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# A closer look at parrots as pests

Small parrots have been attacking fruit and grain crops in the south of Western Australia at least since agriculture expanded into their native habitats in the early 1900s. The parrots are capable of quickly adapting to new situations so it is not surprising that they have eaten crops.

It is not known whether parrot numbers have increased since European settlement began, but this appears likely. The present landscape of islands of uncleared country interspersed with areas of agriculture appears to favour the survival of the red-capped parrot, western rosella and the Port Lincoln parrot. These species were investigated during a study by Agriculture Protection Board officer **J. L. Long** to assess their impact on agriculture in the south of the State.

The study investigated which species cause damage, how much damage they do and at what cost, why parrots cause damage, when is damage likely to occur, and what will it cost to prevent it?

The research was undertaken at Wickepin, a grain growing area, and at Balingup and Manjimup which are predominantly fruit growing areas. Fruit damage was also assessed in the Mundaring fruit growing area near Perth.

■ Red-capped parrot.



## Eating habits

Before these studies started little was known, except in general terms, of the diets of the three parrot species. As this investigation was biased towards the effects of the parrots on agriculture, crop and gizzard samples were collected from parrots found in or near cultivated areas. Before agricultural development parrots ate a variety of seeds of native trees, shrubs and herbs. Some of these including seeds of eucalypts, casuarinas, hakeas and banksias are still evident in the diet.

The three parrot species now feed on a mixture of seeds from native trees, shrubs and herbs and the seeds of pastures and weeds (see table). Weed seeds from both pastures and waste areas made up 40 per cent or more of the food types eaten by the parrots. Important in their diets were seeds of thistles, capeweed, flatweeds and dock. A large amount of cultivated pasture grasses and subterranean clover seeds was found in the diet of the western rosella at Balingup, especially in late summer and autumn.

Besides seeds, all three species are partly insectivorous; they eat mainly pupae and larvae of a number of insects. Although insects are taken throughout the year, they are eaten in larger quantities just before and during the breeding season. All species of parrots studied, feed insects to their nestlings.

## Damage

All the parrots studied had fruits and grains in their diet. At Wickepin a major portion of the Port Lincoln parrot's diet was grain such as oats and wheat (see table). Some of this was taken from growing crops in spring, but most was scavenged from stubble and around farm buildings. Western rosellas were not seen feeding on cultivated grain crops, but they may do so at times. Neither the western rosella nor the Port Lincoln parrot caused measurable

■ Western rosella (below) and Port Lincoln parrot (bottom), sometimes called the 'twenty-eight'.





damage to growing crops in the areas under study.

The amount of damage caused by parrots in orchards in the Mundaring, Balingup and Manjimup districts was investigated. In these districts, all three species fed on cultivated fruits during the ripening period starting in January. They continued to eat fruit left on the trees or on the ground beneath the trees until September. Most fruit however was damaged in the period from January to April just before the crops were picked for market. The attacks rendered the fruit unfit for market.

Fruit damage was assessed each month during the ripening period on an orchard at Mundaring for one year; on two orchards at Balingup, one for three years and the other for two years; and on three orchards at Manjimup for one year. The orchards were examined monthly from January to May. The numbers of damaged fruits were compared with the amount of fruit picked, and the value of the damage was calculated from prices received for the fruit by growers.

Parrots caused only small losses in these orchards. No orchard suffered a loss greater than 1.7 per cent of the fruit picked nor was the total net income from an orchard reduced by more than \$100. However, the parrots were selective; they attacked certain varieties of apples such as the red-skinned and sweeter types and also some soft fruits (peaches, plums, nectarines) more than other fruits. Damage to single varieties of these fruits was as high as 12 per cent of the fruit picked. In monetary terms, however, this loss did not exceed \$41 per orchard per year for any single variety.

### Conclusions

Research into the biology of these species in the south of Western Australia shows that the parrots turn to eating fruit in late summer-early autumn at a time when other foods are becoming depleted. The availability of particular "natural" food probably determines the extent to which crops are attacked.

Although there is a need for longer term studies of the relationships between food availability and crop damage, this study suggests that rainfall is the determining factor. In years of significant above average rainfall at Balingup there were fewer parrots and less damage to orchards.

Observations in orchards and the diet studies of the parrots show that the red-capped parrot is the chief culprit in damaging apples. The Port Lincoln parrot caused considerably less damage to this fruit during the study and the western rosella played a secondary role, eating apples which had already been attacked by the other parrots. Both the red-capped parrot and western rosella attacked soft fruits, but the role of the latter was not fully determined.

From this investigation it appears that small populations of parrots have little effect on orchard income. However, larger populations than those experienced during these investigations could cause considerably greater losses to fruit crops.

Orchardists will need to decide on the amount of damage which is acceptable and to balance this with the costs of control. The average value of the damage during these studies was about \$9 per hectare. Estimated costs of control using noise-making units backed up with shot-gun shooting could be as much as \$50 per hectare over a five-year period on a six-hectare orchard. Smaller orchards may cost less to protect as the number of noise-making units and number of visits to the location could probably be reduced.

The diet of parrots at Balingup and Wickepin	Percentage of Dry weight				
	Balingup			Wickepin	
	Port Lincoln	Western Rosella	Red-capped Parrot	Port Lincoln	Western Rosella
Seeds/fruit from introduced plants	53	82	62	86	45
Seeds/fruit from native plants	32	3	24	5	35
Insects	7	5	12	2	3
Other items not classified	6	10	11	9	10
Pasture/weed seeds	52	83	49	60	51
Tree/shrub seeds	32	2	25	3	35
Cultivated grain and fruit	2		14	28	
Storksbill				33	4
Oats				21	
Wheat				16	34
Barley grass				8	
Cape weed	11	25			
Casuarinas					30
Thistles	17	10	35		
Eucalyptus	14		23		
Docks	8				
Subclover		26			
Flatweeds		5	8		
Apple			13		



■ Inspecting western rosella nests in the South-West.