The fox: status and control

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How important is the fox as a sheep killer in Western Australia?

NOBODY knows for certain and it is possible that the damage done by foxes is sometimes over-rated, but the fact remains that foxes are reputed to be a real problem to some farmers at lambing time.

It is not known just what percentage of foxes are lamb killers, but we can make a guess that the figure must be very small. If all the foxes which inhabit our sheep-raising areas were killers it would be virtually impossible to carry on a profitable sheep farming venture. As many as six or eight foxes have been seen among sheep in a single small paddock; if all foxes were killers this number would do tremendous damage in a very short time.

Habits of the Fox

The true economic status of the fox has never been determined in Western Australia but a recent research survey carried out in eastern Australia by Mr. D. L. McIntosh of the C.S.I.R.O. Division of Wildlife Research threw a lot of light onto the habits and activities of the fox in farming areas.

Part of Mr. McIntosh's report reads:

The fox is an opportunist, predator and scavenger. It eats a wide range of food, the predominant items being of vertebrate origin, supplemented by invertebrates (insects) and fruits. The composition of the diet is governed by the availability and abundance of acceptable food.

Sheep and rabbits are the most important foods, most of the sheep being obtained as carrion. Foxes continue to visit sheep carcasses, even when these have lost all apparent food value. Foxes undoubtedly utilise beetles and their larvae, scorpions, centipedes, and caterpillars, which shelter under weathered sheep carcasses.

A relatively small proportion of sheep eaten was identified as lamb. It is undeniable that some foxes kill lambs, but whether lamb-killing is confined to "rogue" or "killer" foxes, or is within the general framework of fox behaviour is not known. There seems to be no way of resolving the important question of the number of lambs killed by foxes. Direct observation would seem to offer little prospect of obtaining sufficient suitable data on sheep killing by the fox. The fox hunts mainly at night, is very elusive, and appears to hunt over a wide area. Observations of actual attacks are made very rarely and only by chance.

Sheep is the important "carry over" food of foxes during the winter months in N.S.W., sheep carrion being the dominant food available at this time.
It appears to be eaten from necessity and not from preference. When other foods are abundant, consumption of sheep declines. Combined with rabbit, it is the mainstay of the fox during the vital period prior to the breeding season. If landholders removed sheep carcasses from paddocks during winter, foxes could be hard pressed (in N.S.W.) especially when the rabbit population was low. The rabbit population has been substantially reduced since the introduction of myxomatosis and organised control methods. In Britain, after the spread of myxomatosis, it was shown that voles (small rodents) almost replaced rabbits in the diet of the fox. No figures are available for rabbit consumption by foxes in Australia before the disease. When rabbit numbers are high, foxes eat more rabbit, as was found in Mildura during April 1958, where rabbit constituted 78 per cent. of the total volume of food recorded. It is a fairly safe assumption that rabbit occupied a higher position in the pre-myxomatosis diet of the fox, and at the present time other foods, particularly sheep, have partially replaced it. It has been pointed out that when prey populations are low foxes do little to "importantly limit their future expansion." It is unlikely that foxes will be a major factor in the control of depleted rabbit populations.

Predation on birds was lower than anticipated. The literature has often contained statements, mainly unsupported by evidence, that foxes are a menace to ground-nesting birds. Birds such as the spur-winged plover, pipit, the English skylark, were abundant in the study area, but the number found in stomachs was remarkably low. There is evidence to show that the fox was not the main cause of the decline of the mallee fowl in uncleared areas, although it was responsible for the greatest loss of mallee fowl eggs. Of 1,094 eggs laid in a study area, 377 (34.4 per cent.) were dug up and eaten by foxes.

The small numbers of native mammals in the diet probably indicates a paucity of these animals in the locality, particularly small ground-living marsupials. Figures obtained from wheat-growing areas show that the fox makes use of small mammals, particularly house mice, if they are available. It is conceivable that in areas where terrestrial native mammals are more abundant, predation on them by foxes is more intensive. One research worker states that "foxes, no doubt, have been partially responsible for the decline in numbers of these mammals in the mainland States." The greater abundance in Tasmania of such mammals may be due, at least in part, to the absence of the fox from that State.

(The above information is taken from an article by D. L. McIntosh in C.S.I.R.O. Wildlife Research Vol. 8, pages 1-20.)

Foxes in Western Australia

Until 1916 no foxes were known to exist in Western Australia. One was seen at Esperance in that year and there are records of a fox being shot at Sandstone in 1917. Within a few years of the first recordings foxes had spread almost throughout the State. Although bonuses have been paid on over 893,000 fox scalps during the past 30 years we still have a large and thriving fox population.

