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Rabbit kitten survival in the south-west

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Rabbits

Rabbit kitten survival
in the South-West

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In the South-West of Western Australia reliable winter rains allow the rabbit breeding season to extend through winter and spring, and thus a large number of kittens are produced each year.

Studies on the biology of rabbits at Cape Naturaliste (270 kilometres south-west of Perth) and Chidlow (40 kilometres east of Perth in the Darling Range) have shown that at these sites each doe produces about 30 and 27 kittens respectively a year. If all these young rabbits survived, there would be a 15-fold increase in numbers. Within a short time the State would be covered "wall-to-wall" by rabbits.

Studies by Agriculture Protection Board research officers help us to understand why this does not happen, and at the same time point the way to better and more cost effective control strategies.

Survival rates

Earlier studies in other parts of Australia showed that young kittens did not survive as well as older ones, and this was studied in more detail in selected populations in Western Australia. Kittens were trapped when they emerged from warrens, usually at about three weeks old, tagged and released. They were then recaptured at intervals.

The survival rates of kittens born at different times of the year were calculated from one four-week period to the next, until they became adults (Figure 1).

Some kittens would have died in the first three weeks of life, before they could emerge and be tagged. They could not be included in the survival rates which were calculated; these rates therefore over-estimate survival in the first two four-week periods. Nevertheless, a very low percentage of tagged kittens survived to the age of eight weeks.

Survival rates of kittens above that age improved and by the time they were four to five months old their survival rates equalled those of adults. However, adult survival rates were still only about 80 per cent from one four-week period to the next.

The time of year at which kittens were born also influenced their likelihood of surviving until they became adults. Those born between December and March when green feed was scarce, temperatures were high and there was hardly any rainfall, had very low survival rates compared with those born in winter and early spring.

At Cape Naturaliste the survival rates of young kittens at different times of the year were greatly influenced by the occurrence of myxomatosis epidemics. Myxomatosis developed in some winters during the study, but there were gaps of up to three years between outbreaks.

In years with no myxomatosis outbreak, survival rates of young kittens were lowest in December and January. Many of these kittens probably died from thirst or starvation as a result of pasture deterioration. In years with winter outbreaks of myxomatosis, survival of young kittens was lowest in winter and highest in late spring and summer. Those kittens which died in winter may have died from the disease, from other causes, or as a result of the deaths of their mothers.

The reasons for the better than normal survival at the end of the breeding season are not fully known. In some years, the breeding season extended longer into summer after winter myxomatosis than would otherwise have been the case. Because of this, and the higher survival rates of kittens born late in the breeding season, rabbit numbers increased rapidly and quickly replaced animals which died of the disease.

While large numbers of rabbits still die from myxomatosis, the disease alone is not an adequate control measure as populations can rapidly build up again after outbreaks.

Control

It is important to remember the low survival rates of young rabbits when planning control programmes. Most kittens will die from one cause or another before they become adults. The cost of rabbit control is influenced to some extent by the number of rabbits present on an area because more rabbits will eat more bait, or occupy larger warrens requiring more effort to rip or fumigate.

Control programmes should be undertaken when populations are at their lowest level for the year, which is at the end of summer when there are no young kittens. In this way, advantage can be taken of the natural causes of death such as predators, disease and food shortages to reduce the cost of control work.

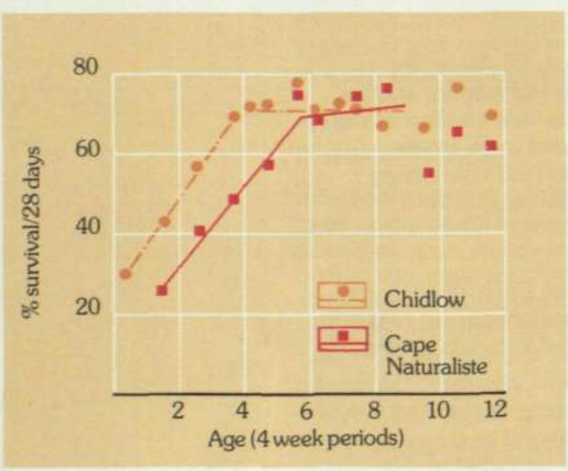

Figure 1. Survival rates of kittens by age at Chidlow and Cape Naturaliste.

■ Trapped rabbit kitten near warren at Chidlow.