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**An Evaluation of Visitor Facilities and the Visitor
Perceptions of the National Zoological Gardens in South
Africa**

**Kevin F. Mearns
Professor
Department of Environmental Sciences
University of South Africa
South Africa**

**Jana Liebenberg
Graduate student
Department of Environmental Sciences
University of South Africa
South Africa**

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Athens Institute for Education and Research
8 Valaoritou Street, Kolonaki, 10671 Athens, Greece
Tel: + 30 210 3634210 Fax: + 30 210 3634209 Email: info@atiner.gr URL:
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An Evaluation of Visitor Facilities and the Visitor Perceptions of the National Zoological Gardens in South Africa

Kevin F. Mearns

Professor

Department of Environmental Sciences

University of South Africa

South Africa

Jana Liebenberg

Graduate student

Department of Environmental Sciences

University of South Africa

South Africa

Abstract

The future existence of zoological institutions is in a precarious state. Zoos are viewed by some people as cruel and redundant, whilst others are of the opinion that zoological institutions are the last hope and haven for the survival of animal species facing the ever-increasing risk of extinction. The study measured a series of key indicators as prescribed by the appropriate standards relating to visitor facilities and public safety. This study also investigated and evaluated users' perceptions and attitudes towards the National Zoological Gardens of South Africa, with particular reference to visitor facilities and satisfaction. The visitors also evaluated the importance of various aspects in relation to the primary roles and objectives zoological institutions claim to play. The study further strives to provide recommendations to mitigate problem areas in order to obtain higher visitor satisfaction amongst users. The satisfaction of visitors could potentially attract non-users to visit the National Zoological Gardens of South Africa thereby contributing to the long-term economic sustainability and survival of zoological institutions.

Keywords: National Zoological Gardens, visitor facilities, public safety, user perceptions and attitudes, sustainability.

Introduction

Modern day technology, such as the development of film and television has resulted in an increase in the public awareness of the phenomena of the natural world, enabling the introduction of wildlife sights and sounds into one's living room. Film and television offer the opportunity for people to observe and learn about wildlife behaviour in the comfort of their own homes (Lever, 2007). These advancements in technology have contributed to a growing realisation of the consequences of the human impact on the environment and its resources. In return, this has resulted in a growing determination amongst the members of the public to do something before it's too late. Humans have become more aware of their relationship with other living creatures, resulting in questions regarding the need and right to keep creatures that belong in the wild in a cage in a Zoo (Lever, 2007).

Dale Jamieson (1985:109), a professor of philosophy and environmental studies at New York University questions in his controversial essay whether there is any justification for zoos. His research found that the majority of zoos are badly managed, their managers incompetent and in some cases non-existent towards the roles zoos claim to portray. A further statement made in the essay is that the education zoos provide are "false" and "dangerous," and that animal and human will be better off if zoos are abolished (Pojman *et al.*, 2015:120). In contrast to the statements and findings made by Jamieson (1985), Gippoliti (2011) is of the opinion that the human population remains ignorant of their dependence on natural services and have little or no opportunity to experience the beauty of natural landscapes or wild animals. Zoos, especially in urban areas, therefore have an important role in enhancing opportunities for people to confront and come into contact with wild creatures but also to be educated about the services nature delivers to humanity.

The survival of zoos is in jeopardy, because of conflicting views amongst the public. Some people argue that the demise of zoological institutions would be a good thing, an opinion supported by the perception held by part of the public that zoos are prisons, keeping animals locked-up behind bars and preventing them from roaming free in the wild (Jamieson, 1985; Vining, 2003). A further perception often made is that zoos lack proper welfare facilities for animals, emphasising the cruelty of these institutions (Mazur & Clark, 2001; Jensen, 2007).

Zoos claim to have multiple roles which include education, conservation and recreation. However, information is lacking on the motivation and the expectation of visitors, visiting zoos especially in a developing country such as South Africa. Zoological institutions are valued by many people as key venues for connecting with animals and the natural. A zoological institution is seen as an important institution that must be maintained especially for urban populations, who generally have only indirect access to the natural world and limited encounters through travel or direct experience in natural conservation areas (Rabb, 2004). This is relevant given the rapidly expanding urban areas worldwide and the associated shrinkage of urban natural environments.

