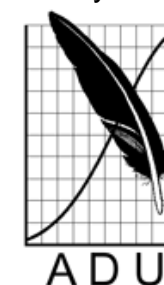


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Ornithological Observations accepts papers containing faunistic information about birds. This includes descriptions of distribution, behaviour, breeding, foraging, food, movement, measurements, habitat and plumage. It will also consider for publication a variety of other interesting or relevant ornithological material: reports of projects and conferences, annotated checklists for a site or region, specialist bibliographies, and any other interesting or relevant material.

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FERAL PIGS: A THREAT TO GROUND-NESTING BIRDS

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FERAL PIGS: THREAT TO GROUND-NESTING BIRDS

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Elandsberg Private Nature Reserve is situated near Hermon in the valley of the Berg River, Western Cape Province. It is a South African National Heritage Site for the protection of the endangered Geometric Tortoise *Psammobates geometricus*. The reserve includes a substantial area of Renosterveld at the foot of the Elandsberg Mountains. It is also a Contractual Nature Reserve, which gives it formal conservation status in terms of fauna and flora. This is important because much of the natural vegetation is threatened and includes some rare indigenous plants that can be damaged by alien pigs (Joubert 2009; Picker and Griffiths 2011).

On 9 February 2013 we were atlasing in the reserve S33° 28' 59.65" E19° 03' 36.01" along a game fence. We were driving towards the mountains at 11:15 – the weather was cloudy with intermittent light rain. A group of animals approached us on the opposite side of the fence giving the impression in the distance that they might be goats from their mixed colours. However, when they were less than 100 m from us they crossed under the fence in a depression in single file and we counted seven large feral pigs. On a previous occasion a single big boar had been seen in another part of the reserve. These sightings have prompted us to investigate the history of these pigs and collate information on the size of Western Cape and other populations. We felt it necessary to draw attention to the possible damage that feral pigs are probably doing to vulnerable ground-

nesting birds, as well as the need for comprehensive research and remedial interventions.

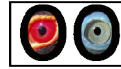
Historical and current situations

In the early 1900s six Eurasian Wild Boar *Sus scrofa* were relocated by the Department of Forestry from the former Groote Schuur Zoo to the Wolseley forests to establish a population of pigs to help control the Pine Emperor Moth *Nudaurelia cytheria cytheria*. Pigs were also released in forests near Franschoek for the same reason (Hignett 2006; Joubert 2009; Picker and Griffiths 2011). Since the original introductions escaped domestic pigs *Sus scrofa domesticus* have certainly joined the feral population. A recent estimate is that the Elandsberg-Voëlvllei sub-population may comprise about 500 animals (Stafford *et al.* 2011). However, this might be an underestimate because the same authors thought there were about 200 pigs in the Porseleinberg-Kasteelberg area of 5 400 ha in 2011. In 2012 hunters shot 388 pigs the latter area, i.e. nearly double the number. Another concentration estimated to exceed 500 pigs is on the lower Berg River from Moravia to Velddrif (Stafford *et al.* 2011).

More recent information is from the camera traps of The Cape Leopard Trust's Boland Project. The camera traps are intended primarily to detect the presence of leopard but have coincidentally located feral pigs, other animals and occasionally important birds. Pigs have been photographed near Bainskloof and in the Klein Drakenstein mountains, and are also known to be present near the Berg River Dam and the Wemmershoek Dam (Hayward and Meyer, *in litt.*).



Fig 1 - Feral pigs captured on camera trap in Elandsberg Nature Reserve in December 2011 at 21:12 (Bernard Wooding)



Elsewhere there are reports of feral pigs as far afield as Namaqualand, the southern Cape and the former Transkei. The State Veterinarian in East London is aware of a large population of feral pigs in thick bush along the Wild Coast (Van Niekerk, *in litt.*). Since it is common practice for the rural Xhosa people to keep free-ranging pigs it is inevitable that some of them will go feral. It has been postulated that pigs have been responsible for the local extinction of the Egyptian Vulture *Nephron percnopterus* in the Eastern Cape because they are in direct competition to scavenge human waste (Ledger 1985).

Preliminary literature survey

In addition to providing specific information this survey is intended to be a starting point for local researchers in future projects. There does not appear to be any South African hard data regarding predation on birds by feral pigs. Literature on the diets of African Warthog *Phacochoerus aethiopicus* and Bush pig *Potamochoerus porcus* has not been searched because they are not taxonomically close to *Sus scrofa*.

