THE IMPACT OF CAPTIVE WILDLIFE FACILITIES IN PROVISION OF CONSERVATION EDUCATION: A CASE OF THE NAIROBI SAFARI WALK, NAIROBI, KENYA

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N50/CE/11376/2007

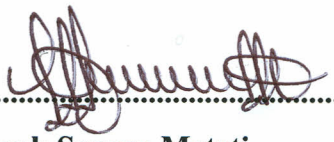
A THESIS SUBMITTED IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF SCIENCE (ENVIRONMENTAL EDUCATION) IN THE SCHOOL OF ENVIRONMENTAL STUDIES OF KENYATTA UNIVERSITY

MARCH 2013

DECLARATION

Student's Declaration

This is my original work and has not been presented for a degree in any other university or any other academic award.



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Supervisors' Declaration

I/we confirm that the work reported in this thesis was carried out by the candidate under my/our supervision.

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To my parents Protas Meteti and Susan Boke for your relentless effort to educate me and for espousing hard work as a key to success in life.

ACKNOWLEDGEMENTS

Foremost I am thankful to the Almighty God for His love and blessings. I am also grateful to various individuals and institutions through whose assistance this work was made possible. I would like to appreciate Kenya Wildlife Service (KWS) offer of partial scholarship which catered for part of the tuition fees. I am also grateful to KWS for granting me staggered study leave to attend the course.

I am greatly indebted to my supervisors, Dr. Richard Kerich and Dr. James Koske both of the School of Environmental Studies, Kenyatta University for their scholarly advice and guidance. I am similarly appreciative of the assistance and cooperation accorded by the Conservation Education Department of KWS under the headship of Mr. Paul Mbugua, Assistant Director - Conservation Education. The KWS Deputy Director – Biodiversity Research and Monitoring granted me permission to conduct the study within Nairobi Safari Walk.

To my family, brothers, sisters and parents I say thank you for supporting me in various ways during the time of this study. There are many friends, colleagues and workmates whom I have not mentioned individually, kindly accept my appreciation for the role you played towards the successful completion of this study.

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ABBREVIATIONS AND ACRONYMS

AZA	American Zoo and Aquarium Association
EMCA	Environmental Management and Coordination Act
DEFRA	Department for Environment, Food and Rural Affairs
KWS	Kenya Wildlife Service
NAO	Nairobi Animal Orphanage
NSW	Nairobi Safari Walk
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
WAZA	World Association of Zoos and Aquaria
WAZACS	World Association of Zoos and Aquaria Conservation Strategy
WCK	Wildlife Clubs of Kenya

ABSTRACT

Present captive wildlife facilities embrace four important justifications and objectives for keeping wild animals in captivity: recreation, conservation, education and research. Although critics of captive animal displays agree that captive wildlife facilities add to conservation education they point out that little research has been undertaken to ascertain impact or effectiveness of conservation education within such facilities. Captive wildlife facilities are uniquely positioned to bridge the gap between people and the natural world through the creation of learning experiences that raise awareness of environmental threats and biodiversity loss. This study assessed the impact of Nairobi Safari Walk (NSW) in providing conservation education to tourists. The study further sought to determine the adequacy of the channels used to convey conservation messages, tourists' perceived roles of the facility, the extent to which tourists exited the facility with its key conservation messages and challenges faced in the provision of conservation education. Methodology for data collection involved a case study survey. Structured questionnaires were used to collect data from visiting tourists and NSW staff while semi structured interviews were directed at the KWS top management. A focal sampling method was used to obtain a sample of 365 adult tourists based on the 2005-2009 visitation data, 95% confidence level and 5% margin of error. Chi-squared Test and Pearson correlation were used to find relationships between variables. Results showed that an average of 70% of respondents reported having received the key conservation messages thus indicating success of NSW in communicating its key conservation messages. The extent to which visitors left the NSW with key conservation messages depended on visitors' personal goals. Positive correlation existed between learning and discovery goal and the NSW Actions message ($r_{365}=0.20$, $p<0.01$ level). Significant relationship between respondents number of previous visits to NSW and the extent of exiting with key conservation messages was only found on the "Human Actions" message which had a Chi-squared value of $\chi^2=8.222$, $p>0.05$. This implies that the number of previous visits to NSW have no impact on the extent of visitors exiting with its key conservation messages. Wild animals and message boards were the most effective conveyors of conservation messages to over 40% of the respondents in NSW. This suggests that NSW is more dependent on passive channels than interactive ones contrary to recommendations by other studies. Majority of visitors perceived conservation education and recreation as the most important roles of NSW. The study also identified that there are a number of challenges that negatively impact NSW's ability to effectively provide conservation education to tourists. They range from budgetary constraints, shortage of trained staff dedicated to conservation education, overemphasis on revenue generation and lack of an educational program and evaluation mechanism. This study recommends that more resources directed at provision of conservation education be provided to NSW, more interactive channels should be employed in conveying conservation messages and a conservation education policy should be enacted to guide the process. This is envisaged to lead to enhanced conservation message communication and learning thereby enhancing the facility's effectiveness in meeting its conservation education goal.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Problem

In order for captive wildlife facilities to remain viable they must enhance their credibility as providers of conservation education (Hoover, 2007). Many conservation agencies worldwide have established wildlife based attraction centres to provide visitor or public education on conservation (Ballantyne *et al.*, 2007). Conservation education is regarded as a principal means by which wildlife conservation agencies worldwide inform people about an area's natural resources and publicize the role of an agency in managing the resources. Conservation education therefore becomes the primary means through which they attempt to fulfil their conservation goals (Brewer, 2001). A wide spectrum of captive wildlife facilities exists ranging from zoos and aquaria, wildlife clubs and park based education centres. There is concern however on the lack of evidence on the impact of many such facilities in providing conservation education to visitors (Withey and Finn, 2010).

The keeping of wildlife in captivity is often associated with zoological parks and their primary attractions are the animals themselves. However due to animal welfare concerns particularly from animal rights activists captive wildlife facilities have added three more justifications for keeping wildlife in captivity: conservation, education and research. On the other hand captive tourism which thrives on the recreational role of these facilities is big business, with over six hundred million visitors annually (Tribe, 2006). In Australia for instance captive tourism accounts for over one third of its overseas tourists thus contributing significantly to economic development through foreign exchange earnings and employment creation (Tribe, 2006). In regard to conservation education, the great potential of these facilities has been recognized in the World Zoo Conservation Strategy (IUDZG/CBSG (IUCN/SSC, 1993) due to their visitation that is unequalled by any other group of public, conservation-oriented institutions. They are, as Kellert (1987) described them, "the sleeping giant of the wildlife education and conservation field" (pp.100). Captive wildlife facilities have the potential to raise environmental awareness and

generate community involvement through conservation education (Agung and Defira, 2008).

Despite their popularity, traditions and place in recreational history, captive wildlife facilities face an obstacle of striking an appropriate balance between commercial success and the development of professional conservation credibility (Kelsey, 1994 and Tribe, 2001). Often these objectives have been viewed as mutually exclusive. This gives rise to major quandary for today's captive wildlife facilities: how to attract and entertain visitors without compromising other basic reasons for their existence; education, conservation and research. Although their contributions to education and conservation services have been appreciated, it has been confirmed that there is little assessment on the real value and effectiveness of these activities thus making it a research priority (Tribe, 2001 and Yilmaz *et al.,* 2010). The relevance of captive wildlife facilities as public educators has also been questioned due to availability of alternative educational sources through other media. Margotd (2000) claimed that it is "often argued that zoos have become educationally redundant because of many nature programs on television" (p.106), whilst other authors refer to the media as performing a public education role.

With over 176,000 annual visitors comprising of foreign and local tourists, school children and academic researchers visiting the Nairobi Safari Walk (KWS, 2012) this offers a prime opportunity to increase public awareness and a need to participate in efforts of conservation. Although the primary motivations for visitation to wildlife based centres are recreation and education, many centres do not apparently recognize the value of conducting social research or the importance of meeting visitors' needs (Morgan and Hodgkinson, 1999; Withey, and Finn, 2010). Some of the wildlife based centres, mainly captive ones, provide conservation education as a reaction to the criticism directed at the traditional goals– aesthetic and recreational entertainment (Kellert, 1979). Therefore the aims of some providers of conservation education may be incompatible with the motivations of visitors.

Conservation education is the process of inspiring people and positively influencing their attitudes, emotions, knowledge and behaviours about wildlife and their habitat. The

ultimate goal of conservation education is to create behavioural change that will have a positive impact on wildlife and their habitat, as measured by formal assessment of outcomes (KWS, 2007). Conservation education within captive wildlife facilities is synonymous with zoo education. It has a wide remit and may take a formal presentation or a more informal approach such as an interpretation within the facility. In Europe, North America and Australia many zoos have invested in education through purposively built classrooms, trained education officers and interactive touch tables, signage and videos for visitors and outreach programs for those that do not visit the zoos. In these regions conservation education is a legal and policy requirement for captive wildlife facilities. In England for instance zoos have a legal requirement to participate in conservation and education measures (Withey and Finn, 2010). In Japan zoo practices are controlled by standards set out in legislation. Zoos are managed by the board of education if they are municipal zoos (Saito, 1999; Ouzumi, 2010). In addition to municipal zoos, other private incorporated foundations can register as museums or museum correspondence facilities once they have passed the board of education's museum standards, as stipulated in the Museum Act (Saito, 1999; Ohori, 2005). Facilities that do not meet the museum standards are placed outside the Museum Act and considered to be "resembling" organizations (Ohori, 2005). India has a national zoo policy that outlines the use of conservation education and outreach to achieve policy objectives.

It has been argued on the other hand that conservation education has been added as a role of the captive wildlife facilities as a reaction to anti-zoo movements. In this regard education is used as a means to escape the perception problem. In July 1994, the World Society for the Protection of Animals (WSPA) and the Born Free Foundation (BFF) issued The Zoo Inquiry (Dickson and Travers, 1994) which was critical of the UK and Irish zoos. In sub Saharan Africa captive wildlife facilities are relatively few and smaller when compared to those in Asia, Europe and America. This could be partly due to the abundance of wildlife in parks and reserves across many countries in the region. Morgan (2011) notes that there are over 200 zoos like facilities in 48 countries in Africa. They vary in standards from world class facilities to the worst examples. Furthermore the facilities are concentrated in three main density clusters within the continent – Southern

Africa, North Africa and West Africa. East and central Africa have a comparatively low density. Most of these zoos or zoo like facilities are government operated in one way or another and are by large colonial artefacts of early to middle 1900. Morgan (2011) concludes that majority of these facilities are not constrained or guided by any apparent scientific or ethical structure and majority is in terms of World Association of Zoos and Aquaria (WAZA) values in need of improvement.

A 1990 study on policy framework and development program on conservation education and visitor services found that conservation education in Kenya was inadequate considering the importance of wildlife, the development needs and international image of Kenya (KWS, 1991). The study found no coordinated conservation education program in place and the development of educational facilities was constrained by lack of funds, resource material, trained staff and a clearly defined purpose leading to poor recognition, performance and prioritization of roles. The findings of this study were meant to enable the Kenya Wildlife Service (KWS), a state agency mandated to conserve and manage wildlife in the country, to address the inadequacies identified and offer a coordinated conservation education program that could be available to a wider proportion of the Kenyan population (KWS, 1991). The provision of wildlife education and extension services to the public for their support in wildlife conservation was thus listed among the other statutory mandates of the KWS (Republic of Kenya, 2009).

The KWS Conservation Education is a fully fledged department composed of 5 education and 12 information centres distributed across the country as listed in Table 1.1. Established in 1968, the Nairobi Education Centre comprises of the Nairobi Animal Orphanage (NAO), the Nairobi Safari Walk (NSW) and other infrastructural facilities such as classrooms and halls used for provision of conservation education. Both exhibit live wild animals with the latter housing orphaned wild animals and the former exhibiting wild animals within simulated wetland, savannah and forest / woodland ecosystems. Like many wildlife based education centres, this facility has both explicitly stated mission statement and implicitly understood conservation messages.

Table 1.1: List of KWS education and information centres

KWS Education Centres	
Name	**Location**
Nairobi Education Centre	KWS headquarters, Langata, Nairobi
Tsavo East Education Centre	Tsavo East National Park headquarters, Voi
Lake Nakuru Education Centre	Lake Nakuru National Park headquarters, Nakuru
Murera Education Centre	Meru National Park headquarters, Meru (Murera)
Tsavo West Education Centre	Tsavo West National Park, Makueni, (Mtito Andei)
KWS Information centres	
Name	**Location**
Aberdare National Park	Park headquarters, Nyeri (Mweiga)
Watamu Marine Reserve	Reserve headquarters, Kilifi (Watamu)
Kisite Mpunguti	Park headquarters, Kwale (Shimoni)
Saiwa Swamp National Park	Main Gate, Trans Nzoia
Kakamega Forest National Reserve	Forest Reserve headquarters, Kakamega
Ruma National Park	Park headquarters, Homa Bay (Ruma)
Arabuko Sokoke	Arabuko Sokoke Forest, Kilifi
Malindi Marine Park	Park headquarters, Malindi
Hells Gate National Park	Park headquarters, Naivasha
Mt Elgon National Park	Park headquarters, Mt. Elgon
Kisumu Impala	Impala Sanctuary, Kisumu
Kiunga Marine Reserve	Kiunga, Lamu

For the purposes of this study a list of key conservation messages for the Nairobi Safari Walk was developed in consultation with the KWS, Head of Conservation Education. The messages are: (a) there is beauty and value in nature (beauty); (b) extinction is happening faster than ever before (extinction); (c) human actions are causing loss of wildlife and habitats (humans); (d) the facility is actively involved in provision of conservation education (facility actions); and (e) choices we make can help protect wildlife (choice). Conservation education is provided through lectures, video shows, guided tours, brochures and posters. It is expected that tourists would exit NSW with all the conservation messages after watching the animals displayed, reading the signs, brochures, posters and message boards, listening to staff talks and interpretation.

It would have been expected that after establishing education and information centre teams and after initial support the conservation education department could assess its impact, needs and effectiveness. There is no evidence however of any study to assess the impact of the conservation and information centres in providing conservation education

to the public. This study therefore seeks to examine the impact of Nairobi Safari Walk in providing conservation education to visitors.

1.2 Statement of the Problem

The future of humankind greatly depends on extensive and effective environmental and conservation education. Conservation education is important in achieving ecologically sustainable development (Howe, 2009). In Kenya the significance of environmental education is reflected in sector policies and legislation. The Environment Management and Coordination Act (EMCA) of 1999 (Republic of Kenya, 1999) enlists the use of environmental education to manage and protect the environment while the Wildlife (Conservation and Management) Act of 1989 (Chapter 376 Laws of Kenya) lists the use of conservation education for wildlife conservation and management in Kenya. The reviewed draft wildlife policy of 2011 also acknowledges conservation education as a vital part in enhancing community and stakeholder participation in wildlife conservation and management.

Assessing the impact of captive wildlife facilities in delivering conservation education to visitors in different countries is fundamental to understand in order to improve effective education by captive wildlife facilities worldwide. Yet since the revelation by the 1990 review of policy framework on Kenya's wildlife education and visitor services of an inadequacy of the then facilities and programs there is relatively less literature on research studies that depict current status of the KWS conservation education facilities in offering conservation education to visitors and public. Consequently the adequacy of the facilities remains unknown 20 years later. Yamane (2009) studied conservation education in Nairobi Animal Orphanage but focused it on human wildlife conflicts and visitors' preference of animals.

From literature (see for example Mason, 2000; Turley, 2001 and Tomas *et al.,* 2003) there is apparently little research carried out on the non formal environmental education in general and captive wildlife environments in particular in developing countries. Much of the research work has been skewed towards environmental education within the formal educational set up as observed by Harris and Robottom (1997) that researchers and

practitioners tend to consider environmental education to be properly located within schools and universities. A serious lack of information on environmental education centres in Sub Saharan Africa has been confirmed by research done by Shongwe (1996) and, Cowlishaw and Dunbar (2000).

The need for research aimed at identifying and improving captive wildlife facilities operations (for example research on visitor learning, the effectiveness of exhibits and programmes, marketing and messaging, membership, development and fund-raising) is emphasized in the 2005 World Association of Zoos and Aquaria Association Conservation Strategy (WAZACS). Moreover much of the research undertaken has focused on how people relate to the natural world but give little information on how captive wildlife facilities address conservation education. Arising from these concerns this research examined the impact of the Nairobi Safari Walk in providing conservation education to tourists. The present study sought to answer the following research questions.

1.3 Research Questions

In order to fully investigate the problem the study sought answers to the following research questions.

1) Which of the key conservation messages provided do visitors to Nairobi Safari Walk exit with?

2) What is the impact of channels used by the Nairobi Safari Walk to convey conservation messages to visitors?

3) What do visitors perceive the function of Nairobi Safari Walk to be?

4) What institutional challenges does the Nairobi Safari Walk face in providing conservation education to tourists?

1.4 Research Objectives

The research was guided by the following objectives.

1) To determine the relationship between motivation for visitation and the extent to which visitors exit the Nairobi Safari Walk with key conservation messages.

2) To assess the impact of channels and resources used to deliver conservation education in conveying key conservation messages to tourists visiting Nairobi Safari Walk.

3) To determine what visitors perceive to be the function of the Nairobi Safari Walk.

4) To identify institutional challenges faced by the Nairobi Safari Walk and how they affect provision of conservation education to tourists.

1.5 Research Hypotheses

1) The extent to which visitors exit the Nairobi Safari Walk with key conservation messages depends on their motivation for visitation.

2) Channels and resources used to deliver conservation education at the Nairobi Safari Walk are inadequate.

3) Majority of the tourists perceive the Nairobi Safari Walk to be for recreational purposes.

4) Institutional challenges facing Nairobi Safari Walk negatively affect the provision of conservation education to tourists.

1.6 Significance of the Study

The findings of this study will inform the institutional and policy framework of the Nairobi Conservation Education Centre in particular and the KWS management in general in understanding the extent to which the Nairobi Safari Walk conveys conservation education to tourists. Data collected may be used to review the facility's conservation education goals and strategies in order to realign them to both the organizational and tourists' needs. It will form a valuable basis on which an evaluation of the performance of the facility may be undertaken. Studying visitor perceptions of the facility will form a useful tool for evaluating it regarding its educational and recreational goals. Understanding the strengths and weaknesses of the various message channels may be used to maximize their message communication potential.

1.7 Conceptual Framework

Captive wildlife facilities such as zoos, nature parks and botanical gardens exist for four main goals namely conservation, recreation, education and research. The educational opportunities (Figure1.1) which occur in such settings are positively or negatively affected by a number of factors. Positive factors (Figure1.1) include a non biased focus

on all goals, design, use of both active and passive communication channels and resources, naturalism in exhibit environment, and adequate institutional support for conservation education. A balanced focus on all goals of the facility ensures that recreational goals and the urge to raise revenue do not impede provision of conservation education. This will in turn facilitate provision of required resources to enable the facility achieve its educational goals. Properly designed captive facilities, exhibit furnishings, good husbandry practices and welfare of animals affect the positive educational messages provided by exhibits. Enclosures benefit conservation education when they promote positive values and attitude towards nature (Miller *et al.*, 2004). The use of both active and passive channels of conveying messages and information serves to enhance interest and learning when compared to overreliance on passive methods. Previous studies (Heinrich and Birney, 1992; Kelling *et al.,* 2003; Tribe and Booth, 2003; Povey and Spaulding, 2005; Parker, 2006) have shown interactive methods such as keeper talks and presence of informed guides to be one of the most effective ways of educating visitors. All these factors lead to positive perception by visitors thereby leading to enhanced learning.

