

WIRED for SUCCESS

improving hardy sheep containment in the rangelands

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Welcome to the final newsletter being published under the PIRD and Envirofund Project 'Improving Hardy Sheep Containment in the Rangelands'.

The drought has heavily impacted on this project, with paddocks required to be destocked for significant periods during the project. The true impact therefore of the grazing pressure exerted by exotic breeds has been difficult to determine, and the fencing systems not put under pressure due to lower than normal stocking rates within the paddocks.

However, that aside, valuable information on the habits of exotic breeds has been gathered along with useful base data information for measuring changes in paddock conditions and grazing potential. Data has also been collected through monitoring sheep movements through 'normal' fencing in extremely low pasture conditions.

Seasonal Update

For the trial sites at Gum Creek Station, the 2008 winter rains basically failed, and pasture reserves quickly ran down over spring before late November rains produced a minor flush of useful bindii in the trial paddock. Stock were moved into the trial paddock at this time. A subsequent dry summer then led to a major destock from April 20th.

Similar dry conditions were experienced at Gum Glen, the property of Dean and Penny Hooper. Intermittent grazing has occurred throughout the trial period, and for a significant proportion of time, the animals were drought fed in a containment yard on the property.

As well as both trial paddocks being heavily destocked, the control paddocks which held merino's, also had reduced stocking rates.

Animal Behaviour

The delay in completing the electric fence in the trial paddock has allowed us to gain valuable insights into dorper sheep behaviour in extremely low pasture conditions where migratory characteristics are far more likely to be expected. The overwhelming finding is that the purer crosses e.g. F4 and F5 are far more territorial and less likely to migrate to other paddocks than are the early crosses e.g. F1, F2 and F3's.

Escape rates through conventional fences have ranged from as high as 40% in F1 and F2 sheep, to a mid range of about 15% in F3 and as low as 3% in a mob of 120 young F4 ewes. It is evident that the strong territorial characteristics and a tendency to 'orbit' a favoured water point is more observable in the purer crosses. This may even mean that greater spreading of water points will be necessary with dorpers who seem happy to survive (quite well) on varied and rough pastures, rather than walk to all corners of the paddock for fresh feed. It has also been noticed that directly after rain, there is a tendency for once off migrations or walkabouts, particularly with F3 ewes.

Animals were also observed to respond to the electric fencing after first being 'trained' in a containment area. Once trained, they respected the fencing and fewer escapes were noticed with 'trained' animals compared to 'non-trained' animals.



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Fencing Design

Three forms of electric fencing have been trialled, and drought conditions have made it difficult to compare the effectiveness of these designs.

These three designs included:

1. 5 wires; two electrified



2. Two electrified wires on poly droppers run at a 45 degree angle to the existing plain wire fence (at a cost of \$422/km)



3. 12 " offsets placed on existing wire fencing (at a cost of \$605/km)



The following points have been noted in regards to maintaining electric fencing:

- Acacia victoriae and some tall weeds may need to be controlled along the fence
- Outrigger wires can get caught on the bottom of main fence spacers caused by roos getting through
- Auxillary electric wires at creek crossings need to be very strongly clamped to the main wire because of roo movements

Monitoring Paddock Condition

Over the project, the paddock condition has been monitored using various means, to try and determine the true grazing impact of exotic breeds.

Monitoring has occurred using:

The ABCD Paddock Condition Guide (as available in Responsive Grazing Management)

This tool allows the producer to rate Soil Cover, Erosion Risk, Grasses and Forbs, Recruitment, Grazing Evidence and Impact on Vegetation, Palatable/Non Palatable Species and Weeds. As well as rating the current condition of these variables, it also allows the producer to monitor the change over time in paddock condition.

ABCD Guide

All ok

Beware

Cautious

Danger



	>80% cover	50%-80% cover	20%-50% cover	< 20% cover
Soil cover (Includes grasses, mosses, rock & shrubs)				
Erosion Risk	No Erosion evident, soil is stable	Some erosion visible but currently stable	Obvious signs of current erosion and susceptibility to erosion currently high	Severe erosion present and severe erosion potential
Bush	High leaf cover and cover is 'fresh' Good levels of bush present	Leaf cover is high, but not fresh Good levels of bush present	Low leaf cover and dead bush visible Low levels of bush	No leaf cover with high amounts of dead bush visible Low levels of bush
Grasses & Forbs	High presence of grasses and forbs, both annual and perennial, productive and non-productive	Good presence of grasses and, forbs, both annual and perennial, productive and non-productive	Low presence of grasses and forbs, both annual and perennial, productive and non-productive	Total lack of any perennial or annual grasses or forbs, both annual and perennial, productive and non-productive
Recruitment	High level of young perennial plants present	Medium recruitment potential with some young perennial plants present	Low potential of recruitment, only few young perennial plants present	No potential for recruitment, no evidence of young perennial plants
Grazing Evidence and Impact on Vegetation	Low levels of grazing evident with no vegetation loss	Low levels of grazing evident with plants cropped above growing point	Moderate levels of grazing evident and some plants cropped below grazing point	High levels of grazing evident and high levels of utilisation evident on vegetation
Palatable/Non palatable	Low concentration of unpalatable species and presence is not affecting recruitment and growth of palatable species	Low concentration of unpalatable species but presence is affecting recruitment and growth of palatable species	High concentration of unpalatable species species, control method imposed	High concentration of unpalatable species little control method imposed
Weeds	Low concentration of weeds and presence is not affecting recruitment and growth of other species	High concentration of weeds but a control method is imposed	Medium concentration of weeds and presence is affecting recruitment and growth of other species	High concentration of weeds and no control method imposed