In Texas significant predation by feral pigs on the eggs and nestlings of the Northern Bobwhite Quail *Colinus virginianus* and the Rio Grande Wild Turkey *Meleagris galopavo intermedia* has been measured and photographed in controlled studies (Timmons *et al.* 2011).

A French study reported that identifiable parts of birds comprised 0.7% by frequency of the dietary items in the stomachs of wild boars (Dardaillon, 1987). This appears to be an underestimate because it was based on the presence of anatomically identifiable feathers and bones in stomach contents. This study seemed to exclude eggs

which might be difficult to identify after mastication. This study also found that the wild boars ate snails and fish.

Predation by feral pigs on mammals and reptiles

New-born lambs have been eaten by feral pigs on Elandsberg Farms (Mike Gregor, pers. comm.). Pigs habituated to this behaviour infiltrated a flock of lambing ewes at night and ate lambs so entirely that the only evidence usually consisted of small fragments such as a hoof. This is corroborated by information from Queensland, Australia, where predation on lambs and goat kids is a serious problem due to numbers in the huge population of feral pigs ("Feral Pigs Australia" via the internet). It follows that any new-born, weak or injured small wild mammal that cannot escape from pigs will be eaten.

A hunter has reported finding a carapace in the stomach of a pig he shot. Damage to the carapace of a Geometric Tortoise that appears to be consistent with biting by a pig is illustrated in Fig 3. Several similarly damaged carapaces have been found in Elandsberg Nature Reserve. It seems that the pigs predate on the reptiles as well in their foraging raids into the reserve.

The stomach contents of feral pigs shot by hunters have contained large quantities of grapes. Pigs also dug out and bite irrigation pipes to get to drinking water. The cost of this kind of damage can be substantial.

Suggested research methods for new South African studies

Suggested studies to quantify the extent of predation by feral pigs on ground-nesting birds in South Africa should be collaborative between conservation bodies and local universities. These studies could be

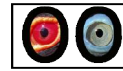


Fig 2 - Feral pigs near the Berg River (Bernard Wooding, Elandsberg Farms)

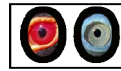


Fig 3 - Damage to the carapace of a Geometric Tortoise that appears to be consistent with biting by a pig (Bernard Wooding, Elandsberg Farms)



undertaken by post-graduate research students. The Texas study (Timmons *et al.*, 2011) could be used as a basic point of departure and our local studies should be designed to the unique South African circumstances and needs. In the Texas study for example hens' eggs were placed in monitored artificial nests on the ground to determine the predation rate by feral pigs. These nests were placed in places where pig tracks could be clearly identifiable. Pigs and confounding indigenous predators including mongoose, genet, baboon, caracal, snakes and others probably leave different residual patterns of egg shell fragments or no fragments at all. Comprehensive camera monitoring of many nests would be expensive but of great value. Natural nests should also be monitored.

Analyses of the stomach contents of a large number of pigs culled in control operations could add further value in determining the possible damage by pigs. The French study by Dardallion (1987) gives some guidance on these types of analyses..

Bird atlas results on Elandsberg Farms

Since July 2010 we have submitted six SABAP2 full protocol atlas cards for Elandsberg Farms, which incorporate the Nature Reserve, three each for summer and winter. The ground-nesting Southern Black Korhaan *Afrotis afra*, Grey-winged Francolin *Scleroptila africanus* and Black Harrier *Circus maurus* were each recorded once only. There is reliable historical information that the korhaan used to be numerous. No broods of Ostrich *Struthio camelus* chicks have been seen in recent years. Denham's Bustard *Neotis denhami* and Blue Crane *Anthropoides paradiseus* are additional important ground-nesters that have been listed on all six full protocol cards. The eggs and nestlings of all of these ground-nesters, as well as all game birds, larks, pipits, longclaws, coursers, plovers, lapwings,

thick-knees, African Grass Owl *Tyto capensis* and Marsh Owl *Asio capensis* must be potential prey to feral pigs.

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Prof Les Underhill of the ADU, UCT suggested that this report should be written. Positive contributions to the information collated in this paper have come from several people including: Bernard Wooding and Mike Gregor of Elandsberg Farms; field staff of Cape Nature especially Riaan van der Walt; Jeannie Hayward and Anita Meyer of the Cape Leopard Trust Boland Project; and Dr Francois Van Niekerk of the Humansdorp Veterinary Clinic.

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