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## Rotational Grazing Revitalises Ruth Robinson's Mid-North Property

Written for Grain & Graze 2 by Mike Roberts Communications, Research and Consulting

When I arrived to interview Ruth Robinson I found her poring over aerial photographs of her Mannanarie property with Rural Solutions SA's Ian McFarland and Daniel Schuppan, Landmark Animal Production Specialist. As part of a Caring for Country Project funded by DAFF, they were in the process of discussing further subdivision fencing to enhance the developing program of rotational grazing which is changing the way Ruth has traditionally managed her property.



Ian McFarland (Rural Solutions), Daniel Schuppan (Landmark), Ruth Robinson

## The Property

Ruth Robinson's great great grandfather took up the land near Jamestown in SA's Mid North when the original pastoral lease was broken up in 1872. She became the fifth generation of Robinsons running the property when she took over management in the late 1970s after attending Roseworthy College.

It had been a mixed farm with pigs and dairy cows but soon converted to the local staple of sheep and cereal crops. Ruth does all the sheep work but has share farmers for the cropping. She now runs the livestock on a part time basis while assisting in her husband John Voumard's law office in Jamestown.

The property at Mannanarie north of Jamestown is about 932ha in total with 228ha non-arable. Only about 120-200ha is now cropped annually with a number of paddocks being removed from the cropping rotation in favour of grazing.

Rainfall is considered reliable with 400-425mm expected annually. Clay loam soils on the hillsides grade to red clay on the valley floors with a pH between 6 and 7.

The undulating topography is about 600m in elevation which makes for cold frosty winters that can put limits on crop growth and stock feed when an early break to the season does not occur.

Some of the land purchased in the last decade had not been cropped for seventy years. It could not be returned to cropping without special exemption from the Native Vegetation Council, on the assumption that native vegetation, which should have re-established, might be damaged. Ruth says, "On most of this block there is quite good native vegetation which I am keen to encourage. So I have chosen not to crop that section at all."

## Livestock operation

The self-replacing Merino flock consists of 1180 ewes mated to pure Merino rams. Some years ago, Ruth thought that the decline in Merino numbers in Australia would see people seeking replacement stock when the situation reversed and decided to be in a position to capitalize on that opportunity. Her aim is for wool production and surplus sheep in the form of wether lambs, cull ewe hoggets and cast for age ewes.

November shearing time is not her preference due to problems with grass seeds but is dictated by availability of shearers. "It would be ideal to have them shorn by mid October but I manage by having the sheep in spray topped paddocks or sown pasture paddocks leading up to shearing."

“Lambing is in June-July which allows me to have the ewes heavily pregnant outside of the real pressure time which is Feb-April. That is when we have the lowest availability of feed. It is always a trade off. The traditional time, April-May, has good weather for dropping lambs but it does mean that ewes are heavily pregnant when feed is scarce.”

## Drivers for change

### Weeds

Broadleaf weeds like wild geranium and thistles had begun to dominate pastures. “Spraying out the geranium only seemed to make the problem worse in subsequent years. Spraying caused baring out which only encouraged broadleaves, so it was a vicious, self-repeating cycle.”

### Poor grazing efficiency and pasture utilisation

The 90s were tough for all the farmers in the region and with the exception of a few good years Ruth says it stretched out to a run of 15 dry years. That was a strong motivator for a search for practice change that could bring about greater pasture production and subsequent profitability.

Ruth Robinson began to consider rotational grazing after attending a workshop at the Hubert Wilkins Centre at Jamestown run by Millie Nicholls, a botanist and farmer from Yacka, and driving force behind the Mid North Grasslands Working Group. At that stage, ten years ago, Ruth was not convinced that it was applicable to her place, but came to adopt the principles over the years.

### Lack of livestock shelter

Ruth explained that, “the whole area is fairly devoid of trees and it is not because the area was cleared but rather that it didn’t ever have many trees. It tended to have some sheoaks and wattles, which are quite low, but was mainly native grassland. A bit further north there were certainly some blue gums on the hills but as far as we can tell they weren’t here.”

“My grandmother and my father planted a reasonable number of trees around the place but with a couple of exceptions they were more just shade trees rather than shelter belts.”

“In late November 2009, just post shearing, I lost about 200 lambs in a cold spell. That hurt both emotionally and financially and we knew we needed to address the issue of shelter for the stock.”

## Key Strategies

### Crop rotations and consideration of ‘pasture cropping’

Intensive cereal cropping is being replaced by rotations that will allow better control of annual grasses. Crop rotations are currently in a state of flux during discussions with the sharefarmers and the agronomist. Some less productive or

rocky ground, previously cropped, has been taken out of the cropping rotation and treated as purely pasture paddocks.

“We have made the change to vetch before cereal cropping this year with the idea of building up the nitrogen levels in an attempt to save some money on fertilisers and provide some sheep feed at the same time. I have restricted the cropping activities to the better cropping paddocks.”