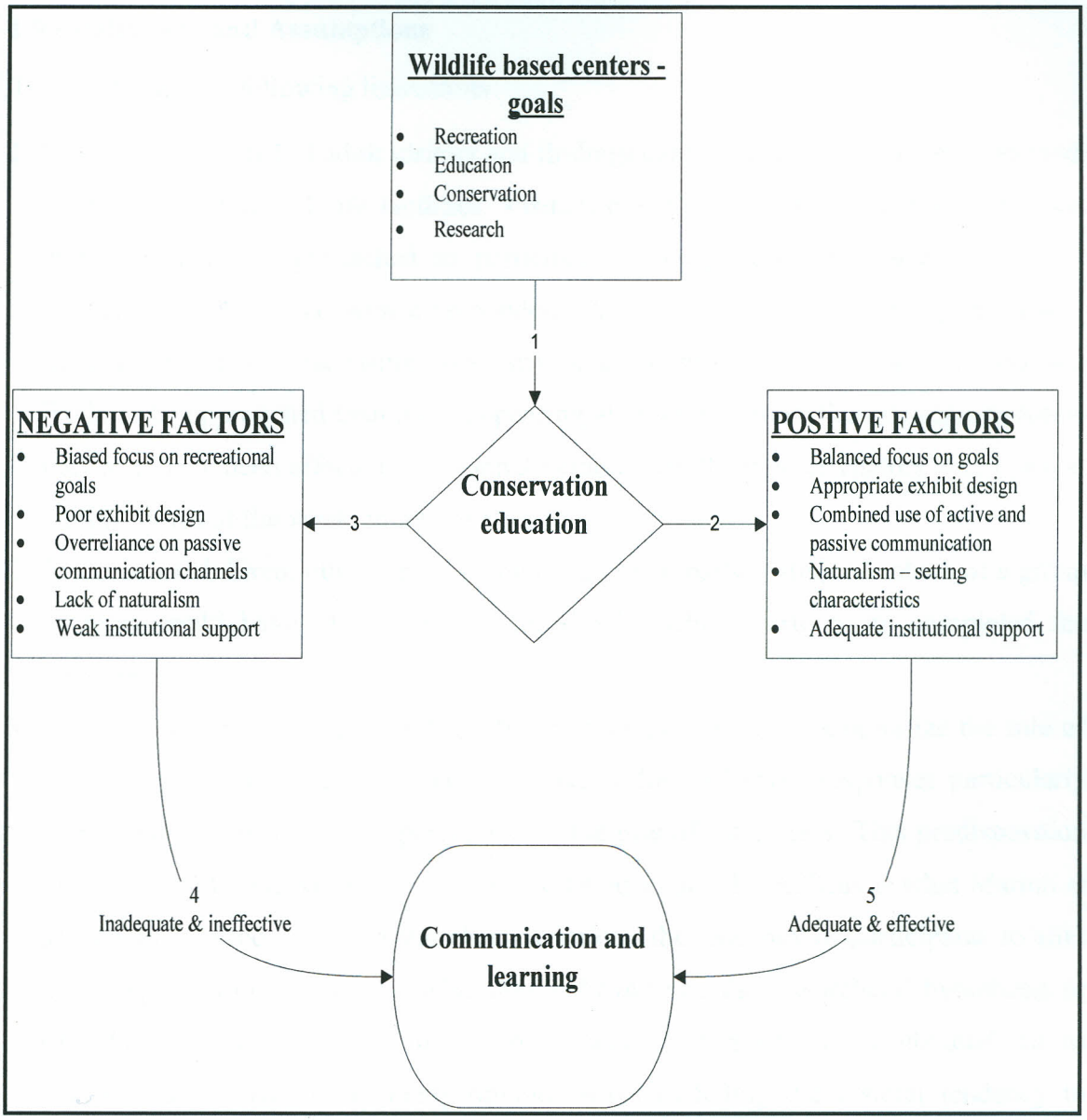

Figure 1.1: Conceptual framework of conservation education (source: researcher)

1.8 Scope of the Study

This study focused on conservation education provided within the Nairobi Safari Walk. Due to the differences in knowledge backgrounds the study focused on adult tourists as respondents and recipients of conservation education. It did not focus on activities undertaken outside the facility such as outreach programs and exhibitions in agricultural shows. The study did not attempt to focus on learning that occurs but sources and conveying of conservation information.

1.9 Limitations and Assumptions

This study had the following limitations

1. The study consisted of adult visitors and findings cannot therefore be generalized to all visitors to captive wildlife facilities. Visitors meeting the selection criteria (18 years and above) were approached to participate as they exited the facility after the researcher had finished with a respondent. Although this was happening at random intervals it implied that visitors who arrived at the busiest time of the day were less likely to be approached than those appearing at quieter periods. Sample representation may also have been affected by seasonal variations in the type of visitors who come at various times of the week, month or year.
2. Presence of children, other family members and non participating members of a group or team could have influenced the speed with which participants completed the instrument.
3. The introductory message boards at the entrance gate meant to emphasize the role of the facility as an educational one may have influenced some responses particularly those related to respondents' perception of the role of the facility. This predisposition may have led to biased responses towards the educational role. This is what Marino *et al.* (2010) referred to as demand characteristics - the tendency of participants to alter their responses in accord with what they believe to be the researchers' hypothesis or expectation. Experiences of most captive wildlife facilities are contextualized as educational experiences in many obvious ways including the general tendency to market them as educational centres, mission and vision statements.
4. This study was susceptible to response bias in the form of acquiescence bias and social desirability bias. In acquiescence bias respondents tend to agree with survey statements, irrespective of their content. Social desirability bias on the other hand is the inclination to present oneself in a manner that will be viewed favourably by others. This study used agreement and importance scales to collect data from respondents thus making it more susceptible to these types of biases.
5. This study was limited by comparatively less research literature focused on conservation education within captive facilities in Kenya or Sub-Saharan region. This

therefore limited this study to comparison with research undertaken within zoos and other free choice learning institutions within the developed countries with a few references to developing countries such as Malaysia, Madagascar and South Africa.

1.10 Definition of Terms

Adult tourist A tourist who is or over 18 years of age.

Adequacy The quality of being able to meet a need satisfactorily.

Animal orphanage A facility for caring for abandoned, abused or orphaned wild animals.

Captive wildlife facility A facility in which animals are confined within enclosures, displayed to the public, and in which they may also be bred.

Conservation education The process of influencing people's attitudes, emotions, knowledge, and behaviours about wildlife and wild places

Conservation messages Information on conservation that is explicitly or implicitly conveyed at a facility.

Docent A person who leads guided tours especially through a museum, zoo or art gallery usually on voluntary basis.

Environmental education A learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action.

High order cognitive messages – Point or points conveyed which require more effort of reasoning, concept formation, problem solving and thinking.

Naturalism The depiction of the physical environment and animals in natural patterns.

Perception The perceived role of the education centre assigned by tourists upon visiting it.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature to the study in order to bring the subject of investigation into appropriate perspective. Review topics have been aligned alongside the study objectives. The reviewed literature shows that captive wildlife facilities have enormous potential in providing formal and informal types of conservation education. The critical role of research in evaluating the impact of each captive facility is indispensable.

The global need for conservation education is evidenced by many key environment and education related global agreements that explicitly acknowledge the value of this field of practice as being complementary to formal environmental education. During the UNESCO Conference on Environmental Education in T'bilisi, Georgia in 1977 the significance of non formal education was stressed. This recognition is equally present in Chapter 36 of Agenda 21 that emphasizes education, public awareness and training which encompasses all streams of education, both formal and non-formal, basic education and all the key issues related to educating for sustainable human development, including environmental education (UNCED, 1992). Additionally the United Nations (UN) has declared 2005 to 2014 the Decade of Education for Sustainable Development with the overall goal being the utilization of education as a means for integrating the principles of sustainable development with human values and perspectives in order to create a sustainable society (UNESCO, 2007). This recognition has led to the establishment of many centres offering environmental education throughout the world. There are for instance currently over 10,000 zoos around the world that display over 250,000 wild animals primarily for the conservation of endangered species, research purposes and education, and secondarily for the entertainment of visitors (Mackay, 2002). The Wildlife Clubs movement in Kenya has a membership of over 2,000 clubs and 200,000 members (WCK, 2011). Other centres which provide conservation education to the public in Kenya include Giraffe Centre, William Holden Wildlife Foundation, Lewa Wildlife Conservancy and Haller Park (formerly Bamburi Nature Trail).

Conservation education while conforming to the definitions of environmental education focuses on the immediate threats to biodiversity loss in contrast to long-term processes (Quang, 2005). The 2005 WAZA conservation strategy defines conservation education as the educational philosophy of captive wildlife facilities that incorporates the principles of environmental education and education for sustainability. Cather (2000) emphasizes that conservation education is not merely a reflection of current needs but also a powerful influence in shaping the future directions of conservation itself. Moreover Brewer (2001) cautions that business as usual in conservation education at all levels may not be sufficient to address current and future environmental questions, issues and problems.

Though educating the public about conservation has been declared as the main concern in wildlife based attraction centres (Ouzumi, 2010), there has been much discussion on how efficient they are at doing this (Broad, 1996; Balmford *et al.*, 2004; Broad and Smith, 2004; Ross and Lukas, 2005; Falk *et al.*, 2007; Smith *et al.*, 2008; Weiler and Smith, 2009). Balmford *et al.* (2004) examined the impact of zoo education on the visiting public rather than focus on how zoos deliver the education. Their study showed that there was no significant change in outlook towards conservation before and after zoo visits in the UK, despite significant funding of the conservation education component in many UK zoos. Despite this result, there is still much to be done to increase awareness of the visiting public and generate new ways of engaging visitors in conservation (Ouzumi, 2010). Moreover, assessing the impact of captive wildlife facilities in delivering conservation education to visitors in different countries is fundamental to understand in order to improve effective education by captive wildlife facilities worldwide.

A number of studies have yielded an incomplete understanding of the impact of captive wildlife facilities on educational and conservation related objectives (Dierking *et al.*, 2002). Kelsey (1994) reaffirmed that two decades after its initial adoption conservation education fails to be effectively translated into practice due to conflicts between recreational goals and contemporary goal of conservation education of most facilities. Patel *et al.* (2005) notes that conservation education programs in developing nations are relatively recent and such efforts are an increasingly routine goal of wildlife researchers. Although very few doubt the importance of such endeavours, some question whether

quantitative evidence exists as to their effectiveness (Cowlishaw and Dunbar, 2000). Tribe and Booth (2003) states that in order for wildlife based facilities to overcome criticisms of being ineffective and expensive a summary of their measurable contribution in the area of education, conservation, research and tourism is of critical importance in demonstrating their contribution to the whole community.

The Nairobi Safari Walk conforms to a zoo due to its display of live wild animals in enclosures (see Appendix 1). With over 176,000 annual visitations by 159,000 local and 17,000 foreign citizens during the 2005-2009 five year period (KWS, 2012) the facility is in a strategic position to contribute to conservation education. Modern progressive wildlife based facilities today have education listed as a priority in order to promote conservation. The World Zoo and Aquarium Conservation Strategy (WAZACS, 2005), states that education is a central role for all zoos and should be integral to planning visitor services, designing exhibits and developing conservation programmes. This study sought to assess the impact of the Nairobi Safari Walk in providing conservation education to tourists.

2.1.1 Historical Evolution of Captive Wildlife Facilities and Need for Conservation Education

The origin and evolution of captive wildlife facilities can be traced to the zoo movement. In this regard zoos and captive wildlife facilities will be used interchangeably in this study. Understanding the evolution of zoos or zoo like facilities is critical so that we can know which changes have occurred and why (Plaatsman, 1996). By realizing the factors that influenced the evolution of zoos we are presented with a historical framework that enables us understand not only where zoos have been and where they stand now, but also given an insight of where they are headed in the future. Additionally reviewing the history of zoological parks makes us aware of what has been accomplished and what pitfalls may lay ahead (Wetzel *et al.*, 1995). This history is also relevant since it touches on the origin of conservation education as one of the roles of captive wildlife facilities.

Plaatsman (1996) categorized the evolution of zoos into seven major eras of exhibit design, early collections, zoological gardens, zoological parks, sterile exhibitory, the

great zoo revolution, current exhibit design and the future of zoos and exhibit design. The era of early collections was characterized by menageries (collections of caged animals) in Egypt, China, Rome and India. The royalty of these ancient civilizations and those of the sixteenth to eighteenth century Europe used these menageries both for entertainment and display of wealth (Polakowaski, 1987). They were built "with the attitude of displaying animals so that they could be admired by their royal owner" (Hancoks, 1971, p.105). This era is characterized by few instances of animal collections being used as places of study the popular use being to observe the animals particularly those of interest to Romans. According to Hancoks the fall of the Roman Empire led to a decline in zoological collections until the middle Ages when they again became popular. Towards the end of the 18th century permanently housed menageries were more popular due to reduced costs and bother of moving around.

The phase of zoological gardens is significant to conservation education in that scientists were beginning to renew interest in studying and learning about animals. It was in the 1800s that the scientific world began to see animals as something to study (Plaatsman, 1996). During this phase zoos begun to include scientific labels, coloured pictures of animals, distribution maps and short descriptions of their natural habitat (Hancoks, 1971). The Zoological Society of London was founded during this era and the first modern zoo, the Zoological Gardens of London was opened to the public in the 1830s. Zoos during this era focused primarily on the animals, architecture of buildings in which cages were housed and the park setting in which the buildings were placed. Therefore although there might have been educational texts and graphics for visitors "there was no attempt of any sort of educational message in exhibit design. Consequently the animals were misinterpreted and misunderstood" (Polakowaski, 1987, p.20). Plaatsman (1996) acknowledges that this era is also significant because of renewed interest by scientists to study animals and the provision of scientific information about the animals although the general public did not display educational interest on the animals displayed.

In the early 20th century a new style of zoo exhibit design was introduced and greatly contributed to improved exhibits for visitors and zoo animals alike. In 1907 Carl

Hegenbeck instigated a new wave of zoo design with opening of a zoo in Hamburg. Hancoks (1971) reckons that his success laid in his ability to recognize the importance of the setting, the position of the observer and the animals' spatial needs in presenting them for the entertainment and enjoyment of the visitor. This demanded extra space leading to increased sizes of the zoos. Due to this increase in sizes the zoos were transformed from zoological gardens to zoological parks and therefore the era of zoological parks (Plaatsman, 1996).

The next era is known as the sterile exhibitory and as the name suggests it was concerned with the hygienic conditions of the animals. Due to the fear that animals kept in natural exhibits could be prone to parasites and diseases as a result of difficulties in cleaning the natural exhibits animals again began to be exhibited in bare cages. Such an arrangement allowed cages to be cleaned more easily leading to reductions in parasites and diseases affecting the exhibited animals (Vecchio, 1994). The shortcoming of this era's exhibits is their failure to provide exhibited animals with space and the psychological and physiological simulation they required.

The great zoo revolution era occurred between 1960 and 1990 and marked significant change in public mentality of zoos. During this era legislative and institutional measures were used to control and guide the operations of zoos. In 1973 the United States enacted the Endangered Species Act which controlled the number of species being collected and stocked by zoos. The accreditation of zoos by the American Zoo and Aquarium Association (AZA) became mandatory in 1980. According to Boyd (1994 – 1995) one goal of AZA was to strive for high levels of professionalism among zoo facilities. Plaatsman, (1996) notes that during this era zoos began to be measured not on the number of species contained but quality of exhibits, educational programs, propagation results, research and conservation activities. In addition to providing recreation and entertainment for visitors zoos began to acknowledge their importance as an educational facility. As a result of the new goals and change in philosophy the new evolution "stressed two points more vigorously". First that appropriate habitat simulation was a fundamental and desirable means for properly maintaining and exhibiting wild animals in captivity and

secondly that suitable interpretive information was an integral and critical component of a successful zoological exhibit (Johnson, 1994, p.104). This era was significant in that zoos showed flexibility and ability to evolve to meet the needs and expectations of its visitors while at the same time educating the visitors and creating a stimulating environment in which zoo animals may live.

One factor that captive wildlife facilities will need to face is that as development continues and the native habitat of many species destroyed, there will be an even greater need for them to educate the public about what is going on in the world. Polakowski (1987) acknowledges that they will be required to provide an increasing public awareness not only about the valuable work being done by captive wildlife facilities but also about the role the public can take in preservation of our vanishing natural environment. Therefore the significance of captive wildlife facility goals of educating the public will be even greater in future. Studies such as the one undertaken in this thesis will ensure that the educational goal is being met now and will be met in the future.

2.1.2 The Role of Captive Wildlife Facilities in Provision of Conservation Education

Studies have pointed out that the formal education sector alone will not be adequate to meet the learning needs of society in developed countries in the twenty-first century (Anderson, 1997a; 1997b). It can almost certainly be argued that the same situation applies to developing countries such as Kenya. As societies change from industrially-based to knowledge-based economies, lifelong and informal learning is becoming fundamental (Falk and Dierking, 2000). The informal learning sector will thus have an increasingly important role to play in society, and leisure settings will provide an important medium through which people can acquire information, develop ideas and construct new visions for themselves and their society. Such leisure settings may include art, history and natural history museums, botanical gardens, nature centres, national parks, science centres, zoos, aquaria, historic houses, historic reconstructions, heritage and archaeological sites and commercial tourism facilities.

Due to the shifting of zoos' foci largely to reflect the social norms of the time many captive wildlife facilities have incorporated conservation education in their mission

statements (Patrick *et al.*, 2007 and Smith *et al.*, 2008). The educational role of zoos has been previously questioned by a number of studies. Jamieson (1985) in a chapter titled "Against Zoos" in a book by Singer (1988) on animal rights argued that zoos had no moral justification for existence. This was after assessing the achievement of zoos in four domains; education, conservation, amusement and research. On education he argued that there was little evidence to prove that zoos were succeeding in educating people about animals. Being critical of zoo-goers he concluded that they were less knowledgeable than many special interest groups such as hunters or fishermen (Smith *et al.*, 2008).

In a rejoinder Chiszar *et al.* (1990) published a book "For Zoos" through which they rebutted some of Jamieson arguments and assertions on achievements of zoos. On education they noted numerous programs on offer but conceded that more evaluation was needed (Smith *et al.*, 2008). As a result of this academic debates many captive wildlife facilities have began to evaluate their role in society and the services they provide. As a result of these internal evaluations many facilities have repositioned themselves to increase and promote their involvement in conservation education (Conway, 2003 and Patrick *et al.*, 2007).

Although some authors have argued that zoos or zoo like facilities have, or have the potential to play a significant role in provision of conservation education (Kellert, 1987; Hancocks, 1995; Maple, 1995; World Association of Zoos and Aquaria, 2005) and zoos or captive facilities stating that they have a strong focus on conservation education (Patrick *et al.*, 2007), some people believe that the captive wildlife facilities have not demonstrated their success in achieving their educational aims (Sommer, 1972; Jamieson, 1985; Chiszar *et al.*, 1990; Ollason, 1993; Mazur, 2001; Balmford *et al.*, 2004). Consequently, there have been many calls for further research examining the education roles and achievements of these captive wildlife facilities (Broad and Weiler, 1998; Woods, 1998; Margodt, 2000; Tribe, 2001).

2.2 Conservation Messages Offered by Captive Wildlife Facilities

Conservation education at zoos, parks and other wildlife based learning centres is geared towards teaching and/or reinforcing certain key messages that relate to the mission of an

institution. Coe 1996 (cited in Parker, 2006:p.9) defines messages as "the actual communication received and remembered by visitors and goes on to state that these are affected by what the visitor gleans from ideas, concept and the actual interpretive information (signs, live interpreters and zookeeper talks)". In recent years, captive wildlife facilities have begun to focus on promoting conservation learning among visitors by communicating conservation messages designed to influence visitors' actions when they return to their home and work environments (Ballantyne *et al.*, 2007).

