



A REPORT ON THE PORCUPINE QUILL TRADE IN SOUTH AFRICA



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This report was commissioned by IFAW (International Fund for Animal Welfare) to determine the extent and impact of the porcupine quill trade in South Africa.

The report covers the following key issues:

- Background information on the ecology, behaviour and status of the porcupine
- The porcupine quill trade

Throughout the report, ‘porcupine’ refers to the Cape porcupine *Hystrix africaeaustralis*

Introduction

It has been fairly difficult compiling this report, as the porcupine quill trade is both controversial and complicated and a range of factors influences the availability or accessibility of data needed to substantiate some of the issues prevalent in the trade.

These factors include for example the geographical range of the problem, in that porcupines occur widely and are hunted extensively throughout South Africa and yet there are no national or provincial estimates to determine population statistics within the different provinces. This means that there is no scientific understanding of the impact that localised hunting has had on porcupine populations over the last few years, which in turn means that there is no relevant information pertaining to how hunting has influenced the ecological integrity of the species. As with all potentially detrimental issues within conservation, one should apply the precautionary principle until such time that conclusive scientific data can prove to the contrary.

We know, through conversation with a wide range of people, that thousands of porcupines are being killed each year and yet there are no records to give indication of the exact or even approximate numbers. There has also been an exponential increase in the number of quills and quill products available in the retail sector, which was evident when we visited different stores around the western and southwestern Cape.

Another problem has been the fact that a person can deal in porcupine by-products without having to obtain a permit, which translates into the fact that there is no control over the number of quills being supplied to the market and no documentation to trace the source or extent of each transaction.

Within the quill trade itself, it has been very difficult tracking down the ‘middlemen’ who supply the retail sector with quills and quill products and we have had to rely on the information given to us by a small, select number of recognised dealers. Outside of this report, we have had to assure the dealers’ confidentiality.

Many people feel that as porcupines are rodents they must breed rapidly and therefore the species can withstand the pressures of indiscriminate hunting practices. This is not so and unfortunately there are a number of incidences within the field of nature conservation that show us that when we are complacent about a species, it can disappear before our very eyes. A relevant, recent example would be the demise of an indigenous porcupine in Italy, which was considered a delicacy and hunted extensively within its range until it eventually became extinct.

From the outset we have attempted to make this report as inclusive as possible, as we believe that the scope of the problem can only be understood if one takes into consideration every aspect of the issue from an ecological, behavioural, conservation and human perspective.

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1. An overview of the reporting process

It is important to note at the onset of this report that the porcupine quill trade has become highly emotive and therefore contentious over the last few years and as a result, many of the people operating within the industry do so elusively and under-cover.

A number of popular articles have appeared in the media, including for example a feature in the Mail&Guardian titled '*Consider the lowly porcupine*' and an article on the SANParks Forum website titled '*Bloody bouquets and bad dreams*' by the Wildlife Action Group, and this has exposed the trade in a negative light and contributed towards its controversy.

As the quill trade operates on an informal basis, there are no structures in place to determine accountability regarding the legitimate source of the products or the number of quills being released in the market. Unlike other litigious issues such as canned lion hunting, where there are defined areas where these animals are bred and hunted, the quill trade has no tangible operating structure and therefore the hunting and killing of porcupines and the selling of porcupine by-products is carried out randomly and with no means of accountability.

The reporting process has been influenced by these factors and the data that we have assimilated has been based largely on anecdotal information obtained through established conservation contacts as well as through direct communication with farmers and individuals within the retail sector who are involved within the porcupine quill trade.

2. Background information on the Cape porcupine

2.1 The ecology of the Cape porcupine

2.1.1 Distribution

The Cape porcupine is an Old World porcupine that occurs throughout the entire southern African sub-region, except in extremely arid areas such as the interior of the Namib Desert. It has a wide distribution and has adapted to most habitats, which enables it to survive in a range of geographical localities. The porcupine is endothermic in that it has the ability to regulate its body temperature independently of ambient temperature, thereby resulting in a wide ecological tolerance.

2.1.2 Burrows

The porcupine has a preference for environments that offer shelter during the daylight hours, for example areas that have rocky out-crops, caves, exposed tree roots and disused burrows. Some burrows are used on a semi-permanent basis and have either been excavated or modified by the

porcupines, which use their fore-claws to dig the earth to make the burrows more secure and comfortable.

2.1.3 Diet and feeding

Porcupines are nocturnal animals and spend the night-time hours foraging along well-worn tracks in search of the bulbs, tubers, roots and other plant matter that comprise the bulk of their diet. Although they are predominantly vegetarian, they have been known to eat decayed meat. Bone shards found in their burrows are attributed to their need to replenish calcium and phosphates in their diet.

The porcupine is fairly destructive in its eating habits, as it generally bites into a vegetable or tuber and after only a few mouthfuls, discards it. They feed by clenching the vegetable in their forelegs and then chewing loudly. They are very potent gnawers and this has created a range of problems for the species, as their ability to bite through even the most robust substrate has brought them into direct conflict with farmers around the country.

2.1.4 Reproduction

Porcupines are monogamous animals and live in extended family groups consisting of an adult male and female and their offspring. They are generally solitary by nature but at times forage in pairs or small family groups. There is sexual dimorphism in the species, as females are larger than the males.

Because of their barbed anatomy, females initiate copulation by presenting to the males. Once pregnant, gestation lasts for three months. One to four young, with an average of 2, are born in grass-lined chambers in the burrow in summer, between August and March. There is no evidence of a female having more than one litter per year within free-ranging populations.

2.1.5 Life span

Unlike other rodents, a porcupine's life span can range from between 15 to 20 years, with an average of 15 years.

