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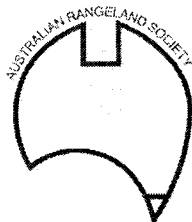
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50-YEAR CHANGES FROM PHOTO-PAIR COMPARISONS IN THE ARID ZONE OF SA

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BACKGROUND

From the early 1940s, pastoral inspectors were appointed to the then newly established Pastoral Board, under the *Pastoral Act* 1936. Their purpose, which is largely unchanged today, was to observe and report on the condition of leases issued pursuant to that Act. The first inspector was Cecil Goode, a person 'before his time', so to speak, in that he took many 'precisely' recorded and annotated photographs of all his inspection expeditions. These now form part of an invaluable historical collection currently housed within the Pastoral Management Branch at Kensington.

In 1990, new pastoral legislation, the *Pastoral Land Management and Conservation Act*, came into operation. This Act specified, for the first time, that all Pastoral Leases in the State be assessed as to their current condition, and a monitoring system be established to determine future trends. It was realised that these photographs should, if the sites where they were taken could be located, provide some invaluable clues as to the changes which have taken place in the last half-century or so. This initiative was given further stimulus by examination of the value of similar work over a longer time period overseas, particularly that of Hastings and Turner (1965) and Progulske and Sowell (1974).

METHODS

Inspired by this overseas work, and successful relocation of one or two of the old photo-sites, we began in 1991 a programme of gradual cataloguing and storage of the collection, so that as each lease was assessed, an attempt could be made to relocate any old photos as may exist. Many of the photographs had never been properly filed or archived, and negatives are missing in some cases as a result.

As opportunity permitted, these photographs have been systematically relocated where possible or practicable, and the prints produced at the same scale for comparison purposes. We have also experimented with digital scanning techniques to enable this scale-matching to be more efficient, and as a long-term storage medium of 'Goode Books' for which there are no negatives.

For each successfully re-located site, the following detail was recorded if available:

- Composition and structure of existing plant communities within the field of view of the recent photo, and likely original vegetation composition.
- Discursive analysis of the changes which have taken place, based on the above.

These comparisons were then collated for regional, vegetation (pasture) type or species-specific general trends. The most representative set(s) of photo-pairs have been selected for inclusion in the final book which will report the overall findings from this project. Where such changes are typical of a number of re-located photo-pairs, an in-depth analysis of possible causes may be carried out, possibly related to common attributes of the sites - region, soil type, distance from water, pastoral stocking history, feral animal impacts etc.

RESULTS

As the project is only part-completed, some preliminary visual analyses only are presented. Extensive relocation efforts have concentrated on the area within about 40 km of Yunta in the North-East Pastoral District, and some leases in the Eastern Flinders Ranges. The general findings for the north-

east pastoral country (along the Barrier Highway towards Broken Hill) are that there is variable but generally improving land condition in many areas.

Some specific, and surprising, findings so far have been:

- Most mallee communities are much thicker and healthier in appearance than in the 1940s and 1950s - a reflection of the extensive cutting which occurred earlier this century.
- Other tree species, such as sugarwood (*Myoporum platycarpum*) and Mulga (*Acacia aneura*), have declined markedly in most areas, probably reflecting the lack of regeneration over the period preceding and following the date of the original photos, most likely as a consequence of continuous rabbit grazing pressure.
- Short-lived shrub species such as *Dodonaea* spp. and *Acacia victoriae* have increased markedly on many sites, probably as a result of the extraordinary rainfall years of 1973-74. However, as *A. victoriae* in particular is a short-lived species, some populations may have come and gone in the intervening period.
- Many eroded and completely bare sites in 1943-54 have now been extensively colonized by the chenopod shrubs *Atriplex stipitata*, *A. vesicaria* and *Maireana pyramidata*.
- In almost all photographed areas showing a current dominance of nitre bush (*Nitraria billardierei*), this shrub was not evident in those areas in the original photos.
- None of the 70 odd photos relocated to date show a deterioration in condition over the intervening 50-year period.

Our final intention is to produce a book illustrating changes from these photo-comparisons by the end of 1996, as a companion volume to the recently produced book 'In the Interest of the Country: A History of the Pastoral Board 1893 to 1993' (Donovan 1995).

The poster will contain a series of the more interesting photo-comparisons using conventional photographic techniques and digitally scanned image enhancement methods.

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