Civettictis civetta – African Civet

The African Civet’s range is widespread in Africa from Senegal and Mauritania to southern Sudan, Ethiopia, Djibouti, and southern Somalia southwards in all countries to northeastern Namibia, north and east Botswana, and northeastern South Africa (Ray 2013). It is present on Zanzibar Island (Pakenham 1984; Stuart and Stuart 1998) and Sao Tome Island (Dutton 1994). The species is recorded from almost sea level to altitudes of 5,000 m asl on Mt Kilimanjaro (Moreau 1944).

Assessment Rationale

The African Civet is listed as Least Concern as it is fairly common within the assessment region, inhabits a variety of habitats and vegetation types, and is present in numerous protected areas (including Kruger National Park). Camera-trapping studies suggest that there are healthy populations in the mountainous parts of Limpopo’s Waterberg, Soutpansberg, and Alladys areas, as well as the Greater Lydenburg area of Mpumalanga. However, the species may be undergoing some localised declines due to trophy hunting and accidental persecution (for example, poisoning that targets larger carnivores). Furthermore, the increased use of predator-proof fencing in the growing game farming industry in South Africa can limit movement of African Civets. The expansion of informal settlements has also increased snaring incidents, since it seems that civets are highly prone to snares due to their regular use of footpaths. Elsewhere in Africa, this species is an important component in the bushmeat trade. Although the bushmeat trade is not as severe within the assessment region, it is thought that trade in civet bushmeat will increase as other sources of bushmeat become scarce. Even though information regarding the traditional medicine trade of African Civets in the assessment region is limited, it is likely that this species has the same medicinal significance as in other regions of Africa. We recommend that research focuses on population size and trends, as well as quantification of traditional medicine use, legal removals through hunting and permeability of fences. We also recommend that local management efforts should include snare removal, especially along footpaths.

Regional population effects: The African Civet’s range is continuous with the rest of its African range and there are no major barriers to this species’ dispersal. We therefore assume that there is dispersal across regional boundaries, especially across the Great Limpopo Transfrontier Park (GLTP), and across the Limpopo Province with Botswana and Zimbabwe. However, within the assessment region, an increase in predator-proof fencing across the game ranching areas in Limpopo, Mpumalanga and North West provinces will severely obstruct civet dispersal.

Distribution

The African Civet is widely distributed in Africa from Senegal and Mauritania to southern Sudan, Ethiopia, Djibouti, and southern Somalia southwards in all countries to northeastern Namibia, north and east Botswana, and northeastern South Africa (Ray 2013). It is present on Zanzibar Island (Pakenham 1984; Stuart and Stuart 1998) and Sao Tome Island (Dutton 1994). The species is recorded from almost sea level to altitudes of 5,000 m asl on Mt Kilimanjaro (Moreau 1944).
Within the assessment region, it occurs in the northern parts of the South Africa, including northern KwaZulu-Natal, Mpumalanga, Limpopo and the northern parts of the North West Province. Its dispersal routes are unknown, but can be suspected to be contiguous with its distribution. Camera-trapping across Limpopo and Mpumalanga show them to be fairly common (L. Swanepoel unpubl. data), but their distribution and abundance in other provinces remains uncertain. Recent data also reveal their occurrence in the Free State Province. However, these records should be interpreted with caution as they may pertain to escapees from game farms and thus represent translocations rather than natural occurrences (N.L. Avenant pers. comm. 2016).

Although Power (2014) noted that the extent of occurrence (EOO) of this species has contracted by 36% since 1983 in the North West Province, this is a range-edge and marginal distribution, and range expansions or contractions are difficult to estimate accurately. African Civets do seem to now be absent from the Magaliesberg area – an area in which they once occurred in the pre-1980s (see Rautenbach 1978). In the North West Province they are not known further south than the 25° 30´ S parallel. They are common in Madikwe Game Reserve and Borakalalo National Parks, but are rare in Pilanpesber National Park (see Power 2014). In the Limpopo Province there seem to be healthy populations in the Waterberg District (protected and non-protected areas), Soutpansberg/Vhembe District (projected and non-protected) and a number of game/livestock farming areas. In KwaZulu-Natal their distribution and abundance seem to be localised, with rare detections in Phinda and Thanda Nature Reserves (L.H. Swanepoel unpubl. data). Skinner and Chimimba (2005) documented their occurrence in the middleveld and the Lubombo region of Swaziland. This species does not occur in Lesotho (N.L. Avenant pers. comm. 2016).