In conclusion

As the porcupine is a generalist and readily adapts to its natural environment, it has benefited greatly from habitat transformation due to urban expansion and agricultural practice in South Africa. Ironically though, this has contributed greatly to its demise, as over the years it has come into increasing contact, and therefore conflict, with humans.

2.2 The porcupine within the context of being a problem animal

The porcupine has been categorised a 'problem animal' or 'vermin' throughout most of its range in the southern African sub-region, and specifically in areas

where it comes into direct contact with human settlements and agricultural practice. This labelling has resulted in the animal being hunted without impunity and no estimates are available to determine the exact impact that this indiscriminate hunting has had on localised populations.

There are a number of factors that have contributed to this negative status, including:

2.2.1 Crop raiding

Porcupines are drawn to areas where there is an abundance of food and this frequently brings them into the vicinity of crop farms and orchards. Their feeding habits are generally wasteful, for example they will bite through a maize stem with their strong incisors, eat a portion of the plant, discard it and then move on to the next plant.

Porcupines also often favour root vegetable crops, for example potatoes, and will feed on a large quantity of potatoes during one night, but often only biting into a potato before moving on to the next.

This wasteful practice has garnered considerable negative feelings towards the species.

In communication with Sean Privet, the botanist at Grootbos Nature Reserve near Gansbaai, he informed us that they have problems with porcupines when they eat the typha planted in their water purification wetland and that he is aware that a nursery in the vicinity has regular problems with porcupines eating their bulbs and arum lilies. A number of people have informed us that farmers in the Overberg region and around Malgas on the Breede River, are regularly involved in hunting porcupines and the number of quills on sale in the area substantiates this.

In conversation with a conservationist called Marina at the Nama Karoo Foundation, we were informed that farmers in the region happily endorse the hunting of porcupines by their farm workers, as the porcupines cause extensive damage to the earthworks and lucern crops. The workers generally skin the animals, take the meat for consumption and ‘shove the quills into a hole in the ground’.

2.2.2 Burrows

Porcupine burrows create significant obstacles for tractors and farm vehicles, which often leads to costly and time-consuming inconveniences to the farmer. The burrows also provide sanctuary for other perceived ‘problem animals’ such as aardvarks and warthogs.

2.2.3 Fencing

As porcupines have strong incisors that are accustomed to biting through tough and fibrous plant matter, they are also able to bite their way through agricultural fencing, which is not only costly to repair and

maintain, but also creates access to other perceived ‘problem animals’ such as Black-backed jackals, Bat-eared foxes and caracals.

2.2.4 Water pipes

Porcupines have an acute sense of smell and, particularly in the arid regions of South Africa, are able to locate the agricultural water pipes which are often positioned below ground-level. They then dig down and bite into the PVP piping to gain access to the water and this leads to costly and time-consuming problems for the farmer.

In communication with Grant McIlrath of the Meerkat Conservation Project in the Karoo, he informed us that the farmers he had spoken to view the porcupine as a massive pest and that they will not hesitate to kill them on sight. He cited porcupines digging up irrigation pipes as being the primary problem in the area. He suggested that farmers should raise their piping above ground level, perhaps on the farm fencing, to prevent porcupines from getting to them.

Interestingly, in conversation with Letsie Coetzee of the Tankwa National Park in the Karoo (Tel 027 341 1927), she informed us that, as porcupines chewed their water pipes ‘to bits’ during the dry season, they now position the pipes below the ground to protect them from ‘the sun, porcupines and baboons’.

2.2.5 Ring barking trees

A number of incidences have been reported of porcupines ring barking trees, particularly during the summer months in the north of the country. This feeding has an impact on woodlands in that it reduces the growth rate of saplings, increases stem malformation and contributes towards the mortality of young trees. (Conversely, ring barking does contribute towards maintaining cyclical succession in savannah ecosystems). During drought months, porcupines are known to dig through to the roots of trees, creating instability within a wooded area.

In conversation with Floors Human of the EWT Riverine Rabbit Project (Mobile 082 407 9481) near Victoria West, we were told that the incidence of ring barking and digging under farm fences is particularly prevalent when they are experiencing drought conditions in the region.

Relocation of problem porcupines

Occasionally a farmer will enlist the assistance of a nature conservation authority to help relocate a porcupine, but this is not the norm. SANParks informed us that they occasionally remove a problem porcupine within an urban context i.e the Table Mountain National Park, and then release it elsewhere in the Park.

In conversation with Helena Greaves of the Centre for the Rehabilitation of Wildlife CROW (Tel 032 942 8781) in KwaZulu Natal, she informed

us that for years, farmers in the vicinity would contact her requesting help in removing problem porcupines, but that recently, these requests have become much less frequent. In her opinion, she believes that the quill industry is having a destructive impact on porcupines and that the animals are being targeted specifically for the industry.

According to porcupine scientific researcher Christy Bragg, CapeNature have been known to trap problem porcupines and then kill them.

In conclusion

All these factors have engendered a very negative attitude towards the porcupine in general and most farmers, apart from a few, isolated 'eco-friendly farmers', deal with the problem by ordering the hunting and extermination of porcupines.

Ironically, the localised killing of porcupines on farms creates an ecological dynamic that compounds the original problem, as other females move into a territory when a dominant female is killed and when they then start breeding, the number of porcupines in the area increases proportionately.

An article titled "Let's be sensible about predators" featured in the 4 August 2006 issue of Farmer's Weekly stated that "*No (farmer/wildlife) programme has much chance of success without inputs from the kingpins in the debate, namely the farmers.*" Certainly this is relevant in the context of porcupines, as it is the farmers who have been killing porcupines for years and who encourage their labourers to hunt porcupines, both for their meat and their quills.

