Potamochoerus larvatus – Bushpig

Regional Red List status (2016)	**Least Concern**
National Red List status (2004)	Least Concern
Reasons for change	No change
Global Red List status (2016)	Least Concern
TOPS listing (NEMBA)	None
CITES listing	None
Endemic	No

Bushpigs are intensely aggressive and territorial; both boars and sows will defend feeding grounds against foreign groups, and will become increasingly intolerant of offspring once they obtain sexual maturity (Seydack 1990; Skinner & Chimimba 2005).

Taxonomy

Potamochoerus larvatus (Cuvier 1822)

ANIMALIA - CHORDATA - MAMMALIA - CETARTIODACTYLA - SUIDAE - *Potamochoerus* - *larvatus*

Common names: Bushpig (English), Bosvark (Afrikaans), Ingulungundu, Ifarigi yommango, Isavakukazana sommango (Ndebele), Kolobê (Sepedi, Setswana), Kolobê-sodi, Kolobê-ya-thaba (Sepedi), Kolobe, Sodi, Kolobe ya thaba, Moru, Holobe-moru, Kolobe-moru (Sesotho), Kolobê yanaga, Kolobê wanaga, Kotola, Nkotola, Kolobê-nkotola, Kolobêsôdi, Kolobêtôpô (Setswana), Ingulube (Swati, Xhosa, Zulu), Ingulube ye siganga, Ihhontji (Swati), Khumba, Nguluve m'hlati (Tsonga), Nguluvhe, Nguluvhe ya daka (Venda), Ingulube yasahlathini (Zulu)

Taxonomic status: Species

Taxonomic notes: The genus *Potamochoerus* includes two species: the Red River Hog (*P. porcus*), which occurs in the forests from Senegal to Nigeria and the Congo; and the Bushpig (*P. larvatus*), which occurs from the savannahs of East Africa to the forests of the Cape in South Africa (Grubb 1993). Three subspecies are currently recognized: the White-face Bushpig (*P. l. hassama*) from East Africa; the Somali Bushpig (*P. l. somaliensis*) from northeast Kenya and Somalia; and the Southern Bushpig (*P. l. koiropotamus*), which is widespread over southern Africa (Grubb 1993).

Assessment Rationale

Considering its relatively widespread distribution, ability to utilise agricultural landscapes, and common occurrence (occurring at 0.3–0.5 individuals / km^2 in Cape forests), the Bushpig is listed as Least Concern within the assessment region. No major threats have been identified that may be causing significant declines in the population. The southern Eastern Cape range is no longer considered effectively isolated from the northern KwaZulu-Natal (KZN) Province. Given the versatility of Bushpigs (for example, their utilisation of agricultural landscapes), and their capacity to conduct long-range movements, it is expected that conditions for dispersal are still largely similar to those that prevailed in the past. However, the effects of local threats, such as persecution and bushmeat hunting, should be monitored, as local declines or extinctions may be occurring.

Regional population effects: There is presumably immigration from southern Mozambique into northeastern KZN and also across the transfrontier areas in northern Limpopo. However, a sink situation is likely to occur should extra-regional areas exhibit overpopulation. The dispersal capacity of the species is good, so rescue effects are possible.

Distribution

The African distribution of this species is shown in Seydack (2013). It is largely continuous, with some isolated patches in western central Africa (mainly in Angola). Bushpigs have an extensive distribution across much of eastern and southern Africa, but aside from possibly the Caprivi Strip, are absent from Namibia (Skinner & Chimimba 2005). Generally, their distribution in South Africa mostly follows the eastern seaboard and forested highlands and has expanded in KZN in association with the advance of sugar cane. Recent records show a more western range in the Western Cape (Figure 1) than that recorded by Friedman and Daly (2004). Similarly, Figure 1 shows scattered records from the interior of the Free State Province that were not reflected in the previous national assessment or the current global assessment (Friedmann & Daly 2004; Seydack 2016). It is unclear whether this represents a range expansion or previously undetected subpopulations. They are generally found from the northern and eastern parts of the country (and neighbouring Swaziland) to southern KZN and the Western Cape.