This paper aims to evaluate the visitor facilities and public safety and determine the users' perceptions and attitudes towards The National Zoological

Gardens of South Africa and interpret the results obtained will be used to identify issues and challenges. The paper aims to recommend measures to mitigate problem areas in order to obtain higher visitor satisfaction to attract non-users to visit the National Zoological Gardens of South Africa thereby potentially ensuring the long-term survival of zoological institutions in the future.

The National Zoological Gardens of South Africa

The National Zoological Gardens of South Africa (also referred to in this manuscript as the National Zoo) is located within the Capital City of Tshwane Metropolitan Municipality, Gauteng Province. The National Zoo was declared a National Research Facility of the National Research Foundation (NRF) on 1 April 2004. The National Zoo is managed by the NRF. As an independent government agency, the NRF promotes and supports research in all knowledge fields (Kotze & Nxomani, 2011). The National Zoo is regarded as one of the highest rated zoos globally, attracting more than 600 000 visitors annually (South African Tourism, 2018). The National Zoological Gardens of South Africa, is the oldest, largest and only zoo in South Africa with national status, and covers an extent of 85 hectares (Gauteng Tourism Authority, 2018). The Zoo contains 3871 specimens of 190 fish species, 3117 specimens of 209 mammal species, 1358 specimens of 202 bird species, 388 specimens of 4 invertebrate species, 309 specimens of 93 reptile species, and 44 specimens of 7 amphibian species (Gauteng Tourism Authority, 2018).

History of Zoological Institutions

Since the history of civilisation, humans have attempted to satisfy their curiosity about animals and confirm human superiority over nature by sustaining menageries. However, it is impossible to give an accurate date when the first zoos originated. Evidence discovered recently suggests that the world's earliest zoo may have been located in Hierakonpolis, Egypt more than 4 500 years ago. Archaeologists uncovered a collection of 112 animals, which included, hippos, baboons, wild cats, cattle, elephants to name a few. The stomach contents of the elephant were found preserved and it was evident that the animal was fed a diet of varying plants from different environments. Another bit of evidence is that some of the animals have fractures that have healed in ways that must have been in captivity or a protected environment (Michigan State University, 2017).

The world's first modern zoological institution was established in London in 1826, by Sir Stamford Raffles with the principal role being to undertake scientific studies of exotic species that were brought back from Malaysia, Southeast Asia to the United Kingdom (Turley, 1999). Due to the need to fund these studies, the concept of charging visitors entrance fees originated. The money was used to support the zoo's collection and scientific studies. As interest in exotic animals thrived, so too did the number of zoological institutions globally. Zoos became popular amongst the global population as attractive sites for entertainment and

recreation (Turley, 1999). Since the 1960's the focus and role of zoos started to shift from one of entertainment to one of conservation, due to the increased awareness of the need to protect the growing list of threatened and endangered species. Behaviourists, geneticists and ecologists view zoos as valuable sites for preserving the diversity and long-term survival of threatened and endangered species (Turley, 1999; Ebersole, 2001).

Today, the concept of a Zoological institution is perceived differently by the human population. Some people are opposed to the concept and perceive zoos as prisons, placing emphasis on the cruelty of imprisoning animals in cages, restricting their freedom and access to natural habitats for the mere amusement of curious humans, whilst others view zoos as institutions for an entertaining recreational outing and an alternative to museums or theme parks. Lastly, the concept of a zoological institution is viewed by some as an "ark", the last refuge for a growing number of the world's animal species who are otherwise doomed to extinction (Tudge, 1991). A zoological institution relies on the visitor's willingness to both pay for their entry and devotes time and consideration to the conservation messages it portrays. Conservation messages aim to encourage visitors to care for natural resources, maintain local habitats for wildlife and participate in local community-based efforts to restore and protect the environment (Rabb, 2004).

Importance and Role of Zoos

The importance of Zoos lie in the multiple roles they fulfil namely conservation, educational and recreational roles (Olney, 2005).