### Population

Within the assessment region, density estimates vary between different land uses. In Limpopo, using spatial mark–recapture models, African Civet density was estimated to be around 14.11 ± 4.15 individuals / 100 km² for protected areas without African Lions (Panthera leo) (e.g. Lapalala Wilderness), 11.39 ± 5.52 for game farming areas (e.g. the Waterberg Mountains) and 6.42 ± 1.99 for protected areas with African Lions (e.g. Welgevonden Private Game Reserve) (Isaacs et al. in press). These results concur with camera-trap studies elsewhere in Limpopo (2013 and 2014) where civet populations were
estimated at 10.1 ± 0.56 and 9.04 ± 0.82 individuals / 100 km² in Mogalakwena Game Reserve and 14.18 ± 0.12 individuals / 100 km² at Moyo Conservation Project Reserve (both in Alldays area; Amiard 2014). Similarly density estimates from Soutpansberg hovered around 15 individuals / 100 km² (A. Thomissen unpubl. data).

Corroborating these estimates, camera-trap studies conducted in the mountainous areas of the Greater Lydenburg area of Mpumalanga, revealed healthy populations with home range sizes between 3 and 5 km² (G. Camacho unpubl. data). The population estimation of 12.52 individuals / 100 km² at Thaba Tholo Wilderness Reserve in the Mpumalanga Province accords with the previous result (Amiard 2014).

These current population estimates suggest healthy civet populations both inside and outside protected areas and these are not thought to be declining. However, several factors seem to drive African Civet populations. First, data from Waterberg studies (Isaacs 2016; Isaacs et al. in press) seem to point to top-down regulation by large carnivores (sensu Prugh et al. 2009), which suggest that high densities of large carnivores (e.g. in small fenced reserves) might limit civet populations. Secondly, there is some evidence (e.g. Mpumalanga and Venda rural areas; L.H. Swanpoel & G. Camacho unpubl. data) that snaring can reduce civet populations. Civets seem to be highly prone to snares as they regularly use footpaths and they can feed on carrion. Snaring for bush meat is often concentrated around rural areas, where civets can investigate animal caught in snares and can subsequently be also snared. For example, within the Vhembe District Municipality of Limpopo, L.H. Swanpoel (unpubl. data) – using camera-trapping (60 days of camera-trapping; 1,060 camera-trap days; 1,500 ha study area) – did not find African Civets near local villages or near urban areas, which suggest that they are either killed directly or indirectly. They are often found on livestock farms, but here they are killed accidentally by poisoning campaigns targeting large carnivores. Thirdly, while populations might seem viable, there is currently no data on the legal removal of Civets through local and international trophy hunting. Thus, expanding human settlements, especially along the edge of protected areas (Wittermyer et al. 2008) could lead to local subpopulation declines or extinctions. More research is however needed to determine the net population trend for the assessment region.

**Current population trend:** Unknown

**Continuing decline in mature individuals:** Unknown, but probably not.

**Number of mature individuals in population:** Unknown

**Number of mature individuals in largest subpopulation:** Unknown

**Number of subpopulations:** It is not currently possible to determine the extent or number of subpopulations.

**Severely fragmented:** No. They have a broad habitat tolerance and can exist in agricultural and rural landscapes.

### Habitats and Ecology

African Civets occupy a wide variety of habitats including secondary forest, woodland, and bush habitats, as well as aquatic environments. They are generally absent from arid regions, with the exception of riverine systems therein.

They are apparently uncommon in mature interior forest habitats, but will infiltrate deep forest via logging roads, and in the forests of West and Central Africa, they thrive in degraded and deforested areas, and are regularly encountered near villages (Ray 2013). They are also found on cultivated land, for instance in Gabon (Bahaa-el-din et al. 2013) and Ethiopia (Mateos et al. 2015). In South Africa, they mainly occur in the Savannah Biome but their range includes a small part of the Grassland Biome as well. In the North West Province, camera-trapping studies indicate that they have a predilection for the Dwarsberg–Swartruggens Mountain Bushveld vegetation type (Power 2014). Wooded landscapes seem to be more favoured than open grasslands, and riverine areas adequately supported by many tributaries and rocky outcrops are preferred. African Civets generally sleep in dense vegetation during the day (but see Photo 1), such as thickets and stands of long grass, among tangled roots or under logs, as well as in burrows excavated by other animals (Ray 2013).

