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Feeding ecology of the black-backed jackal

Diet

The black-backed jackal is a generalist and opportunistic omnivore. This means that the animal will eat any available food (particularly food that is easily accessible), including plant material. But, like most other predators, it does show preferences for certain prey species.

The diet includes:

- Small and medium-sized antelope species such as steenbok, springbok and impala
- Insects and other invertebrates
- Carrion (the remains of dead animals)
- Rodents
- Plant material (berries, seeds, fruits etc.)
- Other small mammals (including hares, rock hyrax and small carnivores).
- Reptiles and amphibians
- Birds (ground-nesting birds and their eggs and fledglings)
- Domestic livestock, particularly sheep and goats. Cattle are also preyed upon. Horses and pigs have also been reported in the diet of the black-backed jackal.

Small to medium-sized mammals make up the most important part of diet, particularly ungulates weighing less than 30 kg. In the case of antelopes, black-backed jackals appear to prefer the fawns of hider species (species that hide their fawns in tall vegetation away from the herd during the first weeks after birth, such as springbok, common duiker, bushbuck. and kudu).

Carrion, invertebrates (mainly insects) and plant material also form an important part of the diet. Although the black-backed jackal has been known as a scavenger, it is a very efficient hunter. Insects or fruits (such as the common guarri) may make up an entire meal during the time of year when it is plentiful. Birds, reptiles, hyrax (dassie) and carnivores generally form only a small percentage of the diet.

Feeding behaviour

The diet of generalist predators such as black-backed jackals is context-dependent. This means that black-backed jackals adapt their diet in response to a variety of factors such as the abundance of the available food items, the habitat and climate at any given time, as well as the presence of large (apex or “top”) predators and the size and behaviour of the available prey.

The influence of land-use on diet

While some South African studies have found that black-backed jackals on farmland prefer wild prey over livestock, others found they eat livestock proportional to how abundant the livestock are in the area. The main food items on farmland are often livestock (particularly sheep), in combination with wild antelope species and rodents. Sheep and wild antelope remains often appear in the diet in the form of carrion.

One study documented a high occurrence of hyrax in the diet on farmland in Namaqualand, presumably because of the higher numbers and activity of hyraxes in the cultivated fields.

On farms in Natal where cattle were the most common livestock species, rodents were the most dominant food item in the diet, followed by cattle. Predation on cattle is aimed mainly at new-born calves, although black-backed jackals have also been observed actively hunting sick cattle.

Although some studies have found the remains of domestic livestock in the stomachs and scats (faeces) of black-backed jackals from protected areas, the percentage of livestock remains were generally low (less than 7% of the black-backed jackal’s diet). One study conducted in the Eastern Cape and one conducted in the Western Cape, found no sign of livestock in the diet of black-backed jackals in protected areas.

The main food items in protected areas are fruits, small mammals, antelope, carrion, and insects and other invertebrates. But in protected areas where larger predators dominate, most of the diet is made up of carrion scavenged from the kills made by

these large predators. Where animals die of disease, drought or other environmental factors, scavenging will also be the main feeding behaviour of the black-backed jackal.

A study conducted in Namaqualand documented that black-backed jackal preyed on rodent species that are active during the day on protected areas, while the diet on farmland included rodents that are active mainly at night. This change in feeding strategy may serve to avoid encounters with humans on farmlands.

The influence of environmental conditions on diet

Generally, black-backed jackals switch their diet according to the seasonal availability and abundance of different food items in the field. There is a slightly broader diversity of prey in the diet during summer. In autumn, black-backed jackals eat more fruits and seeds, when this resource is plentiful, and fewer mammals. In winter they eat more mammals (particularly antelope) and less fruits, seeds and insects. Winter is the season during which sheep and many antelope species lamb. The young of antelope or sheep are thus plentiful and easy to find, and black-backed jackals feed almost exclusively on this food source. During winter, when harsh weather conditions may kill antelope and sheep, more carrion is available for black-backed jackals to feed on. Winter is also breeding season for black-backed jackals, which means that they need more food to take care of their young. This is a very important driver of livestock predation on farmland. One study documented that male black-backed jackals kill more livestock during jackal breeding season compared to females to feed their pups and possibly also suckling females. As winter continues, jackals search for food over a wider area, eventually ranging far outside their core activity areas.

A study conducted in the Eastern Cape found bigger shifts in the diet in protected areas than on farmland. The diet on farms contained more mammals and plant material than on game reserves. Another study found that the most common food of jackals on farmland in the Eastern Cape were duiker, scrub hare, warthog (also considered a problem animal, with few natural predators due to lack of apex predators) and nyala (hider species).

Results from studies conducted in different parts of southern Africa showed how black-backed jackal diets differed among protected areas in different regions:

- In KwaZulu-Natal, the diet in nature reserves consisted mainly of small mammals and carrion, while the diet on wildlife ranches consisted mainly of large antelope species, followed by fruit and medium-sized mammals (particularly springbok).
- In the Eastern Cape, the diet consisted mainly of mammals and plant material. Carrion made up only a small part of the diet, while insects, fruit and seeds were much more common in the diet on game reserves than on farms.
- In Namaqualand, the diet recorded in a national park consisted mostly of insects and rodents. The most abundant small antelope species in the national park also made up a fair proportion of the diet.
- In the central Namib Desert plant material & insects form an important part of the diet.

A study conducted in the Karoo National Park found that black-backed jackal ate more springbok and small antelopes after more springbok were brought into the park. When large predators (lions) were reintroduced into the park, black-backed jackals ate less springbok and more carrion provided by the reintroduced lions.

The diet of the black-backed jackal overlaps with the diet of:

- honey badger
- bat-eared fox
- brown hyaena
- caracal

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