A small amount of research has demonstrated that knowing what content satisfies visitor preferences on basic exhibit labels can increase visitor satisfaction with the overall experience and perceived enjoyment (Eisenberger, 1999; Yalowitz, 2002). Research also reveals that visitors know what messages the wildlife based facilities want to communicate, but there is little research on how these messages are communicated (Heimlich, *et al.*, 2005; Mony and Heimlich, 2008). Prior studies on visitor interactions with docents have examined outcomes such as time spent at exhibits and satisfaction with the visit (Wolf and Tymitz, 1980; Morgan, 2000; Lindemann-Matthies and Kamer, 2006), however, little is known about factors that influence message communication during such interactions. Furthermore, Meyer (2010) recommends that further examination on how conservation messages are received by different visitors would be helpful in developing messaging and programming to be used by conservation organizations.

Patrick *et al.* (2007), emphasizes that captive wildlife facilities being in a critical position to contribute to conservation education must re-evaluate their conservation education efforts and conservation messages. Ross and Lukas (2005) while researching visitor behaviour at an African ape exhibit concludes that the messages the zoos want to convey to visitors is one of the two primary components of the relationship between zoological parks and their visiting public. She recommends that visitor research represents one method for evaluating the experience at captive wildlife facilities. The effectiveness of captive wildlife facilities in conveying conservation messages has been questioned in research done by Rhoades and Goldworthy (1979) and Wineman *et al.* (1996). Furthermore Stoinski *et al.* (2001) asserts that the degree to which institutions fully

understand what visitors are doing and learning in the captive environment remains unclear and demands further investigation. Therefore the challenge for today's captive wildlife facilities is to bridge the gap between visitor expectations and institutional agendas and assessing the effectiveness of their facilities at creating learning opportunities for them is the first step in this process. Martin (2011), while noting that information does not equal education recommends that key conservation messages must be simple and straightforward and accessible to every age and ability.

Many zoos in Western Europe and North America have designed elaborate and unique approaches of converting the recreational needs of their visitors into a "walk through the biodiversity" memorial experience for all age groups, by submitting them to a discrete set of conservation messages. This concept gradually gave rise to re-designing of old zoos and developing new ones that incorporate the need for environmental messages. The new design concept is a subject of preliminary research about educational role and how much it contributes to the need for information and the aesthetic needs of the visitor (Simeonova, 2009). Captive facilities can be inspirational, providing powerful messages that can be translated into positive memories thus encouraging personal compassion and responsibility for conservation.

In March 2000 the Association of Zoos and Aquaria (AZA) in the United Kingdom developed general conservation messages to provide supportive statements for general environmental topics and are designed to provide consistency among the AZA accredited facilities in their efforts to enhance awareness about the topics. These messages are targeted at all cadres of visitors to these facilities. The messages include;

i. All life on Earth exists within an ecosystem.
ii. Human beings are an integral part of all ecosystems.
iii. Healthy ecosystems provide many essential services and benefits that sustain and improve human lives.
iv. The human experience requires a connection to nature. These experiences in wild places in our community enrich our lives and inspire our choices for future generations.

v. Human beings are responsible for dramatic changes to ecosystems at a rate unprecedented in Earth's history.
vi. We have the responsibility to care for the Earth, to leave healthy ecosystems for our families and future generations.
vii. Through informed actions, we can positively impact ecosystems.

In Kenya conservation messaging in particular and conservation education in general within wildlife based centres is not regulated by the central government or any professional body. There is therefore no standardized set of conservation messages that such facilities are expected to provide to their visiting audience. Instead each facility designs its own messages and educational programs depending on among other factors mission of institution, target audience and availability of resources. Messages offered at the NSW are implicit in various pieces of information carried in the various channels on site. Visitors are expected to derive them during their tour of the facility.

Conservation messages offered at NSW were classified into five key ones after reviewing them together with the Assistant Director in charge of conservation education at KWS. The key conservation messages are;

i. There is beauty and value in nature – derived from information on role of species in the ecosystem and the aesthetic value of animals and ecosystems displayed.
ii. Extinction (species loss) is happening faster than ever before – this message is derived through information on population trends of species over a period of time.
iii. Human actions are causing loss of wildlife and habitat – derived from information on detrimental human activities such as poaching, logging, encroachment and land degradation.
iv. The NSW is actively involved in provision of conservation education – introductory messages at the entrance serving to inform visitors of the educational role of NSW.
v. Choices we make can help protect wildlife – derived from information concerning causes of human wildlife conflicts, requirements of wild animals and the role of human beings in ensuring coexistence with wildlife.

2.2.1 Motivations for Visiting Captive Wildlife Facilities

Motivation is an important factor for captive facilities since it influences the choices visitors make regarding what to attend to, the amount of effort they devote to learning and the extent to which they enjoy the experience (Packer, 2004). Falk (2006) notes that visitor's motivations for museum visits seem to directly influence their learning while in the museum. In his study he found that visitors with education as a predominant motivation learned different things than those who held entertainment as a predominant motivation. Researchers in the field of education have long recognized the importance of motivation which is simply defined as the "underlying why" of behaviour (Valleerand *et al.*, 1992). It is the organized partnering of three psychological functions that serve to direct, energize and regulate goal-directed activity: personal goals, emotional arousal processes and personal agency believes (Ford, 1992).

Meyer (2010) emphasizes that learning about visitor motivations is vital for museums and zoological gardens so that they can more accurately predict what visitors gain from their visit. On its part the World Zoo Conservation Strategy emphasizes that, despite the great diversity of the zoo public, it is possible to present educational information and facilities that are suitable to each and every one of the various visitor categories. How these levels should be arranged and approached is a question of knowledge about, and insight into, the composition and motivation of the public that visits that zoo, as well as a matter of creativity, inventiveness, and belief in the importance of the conservation message that zoos must deliver.

Packer (2004) undertook a review of various theoretical frameworks touching on motivation. His end product was an integrated theoretical framework for his research on motivational factors in educational leisure settings. Four motivational factors applicable to educational leisure settings such as museums and captive wildlife facilities were identified. These are personal goals, capability believes, context believes and situational incentives.

1. **Personal goals** represent desired or undesired outcomes that the individual would like to achieve. In his study on motivational factors in five different educational leisure

settings in Australia, Packer (2004) determined that the personal goals which he termed reasons for visiting can be categorized into five subscales namely learning and discovery, passive enjoyment, restoration, social interaction and personal self fulfilment. Learning and discovery includes the desire to discover new things, expand knowledge, be better informed and experience something new or unusual. Passive enjoyment is the desire to enjoy oneself, to be pleasantly occupied, to feel happy and be satisfied. Restoration refers to the desire to relax mentally and physically, to have a change from routine and recover from stress and tension while social interaction implies the desire to spend time with friends or family, interact with others and build relationships. Personal self fulfilment refers to the desire to make things more meaningful, challenge abilities and feel a sense of fulfilment.

2. **Capability believes** are similar to Bandura's (1977) concept of "self efficacy" and Deci's (1980) concept of "perceived competency" and reflect an individual's confidence regarding their ability to achieve a goal.

3. **Context believes** reflect the perceived responsiveness of the environment in relation to a particular goal e.g. whether it provides adequate opportunity, information, material resources and emotional support.
4. **Situational incentives** include physical and social aspects and events which are valued or perceived as attractive (or unattractive) by the individual. These include exciting or intrinsically motivating tasks, positive interpersonal relationships, events that satisfy or threaten an individual's goals, and events that arouse an emotional response.

Although all the motivational factors influence the learning experience within informal settings such as museums and wildlife based centres this study focused on the interrelationship between conservation message uptake and personal goals as reasons for visiting the captive wildlife facility. Context believes and situational incentives were assessed in relation to visitors perceptions of the roles of NSW, learning opportunities offered and levels of satisfaction with the conservation information provided. Personal competency was omitted since it pertains more to how individual characteristics influence learning and this was thought to be outside the scope of this study.

2.2.2 Motivation and Learning in Captive Wildlife Facilities

Researchers have acknowledged that cognition and learning can only be adequately understood with reference to affective processes of which motivation is one of the most important (Hidi, 1990; Krapp *et al.*, 1992; Csikszentmihayi and Hermanson, 1995). Additionally, Packer (2004) states that a considerable body of literature supports the importance of motivation at all stages of learning. People's attention and intent may be influenced by motivational factors such as the novelty or interest value of the material (Csikszentmihayi and Hermanson, 1995), the emotional arousal produced by the material (Herrmann and Plude, 1995) and the personal goal held by the learners (Ford, 1992). Thus in the same context the setting, facilities and animals in captive wildlife facilities will influence the interests and emotions of the visitors.

Visitors to informal learning settings such as museums and captive wildlife facilities often have primary motivations or goals other than education (Packer, 2004). Recreation goals for instance take precedence over education for many visitors (Schauble *et al.*, 1996). Education occurs simultaneously with entertainment a combination that has given rise to the term "edutainment" which basically describes a situation where visitors are educated and entertained at the same time (Combs, 1999). Museum and zoo visitors have been found not to be highly motivated to learn and research indicates that many do not read guide books, message panels or labels, pay little attention to guides and do not look at all the exhibits (Uzzell, 1993). It is therefore likely that captive wildlife facilities may actually be predisposing visitors to adopt a mindless approach by taking on entertainment as one of their goals. Ansbacher (1998) also warns of the possible negative effects of using entertainment to make education and learning fun. In subsequent research Falk and Dierking (1998) found that visitors usually expressed combinations of motivations which directly related to visitor learning. Visitors with education as a dominant motivation learned different things than those who held entertainment as a dominant motivation, still both individuals learned (Falk, 2006). These findings reinforced Paris' (1997) work which concludes that motivation and learning are related.

Despite the importance of motivational factors in the context of informal settings such as wildlife based attraction centres, very little research has examined the relationship between motivation factors and the experience of learning in educational leisure settings (Silverman, 1995). This study seeks as one of its objectives to determine the extent to which learning experience (measured through conservation message uptake) is dependent on personal goals as motivational factors for visitation. The need for research on visitor motivations within wildlife based recreation centres has been emphasized by Morgan and Hodgkinson (1999) after noting that despite keeping good visitor attendance records, most of them do not study visitor motives thus denying the managing agencies information on expectations and motivations of their patrons.

2.3 Methods used to deliver Conservation Education

Captive wildlife facilities undertake informal (free-choice) education with their visitors, and formal education through developing links with schools, colleges, universities and teacher training institutes. Therefore the delivery method or channel will depend on the type of education and target audience. For the formal conservation education the use of exciting, interactive, structured educational workshops, programmes or classes and resources, tailored to meet the specific needs of the target groups have been recommended by the WAZACS (2005) strategy. Additionally, conservation educators or specifically trained staffs advance the objectives of conservation education by working in the community — visiting schools, orphanages and old peoples' homes, or assisting with local environmental projects. Informal approaches or methods include talks, interpretation, hands on experiences, video shows, message boards and exhibits with clear biological themes. The WAZACS strategy confirms that visitors to captive wildlife facilities are open to receiving information about animals and are more often receptive to an informal approach.

Conservation messages are communicated through a variety of channels ranging from interpretive signage to resource elements such as animals and scenic vistas, and personnel - docents and interpreters (Mony and Heimlich, 2008). Effectively relaying conservation messages to their visitors has always been an important goal of most wildlife based

attraction centres. A number of studies have focused on the outcome of visits to such settings, specifically visitor learning and visitor satisfaction (Birney and Shaha, 1982; Harris, 1995; Broad, 1996; Swanagan, 2000; Powey and Rios, 2002). Research has also been conducted on how visitors interact with and learn from these varied channels (Bitgood, 1988; Schnackenberg *et al.*, 1997; Ward *et al.*, 1998; Margulis *et al.*, 2003). It has been surmised that visitors have a low probability of actually paying any attention to the traditional methods of delivering messages – signs, labels and graphics (Bitgood *et al.*, 1990). While selective studies have been done on what constitutes successful signage and exhibit designs and effective use of video shows there is no known study that comprehensively focused on the multiple and sometimes simultaneous use of a combination of channels and resources within a particular facility. Moreover much of the research undertaken was carried within the developed world probably due to origin and high concentration of captive wildlife facilities particularly zoos.

The WAZACS (2005) emphasizes the importance of communication and information transfer by stating that "zoo education is no longer just the display of animals accompanied by signs with their correct names and areas of origin, and regular conducting of school class tours. Important though this is zoo education has grown into a valuable profession in which insight into psychology, didactics, communication and information transfer are of essential importance and in which a whole scale of techniques and technical tools play an important role" (p.8). The strategy recommends the use of a wide range of educational techniques, facilities and considerations to make zoos highly interesting, attractive and effective places for environmental, conservation and holistic life system education. However findings from other studies indicate that the use of a docent or staff member in conveying messages is very important to the visitor experience (i.e., human interaction supersedes all other information channels (Wolf and Tymitz, 1980; Garling and Gustafsson, 2002; Kelling *et al.*, 2003). This finding therefore challenges the use of visitor self-reports to identify information channels and assess the efficacy of these channels in effecting learning. The Nairobi Safari Walk provides conservation education through guide walks, brochures, lectures, video shows and

posters. There is no known study on how effective these channels and resources are in conveying conservation education to visitors.

2.4 Tourists' Perceptions of the Roles of Captive Wildlife Facilities

It is undeniable that captive wildlife facilities such as zoos carry substantial responsibility for the impact they make towards recreation, education, research and conservation, although these may vary according to institution (Puan and Zakaria, 2007). Different zoos may emphasize different roles depending on their mission and target group. Research by Mason (2007) at the Wellington Zoo in New Zealand revealed that visitors perceived education as the most important role of the zoo but recreation was also viewed as a major role. A large minority of visitors were however not aware of the zoos conservation roles thus having major implications on marketing and management of the facility. A different study by Puan and Zakaria (2007) focused on three different zoos in Malaysia found that in general the roles of zoos as perceived by visitors in priority order were conservation, education, research and recreation but each zoo exhibited varied ranking of the roles. In Japan a study by Ouzumi (2010) found that zoo visitors ranked the roles in priority order of recreation, education, conservation and research.

It can therefore be deduced that each facility has a differing visitor perception as established by previous studies. The lack of uniformity in visitor perceptions of the roles of different captive wildlife facilities calls for conducting of site specific research. Such a study is important in developing countries (such as Kenya) where the functions of local captive facilities are rather ambiguous (Puan and Zakaria, 2007). At a first glance a captive facility may act as a conservation centre engaged in protection of threatened species while on the other hand it may act as a refugee centre for wildlife due to increased illegal wildlife trade, poaching, habitat destruction and human wildlife conflict.

Of the four roles of the modern zoological park—conservation, research, education, and recreation — the last two relate most directly to the visitor. Studying visitor behaviour, perceptions, and attitudes are useful tools to evaluate the facility regarding its educational and recreational goals. Studies on visitors' perceptions are invaluable for several reasons. They help us understand how visitors engage with the facility's environment and interact

with animals, identify people's needs, aid planners in developing and evaluating appealing exhibits and educational programs.

Evaluation studies in the zoo literature have shown that visitors respond more positively to naturalistic exhibits with increased visit durations, viewing time, behaviour search, social interaction, animal related conversation and positive attitudes (Price *et al.*, 1994; Johnston, 1998; Totfield *et al.*, 2003; Nakamichi, 2007). Naturalistic exhibits tend to be more aesthetically pleasing, stimulate visitor interest, foster appreciation of natural behaviours, and provide opportunities for conservation education and are therefore crucial for visitor enjoyment (Price *et al.,* 1994; Coe, 1996; Totfield *et al.*, 2003). This position is reemphasized by Screven (1986) who pointed out that "to encourage interest and a readiness to learning, experiences must accompany positive experiences, not negative ones" (p.111). Visitors are more attracted to visual elements such as live animals, objects that move or those that invite sensory involvement such as touching or manipulation than they are to visual elements that are passive, such as two-dimensional panels or wall exhibits (ibid).

While it has been noted that captive wildlife facilities have received relatively less attention in the leisure literature despite the large numbers of annual visitors (Turley, 2001), most of the studies on visitors have been confined to examining demographic profiles of visitors (Martin and O'Reilly, 1989; Scott *et al.*, 1994; Bixler and Lazor,1995); their motivations (Kellert, 1979; Rosenfeld and Terkel, 1982; Milan and Wourms, 1992; Andereck and Caldwell, 1994; Rajack and Waven, 1996; Holzer *et al.*, 1998); and visitors' perceptions and attitudes toward wildlife (Finlay *et al.*, 1988; Roper, 1995). All of these studies have been confined to European and American facilities with a few studies on Kenyan wildlife based education centres (Yamane, 2009). Furthermore there is no known study which focused on visitor perceptions of a captive wildlife facility in regard to its role in provision of conservation education.

2.4.1 Conservation Education Linked Visitor Perceptions

Education related visitor perception can be assessed using several variables relating to visitors' perception of the visit, tour or experience (Packer, 2004). Visitors perceptions of

the learning environment through context believes and situational incentives (setting characteristics) have been used by Packer and Ballantyne (2002) to assess motivational factors for learning in leisure settings but did not examine their relationship with visitors' overall perception of the roles of the facilities. Context believes reflect the perceived responsiveness of the facility's environment in relation to a particular goal e.g. whether it provides adequate opportunity, information, material resources and emotional support. Situational incentives on the other hand refer to physical, social and emotional aspects of the setting or visit that trigger new motivations that were previously not evident. They therefore include physical and social aspects and events which are valued or perceived as attractive (or unattractive), interesting and exciting by the visitor and which may arouse an emotional response. Assessing perception through visitors' context believes provides insight into their perceptions of the educational aspects of a facility. It yields understanding of the extent to which visitors believe learning in those facilities is enjoyable, effortful or evasive. The arousal of curiosity and interest facilitates the initiation of exploratory and investigative behaviours. Both curiosity and interest encourage a person to interact with the setting in order to acquire new information (Krapp *et al.*, 1992). Packer (2004) found that situational incentives can be measured in terms of;

a. The extent to which visitors report experience of arousal of interest. This can be assessed by the extent to which visitors' interest is captured by information or displays found in the facility, visitors being interested in things they previously ignored and information or displays making visitors want to learn.

b. The extent to which a facility setting incorporates characteristics identified as interest arousing. Characteristics identified as interest arousing within leisure settings such as museums and zoos can be grouped into four categories – personal relevance, task characteristics, novelty and social interaction. Personal relevance pertains to characteristics that evoke personal interests, imaginatively and emotionally appealing information, interesting, new and known information. Task characteristics include presentation of interesting information, being able to see real things or places information refer to and presenting opportunities to participate actively and ask

questions. Novelty relates to unexpected, surprising and new information while social interaction refers to opportunity to discuss information with a companion.

2.5 Institutional Challenges that Impede Provision of Conservation Education

Conservation education is infused into the mainstream school curriculum but is more articulated in the sectoral policies of conservation based organizations. It is factored in Kenya's Wildlife (Conservation and Management) Act 1989 as a tool for enhancing public participation in wildlife conservation and management. The Environmental Management and Coordination Act of 1999 singles out the use of environmental education to manage and protect the environment. In some countries such as the UK and Australia there are state standards of captive wildlife practice which apply to education. They include a written educational strategy, an active education program, suitable facilities for education purposes and a high standard of animal welfare to facilitate expression of natural behaviours thereby enhancing the educational role of zoos (Withey and Finn, 2010).

