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The Central Australian Grazing Strategies project
Working Paper Series

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Working Paper
54
2009

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## Contributing author information

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Desert Knowledge CRC Working Paper #54



ISBN: 1 74158 139 7 (Web copy)
ISSN: 1833-7309 (Web copy)

## Citation

D. Walsh. 2009. *A maximum sustainable stocking rate system in central Australia: Woodgreen Station, NT*. DKCRC Working Paper 54, The Central Australian Grazing Strategies project Working Paper Series. Desert Knowledge CRC, Alice Springs.

The Desert Knowledge Cooperative Research Centre is an unincorporated joint venture with 28 partners whose mission is to develop and disseminate an understanding of sustainable living in remote desert environments, deliver enduring regional economies and livelihoods based on Desert Knowledge, and create the networks to market this knowledge in other desert lands.

## Acknowledgements

The Desert Knowledge CRC receives funding through the Australian Government Cooperative Research Centres Programme; the views expressed herein do not necessarily represent the views of Desert Knowledge CRC or its Participants.

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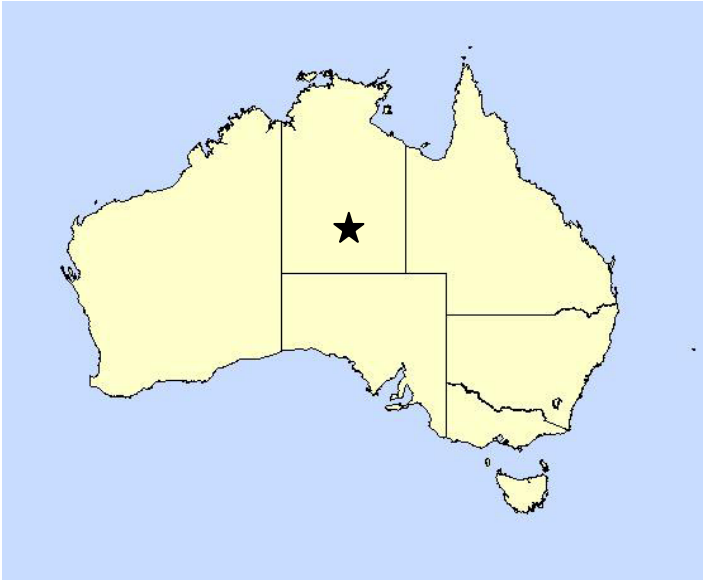
# A maximum sustainable stocking rate system in central Australia

## Woodgreen Station, NT



***Key points***

***365 square kilometres under production***

***Maximum sustainable stocking rates in place***

***Increased perennials, decreased erosion***

***Turn off finished cattle every year***

The Purvis family has owned Woodgreen, 180 km NNE of Alice Springs since the early 1920s. Woodgreen is 1,230 square kilometres in size with 365 square kilometres used for cattle production. The area under production is mostly undulating mulga country on red earths derived from granite. The dominant trees and shrubs include acacias (mostly mulga) and Eucalyptus species adjacent to the watercourses. The most prominent grasses include Aristida, Bothriochloa, Chloris, Chrysopogon, Cymbopogon, Digitaria, Enneapogon, Eragrostis and Eulalia species. Many other grasses are also present on the station. Several palatable chenopods are also present, including Maireana, Enchylaena, Rhagodia and Atriplex species

The average annual rainfall at Woodgreen is 300 mm and the median is 250 mm. Rainfall is summer-dominant. The Purvis's produce finished Poll Shorthorns for the domestic market via Murray Bridge. Steers are turned off at three years and cull heifers at 1.5 to 2.5 years. Cows are removed from the breeder herd at eight years of age and are fattened before sale.

Cattle are mustered by shutting down waters. Cattle are moved slowly towards the yards by people on foot or in vehicles so that recalcitrant or fractious animals can be identified for culling. Furthermore, this slow and steady handling allows the Purvis's to notice cows without their calves at foot so that they can let these cows go immediately. The Purvis's believe that happy cattle are valuable cattle. A set of ramps is situated at one water in every paddock for easy loading of cattle onto trucks.

## The grazing strategy

There are 29 paddocks of varying sizes on Woodgreen. Fences are three wire barb, with steel pickets every 22 metres. There are 53 waters on the property. The fences are built so that the bottom wire is quite high off the ground. This protects them from fires and also stops kangaroos from breaking the bottom wire. It also allows them to cut off the scrub growing near the fence lines with a grader (note that the soil surface is not scraped, in order to prevent erosion). Two thirds of the productive country is spelled at any given time and sustainable numbers are run. The steers and older cows are run on the best country and each mob is rotated between two paddocks. Seven small (~50 head) mobs of breeders and the unmated heifers each have three paddocks of equivalent carrying capacity to rotate through.