African Civets are omnivorous and opportunistic foragers (Ray and Sunquist 2001; Bekele et al. 2008b; Amiard 2014), and their diet may include cereals (maize, wheat, barley) and domestic fruits (e.g. bananas, figs, olives; Bekele et al. 2008b). They are avid feeders on toxic millipedes (Smither & Wilson 1978), and they commonly feed on fruits such as raisin bushes (Grewia sp.) in Alldays area, Limpopo (Amiard 2014). They are thought to play an important role in the dispersal of such fruiting trees.

They are terrestrial, nocturnal and solitary, with the exception of the breeding season when two or more individuals can be seen together. In Ethiopia, in the Bale Mountains National Park, one radio-tracked sub-adult male had a home range of 11.1 km² (Admasu et al. 2004), while in Wondo Genet, one adult male (0.74 km²) and one sub-adult female (0.82 km²) ranged over much smaller areas (Ayalew et al. 2013). The last two individuals moved at an average speed of 326 m / h and travelled between 1.33 and 4.24 km each night. The African Civet characteristically moves slowly, and will often lie down or stand motionless when disturbed (Skinner & Chimimba 2005).

**Ecosystem and cultural services:** Civet species play an important role in seed dispersal, especially in forests of Asia and probably Africa too (Pendje 1994, but see Abiyu et al. 2015). No research has been carried out so far on the role of African Civets in seed dispersal in South Africa,
but it is thought that they play an important role in dispersing seeds of key plant species. Additionally, African Civets have historically been the main animal species from which a musky scent could be extracted and used in perfumery (see Use and Trade).

**Use and Trade**

Besides their prevalence in bushmeat markets in West and Central Africa (see Threats), in particular, African Civets are economically important because of their perineal gland secretion (civet musk or "civet"; Randall 1979; Bekele et al. 2008a; Wondmagegne et al. 2011), which has been exploited for many centuries as a fixing agent, called "civetone" in the perfume industry (Anonis 1997). Even though synthetic alternatives have been available for nearly 70 years (see Rozovear 1974), civetone remains an important export commodity in several countries, such as Ethiopia, and to a lesser extent, Niger and Senegal (Ray 1995, 2013; Abebe 2003; Ray et al. 2005). Between 1985 and 1997, civiculture (i.e. civet farming) generated a total revenue of between c. US$150,000–835,000 per year in Africa. According to Kumera (2005), there are over 200 registered and licensed African Civet farmers who capture this species in the wild and keep several thousand individuals in captivity for musk production in Ethiopia. Only male civets are kept, as they produce greater quantities and better quality musk than females. Apparently no attempt has yet been made to breed this species in captivity (Tolosa & Regassa 2012). In Ethiopia, only 2% of the civet musk produced is used nationally; the rest is exported, essentially to France (85%), for the perfume industry (Girma 1995). Small quantities of civet musk are also exported to Arabian countries for medicinal purposes and to India for use in the tobacco industry (Tamiru 1995). To our knowledge civet farming is not practiced in the assessment region.

African Civets are becoming an important trophy and locally hunted species in Limpopo (see e.g. https://www.discountafricanhunts.com/hunts/honey-badger-civet-and-genet-hunt-in-south-africa.html). Hunting quotas for this province during 2011 were around 50 animals. Export permits showed that an average of 58 ± 11 trophies were exported from South Africa per year between 2002 and 2011.

### Table 2. Use and trade summary for the African Civet (Civettictis civetta)

<table>
<thead>
<tr>
<th>Category</th>
<th>Applicable?</th>
<th>Rationale</th>
<th>Proportion of total harvest</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence use</td>
<td>Yes</td>
<td>Used as bushmeat, trophies, skins and traditional medicine.</td>
<td>Minority</td>
<td>Unknown, probably stable.</td>
</tr>
<tr>
<td>Commercial use</td>
<td>Yes</td>
<td>Selling of bushmeat, skins and probably traditional medicine products.</td>
<td>Majority</td>
<td>Probably stable; trophy hunting predicted to increase.</td>
</tr>
<tr>
<td>Harvest from wild population</td>
<td>Yes</td>
<td>Localised and opportunistic harvest for meat, skins and traditional medicine.</td>
<td>Limited in the assessment region.</td>
<td>Probably stable.</td>
</tr>
<tr>
<td>Harvest from ranched population</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Harvest from captive population</td>
<td>No</td>
<td>African Civets (only males) kept in civet farms all come from the wild.</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 3. CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) trade data for African Civet (Civettictis civetta) exports from South Africa