Mazur and Clark 1997 (citing Clark, 1993) recommends that for captive wildlife facilities to improve their services they must address the following issues; appropriate staffing, sufficient budgetary allocation, written and well articulated educational strategy and matched organizational structure with a self evaluation mechanism. The perception that captive wildlife facilities are places of entertainment rather than institutions of educational, scientific and conservation pursuits (Mullan and Marvin, 1987; Bitgood, 1988; Kellert and Dunlap, 1989) if held by decision makers in government wildlife agencies and nongovernmental organizations may create resistance to zoo participation in conservation and education (Mazur and Clark, 1997). Therefore the perception of management on the role of the facility impacts on the operations of the facilities. It is further emphasized that conflicts between facility's goals also discourage more extensive environmental policy reform.

Many captive wildlife facilities market-oriented approaches and corporatized organizational practices result in an emphasis on maximizing and stabilizing revenues (Mazur and Clark, 1997). Potential competition for resources between revenue-producing

activities of a facility and its conservation education desires and needs has also been recognised as a major challenge. A facility which is financially successful will always be able to allocate or raise more money for conservation education than a facility which is struggling to meet its commitments to its own animals, staff and visitors. Official pressures and budget constraints balance conservation education against corporate efficiency and other demands. In order to overcome such problems, Lasswell (1971) suggested that an integrated approach that involves systematic consideration of how the captive wildlife facilities function as organizations is necessary. As such, this study seeks to find out the institutional challenges that the Nairobi Safari Walk faces in its effort to provide conservation education to tourists.

2.6 Summary of Literature Review

Research shows that a number of studies have not given a comprehensive understanding of educational role of captive wildlife facilities. Moreover conservation education in developing countries is relatively recent and questions have been raised on existence of quantitative evidence to prove the effectiveness of conservation education providers such as parks, zoos and environmental education centres. There is therefore need for captive wildlife facilities to demonstrate their importance to society in areas of education, conservation, recreation and research.

Research has also pointed out to a greater need for captive wildlife facilities to educate the society on the impact of development on habitats as well as the role the public can take in preservation of our vanishing natural environment. Consequently there have been many calls for further research examining the educational roles and achievements of captive wildlife facilities. This is aimed at ensuring that the educational goal is being met now and will be met in the future.

Some of the specifically recommended research studies include how conservation messages are communicated, factors influencing conservation message communication, effectiveness of channels used to convey conservation messages and examination of how conservation messages are received by different visitors. The need to examine the relationship between motivation for visitation and extent of message uptake by visitors

and, challenges facing captive wildlife facilities in provision of conservation education has also been recommended. This study sought to examine the impact of Nairobi Safari Walk in providing conservation education to tourists.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The aim of this study was to assess the impact of captive wildlife facilities in provision of conservation education to tourists. Nairobi Safari Walk was used as a case study and a survey method was used. This chapter outlines the study area, research design and sampling procedures used. The processes of research instrumentation and data analysis are also detailed.

3.2 Study Area

The study was undertaken at the Nairobi Safari Walk located within the KWS Headquarters, off Langata Road, Nairobi County (see map in Figure 3.1 and detailed structural plan in appendix 4). It is a captive wildlife facility that displays live wild animals in cages and enclosures. It is located 10 km to the south of Nairobi City Centre. Its proximity and easy access to the cosmopolitan city of Nairobi and its rare experience with wild animals has made it a renowned destination for many Kenyans especially school groups. The NSW covers an area of 11 hectares and depicts three simulated ecosystems; wetland, savannah and forest/woodland, each area exhibiting different animals representing each habitat with conservation messages. It is a show of Kenya's main natural habitats and landscapes found across the country (KWS, 2007). The NSW mission is "to expose the public to Kenya's biodiversity through environmental education and prepare them to actively participate in conservation" (KWS, 2007:p.4). The facility receives an average number of 176,000 visitors annually (KWS, 2012). Given the large number and diversity of tourists, this facility provided an ideal setting to study its impact in provision of conservation education.

The history of NSW dates back to 1964 when the Nairobi Animal Orphanage was established to care for young and abandoned wild animals. Over the years, the facility accumulated a large collection of captive wild animals. According to KWS records the concept of NSW was borne from the need of setting up a unique facility to provide higher standard of wildlife conservation education and an improved visitor experience. The NSW was opened to the public in 2000 with some of the animals that were in the

orphanage being transferred there. Its central mission is conservation education; using the motivating power of its natural environment and living organisms to inform, inspire and motivate people in environmental protection (KWS, 2007). Thus the primary role of NWS is provision of conservation education to tourists and visitors while the Nairobi Animal Orphanage which is a separate facility serves as a refuge for abandoned or orphaned wild animals.

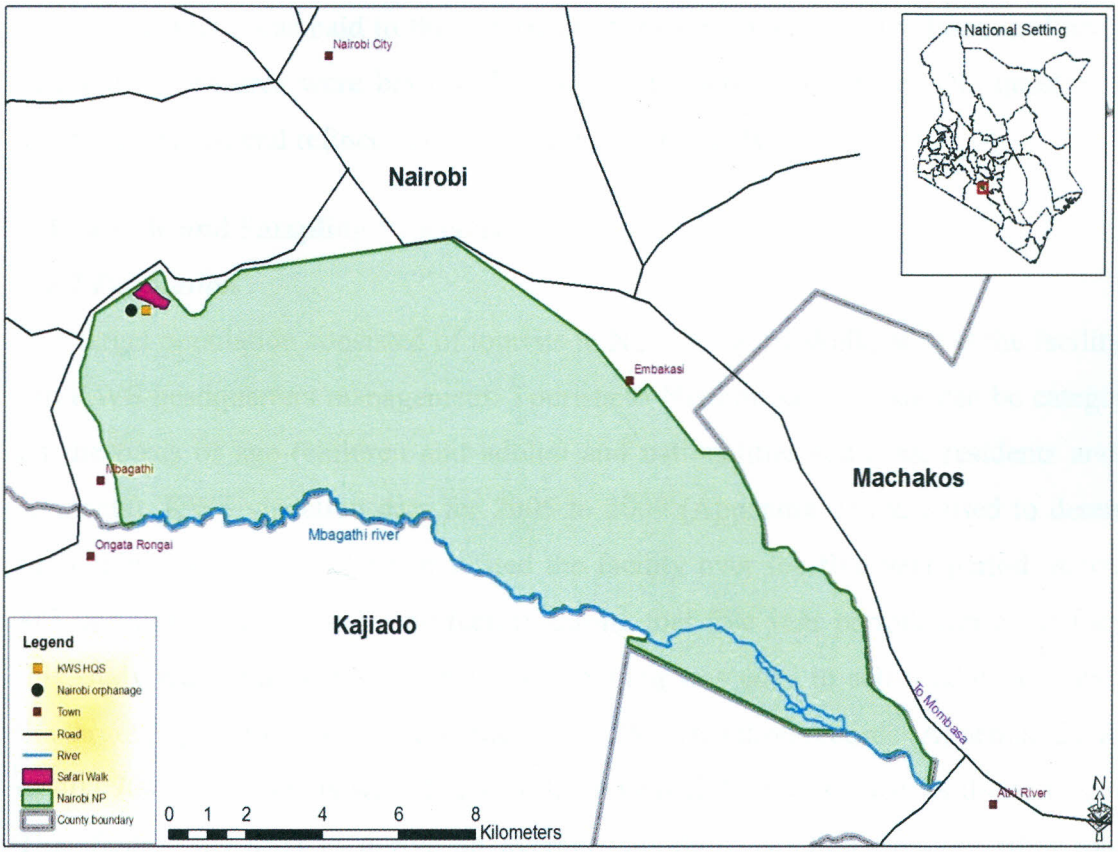

Figure 3.1: Study area map for NSW (36°46'23.814"E 1°20'24.34"S, 36°46'55.718"E 1°20'3.14"S)

3.3 Research Design

A survey was adopted, that enabled an in-depth investigation into the subject under study. A survey method enables information on beliefs, perceptions and motives to be collected (Burns, 2000). The study collected information from adult tourists to the facility on the extent to which they exited the facility with key conservation messages and the channels

and resources through which they were delivered. Information on the tourists' perception on the role(s) of the facility was also sought. The facility's staff and KWS headquarters top management provided information on institutional challenges faced by the facility in efforts to offer conservation education. Both primary and secondary data were collected. Primary data were collected from tourists, NSW staff and KWS top management while secondary data were obtained by review of journal articles, Government reports, theses, dissertations and books.

Careful attention was paid to the processes of instrumentation and validation. Previously developed measures were borrowed or adopted where appropriate. The questionnaires were pilot tested and refined prior to their use in the study.

3.4 Sample and Sampling Procedures

3.4.1 Population

The target population consisted of tourists to Nairobi Safari Walk, staff at the facility and top KWS headquarters management. Tourists to Nairobi Safari Walk can be categorised on the basis of age (children and adults) and nationalities (citizens, residents and non residents). KWS visitation data for 2005 to 2009 (Appendix 2) were used to determine the number of tourists who had visited the facility over the five year period. A total of 883,065 tourists had visited the facility during that five year period. Since the focus of this study was adult tourists, purposive sampling was used to select adult tourists from the target population and based on the same KWS visitation records (Appendix 2), a total of 407,704 adult tourists were found to have visited the facility within the same period. This figure was used to derive an average monthly visitation of 6795 adult tourists. Monthly visitation data was desired since the study was to be undertaken over a 30 day period. It was also used to predict the approximate number of adult tourists to expect within the study period and was therefore used to calculate sample size.

A total of 27 NSW staff members and 10 senior top KWS management staff were targeted for data collection by this study.

3.4.2 Sample Size

The monthly adult tourist visitation of 6795 was used to derive a sample size of 365 adult tourists using an online sample size calculator (Creative Research Systems, 2011). This sample was based on five percent margin error and 95% confidence level and was considered as being representative of the whole visiting tourist population.

3.4.3 Sampling Procedure

Systematic sampling method had been proposed to be used to intercept and interview every 20th adult tourist (using KWS visitor category tickets) exiting the facility. However after piloting it was realized that the low level of visitation arising from the low visitation season would have staggered data collection beyond the planned 30 days period. Instead focal sampling method (Harris, 1995) was utilized to intercept tourists as they exited the study area. The method (also referred to as continual ask by Marino *et al.* (2010) involves intercepting the first person who crosses into the predetermined study area. The entire area falling within the NSW entry gate roofing served as the predetermined study area for this study. Once the researcher was finished with a respondent the next person to enter the area was approached to participate followed by the next and so on until the required number of responses was achieved.

Yocco (2010) reckons that focal sampling is an effective method to recruit participants in visitor studies settings such as zoos or museums, where numerous people are engaging in a public activity. A total of 380 visitors were approached and requested to fill questionnaires during the 30 days period. Ultimately 367 visitors accepted thus completing 367 questionnaires and this represented a response rate of 96.5% with 13 refusals. A refusal log was maintained and after analysis it was established that the refusals were slightly different in distribution across both gender at six and seven for males and females respectively. All but one of the refusals was due to time constraints on the respondents. One respondent was not conversant with the English language and although contingency measures had been put in place to address language barrier by availing multilingual guides it happened that none of them was conversant with the Chinese language. In order to comply with the sample size of 365 respondents two

questionnaires were randomly selected and excluded from the 367 dully completed by respondents.

All staff (permanent, temporary and volunteers) at the facility were selected. Purposive sampling was also used to select 10 members of KWS headquarters top management who are directly involved in the provision of conservation education. The staffs were considered to be conversant with the operations of the facility and the challenges faced in provision of conservation education.

3.5 Research Instruments

Structured questionnaires were used to collect data from tourists and NSW staff. Both qualitative and quantitative data were collected using closed-ended questions. This involved use of two sets of questionnaires, each set for each category of respondents i.e. tourists and NSW staff to cater for the differences in data sought from each category. Data collected from tourists include motivation for visitation, knowledge and information acquired at the facility, how and where the information was acquired within the facility and tourists' perception on the role of the facility.

Questionnaire for tourists to the NSW was divided into two sections. The first section consisted of questions targeted at collecting respondents' profile data while section two consisted of specific questions seeking responses to the research questions. Responses involved selection from a list or rating / scaling using five point scales. The use of structured questionnaires to collect data from tourists was considered most convenient due to the need to get as many responses as possible while being cognizant to keep the time taken to fill it as short as possible.

Semi structured interviews were used to collect data from the KWS headquarters top management on the institutional challenges faced in provision of conservation education and the management's perception of the role of the facility. The rationale for using semi structured interview method during data collection was informed by the need to obtain high response rate and in-depth data for the study.

3.5.1 Administration of Research Instruments

Data collection was undertaken in the month of January 2012 and was spread throughout all the days of the week to ensure that a wide range of visitors from diverse backgrounds was included. A total of 367 questionnaires were distributed as the aim was to obtain at least 365 respondents. Prior to data collection a pilot study was undertaken in order to test the research instruments and also familiarise with modes of instrument administration. Four research assistants were trained and used to administer the questionnaires to tourists. Tourists exiting the facility were targeted and requested to fill the questionnaire since it was expected that they would have been exposed to conservation education through the channels on site. The (tourists) entry tickets were used to confirm the age of the respondents since the facility issues different entry tickets for children and adults. All respondents filled the questionnaires on their own with the research assistants providing clarifications where necessary as well as cross checking the accuracy and completeness of the responses. On average it took about 10-15 minutes for the respondents to complete filling the questionnaires and this was within Moore *et al.* (2009) guidelines on designing park based visitor surveys.

3.6 Data Analysis

The questionnaires were examined to ensure they were completed and consistently filled. The response questions were numerically coded and responses stored on computer spreadsheet software, MS Excel, under assigned variable names. Descriptive statistics namely frequency, means, and percentages were used to analyze the data. Comparisons and associations of ratio and categorical data were done using Student t–Test and Chi Square Test, respectively. Correlations were used to determine degree of associations between two linearly related variables such as motivation for visitation and level of satisfaction. A five point Likert-type scale was used to measure tourists' perception of the roles of the facility, rating importance of reasons for visiting NSW, efforts of NSW and satisfaction with conservation information provided. A five point Likert-type scale was also used to assess respondents' agreement or disagreement with situational characteristics of NSW. Statistical Package for Social Sciences (SPSS) and Stata software were used to conduct these analyses.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

The aim of this study was to find out the impact of captive wildlife facilities in provision of conservation education. Nairobi Safari Walk was used as a case study. In this study the impact of NSW was assessed in terms of the extent to which visitors were exiting the facility with key conservation messages, the impact made by the channels and resources used to convey the messages, the perception of visitors on the role of Nairobi Safari Walk and assessment of challenges faced by the facility in providing conservation education to visitors. The research findings of the study are presented in terms of these four objectives.

4.1.1 Respondents Interview Response Rate

The desired number of responses was 365 which was the sample size. To achieve this, a total 380 visitors were approached to participate in the study out of which 367 accepted and were therefore interviewed. This represents a 96.5% acceptance rate. This was attributed to the sampling procedure used where all visitors that had entered the facility during the data collection period were targeted. A review of the responses established that all the 367 questionnaires had been adequately completed and in order to comply with the desire for the sample size two of the adequately completed questionnaires were randomly excluded thus leaving 365 questionnaires which were analyzed in this study. For NSW staff a total of 23 respondents completed the questionnaire and all of them had been adequately completed and therefore analyzed in this study. This represented 85% response rate the remainder being due to staff that were away from duty due to various reasons. 10 KWS top managers directly involved in provision of conservation education were interviewed as anticipated. There was no refusal. The response rates were as summarized in Table 4.1 below.

Table 4.1: Respondents Interview response rate

Respondents category	Expected responses		Actual responses		Analyzed responses	
	N	(%)	No.	(%)	No.	(%)
Tourists	365	100	367	101	365	100
NSW staff	27	100	23	85	23	85
Top KWS management	10	100	10	100	10	100

Assuming a limited response bias, random sampling error, and a reasonable degree of homogeneity in the sample, these response rates were considered adequate because they exceeded the 65% level set by Dolsen and Machlis (1991).

4.1.2 Respondents Profiles

The respondents were profiled along gender, nationality, age and number of previous visits to NSW in the period of twelve months before date of data collection.

a) Age and Gender of the Respondents

There were 201 female and 164 male respondents representing 55.1% and 44.9% respectively. The difference between male and female respondents was significant (χ^2=3.75, p=0.053). Majority of the respondents (62.5%) were aged between 18 to 27 years while those aged 58 years and above accounted for a mere 1.9% (Table 4.2).

Table 4.2: Respondents' age and gender profiles

Age groups in years	Number of respondents			%
	Male	Female	Total	
18-27	85	143	228	62.5
28-37	45	35	80	21.9
38-47	19	10	29	7.9
48-57	12	9	21	5.8
58 and over	3	4	7	1.9
All age groups	164	201	365	100
Proportion in %	44.9	55.1	100	-

There were significant differences between the age groups (χ^2=453.01, p>0.001) with the age distribution of the respondents being skewed towards the young ages in that the number of respondents in the age categories decreased with increase in age. This implies that the facility appeals to the youth, majority of whom might be at various stages of their education thereby giving the facility a chance to complement the formal environmental education as well as serving to inform a young audience. This could be attributed to the high percentage of youth in the Kenyan national population. The facility is also a popular and renowned destination for school groups. The results also indicate that more females than males visit captive wildlife facilities. This could be attributed to females being more motivated to visit tourist destinations. This finding agrees with a study by Andreu *et al.* (2005) in Turkey which found that females are more motivated to travel to tourist destinations than males. A similar study undertaken by Packer (2004) in six different educational leisure settings in South – East Queensland, Australia found that five of the six educational leisure settings (which included a museum, a wildlife centre, an art gallery, an aquarium, a historical site and a guided walk in a national park area) had the females as the modal gender.

b) Respondents' Nationality and Number of Previous Visits to NSW

Majority (83%) of the respondents were Kenyans and 17% were non Kenyans (Table 4.3). This implies that the facility is frequented by locals and thus placing it in a prime position to impact the Kenyan population with conservation education. Although the non Kenyan respondents were a minority this however implies that the NSW appeals to the international tourism market thereby extending its reach of conservation education beyond the Kenyan borders. The results agree with a study by Tribe (2006) in Australia which found that there were more domestic visitors to captive wildlife facilities than international visitors. This finding also renders support to the WAZACS (2005) recommendation that captive wildlife facility's educational role should influence people's attitudes and behaviour towards wildlife and environments locally and globally.

Repeat visitors (n=205) were the majority comprising 56% of all respondents while first time visitors (n=160) were the minority comprising 44% of the respondents. When

profiled based on nationalities it was revealed that 91% of the repeat visitors were Kenyans while 9% were non Kenyans. Majority (70%) of the first time visitors to NSW were Kenyans while non Kenyans visiting the same facility for the first time comprised of 30% of the respondents (Table 4.3). There were significant differences among the respondents' groups based on number of previous visits to NSW (χ^2=77.23, p>0.001) within twelve months preceding this study and the nationality of respondents (χ^2=161.78, p=0.001).

Table 4.3: Comparison of number of previous visits and nationality

Nationality	Number of previous visits to NSW				
	Never	**Once**	**Twice**	**Thrice and more**	**Total**
Kenyan	117	80	58	49	**304**
Non Kenyan	43	10	4	4	**61**
Total (all respondents)	160	90	62	53	**365**

Repeat visitations have two sided impacts on provision of conservation education. Firstly repeat visitors have a chance to continue learning from where they left during their last visit. This visit may have served to remind them of something they had learned before or forgotten. On the other side visitors that are too familiar with a captive facility may tend to ignore the information provided. This is particularly so when passive channels such as message boards, audio recordings and video shows are dominant. With repeated visitation these channels tend to be monotonous and may often be ignored by the visitors. They may not therefore serve to convey messages to such an audience. The Chi-Square statistical test was used to determine the strength of association between nationality of respondent and number of previous visits to NSW. Approximate Chi-Square value of χ^2=21.79, p>0.001 indicates that there is significant association between nationality of tourists and their number of previous visits to NSW with Kenyan tourists making more repeat visits than non Kenyan tourists.

