

TreeNote

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Control of the Australian ringneck parrot by trapping in south-west Western Australia

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When a parrot species reaches large numbers within an agricultural environment its impact on that environment can be severe. This has been the case for the Australian ringneck parrot in agricultural shires east of the Darling Scarp in the south-west of Western Australia. (Note, the name 'Australian ringneck' is now the preferred usage in describing the two races of ringneck parrot found in the South-West - the yellow-bellied Port Lincoln parrot and the green-bellied 'twenty-eight', and their intermediate forms.)

This TreeNote describes a two-year trial to gauge the effectiveness of trapping as a means of controlling these birds. The results show that in spite of the removal of more than 60,000 parrots by trapping, no regional scale reduction in parrot numbers or extent of damage was observed. However, the study yielded valuable information on improved trapping methods. Parrots strip bark and damage stems and growing points in trees. (See TreeNote No. 26 'Parrot damage in agroforestry in the greater than 450 mm rainfall zone of Western Australia' for more details on damage by parrots and the effects.)

Control measures

While the Australian ringneck, being a native species, is protected under the provisions of the *Wildlife Conservation Act 1950*, it is also a declared pest of agriculture under the *Agriculture and Related Resources Protection Act 1976*. To date, attempts to control the Australian ringneck have been by shooting and only recently by trapping.

Open season shooting does not seem to have been successful in controlling Australian ringneck numbers and the damage they cause on a broad scale. However, some individual farmers have reported local success in controlling these parrots when they have removed 1000 to 2000 by shooting within a season. There has also been some success in limiting parrot damage to some commercial tree plantations by intensive shooting. Both situations have involved a significant input of time and consistent, focused effort by individuals.

Proposal to use trapping as a control measure

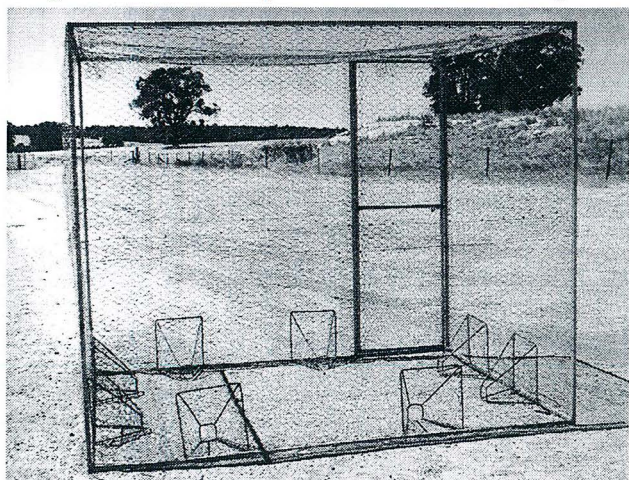
In response to a growing concern about the damage caused to commercial and land care tree plantations and native plants, it was proposed by farmers that trapping of Australian ringnecks might be an effective solution to the problem.

A trapping trial was developed to establish whether coordinated trapping by farmers, over a period of two years in a large area of farmland (160,000 ha) could significantly reduce Australian ringneck numbers and

the damage they caused. The trial was not designed to measure the effect of trapping at an individual farm level (localised effect). The results of this trapping trial are summarised below. Experience from this trial also gave some insights into how to trap more effectively to improve parrot control.

Regional trapping trial

The Australian ringneck trapping trial was conducted in the Kojonup area from February 1997 to April 1999. The trap design was a 'walk in' trap. Dimensions enabled people to walk into the trap to release non-target birds and to dispose of the Australian ringnecks.



'Walk in' parrot trap of the type used in the Kojonup trapping trial. Note entry ports for birds and grain bait on the ground.

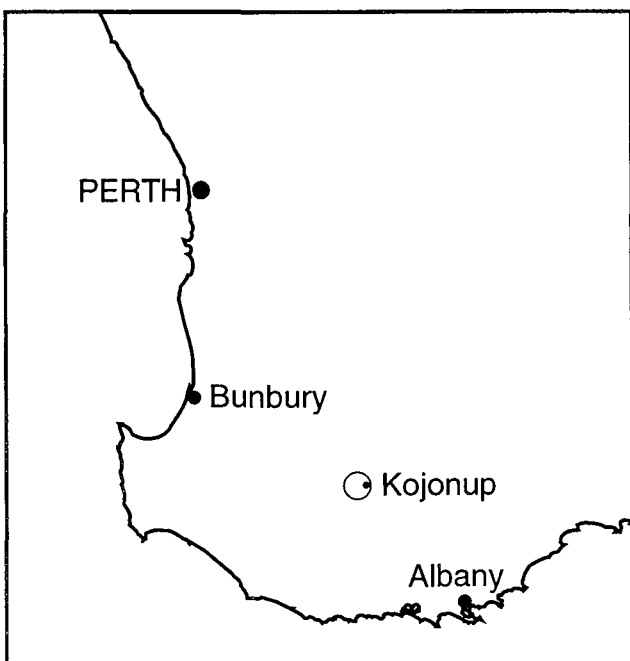
Trapping within the 160,000 ha area was coordinated by the Kojonup Landcare District Committee (LCDC). This area included at least 93 landowners and associates. Given the extensive parrot damage recorded in this region many of these people were highly motivated to trap. This provided the opportunity to test if a trapping program could have a regional effect on parrot abundance and damage. Shooting of parrots also continued in this area as it had done in the past.