Education

Zoological institutions began as demonstrations of the status and power of kings and the wealthy, representing man's ability to control nature (Coe, 1996; Hancocks, 2001; Routman *et al.*, 2010). Later the educational role was added, as educational opportunities were initially developed with the focus upon responding to the public's curiosity about wild animals and the experience in seeing, hearing and smelling wild animals. Lately, the role has evolved to enable visitors to experience (Department of Environment, Food and Rural Affairs, 2012).

Education is one of the principal objectives of zoological institutions. Education at a zoological institution is a holistic discipline that needs to cater to a wide audience and is closely related to the philosophy and practice of environmental education (ADAS, 2010). It is important to know that education is not limited to focusing on children, but on everyone to experience 'learning', which can be formal and informal (Department of Environment, Food and Rural Affairs, 2012). The learning environment (facilities), the design of enclosures, interpretation and even the commercial activities within the zoo all play a part in influencing the education. The education potential for zoos is more than information and feeding our curiosity in seeing, hearing and smelling wild

animals, it is also of a considerable value to support conservation and enhance the experiences and heighten the awareness of visitors, creating an empathy and support for wildlife and the natural world (Department of Environment, Food and Rural Affairs, 2012).

Recreation

Traditionally, the main role of zoos was perceived as being recreation. Within the context of the study 'recreation' is referred to as a sense of relaxation and regenerative enjoyment that the very experience of nature promotes (Chiesura, 2004; Mony & Heimlich, 2008). Modern day technology in the entertainment industry is constantly changing and growing to enable a person to choose from an endless variety of attractions, making it impossible for the zoos to provide competing and satisfactory experiences in terms of recreation for all its visitors (Lee, 2015). People enjoy and appreciate nature in their daily lives, and zoological institutions offer the opportunity to visitors to experience nature and wildlife in an urban setting. Zoos provide people with an opportunity to appreciate and admire the aesthetic qualities of plants, animals, surroundings and the pleasure of being outdoors (Ballantyne *et al.*, 2008). Spending time surrounded by nature provides a peaceful environment for relaxation, providing the visitor with a chance to escape stressors in everyday life, benefiting the visitor on an emotional, psychological, and even on a spiritual level, enabling recreation in an enjoyable environment (Connell, 2004).

Conservation

Conservation activities that can be undertaken in a zoological institution include research, training in relevant conservation skills, the exchange of information, captive breeding, repopulation and reintroduction of species. Zoos tend to make their major contribution to conservation through Species Management Programmes. These usually involves captive breeding with the intention of future re-introduction back into wild areas (WAZA, 2015).

The World Zoo Conservation Strategy (WAZA, 2015) and the European Community Zoo Directive of 1999 oblige zoos to play a role in achieving the following goals (Patrick *et al.*, 2007):

- Actively support conservation of endangered species through synchronised programs.
- Offering support and facilities to increase scientific knowledge that benefits conservation.
- Promoting an increase in public and political awareness of the need for conservation.
- Make contributions to conservation and education.

In order to gain an understanding of conservation, it is important that people know the basic or fundamental concepts about the features that define certain

organisms, their behaviours, their habitats, and their interactions with other organisms and the environment. Only then can visitors appreciate the dilemma facing zoos.

This paper investigates the status of the facilities as well as the perceptions and attitudes of users' relating to the conservation, education and recreation roles that the National Zoological Garden of South Africa plays.

Evaluation of the Present Status of the National Zoological Garden in South Africa

The South African Bureau of Standards (SABS) lays down provisions for the management and operation of zoological institutions and aquariums, including reptile parks, crocodile farms, lion parks, bird parks, insectariums and any combination of these through the South African National Standard SANS 10379:2005 (South African Bureau of Standards, 2005:3). This standard further includes provisions for management systems, the husbandry and welfare of animals, conservation and research practices, and educational and recreational aspects.

This study makes reference to this standard to guide the preparation of a checklist to investigate the fulfilment of the clauses, specifically related to visitor facilities and public safety which in turn relate directly to the three primary roles of Zoos, namely their education and recreation and conservation roles. The standard feeds into the study by providing a guiding tool to evaluate the present status of the facilities provided to visitors at National Zoological Gardens of South Africa.