2.3 Porcupines and natural predation

2.3.1 A formidable defence mechanism

The porcupine's armament of spines and quills acts as a significant deterrent to most predators and although they do occasionally come under attack from lions and leopards, they are generally able to fend off any fatal encounters.

If they are ambushed or feel threatened in any way, they first remain motionless and then, if the threat continues, become very aggressive, making grunting noises, stamping their feet and erecting their quills so that they appear formidable. They also rattle their hollow tail quills and run backwards towards their aggressor, further adding to their intimidation. Apart from learned, specialised hunting by the two above-mentioned carnivores, the porcupine is able to defend itself adequately within its natural environment.

2.3.2 Predation within an urban or rural context

As porcupines have moved into urban and rural areas of the country where very few, if any, predators are still found, predation levels have diminished completely and the only known threat to porcupines are humans.

2.4. Porcupines as biodiversity engineers

Contrary to the perceived negative image of the porcupine as a problem animal, the species has definite positive implications within a biodiversity context and porcupine research scientist Christy Bragg has written scientific papers referring to them as ‘ecosystem engineers’. In a recent article, she wrote: “Studies...show that productivity and diversity of plants within porcupine diggings can be many times higher compared to outside their diggings.” Porcupines not only increase bulb diversity (which also has important eco-tourism implications), but also contribute towards an increase in the diversity and germination of annuals, shrubs and grasses.¹

2.5 Current legislation in South Africa

2.5.1 Classification

In South Africa, the porcupine has no official classification and throughout the provinces, there is no enforced permitting structure in place to regulate the hunting of, or trade in, porcupines. It is generally assumed that the species is relatively common throughout the country and that the core population is stable. This assumption is not based on scientific analysis, as no studies appear to have been conducted to establish the impact of unregulated hunting on porcupine populations over the last few years.

2.5.2 IUCN Listing

The current IUCN listing for porcupines is ‘least concerned’.

2.5.3 Provincial legislation

In the context of provincial conservation legislation, the Cape porcupine is not considered threatened.

The Nature and Environmental Conservation Ordinance, 1974, Cape, which applies in the Western Cape, Eastern Cape, Northern Cape and some areas of the North West Province, offers no protection to porcupines as it is deemed that the porcupine quill is obtained from a dead animal, and therefore gives no reference to the method or reason for the animal being killed.

The ‘Nature and Environmental Conservation Ordinance, 1974, Cape’ contains provisions of relevance to the protection of ‘wild animals’, which are defined as live vertebrates or invertebrates ‘belonging to a non-domestic species’ and includes animals kept or born in captivity.

The Ordinance defines the ‘carcase’ of a wild animal to include ‘any part of the tooth, horns, shell, tusks, bones, hair’ of such animal. Porcupine quills therefore amount to part of the ‘carcase’ as defined under the Ordinance. No reference is made to the animal parts comprising the carcase being processed or unprocessed and so it can probably be assumed that processed as well as unprocessed products fall within the definition of ‘carcase’.²

2.5.4 CapeNature

In conversation with Deon Hignett, Permits, at CapeNature (Tel 021 659 3418), we were informed that CapeNature ‘support the sustainable use of any wildlife product’ and when we asked how he would define sustainability within the context of the porcupine quill trade, he was not able to answer the question, as no population estimates are available. He also stated that, as porcupines are rodents and breed rapidly, their populations are stable, although he could not substantiate that. Because the quill industry supports livelihoods, CapeNature sees no reason to interfere with it.

In conversation with Karen Trendler of WildCare (Mobile 072 969 4499), she feels that the current legislation has created a loophole for the indiscriminate killing of porcupines and that even if the current legislation changes, the problem will continue.

According to Sonia Meintjies of the Department of Environmental Affairs & Tourism (Tel 012 310 3611), around 500 conservation officers will be deployed around the country in the near future to make sure that people comply with the regulations outlined in the new Biodiversity Bill.

In our opinion, the implementation of legislation is only effective if there is sufficient support at ground level to impose the new regulations, which is often not possible within conservation because of geographic obstacles, limited manpower and ineffective prosecution procedures.

2.5.5 New Biodiversity Bill

In the draft Biodiversity Bill, the porcupine has been listed a ‘protected species’, which by definition means ‘an indigenous species of high conservation value or national importance that requires national protection’.³

If the porcupine is officially listed a protected species, this will afford it legal protection from indiscriminate hunting practices, as it will be illegal to hunt, or trade in any body part, without a relevant permit.

The future protection of the species will only be effective if people comply with the new regulations. Given the geographical range of the problem and the general antagonism towards the species, one can envisage that the implementation of these regulations is going to be difficult to enforce.

Sonia Meintjies of DEAT, informed us that the porcupine has been listed a protected animal in the draft Biodiversity Bill as “they do not know what is going on with the species.”

Response to the draft Biodiversity Bill

In conversation with Hannes Stadler of **CapeNature** in Porterville (Tel 022 931 3832), he informed us that the general feeling amongst farmers in the region was that the new draft legislation giving porcupines a protected status is ‘a big joke’ and that they would continue killing porcupines regardless of the Bill, as the porcupines are a huge problem on their farms, especially in context of biting through pipes and fencing.

In a letter to the Department of Environmental Affairs & Tourism dated 5 June 2006 regarding the new draft regulations, the **Wildlife Ranching SA** wrote that they are requesting that the porcupine be removed from the Schedule B1 Protected Species list as they seriously question the credibility of including this animal.

Excerpts from this communication state:

“Problem animals should be eradicated using the most applicable measure. DEAT should assist in research for environmentally friendly poisons for problem animals, e.g. jackal.