Parrot damage to Balga grass tree (formerly called 'blackboy') stands and river red gum (*Eucalyptus camaldulensis*) plantings were monitored before and during the trapping period. These monitoring sites rarely coincided with trapping sites as most trapping sites were located near farm houses or sheds. The monitoring sites would therefore only be expected to pick up a reduction in parrot abundance and damage if such a reduction had occurred consistently throughout the 160,000 ha area.

Parrot damage can vary from year to year. To determine whether trends observed in the trapping area were the result of factors other than trapping, two control areas (one north-west and one south-east of the trapping area), were also monitored for parrot abundance and damage. Shooting, but no trapping, occurred within control areas.

Participation, trapping effort and number of parrots removed

Of the 93 landowners and associates, 71 trapped, 12 only shot (that is, nearly 90% took control measures) while 10 neither trapped nor shot Australian ringnecks during the two-year trial. There was, on average, one trapping/shooting location per 1930 ha (total of 83 locations). The participation rate for trapping increased from 50% of the landowners and associates in the first year to 72% in the second year.



Trapping area near Kojonup as indicated by circle.

About 65% of those who trapped or shot, removed less than 500 Australian ringnecks within a trapping season. Only three participants in the first year and nine in the second year trapped or shot more than 1000 Australian ringnecks in a season (1000 to 1600).

Within the two-year trapping period it is estimated that about 63,400 Australian ringnecks were removed (70% trapped and 30% shot) from the trial area. The average number of parrots removed per hectare was low, 0.17 parrots/ha in the first 12 months and 0.22 parrots/ha in the second 11 months. However, this was about 2.5 to 3.3 times greater than the estimate for the pre-trial year.

Extent of parrot damage observed

The extent of parrot browsing damage in grass tree and river red gum sites was widespread and very variable throughout both the trapping and control areas. Twelve of the 22 grass tree sites had more than 85% of the crowns damaged by parrots. Grass tree deaths occurred at most sites and ranged from less than 10% at the low damage sites to greater than 75% at the most severely damaged sites. Twelve of the 20 river red gum sites had more than 90% of the trees damaged. Accumulated lengths of stem damage (that is, an aggregate of lengths of individual stems damaged) at the most severely damaged site, averaged 11.4 metres per tree.

Most damage occurred in the summer months (December to April). Factors such as marri flowering and rainfall events appeared to decrease parrot damage rates.

Was there a regional reduction in parrot numbers and parrot damage?

Changes in parrot abundance and parrot damage were observed during the trial. There was a decline, of similar magnitude, in parrot abundance in both the Trapping and Control areas. There was a slight decrease in parrot damage to grass trees in the Trapping area when comparing the three February surveys. However, the decrease was not large enough to be significantly different from the trend in the north-west Control area. The river red gums showed decreased damage levels in both the Trapping area and south-east Control from February 1997 to February 1998, but this was followed by a large increase from February 1998 to February 1999. The north-west Control sites had consistently high damage.

The changes in parrot abundance and damage could not be strongly associated with trapping as any decreases in parrot abundance or damage in the Trapping area were not large nor significantly different from the control areas.

Of the local farmers interviewed from the Trapping area, about half considered that parrot numbers had declined while the others felt that parrot numbers were similar or more abundant than before the trial. In regard to parrot damage, 29% felt there had been an increase, 32% no change and 25% a decrease in damage levels. (The remaining 14% were unsure if damage levels had increased, decreased or remained the same.)



Close-up of grass tree crown that has been heavily cropped by the Australian ringneck parrot. Repeated attacks will eventually kill this tree.

The variability in parrot abundance and parrot damage, whether between sites, between regions or from year to year, made it difficult to identify and measure an effect of trapping.

It was concluded that trapping within the 160,000 ha area over a two year period did not produce a clear regional effect. However, in some cases the removal of high numbers of parrots from near particular monitoring sites resulted in temporary control of parrot numbers and damage at a local level.

