

SANDGROUSE SHOOTING: A SCIENTIFIC PERSPECTIVE

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As a member of the Gamebird Research Programme at the Percy FitzPatrick Institute, UCT, I studied the Namaqua Sandgrouse for 3 years, examining its population dynamics and suitability as a gamebird for responsible wingshooting. This project was initiated and partially supported by the African Gamebird Research, Education and Development Trust (AGRED) and De Beers Consolidated Mines Ltd.

The appeal of sandgrouse shooting is based on their fast and often erratic flight and the unique type of sit-and-wait shooting involved. Historically, sandgrouse wingshooting has been conducted at waterholes, where these birds congregate to drink at a predictable time in the morning or evening. Sandgrouse tend to fly high, and only descend to within range of a shotgun prior to landing at a waterhole, roost site or feeding site. Because sandgrouse are easily capable of flying a daily round-trip of more than 50 km between roost site, waterhole and the feeding site, roosting and feeding sites are difficult to locate, and are spread out over a large area. This leaves the waterhole as the only reliable site for sit-and-wait shooting of over-flying birds.

Waterhole shoots

Shooting, by whatever method, is a disturbance to the birds. Research has shown that non-breeding Namaqua sandgrouse can go without water for several days with no observable adverse effects, although they generally fly to the waterhole to drink on a daily basis. When a waterhole is being shot, the birds will fly over the water a couple of times, exposing themselves to the guns. If there is an alternative waterhole within easy flying distance, the birds will then relocate to it for their drink that day. If not, they may make more repeated attempts to drink before finally flying off to their feeding sites. Having alternative drinking sites within 10 km is important to reduce disturbance of the birds. Unfor-

tunately, some shooting operators fail to ensure there is such an option for the birds.

The establishment of a number of waterholes can also be used as a management tool to regulate the numbers of birds exposed to the guns. Namaqua sandgrouse move about nomadically in response to regional rainfall patterns, and the numbers in a specific area will fluctuate substantially from year to year. A waterhole with a drinking population of 500 to 800 birds provides a challenging shoot and an average bag of just under 10 birds per gun (the legal bag limit in the Northern Cape). I have seen over 15 000 sandgrouse gathering at a single pan. Such concentrations usually occur where a waterhole is the only one available for the birds over a large area. When such concentrations are shot, the average bag can exceed 100 per gun, which, I think many would agree, is unnecessary and does not reflect well on the sport.

Shooting sandgrouse from the edge of the water is considered by many to be unsporting, since the birds have often slowed down considerably in preparation for landing. If the butts are placed 100 m from the water's edge this effect is minimized, with most over-flying birds still within range of the guns. Shooting from a 200 m radius, advocated by Dr Richard Liversidge as a more 'ethically correct' practice, is unlikely to result in reduced disturbance of the birds since most will still balk at drinking during shooting. Its only real effect would be to lower shooting bags, since the incoming

birds would be flying higher and a larger proportion would therefore be out of range of the guns, and possibly more prone to wounding.

In his article, Mr Charles Duff suggested walked-up shooting as a more ethical alternative. The birds are suitable for this type of shooting, but the nature of the shooting experience would be radically different, and is unlikely to prove very popular.

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Breeding seasons

Both double-banded and Burchell's (spotted) sandgrouse breed during the winter months, between April and September. In the lowveld, double-banded sandgrouse shooting is often offered as an extra to game hunting, which takes place during the winter months. This species is therefore being shot while breeding. The same holds true for Burchell's sandgrouse in the Kalahari. The Namaqua sandgrouse is a far more opportunistic and nomadic species, and has the potential to breed during any month of the year. If examined on a regional scale, however, its breeding seasons appear more defined.

In the southern Karoo, Namaqualand and Bushmanland (SA), Namaqua sandgrouse usually breed from September to February, although on occasion they may start as early as August or extend to April. The eastern regions of the Northern Cape experience a similar season, except that the birds will regularly start breeding as early as June or July.

