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Red kangaroos can set back range regeneration

By Andrew McLaughlin

After years of severe drought, stocking rates in Western Australia's arid rangelands have been kept low since the 1970s to allow native pastures to regenerate. As well, extensive re-seeding programs have started and sheep and cattle grazing on these areas has been restricted or eliminated.

However, pasture regeneration in the rangelands can only succeed when grazing by all animals - sheep, cattle, kangaroos, goats, camels, brumbies and donkeys - is controlled.

Many more red kangaroos roam throughout Western Australia's pastoral areas today than 20 years ago. The installation of windmills and troughs to water domestic livestock has allowed kangaroo numbers to increase, and they now roam over larger areas of potentially suitable habitat than would otherwise have been possible.

The map shows the distribution of the red kangaroo in Western Australia. Many more kangaroos roam throughout the arid pastoral area today than 20 years ago. Photo: Lindy Lumsden.

1 Now at Derby.
The red kangaroo - a history of increase

The red kangaroo (*Macropus rufus*) roams over about 75 per cent (1.9 million sq. km) of the State, while pastoralists graze sheep and cattle on just over half of this area (see map).

One of the management priorities for pastoral land use is to maintain the productivity and stability of the native vegetation and soil to achieve sustainable use by domestic livestock, kangaroos and other native and feral animals.

As a result of the establishment of pastoral industry in the arid rangelands, red kangaroos have benefited and become more abundant because of:

- The provision of permanent watering points throughout large areas of potentially suitable habitat that kangaroos would not have otherwise exploited because of the lack of natural water.
- Structural changes in rangeland vegetation brought about by the grazing of domestic stock.
- Control of dingoes over much of the red kangaroos' range, which has virtually reduced the impact of predation on the kangaroo population.

In 1971, there were an estimated 1.25 million red kangaroos in the State's pastoral zone.

The Australian National Parks and Wildlife Service conducted the first large scale, statewide aerial survey of red kangaroo density and distribution for the Western Australian Department of Conservation and Land Management in 1981. The survey indicated a population of 969,000 kangaroos. This lower figure was attributed to some years of drought between 1975 and 1980.

Further surveys were carried out in 1984, 1987 and 1990. The results showed a 145 per cent increase in red kangaroo numbers over the 10 years (see Table).

Kangaroo dung counts on Three Rivers Station

Three Rivers Station on the headwaters of the Gascoyne River covers just over 350,000 ha and is 230 km north of Meekatharra. As with other pastoral leases in the region, it includes areas of degraded land that are a legacy of over-use during the industry's early history. Since 1980, stock numbers have been kept low to allow native pastures to regenerate.

The station has 25 permanent watering points which are accessible to all grazing animals.

From January to August 1991, the amount of red kangaroo dung surrounding all permanent watering points on Three Rivers Station was surveyed.

The aims were to find the level of kangaroo grazing pressure and to compare this level with that of grazing cattle in the area.

During dry periods huge numbers of red kangaroos grazed closer to watering points. Kangaroos represented up to 79 per cent of the total grazing pressure on the vegetation and soil, while the total domestic cattle herd made up the rest.

During cooler periods and after seasonal winter rains, kangaroo density decreased dramatically as the animals grazed further from permanent water. However, kangaroos still

### Increase in red kangaroo numbers from 1981 to 1990

<table>
<thead>
<tr>
<th>Year</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>969,000</td>
</tr>
<tr>
<td>1984</td>
<td>1,731,300</td>
</tr>
<tr>
<td>1987</td>
<td>2,335,900</td>
</tr>
<tr>
<td>1990</td>
<td>2,373,000</td>
</tr>
</tbody>
</table>

Source: CALM records
Kangaroo control methods
Western Australia controls its kangaroo numbers by commercial culling for pet meat and skins. The Department of Conservation and Land Management regulates the number of kangaroos harvested each year through a year by year quota system. Once the Minister for Conservation and Land Management is advised of the quota for a particular year, tags are distributed to licensed shooters, on their request. Each shooter operates to supply a licensed processor, who then sells the kangaroo product.

Since this 'control' system started in 1971, kangaroo cull quotas have rarely been filled because there is not enough demand for the product and as a result the kangaroo processing industry is unlikely to expand (see Figure 2).

Grazing pressures
Most of the land degradation in the rangelands is in the form of pasture deterioration, where there has been a major reduction in plant cover associated with minor soil losses. There are also some severely degraded areas that will be impossible to rehabilitate.

Leaseholders can rehabilitate degraded areas by totally destocking them of sheep or cattle, lowering stocking rates, reseeding and cultivating, and by spelling pastures.

For these strategies to be successful, all grazing by domesticated stock, feral and native animals must be controlled in regenerating areas.

Research by Department of Agriculture adviser George Gardiner in 1986 concluded that rangeland management strategies based on the reduction or removal of livestock were not enough to guarantee improved range condition if the kangaroo populations were not similarly controlled.

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Diagram B. In poor seasons, kangaroos and domestic livestock congregate around permanent watering points, competing with one another for feed and water.

Diagram A. After good rains, kangaroos get enough water from their feed for them to survive and roam throughout their natural range.

Figure 2. Since the introduction of the quota system for harvesting kangaroos in 1971, quotas have rarely been filled. The quotas set do not keep pace with the increasing kangaroo population.

The future

Red kangaroos are an integral part of the arid rangeland ecosystem and they must be maintained throughout their natural range. At the same time, appropriate numbers of sheep and cattle must be able to graze pastoral lands, and the processes of range regeneration must not be inhibited.

Where large populations of kangaroos concentrate around permanent water sources during dry years, the range resource becomes overused and kangaroos compete with pastoral stock. Kangaroo numbers here must be controlled to sustainable levels.

Bibliography