Methods

The data collected for this study was collected through two methods namely an evaluation checklist and an online survey. The checklist was drawn up using sections 12 and 13 of the South African National Standard- SANS 10379: 2005 (South African Bureau of Standards, 2005) which relates to visitor facilities and public safety respectively. The checklist was used during visits to evaluate the present status of the facilities provided to visitors at the National Zoological Gardens of South Africa. The facilities were all evaluated as being either: Above adequate, Adequate, Somewhat adequate or Inadequate based on the guidelines provided by SANS 10379: 2005

The second method used was through an online survey to determine visitor perceptions. Previous studies made use of questionnaires to measure visitors' perceived importance and performance of various attributes of the zoological institutions (Tomas *et al.*, 2003; Ryan & Saward, 2004; Taplin, 2012). This study utilised an adapted version of a questionnaire that was compiled by Zoocrew (2007) to measure the perceptions and attitudes of visitors to Zoos internationally. The adapted questionnaire was converted to an online survey to elicit perceptions and attitudes of visitors to the National Zoological Gardens of South Africa. Attributes ranging from accessibility, supply of educational information, amenities, and animal

welfare to ease of animal spectating was assessed in the survey. The questionnaire also included fields to collect relevant demographic information. The survey was divided into 3 sections, the first section collected the demographic details of the respondents, while the second section measured visitors agreement or disagreement (disagree, neutral or agree) with a series of statements relating to the facilities and amenities at the National Zoo. The third section measured the visitors opinion on the importance of various aspects of the primary roles of Zoos. The survey asked visitors how important each specific attributes relating to the education, recreation and the conservation role of the National Zoo was to the participant, using a five-point Likert scale, ranging from Not important at all (1) to very important (5). Average weighted scores were as a result also calculated. A link to the survey was printed on notices and distributed at the entrance gate of the National Zoological Gardens of South Africa to visitors entering the premises. A total of 30 completed surveys were collected, 24 Females and 6 Males all the participants were between the ages of 24 and 74 years of age, with 80 % having completed postgraduate studies and the remaining 20 % having completed secondary school education.

Results and Discussion

Results of evaluation checklist on visitor facilities and public safety

The results emanating from the utilisation of the evaluation checklist on the relevant clauses of SANS 10379:2005 pertaining to visitor facilities and public safety are summarised in Table 1 below.

Table 1. *Results from the Evaluation of Visitor Facilities and Public Safety in Terms of SANS10379:2005*

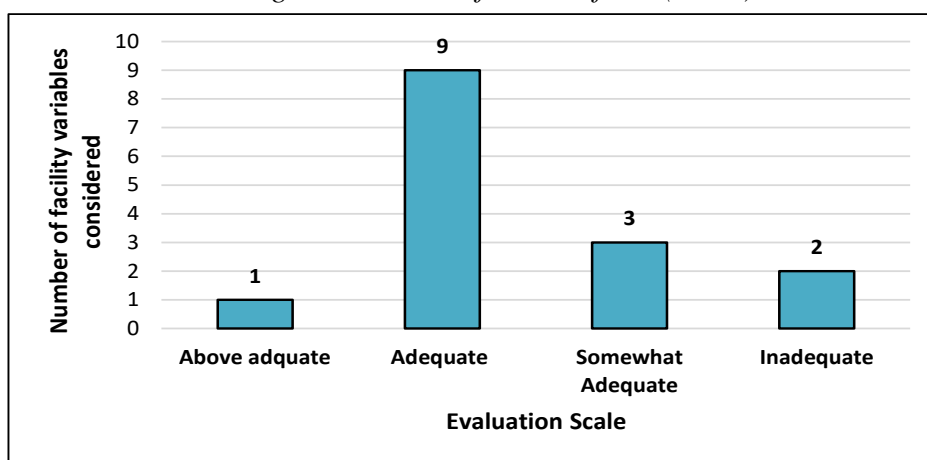
Item	Standard requirement	Scale evaluation
First Aid	First aid points are adequately sign-posted.	Adequate
Toilets	Adequately equipped and maintained toilet facilities are provided commensurate with the anticipated maximum number of visitors to the institution.	Somewhat adequate
	Clean water for washing is provided along with soap and a means of drying hands.	Somewhat adequate
	Toilets are accessible to disabled people.	Inadequate
Parking	Parking in collaboration with the local authority and local traffic authority, institutions ensure that safe and secure parking facilities are sufficient to meet the anticipated needs and number of visitors to the institution.	Adequate
Provision for particular needs	Suitable shelter and seating are provided for use, in particular, by elderly persons and parents with young children.	Above Adequate
	Arrangements are made to meet the reasonable	Adequate