Paragraph 14(2)(b) –An animal may not be hunted by luring the animal by means of –

- (i) bait
- (ii) sounds
- (iii) smell
- (iv) any other induced luring method

Paragraph 14(2)(c) - “May not be hunted by using”

- (i) flood or spotlights
- (ii) motorised vehicles
- (iii) aircraft

In both (b) and (c) we need to be able to use the most appropriate method to eradicate problem animals like jackal, caracal, porcupine, etc. This is important not only to the wildlife ranching industry, but also to the sheep, goat and cattle industries. Our emerging and subsistence farmers cannot continue with their farming if they are not allowed to eradicate problem animals.’

Human-wildlife conflict workshop

In April 2006 an important workshop was initiated in the Western Cape regarding resolving human-wildlife conflict within the agricultural sector and was hosted by the Endangered Wildlife Trust, CapeNature and the National Council of SPCA’s. The aim of the workshop was to review the holistic management of human-wildlife conflict in the agricultural sector of South Africa and to explore various exclusionary techniques for keeping damage-causing wildlife out of farming lands.

We made contact with Dr Kas Hamman, Director Biodiversity at CapeNature, to ascertain the status of the porcupine within this workshop process but were referred to the Porterville office, where we were not able to elicit either an official or anecdotal response to our question.

3. An overview of the porcupine quill trade

3.1 Historical context

Before the widespread distribution and use of porcupine quills within the retail, events and décor sectors in South Africa, porcupines were being hunted and killed extensively within agricultural communities, where they were perceived as problem animals that inflicted considerable damage to cultivated crops.

Two scenarios were evident:

- a. Porcupines were hunted and killed by farmers or farm labourer's as they were problem animals. Their meat was also considered a delicacy, which was an incentive to hunt them.
- b. Opportunistic retail would have been on a very limited basis and probably through local farm stalls i.e selling the occasional quills that were obtained through being collected in the veld or as a by-product of localised problem animal hunting.

In conversation with Werner Sunkel of 'Quills from Africa' (Tel 021 552 3200) we were able to ascertain that his quill operation originated on the family farm where porcupines were hunted and killed regularly. He opportunistically started to collect the quills that were being discarded or burned after the porcupines had been skinned and eaten by the farm labour force, whom he referred to as 'volk'.

The demand for porcupine quills developed through a growing aesthetic appreciation for these commodities and the spread of the porcupine quill trade within the retail, events and décor sectors would have evolved from:

- a. Individuals such as Werner Sunkel of 'Quills from Africa' opportunistically supplying a growing number of retail outlets with porcupine quills, therefore increasing the visibility and aesthetic appeal of the product to a larger audience.
- b. The growing demand for porcupine quills would have been opportunistically exploited by a wider network of 'dealers' such as Werner Sunkel, who would have seen the economic viability of exploiting a commodity which was not only widely available but also involved minimal costs or effort to obtain.

3.2 How porcupines are killed

There are a number of factors that have contributed to the relative ease with which porcupines are hunted, captured and killed, and these include:

- a. Porcupines are territorial and therefore it is relatively easy to locate the burrows of resident animals.
- b. They are particularly vulnerable at night when their foraging and eating habits are audible.
- c. They have distinctive and easily identifiable spoor, as when they walk they drag their quills through the sand behind them.
- d. Porcupines are slow moving animals and although they can run fairly fast when under stress, once they move away from the sanctity of their burrows, they are susceptible to being chased and captured by humans.
- e. When porcupines forage across their territories at night, they often travel great distances, and this makes them vulnerable to capture as they are often not able to return to the safety of their burrows when they are first sighted by a hunting party.
- f. Although porcupines have an acute sense of smell, their eyesight is poor and it is possible to hunt them successfully if one remains down-wind of the animal.
- g. The porcupine's skull is lightly built and the bone structure is thin; a weak area on its forehead has led to it being easily killed by a single but severe blow to the head.

A number of methods are used to hunt and kill porcupines, including:

- a. Baiting a metal or mesh trap with rotten vegetable or fruit matter. Once the porcupine has entered the trap and the trap door has slammed closed, the porcupine is then shot at or clubbed to death on the head. (As an aside, according to porcupine research scientist Christy Bragg of the Zoology Department, University of Cape Town, many other wild animals such as genets and jackals are often caught incidentally in these traps, and are also killed).
- b. Porcupines are occasionally caught in gin traps, a lethal and exceptionally cruel practice that is being looked into by provincial nature conservation authorities, who are concerned about the inhumane suffering of animals caught in these traps⁴
- c. In rural areas, hunting parties consisting of farm labourers and packs of dogs frequently set out at night to hunt porcupines. In conversation with

porcupine research scientist Christy Bragg we established that in her study area in Nieuwoudtville in the Northern Cape, she heard hunting parties going out almost nightly to hunt porcupines in the outlying farmlands.

- d. Porcupines are occasionally shot at by farmers who chase after them in their farm vehicles (this is anecdotal).

In conversation with Hendrik van Aswegen (Tel 051 831 1023), a farmer in the Orange Free State, he complained that the porcupines have an impact on his water pipes and on his mielie crops, and that he shoots porcupines regularly, at times up to 100 animals in a month. He uses traps baited with rotten tomatoes and discards the quills in the veld.

According to Ann van Dyk of the De Wild Cheetah Centre (Tel 012 504 1921), wheat and pumpkin farmers in the area regularly shoot porcupines or set gin traps to catch them. She reiterated that the porcupines cause damage to the water pipes on the farms.