The Purvis's philosophy for the past 40 years has been to get the country into the best possible condition and keep it there.

## Decision making for stocking rates, timing and spelling

The stocking rate at Woodgreen is constant and all paddocks have been designed so that they can carry the same amount of cattle. The length of the grazing period is adjusted depending on seasonal conditions. Bob Purvis has developed a species test over a period of 30 years to monitor his grazing management. Depending on the underlying fertility of the country, Bob has some "rules of thumb" about how many species (particularly edible ones) you should see in a 360 degree scan of any spot you care to select in a paddock. The results of the species test vary with seasons because

there is more biomass in good seasons, however it is the mix of species that is important. Bob says that this test, in conjunction with a knowledge of what species cattle like to eat can tell you a lot about how well the country is being grazed and rested.

In terms of fire management, wild fires are generally left to burn unless they are threatening infrastructure. The Purvis's sometimes use fire as a tool to reduce scrub.

## Objectives of the grazing system

The reasons for adopting conservative stocking rates and spelling on Woodgreen include:

- to improve production
- to increase the stability of production and income
- to improve land condition and prevent degradation
- to improve drought management.

***"A species test, in conjunction with knowledge of what species cattle like to eat can tell you a lot about how well the country is being grazed and rested"***

## Results

### Livestock

Bob feels that animal husbandry has improved as a result of gaining better control over his stock. Musters are now 100% clean and two rounds are conducted each year. Every calf that is branded in the first round is weaned in the second round (except if the weaner is already quite large in the first round). Mustering cleanly twice a year provides good opportunities to identify poor performers and cull them from the herd.

Branding percentages and liveweight gain have improved over the past 40 years. The time taken to reach finished weight is significantly quicker than in the past. Abattoir kill sheets demonstrate that dressed weights and carcase quality have improved.

It is common knowledge that most stations in central Australia can only produce fat cattle in good seasons, however finished cattle are turned off Woodgreen every year.

Image courtesy of Jillian Fisher (Project Officer)

## Financials – costs and profits

Bob notes that the development costs over the past 40 years are “too great to quantify”, with fencing and water points being the biggest costs. The infrastructure has been built so that it is easy to maintain and labour costs are quite low. More fuel is used today, but this has been offset by the reduction in labour costs. The wisdom of Bob’s management approach is confirmed by the fact that the improved production allowed him to clear his debts and all expenses today are met by profits.

## Land condition

Bob states that when he took over Woodgreen it was “a desert”. Photos taken at that time demonstrate low vegetation cover and serious erosion problems. Today, there is a large diversity of plant species, excellent stands of palatable perennials, stable soils, high litter cover and less run-off. Rather than increasing stocking rates in exceptionally wet seasons (as is common in the district), Bob sees these as key times to give his perennials the best possible start. Bob also notes that 40 years ago there were only ten species of birds on Woodgreen and now there are 60. Some of these positive changes became apparent within three years of changing the management of the property.

When Bob took over ownership of Woodgreen the property was “a desert”. Excellent species diversity, grazing management and a continual program of erosion works over the forty years since is the result of a steep learning curve early on.

Image courtesy of Jillian Fisher (Project Officer)

## People

Bob Purvis has used a mixture of experience and observation to develop his grazing management approach. He feels that he had a steep learning curve early on and that he is still learning today.

***"Positive changes became apparent within three years of changing the management"***

## Drought and pest animal management

Bob considers the 1948/9, 1957/9 and early 1960s as the most serious drought periods in the district. Bob took over the management of the station from his father at the start of the 1957 drought when cattle were dying and he notes that the cattle numbers currently run on Woodgreen are equivalent to what came out of the end of the 1960s drought. The current conditions are shaping up to be another drought if rains do not fall in the coming 12 months and Bob sees this as the first real test of his grazing system. The odd dry years across the decades have not required any change in his management and he feels that the low cattle numbers can be sustainably retained during any drought that may develop. He will continue to observe how the country and the cattle are faring if conditions deteriorate further.

The main pest animals impacting on the property are kangaroos. Bob controls these by encouraging a stable population of dingoes to live on Woodgreen and by shutting off all waters not in use.

## Advantages of the system

Bob nominates the following advantages of his grazing system:

- you identify the maximum sustainable stocking rate
- improved soil condition
- increased biodiversity.

## Disadvantages of the system

Bob does not consider there to be any disadvantages of this grazing approach.

## Recommendations to others who want to try it

- learn about and understand the problem/environment you live in
- start to do it and observe the results closely.

## Plans for the future

The Purvis's intend to continue fine-tuning their management through on-going observation and adaptation. Bob intends to continue working and living at Woodgreen and says that two of his children are keen to return home to continue the family business.

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