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimens</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bodies</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Feet</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Leather products</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Live</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skins</td>
<td>1</td>
<td>2</td>
<td>24</td>
<td>3</td>
<td>37</td>
<td>1</td>
<td>-</td>
<td>8</td>
<td>45</td>
<td>66</td>
<td>35</td>
</tr>
<tr>
<td>Skulls</td>
<td>4</td>
<td>2</td>
<td>16</td>
<td>-</td>
<td>38</td>
<td>-</td>
<td>1</td>
<td>9</td>
<td>56</td>
<td>82</td>
<td>37</td>
</tr>
<tr>
<td>Tails</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trophies</td>
<td>48</td>
<td>39</td>
<td>51</td>
<td>56</td>
<td>56</td>
<td>68</td>
<td>73</td>
<td>71</td>
<td>49</td>
<td>65</td>
<td>64</td>
</tr>
</tbody>
</table>
Table 4. Possible net effects of wildlife ranching on the African Civet (*Civettictis civetta*) and subsequent management recommendations

<table>
<thead>
<tr>
<th>Net effect</th>
<th>Data quality</th>
<th>Rationale</th>
<th>Management recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>Suspected</td>
<td>Wildlife ranching may be expanding habitat for African Civets but also may cause accidental persecution and fragmentation through predator-proof fencing.</td>
<td>Reduce persecution of this species through holistic management techniques. Drop fences to form conservancies.</td>
</tr>
</tbody>
</table>

2012 (Table 3). Given the estimated densities of this species in non-protected areas, it is possible that the current harvest has a low impact. However, because quotas do not take into account any non-hunting related mortality, there is a need to evaluate the sustainability of current harvest offtakes. Additionally, civet skins have been confiscated in North West Province (Power 2014), which suggests a local trade in the species, although likely not extensive owing to a marginal distribution there.

Even though information regarding the traditional medicine trade of African Civets in the assessment region is limited, it is likely that this species has the same medicinal significance as in other regions of Africa.

It is expected that wildlife ranching will play a positive role in African Civet conservation and distribution. However, two important factors can affect the role of game ranches in the conservation of this species. First, carnivore persecution among game ranches is high and can lead to accidental killing of African Civets (via poisoning for other carnivores). Secondly, the use of predator-proof fencing is increasing in popularity (due to protection of expensive game), which could limit the movement of African Civets between properties. This could lead to population fragmentation and local inbreeding in civet populations caught on such properties.

Threats

There are no major threats to the species within the assessment region. African Civets are sometimes poisoned through direct persecution by landowners for livestock and crop protection, or indirectly as part of other damage-causing animal persecution programmes. Due to the fact that African Civets are nocturnal and frequently utilise footpaths as pathways as well as roads, they are prone to being caught in snares and experience high mortalities on South Africa’s roads, especially inMpumalanga and Limpopo (Collinson 2013). In the Greater Mapungubwe Transfrontier Conservation Area, African Civets were the top three most important mammal road kills, and in a period of 120 days, 16 dead individuals were found knocked down by cars (Collinson 2013). This could amount to as many as 50 killed per year, which could have an impact on a local population. More research is needed to determine whether the hunting quotas are sustainable, especially in conjunction with non-commercial mortalities.

Throughout the rest of Africa, however, African Civets are commonly found for sale as bushmeat, and are one of the most abundant mammals found in bushmeat markets in southeast Nigeria, where they are utilised for both food and skin (Angelici et al. 1999). They are frequently found trapped for meat in other countries, including Sierra Leone, Democratic Republic of the Congo, Central African Republic, Congo Republic, and Cameroon (Ray 2013). It is suspected that, if traditional bushmeat sources in South Africa become scarce, this species may become increasingly exploited.

Current habitat trend: Stable. The Savannah Biome is not threatened within the assessment region (Driver et al. 2012).

