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Title: An Ethnoprimatological Approach to Assessing the Human-Baboon (*Papio ursinus*) Interface in the Suburbs of Knysna, South Africa.

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Oxford Brookes University

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Abstract

The rapidly increasing human population is placing pressure on the remaining natural landscapes. As land is transformed for human uses, the interface between humans and wildlife increases. An increase in contact between humans and wildlife, particularly in urban or suburban environments where animals are considered 'out of place', will lead to a conflict between the interests of wildlife and the interests of humans. Conflict between nonhuman primates (hereafter primates) and humans may present some of the most challenging issues of human-wildlife conflict. Baboons (genus *Papio*), with their vast range throughout sub-Saharan Africa, high levels of intelligence, and behavioural and ecological adaptability, present particularly challenging obstacles to management and coexistence.

Current literature on human-baboon conflict focuses mainly on their notoriety as efficient crop-raiders. However, in the face of continued development of land, baboons have learned not only to survive, but to thrive in suburban and urban environments as well. Existing literature calls for an ethnoprimatological approach to studying human-primate conflict, whereby conflict is assessed by evaluating the perceptions of the humans in conflict. This type of research provides the opportunity to foster coexistence between humans and primates, rather than focusing solely on reactive, mitigation techniques.

Research was conducted in Knysna, South Africa to assess resident perspectives on the presence of baboons in an emerging suburban setting where conflict with baboons has recently developed. Questionnaires and semi-qualitative interviews were conducted with residents to assess levels of perceived threat and attitudes towards baboons, as well as resident concern for local baboon conservation and advocacy for lethal removal. Strong statistical relationships indicate that high levels of perceived threat result in negative attitudes towards baboons, a lack of support for baboon conservation and an increase in support for lethal removal. The findings of this anthropological study have been used to inform local government management plans, which aim to promote coexistence between humans and their suburban dwelling baboon neighbours.

Acknowledgements

I would like to thank my project supervisor, Kate Hill, for all of her support with this study and beyond. Before enrolling here, I must have emailed close to a fifty professors and lecturers around the world expressing my interest in their work and asking whether they would be willing to supervise a project on humans and baboons. Kate was one of the only people to respond and by far the most enthusiastic about working together. Before our first email and after dozens of let downs, I was starting to lose some of my confidence in pursuing such a debated and challenging conservation issue. But Kate's passion for people and primates reinvigorated me ten-fold and I cannot thank her enough.

Queen Magda, I cannot thank you enough for all of your help. You are such a funny, kind, patient, and extraordinarily helpful person. One of the best parts about this course for me was that we met. You are absolutely amazing.

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Thank you to everyone that helped me with this research in Knysna. I have never felt so welcomed and supported in a new, strange place. Special thanks go to the Ceillier family for allowing me to share their lovely home. Your hospitality and kindness is more than I ever could have asked for. Thank you to Raf for being the coolest "little brother" ever and for helping me with my questionnaire tables. Thank you to Popi for keeping me sane and for always being willing to take a walk around town. A massive thanks goes to Richard and Julie Thorpe, my surrogate Knysna parents. Richard, without you I would not have gotten nearly as much done in Knysna as I did. Thank you for every connection and every opportunity you gave me. Most importantly, thank you for initiating the Knysna Baboon Action Group and for wanting to promote coexistence between residents and baboons. And Julie… my dear friend. Thank you for everything. The coffees, the chats, the home cooked meals, for treating me like a daughter. My experience in Knysna would have been so different had we not met at Cornuti's that very first night.

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Thank you to C.A.R.E., for affording me the first opportunity to experience baboons. It was here that I learned what baboons in South Africa are truly up against and you are solely responsible for inspiring me to do all I can to make South Africa a better place for all baboons.

I would like to dedicate this study to my two little baboon girls, Jessica and Tania, orphaned as a result of human-baboon conflict in South Africa. I hope that someday soon South Africa will be a peaceful place for baboons and you can return to the wild where you truly belong. Finally to my buddy Stephen, my very best baboon friend, I miss you every day. May you rest in peace.

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CHAPTER 1: INTRODUCTION

1.1 Human-wildlife conflict

Human–wildlife conflict is defined by the World Wide Fund for Nature as "any interaction between humans and wildlife that results in negative impacts on human social, economic or cultural life, on the conservation of wildlife populations, or on the environment" (WWF, 2005). The use of the phrase human-wildlife conflict is often debated amongst experts in the field because it predetermines interactions between humans and wildlife as problematic, assigning wildlife the role of an enemy to which humans may then rightfully direct anger and frustration, thereby limiting management strategies and negatively impacting conservation (Peterson et al., 2009). Experts in the field maintain that in many instances human-human conflict exists at the root of human-wildlife conflict as a result of differing views of wildlife management between stakeholders. In other cases, human-wildlife conflict is used to define wildlife damage, which refers to anything wildlife do that humans dislike including causing injury or spreading disease to humans, causing economic loss, property damage or a reduction in human quality of life or overall well-being (Conover, 2002). Literature draws attention to the importance of understanding the full scope of human-wildlife conflict in any given situation as solutions to damage from wildlife differ from methods used to resolve conflict between humans (Peterson et al., 2009). While the phrase human-wildlife conflict is debated, it will be used throughout this study as it is currently the prevailing term in the literature.

1.2 Why does human wildlife conflict happen?

Within the last century, the human population has experienced unprecedented growth. Around 2008, the human population living in cities surpassed the population living in rural settings, a landmark in human history (United Nations Population Fund, 2007). In 2000, only one quarter of all global landscapes were estimated to consist of wild, unaltered land (Ellis et al., 2010). The transformation and fragmentation of natural land is considered to be the leading cause of extinction across all species of wildlife (Pimm and Raven, 2000). The remaining wildlife that is unable to adapt to altered environments is forced into marginalized natural habitats. Behaviourally flexible species, on the other hand, may be able to adapt to changing habitats but at the risk of direct competition with humans (Siex and Struhsaker, 1999).

1.3 How does it manifest?

Conflict between humans and wildlife exists in nearly every corner of the world across numerous species of wildlife (Knight, 2000). Wildlife involved in conflict with humans range from insects and rodents to birds, carnivores and large-bodied mammals (Knight, 2000).

While human-wildlife conflict can have negative impacts on both humans and wildlife, it is often

discussed from an anthropocentric perspective with a focus on how wildlife affects humans (Knight, 2000).

The transmission of zoonotic diseases, defined as the spread of disease between humans and wildlife, is one factor that causes human-wildlife conflict. This has been seen globally in the case of rabies, a lethal virus that can be transmitted to humans from several mammalian vector species such as the skunk and raccoon in North America and black-backed jackal and bat-eared fox in southern Africa (Thirgood et al., 2005). Predation of livestock by carnivores is a factor that contributes to human-wildlife worldwide (Thirgood et al., 2005). For example, grey wolves (Bangs & Shivik, 2001) and coyotes (Knowlton et al. 1999) in North America have been known to predate sheep and cattle. Similar cases of livestock predation by wild dogs in Kenya (Woodroffe et al., 2005), and leopards and lions in Zimbabwe (Butler, 2000) often indicate high economic losses for farmers.

Another component of human-wildlife conflict includes nuisance issues such as damage to gardens by grey squirrels and deer in the United States (Conover, 1998), and infestation of homes by rodents, such mice or rats, virtually anywhere in the world (Tobin and Fall, 2004). The threat to human safety is perhaps the most emotive factor of human-wildlife conflict. Tigers in India (McDougal, 1991), bears in North America (Herrero, 1985) and Japan (Knight, 2000), mountain lions in the United States (Conover, 1998), and venomous snakes globally (Swaroop and Grab, 1954) are among some of the species known to cause injury or death to humans.

One of the most studied types of human-wildlife conflict includes crop raiding and damage. Elephants in Africa (Osborn and Hill, 2005) and Asia (Sukumar, 1990), various species of birds in America (Anderson et al., 2013), and insects worldwide (Bardner and Fletcher, 1974) are known to damage crops. As illustrated, human-wildlife conflict takes many forms for numerous wildlife species in various global landscapes.

1.4 Human-Primate Conflict

One area of human-wildlife conflict research that has increased in attention is that of human- primate conflict (McLennan and Hill, 2012; Hill and Webber, 2010; Strum, 2010; Lee and Priston, 2005). Despite the rate of conversion of land for human uses, many generalist primate species, which exhibit both dietary and behavioural flexibility, are not only able to survive but thrive in human dominated landscapes (Strum, 2010). Due to this adaptability, many species of primates come into increasing competition with humans where land has been transformed for agricultural, urban or suburban uses (Lee and Priston, 2005).

Human-primate conflict most frequently manifests as crop-raiding and is seen in various species such as orang-utans (*Pongo pygmaeus*) (Smith et al., 2010), chimpanzees (*Pan troglodytes*) (Hockings et al., 2009), baboons (Hill, 2000), red colobus monkeys (*Piliocolobus badius*) (Siex and Struhsaker, 1999), and capuchin monkeys (*Cebus capucinus*) (McKinney, 2010). Crop raiding plays an important role in the ecology of many primate species, particularly in the face of habitat destruction, subsequent decrease in natural foods and the prime location of agricultural land at the forest-edge (Lee and Priston, 2005; Hill, 2000; Naughton-Treves et al. 1998). Crop losses from primates are therefore a contentious issue among farmers, particularly those farming for subsistence (Hill, 2000).

Human primate conflict also manifests in urban spaces as is seen with rhesus macaques (*Macaca mulatta*) in India (Southwick et al., 2005) and hamadryas baboons (*P. hamadryas*) in Saudi Arabia (Biquand et al., 1994), where these primates commonly feed on human foods from picnic areas and rubbish bins. Primates that obtain food in association with humans often become aggressive towards humans in their attempts to continue obtaining it (Priston and McLennan, 2013; Southwick et al., 2005; Brennan et al., 1985). This can become a serious issue for human health and safety (Southwick et al., 2005).

1.5 Human-Baboon Conflict

Baboons (genus *Papio*) are the primate species arguably most well-known for conflict with humans. They are highly intelligent, opportunistic, large bodied, omnivorous primates that maintain a complex social organization (Swedell, 2011; Else, 1991). These characteristics make them highly adaptable and able to thrive in various human dominated landscapes.

Studies suggest that baboons can impose greater costs to farmers than any other wildlife species (Hill, 2000). This conflict routinely paints baboons as pests throughout their sub- Saharan range (Uganda: Hill, 2000; Nigeria, Pepeh, 1996; Kenya: Strum, 1994; South Africa: Kansky and Gaynor, 2000). Despite the fact that baboons have the greatest distribution of any primate genera in Africa, research on human-baboon interaction has mainly focused on agricultural conflicts.

A small sect of research focusing on the suburban and urban dwelling baboon troops in Cape Town, South Africa indicates a relationship characterized by years of conflict, whereby property damage and human harassment for food has led to the high levels of human- induced injury and baboon mortality (Beamish, 2009). As growing numbers of people move into urban areas within Africa, the success baboons demonstrate in human-dominated landscapes will inevitably place them in increasing conflict with humans over competition for food and space. Therefore, comprehensive research is urgently required to assess conflict with baboons in the suburban context, prior to

advanced conflict as seen in Cape Town.

1.6 Ethnoprimatological Approach to Human-Primate Conflict

Literature calls for a focus on an ethnoprimatological approach to human-primate conflict (Fuentes and Hockings, 2010; Fuentes and Wolfe, 2007). This interdisciplinary approach draws from several areas of anthropology to create a comprehensive picture of human- primate conflict (Sterling et al., 2013). Due to similar characteristics, the behaviour of primates is often judged by the same moral framework as that for humans. Where primates traverse spatial boundaries established by human societal norms, primates are readily labeled as trespassers and become subjects of human condemnation (Hill and Webber, 2010). People living alongside primates frequently hold perceptions of them as thieves and a threat to personal safety and livelihoods (Hill, 2004). These negative attitudes towards primates can have deleterious impacts on their conservation, a trend that has been shown for various species of wildlife (Hill, 2004; Decker et al., 2002). Therefore, an understanding of the dynamics of the human dimensions of primate conflict is vital to designing any management strategy that aims to ameliorate conflict and promote coexistence (Lee, 2010).

1.7 History of Human Wildlife Conflict in Knysna, South Africa

In 1763, upon arrival in Knysna, South Africa, settlers began exploiting the vast indigenous forests, converting land for agriculture and hunting elephants for ivory and sport (Hall- Martin, 1980). Harvesting continued throughout the 19th century and was responsible for the destruction of great sects of forest, placing pressure on a large number of Knysna's elephants. As a result of decreased space, farmers in the area suffered damage to property and crops, competition for water and the loss of human lives from elephants, which elicited resentment from local people (Hoffman, 1993). This conflict precipitated the decision to eliminate the local population of elephants, thought to be approximately 450 individuals as of 1876 (Hall-Martin, 1980). Due to conflict and continued desire for ivory, by 1950 only 13 elephants remained within Knysna's forests. By 1973 there were reports of only 12 individuals left, indicating continual hunting or failure of the population to thrive based on ecological or genetic constraints (Hall-Martin, 1980). Recent DNA evidence suggests a current population of five individuals (Eggert et al., 2007). A glance into Knysna's history reveals a past account of significant human-wildlife conflict and consequential lethal removal leading to the extirpation of problem wildlife. This historical outlook on the management of conflict animals may contribute to the contemporary attitudes towards species living in conflict with people in this area.

1.8 Study Aims and Objectives

This study aimed to investigate the human dimension of the human-baboon interface in an area of

emerging suburban conflict through the use of questionnaires and semi-structured qualitative interviews. This study also aimed to utilize data to inform relevant management parties. This study assessed resident perceptions of suburban dwelling baboons through:

1) Investigating the factors which contribute to conflict between people and baboons
2) Ascertaining how perception of threat associated with baboons contributes to negative attitudes towards baboons.
3) Assessing the degree to which residents are concerned about the conservation of baboons and the factors that may contribute to increased or decreased conservation concern.

CHAPTER 2: METHODS

2.1 Study Site

Research was conducted in Knysna, Western Cape Province, South Africa (34° South, 23° East) between May 4th and July 16th, 2014. The Knysna municipality, part of the larger Eden Municipal District, covers a total surface of 1,059 square kilometres. According to the Municipal Biodiversity Summary Project (2014), the Knysna municipality consists of 593 square kilometres of natural habitat and 466 square kilometres are areas where the natural habitat has been transformed (Biodiversity GIS, 2007). The Knysna municipality has a population of approximately 70,000 people and is 500km east of Cape Town (Statistics South Africa, 2014). The majority of these individuals, approximately 51,000, live within the town of Knysna (Statistics South Africa, 2014). The town of Knysna is surrounded entirely by the Garden Route National Park, part of the Cape Floristic Region, an internationally acclaimed biodiversity hotspot (Vromans et al., 2010). Knysna is a coastal settlement bordered by the Outeniqua Mountains in the north and the Indian Ocean in the south (Statistics South Africa, 2014). Development centres within and around the Knysna Estuary, a body of water that ranks first among South Africa's estuaries for overall conservation importance (SANParks, 2014; Turpie et al. 2002). In addition to the estuary, Knysna is well known for its forests, namely Diepvalle and Gouna (SANParks, 2014). The suburbs of Knysna border proclaimed nature reserves and other undeveloped natural areas. The suburban interface is not well demarcated, and strips of housing encapsulate and fragment forested areas.

FIGURE 2.1 Map of Africa highlighting the location of South Africa

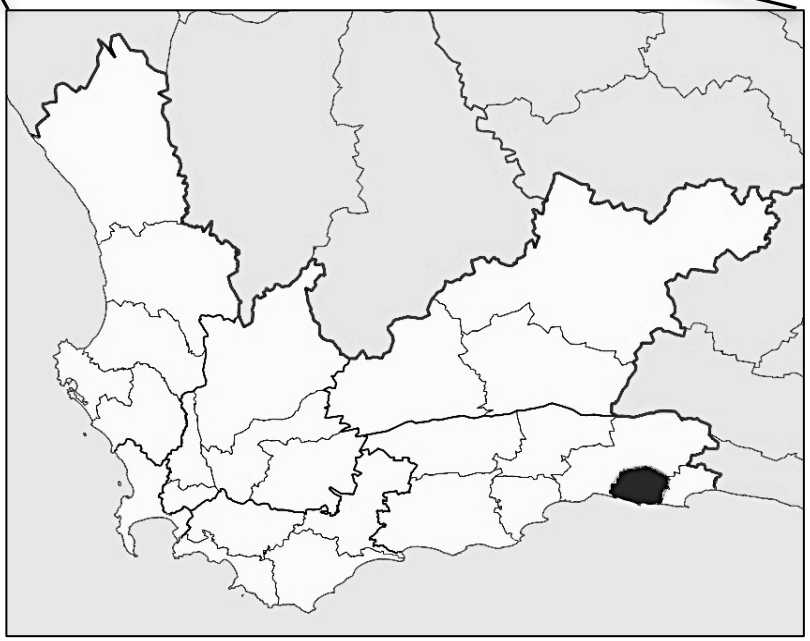


FIGURE 2.2 Map of the Western Cape Province of South Africa highlighting the location of the municipality of Knysna.

2.2 Human-baboon interface in Knysna's suburbs

Chacma baboons (*Papio ursinus*) in the Western Cape are protected wild animals according to the Nature Conservation Ordinance, Ordinance 19 of 1974 (Nature Conservation, 1974). They are listed under the Convention on International Trade in Protected Species of Wild Fauna and Flora (CITES II) and are listed as "Least Concern" by the IUCN guidelines (CITES, 1977; IUCN, 2008).

There are no data available on the spatial ecology of the Knysna baboon troops and all land transformation to date has proceeded without cognisance of the potential effects on either the baboons or residents. There are two areas with an existing human-baboon interface that lie within the suburbs of the north-western and south-eastern areas of Knysna. The south-eastern sector of Knysna is believed to be home to at least three separate troops of baboons that traverse the coastal mountains and lowlands surrounding Pezula Golf Estate, Pezula Private Estate, Hunters Home and Rexford suburban areas (Leonard McLean, personal communication). The north-western sector of Knysna is believed to be home to at least four separate troops of baboons that traverse the mountainous landscapes and suburban areas of Simola Golf Estate, Knysna Heights, Paradise and Eastford, among others (Tony Davidson, personal communication). Troops are estimated to consist of 15- 40 individuals in both the south-east and north-west areas (Leonard McLean and Tony Davidson, personal communication). Pezula Golf and Pezula Private Estates began development in 1999 (Lynne Wilkinson, personal communication) and 2003 (Leonard McLean, personal communication) respectively, and Simola Golf Estate began development in approximately 2003 (Derek Carroll, personal communication). Lowland residential suburbs in both the south-east and north-west sectors were well established prior to all highland development. Pezula Golf and Private Estates were known to have displaced troops of baboons in the south-east sector during housing development (Jessica Hayes, personal communication). Baboon troops have been known to venture into suburban areas in both south-east and north-west areas since development of the highland suburbs commenced. However, an extensive drought between the years of 2009 and 2011 (Holloway et al., 2012) is thought to have decreased the quality of available natural resources, precipitating an increase in baboon presence within suburban areas (Richard Thorpe, personal communication). This increasing interface between residents and baboons is believed to be origin of the conflict addressed in this study.