Item	Standard requirement	Scale evaluation
	needs of special-needs visitors including the disabled.	
Enclosures	Gates and doors to enclosures are kept secured to prevent unauthorised entry and are at least as strong and effective in containing the animals as the rest of the enclosure barriers. Such gates and doors are designed, constructed and maintained so as to prevent animals from lifting them from their hinges or unfastening the securing device.	Adequate
	Gates and doors to animal enclosures where visitors are admitted, and stand-off barriers are designed, constructed and maintained so as not to trap or otherwise injure visitors.	Adequate
	Where used to contain animals, moats (whether wet or dry) are surrounded by fences, walls, hedges or shrubbery to prevent the public from approaching too close to the edge.	Adequate
	Barbed wire, razor wire or electrified fences are beyond the reach of members of the public.	Adequate
	Safety barriers are designed, constructed and maintained to ensure public safety, and prevent children climbing over, under or through them and discourage persons from sitting on them.	Adequate
Exits	Exits are suitably located and adequately sign-posted.	Somewhat adequate
	Each exit is kept clear and capable of being easily opened from inside to allow the exit of visitors from the institution. Such gates are capable of being closed and secured to prevent the escape of animals.	Adequate
Safety signage	An adequate number of clearly visible safety signs, providing warning by means of a symbol, words or a combination of symbols and words, are displayed at each enclosure containing any species of dangerous animal, or where animals and visitors come into contact, or in any other circumstance that can be deemed dangerous to the visiting public.	Inadequate

The table above indicates that only one of the 15 visitor facility and public safety variables (namely shelter and seating) evaluated were above adequate. More than ample shelter and seating is provides throughout the Zoo. The majority (9) of these visitor facilities were evaluated as adequate. Three important variables (toilets facilities, cleanliness of toilet facilities and location and signage of exits) were assessed as somewhat adequate. The number of toilet facilities for the number of visitors the Zoo received seems very limited especially in the Northern section of the Zoo, as a result of the low number of toilet facilities available the cleanliness and

themaintenance of these facilities is in a poor state, many not having toilet paper and soap as well as no means for drying ones hands. Many of the exits to some of the enclosures were also not well signposted making leaving some areas frustrating and confusing. Two (2) variables were consider to be inadequate (toilets for disabled people and safety signage). The very limited provision of toilets for disabled people make the provision of these facilities inadequate. Safety signage relating to dangerous animals and circumstances that could pose a safety hazard were not well signposted and many of the signs are either faded or not clearly legible. The aspects that were deemed inadequate or only somewhat adequate need to be addressed as a matter of urgency.

Figure 1. *Evaluation of the Present Status of Visitor Facilities and Public Safety at the National Zoological Gardens of South Africa (n=15)*



Results of Online Survey

Of the completed online surveys the majority of respondents (83.34%) travelled less than 50 Kilometres to visit the Zoo and interestingly 53.3% only visited the Zoo once every 1- 5 years and only 23.3% indicated that they visit the Zoo at least once a year.

Visitor Perceptions of Facilities

This section discusses the visitor perceptions of visitor facilities. Visitors were asked to indicate their agreement or disagreement (disagree, neutral or agree) with a series of statements relating to the facilities and amenities at the National Zoo.

Layout and location: The majority of the respondents indicated that the location of the Zoo is well signposted and that the layout of the Zoo is well organised. The respondents were slightly less in agreement regarding the access to public transport while the availability of sufficient parking was more neutral.