There was a perception that there is a gap in their distribution between KZN and East London in the Eastern Cape and that the population in the eastern and southern Cape was isolated (Grubb 1993; Seydack 2013).

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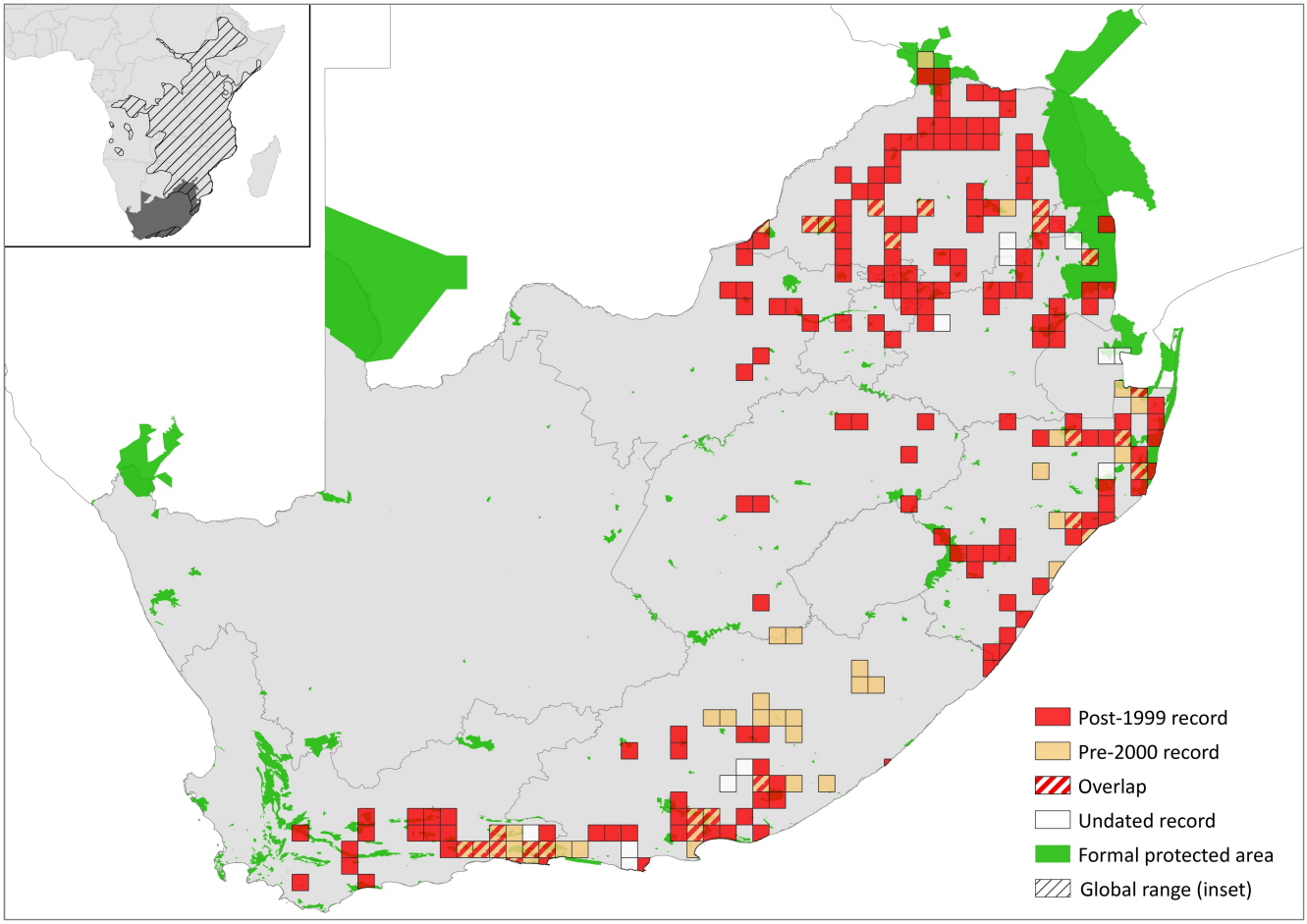