2.3 Data Collection

2.3.1 Questionnaires

Questionnaires about the presence of baboons in the suburban areas of Knysna were conducted both in person and online. Ethical approval from the Oxford Brookes University to distribute

questionnaires and conduct interviews was granted prior to data collection (Appendix A). The questionnaire consisted of 22 open-ended and closed questions based on recurrent themes and attitudes identified from 10 semi-structured qualitative interviews carried out at the beginning of the study (Newing, 2010). The various question formats required respondents to fill in the blank, select one answer or circle all that apply. The questionnaire was trialled on 10 individuals from the target audience prior to distribution to test the clarity, appropriateness of the questions, question type and question order (Newing, 2010). Small changes, including reordering and question removal, were made to the questionnaire based on this trial period (Newing, 2010). The final questionnaire (Appendix B) was distributed on May 31st, 2014 and June 7th, 2014 in front of two grocery stores in Knysna city centre, with permission granted from property management. A link to an identical online questionnaire was posted on a Knysna Facebook group. The questionnaire link was also emailed to homeowner's associations and neighbourhood watch groups in Knysna as well as being sent to past interviewees to share with other relevant individuals. Additionally, the questionnaire link was printed on the front page of the Knysna-Plett Herald local newspaper accompanying a story about this research and was also posted on the newspaper's website (Knysna-Plett Herald, 2014). A security feature of the online questionnaire was enabled to prevent residents from completing more than one questionnaire per IP address so not as to skew the data.

The questionnaire was directed at any resident over 18 years of age living within the municipality of Knysna during the study period. Questionnaires were also open to residents currently living abroad but who own a home and spend a portion of the year in Knysna. This was possible through the online questionnaire process. The questionnaire was intended to be answered by residents that have, and have not, had baboons on their properties for comparison purposes.

Respondents who had baboons on their properties were directed to answer the questionnaire in full, while individuals who have never had baboons on their properties were asked to skip several questions. Questions answered only by respondents with baboons on their properties addressed length of time baboons have been on the respondent's property, behaviour of the baboons on the property, the time of day and time of year of visits to the property, level of threat they believe baboons on their property pose, attitudes towards visits from baboons, whether deterrent(s) against the baboons are used and if so, which type. Questions requested of all respondents included which suburb the respondent lives in, how long they have resided there, their age group, the presence or absence of baboons on their property, whether respondent's believe the presence of baboons in Knysna's suburbs is a problem, safeguarding habits and type(s), level of concern for the conservation of baboons living in Knysna's suburbs, whether the respondent has coverage from their homeowners

insurance for property damage from baboons, which solution(s) residents believed were appropriate to address the presence of baboons, who respondents believed are the responsible management parties, and whether respondents were aware of issues with baboons in Cape Town.

The questionnaire was anonymous. However, at the end of the questionnaire, any individuals who were willing to provide further information in an interview were asked to leave contact details. The questionnaire process ended on July 31st, 2014. 231 questionnaires were received but only 201 have been used in data analysis as 30 of them were not complete enough to be included in analysis or were completed by individuals living outside of the study location.

2.3.2 Interviews

Semi-structured qualitative interviews were conducted with individuals from various stakeholder groups within Knysna to develop a well-rounded perspective on the presence of baboons in Knysna's suburbs (Newing, 2010). These individuals included residents, property managers, lodge owners, municipal government members, South African National Parks representatives, Cape Nature representatives, members of the Knysna Baboon Action Group and other local baboon action groups. Individuals that provided contact information on their questionnaire were chosen to participate based on their responses. Others were asked to participate based on their involvement with a relevant stakeholder group. Additionally, an email address was provided in conjunction with the newspaper article that interested individuals used to contact the researcher to participate in the interview process. A document containing project details was provided to each potential interview participant prior to the interview (Appendix C). They were asked to read through the document and encouraged to ask any details about the interview process. Participants that agreed to partake in the interview process were required to sign a consent form prior to the start of the interview (Newing, 2011) (Appendix D). The interview process lasted until the participant believed they had shared all pertinent information, which ranged from 20 minutes to 2 hours. Interviews were recorded using a dictaphone only if the participant gave consent to voice recording in their consent form. Written and voice notes provided in the interview were kept confidential, with individual names coded as numbers and all materials kept in a locked safe in the researcher's quarters. 27 formal interviews were conducted in a private setting. 18 informal, brief interviews were also conducted, in which a consent form was not needed as general, publicly available information was being provided.

2.4 Data Analysis

Data from the online questionnaires were downloaded from the website (Kwiksurveys.com) and written questionnaire data were added to an Excel spreadsheet. The locations of each suburb were mapped and grouped for thorough analysis according to geographical location and known presence of baboon troops (FIGURE 2.1). The north-east sector was not taken into account for this study as there were no questionnaire respondents living in this area.

Questions that required respondents to "circle all that apply" were split apart and each option treated as its own variable with "present" or "not present" marked for each participant's response (Newing, 2011). Categories for each open-ended question were created based on the most frequently reported themes for that question (Newing, 2011). The question involving the time of day that baboons visit the property was broken into "morning", 6am-11am inclusive and "afternoon" 12pm-6pm inclusive. Many respondents listed seasons for which months of the year they see baboons on their properties. The seasons were broken down into months using the southern hemisphere calendar from the South African Weather Service website as used in other baboon behavioural studies in the Western Cape Province (South African Weather Service, 2014; van Doorn et al., 2009). The majority of respondents used the spaces for "Other" to elaborate on their answer to the question. Although this was not requested of respondents, this information was treated as additional qualitative data and is used throughout this study.

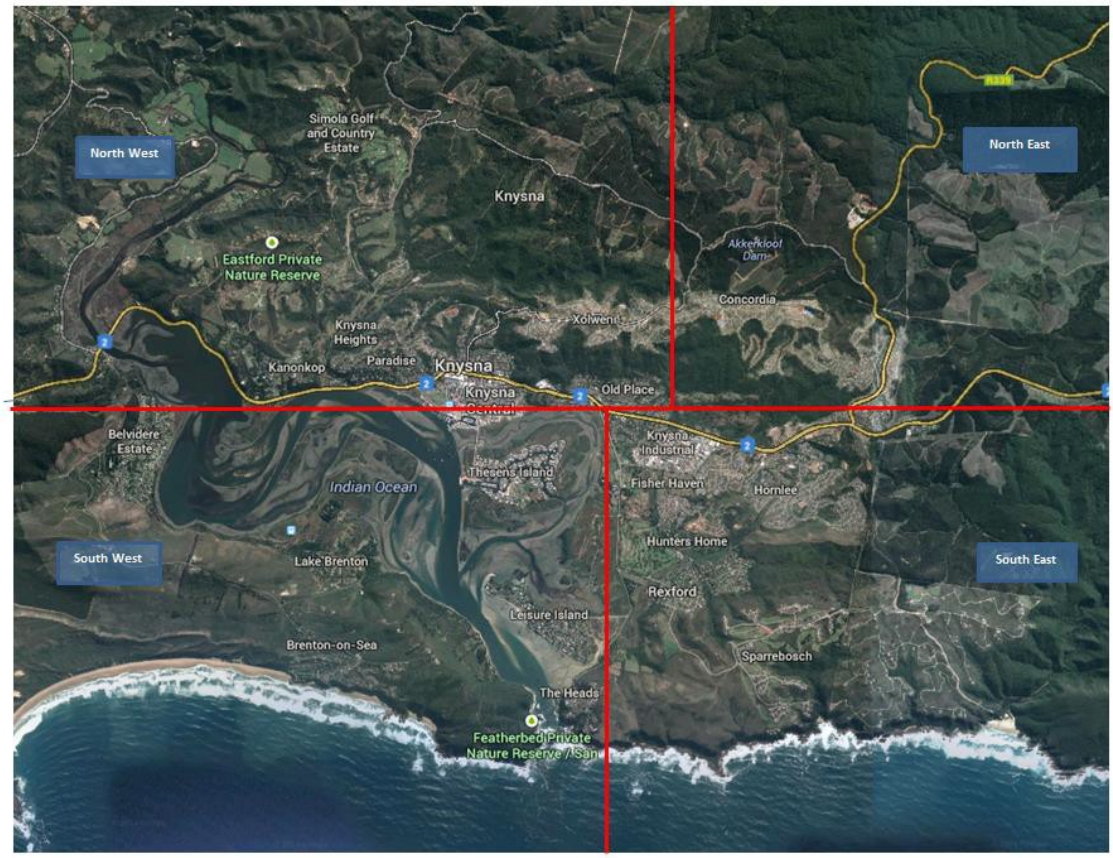


FIGURE 2.3 Satellite image of Knysna. Questionnaire responses were divided into four sectors. The north-east sector was excluded from this study as no questionnaires were received from this area.

Respondents were asked to intentionally omit questions (for those without baboons on their properties) and respondents also occasionally skipped questions that were intended to be answered, either accidentally or deliberately. These two different types of absent answers were coded in a different way as they indicate separate rationale for why they were missed. Consequently, the sample size for each question differs slightly as a result of questionnaire design and respondent self-omissions. All questionnaire responses were coded in Microsoft Excel 2010 for Windows and uploaded into SPSS 21 for Windows for analysis. Frequencies were calculated for all responses to all questions. Non-parametric tests were used due to the non-normal distribution of the data (Field, 2013; Newing, 2011). Relationships between variables were assessed for statistical significance (p<0.05) using Spearman's rank correlations and chi-square analysis (Newing, 2011; De Vaus, 2002). All interviews were transcribed into typed format. Interviewee statements and supplementary qualitative questionnaire data are used throughout this study to support questionnaire data where relevant.

2.5 Terms used in this study

'Safeguard' is defined in this study as anything residents do to prevent baboons from wanting to visit their properties or from allowing them access to their homes. These include:

1. Baboon proof bins, bin locks, or keeping bins in garage until bin day.
2. Keeping windows or doors closed and/or locked. Installing burglar bars or plexiglass bars over windows.
3. Removing or eliminating access to baboon attractants such as compost areas, fruit or nut trees.

'Deterrent' is defined in this study as anything residents do to dissuade baboon from entering their property. These include:

1. Noise deterrents, i.e. firecrackers, banging pots and pans
2. Physical deterrents, i.e. pellet or paintball guns, catapult
3. Passive deterrents, i.e. electric fencing, placing plastic snakes around yard
4. Dog, i.e. when residents use their dog to scare baboons away

'Attitude' in this study relates only to respondents that have had baboons on their properties and have answered the following question, "Which of the following BEST describes how you feel about baboons visiting your property?". The attitudes held by residents not living with baboons on their properties were not assessed in this study.

CHAPTER 3: RESULTS

3.1 Respondent Demographics

Respondents ranged in age from 18-75+, with the average age between 45-54 years old (Figure 3.1).

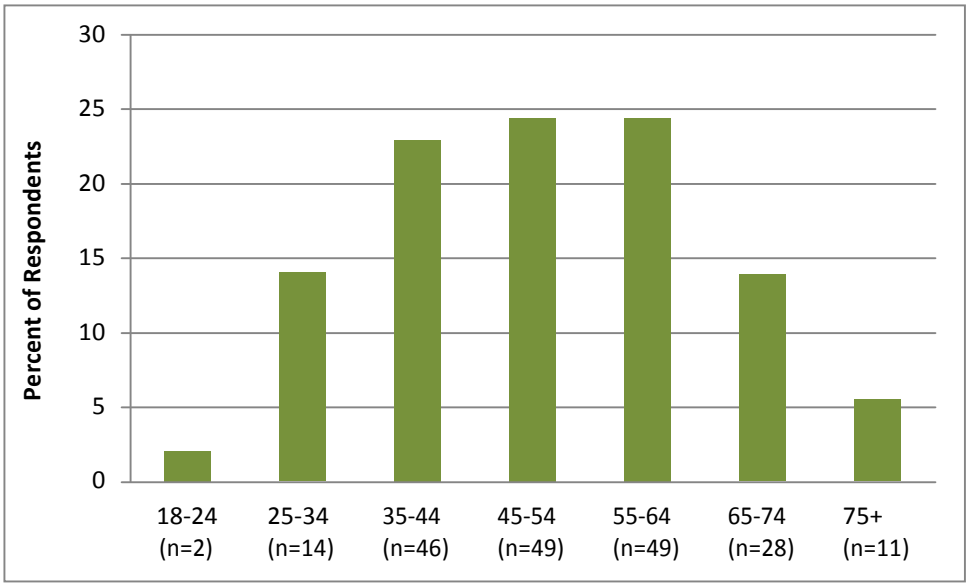


Figure 3.1 Questionnaire respondents' ages

Respondents were mainly from the north-west (52.7%, n=106) and the south-east (32.3%, n=65) sectors of Knysna. Respondents from the south-west and farming areas of Knysna represented only 7.9% (n=16) and 6.9% (n=14), respectively. Overall, 79.1% (n=159) of respondents reported having baboons on their properties. Respondents from the different areas reported having differing levels of baboons on their properties (Table 3.1).

Table 3.1 Sectors of Knysna in which questionnaire respondents live and those that have baboons on their properties.

Sector of Knysna	Number of respondents (n)	Percentage of Respondents	Percentage of respondents having baboons on their property
North-west	106	52.7%	82%
South-east	65	32.3%	86.1%
South-west	16	7.9%	13.8%
Farming areas	14	6.9%	100%

3.1.1 Length of time baboons have been visiting

Baboons were reported to have been visiting respondents' properties for anywhere from 1 month to 30+ years. The majority of respondents reported having baboons on their property for less than 2 years (Figure 3.2).

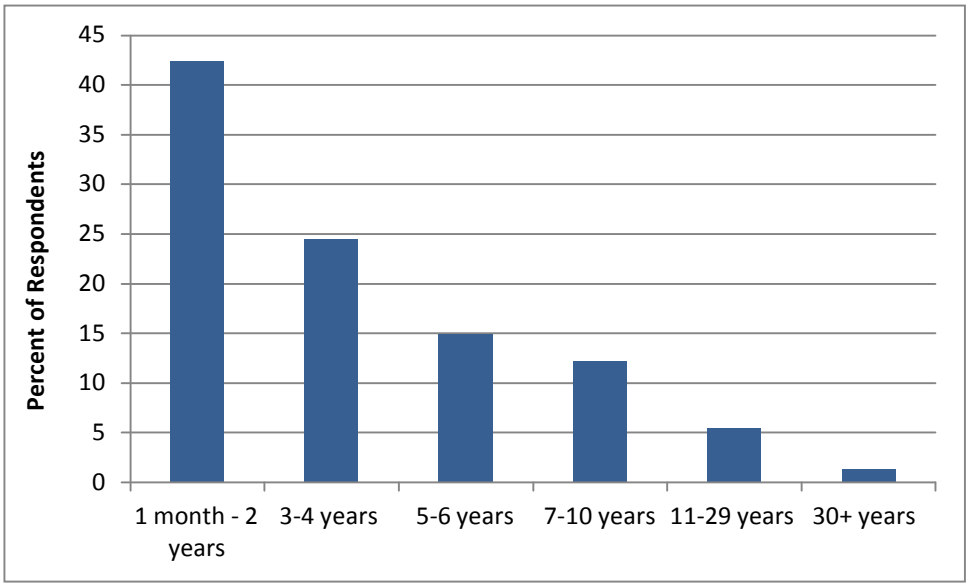


Figure 3.2 Questionnaire respondents' answer to "How long ago did baboons start visiting your property?".

3.1.2 Time of year baboons visit

The majority of respondents with baboons visiting their properties (56.1%, n=148) stated that there was no specific time of day that baboons visited their property. Accordingly, they reported that baboons were equally likely to visit during any month of the year. Nearly equal percentages, with a range of 70.1%-78.2% for each month were reported.

Respondents could answer with any and all months.

3.2 Threat

3.2.1 Types of Threat

14.5% of respondents believed the baboons posed no threat while on their properties. 26.3% believed the baboons pose a small threat, while 34.9% of respondents consider the baboons a moderate threat. 24.3% of respondents reported the baboons on their properties to be an extreme threat. Respondents who indicated that baboons pose a threat were asked to define the threat they perceived (Table 3.2). Respondents were able to list more than one rationale as to why they consider the baboons threatening.

Table 3.2 How respondents defined the threat they associated with baboons.

Object of Threat	Number of respondents (n)	Percentage of total respondents
Pets	66	54.5%
Personal safety	60	49.6%
Material items	47	38.8%
Children	21	17.4%
Women	11	9.1%
Other	3	2.5%

3.2.2 Threat and Property

53.2% (n=67) of respondents who believed baboons were a small, moderate, or extreme threat stated that there was no specific time of day that the baboons visited their properties. A significant relationship was found between the level of perceived threat and whether or not baboons had entered the respondents' houses (X_2=18.019, df=3, n=152, p<0.001), while no significant

relationship was found for baboons solely passing through residents' property (X_2=7.534, df=3, n=152, p=0.057) (Figure 3.3).

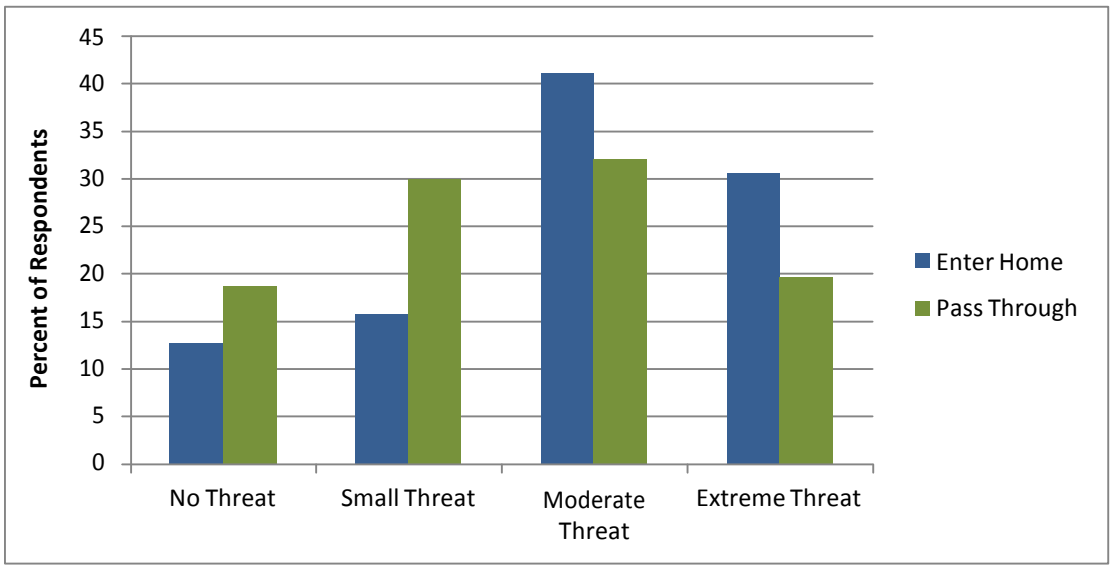


Figure 3.3 Comparison of the level of threat perceived when baboons enter respondent homes and when baboons passed through their property.

3.2.3 Threat and Lethal Removal

There was a significant relationship between residents' perceived level of threat from baboons and their preference for lethal removal as a solution to the conflict. As the level of threat increased, individuals were more likely to have selected lethal removal (X^2=20.573, df=3, n=146, p<0.001). Respondents that believed baboons did not pose a threat or posed a small threat never selected lethal removal. 40% (n=8) of respondents who believed the baboons posed a moderate threat, opted for lethal removal. The biggest proponents of lethal removal as a solution were the residents that believed baboons were an extreme threat (60%, n=12). There was also a strong correlation between levels of perceived threat and whether residents considered the baboons in Knysna's suburbs to be a problem (r_S =0.621, n=147, p<0.001). As their perceived level of threat increased, so did the level of problem they believed the baboons were causing. A strong correlation between perceived level of threat and concern for conservation indicated that the more residents considered the baboons a threat, the less concerned they were with their conservation (r_S =-0.265, n=147, p<0.001).

