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RE-DEFINING CARRYING CAPACITIES IN THE ASHBURTON RIVER CATCHMENT IN WESTERN AUSTRALIA

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INTRODUCTION

A joint rangeland survey team from the Department of Agriculture and the Department of Land Information has the responsibility for determining carrying capacities for the pastoral areas of Western Australia. Potential carrying capacities for land systems in the Ashburton River catchment of Western Australia were first estimated from data collected during the rangeland survey of the area in 1978 (Payne *et al.* 1988). These figures suggested a sustainable level of total grazing pressure assuming that all pastures were in good range condition, the entire pastoral lease was adequately watered for the management of stock, and seasonal conditions were average.

THE PARADOX OF BUFFEL GRASS

Since the time of the survey buffel grass (*Cenchrus ciliaris*), and to a lesser extent Birdwood grass (*C. setigerus*), has established widely throughout the catchment. Buffel is a perennial exotic grass widely regarded in the Western Australian pastoral industry as a very useful feed source for livestock. It is highly palatable when green and relatively resistant to grazing. It colonises readily on alluvial plains, especially on areas that have been overgrazed or disturbed. However, it is considered a pernicious weed by conservationists because it is known to reduce biodiversity as it can form a monoculture to the exclusion of native grasses. A paradox exists in its classification as both a valuable pasture plant and a significant environmental weed.

RE-ASSESSMENT OF CARRYING CAPACITY

In April 2001 and April 2002 the rangeland survey team re-inspected parts of the original survey area to determine the spread of buffel. One of the team members was present during the original survey and recalled visiting the sites thirty years previously. The survey team found that buffel grass had spread extensively since the early survey (Payne *et al.* 2004). In some cases, areas that were mapped as severely degraded and eroded in the 1970's had recovered well with buffel and other native grasses such as Roebourne Plains grass (*Eragrostis xerophila*). However other, more saline, areas had not responded, even with regeneration treatment.

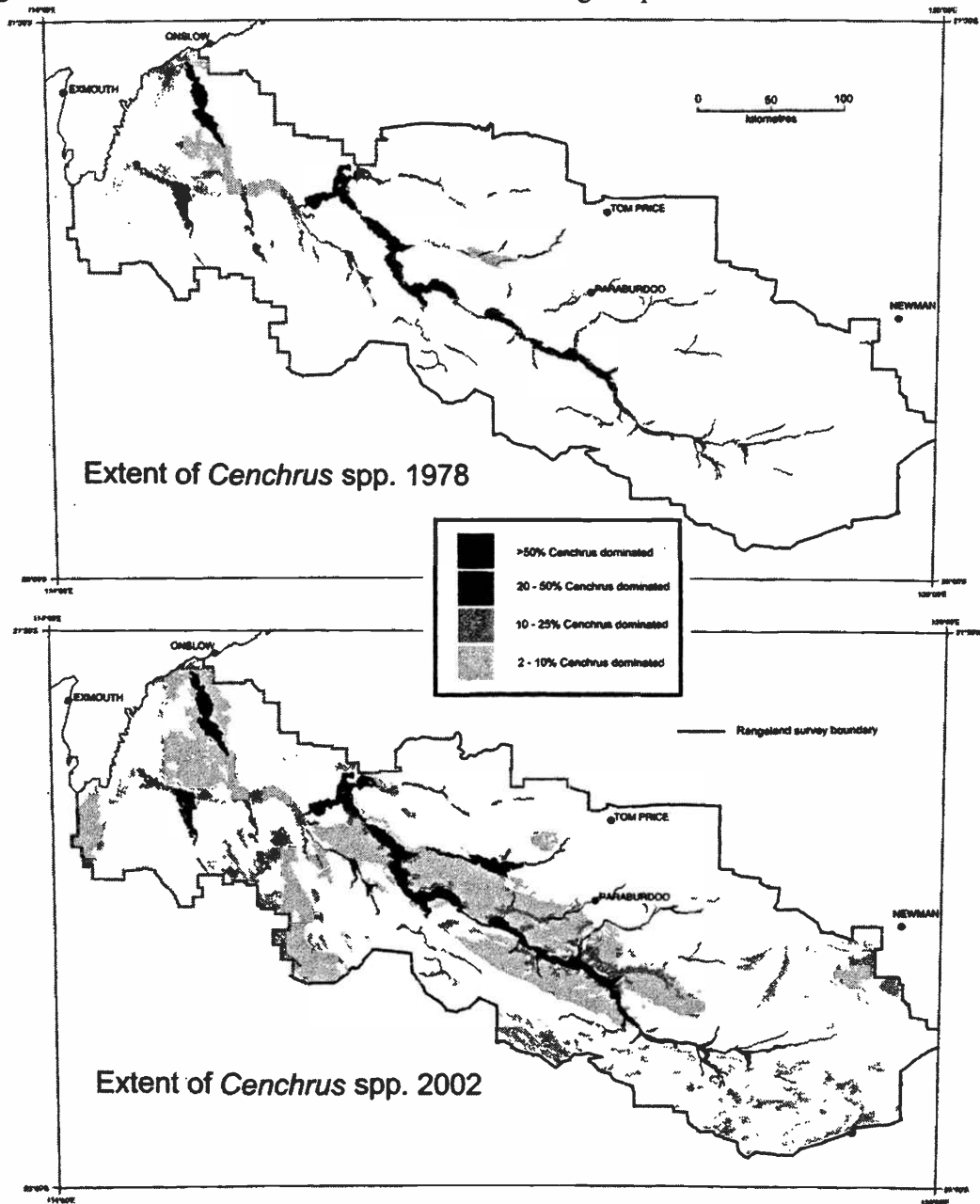
The widespread establishment of buffel grass has significantly increased the carrying capacity of the area. Buffel grass pastures are more productive than native pastures; buffel grass pastures in the Ashburton survey area were rated at nine hectares per cattle unit (ha/cu) while native tussock grasslands were rated at 15 ha/cu and shrublands at more than 55 ha/cu.

On one river frontage land system the proportion that is dominated by buffel grass increased from 5% in 1978 to 64% in 2002. In the hill systems where the spread of buffel is restricted to drainage lines a typical increase was from 0 to about 5%.

.. Bulloo Downs wouldn't be worth a kick in the pants
only for the buffel grass - buffel grass saved Bulloo
Downs, the more of it the better ..
Peter Hall, Bulloo Downs Station, April 2002

Based on the re-assessment and consultation with pastoralists a potential carrying capacity was calculated for each station in the survey area. This resulted in the potential carrying capacity of Ashburton stations being increased by an average of about 60%. For stations with extensive Ashburton River frontage the increase was up to 150%.

The figures below show the extent of buffel and Birdwood grass pastures in 1978 and 2002.



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