It was quite obvious that the bonus system was not exerting any influence on fox numbers and as a result was discontinued in 1958. The Agriculture Protection Board decided that the money which was being spent on the bonus would do much more to control foxes if it were allocated to a system of fox units which were to be used as extension units and to carry out baiting on Crown Lands and reserves. Some contract baiting was also carried out for farmers but this service did not prove popular.

CONTROL

There are six main control methods adopted in W.A. These are:

(a) Shooting (with decoy whistles).
(b) Shooting (with spotlight).
(c) Hunting with dogs.
(d) Trapping.
(e) Poisoning.
(f) Fumigation.

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Decoy Whistles

The use of a decoy whistle, although at one stage quite a popular method of control, has now largely vanished from the farming scene in W.A. However, for those people who have spare time and an interest in "pitting their skill against the cunning fox" the decoy whistle has some appeal. It is interesting to note that the decoy whistle can be very effectively combined with spotlight shooting.

Spotlight Shooting

To most people, spotlight shooting implies a team of shooters on the back of a utility, a mad chase across an open paddock, a blast from a shotgun and "brer fox" will scavenge no more. Although this may be a suitable way of obtaining one's "sport," it is not the most satisfactory method of shooting foxes, and in the confusion caused by spotlight, bouncing vehicle and loaded shotgun, accidents sometimes happen.

It is suggested that a team of three people only be used, a driver, a spotter and a shooter. If a quiet running vehicle is used and paddocks approached "up wind" foxes will often be seen fossicking around a paddock. The vehicle can then be driven quietly to within a reasonable distance, the engine and headlights shut off and several blasts on the fox decoy whistle given to get the fox's interest. In nine cases out of 10 the fox, on hearing the whistle, will turn and trot slowly towards it. Sooner or later he will stop and stare into the light. By now he will be close enough to shoot with a .22 rifle. If a telescopic sight is fitted the accuracy is of course increased.

By using a quiet-running vehicle, a small bore rifle and by avoiding panic, other foxes can be shot. So long as the fox population does not associate the spotlight with being chased, or with excessive noise, those that are not seen the first night will not become "light shy." Once they have been harrassed and frightened the chances of effective control are very much reduced.

Hunting with Dogs

Hunting with dogs may have its uses in certain circumstances but the average farmer has not the time to train a dog (or dogs) for this work. I, personally, feel that the use of dogs has very little to recommend it over quiet spotlight shooting and certainly helps to panic the foxes. It may well be a good method of keeping one's own property free of foxes, probably to the detriment of the neighbours.

Trapping

Trapping is not an effective way of controlling foxes on a large scale. When rabbit trapping was fashionable and rabbits were out of hand, many thousands of foxes were caught in traps annually. This did nothing to control the fox numbers.

Trapping however should not be dismissed so quickly as there are circumstances when it can be useful. If one "rogue" fox is known to be worrying poultry or getting in under a fence by the same route each time, a trap set judiciously in the right place will catch it. However, trapping is not generally used and much better results can be obtained by poisoning.

Poisoning

By far the most effective method of controlling foxes is by poisoning. As was shown in the Eastern States survey, the fox is an omnivorous scavenger and will eat practically anything from insects and meat, to fruits and wild herbage. Because...
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Always use a palatable bait material and place the bait where it will be found readily by the fox.

of this it is an easy animal to poison, provided several facts are not forgotten. These are:

1. Always use a palatable bait material.
2. Use either a carcass bait or a series of small (1 in.) pieces.
3. Place the bait where it will be found readily by the fox.
4. Make sure the taste of the poison (strychnine) does not contaminate the outside of the bait.
5. Be sure to safeguard valuable sheep dogs.

Let us now consider each item in more detail—

**Palatability of Baits**

Foxes are omnivorous and will eat practically anything. A bait favoured by many farmers is a parrot with the poison placed in the throat. Livers and kidneys from slaughtered sheep also make attractive baits as well as suet, fat, butter and fresh meat. There is really no limit to the material which can be used. There are also proprietary fox baits on the market which contain fat as their basic material.

**Carcass or Small Baits**

The usual method used successfully by most farmers is to bait a freshly dead lamb or sheep carcass. A few slits are made around the anal region or into the flanks and poison sprinkled well in. This is called carcass baiting. Foxes will often return on successive nights to feed from a carcass.

The fox must tear pieces from the carcass before eating and often while doing this he takes a portion containing poison. It is generally accepted that a better way is to use the carcass simply as a lure and to place small pieces (about 1 in. cubes) around the carcass. The advantage of small baits is that foxes will usually swallow them whole or with only a casual chew and so do not detect the poison (baits large enough to require chewing should never be used). Small baits made from any palatable material can be laid along pads, or in feeding areas or near places where foxes water. This is generally referred to as wholesale baiting and should be used in conjunction with some method which enables the fox to find the baits.