3.3 Attitudes

Respondents were asked to describe their attitudes towards the presence of baboons on their property, with the highest percentage of people describing themselves as 'angry and frustrated' (Figure 3.4).

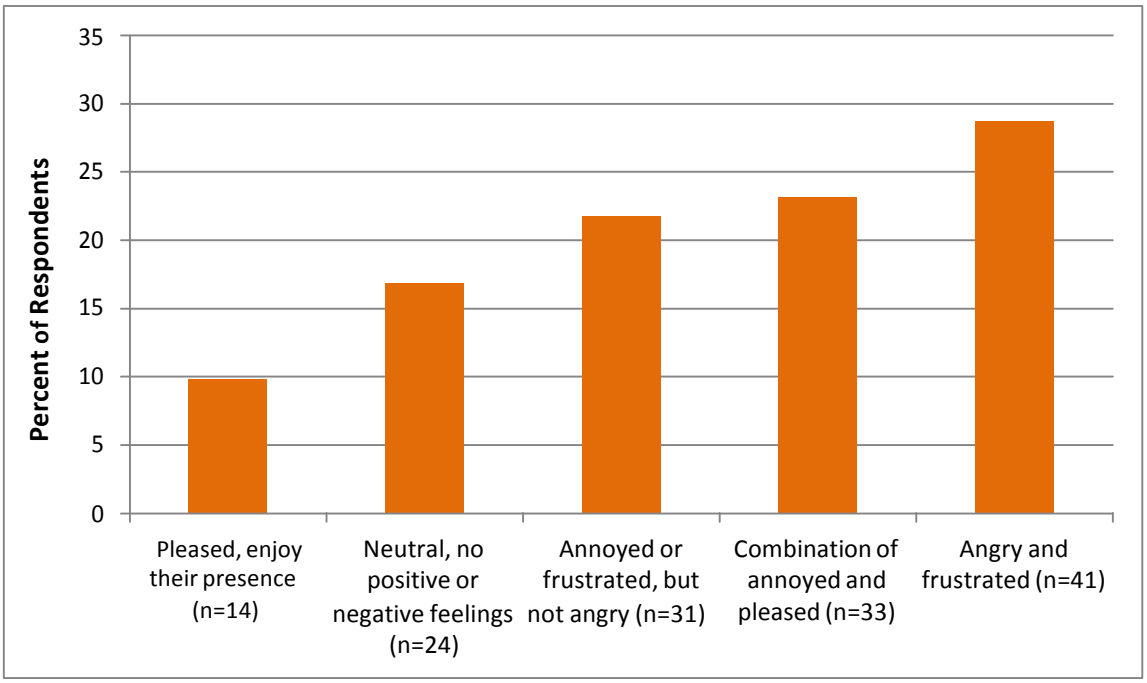


Figure 3.4 The percentage of respondents expressing their attitudes towards the presence of baboons on their properties.

There was a significant relationship between respondent attitude towards baboons and their perceived level of threat ($X2$=101.095, df=12, n=143, p<0.001) (Figure 3.5). The perception of threat greatly influenced residents' feelings towards the baboons. Most notably, the majority of people who thought the presence of baboons on their property posed an extreme threat were 'angry and frustrated'. Most of the respondents who described themselves as 'angry and frustrated' believed the baboons posed an extreme threat. Residents that perceived only a small threat or no threat from the baboons were the only ones that described themselves as 'pleased, enjoy their presence'.

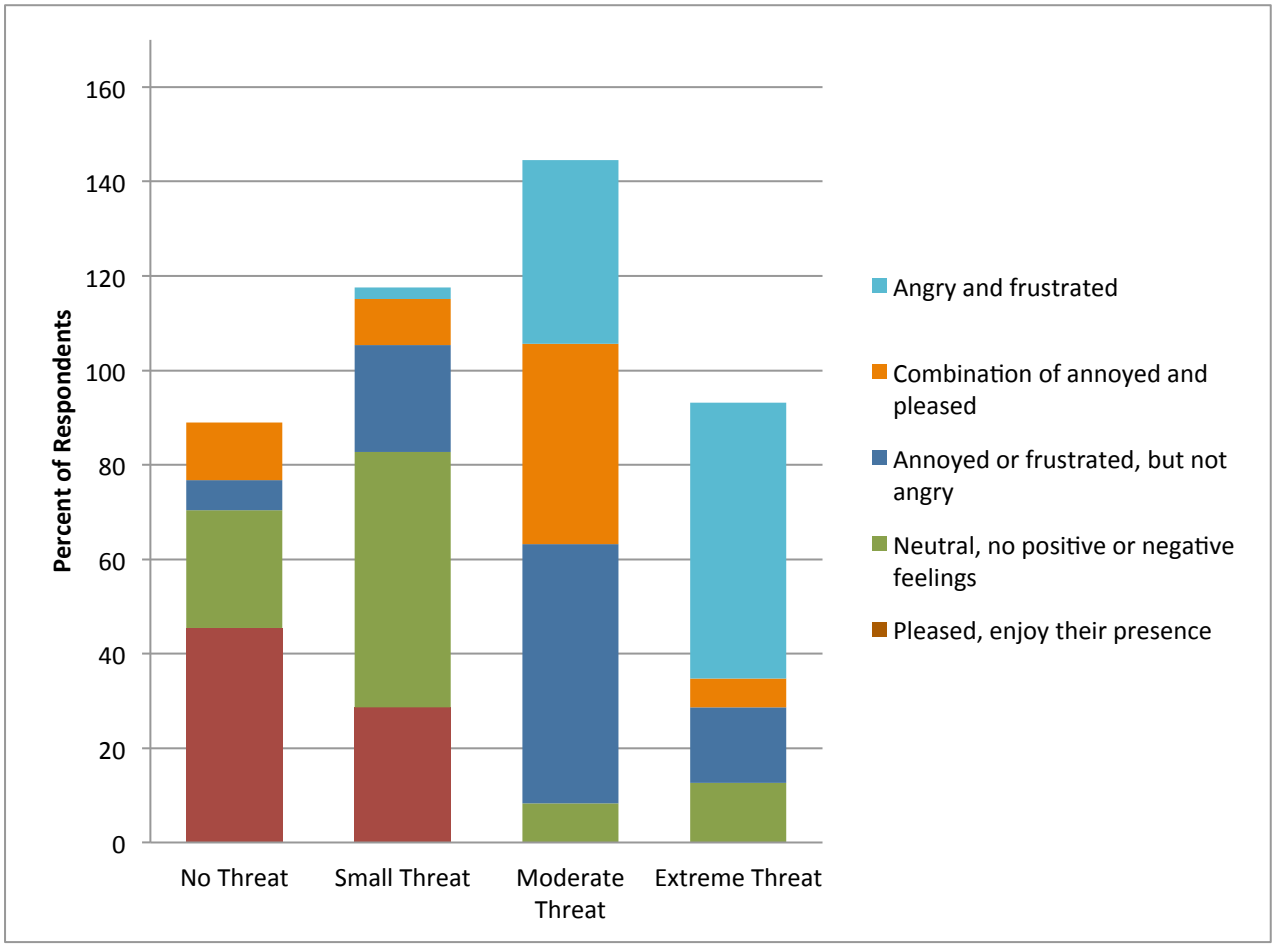


Figure 3.5 Comparison of respondent perceived level of threat and their attitude towards baboon presence on their properties

Respondents that had baboons enter their homes (n=95, 62.1%) were most likely to identify with being 'angry and frustrated'. 35.9% of residents were angry, 23.5% of residents were a 'combination of annoyed and pleased', 25.8% were 'annoyed or frustrated but not angry', and 8.9% of residents were 'neutral' about their attitudes. The least amount of respondents were 'pleased' by the baboons' entering of their homes (5.6%) (X^2=18.996, df=4, n=143, p=0.001).

There was a significant relationship between whether respondents listed the municipality as the responsible party to address issues with baboons (n=108, 57.8%), and their attitude towards baboons on their properties (X^2=10.689, df=4, n=139, p=0.030). The majority of people who selected the municipality considered themselves 'angry and frustrated' (n=31, 37.8%), followed by 'annoyed or frustrated but not angry' (n=19, 23.2%), and a 'combination of annoyed and pleased' (n=15, 18.3%). 6.1% of respondents felt 'neutral' about having baboons on their property (n=12, 14.6%), and 6.1% of respondents that described themselves as feeling pleased (n=5) named the municipality as responsible

for addressing the issues with baboons. Three of the suburbs in Knysna, Simola Golf Estate, Pezula Golf Estate, Pezula Private Estate, have a homeowner's association. The number of questionnaire respondents that lived in these areas totalled 13.9% (n=26). The majority of these residents did not select the municipality as the responsible party for managing the baboons (57.7%, n=15). However, the majority of residents in all of the other suburbs in Knysna (60.2%) stated that the municipality was responsible.

No significant relationship was found between attitudes towards baboons and the length of time they have been visiting respondents' properties ($X2$=12.391, df=20, n=140, p=0.902).

A very significant relationship was found between respondents' attitudes towards baboons and their concern about the conservation of baboons in Knysna's suburbs ($X2$=55.702, df=8, n=140, p<0.001). Individuals that identified with being 'angry and frustrated' about the presence of baboons on their property were not concerned about their conservation, while all respondents that were 'pleased' by their presence were highly concerned about baboon conservation. The majority of people who were 'neutral', 'annoyed or frustrated but not angry', or a 'combination of annoyed and pleased' in their attitudes towards the baboons, still expressed concern for their conservation (Figure 3.6).

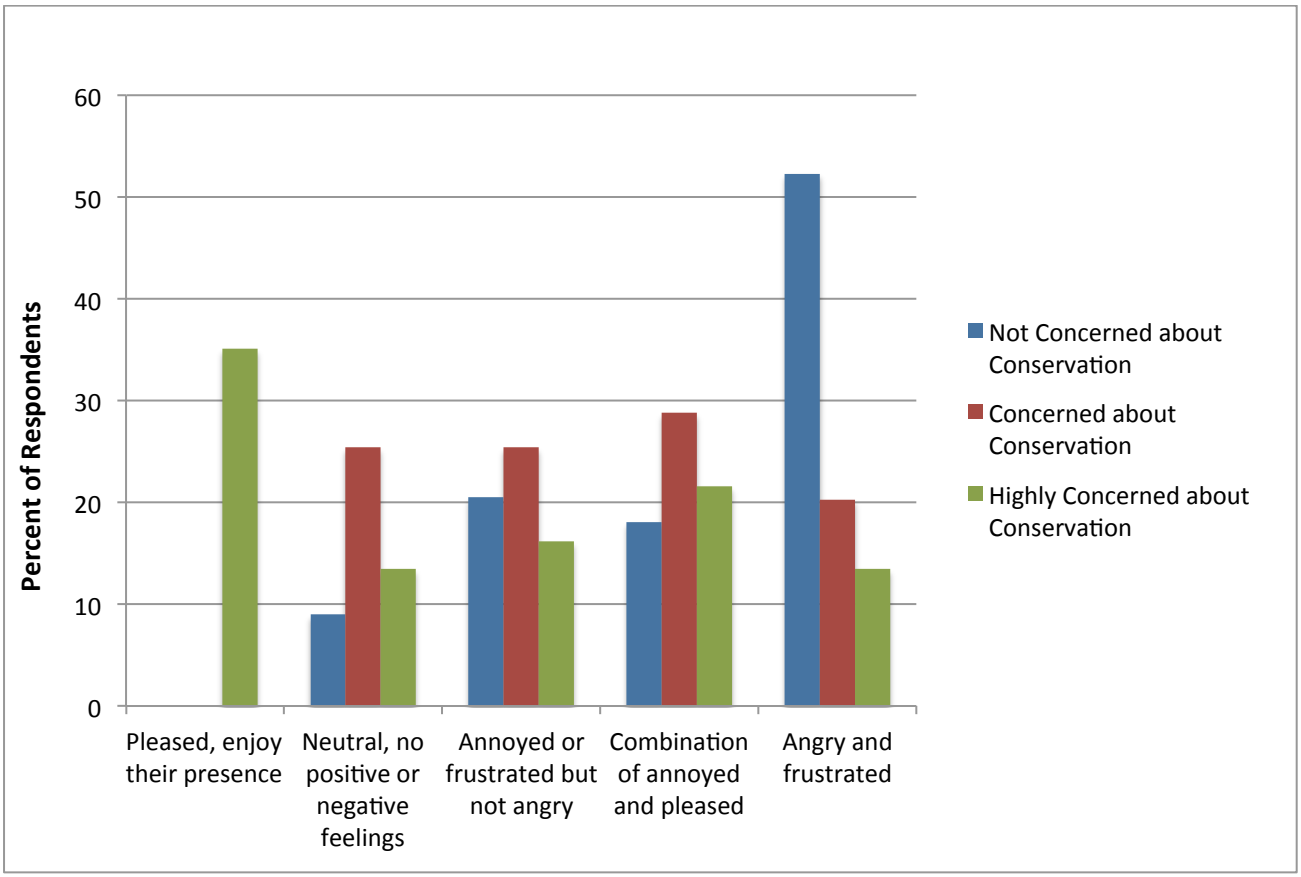


Figure 3.6 Respondents' attitude compared to their conservation concern (x^2= 55.701, df=8, n=140, p<0.001).

3.4 Deterrents and Safeguards

76.5% (n=114) of respondents who said baboons came to their properties stated that they deter baboons from entering their properties. There is a relationship between whether residents deter baboons on their properties and the degree to which they believe the baboons are a threat ($X2$=26.371, df=3, n=149, p<0.001). Of the individuals who deter baboons 9.6% (n=11) believe that the baboons are no threat, 19.3% (n=22) see baboons as a small threat, 41.2% (n=47) perceive them as a moderate threat, and 29.8% (n=34) people view the baboons as an extreme threat.

67.2% (n=135) of total respondents safeguard their homes against the baboons, regardless of whether baboons visit their property. Of residents who do have baboons on their properties, 85.1% (n=126) safeguard their homes. The majority of individuals who do not have baboons on their properties do not actively safeguard their homes (77.5%) ($X2$=61.025, df=1, n=188, p<0.001).

3.5 Problem

47.3% (n=89) of respondents believe the presence of baboons in Knysna's suburbs is a problem and 36.7% (n=69) believe they are a major problem. Only 16% (n=30) did not classify the presence of baboons in Knysna's suburbs as a problem. Overall, 84% (n=158) of people classified baboons in the suburbs as either a problem or a major problem. When looking closer at residents who do or do not have baboons on their properties, the majority of those without baboons still categorized the presence of baboons as a problem, even more so than those with baboons (Figure 3.7).

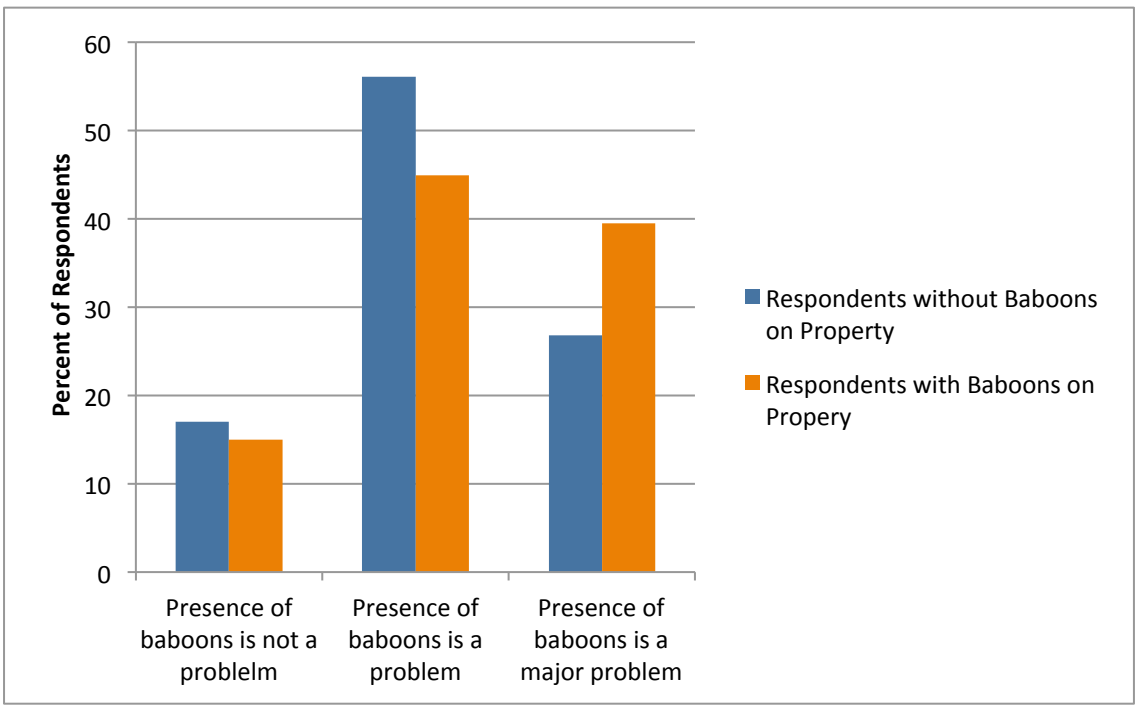


Figure 3.7 Respondents with and without baboons on their properties and the degree to which they consider the presence of baboons in Knysna's suburbs a problem.

Whether or not residents felt that the presence of the baboons in Knysna's suburbs was a problem had a strong relationship on how strongly they were concerned about the baboons' conservation (Figure 3.8). Concern about baboon conservation decreased as people considered them to be more of a problem. The majority of people who thought that the presence of baboons was not a problem were highly concerned about their conservation, while the majority of respondents that considered their presence to be a major problem were not concerned about baboon conservation.

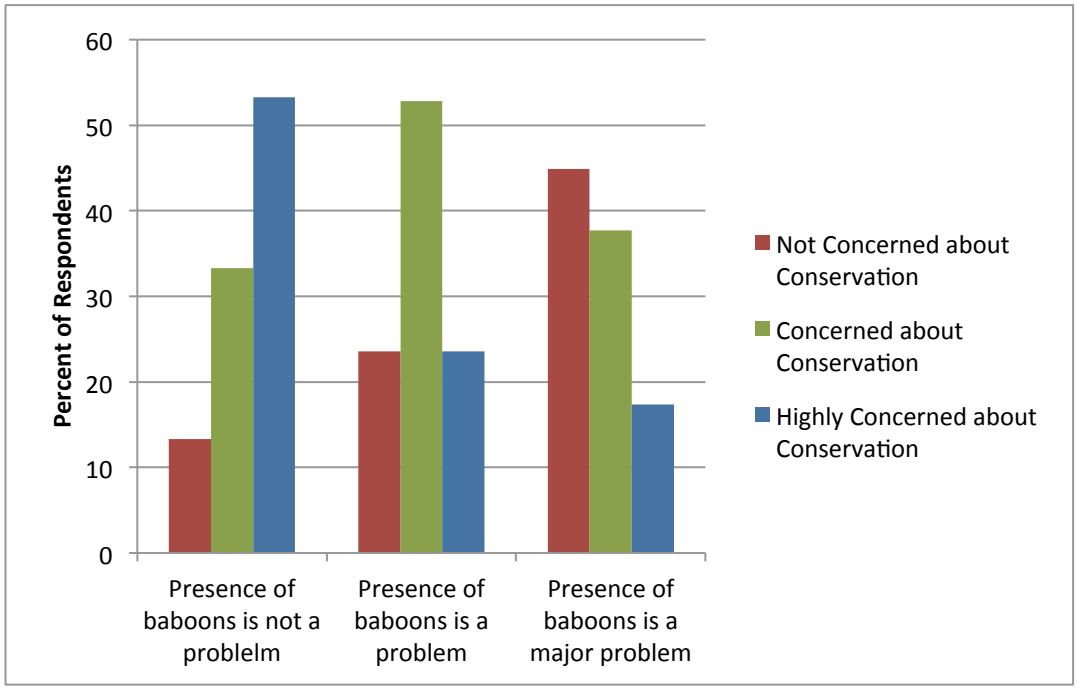


Figure 3.8 The degree to which respondents are concerned about the conservation of baboons in Knysna's suburbs and the degree to which they consider their presence a problem (r_s = -0.298, n=188, p<0.001).