The current shooting season for Namaqua sandgrouse in the Northern Cape, which extends from 1 May to 15 July, therefore fits the non-breeding season reasonably well. In Namibia, Namaqua sandgrouse can breed during most months of the year, with some regions experiencing a winter peak. The

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The ethics of sandgrouse shooting can be improved by:

- 1 Not shooting sandgrouse during their breeding seasons.
- 2 Placing the shooting butts a minimum of 100 m from a waterhole.
- 3 Ensuring that there is at least one alternative waterhole within 10 km of the shoot, where the birds can relocate to drink.
- 4 Not shooting a drinking population that exceeds 1 000 birds. The provision of a number of waterholes can be used as a management tool in this regard.
- 5 Taking effective measures to prevent the shooting of non-target species, for instance not shooting Burchell's sandgrouse during a Namaqua sandgrouse shoot, since the former is likely to be breeding then.
- 6 Ensuring that the bagged birds are retrieved for the pot, either for the hunters themselves or for local communities.



variability of the breeding season in Namibia makes the setting of shooting seasons problematic.

The consequences of shooting breeding sandgrouse

Unlike most other gamebirds (where only the hen incubates) the sandgrouse pair share incubation duties over a period of roughly one month. Once the chicks hatch, they are totally dependent on the adult male for their daily drink of water until the age of two months – he saturates his belly feathers with water before flying back to the chicks who strip the water from his feathers. This means that the breeding attempt is vulnerable to failure for nearly three months should either, or later one, of the parents be killed. Regular shooting of a breeding population can therefore result in near total breeding failure!

What is a sustainable offtake?

Here I shall restrict my discussion to the Namaqua sandgrouse, the only species for which we have any data. The population dynamics of this species are rather different from other gamebirds such as francolin and guinea fowl, and one can banish any idea of a sustainable total offtake of 20%. The principal factor regulating Namaqua sandgrouse

populations is predation on the eggs and chicks, mainly by small mammals such as the yellow mongoose and the skunk. At my study site in Bushmanland in the Northern Cape, an average of only 9% of nests survived to hatch in the period 1993-1996. Predation on the chicks is also heavy, and estimates for annual recruitment ranged from minima of 3-10% to maxima of 6-20%.

With annual adult mortality likely to fall within the range of 20-40% (higher than recruitment), Namaqua sandgrouse populations over much of the Karoo should be in decline. Indeed, long-term bag records from the Northern Cape suggest that populations have declined since the 1950's. Monitoring over a wider area is needed to assess the full extent of this problem, and to determine whether Karoo populations are supplemented by more successful breeding in other regions, such as the proNamib. I should stress that current levels of shooting will have little impact as it is not the cause.

During a typical waterhole shoot, 15-20% of the drinking population is shot. If the entire sandgrouse population were subjected to a single shoot of this nature, it would clearly be unsustainable. However, only a tiny fraction of the total population is currently exposed

to wingshooting. In the Northern Cape, the annual bag is presently no more than 3 000 birds. Only if sandgrouse wingshooting were to become a burgeoning industry, might there be cause for concern. There is, therefore, good reason to encourage its development to serve a 'boutique' market only, i.e. high cost, low impact.

Closing comments

Because the entire population gathers together each day at the waterhole, sandgrouse are vulnerable to over-exploitation. Furthermore, because the birds are both nomadic and migratory, they are never resident on a property, and are therefore open to the so-called "tragedy of the commons".

Although some shooting operators have a genuine interest in the conservation of sandgrouse, others have violated the principles of sustainable use. I am aware of incidences of large concentrations of breeding sandgrouse being shot at remote waterholes, with the birds even allegedly being dumped in the veld afterwards.

There is an urgent need for the wingshooting fraternity at large to agree on a code of conduct for sandgrouse shooting, based on researched scientific recommendations. •