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# THE WESTERN TGP PROJECT- PARTICIPATIVE EVALUATION OF INNOVATIVE APPROACHES TO MANAGING TOTAL GRAZING PRESSURE (TGP)

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## INTRODUCTION

The Western Total Grazing Pressure (TGP) Project aims to evaluate options for managing TGP through landholder initiated large scale trials. The eight participating landholders proposed practical and realistic innovations for managing TGP on their properties and have entered co-learning arrangements with agencies (NSW Agriculture and Department of Land and Water Conservation) to evaluate these innovations. Management practices being evaluated as part of the project include time controlled grazing, rotational grazing, kangaroo exclusion, and stocking rate adjustment. The project is funded by the WEST 2000 Plus program.

## TRIAL OBJECTIVES AND APPROACH

The objectives of the eight trials involved in the project are;

1. Determine the effect of rotational grazing on rangeland pastures, animal production, and economic performance. (Hillston)
2. Determine if rotational grazing improves pasture productivity, and the impact non-domestic animals have on pasture response. (Cobar)
3. Determine the effects of kangaroo exclusion on pasture condition and animal production. (Tilpa)
4. Determine the effects of kangaroo control and stocking rate reduction on rangeland pastures and animal production. (Wilcannia)
5. Evaluate the effects of planned grazing on landscape function, vegetation response, and animal production. (New Angledool)
6. Determine whether a management strategy that involves reducing TGP, crocodile seeding, burning and goat grazing will improve native perennial pastures. (Cobar)
7. Evaluate the effects of reduced stocking rate on pasture condition, animal production and economic performance with or without the re-establishment of forage shrubs. (Menindee)
8. Compare the effects of continuous (set) stocking and time control grazing on pasture growth and composition. (Wentworth)

The participating landholders were encouraged to identify management innovations that they could implement to address issues relating to the management of TGP, that were relevant to their property or district. The landholders had significant input into setting the objectives and developing the design of the trials on their properties.

## METHODOLOGY

The infrastructure required to implement the trials on the eight properties, including fencing and watering systems, has been developed by the landholders. The trial sites are distributed over a broad geographic area of western NSW, and range in size from 1,000 ha to 10,000 ha. The sites are located on a number of different rangeland country types including belah bluebush, mulga, northern flood plain, and southern grassland. The trials will be managed under commercial conditions.

During the trials the landholders, in collaboration with agency staff, will collect data relevant to vegetation, kangaroo population, animal production, paddock stocking history, and climate. The sampling design and data collection techniques have been chosen to be relevant to landholders and easy to implement, while also allowing some statistical testing of proposed hypotheses.

Vegetation sampling will be conducted in autumn and spring each year for the duration of the trial. Ungrazed enclosure sites will be established in the trial paddocks. This will allow each treatment to be tested against an ungrazed control, and will provide evidence of the treatment effect. Vegetation sampling is conducted within and outside the enclosures on paired and unpaired sampling sites. The majority of the techniques used for vegetation monitoring are taken from the Glove Box Guide to Tactical Grazing Management (Campbell and Hacker, 2000). Vegetation sampling was initially carried out in autumn 2002 to establish base data.

Kangaroo populations are estimated using the step-point transect procedure (Campbell and Hacker, 2000). Estimates of kangaroo populations recorded before and after the erection of control fences will be compared. Kangaroo population will continue to be estimated at least twice a year for the duration of the trials.

Paddocks involved in the trial will be stocked according to set guidelines to ensure conclusions can be drawn about the effects of implementing the management innovations on animal production. Stocking rates in the treatment and control paddocks will be adjusted simultaneously to maintain the integrity of the treatment.

Economic data will be collected for a cost benefit analysis of the management practices to be completed. Climatic data will also be recorded to allow a greater insight into pasture response and changes in composition over time associated with the management practices.

## **FUTURE DIRECTION OF THE PROJECT**

The project is currently in its early stages. The eight trials will be operational by October 2002. It is expected that the trial will run for at least 5 years. The broad scale, long term, and commercial approach of these trials will generate practical results that should provide convincing evidence to participants and other pastoralists of the effects of the management innovations on vegetation condition and animal production. A number of kangaroo population estimates have been completed and a preliminary indication of the effectiveness of a range of fencing alternatives for excluding kangaroos will be available before 2003.

## **Information Transfer**

The strong landholder involvement in the project is expected to greatly increase the rate of information transfer of the results generated from the trials. The participating landholders will assist with the promotion of the project and communicate the results of their trial to the pastoral community of the Western Division. The landholders will be involved in writing newsletter articles and running field days promoting their trials. Involvement of the participants in other groups, such as BESTPRAC and Landcare, is also increasing the awareness of the project throughout the pastoral community. The participating landholders will be given the opportunity to co-author any papers that publish the results of their trials. The project will also be publicised beyond the pastoral community of the Western Division of NSW and convey a message of landholder participation and sustainability.

## **REFERENCES**

Campbell, T.A. and Hacker, R.B. (2000). The Glove Box Guide to Tactical Grazing Management for semi-arid woodlands. NSW Agriculture. Dubbo.