Ruth is interested in the concept of pasture cropping but is not able to crop the ground where her best native pasture is. In areas where she is permitted to crop, the practice would not fit with sharefarming as a lower crop yield can be the trade off to growing some of these pasture species in competition with the crop.

### **Livestock strategies**

#### ***Shelter belts***

Ruth has been working on a plan to grow shelter and shade belts. “Sheep really look for shade in summer as well as wind shelter in winter. So far I have been planting seedlings rather than direct seed.” Some areas of creeks have also been protected totally from grazing and have regenerated well.

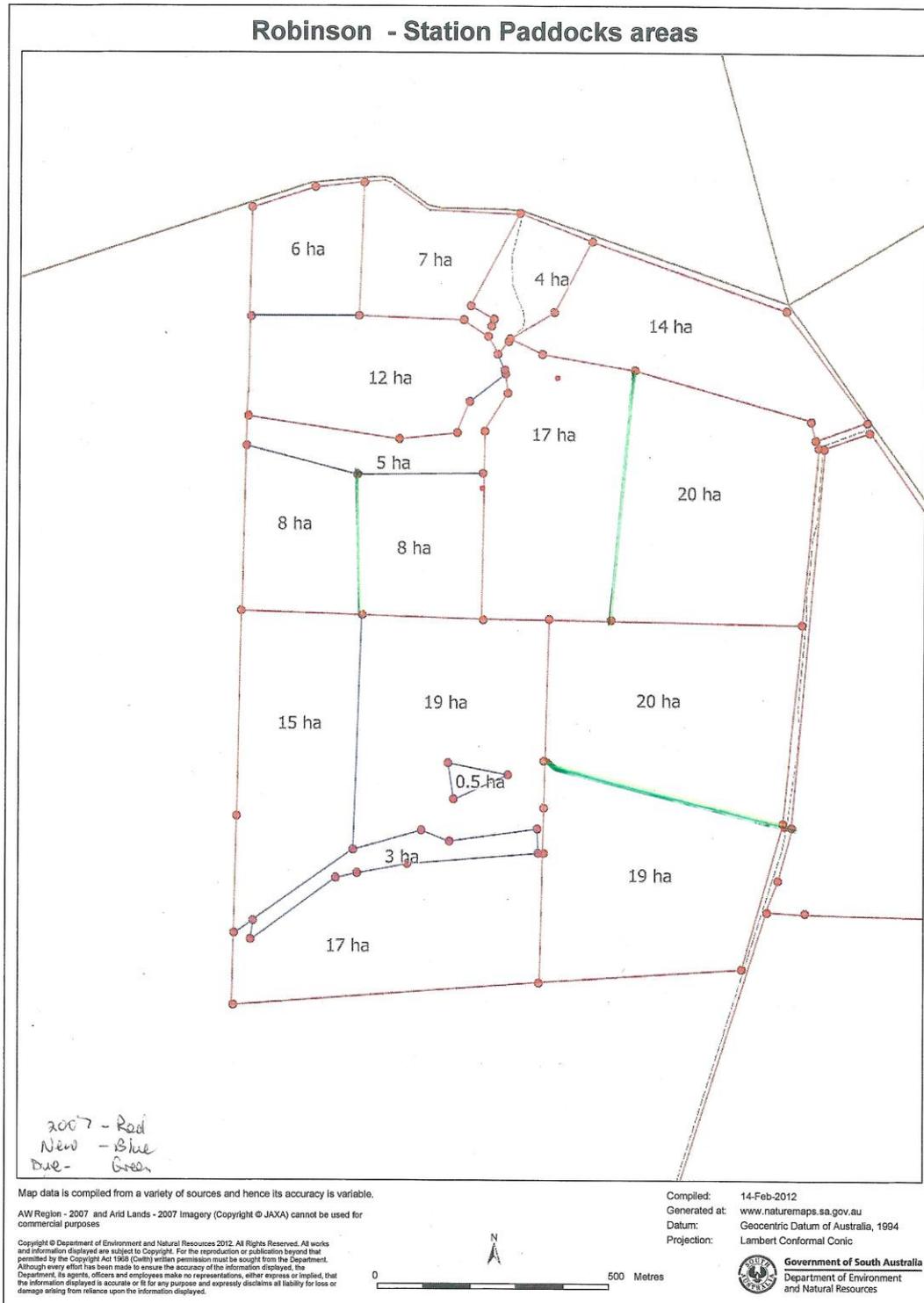


**Shelter belt tree lines**

#### ***Develop a rotational grazing plan***

The real impetus to develop a rotational grazing plan came after the purchase of more land in Dec 2007 that had existing native pasture.”