3.6 Solutions

Respondents were asked to pick a solution(s) they thought would work best for managing the baboon issues in Knysna (Figure 3.9).

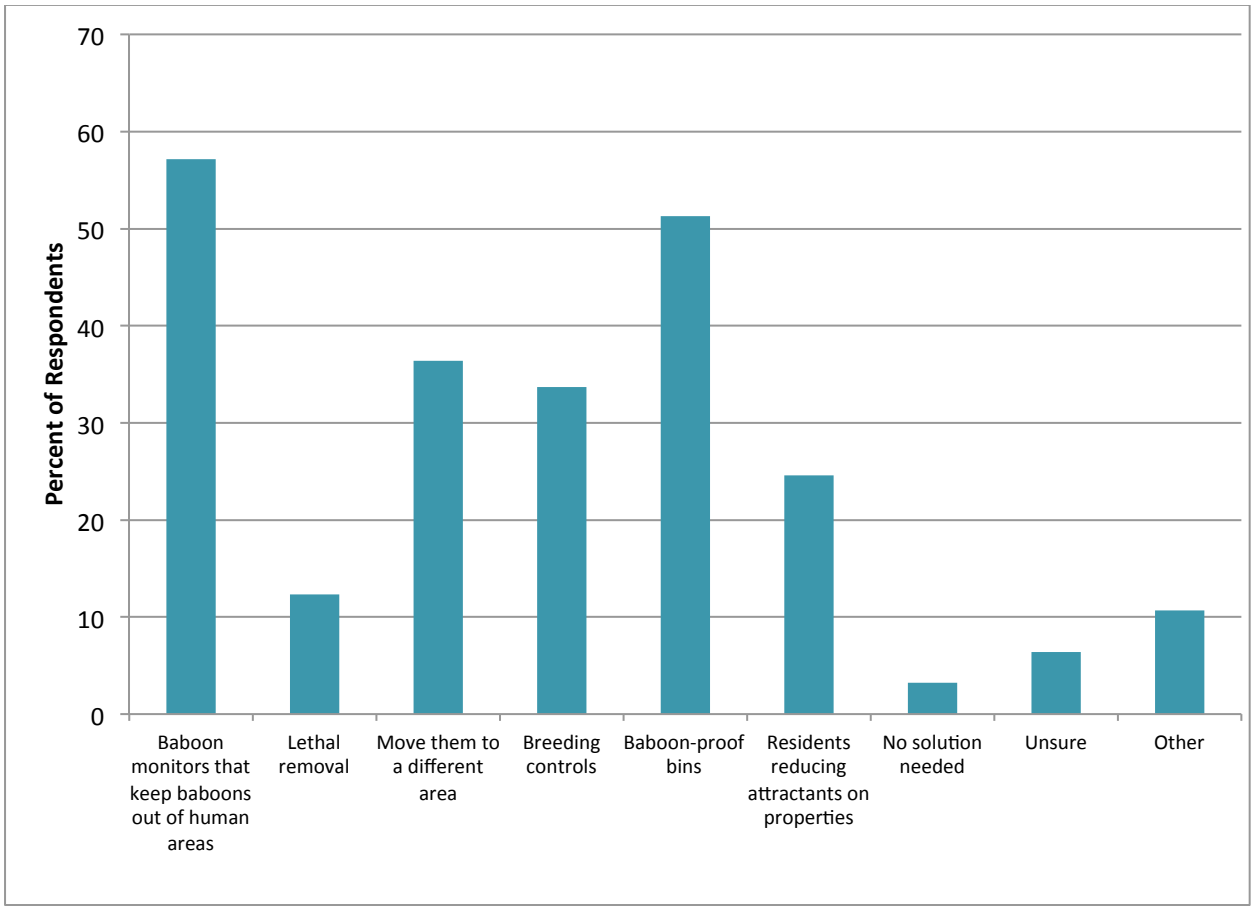


Figure 3.9 Solutions chosen by respondents to address the presence of baboons Knysna's suburbs. Respondents could select more than one answer.

Baboon monitors were the most frequently selected choice by residents. No significant relationship was found between the support for baboon monitors and the degree to which respondents were concerned with the conservation of the baboons (X_2=5.621, df=2, n=187, p=0.060). The majority (51.4%, n=55) of people who chose baboon monitors expressed concern about the baboons' conservation, while those that were not concerned and those that were highly concerned each made up the remaining 24.3% (n=26). No significant relationship was also found between the choice for baboon monitors and whether respondents had baboons on their property (X_2=0.037, df=1, n=187, p=0.847). 56.8% (n=83) of residents who experience baboons on their property and 58.5% (n=24) of residents without baboons both chose baboon monitors as a potential solution.

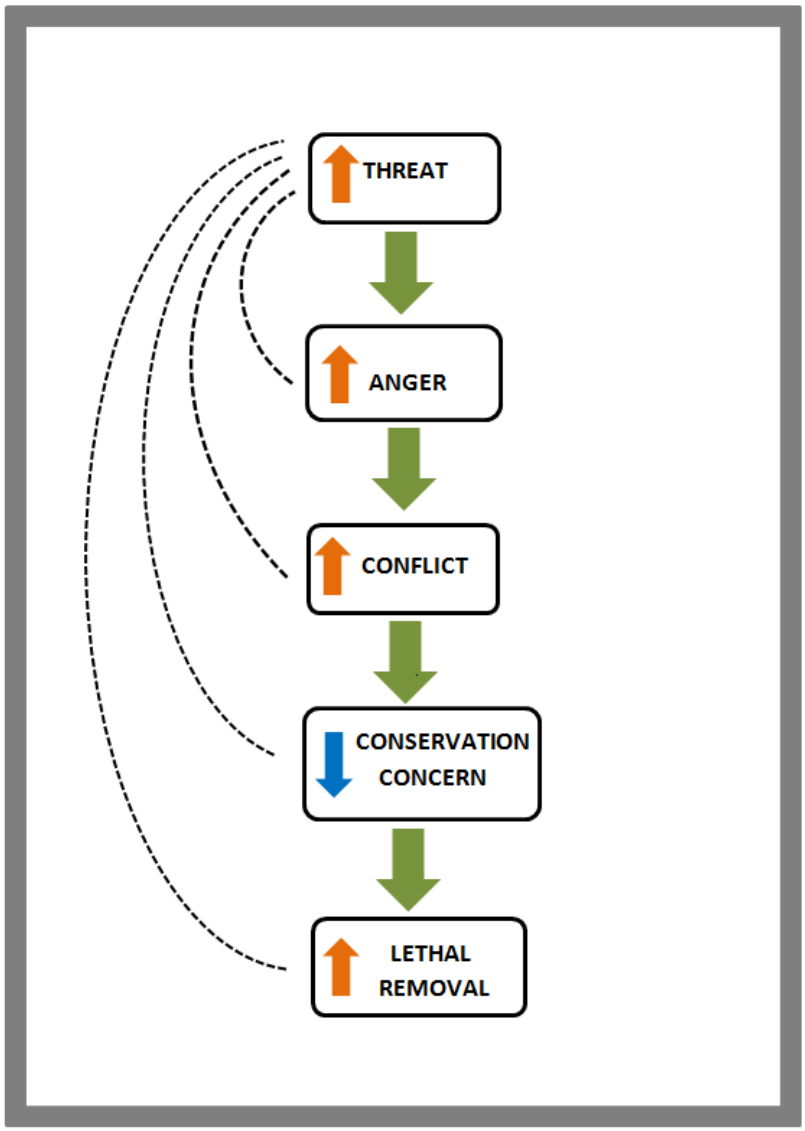


Figure 4.0 Model of order and significant relationships between factors analysed in this study (X_2 tests). Orange arrows indicate an increase in the factor and blue arrows indicate a decrease. Green arrows indicate statistical significance and factor order. Dashed lines indicate significant relationships between factors ($p<0.05$).

CHAPTER 4: DISCUSSION

4.1 Threat

4.1.1 What contributes to the perception of threat?

Data indicates that over half of respondents that have had baboons on their properties consider them a moderate or extreme threat. Fear, or "threat" as it is termed in this study, is considered to be one of humankinds' most basic emotions based in deep evolutionary origin, which reflects the world as a dangerous place to inhabit and thus motivates our survival (Lewis et al., 2008). The ability to identify and avoid danger is necessary to our survival, and the survival of all living things (Slovic, 1987). How threat is perceived, defined and responded to, is a process that is likely to vary by individuals based on role in society, culture and previous experience, among many other aspects. This chapter examines some of the key components of the perception of threat for residents with baboons on their properties.

4.1.2 Baboon Behaviour on Resident Properties

Human versus baboon "territory" was a common thread of discussion throughout the interview and questionnaire process. Permissible areas for baboons to traverse within the suburbs varied greatly amongst interviewed individuals. Unsurprisingly perhaps, none of the interviewed residents or questionnaire respondents believed it was acceptable for a baboon to enter their homes. Questionnaire data indicates that baboons entering peoples' homes were significantly related to their perceived level of threat. Baboons entering homes was frequently described as an "invasion" of personal space or "territory", during interviews. Baboons were often depicted as "renegades" or "thieves" suggesting that the presence of baboons in resident homes disrupted the idea of the home as a safe, secure, human territory. A study on the presence of macaques (*Macaca fascicularis*) in Singapore states that urban residents were also likely to label macaques as "thieves" or "aggressors" after they had entered their homes (Yeo and Neo, 2010). This violation of personal territory and subsequent fear is also seen in human-human conflict. In a psychological study on the experiences of home burglary victims, severe forms of territorial violation such as ransacking of the home, a situation frequently described by residents that have had baboons in their homes, led to a lower long-term sense of security (Brown and Harris, 1989).

Data was then examined to determine whether residents who have baboons 'passing through their properties' associated them with similarly high levels of threat. Data does not indicate a significant relationship between this behaviour and high levels of threat but insignificance was slight,

suggesting a tendency towards a relationship. It is difficult however, to determine whether the basic presence of the baboons is enough to elicit fear or whether the baboons passing through resident properties elicits anxiety that the baboons may attempt to enter homes while passing through. A difference in response to wildlife within different settings was examined in a study on publics' attitudes towards arthropods inside and outside of their homes. In a survey of over 1000 people, nearly 90% of respondents were fearful of arthropods inside their homes and while just over half of them expressed fear of arthropods outside of their home, illustrating that perception of threat associated with wildlife can change dependent on location (Bryne et al., 1984). Assessing perceived threat based on baboon activity is complicated by the fact that respondents could select any or all of the activities listed in the questionnaire, as well as list their own. Therefore, perceived threat may be a result of one or all activities that baboons partake in on resident properties and these activities may weigh heavily or very little when compared to other contributors to threat.

4.1.3 Personal Safety

Perceived risk associated with wildlife may be at its highest when personal safety is involved, even if the likelihood of an actual attack is low (Riley and Decker, 2000). Nearly half of questionnaire respondents stated that they feel baboons are a threat to their personal safety. More specifically, interviewed individuals expressed a fear of being trapped in their house with a baboon. Two interviewed residents stated they had shot adult male baboons that were cornered inside their homes out of fear, further stating that they would do the same in the future to protect their homes and families. None of the interviewed residents stated that they had direct conflict with baboons resulting in physical injury, including in the two instances mentioned above. This indicates that the perception of threat, even in the absence of physical injurious encounters, is great enough to constitute an actual threat and weighs heavily for residents coexisting with baboons.

4.1.4 Children

A small percentage of questionnaire respondents listed that baboons are a threat to their children. Literature suggests that risks to children from wildlife are often considered to provoke the greatest concern, relating to the fact that children are less likely to accurately evaluate risk (Gehrt et al., 2010). However, Knysna is a favoured retirement location. Nearly 70% of questionnaire respondents were over the age of 45 and may be less likely to have small children residing in their homes. Very few of the interviewees had children living with them. Of those that did, interviewees expressed more concern for infants or very young children.

4.1.5 Women

This study did not address differences in perceived level of threat in relation to respondent gender. However, a small portion of questionnaire respondents specifically expressed a particular threat to women. Despite not being addressed directly in the questionnaire, the majority of female interviewees stated that baboons readily discriminate between themselves and the adult men in the household. They further stated that the baboons are less likely to respond to their deterrent efforts and more likely to act aggressively towards them in comparison to the adult men in the household. One of the interviewees stated that she believed her home is specifically targeted by baboons because she lives alone. The municipal representative of Knysna that receives complaints about baboons stated that he often receives phone calls from individuals concerned about the threat baboons pose to women and young girls residing in areas of baboon presence. Discriminatory risks from wildlife and intensified perception of threat by women and towards women is commonly mentioned in human-wildlife conflict literature for various species of wildlife (Gore et al., 2012; Kideghesho et al., 2007; Hill, 1998). Future research should address the differences or similarities in the perception of threat from baboons between genders.

4.1.6 Injury to Pets

Over half of the questionnaire respondents stated that they feel baboons are a threat to their pets. Interviewees that were asked to elaborate stated that they are most fearful for their pets' safety when cornered by baboons within their home. Dogs are very popular pets in South Africa (Odendaal, 1994) and nearly every resident interviewed had at least one dog in their home. Unsolicited, stories of injuries to dogs were frequently mentioned during the interview process. When solicited, the risk of injury to pets often provoked a degree of anxiety in the participants.

4.1.7 Damage to material property

Questionnaire respondents also defined threat as damage to material property both inside and outside of their homes, though it was not as commonly reported as the threat to personal safety. Questionnaire and interview participants stated that they felt their homes were at risk when the baboons climbed on them. Interviewed individuals frequently mentioned the cost of property damage to their roofs, gutters, telephone and cable lines. In extreme cases damage amounted to over ZAR 35,000(~1,975GBP). Damage to material property was a highly provoking issue for interviewees. Two interviewees from areas that baboons frequently visit were attempting to sell their properties during the study period as a result of sustaining continued damage to their homes.

Damage to material property is linked to perceived threat and is likely to significantly contribute to negative perceptions of baboons.

4.2 What other factors are likely to contribute to threat perception?

Slovic (1987) defines several factors that are likely to increase the perception of risk. For instance, whether the risk is unfamiliar or unpredictable is likely to contribute to risk perception.

4.2.1 Familiarity

Familiarity in this case can be linked to knowledge about baboon behaviour. Though not assessed in questionnaires, it was highly evident during the interview process that residents and other local stakeholders are lacking education on basic baboon behaviour and furthermore awareness on how to avoid physical and psychological conflict with baboons. At the conclusion of the interview process, the vast majority of interviewees, regardless of their attitude towards baboons, took the opportunity to ask questions about baboon behaviour and ecology. These questions ranged from gestation length and sleeping habits, communicative sounds and mother-infant relationships, to natural diet and length of daily travel, indicating a desire to better understand their baboon neighbours. Knowledge of even essential behaviour of conflict species is likely to decrease the feeling of the unknown thereby decreasing the perception of threat (Dickman, 2010; Slovic, 1987). Residents are likely to collect information about baboons from neighbours, friends, family, the internet and newspapers.

4.2.2 Media

The mass media endorses views about many types of environmental information and thus plays a substantial role in generating perceptions of suburban wildlife problems (Loker et al., 1999). While the exact mechanism of information-seeking in Knysna residents regarding baboons was not addressed in this study, nearly all questionnaire respondents stated that they were aware of the issues with baboons in Cape Town, a city characteristically labelled by local and international media as sustaining volatile human-baboon conflict. Studies have shown that media coverage of negative interactions with urban dwelling carnivores may amplify the perception of risk for residents (Gehrt et al., 2010; Gore and Knuth, 2009). Though it has not been studied, media sensationalism of the threats baboons pose to people is likely to come to the same conclusion. A Google internet search (Google, 2014) of the phrase “Cape Town baboons” showed baboons as “troublesome”, “burglars”, “kleptomaniacs”, “bandits” and “savages” that “ambush women” and “ransack properties” within the headlines of the first ten results of the web search.

A recent study in Cape Town indicates that residents are most likely to obtain information about

baboons from newspapers (Kaplan, 2013). Following this line of thinking, residents may seek information from Knysna's own local newspaper, the Knysna-Plett Herald (2014), where antagonistic language regarding baboons is often used.

> *"Bold and aggressive troops of baboons are invading Knysna homes, destroying property and causing widespread fear amongst residents. They use more destructive techniques – breaking windows, killing domestic animals and staring down even adult men….. That baboons become increasingly destructive and dangerous when in conflict with humans is well-documented, particularly within the Cape Town area."*

The media is saturated with the use of war-like terms to describe interactions between humans and baboons. This reinforcement of fear and general negative focus is likely to contribute to the vast majority of the population's perception of baboons, regardless of whether or not they live alongside them.

4.2.3 Unpredictability

Data suggest that baboons are equally likely to visit resident properties during any month of the year. Furthermore, the majority of questionnaire respondents expressed that there was not a specific time of day that baboons visit their properties. The majority of individuals who listed the baboons as a threat also reported that there was not a specific time of day that the baboons visited their properties. Adding to the unpredictability of visits from baboons, many interviewees stated that baboons have entered their homes regardless of whether they are present or absent, creating significant anxiety that they could be "targeted" at any time. Several residents mentioned that while they were unable to predict it, baboons appeared to "have a plan" to gain access to homes that was organized and premeditated. While many residents stated they were frequently made aware that baboons are present by the barking of the neighbourhood dogs, their exact location was only approximate due to the splitting of the troop into smaller foraging parties, giving residents a sense that they could be coming from any direction. Finally, as a result of the troop splitting into smaller foraging parties and decreased visibility in the suburbs due to property fencing and thick vegetation, residents could never predict exactly how many baboons may be around at any given time.

4.2.4 Threat final statement

Risk perception is a broad cognitive process influenced by countless interconnected features (Slovic, 1987). Due to its multifaceted nature, it would be impossible to investigate and address all aspects of residents' threat perception regarding baboons. When interviewees were asked why they feel baboons are threatening, several individuals simply stated "because they are". This indicates that risk

perception is a markedly intuitive process that may not be readily defined to another individual and perhaps in some cases, not even to oneself (Slovic, 1987). While the factors which contribute to the perception of threat are extremely important to understand particularly for management and education schemes, studies indicate that regardless of their origin, high levels of threat can significantly impact attitudes towards wildlife (Gehrt et al., 2010; Decker et al., 2002; Kellert, 1985).