Approximately two thirds (61%) of the respondents had been to a different captive wildlife facility. Most of the respondents (58%) visited the facility in the company of at least one other adult. This reflects the potential of the facility to provide conservation

education to adult groups using live animals and other channels on site particularly when wildlife conservation and biodiversity are critical issues to this country and the region.

4.2 Extent to which Tourists Exited NSW with Key Conservation Messages

All the five key messages were received by over 50% of the respondents with the "beauty" message being the most received by 80% of the respondents and extinction message being the least received by 52%.of the respondents (Figure 4.1).

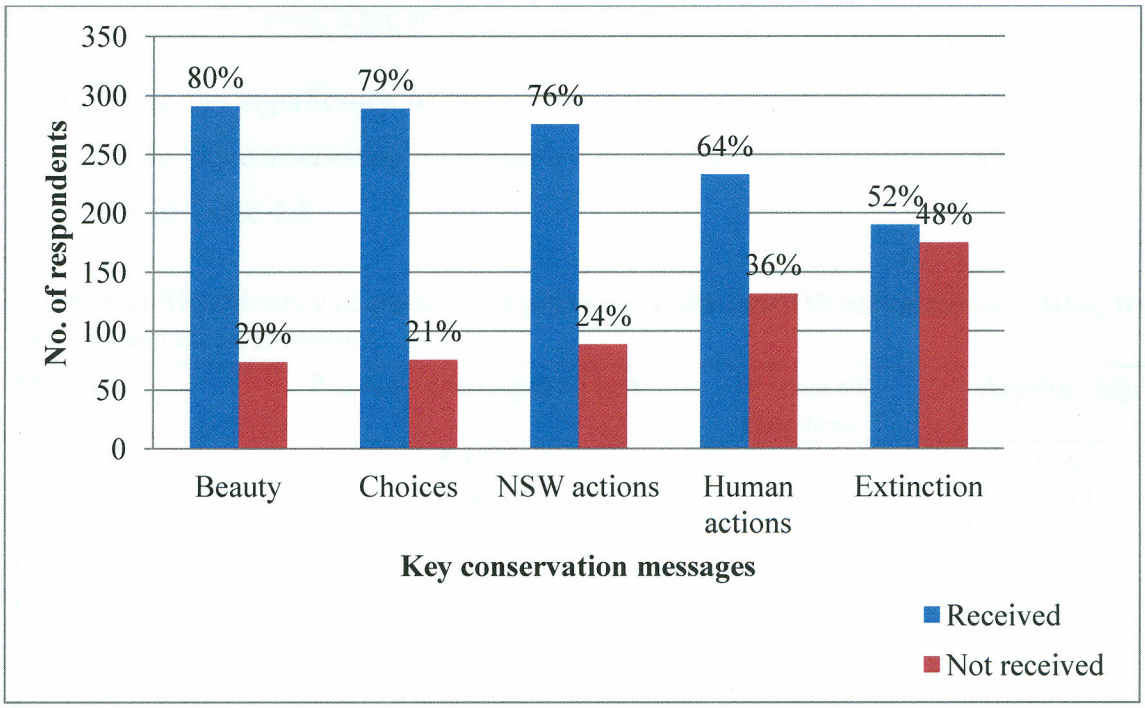

Figure 4.1: Reception of conservation messages by tourists at NSW

Note:	Beauty	=	There is beauty and value in nature
	Choices	=	Choices we make can help protect wildlife
	NWS actions	=	NSW is actively involved in conservation
	Human actions	=	Human actions are causing loss of wildlife and habitat
	Extinction	=	Extinction is happening faster than ever before

The findings by this study that at least half of the respondents reported receiving each of the five key conservation messages implies that the facility is fairly successful in communicating most of its messages using the channels on site. These findings have

slight variations and similarities with those of other studies. A study by Mony and Heimlich (2008) conducted at a large zoo in Midwestern United States which conveys almost similar messages as the study site found that the extent to which visitors exited with key conservation messages ranged from a high of 90% for the Beauty message to a low of 68% for the Choices message. These levels of message conveyance were thus termed successful. Another study carried out by Peake *et al.* (2009) focused on factors influencing effective message communication in a marine park in Australia found that 42% of all respondents had not received any conservation messages and this cannot be rated as successful even if the study was silent on such a rating.

To examine the significance of respondents' previous visits to NSW on the extent of exiting with key conservation messages a Chi-squared analysis was undertaken. Results are shown in Table 4.4.

Table 4.4: Significance of number of previous visits to NSW on extent of exiting with key conservation messages

Message	Pearson Chi-Square (χ^2)	Degree of freedom	Asymp. Sig.
Beauty	5.326	3	0.149
Choices	6.005	3	0.111
NSW actions	1.366	3	0.713
Human actions	8.222	3	0.042*
Extinction	1.193	3	0.755

Note * significant at $p<0.05$ level

The above results show that there were no significant relationships between the respondents' number of previous visits to NSW and the extent of exiting with key conservation messages except for the Human actions message ($\chi^2=8.222$, $p>0.05$). These findings have a general implication that the number of visits a tourist makes to NSW has no effect on the extent of exiting the facility with key conservation messages. The significant relationship observed between number of previous visits and extent of exiting with the "human actions" message imply that the more the number of previous visits a tourist made to NSW the more she/he is likely to exit with this message. This can partly be due to the appeal of the message due to its direct link to humans. There is also the likelihood of enhanced publicity of negative impacts of human actions on wildlife and

habitat by informal approaches such as media publicity and lobby groups serving to predispose respondents more to the "human actions" message than the rest of the messages. In this case repeat visitations cannot be emphasised as a method of enhancing extent of tourists exiting with key conservation messages.

Over 75% of the visitors reported that the conservation messages were not new to them. This supports previous research which has shown that visitors to zoos, museums and other captive wildlife facilities are aware of the conservation messages prior to their visits (Heimlich *et al.*, 2005).

4.2.1 Reasons for Visiting Nairobi Safari Walk

Respondents were asked to rate, on a five-point scale, the importance of 10 items as reasons for visiting NSW. All the 10 items have been shown in previous research in free-choice learning environments to represent five categories of personal goals: Learning and Discovery; Enjoyment; Restoration; Social Contact and Self-Fulfillment (Packer, 2004). Mean responses and the proportion (in percentage) of all respondents in each scale are reported in Table 4.5.

The item "to enjoy myself" was reported by 57.3% of the visitors as a most important reason for visiting NSW. On the other hand "to interact with others" received the lowest importance rating with 30.1% of the respondents rating it as the most important reason and 21.1% as least important reason for visiting NSW (Table 4.5). Of the top five reasons for visitation two of them fall under learning and discovery goal. These are "to experience something new or unusual" and "to expand my knowledge". Items falling under the social contact motivation goal do not appear in the top five reasons. Three items namely "to enjoy myself", "to relax mentally and physically" and "to feel happy and satisfied" were each reported by over 50% (that is 57.3%, 54.8% and 51.0% respectively) of the respondents as most important reasons for visiting NSW (Table 4.5). When the ten individual goals were clustered to form five personal goals it was found that the Restoration goal (mean=3.99) was reported as the most important goal for tourists visiting NSW. Learning and discovery goal (mean=3.94) was the second most

important goal for tourists visiting NSW. Social contact (mean=3.55) was the least rated personal goal by the respondents (Table 4.5).

Table 4.5: Descriptive statistics of reasons and personal goals for visiting NSW

Reason for visitation	Mean Score	S.D	Importance scores (in %) 1*	2*	3*	4*	5*
To expand knowledge	3.90	1.19	4.4	9.6	21.4	21.1	43.6
To experience something new or unusual	3.98	1.10	4.4	5.8	18.1	30.7	41.1
Learning and Discovery (LD)	**3.94**	**0.95**	**4.4**	**7.7**	**19.8**	**25.9**	**42.4**
To enjoy myself	4.25	1.10	4.7	4.7	9.3	24.1	57.3
To feel a sense of achievement	3.65	1.48	15.3	9.6	11.8	20.8	42.5
Passive Enjoyment (PE)	**3.90**	**1.04**	**10.0**	**7.2**	**10.6**	**22.5**	**49.9**
To feel happy and satisfied	4.11	1.14	4.7	5.5	15.1	23.8	51.0
To challenge my abilities	3.55	1.41	14.2	10.7	14.5	26.6	34.0
Personal Self Fulfilment (PSF)	**3.88**	**1.08**	**9.5**	**8.1**	**14.8**	**25.2**	**42.5**
To have a change from routine	3.83	1.31	7.9	10.1	16.7	21.1	44.1
To relax mentally and physically	4.15	1.17	5.5	5.2	13.2	21.4	54.8
Restoration (RST)	**3.99**	**1.09**	**6.7**	**7.7**	**15.0**	**21.3**	**49.5**
To interact with others	3.22	1.52	21.1	13.4	17.5	17.8	30.1
To spend time with family or friends	3.88	1.39	11.5	7.4	11.5	21.1	48.5
Social Contact (SC)	**3.55**	**1.23**	**16.3**	**10.4**	**14.5**	**19.5**	**39.3**

Note: 1 = least important; 2 = a little important; 3 = moderately important; 4 = fairly important; 5 = most important; S.D = Standard Deviation; n = 365, *scores for each scale (1 to 5) are in percentages.

These findings confirm that restoration and, learning and discovery as personal goals and related individual reasons are very important in motivating people to visit captive wildlife facilities. The findings of this study in respect to learning and discovery goal are similar to those of Packer (2004) who found that learning and discovery goal was the second most important goal for tourists visiting six informal educational leisure settings in Australia. The only slight deviations from his findings are that while passive enjoyment was reported as the most important goal, this study has found it to be the third most important goal for visitors to NSW while personal self fulfilment goal which he reported as least important has been found by this study to be second least important goal. His study found that visitors to interpretive sites which included a wildlife centre were characterised as placing the greatest importance on enjoyment followed by learning and discovery.

Visitors rated restoration as relatively more important and learning and discovery as relatively less important. In this respect, NSW visitors are similar to Packer's (2004) National Park visitors, who were found to be placing greater importance on restoration than on learning and discovery. McLoughlin (1998) suggests that in natural areas it is the outdoor sensory experience itself that attracts visitors. Thus, many visitors may simply prefer to absorb the atmosphere of their surroundings and have relatively less interest in learning about plants, animals and ecosystems (Crilley and Price, 2005; Darwin-Edwards, 2000). Michener and Schultz (2002) similarly suggest that many botanic gardens and captive wildlife facilities visitors consider the restorative qualities to be primary reasons for their visits. Given the importance of restoration and, learning and discovery goals as motivations for visiting captive wildlife facilities conservation messaging interpretation should be designed to be consistent with visitors' desire for relaxing, peaceful, reflective experiences coupled with need to expand knowledge and experience something new or unusual. Moreover previous research by Packer (2004) found that there was no conflict between the educational and the restorative aspects of visitors' experience.

Respondents were given a list of key conservation messages provided by the facility and were requested to indicate which massages they had received during their tour of the facility. The extent to which they left the facility with key conservation messages was positively correlated with the learning and discovery goal. Extinction, Human actions, NSW actions, Choices and Beauty messages correlated positively with the learning and discovery goal (r_{365}=0.17, 0.15, 0.20, 0.13, 0.13 respectively, $p<0.01$, 0.01, 0.01, 0.05, 0.05 respectively) as displayed in Table 4.6. All the five key conservation messages subscales had significant correlations with the learning and discovery (LD) goal at as displayed in Table 4.6. The correlation coefficients ranged from 0.13 to 0.20 implying that the nature of the correlation was small. Correlations between the other personal goals and the extent of message uptake varied from positive correlations at 0.01 and 0.05 levels to insignificant levels thus implying lack of consistency in the associations. Apart from learning and discovery which was significantly correlated with extent to which respondents exited NSW with each conservation message, the other personal goals each

had significant correlations with two conservation messages while the remaining three other correlations were not significant.

Table 4.6: Correlation between personal goals and key conservation messages uptake

Key conservation messages	*R*	*r*	*r*	*r*	*R*
	LD	RST	PE	PSF	SC
Extinction is happening faster than ever before	0.17**	0.15**	0.11*	Ns	0.15**
Human actions are causing loss of wildlife and habitat	0.15**	Ns	Ns	0.19**	0.11*
NSW is actively involved in conservation	0.20**	0.14**	0.11*	0.16**	Ns
Choices we make can help protect wildlife	0.13*	Ns	Ns	Ns	Ns
There is beauty and value in nature	0.13*	Ns	Ns	Ns	Ns

Note: **correlation is significant at p <0.01 level, *correlation is significant at p<0.05 level, N=365, Ns=Not significant, LD = Learning and Discovery, RST = Restoration, PE = Passive Enjoyment, PSF = Personal Self Fulfilment, SC = Social Contact.

The findings regarding the relationship between the motivation for visiting NSW and the extent to which visitors exited with key conservation messages are not clear cut. Significant correlations between the extent to which visitors exited with key conservation messages and personal goals for visitation imply that the more important a goal was for respondents to visit NSW the more likely they were to exit with a conservation message. Whereas learning and discovery goal correlated positively with all the messages there was no consistence in the way other goals correlated with the extent of message uptake by respondents. Restoration goal for instance although rated as the most important goal for visitation, correlated with only the extent to which respondents exited with NSW actions and extinction messages. This observation can be attributed to the finding by McLoughlin (1998) that many visitors who hold restoration as the predominant motivation for visitation are relatively less interested in learning about plants, animals and ecosystems. On the other hand the nature of correlation could be dependent on the messages themselves. Beauty and Choices messages for example correlated with only learning and discovery goal and not any other goal. Thus although learning and discovery goal had defined correlations with all the key conservation messages the rest of the personal goals correlated only with two of the five key conservation messages. This implies that people who visit NSW with intent to learn and discover as their most

important reason were more likely to exit the facility with more key conservation messages than those who held other goals as their most important motivation.

4.2.2 Conservation Information Sought by Visitors

Majority (28%) of the respondents reported the most important information that they would have preferred to learn from NSW to be animal behaviour (Figure 4.2). Animal and plant identification was the least rated as the most important information preferred by 12% of the respondents. Information related to animal habitat, food and prey, threats to animal conservation and conservation status of animals and plants was reported by 19, 19, and 22 percent respectively of the respondents as the most important information they preferred to learn from NSW.

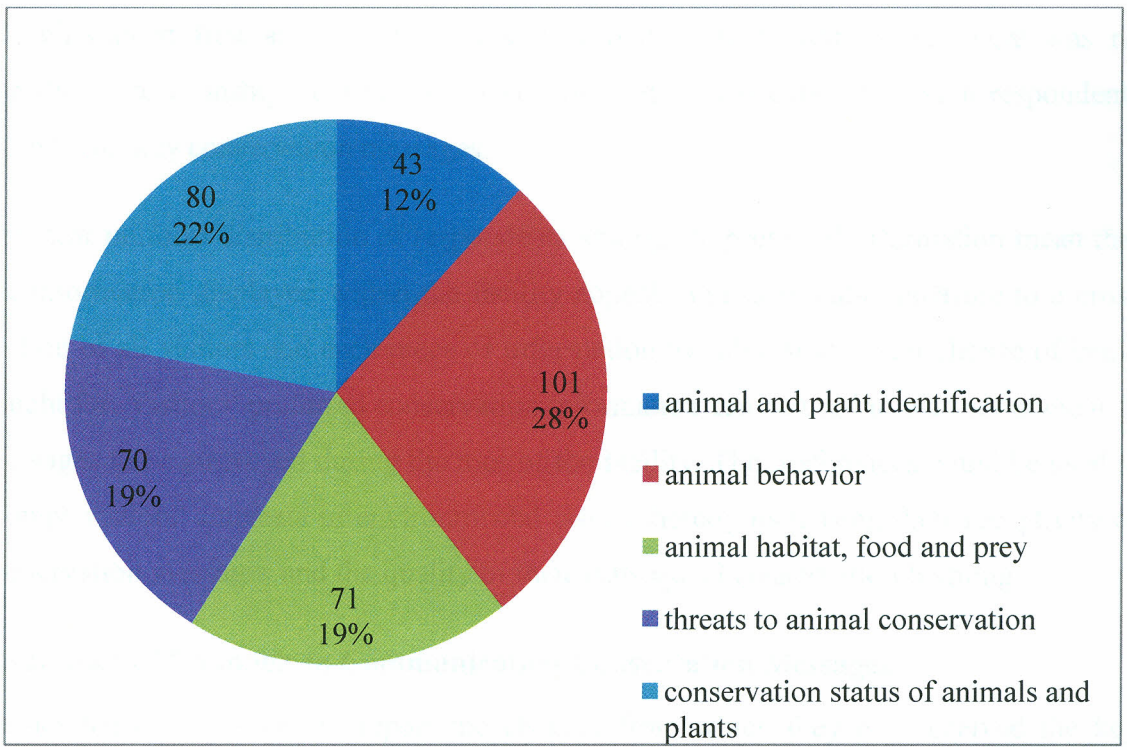

Figure 4.2: Most important information preferred by visitors at NSW

A previous study by Puan and Zakaria (2007) undertaken in three zoos in Malaysia found that the most important information sought by visitors was identification of plants and animals by common names but this study has found that visitors to NSW prefer in priority order information related to animal behaviour, animal habitat, food and prey,

threats to animal conservation, conservation status of animals and, animal and plant identification. Although the reason given for observation made in Malaysia was that it is reasonable for the visitors to first want to know and recognize the animal they were observing before they acquire more information the Kenyan situation may be that most visitors (particularly local citizens) may already have been predisposed to wild animals through previous visits to NSW, other wildlife facilities and also other media. This observation is also supported by McLoughlin (1998), Crilley and Price (2005) and Darwin-Edwards (2000) whose studies found that visitors placing greater importance on restoration prefer to appreciate the atmosphere and beauty of their surroundings and hold relatively less interest in learning about plants and animals. This study found that respondents rated viewing wild animals as the major source of conservation messages (figure 4.3). There is however observed closeness in ranking since animals behaviour though ranked first at NSW was ranked second in Malaysian zoos. There was no significant relationship between preferred information and extent to which respondents exited with key conservation messages.

The near uniform distribution of respondents among the preferred information mean that the information displayed within the facility appeals almost in equal measure to a cross section of all visitors and each piece of information has almost an equal chance of being sought for. Visitors' preferred conservation information can be used to plan for content of messages to be conveyed during the tour of the facility. The preferences could be used to prompt visitors' interests in environmental issues thereby increasing their receptivity of conservation messages and the quality of their subsequent conservation learning.

4.3 Impact of Channels in Communicating Conservation Messages

Respondents were asked to report the channel from which they had received the key conservation messages which they reported as having received during their tour of NSW. Viewing the animals was the most commonly reported source of the conservation messages having been reported by 58% (n=210) of the respondents. It was the only channel that conveyed conservation messages to over 50% of the respondents. Staff guides and talks conveyed conservation messages to 27% of the respondents. A small

proportion (4%) of respondents reported different channels other than those within the study area. These were previous visits (n=7), television programs (n=5) and video shows (n=2) (Figure 4.3).

