

REVIEW OF MATERIALS PROVIDED UNDER FOI REQUEST, SEPTEMBER 2017

By Dr William Taylor*

The key document is a report provided by CSIRO, “Relationships between vegetation condition and kangaroo density in lowland grassy ecosystems of the northern Australian Capital Territory”. The senior author, Dr Robert Godfree, is an experienced and respected field ecologist specialising in native plant ecosystems. The report is an analysis of data collected in 2009, 2012 and 2013.

An important feature of the CSIRO report is that it starts with a non-prejudicial question, “to determine whether relationships exist between kangaroo density and vegetation condition in Canberra’s lowland grasslands and grassy woodlands” (p x, Executive Summary). This is in marked contrast to reports by ACT staff that start with the proposition that kangaroo density needs to be controlled.

The CSIRO report “could not identify any upper limit of kangaroo density beyond which vegetation richness, diversity and overall condition declines” (p x). The authors noted that few of the study sites had densities greater than 3 kangaroos per hectare.

Two other important conclusions of the report are:

1. “This study could not identify an optimal kangaroo density that maximises richness diversity and condition.” (p x)
2. “At the site level, changes in vegetation structure and composition varied more between years, which may be associated with different prevailing climatic conditions, than with kangaroo densities.” (p x)

In marked contrast to the CSIRO report are two reports from the ACT government, “Project design for research on kangaroo impacts in Canberra Nature Park” and “Project Plan: Kangaroos and Conservation - Researching the relationships between kangaroo density, herbage mass, pasture floristics and reptile diversity in grassy ecosystems around Canberra”. In the Overview section (p 3) the first report begins with the proposition that the need to control kangaroo numbers is well established, with references to the usual publications cited by the ACT government. The objective of the second report (p 2) is to provide a basis for the management of kangaroo populations, again showing the management mindset.

A report authored by Rob Armstrong, Environment & Sustainable Development Directorate, ACT Government, “Interim analysis of relationships between vegetation condition and kangaroo density in grassy ecosystems of the northern ACT”, looked at data collected in 2009 and 2012. It is likely these data are the same as those analysed in the CSIRO report, along with additional data from 2013 in the CSIRO report. In the Executive Summary, it is claimed that the report “provides interim guidance as to the optimal kangaroo densities for site

management to protect floristic values ...” However, this statement is contradicted by the conclusions from the CSIRO study.

An examination of the figures (figs 4, 6, 8) plotting floristic value score (a measurement that indicates the conservation value of a site) against kangaroo density for various types of ecological communities shows major variation in scores for each kangaroo density. Even at densities of 2.5 – 3 kangaroos per ha the scores are similar in range to lower kangaroo densities, with several exceptions where intermediate densities show some higher scores. There is a tendency to support the so-called intermediate disturbance hypothesis (some disturbance, in this case grazing, is best to reduce the influence of dominant species such as tussock grasses) but the data also suggest that other factors influence floristic value scores. Similar variation is found when kangaroo density is plotted against species richness for the same communities (figs 5, 7, 9).

The fact that there were a wide range of floristic value scores or species richness measurements for each kangaroo density means there is a scatter of points in each of figures 4-9. The small numbers of samples and the scatter of data points make it hard to have any confidence in the author’s attempts to derive optimal kangaroo densities. And it is also hard to have confidence in conclusions claiming an accuracy of 0.01 kangaroos per ha.

Table 25 in the Conclusions section presents “Interim kangaroo densities to promote floristic diversity within grassy ecosystems of northern ACT and Googong Foreshores”. However, just below that table the author mentions that there are a number of other factors besides kangaroo density that may affect vegetation structure, such as the grazing history of the site, climatic conditions, previous fire and drought, soil conditions and nutrients, etc. “The low correlation between kangaroo densities and vegetation condition metrics is likely due to the variable nature of grassy ecosystem condition relative to a number current and historical site factors not related to kangaroo densities ...”

Nothing in the documents provided under this FoI request provides compelling evidence that lethal management of a native animal is required for protection of biodiversity.

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