

## Series: 4-005/2

### MANAGING PREDATION BY BLACK-BACKED JACKAL - Lethal (control) methods

All control (lethal) methods require proper training, experience, and motivation of the operator, properly functioning devices and equipment, and knowledge of jackal biology to ensure the removal of damage-causing predators and to prevent jackals from learning to avoid these methods. The natural predator-prey balance may also be upset when non-target animals are killed in unselective control attempts.

The effectiveness and selectivity (capturing the animal responsible for damage) of control methods depends on:

- the number of jackals and non-target animals (such as Cape fox, aardwolf, mongoose, or antelope such as duiker) in the area.
- the home range sizes (the total area occupied) of jackal and non-target animals
- the type of habitat
- climatic factors
- the type of control method used
- capture device shyness (the tendency of jackals to avoid the devices)
- the type and age of baits and lures
- control period (hours/days/weeks)

#### Hunting

- Call-and-shoot  
Large numbers of jackals can be culled in areas with high jackal densities or where naive jackals are found. Individual “problem individuals can also be eliminated.
- “Commando/ambush (voorlê)” hunts  
The placement of people in strategic positions when an area is “combed” for jackal is not effective where jackal densities are low and/or where jackals tend to evade human presence.
- Aerial hunting  
Hunting jackals from helicopters can be effective where other methods have failed, but it is not effective where jackals have become so shy that they hide when they hear a helicopter or where their activity times change after a hunt.

Success also depends on the type of helicopter, hunting experience and technique of the crew, the season and timing of hunts and terrain.

It is very expensive – consider the unit costs per jackal and compare it with the cost of preventive methods to help decide whether or not to use this method.

#### Packs of trained hunting dogs

This is perhaps one of the most selective methods, especially where the damage-causing predator can be identified. Because jackals scavenge and will investigate a livestock carcass, simply following jackal scent from a carcass is not guaranteed to catch the guilty jackal. It is important to confirm whether it was killed by a jackal by examining the carcass while it is still relatively fresh for killing and feeding signs (see leaflet 1-008 in this series).

This method is also very expensive, and hounds may be used only to track a wounded jackal, or to point, flush or retrieve a jackal.

On large farms, in hot weather, in mountainous areas, or areas where vegetation is very stubbly or the ground is too hard, dogs are less effective.

#### Livestock Protection Collars (LPC's)

It is the only use of poison legally permitted for predator control. The person fitting the collars to the livestock should be adequately trained in the appropriate use of LPC's because the poison (sodium monofluoroacetate, or Compound 1080), is lethal to humans.

It is a highly selective control method, but it is more effective against cat-like predator species than jackals, because jackals often also attack sheep at the hindquarters.

It is labour intensive, since collars need to be adjusted regularly on growing livestock. It is also expensive and does not protect entire flock, since only vulnerable livestock are collared. Scavengers feeding on the carcasses of poisoned predators may also be killed.

Jackals that survive biting into the collar may learn to attack sheep from behind, particularly if there is not enough alternative prey available to the jackals. Jackals that survive may also

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learn to only avoid sheep with collars, and thus still kill other sheep.

#### *Other toxicants*

The use of any other toxicants, such as poisoned baits or carcasses, is prohibited by law, regardless of the poison used. This method is unselective and creates extensive ecological problems. Some toxicants are also lethal to humans.

#### *Trapping*

Cage traps are generally ineffective for catching jackals. If caracals are killed in traps set for jackals, the disruption of the ecological balance can cause jackal population increase, and thus also predation by jackals.

- **Foothold traps**

Foothold traps with off-set or padded jaws can be used to efficiently catch jackals, with no or minimal injury. This method can be selective if the person using it has a thorough knowledge of correct pan tension and specific lures and baits. Non-target animals can be released unharmed.

It is labour-intensive, and not recommended in areas with large predators. Because they are much heavier than jackals, large predators can easily spring a trap and seriously injure themselves. A jackal or other animal caught in a trap may also be killed by larger predators.

Traps must be checked at least once a day to release non-target animals (which render the trap ineffective at capturing the target animal) and limit the stress experienced by the animal caught in the trap.

#### *Denning*

Removing jackal pups from dens may reduce predation on livestock, because adult jackals require less food when they do not have pups to tend to.

The social structure of the jackal population in an area remains intact, while population increase is limited. It may not always be effective, however, because it is not always possible to find all the dens. As far as possible, dens should not be disturbed after denning.

### **How jackal behaviour, environment and timing of control influence the success of control methods**

The jackal's wary and cunning nature causes it to avoid unfamiliar objects. Its finely tuned sense of smell makes baiting and trapping it difficult. A jackal that has survived a control attempt (hunting, trapping or poisoning) will associate the object used to lure or trap it with an unpleasant experience. It will also learn to avoid an object or control device if it sees its mate or a family member being killed by it (avoidance learning). Further control attempts will then be almost impossible. Therefore, to devise a practical jackal control programme, a control method and the timing of its use should be chosen in such a way that it minimises negative impacts on natural resources and avoidance learning among jackals. For example: during the time of year when jackals live in family groups, they may learn to avoid devices such as foothold traps and poison firing apparatus. A group may also not be as responsive as individual jackals.

Foothold traps and hound packs are less effective in lower rainfall regions, where the smell of baits and jackal trails may fade faster. Their effectiveness increases in moist summer months, and also because there are more young jackals during this time of year. Capture success decreases after two weeks or when traps are used continuously.

Different methods are more effective at removing different segments of a jackal population. Young dispersing jackals are more susceptible to most control methods than adult territorial jackals, because they are inexperienced and away from familiar territories.

More adult male jackals are killed with hounds during winter, possibly due to their increased aggressive behaviour during breeding season (defending territories and protecting mates). This may cause males to be more likely to confront hunting dogs compared to females.

Local population reductions (and reproductive potential) can effectively reduce predation if it is done for short periods after young leave their parents and before females give birth (autumn and winter), or just before the lambing season(s).

E-mail: [PredationMC@UFS.ac.za](mailto:PredationMC@UFS.ac.za)

Tel: +27 51 401 2210

Website: [www.ufs.ac.za/pmc](http://www.ufs.ac.za/pmc)

Consult your local DEFF (environmental affairs) or DARDLR (department of agriculture) office for legal aspects regarding predation management

T: +27 51 401 9111 | E: [info@ufs.ac.za](mailto:info@ufs.ac.za) | [www.ufs.ac.za](http://www.ufs.ac.za)

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