Interestingly, in the CapeNature ‘Guide for Hunters in the Western Cape, 2003’, prohibited hunting means and methods include using ‘dogs’, ‘any trap’ or ‘artificial lighting’ but that ‘a hunting light and dogs may be used at night for the hunting of declared problem animals and rodents, like porcupines and springhares’.

3.3 The porcupine quill

Porcupines have a diverse array of quills and spines, which vary in length, pliability and thickness and extend across the posterior two thirds of the upper parts and the flanks of the body.

A description of porcupine quills and spines:

- a. It is estimated that an adult porcupine has approximately 500* quills and spines on its body.

* Please note that it has been very difficult to ascertain an exact number and that this figure is an estimate.
- b. Both the quills and spines are white with black marks or annulations declining in length towards their bases.
- c. The formation of these marks is controlled by melanin, which is supplied to the individually growing quills or spines.
- d. Spines can grow up to 50cm in length
- e. Quills can grow up to 30cm in length

- f. A vertical crest of long, pliable spines occur on the head and are predominantly black in colour with white on the tips.
- g. The tail quills are hollow-ended with narrow bases and create the rattling noise that is used to intimidate predators.
- h. According to porcupine research scientist Christy Bragg, the small, thin and near-perfect quills are usually obtained from young or baby porcupines.
- i. The quills are quite loosely attached to the porcupine's body and are shed occasionally and then grow back again. The quills attach easily into an animal's body and become deeply lodged when the animal moves around. This can often lead to septicaemia.
- j. The quills are not barbed and contrary to popular belief, porcupines are not able to shoot their quills at an enemy.

In conversation with Marienne de Villiers of the Avian Demography Unit at the University of Cape Town, we were told that during fieldwork in fairly high-density porcupine territory some years ago, she would occasionally pick up only around 2 to 3 quills a night on well-used paths or at the entrances to burrows. She also said that one rarely found the long, thin head crest quills and never the short, hollow tail quills.

This is important, as many retailers claim that their porcupine quills are obtained from opportunistic gathering in the veld. As they can supply quills and spines of all shapes and sizes, this would contradict their explanation.

Anecdotally, Karen Trendler of WildCare informed us that one is able to tell from the follicle whether a porcupine quill has been deliberately pulled out or has fallen out naturally.

Porcupine research scientist Christy Bragg informed us that many of the back quills are often grimy and dirty due to foraging and being scuffed in the burrows, which would mean that a large quantity of porcupines would need to be harvested to supply the production of the pristine quill merchandise on display around the country.

3.4 The quill trade

3.4.1 The 'middleman' or dealer

Specific dealers or 'middlemen' supply the porcupine quills to the retail and wholesale outlets. The dealers obtain the quills directly from the farms or through tanneries, although the latter is less prevalent. Due to the controversial nature of the trade, most dealers prefer to remain anonymous and in conversation with a broad range of retailers in the Western Cape, they choose to protect the identity of their suppliers and at no stage were prepared to reveal their sources.

It appears that there is a functioning ‘black market’ where the dealers are able to supply huge volumes of quills – a figure of 200 000 was quoted by Werner Sunkel – but they insist on anonymity and we were not able to elicit their identities from our sources.

Permitting

In conversation with Deon Hignett, Permits, at CapeNature, he explained that he grants permits to a number of dealers operating in the quill trade and that there are 3 to 4 main dealers operational in the Western Cape. He referred to these dealers as ‘clients’.

(According to Section 72A of the Western Cape Nature Conservation Laws Amend-ment Act, 2000 “Client means a person who is not a South African citizen who, in any form or manner, rewards another person for, or in connection with, the hunting of wild animals, or feral animal”

He refused to reveal any information pertaining to these dealers. In the week of our discussions, he had issued a permit to a dealer for a quota of 20 000 quills. Apparently, provided the dealer can provide details regarding the source of the quills, a permit is granted, although it appears that CapeNature do not check the validity of this source.

A percentage of these quills are then exported as, according to Werner Sunkel, the ‘market in South Africa is saturated’. He is himself looking to export his quill products in the foreseeable future and is developing a website to further this aim.

How the quills are obtained

We have concluded from conversations with a number of individuals involved as ‘middlemen’ in the trade that they travel out to the farms themselves to collect the quills. In conversation with Werner Sunkel, he informed us that he obtains most of his quills from farms in the region of the South African west coast and mentioned in particular the farm of Piet Spannenberg near Louisfontein.

He also informed us that he encourages the farm labourer’s to hunt the porcupines and gives them bread, jam and wine as payment for the quills. The labourers skin the animals, remove and then clean the quills with disinfectant and supply them to him in boxes, with one box comprising the quills of, on average, two porcupines.

In conversation with an employee at a wholesale outlet called MerriPak in Ndabeni (Tel 021 531 2244), they informed us that Werner Sunkel supplies them directly with an assortment of quills, ‘in the 100’s’ and ‘seasonally’, which they then sort and package themselves.

Payment for a dead porcupine

According to Helena Greaves at CROW, farm labourers in the Natal midlands are paid a substantial sum of money for a dead porcupine,

which provides a lucrative incentive for them to hunt the animals. She mentioned a figure of R1,500.00 per animal, but this does not correlate with other figures that we have been quoted and we have taken the amount of R600,00 to be an average price per animal, which sounds more plausible considering how much a dealer is prepared to pay for his quill supplies. Werner Sunkel informed us that when he purchases quills in bulk from black market dealers, he pays R1,00 or R1,20 per quill. Because of these costs, he is looking into having quills produced synthetically.