Facilities: The respondents agreed that facilities for disabled persons were available and that the entry tickets were affordable, however regarding safety and

security there was no clear majority response indicating that these two aspects need to be attended to.

Amenities: Respondents agreed that sufficient seating and relaxation areas were available and that the number of toilets facilities were adequate. Respondents were in agreement that the toilets were clean and that the availability of children play areas and entertainment facilities as well as sufficient cafes, restaurants and picnic sites were available but this was with a very low majority and may prove to be areas of concern in the near future if not attended to.

Variety of animals and quality of enclosures: In this aspect all respondents were in agreement that there was a good selection of animals that could be viewed at the National Zoo. Respondents also agreed that the enclosures were clean, well maintained and made to look like the natural environment allowing visitors with a clear view of the animals. Animals were perceived as healthy and showing no signs of distress.

Table 2. Visitor Perception of Facilities

Aspect	Disagree (%)	Neutral (%)	Agree (%)
Location and layout			
Is sufficient parking space available	13.3	46.7	40.0
Accessibility of public transport	6.7	40.0	53.3
Main attractions and facilities signposting in the Zoo	3.3	6.7	90.0
Well organise layout of Zoo	6.7	16.7	76.7
Facilities			
Facilities for disabled persons	0.0	30.0	70.0
Visible security in Zoo	36.7	33.3	30.0
Feeling safe in Zoo	26.7	30.0	43.3
Affordability of ticket price	16.7	23.3	60.0
Amenities			
Sufficient cafes, restaurants and picnic spots	33.3	13.3	53.3
Adequate toilets facilities	13.3	23.3	63.3
Cleanliness of toilet facilities	17.2	31.0	51.7
Are children play areas and entertainment facilities available?	23.3	26.7	50.0
Are these sufficient seating and relaxation areas available?	13.3	3.3	83.3
Variety of animals and the quality of enclosures			
Was there a good selection of animals?	10.0	6.7	83.3
Are animal enclosures clean and well maintained?	13.3	20.0	66.7
Are animal enclosures made to look like natural environment?	10.0	23.3	66.7
Do animal enclosures allow clear views of the animals?	3.3	10.0	86.7
Do animals look healthy and show no signs of distress?	16.7	16.7	66.7
Educational facilities			
Is useful information available at the entrance?	23.3	13.3	63.3
Are there information and educational points and services available?	13.8	27.6	58.6
Are information signs up-to-date, detailed and	16.7	26.7	56.7

Aspect	Disagree (%)	Neutral (%)	Agree (%)
informative?			
Conservation facilities			
Does the National Zoo advertise its conservation projects well?	36.7	50.0	13.3
Does the Zoo inspire you to get involved in conservation?	26.7	40.0	33.3

*Cumulative percentage may not always add up to 100% as a result of rounding off.

Educational facilities: Respondents felt that useful information was available at the entrance, however to a lesser extent respondents agreed that information and education services were available and that information signage was up-to-date and informative.

Conservation facilities: Respondents had a neutral response to whether the National Zoo advertises their conservation projects well and also had a neutral response to whether the Zoo inspires respondents to get involved in conservation.

Three important areas for concern relate to sufficient parking, safety and security and the conservation role of the National Zoo these aspects will have to be dealt with before negative repercussions are experienced by visitors. Some of the facilities and amenities require additional attention. These concerns directly relate to visitor enjoyment and may negatively influence the National Zoos ability to deliver on its primary mandates of education, recreation and conservation if visitor numbers decline and the economic viability of the Zoo is negatively influenced.

Visitor Perceptions of the Importance of the National Zoo's Fulfilment of its Primary Roles

Visitors' opinion of the importance of the primary roles of Zoos were requested. The visitors indicated the level of importance of the specific attributes relating to the educational, recreational and the conservation role of the National Zoo. The results of the survey are tabulated in Table 3.

Educational role: All the educational role aspects were rated by the visitors as either important or very important for visitors with the highest average score being 4.13 for learning about the conservation of threatened and endangered species and 4.07 for exposure to educational information. Learning about different species received a slightly lower average score than the exposure to animals from all over the world and threatened and endangered species.