4.3 Attitudes and Conflict

Lazarus, 1991, defines anger as "a person's response to a threat or the perception of a threat against an individual or group. The types of threats that tend to trigger an anger response are broad in scope and include both physical threats and psychological threats, or threats to a person's pride or dignity." Negative attitudes towards baboons in this study were significantly correlated with high perceived levels of threat from baboons. Therefore, anything previously described that residents consider threatening will be likely to contribute to negative attitudes towards baboons and thus consider their presence a problem. Most importantly, a strong relationship between attitudes and whether baboons have been in the respondent's home was shown. The majority of respondents with baboons on their properties described themselves as angry. Interviewees frequently described baboons entering their residences as their "tipping point" to anger. This indicates that that the entrance into homes plays a significant role in determining resident attitudes towards baboons (see Section 4.1.2 and 4.1.7)

4.3.1 Lack of Control

One of the factors that is likely to facilitate negative attitudes towards baboons is residents' lack of control over the wildlife conflict situation (Gehrt et al., 2010). In interviews,
individuals identified control, or lack of control, over the situation in various different contexts. A "sense of control" was referenced in relation to both deterrent strategies and safeguarding techniques used by several interviewed residents. Data shows a significant relationship between higher levels of perceived threat and the likelihood that residents deter baboons from their properties. Johansson (2009) posits that the sudden appearance of wildlife within human-dominated areas causes people to lose control over the contents and activities of that space. In an effort to regain control of their space, people usually respond immediately by chasing the animal away. Numerous interviewed individuals stated that their deterrents did not keep the baboons from coming back, but still led them to feel "empowered" in defending their properties. At a baboon management forum attended by the researcher in a neighbouring town, a key stakeholder corroborated this by stating that the psychological control for the residents with paintball guns appeared to be more

important to them than the actual effects the guns have on the baboons because of the sense of power it offered them. On the contrary however, safeguarding of the home was seen from a different perspective. The majority of interviewed residents stated that having to safeguard their homes in the form of burglar bars over windows or routinely keeping windows closed, forced them to be "prisoners" in their homes and made them feel that the baboons had control of their lives. In many cases, individuals referred to "being made a prisoner by wild animals" as "unfair" and "outrageous". Interviewees frequently mentioned their frustration and resentment associated with having to change their daily lives or discontinue hobbies because of the baboons. One resident living in a suburb with baboons stated,

"I have had to change my entire life. That's what upsets me the most. I've been here for 36 years. Up until about two or three years ago I could plant whatever I wanted in my garden. Now there is no point. The baboons come and rip up everything; sometimes they don't even eat it, they just destroy it. We can't even leave the doors or windows open during summer. It's just ridiculous that wild animals are forcing me to live a certain way."

Another resident from the same suburb stated,

"I hate them [baboons]. I have had to change my life because of them. I can't garden the way I want to… I can't live the way I want to."

The vast majority of the interviewed residents also expressed that they felt they had limited control over the situation because they believed the municipality had not addressed their concerns or shown responsibility for protecting its residents against destructive and potentially dangerous, wild animals. Data shows that individuals who indicated high levels of perceived threat and associated feelings of anger were significantly more likely to list the municipality as a responsible party for baboon management. This finding is evidence of potential human-human conflict, which often plays a role in human-wildlife conflict (DeStefano and Deblinger, 2005; Hill, 2004). During several interviews, some residents stated they were angrier about the lack of support from the municipality than about the baboons themselves.

"I've filed many complaints to the municipality. I used to send them emails every time the baboons came to my house and caused a problem. They don't say or do anything. They've never even come to my property to see the issues they cause."

It is worth noting that individuals living within a suburb with a homeowner's association, and therefore private management that handle complaints regarding baboons, were less likely to discuss the municipality's lack of responsibility at length. Data show that the majority of questionnaire respondents living in suburbs without a homeowners association listed the municipality as a responsible party, while the majority of respondents that lived in suburbs with homeowners associations did not. This is most likely due to the fact that their concerns were being addressed and a sense of safety was established. Bruskotter and Wilson (2013) state that resident trust in wildlife management can reduce levels of perceived threat and lead to decreased hostility towards wildlife.

4.3.2 Does the length time baboons have been visiting matter?

In studies focused on urban carnivores, conflicting evidence is found to determine whether the length of time urban dwelling carnivores have been living near residents affect their attitude towards and perception of threat associated with carnivores. One study indicates that people's attitudes towards carnivores become less negative over time due to decreased risk perception as a result of increased experience with and knowledge about them (Zimmerman et al., 2001). A similar study showed that attitudes and perception of threat may remain constant or even decrease over time (Ericsson and Heberlein, 2003). No significant relationship between attitudes toward baboons and length of time they have been visiting has been shown in this study. Representing Zimmerman et al.'s study, a resident living in Pezula Golf Estate that has had baboons on her property for the past 5 years stated in an interview that when the baboons first started visiting her property she was not fond of them but over time she began to accept their presence and now enjoys watching the "family behaviour" of the baboons. She stated that there was a "shock period" to adjusting to their presence. In support of Ericsson and Heberlein's study that attitudes may remain constant over time, interviewed individuals that said they were pleased with the baboons' presence stated that they have always been pleased. Contrary to this, a large proportion of interviewed residents stated that they believe the frequency of baboon presence has intensified over the past two years, leading many of them to change their previous neutral attitude towards baboons to negative. It is important to note that the majority of questionnaire respondents stated that baboons have been visiting their properties for under two years, indicating that the presence of baboons, and so the possibility for conflict, is recent. Therefore, these data are limited in extrapolating how attitudes towards baboons may change over time and additional research is needed to determine if a significant relationship exists. Based on prior studies, it can be predicted that due to the unpredictability of baboon visits and the high levels of threat associated with them, habituation to their presence based solely on length of time is improbable (Kaltenborn et al., 2006; Atkinson et al., 1993). This is also significantly less likely

as baboons become more habituated to the presence of people and exploiting human resources over time, increasing the potential for direct conflict with people (Kamal et al., 1997; Fa 1992; Brennan et al., 1985).

4.4 How do residents without baboons on their properties perceive the conflict?

Questionnaire data indicates that nearly 80% of respondents have had baboons on their properties and nearly 85% of them consider the baboons either a problem or a major problem. Surprisingly, of the individuals who have not had baboons on their properties, 83% of them still consider the baboons a problem or a major problem. This evidence suggests that the perception of threat is not limited to residents coexisting with baboons on their properties and that other factors, in addition to threat, may lead residents to believe the presence of baboons is a problem. One of the factors contributing to why respondents believe baboons are a problem, despite not having them on their properties, may be related to the basic location of their residence within a suburb where baboons are present. The very potential for baboons to visit a property is likely to create unease leading residents to believe their presence is a problem. This is shown by the data that nearly a quarter of respondents living in suburbs where baboons are frequently present (north-west and south-east sectors) safeguarded their homes against baboons despite reporting that baboons had never been on their properties.

It must be considered that the daily lives of residents who do not have baboons on their properties, but do within their suburbs, may still be affected by their presence, when walking their dogs, as mentioned during an interview. Similarly, residents from suburbs where there are no known baboons may also partake in recreational activities in suburbs where baboons are found, likewise leading them to perceive the baboons as a threat and a problem. Baboons do not visit Thesen Island and Leisure Isle due to their geographic location within the Knysna estuary. Despite this, 86% of residents from these areas believed the presence of baboons in Knysna's suburbs were a problem or a major problem. Two women living on Leisure Isle reported that they ceased their daily walks in Hunters Home because they were concerned about being harassed or threatened by the baboons.

Another factor is neighbourhood hearsay, which may instil fear and create negative attitudes towards baboons even for residents without baboons on their properties.

Individuals without strong prior opinions, as may be the case for individuals not experiencing direct issues with baboons, are likely to uphold the viewpoint most frequently or firmly presented to them (Slovic, 1987). Yeo and Neo (2010) found that for residents living in suburbs, their understanding of the issues with macaques were influenced in part by the sharing of others' experiences or

encounters with macaques. Additionally, as previously touched upon, the media can significantly guide people's knowledge of, perceptions of, attitudes and behaviour towards an issue whether or not it directly affects them (see Section 4.2.2). It is clear therefore, that the perception of threat and resultant negative attitudes toward baboons expand beyond the scope of directly living alongside them and rather stretch further to suggest a fundamental problem with the very presence of baboons within a human-dominated environment.

4.5 What is at the root of the conflict?

It is theorized that the concept of human-wildlife conflict stems from a fundamental social belief that humans and wildlife are meant to exist in separate settings (Johansson, 2009; Whatmore and Thorne, 1998). This theory suggests that human-wildlife conflict will occur when wildlife crosses the perceived borderline into the human realm. Wildlife is then considered 'out of place', in that it is located in a space where it should not be according to such human criteria as public opinion, tradition or custom (Johannson, 2009; Knight, 2000). Wildlife will inevitably be seen more frequently in rural settings and is likely to be customary due to its location within a wild area. The presence of wildlife within suburban settings is likely to present a much starker contrast due to resident isolation from the natural world.

Whether residents believed baboons are profoundly 'out of place' in Knysna's suburbs was directly addressed by the phrasing of the questionnaire question, "Do you consider the presence of baboons in Knysna's suburbs to be a problem?". This question was targeted at all respondents regardless of whether they have baboons on their properties or not. The majority of respondents labelled the presence of baboons within the suburbs as a problem. Additionally, this point of view held true for all interviewees independent of their attitudes towards baboons. Therefore, it can be deduced that the mere presence of baboons in Knysna's suburbs as problematic is a socially accepted norm at the core of existing conflict. This social understanding of environmental order labels baboons as intruders trespassing on human spaces uninvited (Johansson, 2009; Knight 2000). Furthermore, any action that the baboons take, or threats they pose within the suburbs, will only serve to significantly amplify a conflict that fundamentally already exists. The theory that the presence of baboons is the root of the problem is further supported by the fact that the respondents selected 'baboon monitors that keep baboons out of human areas' more frequently than any other suggested solution to the presence of baboons, within the questionnaire. This held true independent of the presence of baboons on residents' properties or the varying degrees of concern for their conservation. This demonstrates that returning baboons to the areas where they do 'belong' according to societal norm, is not only most supported by residents, but is also most likely to solve the true conflict if successful.

4.6 How do negative attitudes affect conservation interest for Knysna's suburban dwelling baboons?

Despite the presence of baboons in Knysna's suburbs being labelled a problem by the majority of respondents, the vast majority of those respondents are still concerned about the conservation of baboons. While a significant relationship exists between the degree to which residents consider the baboons a problem and their concern for conservation, it is important to specifically evaluate resident attitudes towards coexisting with baboons and the impact it has on resident concern for baboon conservation. These data show a significant correlation between negative attitudes and lack of concern for baboon conservation. The majority of respondents who stated they were 'angry' were unconcerned with the conservation of baboons. In significant contrast, over 70% of individuals from all other attitudes towards baboons supported conservation, most notably "pleased" individuals who selected highly concerned in every case. Recall that high perceived levels of threat associated with living alongside baboons has been shown to foresee negative attitudes towards baboons in this study. Residents that are highly impacted by the presence of baboons are more likely to hold negative attitudes towards baboons and their conservation, than individuals that are less affected, i.e. people who do not have baboons on their properties. Resident concern for conservation is therefore dependent on the severity of the conflict they experience, perceive or anticipate as a result of living with baboons.

Residents that held negative attitudes towards baboons, and a subsequent disinterest in their conservation were also more likely to support lethal removal of baboons as a management solution. Furthermore, individuals who felt angry represented the majority of proponents for lethal removal, indicating that a lack of concern for baboon conservation, as a result of anger and the factors that shaped it, leads to support for lethal removal. Similar conclusions have been drawn in numerous studies for different types of wildlife (Kaltenborn et al., 2006; Wittmann et al., 1998; Hill, 1998). This finding indicates the importance of addressing the issues baboons pose for residents living in conflict with them. It must be noted that the 'lethal removal' solution was specifically phrased to assess whether residents would like permission to lethally remove baboons from their properties themselves. It can be anticipated that the residents who selected this option have reached the threshold of their tolerance for baboon conflict, increasing their willingness to behave retributively (Liu et al., 2011). In Cape Town, conflict with baboons has led to high levels of baboon mortality and injury (Beamish, 2009). Therefore, if the management of Knysna's suburban baboon issues is meant

to provide sustainable, conservation-based solutions, all attempts must be made to reduce and prevent negative attitudes towards baboons, which negatively impact baboon conservation.

4.7 Is there hope for Knysna's baboons?

Knysna is in a state of relatively new, but increasing, conflict with baboons. Just over a quarter of Knysna's residents that coexist with baboons consider themselves angry about their presence on their properties. Slightly over half of these same respondents are unconcerned with the baboons' conservation and fewer still are proponents of lethal removal. While these viewpoints on baboons in Knysna's suburbs are highly important for understanding the existing conflict, the relatively low percentages of respondents that hold these views is encouraging and suggest that harmonious coexistence between Knysna's residents and baboons is possible. That being said, intervention and management is urgently required, which addresses the human dimension of the conflict as well as the direct management of baboons. This is particularly important in the face of the extreme adaptability baboons exhibit in human-dominated landscapes, which predict that conflict has the potential to escalate rapidly.

4.8 Conclusions

The respondents in this study define Knysna as an area of human-baboon conflict. The defining principle of conflict for Knysna's residents appears to centre on baboons as entities that are 'out of place' in the suburbs. This conflict is amplified for residents living in overlap with baboons. Visits from baboons are perceived as threatening, unpredictable and uncontrollable. Perception of threat has been shown to play a pivotal role in creating negative attitudes towards baboons. Though perception of threat for individuals not sharing their properties with baboons was not assessed in this study, public opinion and mass media are likely to create preconceived notions of threat associated with baboons. Residents holding negative attitudes towards baboons have shown a decrease in support for local baboon conservation and the advocacy for their lethal removal. Understanding this perspective is extremely important, not only for the affected individuals whose needs must be addressed, but also to learn how residents can be prevented from reaching this point.

Each of the factors discussed in this study play a part in the complex matrix of the human dimension of human-baboon conflict in Knysna. This study illustrates the importance of considering insight into the human dimension, which provides the opportunity to foster coexistence between humans and wildlife, rather than focusing solely on mitigating conflict. Furthermore, this study has significant implications not only for the human-baboon interface in the suburbs of Knysna, but also for emerging suburbs throughout South Africa.

4.9 Notes and recommendations

During the research period, the researcher worked closely with the Director of the Knysna Baboon Action Group to promote a baboon management plan for Knysna. This plan was submitted to the municipal council and has since been approved. Once implemented, this program will include baboon monitors, an SMS alert system, an education program for residents and baboon proof bins (Appendix F). The findings of this study have been submitted to the Knysna Municipality and the Knysna Baboon Action Group to provide information on residents' perceptions of the conflict. This study supports the two main management solutions, baboon monitors and baboon proof bins, which were selected by the majority of questionnaire respondents. These solutions are specifically targeted to the public's interests, and therefore acceptance and support for the management plan by residents is predicted to be optimistic.

The education program suggested in the baboon management plan must inform residents about baboon ecology, behaviour, how they may conflict with humans and how to prevent such conflict. Though it may appear obvious, all members of management should be educated on these topics as well, in addition to being informed of the publics' perceptions, which this study presents. It must be noted that the perception of threat will not simply disappear in the presence of evidence or education. The goal of management should be to prevent the perception of threat and subsequent negative perceptions of baboons. This will present challenges especially in the face of negative attitudes towards baboons in the media, which should instead focus on presenting neutral and factually accurate depictions of baboons, particularly on the local scale. An interview with the researcher was featured on
the front page of the Knysna-Plett Herald newspaper during the study period where initial findings, baboon behaviour and common myths are discussed (Appendix E). The researcher received many positive emails from Knysna residents in response to this article and more articles of this nature should be the focus of local newspapers.

Future land transformation decisions must be made with the knowledge that baboon troops exist in the area. Municipal land development plans exist that designate areas of surrounding forest in north-west and south-east Knysna as areas of future development.
These two areas lie within the two areas where baboon troops are frequently seen and reducing additional natural habitat will inevitably intensify conflict by forcing increased contact between residents and baboons. Therefore, sufficient baboon management must be in place before land development commences.

Developing sustainable solutions to promoting human-baboon coexistence must be a priority for the Knysna municipality, particularly due to their location within a world- renowned national park. The fact that Knysna is currently in the beginning stages of human- baboon conflict presents management with a unique and important opportunity to act in a preventative manner, setting an example for urban and suburban areas throughout South Africa. The Knysna municipality mission statement reads, “Knysna, where people and nature prosper”. Making all efforts to promote coexistence between residents and baboons in Knysna will reaffirm that declaration.

5.0 Recommendations for Future Research

1. In light of the recently approved Baboon Management Plan, follow up research on the human dimension should be conducted on the perceived effectiveness and acceptance of the selected management techniques for residents. The research should investigate whether there is a shift in attitudes towards baboons once a management plan has been put in place, including the effects of the educational program. All findings should be used to inform the managing bodies on the overall success and progress of the management plan.

2. Studies that address basic information about the behaviour and ecology of the baboon troops that live in and around Knysna are needed. Research should address home range size, use of human-dominated spaces, population census, rate of reproduction, survival rate, causes of mortality, and an assessment of the availability of wild foods in the remaining natural environment. This research will contribute to the limited available literature on suburban-dwelling baboons and should also be used to inform future management decisions.

3. Research that assesses the impacts the mass media have on the perception of baboons is urgently needed. In the researcher’s personal observations, the depiction of baboons as aggressive, havoc-wrecking animals is upheld even by individuals living in countries far from baboon range states. This perception is may be detrimental to conflict prevention and resolution in range states and may dissuade international interest in baboon conservation.

REFERENCES

Anderson, A., Lindell, C. A., Moxcey, K. M., Siemer, W. F., Linz, G. M., Curtis, P. D., Carroll, J.E., Burrow, C.L., Boulanger, J.R., Steensma, K.M.M., and Shwiff, S.A. (2013) Bird damage to select fruit crops: The cost of damage and the benefits of control in five states. *Crop Protection*, *52*: 103-109.

Atkinson, R., Atkinson, R.C., Smith, E.E. & Bem, D.J. (1993) *Introduction to psychology* (11th Ed.) Hartcourt Brace Jovanovich, San Diego, USA.

Bangs, E.E., and Shivik, J. (2001) Managing wolf conflict with livestock in the Northwestern United States. *Carnivore Damage Prevention News*, 3:2-5.

Bardner, R., and Fletcher, K. E. (1974) Insect infestations and their effects on the growth and yield of field crops: a review. *Bulletin of entomological research*,*64*(1): 141-160.

Beamish, E. (2009). *Causes and consequences of mortality and mutilation in the Cape Peninsula baboon population, South Africa*. MSc Thesis. University of Cape Town.

Biodiversity GIS (2007) *Municipal Biodiversity Summaries*. [Online]. Available at: http://bgis.sanbi.org/municipalities/project.asp, [Accessed 23 August 2014].

Biquand, S., Boug, A., Biquand-Guyot, V. and Gautier, J.P. (1994) Management of commensal baboons in Saudi Arabia. *Rev. Ecol. (Terre Vie)*, 49 : 213-222.

