



**HISTORICAL CHANGES IN LAND
CONDITION IN THE SOUTH AUSTRALIAN
ARID PASTORAL ZONE**

by

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Frontispiece: Travelling in the far north collecting historical records - just out of Birdsville, Queensland.

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ABSTRACT

During this project, historical changes in land condition of two north-eastern pastoral districts of South Australia were examined. Changes in rangeland condition, from 1880 to 1994, were assessed from historical data. The data was compiled from a variety of sources, including pastoral records, State archives, and personal observation. Information was also collected on four of the main factors that influence rangeland condition - stock, rabbits, kangaroos, and rainfall.

The two regions of interest were the North East Pastoral and the Marree Soil Conservation Districts (SCDs). A methodology, involving classification of all reliable historical data on a five-point scale of land condition, was developed for the North East Pastoral SCD. The scale, specifically designed for the area, was based on plant cover and soil stability, the two features which could be most easily and reliably judged from the historical data. Rigorous criteria were used to extract 580 pieces of reliable data on historical land condition for the North East Pastoral SCD, from the many thousands of records examined. The classified data was then analysed graphically and statistically.

Graphs of classified data, and a land condition index, showed that land condition deteriorated rapidly from the 1880s to the turn of the century, remained low until the 1930s, and has since improved substantially. These trends are derived from the classes of broad-scale plant cover, and do not include detail of more subtle indicators of condition, such as biodiversity or shifts in species composition.

The classification method, the main focus of this project, was found to be a useful approach to organising information from disparate sources for the North East Pastoral SCD, largely due to the homogeneity of the area and the smaller size of stations. The method was unsuccessful in the Marree area, due to the vastly contrasting land systems, each with internal heterogeneity, intermingled throughout the area. The sheer size of the area also limited the number of historical records for each land system, as well as the amount of land that could be usefully assessed during this project.

The results are discussed in terms of the value of historical context for assessments of land condition, the limitations of the methods employed, and the current debate on land condition in the rangelands of South Australia.

DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University and to the best of my knowledge, it contains no material previously published or written by any other person except where due reference and acknowledgment is made.

I give my consent to this thesis being made available for photocopying and loan.

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ABBREVIATIONS AND ACRONYMS

ABARE	Australian Bureau of Agriculture and Resource Economics
CSIRO/CSIR	Commonwealth Scientific and Industrial Research Organisation
DENR	Department of Environment and Natural Resources, South Australia
MARREE SCD	Marree Soil Conservation District
NEP SCD	North East Pastoral Soil Conservation District
NSW	New South Wales
PCC	Plant Cover Class
PCI	Plant Cover Index
PCS	Plant Cover Scale
PMB	Pastoral Management Branch of DENR
SA	South Australia
SAFF	South Australian Farmers Federation
SAPP	South Australian Parliamentary Papers
SCD	Soil Conservation District
SE's	Sheep Equivalents