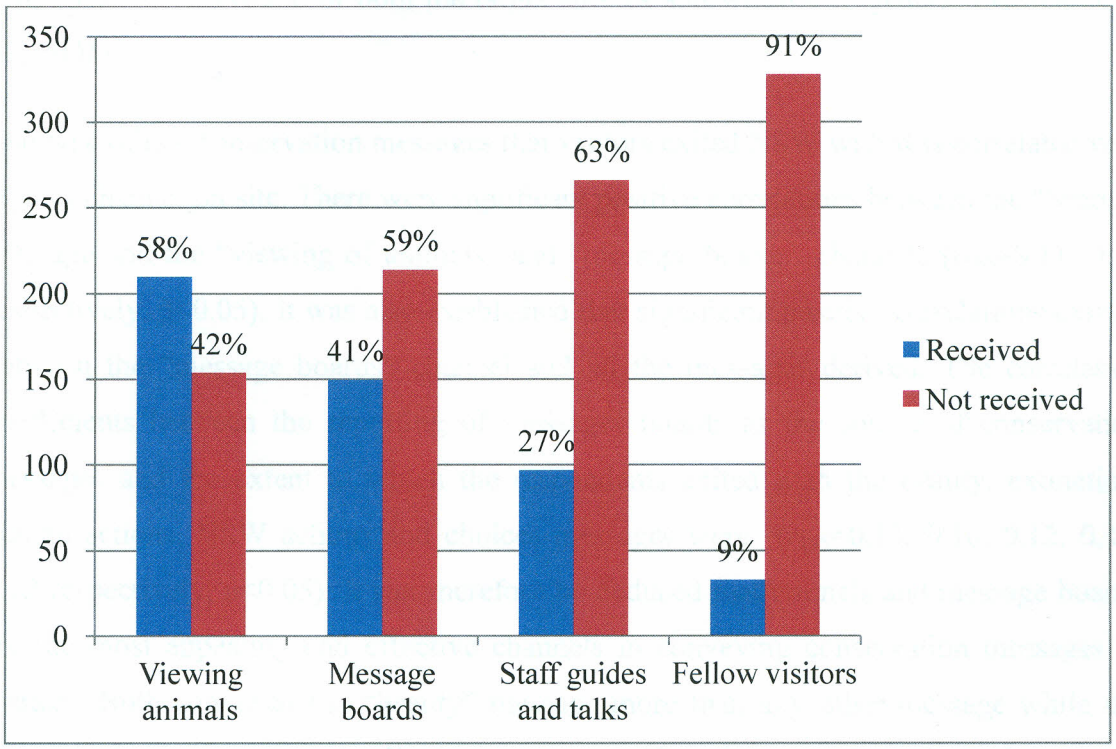

Figure 4.3: Reception of conservation messages from channels on site

Viewing wild animals and message boards were the major sources of conservation messages to tourists visiting NSW. Therefore the animals held in captivity within NSW which has attracted considerable criticism due to animal welfare concerns play a significant role in conveying conservation messages to tourists. On the other hand staff guides, interpretation and talks which previous studies have considered to be fundamental in the design and delivery of conservation education appeals to slightly over a quarter (27%) of tourists to NSW. Therefore the facility is heavily dependent on what Tribe (2001) referred to as non-personal (static displays, signage and animals) strategies as opposed to personal (keeper talks, guides and interpretation) strategies which he described as key weapon and strategy for achieving both education and conservation. This is further supported by Broad and Weiler (1998) emphasis that captive wildlife attractions need to embrace interpretation as their key weapon and strategy for achieving

both education and conservation goals. The study further established that the best conveyance of conservation messages to visitors is achieved by combining exposure to wildlife with interpretation. In general a number of studies have found that exposure to wildlife when combined with some form of interpretation was associated with increased support for conservation of both the target species and wildlife in general (Moscardo *et al.*, 2001).

The type of key conservation messages that visitors exited NSW with was correlated with type of channel on site. There were significant positive correlations between the "beauty" message and the "viewing of animals" and "message boards" channels (r_{365}=0.11, 0.13 respectively, $p<0.05$). It was also established that significant positive correlations existed between the "message boards" channel and all the messages derived. The correlation coefficients between the reporting of messages boards as the source of conservation messages and the extent to which the respondents exited with the beauty, extinction, human actions, NSW actions and choices messages were (r_{365}=0.13, 0.10, 0.12, 0.13, 0.12 respectively, $p<0.05$). It can therefore be deduced that animals and message boards are the most appealing and effective channels in conveying conservation messages to visitors. Both conveyed the "beauty" message more than any other message while the message boards conveyed all the messages. Therefore passive channels convey conservation messages to majority of tourists at the NSW than the interactive channels which is the opposite of what other studies have recommended. The wider appeal of the passive channels is a result of their dominance in the facility when compared to the interactive ones. There are more message boards and wild animals in NSW but fewer guides and interpreters.

The selection of fellow visitors as sources of conservation messages is an indication of conservation related conversations among the visitors and a sign of positive response from visitors. This supports evaluation studies in the captive wildlife facilities which have shown that visitors respond more positively to naturalistic settings and exhibits of a facility with increased visit durations, viewing time, behaviour search, social interaction,

animal related conversation and positive attitudes (Price *et al.*, 1994; Johnston, 1998; Totfield *et al.*, 2003; Nakamichi, 2007).

4.4 Visitors' Perceived Roles of NSW

In Table 4.7 the four roles of captive wildlife facilities have been listed in a descending order of their mean scores rated by the respondents. Accordingly the roles of NSW as perceived by respondents in rank order were education (mean score = 4.3), recreation (mean score = 4.3), conservation (mean score = 4.2) and research (mean score = 3.8). Therefore education and recreation were the most important roles of NSW as perceived by the respondents. Research is the only role that was ranked by less than 50% of respondents as the most important role of NSW. Accordingly 37.8% of the respondents ranked it as a most important role while 9.6% ranked it as a least important role.

Table 4.7: Descriptive statistics for visitors' perceived roles of NSW

Role	Mean score	S. D	Importance scores (in percentages)				
			1*	2*	3*	4*	5*
Education	4.3	0.88	1.6	1.9	12.9	33.2	50.4
Recreation	4.3	0.99	2.5	3.8	12.1	26.6	55.1
Conservation	4.2	1.01	3.0	1.9	19.5	23.0	52.6
Research	3.8	1.30	9.6	8.2	15.9	28.5	37.8

Note: N= 365, 1 = least important; 2 = a little important; 3 = moderately important; 4 = fairly important; 5 = most important; S.D = Standard Deviation, *scores for each role (1 to 5) are in percentages.

Compared with the perceptions of the respondents NSW fits its roles closely to the officially stated roles especially in regard to education and recreation. Managed by a governmental body NSW has been actively involved in conservation education programs directed at schools and other learning institutions. It has equally been a popular destination for tourists due to the relatively low entrance fees charged and less logistical arrangements needed. It does for instance not require a tourist to have a vehicle in order to tour the facility. The marginal differences between the means of education and recreation signify the perceived importance accorded to the facility by its visitors. Moreover the ranking by the respondents of restoration and, learning and discovery goal in section 4.2.1 (Table 4.5) serves to confirm that education and recreation are in addition

to being rated as important roles of captive wildlife facilities very closely related. These findings are marginally different to those of Puan (2007) in Malaysia where education was ranked as the second most important role of all three zoos surveyed. Recreation on the other hand was rated as the most important role in two out of the three zoos. It should however be noted each captive wildlife facility may emphasise different roles depending on their mission and target groups.

4.4.1 Perceived Efforts of Nairobi Safari Walk

In order to capture opinion on efforts of the facility respondents were asked to rank the importance of the efforts of NSW as captured in five statements. A scale of 1 to 5 where 1 represents least important and 5 most important was used to rate visitors' perceived importance of the efforts. Positive responses about the efforts made by NSW were received (Table 4.8). The majority (60.8%) of the respondents perceived conserving and protecting of wild animals (mean score =4.43) to be the most important effort undertaken by the facility. Making use of wild animals as a learning resource and making society aware of the importance of wildlife was rated as most important efforts of NSW by 53.7% and 48.9% of respondents respectively while 47.9 % of the respondents perceive preparation of educational programs for children to be the most important efforts. As expected a small proportion (30.7%) of the respondents perceived that entertaining of visitors through videos and lectures to be the most important effort by NSW since these are not widely undertaken.

Table 4.8: Descriptive statistics for perceived efforts of NSW

Efforts of NSW	Mean score	S. D	Importance scores (in %) 1*	2*	3*	4*	5*
Conserves and protects threatened animals	4.43	0.85	1.4	1.6	10.7	25.5	60.8
Makes society aware of the importance of wildlife	4.28	0.85	1.4	1.6	13.2	34.9	48.9
Makes use of animals as a learning resource	4.28	0.96	2.5	2.7	12.9	28.2	53.7
Prepare educational programmes for children	4.04	1.19	6.8	4.1	15.1	26.0	47.9
Entertain visitors through videos, lectures	3.46	1.41	15.6	9.0	19.7	24.9	30.7

Note: N=365, 1 = least important; 2 = a little important; 3 = moderately important; 4 = fairly important; 5 = most important; S.D = Standard Deviation, *figures for each score (1 to 5) are in percentages.

The findings on the respondents perceived roles do not match the perceived efforts thus making them surprising. Having rated education as the most important role of NSW it would have been expected that education related efforts would as well be regarded as most important. Instead conservation linked efforts were perceived as the most important efforts. Although these variations could be accommodated as falling within the ranges standard deviation, they can also be attributed to the mission of the managing institution (KWS) whose mandate is to conserve and protect wildlife. By virtue of NSW being managed by KWS visitors may have contextualised its efforts as being directed towards the achievement of KWS mission.

Visitors' perceptions of the roles of the facility were positively correlated with the perceived efforts except for correlation between the effort of "entertaining visitors through videos, lectures and talks" and the role of "education" which is not significant. The correlation between the perceived role of conservation and the effort of entertaining visitors through videos, lectures and talks was significant but negative (r_{365} = -0.10, $p < 0.05$ level). This is not surprising since entertainment as an effort does not yield to conservation. This observation could also be due to low level of these services within the facility and their perceived conflicts with conservation. A section of Kenyans has been vocal against the holding of entertainment events such as weddings, launch events within wildlife conservation areas. Additionally previous study by Puan (2007) found "conducting of animal shows" to be the least rated effort due to its controversy in respect

to the welfare of the animals involved. The strongest positive correlation was between the perceived role of conservation and the effort of making society aware of the importance of wildlife ($r_{365} = 0.47$, $p < 0.01$). This implies that respondents believe that enhancing awareness of the importance of wildlife enhances the conservation of biodiversity.

4.4.2 Perceived Context Beliefs of NSW

In order to measure the respondents perception of the extent to which they perceived that NSW supported learning, participants were asked to rate six specifically designed items on a five point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The six items represented two factors namely learning is enjoyable (five items) and learning is effortful (one item). Table 4.9 shows the descriptive statistics of the responses for each item and subscale. The means of all items in the Learning is enjoyable subscale were within the "agreement" (mean=4.27) range while that of Learning is Effortful was within the "disagreement" range (mean=2.64). Majority (48.2%) of the respondents strongly agreed that understanding the information presented in NSW (mean =4.35) was important to them. Regarding the visit to or tour of NSW marginally more respondents were in agreement that the visit was more entertaining (88.5%) than educational (88.2).

Table 4.9: Descriptive statistics for perceived context beliefs

Context beliefs	Mean score	S. D	Agreement / disagreement scores (in percentage)				
			1*	2*	3*	4*	5*
Understanding the information presented here is important to me	4.35	0.76	0.5	2.5	7.1	41.6	48.2
Learning here is relaxing and fun	4.30	0.8	0.5	3.8	6.6	43.6	45.5
The visit or tour was educational	4.29	0.83	1.6	1.9	8.2	41.9	46.3
The visit or tour was entertaining	4.24	0.78	1.4	1.6	8.5	49.0	39.5
There are lots of opportunities to learn here	4.19	0.71	0.8	1.9	6.8	57.8	32.6
Learning is enjoyable	**4.27**	**0.78**	**1.0**	**2.3**	**7.4**	**46.8**	**42.4**
Learning here is difficult	2.64	1.57	36.4	18.1	10.1	15.9	19.5
Learning is effortful	**2.64**	**1.57**	**36.4**	**18.1**	**10.1**	**15.9**	**19.5**

Note: N=365, 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree; S.D = Standard Deviation, *figures for each context belief ranking (1 to 5) are in percentages.

These findings indicate that visitors to NSW believe that learning within the facility is enjoyable but does not require a lot of effort. It also indicates that visitors perceived the tour of the facility to be both educational and entertaining. Additionally majority (90.4%) of visitors believe that NSW presents lots of opportunities to learn. It can therefore be deduced that majority of visitors to NSW perceive that it supports learning about conservation. There were positive and significant correlations between the context belief items and the perceived roles of NSW. Strong correlations were observed between perceived role of education and existence of opportunities to learn (r_{365} = 0.41, p > 0.01 level) and between the item "the visit was entertaining" and the role of recreation (r_{365} = 0.31, p > 0.01). These findings imply that the more tourists agreed that NSW had lots of opportunities to learn the more likely they were to perceive education as its most important role and, the more the tourists agreed that the tour of NSW was educational the more they perceived recreation as its most important role. However tourists that were likely to agree that the tour was educational were those who perceived that recreation was the most important role of NSW as proved by a stronger correlation between perceived role of recreation and the agreement that the tour was educational (r_{365} = 0.19, p > 0.01). This implies that both educational and entertainment objectives of captive wildlife facilities complement each other.

4.4.3 Perceived Setting Characteristics of NSW

Setting characteristics of NSW were measured using eight items representing four subscales namely interest arousal (3 items), personal relevance (2 items), task characteristics (2 items) and novelty (1 item). Respondents were asked to rate the items on a five point scale ranging from 1 (strongly disagree) to 5 (strongly agree). On individual items task characteristics items were ranked at both extreme ends of the scale with "being able to see real things or places referred to by the information" scoring the highest agreement (mean=4.30) and "having opportunity to ask questions" being the least reported item (mean=3.24) as shown in Table 4.10 Overall majority of respondents agreed that they experienced interest arousing characteristics (mean=3.99) during their tour of NSW than any other sets of characteristics. Personally relevant characteristics (mean=3.93) were second followed by task characteristics and novelty with mean scores

of 3.77 and 3.39 respectively. The aggregate setting characteristics had a mean score of 3.77.

Table 4.10: Perceived setting characteristics of NSW

Setting Characteristics	N	Mean	S.D
The information / displays made me want to learn	365	4.06	0.94
The information / displays captured my interest	365	4.04	0.87
I became interested in things that didn't previously interest me	365	3.86	1.03
Interest arousal	**365**	**3.99**	**0.95**
The information was relevant to my life	365	3.96	1.02
I was reminded of something I already knew or had experienced	365	3.90	1.02
Personal relevance	**365**	**3.93**	**1.02**
I was able to see the real things or places the information referred to	365	4.30	0.90
I had the opportunity to ask questions	365	3.24	1.46
Task characteristics	**365**	**3.77**	**1.18**
The information was new to me	365	3.39	1.30
Novelty	**365**	**3.39**	**1.30**
Aggregate setting characteristics (8 items)	**365**	**3.77**	**1.11**

Note: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree; S.D = Standard Deviation.

The extent to which the setting of NSW was perceived to include a range of incentives (setting characteristics) was correlated positively with the extent to which visitors exited with key conservation messages (r_{365}=0.32, $p<0.001$). This study therefore supports the importance of setting characteristics in motivating visitors to engage in and experience learning. The findings suggest that when conservation information is presented in an interesting way, has personal relevance to the visitor, is new, and affords the visitor the opportunity to see the real things referred to and ask questions visitors will be motivated to derive conservation messages out of their visit. However the lack of agreement or disagreement with the item "I had the opportunity to ask questions" should be a major concern to the management of NSW. In addition to rendering validity to the low level of conveying conservation messages by the "staff guides and talks" channel it may also imply shortage of staff within the facility from whom visitors could have sought answers and clarifications to issues or questions related to conservation information or the facility in general. A previous study by Packer (2004) made similar observation although its

mean scores were higher than those in this study. It concluded that visitors' perceptions of a facility's setting can be used to reflect the perceived responsiveness of the facility in relation to provision for information, opportunity and material resources. The strong agreement by the respondents that they were able to see the real things or places the information referred to imply that NSW's simulated ecosystems and animals are properly linked or referred to by the messages offered and channels used. According to KWS (2007) NSW is a show case of Kenya's main natural habitats and landscapes through the depiction of three simulated ecosystems – wetland, savannah and forest/woodland each exhibiting different animals representing each habitat with conservation messages.

4.4.4 Visitors Satisfaction with Conservation Information and Visit

There was significant proportion of visitors who expressed satisfaction with conservation information provided within NSW. The proportion of respondents falling within the satisfaction (extremely satisfied plus somewhat satisfied) range was 91.5%. Majority (53.4%) of the respondents reported that they were somewhat satisfied while 38.1% of the respondents were extremely satisfied as shown in Figure 4.4. A small percentage (4.7%) of respondents expressed neither dissatisfaction nor satisfaction while 3.8% of the respondents were dissatisfied with conservation information provided.

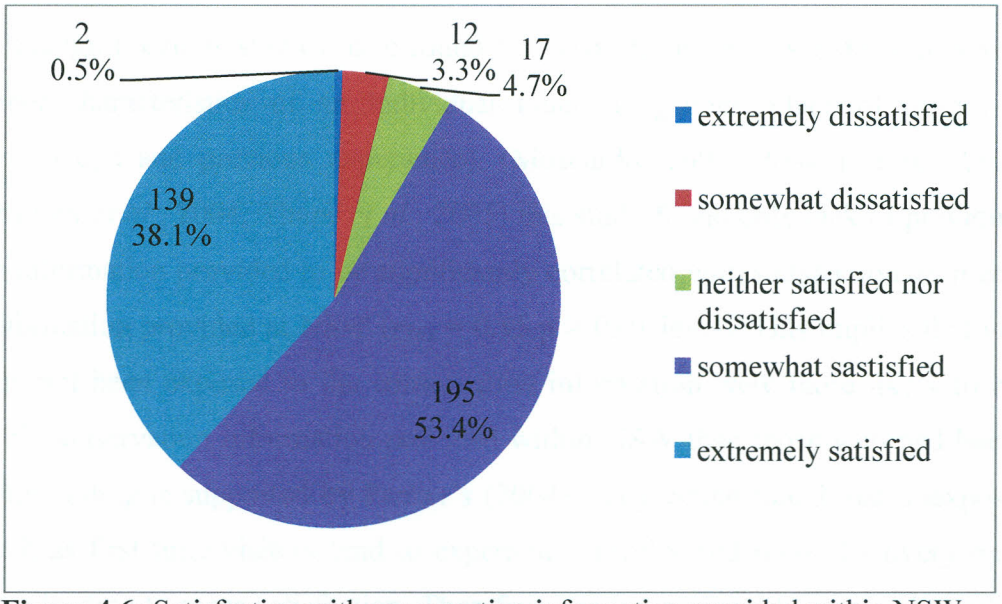

Figure 4.6: Satisfaction with conservation information provided within NSW

There was statistically significant correlation between respondents' number of previous visits to NSW and the level of satisfaction with conservation information provided within the facility (r_{365}=0.12, p > 0.05 level). This implies that an increase in the number of visits to NSW leads to increased level of satisfaction with conservation information provided within the facility. This may be a precursor to the understanding of conservation messages as suggested by Peake *et al.* (2009) while cognizant of the complex and co-dependent nature of satisfaction on other visitor and context attributes.

