

XANTHORRHOEA PREISSII, or Grasstrees as we commonly know them as in Western Australia, are dying as the result of browsing by parrots in many agricultural areas such as Boyup Brook, Kojonup, West Arthur, Beverley, York, Toodyay and Victoria Plains. Grasstrees are long-lived (to hundreds of years old) and have survived grazing in remnant vegetation due to their height (usually greater than one metre). They are often the only understorey species present within stands of Wandoo, Jarrah and Marri. Farmers have observed the death of Grasstrees from parrot damage as early as fifteen years ago, but damage to individual trees and the loss of whole stands has become most noticeable in the last six to seven years.

The Boyup Brook LCDC (with support from Kojonup LCDC, West Arthur LCDC, CALM and the Conservation Council) initiated a study during 1996 to record damage to Grasstrees by parrots. One of the main aims of the study was to provide evidence that it is a problem, and hopefully initiate support for efforts in management and research to reduce (if not stop altogether) the loss of trees.

The Port Lincoln Ringneck ('28' parrot) is the only species to date that has been observed feeding on *Xanthorrhoea* fronds, which they do during the summer and autumn months. This coincides with the time when the paddocks have dried out and the crops have been harvested, until a month after the first winter rains. In 1996 the damage was greatest in January and March (it dropped in February when the Marri was in flower), and lowest during July to November. During August to November, damaged fronds which were only 2-6cm long, were able to grow to a length of 30-50cm.

I have observed the birds to fly onto crowns, chew off a long frond, place it in one of their feet (holding it like an icecream cone!) and then proceed to chew small pieces off the end of the frond. The parrot eventually drops the long frond to

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LOSS OF GRASSTREES IN REMNANT VEGETATION

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the ground and starts on another one. This is why long sections of frond are sometimes seen at the base of damaged trees. I also watched a parrot feeding on the short damaged fronds of a crown for 37 minutes, where it took a total of 416 bites from approximately 160 fronds.

The parrot does not consume the chewed off pieces (the size of oaten chaff) but rather compresses them between its bill, leaving bite marks along the length before dropping them onto the crown. When parrots feed on the softer, young centre fronds, the pieces of frond are chewed to a pulp before dropping them. It appears that the parrots are after the juice of the frond – not that the fronds are that juicy! They taste a bit like eating grass (and the drying chaff sitting on the crown smells like hay, at least until it starts to rot). It is probable that the parrots are getting a particular nutrient from these fronds at a time when there isn't much else green around. However, it is with much consternation that we see the death of *Xanthorrhoeas* as a result of their activity.

It may be that the Port Lincoln Ringneck has always fed on Grasstree fronds, although very infrequently. Today the parrot is very adept at feeding on cultivated grain (eg stored grain, grain fed to stock, dropped on the side of the

road and in the stubble) as well as introduced pasture weeds (eg Guildford grass, corkscrew, capeweed). Thus it has a large food source available in agricultural areas and the species appears to be doing very well such that they have increased in abundance in many areas over the last twenty years. However, parrots cannot live on dry grain and seed alone. Most parrots feed on some other plant material such as flowers, stems, bark and leaves. Although adult birds may be able to survive on dry seeds for a period of time, the young birds, fledged in spring, may need other sources of food to supplement their diet (eg *Xanthorrhoea* fronds) especially during the summer and autumn months. This needs further investigation.

Six Grasstree sites surveyed during 1996 had high levels of parrot damage. More than 90% of their crowns had most, if not all, of their fronds chewed back by parrots. The death rate of *Xanthorrhoea* trees at these sites was 24% (38 trees out of 161 surveyed from January to November). Given this death rate these sites are likely to lose all their trees with only the blackened stumps remaining. The density of Grasstrees can be quite high, most of the sites surveyed ranged from 102 to 392 live trees per hectare. At one site, where a large number of deaths had occurred, there were only 36 live *Xanthorrhoea* trees per hectare.

What can we do to reverse this trend? Reduce the availability of cultivated grain? Reduce parrot numbers? Provide parrots with a supplement so that they no longer feed on Grasstree fronds? Increase the abundance of their predators? (For example, encourage the presence of carpet snakes, race-horse goannas and possums which predate nests in tree hollows, or birds of prey which predate on young fledged birds.) Encourage the return of the understorey to remnant vegetation to increase the variety and abundance of their natural sources of food?

The relatively high abundance of Port Lincoln Ringnecks is an indication of an imbalance between the factors that allow their

populations to increase and those that restrict their numbers, and the damage they are causing indicates an imbalance in their food supply. There is a sense of urgency to get management strategies, combined with monitoring and research, up and running in order to reduce damage that these parrots are causing.

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