Quantities

In conversation with Patty van der Merwe, a quill supplier in Aberdeen (Tel 049 846 9009), she can supply any number quills in a variety of sizes, which she obtains by 'picking them up' but when probed further, would not reveal more substantive information regarding her sources. She charges 50 cents per quill and sells them in bundles of 12 i.e R6,00 per bundle. She supplies an outlet called Kokskraal Handcraft and the proprietor Liz Trosky informs us that she sells porcupine products in her shop, which are supplied to her by Patty van der Merwe.

Interestingly, the porcupine quill jewellery items made through Kokskraal Handcraft are sold overseas via an Internet site called Cebra (see attached quotation and advertisement).

In our request for a quotation from Patty, we were quoted a figure of R8520.00 for 1420 bunches of quills consisting of 12 quills per bunch, which equates to 17 000 quills, for one order. In our opinion, it is not possible that these quills are being 'picked up' in the veld.

Anecdotal information

In conversation with Peter and Nola Fraser of The Manger in Barrydale (Tel 028 572 1643), they are aware of a farmer in the vicinity who uses food to entice porcupines onto his farm so that he can gather their quills 'naturally', which he then sells for R2,00 each.

In Graaf-Reinet, a farming couple called Richard and Kitty (surname withheld - Tel 049 891 0576) is sometimes approached for quills by game lodges in the vicinity, which use the quills for decorative purposes. They apparently obtain quills from opportunistic gathering in the veld and also through road kills, which are fairly frequent in the area.

A dairy farmer in the Dundee area in KwaZulu Natal, Arthur Letheridge, informed us that he is able to supply quills in all different sizes and in large quantities, which are collected on his farm 'by the farm children' (see attached quotation).

3.4.2 The retailer

The number of retail outlets stocking porcupine quills and quill products has increased substantially in recent times. Only a few years ago, one could only obtain quills that were sold in small bundles through a few retail stores or farm stalls, but today one can purchase huge quantities of quills through a large number of retail outlets as well as a variety of products that use quills either in an accessory or functional capacity. Many of the products show a distinct and elaborate sophistication in design and finish.

These products range from jewellery items such as bracelets, necklaces and earrings; to lampshades, which are manufactured in a variety of styles and sizes; to picture frames, quill accessories on leather journal covers and even glass coasters.

In conversation with a number of retail stores, we were informed that if we are looking for individual quills, they can supply us with any quantity that we require and the average price per quill was between R2,00 to R3,00. Werner Sunkel informed us that the most expensive single quill – most probably a boldly tri-coloured head spine - retails at around R20,00.

The consumer

It must be remembered that porcupine quills are quintessentially ‘African’ in that they represent the bushveld and the wild places of our continent. Many people who purchase quills through retail outlets do so because of the aesthetic and nostalgic appeal of the product and in most instances, will not even question the origin of the quills or whether they were obtained in an ethical manner. They will not stop for example, to think that their purchase is having a detrimental impact on porcupines by driving up the demand for quill products beyond the sustainability of non-lethal harvesting.

Through the course of our research, we approached many retail outlets which stock porcupine quills or quill products and when we asked the shop manager or assistant where they obtained their quills from, they would refuse to reveal their source and in one or two instances, became quite affronted and rude. We concluded that this was a result of the contentiousness of the product as well as the fact that the retailer was protecting his/her right to a direct sale.

As mentioned earlier in the report, most retailers would tell us that the quills were collected in the veld or were supplied to them by people who obtained them from the farms. This was particularly prevalent in country shops, which are in close proximity to farmlands.

Listed below are examples of retail outlets that stock porcupine quills or quill products in the vicinity of Cape Town:

Resonance (Tel 021 418 6002) in the Clock Tower complex at the V&A Waterfront. They sell a variety of elaborate quill lampshades (some of the shades have been made using the tall and feathered back quills) as well as smaller items such as picture frames and coasters.

African Trading Port (Tel 021 419 5364) at the V&A Waterfront. They sell a large volume of single quills, which are displayed in a big wooden container and look very impressive due to their length and quantity. They also sell a range of quill jewellery. A large chandelier, consisting of a number of smaller quill lampshades attached to the base, is exhibited in the main entrance to the shop.

Curiosity (Tel 021 788 8515) in Kalk Bay sells a range of quill necklaces and bracelets, as well as single quills.

Van der Berg's Leathers (Tel 021 555 2293) in the Canal Walk complex, sell quill lampshades.

There are the occasional retail outlets that seem aware of the ecological implications of using animal products, for example African Light & Trading (Tel 021 462 1490) who promote their products by saying that they use exotic materials such as porcupine quills and feathers and that 'only animal by-products and timber from renewable sources are used' - but this is not the norm.

Rag trade

Quills are also used within the local and international garment and rag trade industry, where they are incorporated as accessories on clothing designs. This is particularly prevalent with the new trend towards Afro-Eurocentricism.

Availability leads to increased demand

The availability of quills through wholesale outlets such as MerriPak in Ndabeni, which are sold in a range of sizes, thicknesses and colours, has meant that many people specialising in, for example, interior decoration and events organisation, have direct access to these quills, and due to the aesthetic value of the products, use them widely within their trade. This is especially prevalent when a corporate or game lodge outfit are aiming to create an African flavour or ambience.

Exposure to local and international visitors

A random browse on the Internet keying in the words 'Bed & Breakfast - porcupine quills' will reveal the number of establishments that use porcupine quills within a décor capacity, thus increasing the aesthetic value and visibility of the quills to both local and international visitors.