Responsive Grazing Management



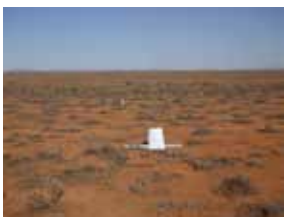






A summary of the recordings for 3 of the variables monitored through the ABCD Paddock Condition Guide over the life of the project are shown below. Both the trial and monitor paddocks have been combined in the data below.

	Gum Creek Station <i>Trial Paddock</i> <i>Monitor Paddock</i>	Gum Glen <i>Trial Paddock</i> <i>Monitor Paddock</i>
Soil Cover	At the commencement of the project, soil cover was around 50%, but this decreased to around 20% by the end of the project. Drought conditions heavily impacted on the cover levels present	Soil cover varied from between 20-50% over the life of the project.
Erosion Risk	Ranged from low to medium erosion risk over the life of the project, as soil cover was reduced	Erosion risk was generally low, with some erosion visible, but controlled.
Grazing Evidence and Impact on Vegetation	Medium to high levels of evidence of grazing was noticed, with moderate to high utilisation of feed on offer throughout the period.	A general lack of perennial grasses and forbs during the trial period, with moderate to heavy levels of grazing evident.

What has been interesting to note is that there was little significant difference in paddock condition between the trial paddocks and monitor paddocks. The possible conclusion could then be drawn that there is no real difference in overall impact on paddock condition between dorpers and merinos grazing. However, because of drought conditions, it is very difficult to draw a strong conclusion of grazing habits because of the varied stocking levels and rates between the paddocks. Grazing from non-domestic animals have also impacted on overall paddock condition, and Total Grazing Pressure was not measured or monitored.

Using photo points to monitor paddock condition







3 photo points in each paddock, 500m apart were set up. Photos were taken at these points every 6 months to help visually monitor the change in these paddocks.

	January 08	May 08	November 08	May 09
Gum Glen Trial Paddock				
Gum Creek Trial Paddock				

The photos help to show the changes in land condition over time. Photos are a useful media to monitor the change as the subtle changes can not otherwise be easily detected. As the photos show, drought has caused a general decline in paddock condition, but seasonal rain has also enhanced food on offer at particular times during the project. In some instances, sheep were returned to the paddock during these times, and in other instances, the paddock was allowed to rest.

Setting up an exclosure zone

An exclosure zone, 1m x 1m, was set up in each paddock. This zone was not grazed, either by domestic or non-domestic animals, and it allowed us to visually determine the true impact of grazing.

	January 08	May 08	November 08	May 09
Gum Glen Trial Paddock			(No photo available)	
Gum Creek Trial Paddock		(No photo available)		

Monitoring the exclosure points showed the following:

- Generally a higher ground cover percentage within the exclosure area
- A higher percentage of grasses and forbs within the exclosure area
- Bush was in better condition, with more 'fresh' growth present within the exclosure area
- Higher levels of recruitment evident within the exclosure area

The exclosure area removed Total Grazing Pressure from the excluded area. Therefore, it can not be said that sheep alone (be it Merino or Doper) contributed to the noticeable changes in land condition inside and outside the exclosure area, as other non-domestic grazing animals have impacted on the land condition outside the exclosure.

Measuring Food On Offer

Dry matter cuts were taken to measure total Food On Offer every 6 months over the life of the project.

Dry matter cuts were not taken during the last two assessments of the sites due to lack of feed on offer able to be cut. Although the samples were taken with the use of quadrants, dried and weighed, under pastoral conditions, these weights do not give an accurate measurement of total standing food on offer due to the numerous variables within a paddock.

Project Conclusions

From Gum Creek Station:

- Evidence to date reinforces our plan that pure bred dorpers, in conservatively stocked circumstances, with water points towards the middle of reasonably sized paddocks, where the boundary is reinforced with electric fence, will be effectively contained on a long term basis.

From the project manager

- More work is still required in determining the true grazing impact of exotic breed sheep. Determining the true DSE rating of an exotic breed is also required, in order to compare the true grazing pressure with a merino.
- Although the fencing mechanism trialled were not put under pressure from 'normal' stocking rates, it seems to date that electric fencing will, to some extent, prohibit escapes. The success of the electric fencing will depend upon the original construction and maintenance to ensure it is continually electrified and serves its purpose.

What we would do differently next time

What wasn't measured in this project was the impact of alternative grazing pressures, such as goats and kangaroos. While the paddocks were destocked from domestic grazing animals, kangaroos and goats were still impacting on the grazing pressures within the paddock, which influences pasture regeneration and growth.

Paddocks will be continued to be monitored in the future to ensure paddock condition is maintained and improved, the number of escapes monitored, and evidence of the most appropriate fencing techniques collected.

Full Project Report

Once finalised, the full project report will be available on the Rural Directions website, at www.ruraldirections.com, or the Bestprac website, www.bestprac.info

With thanks

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