Conservation

The African Civet is present in numerous protected areas across its range within the assessment region, for

Table 5. Threats to the African Civet (*Civettictis civetta*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Threat description</th>
<th>Evidence in the scientific literature</th>
<th>Data quality</th>
<th>Scale of study</th>
<th>Current trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.1.3 Persecution/Control: poisoning by landowners for livestock and crop protection.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>Probably stable</td>
</tr>
<tr>
<td>3</td>
<td>5.1.2 Hunting &amp; Collecting Terrestrial Animals: indirect persecution targeted at other damage-causing animals.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>Probably stable</td>
</tr>
<tr>
<td>4</td>
<td>5.1.1 Hunting &amp; Collecting Terrestrial Animals: direct hunting or poaching and snaring for trophies, skins, bushmeat and traditional medicine.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>Stable due to cultural use being localised. Trophy hunting predicted to increase.</td>
</tr>
</tbody>
</table>
example the Greater Mapungubwe Transfrontier Conservation Area, Marakele National Park, Blyde River Canyon Nature Reserve, Pilanesberg National Park, and the Kruger National Park, which represents the largest protected subpopulation. Additionally, the population of Botswana is listed on CITES Appendix III. Detailed recommendations to ensure the sustainable use of African Civets for musk production can be found in Abebe (2003).

Educational campaigns should be used to decrease persecution by landowners and public awareness campaigns should be used to increase the profile of this species. The trophy hunting industry should be monitored, specifically the age, sex and location where animals were hunted. Conservancy formation should be incentivised to allow African Civets to disperse. Permeable fences should also be trialled, such as done in Namibia with rubber tyre installation which allows free passage of many wildlife species between farms (Weise et al. 2014), and the same design would allow movements of African Civets too. Road mortalities should be monitored in order to evaluate the ecological impact on local populations. Many factors may influence road casualties such as habitat use and movement patterns. These factors should be considered before setting up any mitigation devices.

Recommendations for land managers and practitioners:

- Currently, no management plan is needed, although local monitoring programmes should be established to determine population size and trends, and the impacts of trophy hunting and trade, as well as monitoring of traditional medicine use and bushmeat hunting.

Research priorities:

- Population sizes in protected and non-protected areas across its range.
- Impact of harvest on population persistence.

Table 6. Conservation interventions for the African Civet (Civettictis civetta) ranked in order of effectiveness with corresponding evidence (based on IUCN action categories, with regional context)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Intervention description</th>
<th>Evidence in the scientific literature</th>
<th>Data quality</th>
<th>Scale of evidence</th>
<th>Demonstrated impact</th>
<th>Current conservation projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.4 Compliance &amp; Enforcement: systematic monitoring of trophy hunting trade.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>1.1 Site/Area Protection: conservancy formation.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>2.3 Habitat &amp; Natural Process Restoration: development of permeable fences, for example with the use of rubber tyres.</td>
<td>Weise et al. 2014</td>
<td>Indirect</td>
<td>Local</td>
<td>Eleven mammalian species were shown to utilise tyres installed in wildlife-proof fences as a passageway.</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>4.3 Awareness &amp; Communications: education awareness campaigns for landowners and the general public.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>5.4 Compliance &amp; Enforcement: Systematic monitoring of the use of this species in the traditional medicine industry.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>5.4 Compliance &amp; Enforcement: speed control on roads.</td>
<td>-</td>
<td>Anecdotal</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Data Sources and Quality

Table 7. Information and interpretation qualifiers for the African Civet (Civettictis civetta) assessment

<table>
<thead>
<tr>
<th>Data sources</th>
<th>Field study (literature, unpublished), indirect information (literature, expert knowledge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data quality (max)</td>
<td>Estimated</td>
</tr>
<tr>
<td>Data quality (min)</td>
<td>Inferred</td>
</tr>
<tr>
<td>Uncertainty resolution</td>
<td>Best estimate</td>
</tr>
<tr>
<td>Risk tolerance</td>
<td>Evidentiary</td>
</tr>
</tbody>
</table>

- Population demographics.
- Spatial ecology, especially effect of predator-proof fences on movement and population ecology.
- Seed dispersal as an ecosystem service provided by African Civets.
- Prevalence of African Civet body parts in traditional medicine markets.

Existing African Civet research projects by L.H. Swanepoel and colleagues at the University of Venda include a population density study in the Waterberg Biosphere, and spatial ecology and seed dispersal studies of this species in forested patches.

Encouraged citizen actions:

- Report sightings on virtual museum platforms (for example, iSpot and MammalMAP), especially outside protected areas.
- Landowners should form conservancies or employ permeable fences.
References


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