# APPLICATION ABSTRACTS

## Range condition assessment in bladder saltbush (*Atriplex vesicaria*) communities

*A.D. Wilson, G.J. Tupper and D.J. Tongway*

Changes in the condition of saltbush lands were analysed in terms of plant type and quantity, forage production and soil fertility. The results show that these changes may be characterised by measurements of canopy cover of the major perennial and biennial plants.

The presence of saltbush is an indicator of good condition in all aspects. However, when the bush is lost through heavy grazing, it does not necessarily indicate a loss of forage productivity or an increase in erosion. The bush may be replaced by either desirable or undesirable plants and an assessment of these plants is needed to determine change in forage productivity and soil stability. Separate indices of saltbush, forage production, species change and erosion surface, based on canopy cover measurements, are proposed for the assessment of the condition of saltbush lands.

## Effect of sowing depth and seedling morphology on establishment of grass seedlings on cracking black earths

*L.A. Watt and R.D.B. Whalley*

This study examines grass establishment on black earths and suggests means by which it may be improved.

Deeper plantings would appear to be a relatively simple way of improving the establishment of some species.

Selection and/or breeding for a well developed primary root and a low ratio of shoot to root in the seedling stage, should result in grasses which can establish better in this soil type.

## The importance of plant density, plant basal area and plant mass per unit basal area as factors influencing the herbage mass of some native perennial grasses

*G.M. Lodge and A.C. Gleeson*

Changes in the herbage mass of an individual species within a pasture may occur as a result of changes in either the number of plants per unit area (plant density), the plant basal area, or the mass per unit of basal area. A method of assessing the relative importance of each of these three components of herbage mass is presented for four native perennial grasses. Data collected using this method will enable the response mechanisms of different species to be monitored and so will lead to a better understanding of the processes of change in species composition with management.

**Drought relief schemes for the 'pastoral zone'**

*I.B. Robinson*

The implications of this paper are for the managers and policy formulators associated with drought relief measures.

What emerges is that relief measures, which are currently available, are partially defective from both economic and conservation points of view. The challenge is to devise longer-term assistance which does not have similar defects and which, hopefully, may lead to a situation in which Governments are able to reduce the level of short-term assistance.

**Land management and its impact on water yield on the Northern Tablelands of New South Wales**

*P.A. Wright*

The advent of new pasture species, improved establishment techniques, and aerial seed and fertilizer application in the post-War years, has led to widespread transformation of a native pasture store stock industry on the Northern Tablelands of New South Wales to intensive fat stock and woolgrowing on highly improved pastures.

Whilst this has brought significant economic and social benefits to the area, it has also induced greatly increased demands on available water supplies, whilst at the same time the amount and frequency of effective water run-off from pasture land has been reduced, and there has been a deterioration in the nature and permanency of streams and rivers. The overall effect can be described as a man-induced semi-permanent water drought in rainfall conditions which suffice for effective pasture production. In times of actual drought the ensuing water shortage is greatly exaccerbated.

A study of a river valley catchment area typical of the Tablelands has been defined and the problem quantified. From this it is evident that specialised research and extension is a priority need to determine improved method and application techniques in water management.