Figure 1. Distribution records for Bushpig (*Potamochoerus larvatus*) within the assessment region

Table 1. Countries of occurrence within southern Africa

Country	Presence	Origin
Botswana	Extant	Native
Lesotho	Absent	-
Mozambique	Extant	Native
Namibia	Extant (Caprivi Strip only)	Native
South Africa	Extant	Native
Swaziland	Extant	Native
Zimbabwe	Extant	Native

However, there are sufficient recent (post 2000) data that indicate that the species occurs in a number of forests throughout this perceived distribution gap (de Villiers 2002; Hayward et al. 2005; Eastern Cape Parks and Tourism Agency unpublished camera trap records). Therefore, the assumption that the Western and Eastern Cape population is isolated from the rest of the population is probably inaccurate.

Population

Population density estimates of Bushpig in the southern Cape forests of South Africa have been recorded at a range of 0.3–0.5 animals / km² (Seydack 1990, 2013). There are suspected to be three major subpopulations: Eastern/Western Cape, KZN, and Mpumalanga/Limpopo provinces. Population estimates for KZN have yet to be calculated. Given their wide extent of occurrence (EOO), we suspect that there are over 10,000 mature individuals within the assessment region. However, this should be estimated more accurately through camera trap studies and field surveys.

Current population trend: Stable

Continuing decline in mature individuals: Locally due to persecution and bushmeat hunting.

Number of mature individuals in population: Possibly > 10,000

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: 3

Severely fragmented: No. Bushpigs can utilise agricultural landscapes and have good dispersal capacity.

Habitats and Ecology

Bushpigs are commonly associated with dense vegetation types, including xeric scrub forests, thickets and riverine habitats, where food, shelter and water are readily available. They adapt easily to transformed landscapes, such as agricultural areas, and may become a problem species within croplands, specifically maize, peanuts, beans and sugar cane (Seydack 2013). In the Western Cape, Bushpig habitat includes southern Afrotemperate evergreen forest, fynbos and commercial pine plantations and in the Eastern Cape, Sundays Noorsveld, Southern Afrotemperate Forest, Albany Thicket, Eastern Valley Bushveld and southern coastal forest (Seydack 1990; Seydack & Bigalke 1992).

Table 2. Use and trade summary for the Bushpig (*Potamochoerus larvatus*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

Category	Applicable?	Rationale	Proportion of total harvest	Trend
Subsistence use	Yes	Bushmeat	Minority	Stable
Commercial use	Yes	Trophies and meat	Majority	Increasing
Harvest from wild population	Yes	Persecution, bushmeat	Minority	Stable
Harvest from ranched population	Yes	Trophies and meat	Majority	Increasing
Harvest from captive population	Yes	Trophies and meat	Minority	Stable

Bushpigs forage both alone and in groups (Seydack 1990; Skinner & Chimimba 2005). Group sizes range from 1–11, with a mean group size of 3.2 (Ghiglieri et al. 1982). Bushpigs are monogamous and territorial, with family groups consisting of one breeding female, one alpha boar and one or two generations of offspring (Seydack 1990, 2013). Females can conceive at approximately 21 months and litters can be up to six in size, but typically 2–4. The thermoneutral zone of juvenile Bushpigs (10 kg) is between 13–30 °C, and mother sows build nests when it is cold and wet (Seydack 1990). Bushpigs are omnivorous and eat anything from insects, roots, seeds and fruits, that they find by dismantling rotten logs, moving rocks and by picking up leftovers from other forest animals (Ghiglieri et al. 1982). Although they are considered to be nocturnal, diurnal activity is not unusual (Ghiglieri et al. 1982; Seydack 1990). In summer, Bushpigs rest during the warmer hours of the day and, during winter, increased resting also occurred from midnight to dawn (Seydack 1990, 2013). Bushpigs occupy an average home range of 7.2 km^2 (3.8–10.1 km^2), which they traverse every 1–4 days as part of territory patrolling (Seydack 1990, 2013). Divergence in characteristics of population dynamics between southern (low population turnover; nutrient-poor habitat) and eastern (high population turnover; nutrient-rich habitat) Cape populations was revealed (Seydack & Bigalke 1992).