When tested against overall satisfaction with the visit or tour of NSW a mild positive correlation was found to exist between overall satisfaction with the visit and satisfaction with conservation information (r_{365} =0.36, p > 0.01 level). Thus the more the visitors were satisfied with conservation information the more likely they were to be satisfied with the overall visit. This may serve to underline the importance of conservation information as a factor contributing to the overall satisfaction and experience of visitors. It was also established that visitors were marginally more satisfied with the overall visit or tour of NSW (mean = 4.34, S.D = 0.80) than with the conservation information provided (mean = 4.24, S.D = 0.74). Positive medium correlations were found between satisfaction with conservation information and the learning and discovery goal (r_{365} = 0.11, p > 0.05 level) and social contact goal (r_{365} = 0.13, p > 0.05 level).

Although previous studies have found that visitors' level of satisfaction were related to other characteristics of an individual (such as gender, place of origin, age, prior knowledge and previous experience), (Moscardo, 2001; Priskin, 2003; Lihoto, 2004; Ormsby *et al.*, 2004; Thapa *et al.*, 2005) this study found only lack of previous exposure to information provided to be significantly correlated with satisfaction with conservation information provided at NSW (r_{365} = 0.15 p > 0.01 level). This implies that visitors who had not been exposed to the conservation information were more likely to be satisfied with conservation information provided within NSW than those who had been exposed. This finding is supported by Packer's (2004) study which found that unexposed visitors such as first time visitors tend to experience novelty and more discovery opportunities thus leading to more satisfaction. Therefore gender, nationality, age and number of other

visitors accompanying respondent had no influence on visitors' satisfaction with the tour of or visit to NSW. It should however be recalled that respondents number of previous visits to NSW was positively correlated with satisfaction with conservation information provided. This observation renders support to findings by previous studies that demographic variables have consistently been shown to be poor predictors of how and why people learn from informal educational settings such as wildlife based centres and museums (Falk, 1993; Falk and Adelman, 2003; Falk and Storksdieck, 2005).

Five items were used to measure respondents' satisfaction with visitor experience at NSW. A five point scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to gauge respondents agreement or disagreement with item statements related to their visit. Table 4.11 illustrates participants' responses for all the items. On individual items majority (49.6%) of respondents strongly agreed that they would go back to NSW when another opportunity arises. Recommending NSW to a friend and overall satisfaction with the visit were positively rated by the respondents with 48.2% of the respondents strongly agreeing with the statements. Respondents that strongly agreed that they felt that they had benefited from visiting NSW represented 30.3% of the respondents while those who strongly agreed that the visit was as good as expected were 36.4%. Overall majority (88.9%) of the respondents were satisfied with the visit, 8.0 were neither satisfied nor dissatisfied while 3.1% were dissatisfied.

Table 4.11: Respondents' satisfaction with tour of NSW

Satisfaction with visit	**Mean score**	**S. D**	**Agreement / disagreement scores (in percentage)**				
			1*	**2***	**3***	**4***	**5***
Given another opportunity I would come again	4.37	0.75	1.4	0.3	7.7	41.1	49.6
I would recommend this place to a friend	4.36	0.74	1.1	0.5	7.4	42.7	48.2
Overall I was satisfied with the visit	4.34	0.80	1.4	2.5	5.5	42.5	48.2
I feel I benefited from having come here	4.14	0.76	1.6	1.9	7.4	58.9	30.3
The visit was as good as I had hoped	4.13	0.87	1.6	3.3	12.1	46.6	36.4
Aggregate satisfaction (5 items)	**4.27**	**0.78**	**1.4**	**1.7**	**8.0**	**46.4**	**42.5**

Note: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree; S.D = Standard Deviation, n=365, *scores for 1 to 5 are in percentages.

All the personal goals for visiting NSW (learning and discovery, passive enjoyment, restoration, social contact and personal self fulfilment) were positively correlated with the overall satisfaction with the visit or tour (r_{365}=0.24, 0.17, 0.15, 0.25, 0.17 $p > 0.01$ level respectively). This implies that the more important a reason was for visiting NSW the more likely the visitor was to be satisfied with the visit. This observation is further confirmed by the positive correlation between "learning is enjoyable subscale" and satisfaction with the visit (r_{365}=0.20, $p > 0.01$ level) thus implying that the more the visitors perceived that learning within NSW was enjoyable the more they were likely to be satisfied with the visit. It is undeniable that the desire of each visitor is to have an enjoyable visit or experience. Therefore effective conservation education can only be gained when visitors' desire for enjoyment is met and the enjoyment can be achieved through high quality displays, effective interpretation and other visitor services as confirmed by previous studies (Milan and Wourms, 1993; Reade and Waran, 1996; Davey, 2006).

4.5 Institutional Challenges that Impede Provision of Conservation Education

To examine the challenges faced by NSW in providing conservation education, staff at NSW and top KWS management were asked to list the most critical challenge faced by the facility. This was followed by a question which required the respondents to rate the extent to which a list of challenges impacted on the provision of conservation education. Table 4.12 lists the most critical challenges as reported by staff. The most frequent critical challenge was shortage of trained staff to offer guiding and interpretation services which was reported by 8 (34.8%) of the respondents. An inadequate budgetary allocation was second having been reported by 5 (21.7%) of the respondents. The other critical challenges reported were overemphasis on revenue generation (17.4%), shortage of suitable facilities (13%), lack of an evaluation mechanism (8.7%) and lack of an active and coordinated education program (4.3%).

Table 4.12: Most critical challenges affecting provision of conservation education

Ranking of most critical challenges	Frequency	Percentage
Shortage of trained staff to offer guiding and interpretation	8	34.8
Inadequate budget allocation for educational activities	5	21.7
Overemphasis on revenue generation at expense of education	4	17.4
Shortage of suitable facilities for educational services	3	13.0
Lack of an evaluation mechanism	2	8.7
Lack of active and coordinated education program	1	4.3

n = 23

Shortage of qualified staff to provide conservation education is the most critical challenge facing NSW in its endeavour to provide conservation education. This implies that provision of conservation education is not at its optimal. Out of 27 staff members at NSW only two were tasked with the role of providing conservation education. During the time of this study the facility had only nine guides then employed on temporary terms. The facility had been relying on students on attachment and interns to provide these services. The implication is that a substantial proportion of the audience is left unattended. Additionally this causes the facility to be more dependent on passive and non interactive approaches of providing conservation education. Yet the effectiveness of staff interaction with visitors is an approach that has been validated by research (Falk *et al.*, 2007). The NSW staff and KWS top management perceptions of the roles of the facility mirrored that of the visitors with education being the most important and research the least important. Therefore perceptions between management, staff and visitors on the roles of the NSW are not in conflict.

Previous studies have confirmed that many captive wildlife facilities in developing countries have long faced problems and challenges that affect operation and even existence. A 1990 study that assessed the status of KWS conservation education found the very challenges examined in this study. In addition to lack of coordinated conservation education program that study also found that provision of conservation education was constrained by lack of funds, resource material, trained staff and clearly defined purpose leading to poor recognition, performance and prioritization of roles

(KWS, 1991). Another study by Puan and Zakaria (2007) focused on local zoos in Malaysia found that the most prevalent challenges and problems affecting their operations included lack of trained workers, food supply and financial support, as well as strategic location within development pressures. It is therefore evident that many wildlife based centres are providing education within constrained budget and below optimal staffing.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study was aimed at assessing the impact of Nairobi Safari Walk in provision of conservation education to tourists. In this regard four study objectives were set out. This chapter summarizes the findings of the study along the study objectives. Recommendations are made and areas for further research are suggested in relevant aspects so as to improve provision of conservation education within captive wildlife facilities in Kenya.

5.2 Conclusions

5.2.1 Extent to Which Tourists Exit NSW with Key Conservation Messages

All the five key messages were received by over 50% of the respondents with the beauty message being the most received by 80% and extinction the least received by 52% of the respondents. The average rate of visitors' reception of the messages was 70%. This suggests that NSW is successful in communicating three of its key conservation messages (there is beauty and value in nature, choices we make can help protect wildlife and NSW is actively involved in protection and conservation of wildlife) to its audience who are the visitors. It was however noted that a significant percentage (48%) of its visitors exited the facility without deriving the extinction message from their tour of the facility. This observation was also noted for the "human actions are causing loss of wildlife and habitat" message which was received by 64% of the respondents. These are messages that were intended to communicate the consequences of human actions on wildlife conservation and are interrelated. Extinction is partly a consequence of human action.

The existence of positive correlation between reception of key conservation messages and learning and discovery subscale confirms that learning and discovery is a major reason for visitation to captive wildlife facilities. Lack of significant correlation between messages and other personal goals serve to demonstrate that the extent to which visitors leave with the facilities key conservation messages depend on the reason for visitation. There is therefore need for management of facilities offering conservation education to

know the motivation for visitation of their patrons so that they can appreciate the extent to which they could be leaving with its messages.

5.2.2 Impact of Channels used to Convey Conservation Messages

Animals and message boards were the most effective media for communicating conservation messages to visitors. They are the only channels that appealed to over 50% of the respondents. Wild animals are attractive visual elements that attract by inviting (visual) sensory of the visitor. This is more so with the big five (elephant, lion, rhino, leopard and buffalo) all of which except the elephant are found at NSW. The positive correlation between "viewing animals" as a source of messages and "beauty" as the message derived out of the tour of NSW confirms findings by Mony and Heimlich (2008) that animals themselves best communicate affective messages. Although prior research indicates that visitors prefer learning from a live person (Wolf and Tymitz, 1980), this study shows that visitors are more likely to report gleaning key messages from live animals and message boards. On the other hand the low reception of messages from guides and talks should not be taken to imply a lower appeal but a consequence of the challenge of shortage of skilled staff to offer conservation education.

The Nairobi Conservation Education Centre which comprises of NSW and the Nairobi Animal Orphanage has two staff (naturalists) on permanent deployment dedicated to oversee provision of conservation education. Additionally the two officers have mandate to provide conservation education within one of the eight KWS wildlife conservation areas, Southern Conservation Area. In 2011 nine guides were hired on temporary terms to offer guiding services within the two facilities. That means that each facility is being served by at least four guides. With only four guides on temporary employment the maximum number of visitors or groups of visitors that can be guided is forty and the number could be less if animal keeper talks are undertaken. The importance of learning from trained staff has been corroborated by other studies (Heinrich and Birney, 1992; Kelling *et al.,* 2003; Tribe and Booth, 2003; Povey and Spaulding, 2005; Parker, 2006) which have shown that interactive channels such as keeper talks and presence of informed guides is one of the most effective ways of educating visitors.

It can therefore be concluded that NSW is more reliant on passive channels (message boards) than interactive ones (guides, talks and interpretation) and therefore less effective in conveying messages. Mony and Heimlich (2008) established that signage and message boards can be used to communicate simple cognitive messages relating to extinction and conservation issues. High order cognitive messages such as conservation actions relevant to the visitor can be communicated through trained guides and interactive exhibits. Therefore NSW could be missing the opportunity of engaging more visitors in the high order cognitive messages. This could partly explain why the message relating to human actions was the second least received. The choice of fellow visitors as sources of conservation messages suggest that NSW has an enabling environment that encourage conservation related conversations amongst visitors.

5.2.3 Visitors Perceptions of the Roles of NSW

In general, the overall roles of NSW as perceived by visitors (in priority order) were education, recreation, conservation, and research. The marginal differences in the mean scores of the rankings of the first three roles at 4.3, 4.3 and 4.2 respectively indicate that the facility is perceived to have multiple roles. In conclusion respondents were actually supporting NSW as a place for learning, where wild animals are conserved and visitors are entertained. The replicated perceived roles by the facility's staff serve to prove that both staff and visitors have similar feelings on the existence of the facility. Majority of respondents believe that NSW is actively involved conserving and protecting threatened animals. They also responded positively regarding the use of animals as a learning resource. They however ranked lowly the entertainment of visitors through videos and animal shows. This could be due to their consciousness of animal rights.

Many have questioned how these diverse roles of captive wildlife facilities can be placed in a rational context and be achieved. The truth is that all the roles stated above cannot be achieved independently because they are interrelated: the success and/or failure of a captive facility will depend on how it addresses each of the roles. If they want to save threatened species, it is essential that they use all the available expertise to support conservation programmes by captive propagation and research. However, without

educational programmes to provide a foundation, these activities will never be achieved. This does not mean that conservation research is precluded by a focus on conservation education but it is strengthened by it (Hamilton and Phelps, 1992). It is undeniable that effective education can only be gained if the desire of visitors for enjoyment is met and the best way to achieve that is through high quality displays (Milan and Wourms, 1993; Reade and Waran, 1996; Davey, 2006).

In regard to the situational incentives that promote learning within captive wildlife facilities majority of visitors were in agreement that NSW possesses interest arousing, personal relevance and task characteristics. These are setting characteristics which offer an enabling environment for learning. It can therefore be concluded that NSW is perceived to have setting characteristics that support learning. Additionally respondents were in agreement that learning within NSW is enjoyable as perceived through their context beliefs. It can therefore be summed that NSW has the requisite setting environment that enhances its role in provision of conservation education.

5.2.4 Institutional Challenges Faced by NSW in its Effort to Provide Conservation Education

This study established that NSW faces a number of institutional challenges that negatively affect provision of conservation education. Results indicated the following as the key challenges in priority order;

1. Shortage of trained staff to offer guiding and interpretation
2. Inadequate budget allocation for educational activities
3. Overemphasis on revenue generation at expense of education
4. Shortage of suitable facilities for educational services
5. Lack of an evaluation mechanism
6. Lack of active and coordinated education program

NSW has been operating with a low staffing level of conservation education officers and guides / interpreters. As mentioned in Section 5.2.2 there are two officers (designated as naturalists) dedicated to conservation education and nine guides on temporary terms at the Nairobi Education Centre to cater for both NAO and NSW onsite and outreach

educational services. The two officers' jurisdictional mandate on provision of conservation education extends to the entire of the Southern Conservation Area which is one of the eight regions that the whole country has been divided into in efforts to devolve wildlife conservation. This region comprises of Kajiado, Nairobi, Kiambu, Machakos and part of Makueni Counties. This staffing level although partly meeting the WAZA (2005) standards for conservation education within zoos which requires that at least one member of staff should be responsible for the professional implementation of educational policy, is too low bearing in mind the importance attached to the use of humans particularly guides and docents (volunteer wildlife educators) in interpreting conservation messages to visitors.

The importance of adequate and qualified staff dedicated to provision of conservation education has been emphasized in the WAZA (2005) strategy which suggests that "Zoos and aquaria should also make a suitably qualified member of staff responsible for developing and overseeing educational activities, and should make sure that trained staff and/or volunteers are available. Where possible, they should employ 'educators' and should develop education centres or similar educational facilities" (p.37). This study also established that the NSW education officers are not members of any local, regional or international network thus denying them an essential means of maintaining an effective education base with fellow educators in other parts of the world.

Inadequate budgetary allocation for conservation education hinders provision of education in a number of ways. These range from negative impacts on planning and implementation of educational programs and preparation and production of education materials. Budgetary constraints were found to be hindering the production of brochures and leaflets meant for conveying conservation messages thus implying that one of the channels earmarked for delivering education was not in use.

Overemphasis on revenue generation was found to translate into skewed focus and attention on revenue generating activities. This study for instance found that flyers and leaflets aimed at promoting NSW as a tourist site are relatively frequently produced and distributed when compared to educational ones yet the facility is primarily an educational

one. Whereas the need to have captive facilities maintain a sound financial base in order to support their operations has been acknowledged in previous studies, the best way forward between entertainment and educational goals is for both to complement each other. In regard to learning Packer (2004) established that entertainment (sometimes aimed at enhancing revenue generation) may be in conflict with education by; the use of entertainment to create interest and attract attention may actually distract visitors from educational pursuits (Garner *et al.*, 1992; Ansbacher, 1998), entertainment may predispose visitors to adopt a mindless approach and thus invest little mental effort in learning (Salomon, 1981, 1983). On the other hand education and entertainment may complement each other through pleasurable, satisfying, stimulating and enjoyable experiences and by entertainment evoking optimal conditions for learning by encouraging exploration, questioning and challenge much in the same way surprise, adventure and discovery are key ingredients in children play. Therefore NWS management should work out the best synergy between entertainment and educational goals.

It is therefore recommended that the KWS management should address the staffing and budgetary needs of the NSW in facilitating provision of conservation education. On staffing the key consideration should be that more education officers and guides should be employed with specific duties for preparation and implementation of education programs and interpretation. The facility should design a mechanism for continuously evaluating and reviewing educational programs on offer. The educational staff should be involved in design of exhibits and introduction of new animals into the facility. This will ensure that animals are displayed in natural settings to provide contextual theme led or message driven experiences.

The facility lacks an education program and consequently an evaluation mechanism. The reason advanced by management was due to lack of follow up on visitors or groups. Although this may be difficult to overcome it is still possible to have a program for mobile groups. The program would act as a guide for the educators serving to monitor content and objectives. An evaluation mechanism would enable the management of NSW to monitor the impact made by the programs offered.

5.3 Recommendations

The following recommendations are made in order to improve provision of conservation education at NSW as well as recommendations on areas for further research.

5.3.1 Recommendations for Improving Provision of Conservation Education

From the foregoing findings of this study the following basic recommendations are proposed for KWS, captive wildlife facilities, environmental educators and researchers. These recommendations are aimed at enhancing the effectiveness of captive wildlife facilities in providing conservation education to the visiting public.

1. The KWS management should consider the critical role that conservation education can play in enhancing public awareness of the importance of wildlife. This recognition should be translated into resource allocations in terms of budget, staff, transport and other relevant logistical support necessary for enhanced role in provision of conservation education. More importantly is that NSW should serve the purpose for which it was established – conservation education. This is in line with the WAZACS (2005) recommendation that education should be integral to the plans and activities of the senior management team which should make sure that education goals are fully considered when planning collections, designing exhibits, developing conservation programmes and planning visitor services for the captive wildlife facilities.
2. NSW should put in place more interactive channels for communicating conservation education to visitors. The use of human beings in the form of guides and docents has been found to enhance learning. This study found that there were too few guides in the facility. Additionally the NSW management should ensure that the guides and other personnel are not distracted from the provision of conservation education as recommended in the WAZAS (2005).
3. NSW should enact a conservation education policy which will guide the preparation and evaluation of educational programs. Through such a policy the programs will address other interrelated government development plans such as Vision 2030, environmental education, formal and informal education.

5.3.2 Recommendations for Further Research

1. Further research should be carried out on factors that affect communication of conservation messages by the various channels on site within NSW.
2. Managers of captive wildlife facilities offering conservation education should investigate the motivational factors that influence learning within captive wildlife facilities.
3. Researchers should find out the impact made by captive wildlife facilities on visitors' attitudes towards wildlife.