Brennan, E.J., Else, J.G. & Altmann, J. (1985) Ecology and behaviour of a pest primate: vervet monkeys in a tourist-lodge habitat. *African Journal of Ecology,* 23: 35-44.

Brown, B.B and Harris, P.B. (1989) Residential burglary victimization: reactions to the invasion of a primary territory. *Journal of Environmental Psychology* 9(2): 119-132.

Bruskotter, J. T., & Wilson, R. S. (2013) Determining where the wild things will be: using psychological theory to find tolerance for large carnivores. *Conservation Letters,* pp.1-8

Bryne, D.N., Carpenter, E.H., Thoms E.M. & Cotty, S.T. (1984) Public attitudes towards urban arthropods. Bulletin of the ESA, 30(2):40-45.

Butler, J. R. A. (2000) The economic costs of wildlife predation on livestock in Gokwe communal land, Zimbabwe. *African journal of Ecology*, *38*(1): 23-30.

Campbell-Smith, G., Simanjorang, H.V.P., Leaders-Williams, N., and Linkie, M. (2010) Local attitudes and perceptions towards crop-raiding by orangutans (*Pongo abelii*) and other nonhuman primates in Northern Sumatra, Indonesia. *American Journal of Primatology,* 72: 866-876.

Conover, M. R. (1998) Perceptions of American agricultural producers about wildlife on their farms and ranches. *Wildlife Society Bulletin*, 597-604.

Conover, M. R. (2001). *Resolving human-wildlife conflicts: the science of wildlife damage management*. CRC press. Boca Raton, USA.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1977)

Baboons. [Online]. Available at: http://www.cites.org/eng/gallery/species/mammal/chacma_baboon.html, [Accessed 11 August 2014].

Decker, D. J., Lauber, T. B., and Siemer, W. F. (2002) *Human-wildlife conflict management: A practitioner's guide*. Northeast Wildlife Damage Management Research and Outreach Cooperative.

DeStefano, S., and Deblinger, R.D. (2005) Wildlife as valuable natural resources vs. intolerable pests: a suburban wildlife management model. *Urban Ecosystems*, 8: 179-190.

De Vaus, D. A. (2002). *Surveys in social research*. Psychology Press, Australia.

Dickman, A. J. (2010) Complexities of conflict: the importance of considering social factors for effectively resolving human–wildlife conflict. *Animal conservation*, *13*(5): 458-466.

Eggert, L. S., Patterson, G., & Maldonado, J. E. (2008) The Knysna elephants: a population study conducted using faecal DNA. *African Journal of Ecology*, *46*(1): 19-23.

Ellis, E. C., Klein Goldewijk, K., Siebert, S., Lightman, D., & Ramankutty, N. (2010). Anthropogenic transformation of the biomes, 1700 to 2000. *Global Ecology and Biogeography*, *19*(5): 589-606.

Else, J. (1991) Nonhuman primates as pests. In *Primate Responses to Environmental Change*. (Ed. H.O. Box) pp. 155–165. Chapman & Hall, London, UK.

Ericsson, G., & Heberlein, T. A. (2003) Attitudes of hunters, locals, and the general public in Sweden now that the wolves are back. *Biological conservation*, *111*(2): 149-159.

Fa, J.E. (1991) Provisioning of Barbary macaques on the Rock of Gibraltar. In Primate Responses to Environmental Change (ed. H.O.Box) pp. 155-165. Chapman and Hall, London, UK.

Fa, J. E. (1992) Visitor directed aggression among the Gibraltar macaques. *Zoo Biology*, 11: 42–52.

Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.

Fuentes, A., and Wolfe, L. D. (2002) *Primates face to face: conservation implications of human-nonhuman primate interconnections*. Cambridge University Press, Cambridge, UK.

Fuentes, A. and Hockings, K. (2010) The ethnoprimatological approach in primatology. *American Journal of Primatology*, 72(10): 841-847.

Gehrt, S. D., Riley, S. P., & Cypher, B. L. (Eds.). (2010) *Urban carnivores: ecology, conflict, and conservation*. JHU Press.

Google (2014) *"cape town baboons"*. [Online]. Available at: https://www.google.co.uk/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=cape+town+baboons, [Accessed 17 August 2014].

Gore, M. L., & Kahler, J. S. (2012) Gendered risk perceptions associated with human-wildlife conflict: implications for participatory conservation. *PloS one*,*7*(3).

Gore, M. L., & Knuth, B. A. (2009) Mass Media Effect on the Operating Environment of a Wildlife-Related Risk-Communication Campaign. *The Journal of Wildlife Management*, *73*(8): 1407-1413.

Hall-Martin, Anthony. (1980) Elephant Survivors. *Oryx*, 15(4): 355-362. Herrero, S.

(1985) *Bear Attacks*. (Ed. Nick Lyons), New York, USA.

Hill, C. M. (1998) Conflicting attitudes towards elephants around the Budongo Forest Reserve, Uganda. *Environmental Conservation*, *25*(03): 244-250

Hill, C.M. (2000) Conflict of interest between people and baboons: crop raiding in Uganda. *International Journal of Primatology*, 21(2): 299-315.

Hill, C.M. (2004) Farmers' perspectives of conflict at the wildlife-agricultural boundary: some lessons learn from African subsistence farmers. *Human Dimension of Wildlife*, 9: 279-286.

Hill, C. and Webber, A. (2010) Perceptions of nonhuman primates in human-wildlife conflict scenarios. *American Journal of Primatology*, 72(10): 919-924.

Hockings, K.J., Anderson, J.R. and Matsuzawa, T. (2009) Use of wild and cultivated foods by chimpanzees at Bossou, Republic of Guinea: feeding dynamics in a human-influenced environment. *American Journal of Primatology*, 71:636-646.

Hoffman, P.J. (1993). Major P.J. Pretorius and the decimation of the Addo elephant herd in 1919-1920: important reassessments. *Koedoe*, 36(2): 23-44.

Holloway, A., Fortune, G., Zweig, P., Barrett, L., Benjamin, A., Chasi, A. and de Waal, J. (2012) Eden and Central Karoo Drought Disaster, 2009-2011: "The Scramble for Water".
Stellenbosch University. Disaster Mitigation for Sustainable Livelihoods Programme.

The IUCN Red List of Threatened Species (2008) *Papio ursinus*. [Online]. Available at: http://www.iucnredlist.org/details/16022/0, [Accessed 11 August 2014].

Johansson, T. (2009) The Spatial Dimension of Human-Wildlife Conflicts–Discoveries of New Animal Geography. In *Donert K., Ari Y., Attard M., O'Reilly G. et Schmeinck D., Geographical Diversity.* Proceedings of the HERODOT Conference in Ayvalik, pp. 257-265.

Jun-Han Yeo & Harvey Neo (2010) Monkey business: human–animal conflicts in urban Singapore, *Social and Cultural Geography*, 11:7, 681-699.

Kaltenborn, B. R. P., Bjerke, T., & Nyahongo, J. (2006). Living with problem animals—Self- reported fear of potentially dangerous species in the Serengeti Region, Tanzania. *Human Dimensions of Wildlife*, *11*(6): 397-409.

Kansky, R. and Gaynor, D. (2000) Baboon Management Strategy for the Cape Peninsula. Final Report, Table Mountain Fund Project number ZA 568, Cape Town, South Africa.
Kaplan, B. (2013) *In pursuit of a panacea: mitigating human-baboon conflict in the Cape Peninsula, South Africa*. PhD Thesis. University of Cape Town.

Kamal, K. B., Boug, A., & Brain, P. F. (1997). Effects of food provisioning on the behaviour of commensal Hamadryas, baboons *Papio hamadryas*, at Al Hada Mountain in western Saudi Arabia. *Zoology in the Middle East*, 14: 11–22.

Kellert, S.R. (1985) Public perceptions of predators, particularly the wold and coyote. *Biological Conservation*, 31:167-189.

Kideghesho, J. R., Røskaft, E., & Kaltenborn, B. P. (2007) Factors influencing conservation attitudes of

local people in Western Serengeti, Tanzania. *Biodiversity and Conservation*, *16*(7): 2213-2230.

Knight, J. (Ed.). (2000) *Natural enemies: people-wildlife conflicts in anthropological perspective*. Psychology Press. Abingdon, UK.

Knowlton, F.F., Gese, E.M., & Jaeger, M.M. (1999) Coyote depredation control: an interface between biology and management. *Journal of Range Management*, 52:398-412.

Knysna-Plett Herald (2014) [Online] Available at: Knysnaplettherald.com, [Accessed 2 August 2014].

Lazarus, R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion. *American Psychologist*, 46: 819–834.

Lee, P. (2010) Sharing space: can ethnoprimatology contribute to the survival of nonhuman primates in human-dominated globalized landscapes? *American Journal of Primatology*, 72(10): 925-931.

Lee, P.C. and Priston, N.E.C. (2005) Human attitudes to primates: perception of pests, conflict and consequences for primate conservation. In *Commensalism and Conflict: The Human-Primate Interface* (Eds. J.D. Paterson and J.Wallis), pp.1-23. American Society of Primatology, Norman, Oklahoma, USA.

Lewis, M., Haviland-Jones, J. M., and Barrett, L. F. (2010) *Handbook of emotions*. pp.710, Guildford Press, New York, USA.

Liu, F., McShea, W. J., Garshelis, D. L., Zhu, X., Wang, D., & Shao, L. (2011). Human-wildlife conflicts influence attitudes but not necessarily behaviors: Factors driving the poaching of bears in China. *Biological Conservation*, *144*(1): 538-547.

Loker, C. A., Shanahan, J., & Decker, D. J. (1999) The mass media and stakeholders' beliefs about suburban wildlife. *Human Dimensions of Wildlife*,*4*(2): 7-26.

McDougal, C. (1991) Man-eaters. In *Great Cats: Majestic Creatures of the Wild.* (Eds. J. Seidensticker and S. Lumpkin) pp. 204-209. Rodale Press, Emmaus, Pennsylvania, USA

McKinney, T. (2011) The effects of provisioning and crop-raiding on the diet and foraging activities of human-commensal white-faced Capuchins (*Cebus capucinus*). *American Journal of Primatology*, *73*(5): 439-448.

McLennan, M. and Hill, C. (2012) Troublesome neighbours: changing attitudes towards chimpanzees (*Pan troglodytes*) in a human-dominated landscape in Uganda. *Journal for Nature Conservation,* 20(4): 219-227.

Nature Conservation. (1974) Nature and Environmental Conservation Ordinance No. 19 of 1974.

Naughton-Treves, L. (1998) Predicting patterns of crop damage by wildlife around Kibale National Park, Uganda. *Conservation Biology,* 12: 156–168.

Newing, H. (2011) *Conducting Research in Conservation: A Social Science Perspective*. Routledge, London, UK.

Odendaal, J. S. J. (1994) Demographics of companion animals in South Africa.*Journal of the South African Veterinary Association*, *65*(2): 67-72.

Orams, M.B. (2001) Feeding wildlife as a tourism attraction: a review of issues and impacts.

Tourism Management, 23: 281-293.

Osborn, F. V., and Hill, C. M. (2005) Techniques to reduce crop loss: human and technical dimensions in Africa. In *People and Wildlife: Conflict or Coexistence*? (Eds. R. Woodroffe, S. Thirgood & A. Rabinowitz), pp.72-85.

Peterson, M. N., Birckhead, J. L., Leong, K., Peterson, M. J., & Peterson, T. R. (2010). Rearticulating the myth of human–wildlife conflict. *Conservation Letters*, *3*(2): 74-82.

Pepeh K. (1996) A preliminary assessment of crop damage by wild animals in and around Gashaka Gumti National Park. Unpublished report to Nigerian Conservation Foundation, World Wildlife Fund and National Park Service.

Pimm S.L. and Raven, P. (2000) Biodiversity: Extinction by numbers. *Nature* 403: 843-845.

Priston, N. E., and McLennan, M. R. (2013) Managing Humans, Managing Macaques: Human–Macaque Conflict in Asia and Africa. In *The Macaque Connection* (pp. 225-250). Springer, New York, USA.

Riley, S. J., & Decker, D. J. (2000) Risk perception as a factor in wildlife stakeholder acceptance capacity for cougars in Montana. *Human Dimensions of Wildlife*, *5*(3): 50-62.

Siex, K. S., and Struhsaker, T. T. (1999) Colobus monkeys and coconuts: a study of perceived human–wildlife conflicts. *Journal of Applied Ecology*, *36*(6):1009-1020.

South African National Parks (2014) Garden Route National Park: State of Knowledge. South African National Parks unpublished report.

South African National Parks (SANParks) (2014) *Garden Route: Scientific Services*. [Online]. Available at: http://www.sanparks.org/conservation/scientific/coastal/state_of_knowledge.php, [Accessed 19 August 2014].

South African Weather Service (2014) *How are the dates of the four season worked out?* [Online]. Available at: http://www.weathersa.co.za/learning/weather-questions/82-how- are-the-dates-of-the-four-seasons-worked-out, [Accessed 2 August 2014].

Southwick, C., Malik, I., and Siddiqi, M. F. (2005) Rhesus commensalism in India: problems and prospects. In *Commensalism and Conflict: The Human-Primate Interface* (Eds. J.D. Paterson and J.Wallis), pp.1-23. American Society of Primatology, Norman, Oklahoma, USA.

Statistics South Africa (2014) *Municipalities* [Online]. Available at: statssa.gov.za, [Accessed 2 August 2014].

Sterling, E., Bynum, N., & Blair, M. (Eds.). (2013). *Primate Ecology and Conservation*. Oxford University Press. Oxford, UK.

Strum S.C. (1994) Prospects for management of primate pests. *Revue d'Ecologie (La Terre et la Vie)* 49: 295-306.

Strum, S. (2010) The development of primate raiding: implications for management and conservation. *International Journal of Primatology*, 31(1): 133-156.

Sukumar, R. (1990) Ecology of the African elephant in southern India. II. Feeding Habits and crop raiding patterns. *Journal of Tropical Ecology,* 6: 33-53.

Swaroop, S., and Grab, B. (1954) Snakebite mortality in the world. *Bulletin of the World Health Organization*, *10*(1): 35.

Swedell, L. (2011) African Papionins: diversity of social organization and ecological flexibility. In *Primates inPerspective 2*: 241–277. Campbell, C., Fuentes, A., MacKinnon, K., Panger, M. & Bearder, S. (Eds). Oxford University Press. Oxford, UK.

Thirgood, S., Woodroffe, R. and Rabinowitz, A. (2005) In *People and Wildlife: Conflict or Coexistence*? (Eds. R. Woodroffe, S. Thirgood & A. Rabinowitz), pp.13-26, Cambridge University Press, Cambridge, UK.

Tobin, Mark E. and Fall, Michael W., "PEST CONTROL: RODENTS" (2004). *USDA National Wildlife Research Center – Staff Publications.* Paper 67.

Turpie, J.K., Adams, J.B., Joubert, A., Harrison, T.D., Colloty, B.M., Maree, R.C., Whitfield, A.K.,Wooldrigde, T.H., Lamberth, SJ., Taljaard, S. and van Niekerk, L. (2002) Assessment of the conservation priority status of South African estuaries for use in management and water allocation. *Water SA* 28 (2): 191 - 206.
United Nations Population Fund (UNFPA) (2007) *State of World Population 2007: Unleashing the Potential of Urban Growth*. UNFPA, New York, USA.

van Doorn, A.C., O'Riain, M.J. and Swedell, L. (2010) The effects of extreme seasonality of climate and day length on the activity budget and diet of semi-commensal chacma baboons (*Papio ursinus*) in the Cape Peninsula of South Africa. *American Journal of Primatology*, 72: 104-112.

Vromans, D.C., Maree, K.S., Holness, S. and Job, N. and Brown, A.E. (2010) The Garden Route Biodiversity Sector Plan for the George, Knysna and Bitou Municipalities*. Supporting land-use planning and decision-making in Critical Biodiversity Areas and Ecological Support Areas for sustainable development.* Garden Route Initiative. South African National Parks. Knysna.

Whatmore, S., & Thorne, L. (1998). Wild (er) ness: reconfiguring the geographies of wildlife. *Transactions of the Institute of British Geographers*,*23*(4): 435-454.

Wittmann, K., Vaske, J. J., Manfredo, M. J., & Zinn, H. C. (1998). Standards for lethal response to problem urban wildlife. *Human Dimensions of Wildlife*, *3*(4): 29-48.

World Wildlife Fund (2014) Human-wildlife conflict. [Online]. Available at: http://wwf.panda.org/about_our_earth/species/problems/human_animal_conflict/, [Accessed 20, 2014].

Zimmermann, B., Wabakken, P., & Dötterer, M. (2001) Human-carnivore interactions in Norway: How does the re-appearance of large carnivores affect people's attitudes and levels of fear. *Forest Snow and Landscape Research*, *76*(1): 1-17.

APPENDICES

Appendix A: Ethics Form from Oxford Brookes University

Faculty Ethics form HSS.E2

Faculty of Humanities and Social Sciences

Application for ethics approval for a research project involving human participants

Undergraduates and Foundation Degree Students:
Before completing this form, the ethics review checklist (school form HSS.E1) should have been completed to establish whether this additional application for ethics approval is required. If ethics approval is required, you should complete this form, sign it and submit it to the Faculty Research Ethics Officer, Maggie Wilson at mvwilson@brookes.ac.uk. A decision form, E3 will then be returned to you by e-mail.

Master's Students:
You should complete this form before you start your project and submit it to your supervisor. If he or she is unable to sign it at this stage, the form will be referred to the Faculty Research Ethics Officer, as above, who may seek further information and clarification from you. A decision form, E3, will then be returned to you by e-mail.

All students should refer to the University Code of Practice on Ethical Standards for Research involving Human Participants, available at www.brookes.ac.uk/res/ethics and Faculty guidelines, which are included in the relevant on-line module or course handbook. You should bind a copy of the approved form in your final project or dissertation submission.

1.	Name of Principal Investigator (Student):	Joselyn Mormile
	E-mail address:	Joselyn.Mormile-2013@brookes.ac.uk
2.	Name of Supervisor and e-mail address:	Professor Kate Hill
	E-mail address:	cmhill@brookes.ac.uk
3.	Working Project Title:	An ethnoprimatological approach to assessing the human-baboon interface in Knysna, South Africa.
4.	Project Type (please specify course and give module number):	Master's project
		Master's dissertation MSc Primate Conservation
		Undergraduate project:
		Undergraduate dissertation:
		Foundation degree project:
5.	Background and rationale of proposed research:	Human–primate conflict is rapidly becoming an issue of concern in many countries. As a result of the transformation and destruction of non-

1

human primate ecosystems for various land uses, they are increasingly forced to live in closer proximity to, or even sympatrically with humans. Baboons, in particular, are highly adaptable, dietary generalists known to exploit human resources within their range. This flexibility has facilitated their vast range throughout most of sub-Saharan Africa. Despite the prevalence of baboons, human-baboon conflict research is a relatively new area of investigation. To date, the vast majority of this research focuses on areas of advanced conflict within agricultural settings. This study is one of the first of its kind to assess the human-baboon interface in a suburban setting prior to advanced conflict, allowing for the opportunity to construct appropriate preventative management. This project will assess measured versus perceived human-baboon conflict by utilizing an interdisciplinary approach within the emerging suburban communities of Knysna, South Africa. Behavioral and anthropological components will be combined to determine appropriate management strategies that aim to create an ecologically and socially sustainable balance between humans and baboons.