**Bait Placement**

In deciding where baits should be placed it should always be remembered that the act of laying baits is not enough. A bait laid where it will not be found is better not laid at all. A “scent trail” is usually used in conjunction with wholesale baiting and this means dragging a sheep paunch or other smelly object around where foxes are known to feed. Baits should be dropped periodically along this trail (or placed, if the farmer wants to retrieve them later) in likely spots. The number of baits laid should be increased around water holes or along known pads. As a general rule baiting with a scent trail is the most effective way of poisoning the most foxes. Small baits, which can be swallowed whole should be used.

Sometimes it is advisable to utilise semi-permanent baiting stations. A regular dumping ground is established in some secluded portion of the property where all offal and other material attractive to foxes is deposited. After some time foxes will come to expect food in this area and will return regularly to feed. When there is evidence of foxes feeding from the dump, poison baits or offal can be deposited and the majority of the foxes poisoned.

**The Poison**

Strychnine is the only poison used for fox control in Western Australia (some people have tried others, but they are not as good as strychnine).
There is some confusion in farmers’ minds regarding strychnine. There are two distinct chemical compounds. One is soluble strychnine (strychnine hydrochloride, bisulphate, etc.), which is soluble in water and alkaloid or pure strychnine, which is insoluble in water. Both of these compounds can be obtained in either crystalline or powder form. Although both types will kill foxes, it is usually considered better to use the alkaloid strychnine as it is thought that being insoluble, the taste may not be detected quite as readily. (This suggestion has never been scientifically proved.) Crystalline or powdered strychnine should be used if “loading” a carcass, but for small bait making, farmers are better advised to use the small grain tablets.

These have several advantages, the two most important of which are:

1. They contain a measured dose large enough to kill the biggest dog or fox.
2. They enable the bait-maker to place the poison right into the centre of the bait.

This is most important. Strychnine is intensely bitter and any trace of it contaminating the outside of the bait will immediately repel the fox and result in him rejecting the bait. Tablets make the deep insertion of the poison a much easier task. They should always be used when making small baits.

**Safeguarding Sheep Dogs**

This is probably the biggest single reason why farmers are loath to carry out fox baiting. The problem is of course a very serious one and there appears to be no real solution at present. For some years work has been progressing towards developing a bait which will deteriorate after three to four days, but so far the search has proved fruitless. In the meantime the best safeguard is to keep dogs muzzled at all times when they are not confined. Also dogs can be easily and quickly trained to only eat food given to them in a certain plate or from the owner’s hand.

Baits can be laid with markers and retrieved after three or four days during which time the dogs have been kept chained.

Crows are often blamed for transporting fox baits from one place to another. Although this rarely happens, crows often get the blame whereas actually the dog picked up the bait where it was originally laid. To overcome this problem baits can be buried one inch under the soil surface. This will prevent birds from finding them, but will not stop foxes (and dogs) from digging them up.

**Fumigation**

The last method of control to be discussed is fumigation of dens. Where a farmer is fortunate (or skilled) enough to locate a fox den it will usually be found in an underground burrow—often an old rabbit burrow is enlarged and used by foxes—or, in a cave with a small entrance. In either case, fumigation can be used effectively.

Either of the two major rabbit fumigants Chloropicrin or Phosphine can be used effectively. The fumigant should be introduced and the entrance “stopped” effectively to prevent the exit of the vixen and cubs. Fumigation has a limited use as cubs occupy the dens for only a brief period of about 12 weeks in the spring. After this period they will, if the weather is fine, be found sleeping away from the den and any attempt at fumigation could meet with failure.

**IN BRIEF . . .**

- The fox is an omnivorous animal which feeds on whatever food is most abundant at the time.
- There is no complete evidence yet to prove that the fox is a serious menace to sheep husbandry.
- The fox is often blamed for seriously reducing native fauna and bird populations but so far there is no evidence to support this.
Control can be carried out by six methods:
(a) Decoy shooting.
(b) Spotlight shooting.
(c) Hunting with dogs.
(d) Trapping.
(e) Poisoning.
(f) Fumigation.

Spotlight shooting is an effective control method but should be applied with intelligence.

Poisoning is the most effective method of wholesale control when poisoning these points are important:
(a) Baits must be palatable.
(b) Use carcasses or small baits (1 in. cubes).
(c) Bait placement is important.
(d) Use strychnine tablets whenever practicable.
(e) Sheep dogs should be protected by muzzling or other recommended means.

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