Ecosystem and cultural services: Bushpigs are important seed dispersers in forest ecosystems (Brodie et al. 2009; Abernethy et al. 2013) and, due to the presence of the species in many of South Africa's coastal and forested/thicket vegetation types, the ecosystem service they provide in this regard cannot be under-emphasised. Bushpigs also are an important source of bushmeat for many rural people in Africa (Lindsey et al. 2012; Abernethy et al. 2013).

Use and Trade

This species is used at a subsistence level for food, both legally and illegally (bushmeat). It is a sought-after species to be hunted in southeastern KZN and the Eastern Cape and has value for both local hunters and as trophies.

Wildlife ranching and the private sector have generally had a positive effect on this species as it has been widely reintroduced onto private properties (or has naturally recolonised wildlife ranches) within its natural distribution. The subpopulations on wildlife ranches are normally self-sustaining and free-roaming; with little management intervention required.

Threats

Within the assessment region, expanding human settlements are destroying habitat within this species' range. Similarly, deforestation and the resulting loss of habitat along the Indian Ocean Coastal Belt Forest is increasing with expanding development and increased farming activities. Additionally, settlements bring Bushpigs into contact with agricultural areas, where they are often persecuted. In some cases, agriculture (for example, sugar cane) may have led to an increase in its range and numbers, while in others (for example, dairy and beef farming) it may have led to a decline. This species is also regarded as a pest on some maize, sugar cane and tree nut production farms, and is therefore persecuted, in some cases severely. As such, they may be subject to localised declines and range contractions in some areas due to large-scale habitat destruction or as a result of hunting for crop protection and local consumption (Vercammen et al. 1993).

Even though Bushpigs are occasionally vulnerable to persecution and official population control measures in agricultural areas, due to crop damage, they are particularly difficult to eliminate considering their preference for sheltered, densely vegetated habitats, nocturnal habits and high reproductive potential (Seydack 2013).

In southeastern KZN an escaped feral population of Wild Boar (*Sus scrofa*) of unknown size exists and is interbreeding with the local Bushpig population which will increase genetic contamination.

Table 3. Possible net effects of wildlife ranching on the Bushpig (*Potamochoerus larvatus*) and subsequent management recommendations

Net effect	Positive
Data quality	Suspected
Rationale	Wildlife ranches may be providing greater habitat quality for this species.
Management recommendation	No specific management interventions are necessary for this species, although hybridisation of this species with non-native wild pig species should be prevented.

Table 4. Threats to the Bushpig (*Potamochoerus larvatus*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

Rank	Threat description	Evidence in the scientific	Data quality	Scale of study	Current trend
1	*5.3 Logging & Wood Harvesting*: habitat loss through deforestation. Current stress *1.1 Ecosystem Conversion*.	-	Anecdotal	-	Ongoing
2	*1.1 Housing & Urban Areas*: habitat loss through human settlement. Current stress *2.1 Species Mortality:* increased bushmeat hunting.	-	Anecdotal	-	Ongoing
3	*5.4.5. Persecution/Control*: direct persecution in agricultural areas, due to crop damage. Current stress *2.1 Species Mortality.*	-	Anecdotal	-	Ongoing
4	*5.1.1 Intentional Use:* bushmeat hunting.	-	Anecdotal	-	Increasing with settlement expansion
5	*2.3.2 Livestock Farming & Ranching*: habitat loss from livestock ranching.	-	Anecdotal	-	Ongoing
6	*8.1 Invasive Non-Native/Alien Species/Diseases*: inbreeding with non-native pigs. Current stress *2.3.1 Hybridisation*: genetic contamination with Wild Boar.	-	Anecdotal	-	Stable