6. Methods of data collection:

(Please attach a copy of your draft questionnaire, interview schedule or observation guidelines)

Questionnaires and semi-structured qualitative interviews will be used to assess perceptions of baboons in Knysna. Prior to data collection, any individuals partaking in the interview or questionnaire process will be made aware of who I am, what my project is about and what involvement in my data collection process will entail. Informed consent from all participants will be given before any data collection takes place. Questionnaires will be developed in the field based on initial semi-structured interviews with a representative sample of the Knysna community. Questionnaires and interviews will avoid containing leading questions and words or phrases that naturally evoke a negative response. Questionnaires will contain both open-ended and closed questions to allow for maximum data collection both qualitatively and quantitatively. All people will be welcomed and encouraged to discuss any concerns or questions they might have in regards to this research.

7. Participants involved in the research:

Including source and method of recruitment)

The participants involved in this research, both through questionnaires and interviews, will include residents, baboon interest group members, municipal government members, lodge owners and tourists. Interviews will be conducted with individuals in a private location to protect anonymity. Questionnaires (approximately 5 minute length) will be distributed at store fronts i.e. grocery stores. Upon completion they will be folded and dropped into a box so that I will not be able to match the

		participant and their responses.
8.	Potential benefits of the proposed research:	Research will be used to add to the growing literature of the nature of human-baboon interactions, and perceptions of wildlife, specifically wildlife in anthropogenic environments. Any useful findings and recommendations will be shared with members of the Knysna Baboon Action Group and municipal government if such findings and recommendations can positively and actively assist in the management of baboons in Knysna.
9.	Potential adverse effects of the proposed research and steps to be taken to deal with them: (These could include possible psychological stress or anxiety)	The killing of baboons is not an illegal practice in Knysna, South Africa. No attempt will be made to obtain information regarding illegal practices. Furthermore, the anonymity of participants will be upheld at all times. In the event that a participant shares knowledge of the killing of baboons, this act will not be reported to management or government authorities.
10.	Plan for obtaining informed consent: (Please attach copy of information sheet and consent form) Note; consent forms are not needed for questionnaires	Each participant will know the details of the project in advance of filling out the questionnaires or participating in the interview process and can refuse to do so if he/she does not wish to participate. Any individuals partaking in the interview process will be asked to sign an informed consent form. (see attached)
11.	Steps to be taken to ensure confidentiality of data: (Please outline steps to be taken to ensure confidentiality, privacy and anonymity of data during collection, storage and publication of data)	The identity of interviewed individuals will be kept confidential and all identifying data kept in a secure, locked location to protect anonymity. Questionnaires will not contain any identifying information but will also be kept in a secure, locked location. The Oxford Brookes University Research Ethics Committee will review all relevant ethical aspects of my project. My project will adhere to the code of ethics set forth by the American Association of Anthropologists.

All materials submitted will be treated confidentially.

I have read and understood the University's Code of Practice on Ethical Standards for Research involving Human Participants

Signed: [signature] Principal Investigator /Student

Signed: E.M. Hill. Supervisor

Date: 24/4/2014

Appendix B: Questionnaire

Short Questionnaire about Baboons in Knysna

The information collected in this survey is for scientific study purposes of MSc student Joselyn Mormile from Oxford Brookes University and will be kept confidential. Please answer all the questions honestly.

1. In which residential Knysna suburb do you live?_____
2. How long have you lived in this suburb? _____
3. What is your age group?
   18-24 25-34 35-44 45-54 55-64 65-74 75+
4. Have you had baboons on your property? **YES NO (if NO, please skip to Question #13)**
5. Approximately how long ago did baboons start visiting your property?
   _____
6. What do baboons do on your property? ***Circle ALL that apply.***
   a. **Just passing through**
   b. **Resting**
   c. **Eating natural vegetation**
   d. **Eating exotic or nonindigenous vegetation (e.g. vegetable gardens, fruit trees)**
   e. **Entering your home**
   f. **Eating from rubbish bins**
   g. **Eating from compost areas**
   h. **I am unsure**
   i. **Other** _____
7. In which months do you see baboons on your property? ***Please list.***
   _____
8. Is there a certain time of day when baboons visit your property? **YES NO**
   If so, please specify approximate time(s): _____
9. Do you consider baboons on your property to be a threat? ***Circle one.***
   a. No threat
   b. Small threat
   c. Moderate threat
   d. Extreme threat
10. If you feel they are a threat, ***please explain how.***
    _____
    _____
    _____
11. Which of the following BEST describes how you feel about baboons visiting your property? ***Circle one.***
    a. Neutral, no positive or negative feelings
    b. Pleased, enjoy their presence
    c. Annoyed or frustrated, but not angry
    d. Angry and frustrated
    e. Combination of annoyed and pleased
    f. Other, *please explain*: _____
12. Do you try to deter baboons when they enter your property? **YES NO**
    If so, what do you do? ***Please explain.***
    _____
    _____
13. Do you consider the presence of baboons in Knysna's suburbs to be a problem? ***Circle one.***

a. Not a problem
b. A problem
c. A major problem
d. I did not know there were baboons in Knysna's suburbs.

14. Do you safeguard your home against baboons? (e.g. burglar bars, baboon proof bins, keeping windows closed) **YES** **NO**
    If so, ***please explain***: _____

15. How concerned are you about the conservation of the baboons in Knysna? ***Circle one.***
    a. Not concerned
    b. Concerned
    c. Highly concerned

16. Does your homeowners insurance cover damage to your home or property from baboons?
    YES NO UNSURE DO NOT HAVE INSURANCE

17. What do you believe is/are the best solution(s) to address the presence of baboons in residential suburbs of Knysna? ***Circle ALL that apply.***

    a. Baboon monitors that keep baboons out of human areas
    b. Permission to lethally remove them from your property
    c. Move them to a different area
    d. Breeding controls to reduce the population
    e. Baboon proof bins
    f. Residents reducing attractants on their property (e.g. vegetable gardens, fruit trees)
    g. No solution is needed
    h. Unsure
    i. Other _____

18. Who do you believe should be responsible for the baboons in residential suburbs of Knysna? ***Circle ALL that apply.***

    a. Residents of Knysna
    b. Municipality/Law enforcement
    c. Cape Nature/SANParks
    d. Baboon specialist groups
    e. Unsure
    f. Other _____

19. Are you aware of the issues with baboons in Cape Town? **YES** **NO**

20. If you would be interested in partaking in an interview to discuss baboons in residential suburbs of Knysna please provide contact information below. All information you provide in the interview will be kept anonymous and confidential.

    Name:
    Phone Number:
    Best time of day/evening to reach you: Email:

    Thank you very much for taking the time to complete this questionnaire. If you have any questions regarding this questionnaire or you would like more information about this research, please call or SMS Joselyn Mormile at 083 387 0582 or email at Joselyn.Mormile-2013@brookes.ac.uk

Appendix C: Project Details for Interviewees

OXFORD BROOKES UNIVERSITY

Attitudes towards baboons living in and around the residential areas of Knysna, South Africa

You are being invited to take part in a research study, conducted by Joselyn Mormile, on the presence of baboons in Knysna. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?
This study will take place from May 3rd until July 17th, 2014. This study involves a combination of recording baboon behaviour and ecology in and around the Knysna area, the distribution of questionnaires to the general public of Knysna and interviews of as many individuals as time allows. These three forms of data collection will allow for a comprehensive understanding of the interactions between baboons and residents of Knysna.

Baboons are highly adaptable primates living in most areas of sub-Saharan Africa. Frequently, the home ranges of baboons overlap with areas where people live. Due to the ability of baboons to live off of nearly any kind of food, including human foods, they often enter people's property in search of sources of food. These encounters are met with a mixed range of feelings from individuals whose property they enter. This study aims to understand resident's attitudes towards baboons living in and around Knysna in an attempt to highlight potential management strategies for the baboon population of Knysna.

Why have I been invited to participate?
You should explain how the individual was chosen to take part in the study and how many other people will be asked to participate.

You were chosen to participate in the interview process because your interview may provide an important understanding of what it is like to live amongst baboons in Knysna. Interviews will be conducted with as many individuals as time allows in an attempt to gain as much insight as possible regarding living alongside baboons.

Do I have to take part?
Participation in this study and interview process is entirely voluntary. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What will happen to me if I take part?
If you agree to take part in the interview process, I will ask for no more than 20 minutes of your time. You will be interviewed in a private area to protect your anonymity where you will be able to discuss your answers to my questions freely. As stated, the interview process generally takes no more than 20 minutes however, the interview length is flexible if you would like to add additional comments or ask questions regarding this study. There are no disadvantages to taking part in the interview process, aside from time it takes to participate. All information provided to me will be kept anonymous at all times, unless you specifically request the use of your name.

What are the possible benefits of taking part?
Gaining an understanding of the effects the presence of baboons may have on the lives of residents is the first step in developing potential management strategies. This interview gives you the opportunity to freely discuss any concerns, benefits or questions you may have regarding the presence of baboons in your residential area.

Will what I say in this study be kept confidential?
All information provided to me will be kept strictly confidential. Confidentiality, privacy and anonymity will be ensured in the collection, storage and publication of research material. Data generated from my

1

study will be retained in accordance with the University's policy on Academic Integrity. Data generated will be kept securely in paper and electronic form for a period of ten years after the completion of a research project. Your name will never be used in the reporting of my results, unless specifically requested (see Consent Form).

What should I do if I want to take part?
If you would like to take part in this study please contact me, Joselyn Mormile, via SMS or phone call at 72 455 2389 or send an email to Joselyn.Mormile-2013@brookes.ac.uk.

What will happen to the results of the research study?
The results of this study will be used in my Master's of Primate Conservation dissertation for Oxford Brookes University in Oxford, England. A copy of the findings will be submitted to the Knysna Baboon Action Group for public availability. The results from this study will also be submitted for publication. All published work will be submitted to the Knysna Baboon Action Group for public availability. Additionally, if you are interested in personal copy, you can request it from me via email.

Who is organising and funding the research?
I am conducting this research as a Master's student in Primate Conservation, as part of the School of Humanities and Social Science at Oxford Brookes University in Oxford, England. This research is entirely self-funded and no funds from outside organizations have been received.

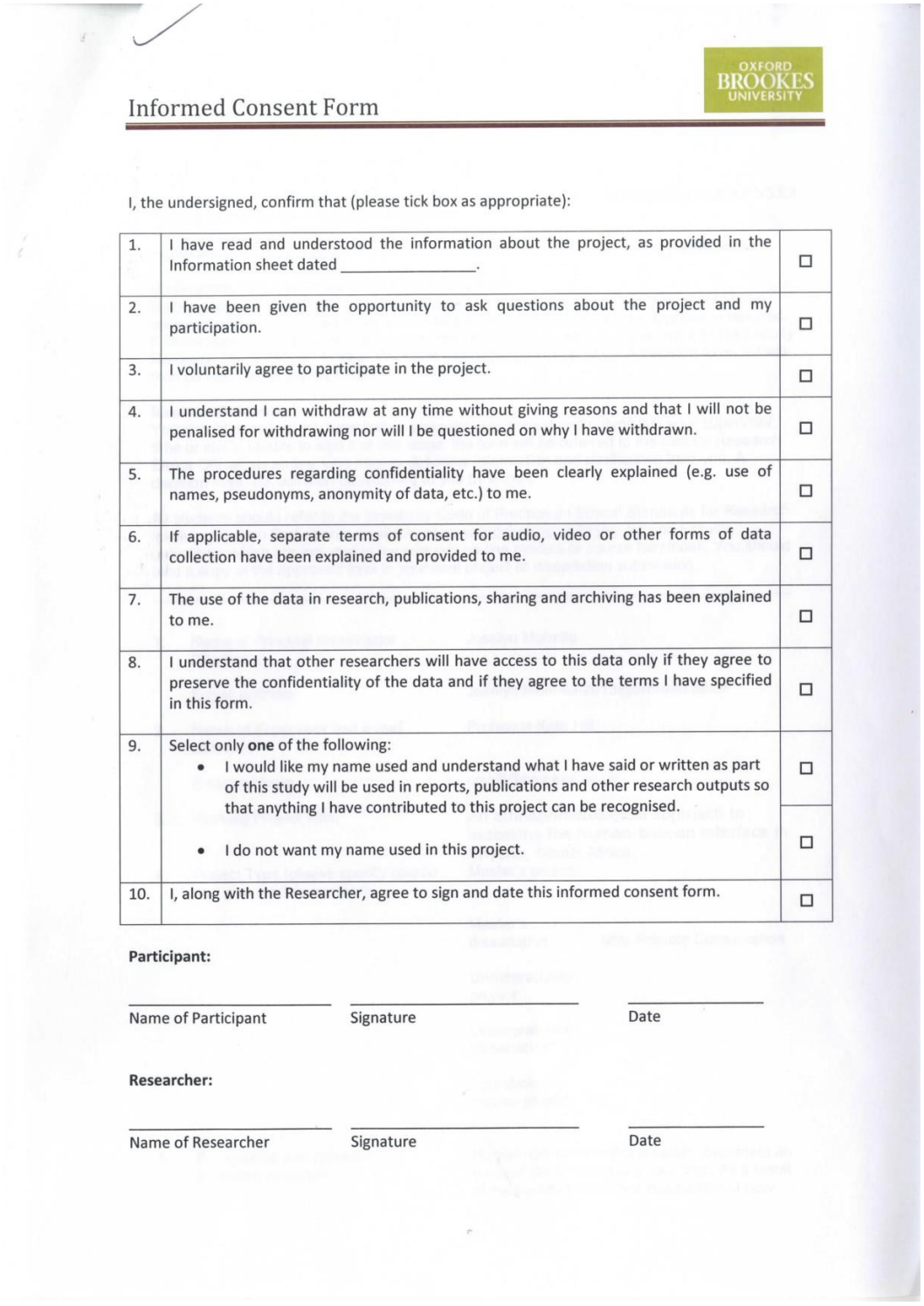
Who has reviewed the study?
This research has been approved by the University Research Ethics Committee at Oxford Brookes University and follows the guidelines set forth by the American Association of Anthropologists.

Contact for Further Information
If you required additional information regarding my study, please contact my project supervisor Professor Kate Hill at cmhill@brookes.ac.uk. If you have concerns about the way in which the study has been conducted, please contact the Chair of the University Research Ethics Committee on ethics@brookes.ac.uk.

Thank you for taking the time to review this information sheet.

Written by Joselyn Mormile B.S., C.V.T., MSc Candidate. 1 May 2014.

Appendix D: Interviewee Informed Consent Form



Informed Consent Form

OXFORD BROOKES UNIVERSITY

I, the undersigned, confirm that (please tick box as appropriate):

1.	I have read and understood the information about the project, as provided in the Information sheet dated _____.	☐
2.	I have been given the opportunity to ask questions about the project and my participation.	☐
3.	I voluntarily agree to participate in the project.	☐
4.	I understand I can withdraw at any time without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.	☐
5.	The procedures regarding confidentiality have been clearly explained (e.g. use of names, pseudonyms, anonymity of data, etc.) to me.	☐
6.	If applicable, separate terms of consent for audio, video or other forms of data collection have been explained and provided to me.	☐
7.	The use of the data in research, publications, sharing and archiving has been explained to me.	☐
8.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	☐
9.	Select only **one** of the following: • I would like my name used and understand what I have said or written as part of this study will be used in reports, publications and other research outputs so that anything I have contributed to this project can be recognised. • I do not want my name used in this project.	☐ ☐
10.	I, along with the Researcher, agree to sign and date this informed consent form.	☐

Participant:

Name of Participant	Signature	Date

Researcher:

Name of Researcher	Signature	Date

Appendix E: Researcher's Newspaper Article

KNYSNA-PLETT HERALD

INCORPORATING AREAS FROM SEDGEFIELD TO BITOU

Thursday 3 July, 2014 www.knysnaplettherald.com R3.00

Baboons under loupe

read more on page 2

American Joselyn Mormile is currently doing research in Knysna and hopes her work will contribute to finding a sustainable solution for baboon vs human conflict locally and elsewhere. In this image she is observing a troop of baboons at Lajuma Research Centre in the Soutpansberg. *Photo: Peter Tomlin.*

knysna-plett herald team

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Baboons under loupe

Anoeschka von Meck

Seeking sustainable solutions, American student, Joselyn Mormile (27), is currently doing research on baboon vs human conflict in Knysna and is keen to make contact with anyone who has had problematic encounters with baboons on their property.

Mormile's research in Knysna will go towards her Master's degree in Primate Conservation at Oxford Brookes University in England and she will also make data available to local roleplayers.

"Originally I wanted to study apes but once I worked with baboons I never looked back. Even as a monkey species, baboons are so human-like. Anyone watching the youngsters can see their likeness to human kids, they even giggle. Unfortunately, this similarity is often what brings them into conflict with people."

Mormile originally came to Africa to volunteer for one year as a veterinary nurse, running the clinic at the Centre for Animal Rehabilitation and Education (CARE) in Phalaborwa and thereafter as a research assistant at Lajuma Research Centre, Soutpansberg.

Mormile has a degree in Animal Behavior and also qualified as a licensed veterinary nurse. At CARE in Phalaborwa, she had her first ever contact with baboons.

"I expected baboons, as a monkey species, to be much more 'monkey-like', flighty and generally disinterested in people. But I couldn't have been more wrong. The differences in their personalities, their complex social society and their similarities to humans fascinated me."

The majority of CARE's intakes are orphaned infants. The vast persecution of this species in South Africa - including the pet trade, the muti trade and the decimation of entire troops by some farmers, became issues she dealt with at the sanctuary. During her time as volunteer at Lajuma Research Centre she followed a troop of 80 wild, habituated baboons on their daily trek.

"It was this experience that opened my eyes to exactly what CARE's baboons had been robbed of as a result of being orphaned by humans."

The horror of baboon babies as pets

Mormile was shocked to discover that a fair number of CARE's intakes were surrendered or confiscated pets. These infants have been kept as pets after farmers killed an entire troop of baboons and then finding the infants while disposing of the baboons' bodies.

"In some of these cases, the infants' mothers have been shot intentionally to obtain the infants who are then treated as human infants, dressed in clothes and nappies and, in extreme cases, even allowed to suckle from human breasts.

Several of these infants arrive with an alcohol or sugar addiction, traumatised and confused.

These infants are generally surrendered at around five to six months of age, an age when they would have been gaining independence in the wild. In captivity they start to cause damage to people's homes. In adulthood the owners often castrated them, remove teeth, and tie a tight belt around their waist to a pole or tree.

For infants, says Mormile, there is still a good chance of successful rehabilitation, but for adults, this is unfortunately not the case.

Proactive solutions

Mormile chose to further her study in Knysna because no scientific research has yet been conducted on the human-baboon interaction here.

Unlike in Cape Town, the issues with baboons in Knysna are more recent.

According to her findings, the majority of residents who have had issues with baboons on their property are generally frustrated or angry, but do not dislike baboons inherently - only unwanted baboon behaviour.

"People in Knysna seem to want to be closely intertwined with nature. It is a given that residents do not want baboons damaging their properties." She found that residents stressed that they believed their complaints about baboons and demands for management have been largely ignored. Frequently, this is just as frustrating to residents as their issues with baboons themselves.

Mormile felt that the main issue was that areas such as Hunters Home or Knysna Heights do not have a homeowners association.