We have found advertisements that promote porcupine quill and other animal products, for example:

“Sophisticated Eurocentric products with superb local twists are finding their way into design-savvy shops all over the world, and, from minimalist handbags made with richly patterned Nguni hides to gorgeous lamps made with polished horn or porcupine quills, you'll find them here, particularly in the De Waterkant area, for far less. For more listings, page through the annual *Time Out Visitor's Guide*. And remember that you are entitled to a 14% VAT refund before you leave”.

and

“The look is colonial-minimalist-chic, with the use of lightly tanned cowhide on armchairs, an abstract placement of a buck horn set, and porcupine quill lampshades on contemporary clear perspex lamp bases all creating a quirky African ambience”.

and

“Everything here is African made, including crafts using reclaimed wood and hand-made jewellery using sea shells, porcupine quills, beads, ostrich egg shells, warthog tusk etc” (Ethno Bongo, Hout Bay)

In communication with Denise Hammerton, Collection’s Manager at Iziko South African Museum, she said that she suspects that the popularity of porcupine quills is doing no favours for the animals, which is a sentiment echoed throughout our research, by a range of people.

In conclusion

The retail industry is at the heart of the porcupine quill problem, as most consumers are not discerning when they purchase products that contain animal by-products, possibly as a result of naivety or a lack of concern for the broader picture. The fact that retailers routinely say that quills are obtained from the veld alleviates any possibility of remorse or guilt. Clearly, it is the bottom line that counts.

3.4.3 The products

According to Werner Sunkel of Quills from Africa, there are around 4 or 5 entrepreneurs in the Western Cape who make porcupine quill products from small, home-based industries.

The manufacture of quill lampshades is the most economically profitable product, as they are sold for around R250,00 or R450,00 per

lampshade to a retail outlet, and after the retail mark-up, are then sold for between R1,200.00 to R1,500.00 to the public.

The products on display use a variety of quill sizes, for example:

- a. a small-to-medium, single lampshade uses 120 single quills measuring around 20cm each, i.e around 30 quills per side. In some instances smaller quills are used two-up on each side, doubling the number of quills used
- b. an ornate single lampshade uses around 140 to 160 of the thinner, feathered quills which taper at the top in an elegant design
- c. the picture frames generally consist of a leather or wooden frame with pieces of cut quill attached to the frame with glue. In these instances, around 10 to 20 single quills measuring around 10cm each are used.

3.4.4 An awareness of an increase in the availability of quill products in South Africa

Throughout our research, we have come into contact with many people who have a sense that in the last few years there has been a marked increase in the number of quill products on the market. In particular, areas such as the Garden Route, small shops in the Overberg and in the Karoo all stock quills or quill products and often these are obtained from small home industries specialising in producing a range of items for the craft market.

In the October 2006 issue of Africa Geographic, the following letter was published in ‘Viewpoint’:

“I see more and more porcupine quills for sale in interior design shops in the form of lampshades and other ‘fashion’ items. As we know, porcupines don’t shoot their quills, so where do these quills come from? How are they harvested, and by whom? Is anybody monitoring the culling of porcupines, and is there some way to stop this harvesting?” Amanda Walden, South Africa

This is just one of many people who have expressed concern about the widespread availability of quill products in recent years.

Export overseas

According to Werner Sunkel, quill items are exported overseas from South Africa, where there is a growing market for Afrocentric homeware and designs. For example, porcupine products manufactured

by Kokskraal Handcrafts in Aberdeen are sold on the Internet to overseas buyers through *Cebra – fair trade crafts from Africa*.

3.4.5 The Internet

There are a number of Internet sites that promote the sale of African porcupine quills and quill products. A few examples include:

Wakeda in Oakdale, California USA (Tel 209 848-0500)
i.e “African Porcupine Quill 6-9” \$1.95 – Great for roach pins and hair sticks”

Atlantic Coral Enterprise in St. Augustine, Florida (Tel 904-797-7478) i.e “African porcupine quills / From 4” to 14” / Sold in lots of 50, 100 and 1000 / Skip the middleman, we are direct importers!”

4. Anecdotal information

4.1 The muti and traditional medicine trade

In African mythology, the porcupine is imbued with special protective powers due to its formidable armament of quills. Within indigenous African medicine, porcupine internal organs are burned and then ground up with herbs and crushed tree bark and then prescribed as a remedy that that will enhance an individual’s strength and offer protection against one’s enemies. The analogy here is the porcupine’s ability to defend itself from predation by using its quills to intimidate and ward off a potential predator.

Porcupine quills are occasionally used within the Zulu culture to make incisions in the skin for the application of topical medicines.

Traditional healers operating in the Mai Mai muti market in Johannesburg sell porcupine innards as a medicinal remedy.

It is interesting to note that as informal settlements establish and expand alongside designated nature areas, for example villages adjoining the Kruger National Park, the unregulated gathering of plant and animal matter for the muti trade can start having serious implications for indigenous flora and fauna if it is not monitored and/or regulated by the conservation authorities.

4.2 The hunting and game auction industries

A report issued by Care for the Wild in 2004 stated that porcupines were just one of over 54 000 animals killed by tourists every year in the trophy hunting industry in South Africa.

In conversation with Sonia Meintjies of the Department of Environmental Affairs and Tourism, she confirmed that porcupines were hunted by tourists in South Africa each year and that US\$100 was the standard price paid to shoot one. The dead animal was then sent to a taxidermist to be prepared for export to the hunter's country of residence.

According to an article published in the Farmers Weekly in 2004 under analysis of game prices, a porcupine fetched R190.00 at a game auction.

In an article titled 'Playing the game', Julienne du Toit wrote: "*Even porcupines are being bid for in game auctions. As a signatory to Convention on Biological Diversity, and a world leader in game farming, South Africa has a clear responsibility to respect the principles of natural processes, the conservation of species within their natural areas of distribution, and the sustainable use of natural resources.*"

We have tried to establish whether it is viable to breed porcupines in captivity for the trophy hunting and quill industries and according to Prof Wouter van Hoven of Wildlife Economics at the University of Pretoria, it is possible - but apparently there would be little point in going to that length, as porcupines are supposedly widespread and abundant throughout the country.