Current habitat trend: Declining due to anthropogenic disturbance, in the form of expanding human settlements, firewood and charcoal production, as well as dairy and beef agriculture. These disturbances have altered habitat structure; however, certain farming practices, such as sugar cane farming, may represent positive habitat components for Bushpig. Firewood and charcoal production decreases habitat quality and is also more likely to bring this species into contact with humans who might persecute them or hunt them for bushmeat. Draining and filling in wetlands also severely affects the persistence of local subpopulations, as Bushpigs frequently lie up in wetlands.

Conservation

This species occurs within a number of protected areas across the assessment region, including Mpenjati Nature Reserve, Oribi Gorge Nature Reserve, Vernon Crookes Nature Reserve, Umtamvuna Nature Reserve, Mbumbazi Nature Reserve, Mkambati Nature Reserve, Silaka Nature Reserve, Hluleka Nature Reserve, Dwesa-Cwebe Nature Reserve, East London Coast Nature Reserve, Addo Elephant National Park, Garden Route National Park, Mountain Zebra National Park, Mpofu Nature Reserve, Fort Fordice Nature Reserve, Thomas Baines Nature Reserve, Groendal Nature Reserve, Baviaanskloof Nature Reserve, Isimangaliso Wetland Park, De Hoop Nature Reserve and Swartberg Nature Reserve. The protected areas below the Mpumalanga escarpment and Magoebaskloof are specifically important for this species.

While no specific interventions are necessary at present, private landowners should be encouraged to create conservancies that protect natural forests, which form integral habitat for this species. Given the low densities and recruitment rates of Bushpig, it is unlikely that this species is a suitable candidate for the sustainable, wildlife-based rural economy. Additionally, the introduction of non-native wild pig species should be monitored and prevented as much as possible to avoid hybridisation.

Recommendations for land managers and practitioners:

- Conservation management agencies should institute effective and accurate long-term Bushpig population monitoring programmes.

Research priorities: Currently research is being conducted on the impacts of changing land-use on biodiversity, particularly mammals such as Bushpig, using camera trapping: metapopulation dynamics of forest mammals in the fragmented sub-tropical coastal forests of southern KZN, University of KwaZulu-Natal in collaboration with Ezemvelo KZN Wildlife (June 2014–June 2016). Additionally, an internal monitoring project on the camera trapping of forest mammals in the Eastern Cape is being conducted by the Eastern Cape Parks and Tourism Agency.

- Monitor population density and trends, specifically in areas where this species is hunted.
- The extent of hybridisation with non-native wild pig species in existing subpopulations, especially on private land.
- The effects of wildlife ranching on this species across bioregions.

Table 5. Conservation interventions for the Bushpig (*Potamochoerus larvatus*) ranked in order of effectiveness with corresponding evidence (based on IUCN action categories, with regional context)

Rank	Intervention description	Evidence in the scientific literature	Data quality	Scale of evidence	Demonstrated impact	Current conservation projects
1	*1.1 Site/Area Protection*: create conservancies/ stewardship sites to conserve natural forest habitat.	-	Anecdotal	-	-	-

- Methods to reduce conflict between Bushpig and people, especially within agricultural areas.

Encouraged citizen actions:

- Landowners should create forest conservancies for this species.
- Report sightings of free-roaming animals on private lands or protected areas on MammalMAP, iSpot and KZN Wildlife Watch.

Data Sources and Quality

Table 6. Information and interpretation qualifiers for the Bushpig (*Potamochoerus larvatus*) assessment

Data sources	Field study (literature, unpublished), indirect information (expert knowledge)
Data quality (max)	Inferred
Data quality (min)	Suspected
Uncertainty resolution	Expert consensus
Risk tolerance	Evidentiary

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Details of the methods used to make this assessment can be found in *Mammal Red List 2016: Introduction and Methodology.*