray for it if numbers are sufficient". Rodney also top dresses his serradella paddocks with super phosphate. "When we are sowing our own seed we actually dehull the seed and sow the seed rather than spreading the pod, as it is our own seed and costs are lower than buying seed in we sow it at a higher rate, we sow 7-8kg/ha rather than 5kg/ha when we buy it in" says Rodney.

*Full economics will be published in the Case study booklet later this year - register your interest with Chris David for a copy on 9690 2268 or [cdavid@wheatbeltnrm.org.au](mailto:cdavid@wheatbeltnrm.org.au).*

# Avon Master TreeGrowers update

## By Monica Durcan

The 2011 Avon Master TreeGrowers (MTG) course was recently held for Wheatbelt tree crop growers and attended by 15 land owners and managers. The 8-day course took place in two day blocks around Perth, West Dale/Brookton/York, Gabbin/Bencubbin and Wongan Hills/Goomalling/Dowerin. It was the 19th course to be run in Western Australia and one of over 70 to be run Australia-wide. Graduates of the 2011 Avon Master TreeGrower Program now join a national support network of private tree crop growers. The 2011 Avon Master TreeGrowers learned, not just about tree species with commercial potential for our region, but also how growth and productivity can be manipulated to help tree crops reach their best potential. 'It is not just about selecting a species to suit a site' said coordinator Monica Durcan, 'it is about learning how everything from genetics to nutrition and from planting design to stand management influences the productivity of any tree crop. How to measure a stand and how to calculate when and how to prune and thin a stand for the best results.' Each course is designed to suit local needs, tree species and conditions.

Participants were exposed to more than 18 experts in a range of fields from farm forestry to bioenergy and introduced to specialist topics from regional scale planning to permits and legislation.

The national MTG Program is an 8-day adult learning experience that includes the sharing of experiences and knowledge, not just from 'experts' but also between participants—everyone has something beneficial to share. The delivery is a mix of class room type presentations and field visits.

A special 3-day introductory course is scheduled for August 2011 and will target broad acre farmers in

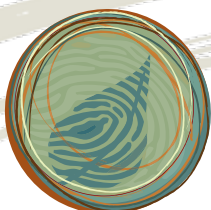


*Bob Huxley of Gabbin explains direct seeding to participant Clare Kent of Pingelly*

the southern part of the Avon catchment. For more information or to book your place contact Monica Durcan at AVONGRO on 9291 8249 or email [mdurcan@inet.net.au](mailto:mdurcan@inet.net.au)

The Master TreeGrower Program is a national program developed by Rowan Reid, originally of the University of Melbourne.

The MTG courses are regionally based adult education programs (of approximately 50 hours), in agroforestry, vegetation design and management for farmers with the aim of improving the design and management of agroforestry, helping participants understand the interests of stakeholders and facilitate the involvement of participants in the development and promotion of agroforestry.



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