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APPENDICES

Appendix 1: Major Animals at NSW

Animals at Nairobi Safari Walk

1. Beisa Oryx *(Oryx gazelle)*
2. Black and white colobus *(Colobus guezreza)*
3. Bongo *(Boocercus euryceros)*
4. Burchell's zebra *(Equus burchelli)*
5. Bush duiker *(Sylviacapra grimmia)*
6. Cape Buffalo *(Syncerus caffer)*
7. Cheetah *(Acynonyx jubatus)*
8. Spotted hyena *(Crocuta crocuta)*
9. Impala *(Aepyceros melampus)*
10. Kirk's Dik Dik *(Madokua kirkii)*
11. Leopard *(Panthera pardus)*
12. Leopard tortoise *(Geochelone pardalis)*
13. Lion *(Panthera leo)*
14. Nile crocodile *(crocodiles Niloticous)*
15. Ostrich *(Struthio camelous)*
16. Pygmy hippopotamus *(Choeropsis liberriensis)*
17. Thompson's gazelle *(Gazella thompsonii)*
18. White rhinocerous *(Ceratotherium simum)*
19. Wildebeest *(Connochaetes taurinus)*

Major birds at Nairobi Safari Walk

1. African palm swift *(Cypsiurus parvus)*
2. African paradise flycatcher *(Terpsiphone viridis)*
3. Baglafetch Weaver *(Ploceus baglafetcht)*
4. Bronze sunbird *(Nectarinia kilimensis)*
5. Black crake *(Amourorni flavirostris)*
6. Black kite *(Milvus migrans)*
7. Cattle egret *(Bubulcus ibis)*
8. Common bulbul *(pycnonotus barbatus)*
9. Eastern Honey bird *(Prodotiscus zambesiae Ellenbecki)*
10. Golden winged Sunbird *(Nectarinia reichenowi)*
11. Greater Blue eared starling *(Lamprotornis chalybaeus)*
12. Hunter's Cisticola *(Cisticola hunteri)*
13. Hadada Ibis *(Bostrichia hagedash)*
14. Malachite Kingfisher *(Alcedo csistata)*
15. Malachite Sunbird *(Nectarinia famosa)*
16. Nubian Woodpecker *(Campethera nubica)*
17. Olive Thrush *(Turdus olivaceus)*
18. Pied crow *(Corvus albus)*
19. Red-chested Cuckoo *(Cuculus solitaries)*
20. Red Eyed Dove *(streptopelia semitorquata)*

21. Red-checked Cordon bleu *(Uraginthus bengalus)*
22. Ring-necked Dove *(Stepopelia capicola)*
23. Robin Chat *(Cossypha heuglini)*
24. Rufous Sparrow *(Passer rufucinctus)*
25. Speckled Mousebird *(Colius striatus)*
26. Variable Sunbird *(Cinnyris venusta)*

Appendix 2: Visitation Data for NSW (2005-2009)

VISITOR CATEGORY	2005	2006	2007	2008	2009	TOTAL
ADULT CITIZEN	46,265	53,889	70,422	80,832	88,968	**340,376**
CHILD CITIZEN	22,572	25,242	26,003	44,925	35,081	**153,823**
STUDENT CITIZEN	45,510	60,505	77,898	51,718	66,726	**302,357**
ADULT RESIDENT	4,074	4,279	4,400	4,315	3,987	**21,055**
CHILD RESIDENT	1,964	1,800	1,974	1,847	1,254	**8,839**
STUDENT RESIDENT	42	367	430	1,152	171	**2,162**
ADULT NONRESIDENT	5,887	8,965	8,625	10,465	12,331	**46,273**
CHILD NONRESIDENT	732	1,415	1,869	1,621	1,770	**7,407**
STUDENT NONRESIDENT	440	333	0	0	0	**773**
YEAR TOTAL	**127,486**	**156,795**	**191,621**	**196,875**	**210,288**	**883,065**

Source: KWS Marketing Research Office

Appendix 3: KWS Conservation Education and Information Centers

One of the core functions of KWS is to provide wildlife education and extension services to the public for their support in wildlife conservation. This is aimed at enhancing wildlife conservation, protection, and management, improving KWS's linkages, recognition and relationships with stakeholders. Conservation education centres have centred based facilities such as classrooms and hostels to facilitate on site learning. In addition education centres offer outreach conservation education and have resources such as buses for hiring out specifically for conservation education functions. Information centres on the other hand are limited in resources to the extent that they can only undertake their activities within the centre. There are five education centres and twelve information centres located in various national parks and reserves.

Education Centers

NAME	COMMENTS
Nairobi Education Centre	Displays live wild animals, has classrooms but no hostels. Includes Animal orphanage and Nairobi Safari Walk
Tsavo East Education Centre	No wild animals displayed, has both classrooms and hostels
Lake Nakuru Education Centre	No wild animals displayed, has both classrooms and hostels
Murera Education Centre	No wild animals displayed, has both classrooms and hostels
Tsavo West Education Centre	No wild animals displayed, has classrooms but no hostels

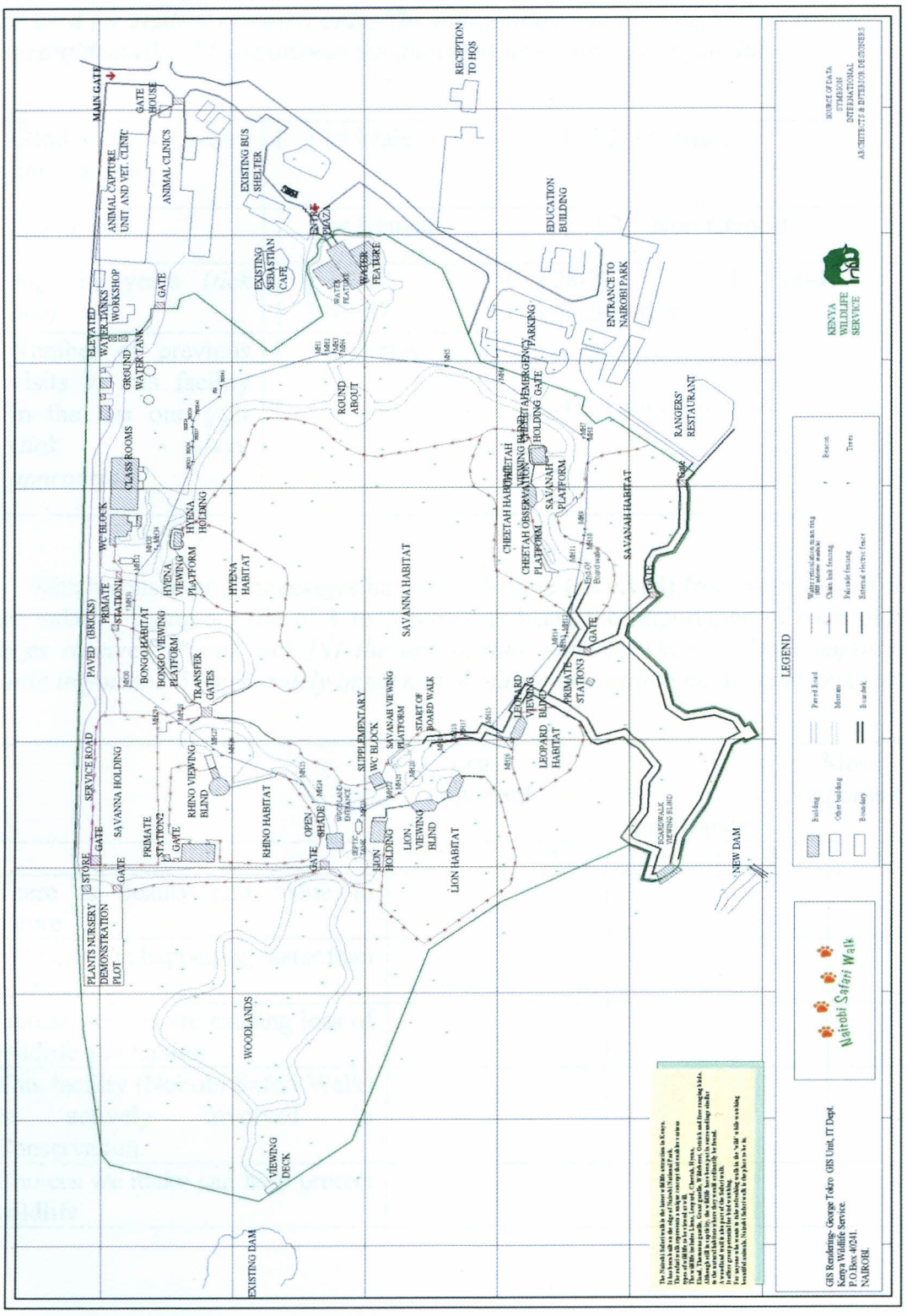
Information Centers

NAME	COMMENTS
Aberdare N. Park	Offers bus shuttle service in addition to in house lessons
Watamu Marine Reserve	Onsite conservation education services only
Kisite Mpunguti	Onsite conservation education services only
Saiwa Swamp N. park	Onsite conservation education services only
Kakamega Forest N. Reserve	Onsite conservation education services only
Ruma N. Park	Onsite conservation education services only
Arabuko Sokoke	Onsite conservation education services only
Malindi Marine Park	Onsite conservation education services only
Hells Gate N. Park	Onsite conservation education services only
Mt Elgon N. Park	Onsite conservation education services only

Kisumu Impala	Onsite services with caged wild animals
Kiunga Marine Reserve	Onsite conservation education services only

Source: KWS Conservation Education Department

Appendix 4: Structural Map of Nairobi Safari Walk



Source: KWS, GIS Office

Appendix 5: Questionnaire for Tourists to the Nairobi Safari Walk

This questionnaire is for research in conservation education and the findings of this study will be used for student research only. The information you provide will be treated with utmost confidentially. Please answer the questions as accurately as possible.

1	Gender (*tick where appropriate*)	[ ] 1= Male [ ] 2 = Female
2	Nationality	[ ] 1= Kenyan [ ] 2 = Non Kenyan
3	Age in years (*tick one)*	[ ] 18-27 [ ] 28-37 [ ] 38-47 [ ] 48-57 [ ] 58 and over
4	Number of previous visits to this facility in the last one year (*tick where appropriate)*	[ ] 1= Never [ ] 2 = Once [ ] 3= Twice [ ] 4 = Thrice and more

4. Which conservation messages have you derived (received) from your tour of this facility today? Using a scale of 1 to 5 please indicate the importance of each of the messages received. *Please tick [√] the appropriate number where 1=least important, 2=a little important, 3=moderately important, 4=fairly important and 5=most important.*

		Least important ← Importance → Most important				
		1	2	3	4	5
1	There is beauty and value in nature					
2	Extinction is happening faster than ever before					
3	Human actions are causing loss of wildlife and habitat					
4	This facility (Nairobi Safari Walk) is actively involved in Conservation					
5	Choices we make can help protect wildlife					

6. Where did you receive the messages you have selected in 5 above during your tour of this facility today? *Please tick [√] where appropriate.*

[ ] 1 = By viewing the animals themselves

[ ] 2 = Message boards located within the facility

[ ] 3 = From staff guides, talks, lectures and interpretation

[ ] 4 = From fellow visitors

[ ] 5 = Other _____

7. Please indicate how important each of the following is **to you** as a **reason for coming today**. *Please tick [√] one number for each where 1=least important, 2=a little important, 3=moderately important, 4=fairly important and 5=most important.*

Reason for coming to NSW	Least important ←		Importance		→ Most important
	1	2	3	4	5
1.To expand my knowledge					
2.To experience something new or unusual					
3.To enjoy myself					
4.To feel happy and satisfied					
5.To have a change from routine					
6.To relax mentally and physically					
7.To spend time with family or friends					
8.To interact with others					
9.To challenge my abilities					
10.To feel a sense of achievement					

8. Who are you accompanied with during this visit? *Please tick [√] where appropriate.*

[ ] 1 = Alone

[ ] 2 = Children or family group

[ ] 3 = One other adult

[ ] 4 = 2-5 other adults

[ ] 5 = 6 or more adults

[ ] 6 = other _____

9. Please *tick [√]* in priority order what you consider to be the role(s) of this facility. Tick the number that correctly represents the importance of each role *where 1=least important, 2=a little important, 3=moderately important, 4=fairly important and 5=most important.*

	Roles	Least important←.....→Most important Importance				
		1	2	3	4	5
1	Conservation					
2	Education					
3	Research					
4	Recreation					

10. Using a scale of 1 to 5 please tick (√) the number that correctly reflect your opinion about the efforts of this facility.*1=least important, 2=a little important, 3=moderately important, 4=fairly important and 5=most important* The Nairobi Safari Walk…..

	least important ← → Importance				Most important
	1	2	3	4	5
Makes society aware of the importance of wildlife					
Conserves and protects threatened animals					
Makes use of animals as a learning resource					
Prepare educational programmes for children					
Entertain visitors through videos, lectures and talks					

11. What do you think of the Nairobi Safari Walk as a conservation education facility? Please indicate how much you agree or disagree with each of the following statements. (*For each statement, please tick [√] one of the numbers where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5= strongly agree*).

	Strongly disagree	disagree	Neither agree nor disagree	agree	Strongly agree
	1	2	3	4	5
There are lots of opportunities to learn here					
Learning here is relaxing and fun					
Learning here is difficult					
The visit or tour was educational					
The visit or tour was entertaining					
Understanding the information presented here is important to me					

12. Please indicate the extent to which each of the following was true of your visit today. *Please tick [√] the appropriate rate where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5= strongly agree.*

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		1	2	3	4	5
1	The information / displays captured my interest					
2	I became interested in things that didn't previously interest me.					
3	The information / displays made me want to learn.					
4	The information was relevant to my life.					
5	I was reminded of something I already knew or had experienced.					
6	The information was new to me					
7	I had the opportunity to ask questions					
8	I was able to see the real things or places the information referred to					

13. Which one is the most important information that you would prefer or would have preferred to learn from the Nairobi Safari Walk? *(Please tick [√] where appropriate*).

[ ] 1 = Animal and plant identification (common and scientific names)

[ ] 2 = Animal behaviour

[ ] 3 = Animal habitat, food and prey

[ ] 4 = Threats to animal conservation

[ ] 5 = Conservation status of animals and plants

14 Have you ever visited a different captive wildlife facility before?

[ ] 1 = Yes [ ] 2 = No

15. To what extent were you satisfied by the conservation information provided to you at the Nairobi Safari Walk? *(Please tick* [√] *the response that is most appropriate to you)*

Extremely satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Extremely dissatisfied
5	4	3	2	1

16. How satisfied were you with your visit to Nairobi Safari Walk? Please *tick [√]* one number for each of the following statement.

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
I feel I benefited from having come here					
The visit was as good as I had hoped					
I would recommend this place to a friend					
Given another opportunity, I would like to come back here again					
Overall I was satisfied with the visit					

Date:
Thank you very much for taking your time to fill this questionnaire.

REF. No

Appendix 6: Questionnaire for Staff Members at the Nairobi Safari Walk

This questionnaire is for research in conservation education and the findings of this study will be used for student research only. The information you provide will be treated with utmost confidentially. Please answer the questions as accurately as possible.

1.	Gender (tick one)	[ ] Male [ ] Female
2.	Terms of employment (tick where appropriate)	[ ] Permanent [ ] Temporary / casual [ ] Attachment [ ] Volunteer [ ] Other (specify)_____
3.	Age in years (tick one)	[ ] 18-27 [ ] 28-37 [ ] 38-47 [ ] 48-57 [ ] 58 and over
4.	Duration of service (in years) at this centre	[ ] 1-5 [ ] 6-10 [ ] 11-15 [ ] 16-20 [ ] 21-25 [ ] 26-30 [ ] 31 and over
5.	Highest education level attained	[ ] None [ ] Primary [ ] Secondary [ ] Tertiary [ ] Non formal
6.	Have you undertaken a professional training in conservation	[ ] Yes [ ] No If YES please specify _____
7.	Have you undertaken any professional training in education or communication?	[ ] Yes [ ] No If YES please specify _____

8. Please *tick [√]* in priority order what you consider to be the role(s) of Nairobi Safari Walk. Tick the number that correctly represents the importance of each role

Roles	Least important←.....→Most important Importance				
	1	2	3	4	5
Conservation					
Education					
Research					
Recreation					

9. Which one of the following is the **most important** conservation information that tourists seek from Nairobi Safari Walk? *Please tick [√] the most important.*

[ ] 1 = Animal and plant identification (common and scientific names)

[ ] 2 = Animal behaviour

[ ] 3 = Animal habitat, food and prey

[ ] 4 = Threats to animal conservation

[ ] 5 = Conservation status of animals and plants

10. Indicate in your own opinion the extent to which tourists' needs for conservation information is met by this facility. *Please tick [√] the number that best reflects your opinion where 1= extremely inadequate; 2=fairly inadequate; 3=adequate; 4=fairly adequate and 5= extremely adequate.*

extremely inadequate	Fairly inadequate	Adequate	Fairly adequate	Extremely adequate
1	2	3	4	5

11. What is the **most** critical challenge that you face in the course of offering conservation education to tourists at this facility?

[ ] Shortage of trained staff to offer guided talks and interpretation

[ ] Inadequate budgetary allocation for educational activities

[ ] Overemphasis on revenue generation at the expense of education

[ ] Lack of suitable facilities to offer education

[ ] Lack of active and coordinated education program

[ ] Lack of an evaluation mechanism

12. To what extent do the challenges named above impede the provision of conservation education at the facility? *Please tick [√] a number that best reflect the extent of the effect.*

Challenges	Not at all		A moderate degree		A great deal
	1	2	3	4	5
Shortage of staff					
Inadequate budgetary allocation					
Overemphasis on revenue generation at the expense of education					
Lack of suitable facilities to offer education					
Lack of active and coordinated education program					
Lack of evaluation mechanism					

13. To what extent do you use the following channels to convey conservation messages to tourists? *Please tick [√]* the number that best represents the extent of usage.

channels	Not at all←.....→A great deal Extent of usage				
	1	2	3	4	5
Message boards					
Brochures					
Staff guides, talks					
Video shows					
Audio recordings					
Cage and exhibit layout					

14. What facilities and services would you like the Nairobi Safari Walk to provide in order to improve its provision of conservation education? *Please tick [√]* the number that best represents the importance of each suggested facility or service.

	Least important←.....→Most important Importance				
	1	2	3	4	5
More sitting space					
More services					
Daily class lessons for tourists					
More signage					

Thank you very much for taking your time to fill this questionnaire.

Appendix 7: Interview Schedule for top KWS management

REF. No

Department.....

Position .....

1. *Please tick [√]* in priority order what you consider to be the roles of Nairobi Safari Walk. Tick the number that correctly represents the importance of each role.

Roles of NSW	Least important←.....→Most important Importance				
	1	2	3	4	5
Conservation					
Education					
Research					
Recreation					

2. To what extent are the following channels used to convey conservation messages to tourists? *Please tick [√]* the number that best represents the extent of usage.

Channels	Not at all.....→A great deal Extent of usage				
	1	2	3	4	5
Message boards					
Brochures					
Staff guides, talks					
Video shows					
Audio recordings					
Cage and exhibit layout					

3. Which of the channels listed in 2 above is the most effective?

_____

4. How do you assess the effectiveness of the delivery of conservation messages to tourists?

5. In your opinion do you believe that the Nairobi Safari Walk meets tourist conservation education needs? *Please tick the number that best reflects your opinion where 1= extremely inadequate; 2=fairly inadequate; 3=adequate; 4=fairly adequate and 5= extremely adequate.*

extremely inadequate	Fairly inadequate	Adequate	Fairly adequate	Extremely adequate
1	2	3	4	5

6. What is the **most critical** challenge that the Nairobi Safari Walk face in efforts to provide conservation education to tourists?

[ ] Shortage of trained staff to offer guided talks and interpretation
[ ] Inadequate budgetary allocation for educational activities
[ ] Overemphasis on revenue generation at the expense of education
[ ] Lack of suitable facilities to offer education
[ ] Lack of active and coordinated education program
[ ] Lack of an evaluation mechanism

7. To what extent do the challenges named above impede the provision of conservation education at Nairobi Safari Walk? *Please tick [√] a number that best reflect gravity of the challenge.*

	Not at all		Moderate degree		Great deal
	1	2	3	4	5
Shortage of staff					
Inadequate budgetary allocation					
Overemphasis on revenue generation at the expense of education					
Lack of suitable facilities to offer education					
Lack of active and coordinated education program					
Lack of evaluation mechanism					
Number and variety of animals					

Date:
Thank you very much for taking your time to fill this questionnaire.