4.3 Tanneries

There are a number of small tanneries based in the Western Cape specialising in the tanning and processing of custom, taxidermy or commercial game hides.

In communication with Tony Dickson, editor of S V Magazine (a leatherware publication), he informed us that in his experience no tannery would specialise in porcupine skins/quills, but that they are brought in occasionally from the farms to be processed - however this is not the norm. In his opinion "I hope you help fight for a complete ban on the sale of (quills) them."

We visited Oasis Tannery in Durbanville but saw no direct evidence of quills being processed on the premises. We were informed however that they could obtain any number of quills for us, as well as quill products.

We contacted a number of local tanneries, including:

Mossop Leathers in Wellington (Tel 021 864 9300)
Swartland Tanning Co in Wellington (Tel 021 873 1061)
Afritan (Tel 021 976 2324)
African Gameskin Trading (Tel 021 946 4874)

None of these establishments work with or are aware of the processing of porcupine skins.

As porcupine quills are easy to remove from the skin once the animal has been killed, in most instances they are cleaned and bundled by the farm labourers and therefore there would be no need to send the skin to a tannery.

5. Our assessment of the development of the porcupine quill industry

We have looked at the porcupine quill trade from a broad range of perspectives and, based on all the information that we accumulated through conversations with conservationists, farmers, retailers and interested parties, we have put together a probable scenario of the development of the quill trade in South Africa over the last few years.

A suggested transition model of the impact that agriculture and urban expansion have had on porcupine populations in South Africa:

- Stage 1 Porcupine populations throughout South Africa were **inherently stable** as there was limited or no urban or agricultural impacts on these animals. The holistic functioning of these populations would have been influenced by natural ecological sustainability principles.
- Stage 2 An increase in agriculture and urban development over the years would have gradually had a positive impact on local porcupine populations, due to an **increase in food availability and a decrease in predator species**. Therefore there would have been an increase in population densities per unit area.
- Stage 3 As agriculture or urban development intensified in a region, the **sustainability of porcupine populations would have increased** due to higher food availability and as a result, the combined carrying capacity of both natural and cultivated habitats would have been greater than at Stage 1.
- Stage 4 It would have been at this point that porcupines would have started having a perceived detrimental impact within farming communities and were labelled ‘problem animals’. This would have resulted in farmers starting to kill significant numbers of porcupines, as they tried to curb the **impact that the animals were having on their crops and food production**.
Simultaneously a second population restrictor would have developed at this point, namely **meat consumption**. Parts of the porcupine, for example the back strap, are considered a delicacy and certainly amongst rural labourers, porcupine meat is a welcome and sought-after protein supplement in their diet.
Natural habitat loss due to an increase in urban and agricultural development would also be increasing at this point, therefore encouraging more porcupine populations to move into agricultural areas.
- Stage 5 The porcupine was officially classified a **problem animal** and consequently began to suffer large-scale mortalities through hunting, trapping and poisoning. A growing increase in the aesthetic and economic value of the porcupine quill would have developed slowly,

as **opportunistic retail through farm stalls** began introducing the public to the quirky and Afrocentric qualities of this commodity. These quills would have been collected as a by-product of the culling and meat harvesting activities.

Stage 6 An **increase in demand** for quills would have created a feedback loop as retail demand now starts impacting on populations through **targeted killing to supply the quill trade**.

In our assessment of the various factors influencing the population dynamics of porcupines throughout the country, we have concluded that the initial positive influences of increased food availability and reduction in natural prey species through agricultural practice would soon have been negated by a marked increase in porcupine mortalities due to problem animal control and meat utilization.

6. Summary and recommendations

It is evident from our investigations that the retail industry is having a hugely negative impact on the species, in that it has placed an economic value on porcupine quill products and at the same time, has misled the public into believing that the quills used in the manufacture of these products are obtained in an ethical manner.

It is also evident from our investigations that porcupines are without doubt problem animals within the agricultural sector, as they cause fairly extensive and therefore expensive damage to agricultural crops and equipment. However, the widespread and often inhumane manner in which porcupines are killed needs to be addressed, and hopefully the new Biodiversity Bill will enforce regulations to achieve this.

Within this context, it would be imperative to work closely with the agricultural community to try and find practical, non-lethal solutions to problem animal control, as outlined in 2.5.5 of this document.

It would also be essential for the Department of Environmental Affairs & Tourism, through the provincial nature conservation authorities, to initiate an assessment of porcupine population dynamics within a designated study area. This would help determine the impact and effects that localised hunting practices are having on porcupines, as well as provide a regional estimate for the species.

We are concerned that an authoritative body such as CapeNature in the Western Cape does not appear to have an interest in the implication of indiscriminate hunting on porcupine populations and that they issue permits for the trade in quills without having any current population estimates for the region. A public awareness campaign highlighting the wide scale nature of the problem will hopefully put pressure on the relevant authorities to initiate an assessment of the situation.

In our opinion, a public education and awareness programme needs to be conceptualised and implemented so that the consumer is made aware of the ecological implications of purchasing porcupine quills and quill products. The story of the Honey Badger is a good case in point, as Honey Badger mortalities within the apiary industry were reduced significantly through a public awareness campaign that made people aware of the fact that the honey industry was impacting negatively on this species. The campaign encouraged consumers to be more discerning, and to only purchase Honey Badger-friendly honey.

We believe that, through a collective commitment to finding a working solution within the agriculture and retail industries, and through increased visibility of the problem, a similar outcome can be achieved for the Cape porcupine.

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