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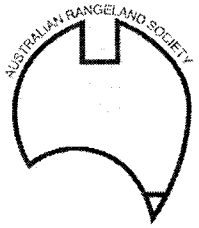

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MANAGING GRAZING BY ALTERNATING WATERING POINTS IN THE BARKLY REGION

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ABSTRACT
This investigation aims to establish the feasibility of managing the grazing of cattle through methods other than increased fencing within the extensive production systems of the Barkly region of the Northern Territory. Cattle grazing behaviour is being manipulated through having only 1 of 5 watering points in a paddock operating at any one time over the dry season (April to November). A control paddock exists which operates under a traditional grazing management regime. Extensive pasture and cattle data has been collected from the Rockhampton Downs station site and indicates cattle performance is reduced initially by the alternating waters management regime although pasture composition is improved. The investigation is ongoing and has been successful in demonstrating cattle grazing can be managed by alternating watering points in the Barkly Region.

INTRODUCTION
In the extensive native pastures of the Barkly Region of the Northern Territory, grazing is concentrated around watering points. Fisher (2001) reported 80% of cattle activity at Rockhampton Downs station was within 5km of the watering point. The concentration of cattle close to the watering point results in sacrifice zones in which no perennial grass species are present.

Within the Barkly Region the average size of a paddock is 364km^2 (Bubb 2006). While multiple watering points exist within paddocks cattle often concentrate on only one for the entire dry season. This results in extreme variation in the utilisation of pasture between watering points. Over time this leads to a sub optimal carrying capacity for paddocks and can impact on the long term diversity of species within a native pasture.

This investigation was initiated in May 2004 at Rockhampton Downs Station. It follows the observation by station managers as to the resilience of pastures within holding paddocks at yards which were stocked heavily every year but only for short periods of time. Primarily the investigation focuses on the feasibility of moving cattle around the paddock by turning on and off watering points to promote even grazing without having to resort extra fencing.

Problem
Continuous grazing of watering points over an entire dry season results in large sacrifice zone being created at some watering points while others are left ungrazed. There are few management options available to pastoralists other than installing extra fencing, which is expensive due to the scale of paddocks. Reducing the size of paddocks through the installation of more fences would provide the greatest level of control over grazing. Due to the extreme size of paddocks this is not a feasible financial option.

Solution

The Australian Agricultural Company (AACo) in collaboration with the Northern Territory Department of Primary Industry, Fisheries & Mines (DPIFM) is investigating the effects of increasing watering points and to reduce grazing pressure by spreading it more evenly through a paddock. This is achieved by having only having one watering point operational at a time. Cattle are moved strategically around the paddock at regular intervals.

METHOD

Rockhampton Downs station is located on the black cracking clay soils of the Barkly Tableland. Mitchell Grass is the predominant perennial species across the vast treeless plains. The region experiences distinct wet and dry seasons with 95% of the average rainfall of 400mm occurring from November to April. The annual average minimum temperature is 19°C while the annual average maximum temperature is 34°C.

A 530km^2 paddock was divided into two paddocks. 880 cattle in the control paddock are managed under traditional continuous grazing practices. All watering points within the control paddock are operational at all times and cattle grazing is uncontrolled. The treatment paddock operates under an alternating watering location management practice. 730 cattle are moved around the treatment paddock by having only one of five watering points operating at any one time. New watering points have been created by turning off existing troughs at bores and pumping the water to new troughs approximately 4km away in areas traditionally not grazed. Cattle are held on the waters for 6 weeks which allows for the each watering point to be grazed once during an average dry season. During the wet season when surface water is present cattle grazing is uncontrolled.

The pasture is monitored using an intensive double sampling method at the beginning and end of the dry season. All transects originate at watering points and extend to a distance of 3km at new watering points and 5km at existing watering points. Sampling occurs at 250m intervals within 2km of the watering point and then at 500m intervals when further than 2km from the watering point. Cattle weights, pregnancy status and weaner weights are also collected in May. An extensive management diary has also been kept to evaluate the impact of this grazing system on overall station operations allowing for a greater understanding of its impact.

PRELIMINARY RESULTS

May 2004 – May 2006

Low re-conception rates for lactating 1st calf heifers is a recognised problem within the Barkly Region with the average estimated at 62% (Bubb 2006). Pregnancy test data from 2005 indicates re-conception rates for the treatment (30.2%) and control (50.6%) was low in comparison to the region average. While a long dry season in 2004 contributed to this poor performance the re-conception rate of the treatment cattle was significantly lower than the control cattle. Pregnancy test data for 2006 was unavailable at time of publishing due to the late wet season.

There was no significant difference between the average weights of the weaners turned off from the treatment or control paddocks over the two years of the investigation.

Initial pasture observations have indicated an increase in the perennial pasture species (Mitchell Grass) within 250 meters of the watering points.

DISCUSSION

This investigation is studying the effectiveness of controlling grazing without installing additional fencing. Holding the cattle on watering points proved difficult during 2004 but was resolved in 2005 through the persistence of the manager. Greater influence over the areas of the paddock that are grazed has been achieved through investing time in training cattle and modifying their behaviour. The investment in training and developing more waters has allowed for savings in time and money when mustering by having cattle closer to yards reducing the need for helicopter use.

The increase in perennial grass species within traditional sacrifice zones also represents an improvement in pasture composition. Increases in perennial grasses offer more feed towards the end of the dry season increasing the overall carrying capacity of the paddock.

The ability to manage the cattle alternating watering points represents a vast change from traditional grazing strategies and is considered a major achievement of the investigation.

CONCLUSIONS

Preliminary results and observations indicate that managing cattle by alternating watering points is possible within the extensive grazing systems of the Barkly Region. This investigation has been able to demonstrate the increases in perennial grass species gained through the alternate waters management system. The overall losses or benefits of managing grazing through alternating watering points will be derived at the end of the investigation.

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