

OPINIONS

The advantages and disadvantages of vulture restaurants versus simply leaving livestock (and game) carcasses in the veldt

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There has recently been a proliferation of vulture restaurants (feeding sites) in South Africa (and elsewhere in southern Africa). Is this a good thing or a bad thing? Are there alternative ways to providing food for vultures? Here we present some ideas on whether it is better to simply leave animal carcasses in the veldt (in contrast to delivering them to central places), a task we were delegated at the March 2005 Birds of Prey Working Group workshop in the Magaliesberg, South Africa.

The situation for vultures in South Africa, especially in terms of food availability is very different today than it was in pre-colonial times. Importantly, there is probably less food for vultures now than there was in historical times (less game animals, livestock well managed, etc.). Vultures, and the Cape Vulture *Gyps coprotheres* in particular, are probably very dependent on dead domestic livestock for their food requirements and it has not yet been determined to what extent the plethora of relatively recently established game farms and private nature reserves contribute to the food base of these vultures. The situation is therefore now quite unnatural and many argue that there is therefore little harm in

increasing food supply through the operation of vulture restaurants.

The benefits of providing food at vulture restaurants include the following. Vultures are provided with a poison-free source of food at a central locality. These feeding sites have been used to address specific issues, such as low juvenile survival rates of vultures, specifically during the bottle-neck period of mid-December to mid-February at Potberg in the Western Cape (see Piper *et al.* 1999, *Bird Study* 46: 230-238). As vultures often congregate regularly at vulture restaurants, these sites can be used to monitor vultures (the number of vultures, their ages, colour-ringed birds, etc.). Vulture restaurants also have ecotourism value as they provide a convenient place where these birds can be observed at close quarters.

Despite the value of vulture restaurants, as far as we are aware, there has only been one study in southern Africa to determine what proportion of the local population of vultures' food requirements are met at these feeding places (Scott & Boshoff 1994, Cape Nature Conservation Internal Report No. 13). At the Potberg restaurant 507 carcasses (17.8 tons) of 13 animal species were provided during the period 1984 to

1992. These provided an annual average of 11% of the Potberg colony's mean food requirements, but the vultures only utilized 51% (range 20–94%) of the food provided (i.e. 6% of their annual requirement). In the core of the Cape Vultures' range it is not known whether vulture restaurants contribute significantly to the amount of food that the local population of vultures need, but the above study shows that the contribution may be minimal? Concerns have also been expressed about vultures becoming dependent on these restaurants, but this aspect has probably not been adequately studied. Research by Scott and Boshoff (1994; Cape Nature Conservation Internal Report No. 13) however showed that vultures were not over-dependent on the Potberg restaurant. Preliminary research by Maria Diekmann (Rare and Endangered Species Trust, Namibia), which has involved the marking (with satellite- and radio-transmitters, and colour-rings), is providing some evidence that vultures in northern Namibia (Waterberg) may be less dependent on restaurants than was previously thought. It is also possible that vultures (and other scavenging birds) may periodically be attracted out of their normal foraging range and this could possibly and ultimately result in permanent changes in their foraging strategy and/or roosting areas.

Another alternative to vulture restaurants is to encourage farmers to leave the animal carcasses lying in the veldt, i.e. not to bury them, burn them, or transport them to a central feeding place. This has been advocated in parts of South Africa, such as in the Kalahari by Abrie Maritz of the

Birds of Prey Working Group's S.A. Eagle Kalahari Raptor Project.

Advantages of the latter approach include:

1. Vultures will not become dependent on the food source at vulture restaurants.
2. Vultures, especially young birds, may lose their foraging ability if food is regularly provided at central feeding places. This problem may be overcome by operating vulture restaurants on a rotational (and random) manner (this was recommended by Boshoff *et al.* in *Bontebok* (1985) 4: 25-31), but is this practical?
3. Black-backed Jackals *Canis mesomelas* do not concentrate at a central point, which can result in farmers apportioning blame on vulture restaurant managers for the increase in jackal numbers in an area. Although this problem can be alleviated by isolating the restaurant with jackal-proof fencing, regular fence maintenance is not always possible and some neighbouring farmers are not convinced by the effectiveness of the fencing and therefore would always remain convinced that vulture restaurants benefit jackals.
4. Crows (*Corvus spp.*) seem to aggregate at vulture restaurants and they can cause direct and indirect problems for livestock and other animals (such as raptors). For example, they apparently occasionally peck at the eyes of lambing sheep ewes, and compete with raptors for food, nesting sites, and possibly depredate on raptor eggs/chicks. There is circumstantial evidence to suggest that vultures breeding close to

a vulture restaurant may have a lower reproductive success, possibly due to the depredations of crows on vulture eggs and nestlings and possibly even through competition for food.

5. Carcasses are not located at a central point, where theft by humans could be easier. The main concern here is that people may consume condemned carcasses and become ill or worse.
6. Time and labour is saved as there is no loading and moving carcass to the vulture restaurant.
7. The recycling of nutrients from decaying carcasses and the vulture activity (i.e. excreta) is not concentrated in one place (i.e. at the vulture restaurant).
8. This method may reduce the possibility of the spread of diseases.
9. It is possible that less food will ultimately be available to vultures (as not all carcasses will be located); i.e. in contrast to placing the dead livestock at central points. This however needs to be studied.
10. In the Potberg area (Western Cape) it was shown that sheep carcasses in the Potberg area were seldom eaten by vultures once they had been moved from the site where the animals had died (Scott & Boshoff 1994, Cape Nature Conservation Internal Report No. 13).
11. Vulture restaurants need to be properly designed, constructed and managed, which requires funds, time and effort. There also needs to be overall guidance (such as from the Birds of Prey Working Group) for the establishment and operation of vulture restaurants, as

well as the development of a sound and scientific monitoring and evaluation programme, without which many restaurants would not be sustained.

The disadvantages of the latter approach are:

1. Vulture monitoring and vulture-watching (i.e. ecotourism) are not always possible.
2. Vultures may not find the carcasses, especially in areas that are encroached by alien plants and invasive plants (such as *Prosopis* spp., *Rhigozomy trichotomum*, *Acacia mellifera*).
3. If carcasses are not consumed by scavengers or destroyed, it may increase the spread of diseases, such as anthrax. Blowflies, which use dead animals as breeding substrates, would possibly also increase and cause problems for livestock.
4. Livestock, especially cattle, may consume the bones of the dead animals, increasing the risk of disease, such as botulism. Bones may also become lodged in the livestock's mouths or throat, possibly causing the animal's death.
5. Vulture restaurants allow one to collect the remains of the dead animals and to sell the old bones for bone meal.
6. Small bones from previous feeds are also available to vultures visiting the restaurant.
7. Vultures cannot be drawn away from potential threats, such as hazardous powerlines, or attracted to "safer" areas.
8. The establishment and management of vulture restaurants allow for the

education of farmers and land managers about vultures.

9. On many well-managed farms in South Africa, where large livestock are accounted for, some of the problems associated with leaving carcasses in the veldt (spread of diseases, botulism) may be minimal.

This short review shows that there are pros and cons of establishing vulture restaurants (contrary to leaving carcasses in the veldt).

There are also many unanswered questions, with decisions often being made on gut feel, and unsubstantiated findings, so clearly there are many opportunities for exciting research projects.

André Boshoff, Ann Scott, Maria Diekmann and Wendy Borello provided valuable comments on drafts of this manuscript, for which we are very grateful.



From: *The Seattle Times*.