“The initial swing to rotational grazing was done by producing fewer mobs of more sheep. That is still the case because I can’t subdivide the cropping paddocks and leave a realistic paddock for the share farmers to crop. However, on the paddocks that I am reserving purely for grazing I have done quite a bit of subdivision and more is planned.”



Ruth tries to minimize the time spent feeding sheep so she is able to help in her husband’s business. “Part of the reason I lamb when I do is to avoid hand feeding

in autumn. We try to match the feed curve to when the pasture is growing. So one of the reasons for the shift to rotational grazing is an attempt to better utilize what feed I have and avoid hand feeding.”

To increase the total supply of feed by resting the pastures is an aim of rotational grazing. The basis is to have a heavy stocking density for a short period of time and then remove stock for a decent length of time so that each paddock or each area is rested for much longer than it would be under a set-stocking scheme.

Daniel Schuppan explained, “with higher stocking pressure for short periods of time you get more even grazing across your paddock and less selective grazing. You don’t get sheep camps, tracking and some areas of the paddock with rank pasture while other areas have short pasture. You are increasing your feed utilization and also resting the pasture to allow it to grow and recover. The length of rest tends to vary with the rainfall, the number of paddocks in the rotation and the number of sheep in the system.”

Ruth put each of her three mobs of lambing ewes in a discrete part of the farm, each with several paddocks that can be used as a little rotational grazing cell. Each cell has 3-6 paddocks that sheep are rotated through. “It is very difficult to forcibly shift them when they are lambing, almost impossible without mis-mothering them, but you can just open a gate and let them drift through on their own quite safely.”

“We are not yet doing any strip grazing. Electric strip fencing is probably something I will look at on these bigger paddocks that I’ve left for cropping.”

### *Encourage native grasses*

With fencing costs so high, much of this subdivision has only been possible by the receipt of various NRM or Hotspot Biodiversity grants. “These grants have been centered around and gained because the block we bought in 2007 had good remnant native vegetation worth protecting.”

Ruth stresses the importance of contact with some key people such as farmer Millie Nichols and Anne Brown from Greening Australia who provides technical vegetation advice on behalf of the local NRM Board. “The two of them often work together. They are extremely encouraging and knowledgeable about plant species. Anne was a forester before working with grasses and shrubs; and Millie has farming experience and a strong grazing background. They are both involved with a group called Mid North Grasslands Working Group that has been around for 10-15 years promoting regeneration of native pastures.”

Keen to identify and encourage more perennial plant species suited to her area, Ruth has worked with Michael Wurst of Rural Solutions SA in Jamestown to establish some native pasture trial plots to look at establishment and spread of various species.

“The native grasses here consist of a mixture of winter and summer species. The summer active species are a good foil for the remaining paddocks that grow clovers and grasses in winter and nothing useful in summer. I have two paddocks of established lucerne that is not a bad summer feed but plants are spaced quite far apart with little of value in between. I would be really pleased if I could establish wallaby grass in between but so far attempts to do that have not been successful.”

### **Five years on – has the carrying capacity changed?**

Ruth finds this a hard question as sheep numbers have increased at the same time as land acquisition and all while grazing methods have been changing. “My gut feel is that I am able to run more sheep because of the rotational grazing than I would otherwise. It could be 10-15% more.”

“This has been a very short feed year and while it may have resulted in sheep being in slightly less condition and slightly fewer lambs I think I would have to have hand fed but for the rotational grazing.”

Daniel Schuppan added that, “you held your wether lambs over and probably took some of your feed away from the ewes. So you actually increased your stocking rate AND you didn’t hand feed.”

### **Progress toward goals**

#### **Weeds**

“I have aimed to produce more feed and have less invasive broad leafed weeds. I think I am succeeding. I certainly have less wild geranium. It is a flat weed that puts up a seed head, which then corkscrews and buries into wool and eyes and fingers.”

“On the area outside of the 160ha of native vegetation I have more native pasture appearing on the cropping paddocks. There are a couple of paddocks not cropped for 8-10 years that have quite a bit of speargrass and New Holland daisy. I think that is attributable to two things – one is the grazing management because they are not being eaten all the time and another is the fact that we have had some fairly decent summer rainfalls which have encouraged the perennial and summer active native plants.” Cropping ground depleted of native species tends to produce mainly weeds in response to summer rain.

#### **Ground cover**

“Our ground cover has increased significantly. In the pasture paddocks the goal would be 100% ground cover 100% of the time. I think we are at about 85% now. When we started the program it was maybe 50-60% and that varied across the farm.”



Ruth Robinson in paddock showing excellent ground cover

Because the ground cover is so much better, a lack of runoff to fill dams is a problem in some paddocks. “The combination of altered farming practices in the last decade and the dry years certainly meant that I needed to look at alternative sources of water in several paddocks which had relied on what had been permanent dams.”