Recreational role: The recreational role aspects were all rated as either important or very important with the highest average scores of 4.7 being assigned to the need to feel safe and secure and importance of having well managed and maintained facilities. Slightly lower average scores were assigned to close encounters with wild animals and the variety of recreational and entertainment facilities.

Conservation role: All conservation aspects were also rated by visitors as important or very important with the most important aspects from a conservation

point of view being evidence of good animal welfare (average score:4.83) and appropriate animal enclosures as 4.57. The visible evidence of conservation efforts also receiving a high average score of 4.1.

Table 3. *Visitor Perceptions of the Importance of the National Zoos Fulfilment of the Primary Roles (namely: Education, Recreation and Conservation*

	Not important at all (%)	Not that important (%)	Neutral (%)	Important (%)	Very Important (%)	Average weighted score
Education						
To learn about different species	6.7	6.7	3.3	53.3	30.0	3.93
To learn about the conservation of threatened and endangered species		3.3	20.0	36.7	40.0	4.13
Exposure to the widest possible variety of animals from all over the world.	3.3	6.7	16.7	33.3	40.0	4.00
Exposure to educational information		3.3	16.7	50.0	30.0	4.07
Recreation						
To experience a fun day out for recreation and entertainment.				50.0	50.0	4.5
To experience close encounters with wild animals	3.3	16.7	10.0	53.3	16.7	3.63
Variety of recreational and entertainment facilities available	3.3	13.3	13.3	53.3	16.7	3.67
A Zoo environment that is aesthetically appealing			6.7	43.3	50.0	4.43
A Zoo environment where I feel safe and secure			3.3	23.3	73.3	4.7
Well managed and maintained facilities				30.0	70.0	4.7
Conservation						
Visible evidence of conservation efforts		6.7	10.0	50.0	33.3	4.1
Appropriate animal enclosures			3.3	36.7	60.0	4.57
Evidence of good animal welfare				16.7	83.3	4.83

*Cumulative percentage may not always add up to 100% as a result of rounding off.

It is important to note that from the perceptions of the visitors that the majority of responses relating to all three the primary roles of Zoos are seen as either important or very important throughout. The importance of these primary functions or roles of the Zoos should receive focused management attention and interventions to ensure that all three these important aspects a carefully managed for visitor enjoyment so that the National Zoological Garden can remain a financially viable and economically sustainable entity.

Recommendations

A series of recommendations are provided to improve the visitor satisfaction. The applicability and the implementation of the recommendations still need to be considered by the management of the National Zoological Gardens.

Safety Signage

There is a lack of safety signage at enclosures containing a dangerous animal. It is recommended that signs are displayed at these enclosures to provide warning by means of a symbol, words or a combination of symbols and words. Not only will these signs provide a warning for visitors to stay clear, but will also contribute educationally, by educating the visitors to respect and to practice cautiousness when approaching the dangerous animals in the wild.

Information Boards and Directional Signage

The general lack of signage and the updating of the information boards require attention. Paths within the National Zoological Gardens lack directional signs to indicate exits. Zoos are required to provide information about all animals. Unfortunately, the information is often insufficient and limited to one or two languages. It is recommended that an interactive zoo guide is developed and made available as a cellphone application that can be downloaded when entering the National Zoological Gardens. This information will enable visitors to obtain information about the zoo and animals on their mobile devices (Maybury *et al.*, 2006: 236).

Toilet Facilities

The toilet facilities were found not to be adequately maintained. It was further found that toilet facilities in the north of the National Zoological Gardens of South Africa were lacking. It is an undeniable fact that clean toilet facilities play an important role in adding to the appeal of a place. It may even influence a visitor's decision to visit again or not (The Nation, 2014). The National Zoological Gardens of South Africa is visited by thousands of people daily, and it would be impossible to keep its toilet facilities in a well maintained and hygienic condition without regular cleaning routines and schedules. It is recommended that a thorough general cleaning process is carried out once a day, combined with spot cleaning at