Possible factors limiting the regional impact of the trapping trial

Factors that may have contributed to a lack of a regional effect were:

- Not enough Australian ringnecks were trapped and removed from the trapping area (region) as a whole, because:
 - trap design in year one was ineffective;
 - the density of traps was relatively low with one trap/1,930 ha;
 - the participation rate was low in the first year (50%); and
 - the number of parrots removed per trap was not high (less than 500 parrots/trap/season for about 60% of traps).
- Australian ringnecks are not easily trapped in late spring (when the young fledge the nest), or in summer when most of the damage is done. The parrots are not attracted to the dry grain in traps at these times of year.



Typical damage to river red gum by parrots. Bark-stripping has resulted in a broken stem.

- Parrots appear able to move from adjacent areas into areas where parrots have been removed.
- It is possible that even where parrot populations have been reduced, concentrations of them may still cause extensive damage.

Improving effectiveness of trapping

Observation and experience from the trapping trial suggest a number of ways to improve the effectiveness of a trapping program. These are:

- Maximise the intensity of trapping (aim to trap more than 1000 parrots in the first year) by these methods:
 - use a large walk-in trap design for convenience and efficiency;
 - move traps to new sites when bird catch numbers drop. Don't limit the trap location simply to being near the house/sheds/silos. Also offer free access to grain at several locations so parrots become used to feeding and will be readily trapped by a trap in a new location;
 - use several traps simultaneously at a number of sites; and
 - remove parrots during summer, as well as intensively trapping them in autumn and winter. Different baits may be required to lure the parrots into traps in summer. Water in the trap has been tried with some success. If summer trapping numbers are poor, supplement with intensive shooting.
 - Place traps adjacent to sites that need protection from parrot damage.
- Combine this with trapping elsewhere on the property to decrease the effect of parrots moving in to 'fill the space' and to increase the size of the localised effect.
- Systematically involve neighbours or landcare groups in a coordinated control effort.

- Employ other strategies to remove Australian ringnecks where trapping is not effective such as:
 - employing professional shooters to protect commercial crops;
 - physically protecting high value crops, such as orchards, with anti-bird netting;
 - minimise 'available grain' on the farm (grain spillage and open grain storage) through good hygiene practices. District observations show that very large populations of birds build up where parrots have year-round access to grain.

The last item needs further research to determine its effectiveness in Australian ringneck control.

Preference for trapping over shooting

More than 80% of participants interviewed said they preferred trapping to shooting parrots, while another 13% rated both equally. Those that favoured trapping found it to be cheap, time effective and efficient in removing large numbers of parrots.

Almost all trial participants indicated they would use traps to control Australian ringnecks if permitted.

Guidelines for treatment of Australian ringnecks

While for many landholders Australian ringnecks are a 'pest', they are protected under the provisions of the Wildlife Conservation Act 1950 and are enjoyed/respected by many in the broader community as part of Western Australia's natural environment. This places a special responsibility on those trapping, to strictly follow a set of guidelines for humane treatment of Australian ringnecks and other birds inadvertently caught in the traps.

- Check traps daily to minimise injury to captured birds and release all non-target species. If at times (for example, summer) numbers of birds trapped are small, birds should not be left in cages for days on end. Either visit the traps daily or discontinue operation of the traps (for example, tip the trap over on its side or put it into storage).
- Treat captured birds humanely. Control dogs near the traps.
- Provide water in the cages in the dry months of the year.

Trapping licences

Trapping as a method of parrot damage control has recently been authorised in the Shires of Brookton, Pingelly, Wandering, Williams, Cuballing, Narrogin,

West Arthur, Wagin, Woodanilling, Katanning, Broomehill, Tambellup, Boyup Brook, Kojonup, Cranbrook and Plantagenet. The issue of licences, where possible, is under a centrally licensed regional trapping program where landholders work together in cooperation with their neighbours. Where such cooperation is not possible, individual or neighbour trapping programs may operate under damage licences issued by Wildlife Officers of the Department of Conservation and Land Management (CALM).

Enquiries about trapping licences should be directed to the nearest CALM Office.

Further reading

- TreeNote No. 26 (1999). 'Parrot damage in agroforestry in the greater than 450 mm rainfall zone of Western Australia'. Agriculture Western Australia and CALM.
- TreeNote No. 29 (1999). 'Rectifying parrot damage in eucalypts in the greater than 450 mm rainfall zone of Western Australia'. Agriculture Western Australia and CALM.
- 'Parrot damage to blue gum tree crops. A review of the problem and possible solutions' by Peter Ritson (1995). Resource Management Technical Report, No. 150, Agriculture Western Australia.
- 'Loss of grass trees in remnant vegetation' by Shapelle McNee (1998). *In* Western Wildlife Newsletter, Vol. 1, No. 3, p 10. CALM.

Acknowledgments

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