#### ***Total available feed and mixed nutrition***

There has been dramatic improvement in the density of species in the native pasture block. “They are just more evident and their percentage of the total available feed has increased.”

Ruth also thinks the sheep are benefitting from the mixture of feed available to them. “They get the barley grass and Salvation Jane in the pasture phase of the cropping paddock and native grasses on the grazing paddock. By running across the whole place within a year they are getting a good mix of nutrition.”

Daniel Schuppan notes that, “Ruth is also building up her ‘feed wedges’. Stubbles are available so pastures can rest but she still relies on a rotational system for most of her grazing. Lambs are weaned onto spray-topped paddocks and feed paddocks so that part of the system works throughout the year too. Feed is not limited to one source. Ruth can best manage that feed at the time she wants to use it through rotational grazing.”

### *Worm control*

Daniel Schuppan notes other benefits; “with sheep grazing stubbles over summer the native pastures get a break from worms during that time. Pasture height might also influence fewer larvae being ingested. Rather than keeping native pastures really short with set stocking where they are always eaten, rotational grazing can keep them about 10-15cm high. The majority of worm larvae concentrate in the pasture below 5cm so sheep ingest fewer on higher pastures. Fecal egg counts have shown a reduction since the introduction of rotational grazing.”

### *Workload*

There are fewer mobs of sheep for Ruth to check but the counter to that is that they need to be shifted more frequently, at least weekly and sometimes every 2-3 days.

She finds that it doesn't take long to shift the stock and because they are handled and observed more frequently, problems are spotted earlier. “I can assess things like condition and pasture growth more easily now. With set stocking you would put them in a paddock and effectively leave them there and forget them for three months so this is really a change of mindset.”

### *Native tree regeneration*

Self-propagation of trees is not yet evident in grazing areas, however yackas have re-established from butts in one paddock where set stocking had decimated them. “Speargrass, wallaby grass, sheep burr, brush wiregrass, a little fern and a chocolate lily can easily be found in the same paddock.”

## **Weighing it all up**

On the negative side Ruth says that changing to rotational grazing can be “a bit of a tie. You can't just nick off for a week without having someone lined up to shift sheep. My husband will tell you I'm married to the place and he finds it difficult to get me away anywhere for very long.”

Having said that she sees the benefits of more feed, healthier sheep and the satisfaction of ‘the buzz’ about the development of the native pastures. I guess I'm a bit of a greeny at heart.”

Ruth concedes that she is optimising productivity to suit her situation as opposed to maximizing productivity. If maximizing were the goal it might require a greater time commitment as well as more inputs of fertilizer and pasture species.

With the labour of hand feeding all but gone and fewer mobs to look at Ruth thinks that rotational grazing has saved her many hours over the last twelve months in a season where she would have been feeding set stocked sheep.

“Financially I believe I’m in front because I have more feed production and therefore run more sheep. It is possible I could be getting heavier lambs and more wool cut if I ran fewer sheep but I think the optimum profit across the whole place is found by running more sheep than perhaps some of my neighbors are able to do per hectare. My ability to run more sheep is enhanced by rotational grazing.”

“If I had set stocked and increased sheep numbers I would have degraded the country. I think that is actually what I had been doing before I began rotational grazing. The financial pressure of attempting to make money off the place, saw me increasing numbers of broadleaved weeds because I was overstocking. So, sooner or later I was going to be losing profitability.”

Ruth thinks that the changes will make the property more sustainable in the longer term. That impacts on soil erosion as well. “Historically, this area has been quite degraded by heavy rainfall particularly in summer storms when the cropping practice was to fallow in Sept/Oct. Those practices have long since ceased, but soil erosion is still quite possible, and I feel the rotational grazing will help by retaining more soil cover, more evenly.”

### Things you’d do differently

“Money is always a limiting factor and if I had more I would have hastened the roll out of subdivision fences. I did some tree planting before the kids came along and have only just started that again in the last couple of years. So maybe I could have done more there.”

### Advice for others

Ruth Robinson thinks that to be successful at introducing rotational grazing a farmer needs to be prepared for change. That can mean a willingness to spend time more regularly with your sheep and looking at your pastures. It means being prepared to analyse and make changes to infrastructure like fences, water systems and sheep yards. She encourages those interested to get advice and seek encouragement from professionals and those farmers who have already made the change.

“It has been mutually supportive to get together with other farmers who are keen on their sheep. There are many farmers who get great satisfaction from producing a really good crop but think that sheep are just a nuisance. It’s good just to get with like minded farmers interested in sheep and compare notes.”

*“Looking back on the changes I’ve made gives me great satisfaction. I have the feeling that I am working better with nature and getting better productivity as a result.”*

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If you would like to see a very short video clip of Ruth Robinson showing the extent of native pasture cover in one of her paddocks please click here:

<http://youtu.be/7m33hYzHSsY>