least 3 to 4 times a day for all toilet facilities. Loong *et al.*, (2013) state that thorough cleaning refers to the cleaning of the entire toilet facility, whilst spot cleaning is referred to as in between cleaning or the process whereby only specific elements of the toilet facilities are cleaned (i.e. dirty areas). An inspection card should be used in the supervising and monitoring of the daily maintenance of the toilet. If any defects are discovered during the inspection that can only be rectified by a qualified person such as a plumber, the building manager or facility manager should be notified immediately. An “out-of-order” message should be displayed at any facilities with defects to make users aware of the defects (Loong *et al.*, 2013). It is recommended that the cleaning schedule of toilet facilities are displayed at a noticeable spot at the toilet facility entrance whereby visitors can easily view them. The notice can also include contact information should a visitors feel the need to report unsatisfactory toilet facilities.

Events

It was reported by users that the National Zoological Gardens of South Africa lack events attracting visits. Events are advertised on The National Zoological Gardens of South Africa website. Should a cell phone application be available in future, this type of technology could be further applied to enable users receiving notifications on their mobile device of upcoming events.

Safety and Security

Safety outside the National Zoological Gardens of South Africa was reported as an issue for some users. Users have also reported that there is a lack of visible security outside the National Zoological Gardens of South Africa (Kgosana, 2014; Kubheka, 2014).

According to an article published, the United States of America (USA) Embassy has advised their citizens touring or living in South Africa to avoid visiting the National Zoological Gardens of South Africa. The USA Embassy advice was given due to the number of armed robberies that were committed against outside the National Zoological Gardens of South Africa during 2014 (Kgosana, 2014; Kubheka, 2014). According to the articles, the South African Police Service and the Metro Police have committed themselves to an additional presence at the National Zoological Gardens of South Africa to ensure visible policing. A patrol vehicle and four officers on public holidays and weekends were deployed to conduct daily patrols and monitor closed circuit television system (Kgosana, 2014; Kubheka, 2014).

Cleanliness and Litter

Litter was an evident problem at the National Zoological Gardens of South Africa. Not only is the presence of litter appalling, it also presents a threat to animals when they come into contact with litter. It is recommended that the problems and

consequences of litter are communicated to visitors using posters to draw their attention to the problem.

Entrance Fees

Some users of the National Zoological Gardens of South Africa have reported that entrance fees are too high. Visitors tend to forget that the funding of maintenance and operational costs of the Zoo are dependent on entrance fees paid by visitors. A recommendation to display a notice at the ticket office to illustrate to visitors how much of their entrance fee will contribute towards educational and conservation activities. Discounted entry fees could be made available to users that purchase their tickets online, making it an attractive option this would also attracting users to visit the National Zoological Gardens of South Africa website more often.

Conservation Activities

A lack of information available on conservation activities has been reported. The conservation activities of the National Zoological Gardens of South Africa overview is available on their website (National Research Foundation, 2017). It is recommended that details on the National Zoological Gardens of South Africa conservation activities are presented on the website, on notice boards at the entrance/exit to the Zoo to show visitors the conservation activities the National Zoological Gardens of South Africa contribute towards.

Enclosures

Visitors have reported some of the enclosures are empty, and some animals in enclosures seem stressed while other enclosures lack maintenance. It is recommended that information be made available at the entrance to the National Zoological Gardens of South Africa indicating which enclosures are under maintenance to prevent visitor disappointment if they visit the zoo specifically to view a certain animals. It is also recommended that the cleaning schedule of animal enclosures are made available to the public to indicate to users how these enclosures are maintained and how often it is cleaned. The notice can also include contact information should a visitor feel the need to report unsatisfactory enclosure conditions.

Conclusion

The management of visitor satisfaction is of critical importance for the long-term financial viability and economic sustainability of zoological institutions. All the facilities of the zoological institutions and not only the animal enclosures have to be well maintained and managed to ensure both visitor enjoyment and a high degree of animal welfare is achieved. The educational, recreational and conservation roles and priorities of the zoological institutions such as the National Zoological

Garden in South Africa have to be carefully managed so that all three goals are achieved and none suffer neglect at the cost of the other priorities.

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