"Therefore, each resident in these areas does different things to keep baboons away and some people do nothing at all. In order to be effective, everyone must be in communication and an assigned group in each suburb must lead the management. I believe baboon monitors that herd troops away from these suburbs are the first step. It is not effective for neighbour A to chase baboons off their property onto neighbor B's property. It is also important that residents take responsibility. A baboon monitoring programme is likely to increase in success with a decrease in attractants on individual properties, such as fruit or nut trees and easy access into houses. Management must be a joint effort on everyone's part in order to encourage baboons to utilise the remaining natural environments over human dominated ones."

She began her research in Knysna on Monday, May 5, collecting data on baboons in primarily Hunters Home and Rexford, and will return to Oxford on Wednesday, July 16. Mormile believes preventative management and proactive deterrents are the keys to any wildlife conflict issue.

Mormile would be most grateful if Knysna residents would fill out her online questionnaire at https://kwiksurveys.com/s.asp?sid=ve8jb6m4cwdop41373948 or email her at Joselyn.mormile-2013@brookes.ac.uk. (Read the full interview online at www.knysnaplettherald.co.za.)

EMERGENCY NUMBERS

Police:
Emergencies (where a crime is involved): 10111
Emergency rescue (accident, fire, flood, lost/injured hiker): 10177

Knysna:
- Knysna Station: 044 302 6608/9.
- Knysna Station Commissioner: 044 302 6672.
- Knysna Detectives: 044 302 6652.
- Sedgefield Station: 044 343 1321.
- Plettenberg Bay Station: 044 501 1907/8/9.
- Plettenberg Bay Station Commissioner: 044 5332226.
- Plettenberg Bay Detectives: 044 533 1166.
- Kwanokuthula Station: 044 533 2145.

Ambulance
- Emergencies: 10177.
- Knysna: 044 382 5613.
- Plettenberg Bay: 044 533 5000.
- ER24: 084124.

Fire
- Knysna: 044 302 8911 (all hours).
- Sedgefield: 044 349 2900.
- Plettenberg Bay: 044 533 5000.

NSRI
- Plettenberg Bay: 082 990 5975 or 044 533 2744.
- Knysna: 044 384 0211/5610 or 082 990 5956.
- Sedgefield: 044 384 0211 or 082 990 5955.

Mountain Rescue:
10177

Hospital:
- Knysna Provincial: 044 302 8400.
- Knysna Private: 044 384 1083.
- Plettenberg Bay: 044 533 5589.

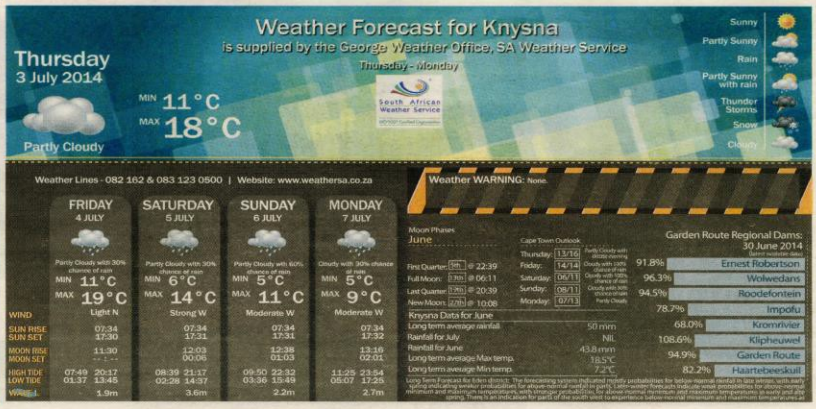
Municipality:
- Plettenberg Bay: 044 501 3000.
- Knysna/Sedgefield: 044 302 6300.
- Eden District: 044 533 4421.

Flora and Fauna Crime Stop:
- Cape Nature Conservation Crime Stop: Barend le Roux 082 554 1271; Paul 082 551 8312.

Animal Welfare:
- Knysna: 044 384 1603.
- Plettenberg Bay: 083 287 9917.

Cape Nature:
- Knysna: 044 383 0042.

Birds:
- Injured sea-birds: 083 414 6730.
- Injured birds: 082 493 1298.
- Injured raptors: Dennis Robson 083 561 0973.



Appendix F: Knysna Municipality's Baboon Management Plan

KNYSNA
Municipality
Munisipaliteit
uMasipala

Baboon Management Plan

INTRODUCTION

Since early times man and wild animals have been in conflict with each other.

Over time the conflict situation has intensified due to various factors such as wildlife having easy access to food sources, human population growth, indiscriminate hunting practices, decrease in natural habitats and inappropriate development.

Wild animals in natural habitats are normally viewed by man as a thrilling experience as they are part of South Africa's rich biodiversity and also contribute to the tourism industry. It is possible for man and wild animals to co-exist but as soon as our personal space, property, finances, safety and security are negatively impacted upon these animals are then perceived as a threat.

As soon as conflict situations intensify people tend to expect that the situation be dealt with swiftly by wanting to remove the animal either by relocation or euthanasia. Due to fragmented habitat and the location of human settlements in close proximity to natural areas these management options are not always considered as a long term solution as the number of animals are determined by the available habitat.

Chacma baboons (*Papio cynocephalus ursinus*) in the Western Cape are protected wild animals according to the Nature Conservation Ordinance, Ordinance 19 of 1974 as they are listed under the Convention on International Trade in Protected Species of Wild Fauna and Flora (CITES II)**.** Baboons play an integral part in the functioning of an ecosystem.

The purpose of this Management Plan is to address baboon management in Knysna and co-ordinates the responsibilities of all role players but principally Residents, Knysna Municipality, CapeNature, and SANParks. It identifies holistic management interventions aimed at minimising conflict between humans and baboons in both the short and longer term.

1. BACKGROUND

Knysna is a town with approximately 70,000 inhabitants in the Western Cape Province of South Africa and is part of the Garden Route. It lies 34 degrees south of the equator, and is approximately 65 kilometres east from the town of George on the N2 highway, and 20 kilometres west of Plettenberg Bay on the same road.

Knysna is a coastal settlement on the Garden Route and is in the unique position of being entirely surrounded by the Garden Route National Park (GRNP). It falls under the jurisdiction of the Eden District and Knysna Local Municipalities which preside over one of the most environmentally valuable areas in South Africa that includes coastal fynbos, indigenous forest, estuaries, river, dunes, beach, rocky shores and southern ocean, which all combine to support an unparalleled biodiversity. The area consists of Knysna, Sedgefield, Brenton, Noetzie, Belvidere and Buffalo Bay along the Indian Ocean coast and inland it holds the farming communities of Rheenendal and Karatara as well as many forests of which the most famous are Diepvalle and Gouna.

Knysna's rich and colourful history spans the days of sailing ships, timber extraction and even a brief period of gold discovery. The vast, indigenous forests just outside Knysna

became an invaluable source of timber for buildings, ships and wagons. Knysna was first proclaimed a port in 1817 and the village of Knysna dates from 1825. The timber business was mainly responsible for the development of the township but the popularity of the town as a tourist destination has seen it grow significantly with more and more houses being built until much of the available erven has been developed.

Many of these residential areas do not only border proclaimed nature reserves but also natural areas with the urban interface being soft and not that demarcated as experienced in cities. The baboons would have occurred in the greater Knysna area but were absent from the residential areas. It is possible that the baboons started utilizing the residential area during periods of environmental stress such as the drought of 2010/11. During this period the conflict with baboons escalated. It is however possible that ad hoc conflict occurred before this period but that due to the low intensity the conflict was tolerated.

It is contentious whether these baboons were ever native to the area but certainly they migrated into residential areas during the prolonged drought of 2010/11. There have been frequent reports of property damage, some of home invasions and several of attacks on dogs since the beginning of summer in 2011.

Ineffective waste management practices by the community and by the local authority together with a lack of awareness by the residents are two of the major contributing factors to the baboon conflict in Knysna.

3. **NATURE OF BABOON/HUMAN CONFLICT**

- Baboons enter houses
- Damage to property
- Baboons have lost the fear of humans leading to humans' fear of baboons
- Threat to both residents and tourists
- Threat to pets
- Baboons gain access to refuse and waste
- Conflict situations on properties

4. ROLE PLAYERS

The identified role players are committed to develop and implement a short and long term management strategy that would minimise human/wildlife conflict caused by baboons in the residential area of Knysna.

4.1 Cape Nature

The Western Cape Nature Conservation Board (CapeNature) is responsible for conserving the unique natural heritage of the Western Cape in partnership with its people. Cape Nature is also responsible for the implementation of the Nature Conservation Ordinance, Ordinance 19 of 1974 (Hereafter referred to as the Ordinance) setting the legal framework for the management of wildlife in the Western Cape.
Substitution of regulation 42A(1) of Provincial Notice 955 of 1975 under Section 82 of the Western Cape Nature Conservation Ordinance 19 of 1974:

Amendment:

"No persons may feed or attempt to feed any baboon (Papio hamadryas ursinus) or vervet monkey (Ceropithecus pygerythrus) in a built up area or public place".

4.2 Knysna Municipality

Knysna Municipality is the local authority accountable to its residents and ratepayers and is committed to facilitate responsible environmental management by implementing effective measures to prevent conflict caused by baboons.

4.3 Knysna Baboon Action Group (KBAG)

The Knysna Baboon Action Group was formed to be the key role player on behalf of residents, engage with the authorities and other relevant bodies in evaluating baboon management options within the Knysna area and to ensure an appropriate action plan is in place.

The position of the Baboon Action Group is that urgent and adequate measures are required on the part of the Residents, Knysna Municipality and/or Cape Nature to remove the raiding troops from the area, or prevent their intrusion into residential areas.

The Group is endorsed by the Knysna Ratepayers Association whose major aim is to protect and serve the interests of the ratepayers and work for an increased quality of life for all residents by insuring that the baboon/human interactions is mitigated in a holistic manner and within a legal framework.

4.5 South African National Parks (SANParks)

SANParks acts in accordance with the National Environmental Management Act 57/1998 under the Protected Areas Act.

SANParks will strive to promote long-term conservation and rehabilitation of the biodiversity of the Park.

SANParks aims to improve relationships between the park, different spheres of government and stakeholders to attain the vision and goals for the park.

4.6 Other Stakeholders

It might be possible that other landowners/communities in the close vicinity of Knysna also encounter human/baboon conflict in future. In co- operation with Knysna municipality and other relevant authorities, landowners/communities should identify potential problem areas and put measures in place to prevent such conflict.

5. AIM OF THE MANAGEMENT PLAN

- To minimize the conflict between residents and baboons in the long term by holistically managing the situation and taking into consideration the location of Knysna which is surrounded by a natural ecosystem.
- To define the responsibilities of role players and stakeholders.

6. OBJECTIVES OF AN EFFECTIVE AND SUSTAINABLE BABOON MANAGEMENT PLAN

- The establishment of a Knysna Baboon Management Forum (KBMF) representing all Stakeholders
- Effective resolution of Human/Baboon Conflict
- Effective waste management strategy and action plan
- Assessment of the current situation and ongoing monitoring
- Public awareness
- Dealing with baboons on a day to day basis (short term solutions/ deterrents)
- Dealing with baboon raids (e.g. baboon monitors, warning system, cost implications).
- Dealing with repeat baboon raiders (type of actions and criteria against which they will be taken)
- Dealing with injured baboons

The measures/management actions implemented should reduce the human/baboon conflict to acceptable levels. Removing the raiding troops from the area would be difficult. Also it is possible that management actions such as baboon monitors or an electric fence will not totally exclude baboons from the residential area although this is the ideal situation.

The KBAG should with the role-players identify and or develop management actions that will manage the human/baboon conflict experienced in the Knysna Area. Each role player will incur responsibilities in terms of their mandate or responsibilities.

7. RESPONSIBILITIES WITHIN THE PLAN

Cape Nature responsibilities:

- Ensure that the residents of Knysna and the Knysna municipality comply with the legal framework as set out in the Ordinance.
- Assist the Knysna Baboon Management Forum (KBMF) in the compilation, revision and execution of this management plan by making use of data that has been collected to make decisions when, for example, considering permit application relevant to baboons.
- Supply advice on managing human/wildlife conflict situations to the KBAG as well as the public.

Knysna Municipality responsibilities:

- To be "environmentally sustainable" in relation to the provision of a municipal service, meaning the provision of a municipal service in a manner aimed at ensuring that –
    a. The risk of harm to the environment and to human health and safety is minimised to the extent reasonably possible under the circumstances
    b. The potential benefits to the environment and to human health and safety are maximised to the extent reasonably possible under the circumstances
    c. Legislation intended to protect the environment and human health and safety

is complied with

- To enable effective waste management by:
  a. Ensuring that all municipal bins are baboon proof
  b. Identifying impacted residents and providing them with wheelie bins**
- Champion and lead the implementation of a Baboon Monitoring Programme similar to those of other impacted municipalities within the Western Cape. This will include the provision of baboon monitors in all impacted residential areas to monitor baboon movements, record baboon sightings and raiding in order to be first line of deterrent and for the Knysna Baboon Action Group to update it's website. The main avenue of funding is likely to come from either provincial or national government
- Provision of signs at agreed key locations warning both the public and visitors that it is illegal to feed baboons.
- Take the lead in the development and implementation of a communication and public awareness strategy

Knysna Baboon Action Group responsibilities:

- To collaborate with Knysna Municipality and SANParks in ensuring that sustainable, effective waste management practices are followed in the Greater Knysna area of the Garden Route National Park
- To collaborate with Knysna Municipality in ensuring that effective waste management practices are followed at all roadside picnic spots in the town
- To support an awareness campaign among property owners/residents and the general public concerning proper baboon management practices
- To populate the crowdmap and report baboon incidents received via the website, email or Knysna municipality
- To gather baseline information about the Knysna baboon troops
- To liaise with other experts in the field of baboon management
- To play an active role in supporting good governance
- To promote an active, mobilised, aware community including the baboon proofing of bins.

SANParks responsibilities:

- Legal opinions show that SANParks may not act outside a protected area with specific reference to damage causing wildlife.
- In terms of the professional working relationship that has been built up between the Knysna Baboon Action Group and the Knysna Municipality, SANParks will assist in providing a new type of baboon proof waste bin to replace any existing bins in the Greater Knysna area of the Garden Route National Park.
- SANParks will ensure that sufficient informative material is supplied to visitors to promote awareness surrounding the problem animals within the area and the correct measures to be taken.

It should be noted that a high percentage of visitors to the Knysna area are not necessarily aware of the potential conflict that could be caused if sound environmental and baboon management practices are not followed. This should form part of the communication and awareness strategy mentioned above.

Knysna is situated in close proximity to a natural environment and owners should be made aware of the

fact that they have a responsibility to follow sound baboon management practices on their properties.

8. IMPLEMENTATION OF THE MANAGEMENT PLAN

8.1 Knysna Baboon Management Forum (KBMF)

The KBMF will comprise representatives of the listed role players. The chairperson will ensure that regular meetings take place, records of these meetings are kept and that they are distributed to all role players. The
KBMF will evaluate the implementation and effectiveness of the management plan. The management plan will be revised by the forum with input from the role players and community, as and when required.

8.2 Conflict Resolution

Residents experience conflict situations including, but not limited to, baboons entering houses, damage to property, threats to pets, raiding of refuse bins and other food sources. This does not only cause financial loss but also fear of possible injury by baboons. For advice on the handling of baboon conflict inside and outside the house, residents and visitors should refer to the KBAG website (www.baboons.myknysna.co.za) and to the information provided on the Knysna Municipality website (Dealing With Baboons). In cases where residents are unsure how to manage the conflict situation they can contact Cape Nature, the Knysna Municipality for advice. The contact details are listed in Appendix B.

Experience has taught that in most cases conflict with baboons can be prevented by proactively ensuring that properties do not attract baboons. The following preventative measures are universally accepted to avoid conflict with baboons:

* Secure rubbish in a baboon proof bin or in a place that baboons cannot access.
* Avoid growing vegetables and planting fruit bearing shrubs and trees.
* Secure residence by keeping windows and doors closed when not at home.
* Prevent baboons from accessing open doors and windows by putting appropriate structures in place such as burglar bars or security gates.
* It against the law to feed or put out food for baboons or monkeys in the residential area.
* Be cautious when feeding birds with bird feeders or pets by not leaving leftover
* feed outside where it can be accessed by baboons.

8.3 Waste Management

In terms of the Local Government Municipal Systems Act, Act 32 of 2000 Knysna Municipality has a duty to promote a safe and healthy environment in the municipal area. Waste management does not only address health issues but in the case of Knysna, where baboons have been attracted by household waste left on pavements for collection, it also includes public safety issues. Implementation of a comprehensive waste management strategy will alleviate major causes of possible conflict between baboons and residents.

This strategy should include the following actions:

* Prioritize waste collection times in the affected areas.
* Apply and maintain baboon proofing methods at public facilities.
* Identify the number of affected residents in impacted areas without 'wheelie' bins

* Supply 'wheelie' bins to be used by residents. Residents to be responsible for baboon proofing these bins.
* Implement a municipal bye law making the use of baboon proof bins compulsory with fines for non-implementation of sound waste management practices.
* Identify and implement relevant signage at identified public areas.

8.4 Monitoring

The implementation of a basic monitoring program is essential in order to determine the effectiveness of the management interventions as set out in this management plan. A Baboon Conflict Incident Report Form (Appendix D) will be available at the KBAG and Municipality websites and at the Municipal Offices where residents or the offices can record baboon incidents. This data will indicate trends in baboon/human conflict and will allow for adaptive management actions.
Incidents reported to KBAG during 2011/2012 will be used as baseline reference information for trends (e.g. identification of any peak periods).

8.5 Public Awareness

The Knysna Municipality will develop and embarked on a public awareness campaign. All role players and any research resource(s) will contribute to this awareness campaign and the strategy will encompass the public meetings, print media and radio in addition to current newsletters, websites, etc. This will include distributing pamphlets and informing residents and visitors to Knysna about baboon behaviour and dealing with conflict situations. It is essential that these activities be sustained, and where relevant be improved upon, in order to reinforce the message.

8.6 Systematic And Strategic Solutions

8.6.1 Short Term

Neighbourhood Warning System

It has been determined that many of the conflict situations can be avoided if homeowners are timeously made aware of baboons in their vicinity. This can be achieved by activating an SMS early warning system when baboons are spotted in Knysna. Neighbours within the vicinity of baboon activity can then react appropriately by closing doors and windows, preventing baboons from accessing their homes. Knysna Municipality has agreed to develop and implement such a system.

The system will first be tested, and if successful, be implemented permanently. The SMS early warning system will operate based on a grid layout of the impacted areas in Knysna. The Municipality will be notified of baboon activity within a particular grid block and will then send out bulk SMS's to homes within that particular block to inform occupants of the whereabouts of baboons. There will be an SMS list for permanent residents that will be maintained by the Municipality who will be responsible for a weekly update of information. One specific challenge will be to incorporate temporary residents into the system.

This system will be explained to homeowners and visitors through the public awareness information. If the SMS early warning system proves to be successful, a

laminated map outlining the grid and relevant instructions will be distributed to all homeowners in Knysna.

Physical Deterrents

Certain devices have been developed to function as deterrents for baboons. To ensure that humane and safe devices are used the KBMF will discuss such devices in the context of the latest information and research available, and liaise with relevant tertiary institutions and authorities to make recommendations for their use by the public providing their effectiveness has been proven.

8.6.2 Long Term

Baboon/Wildlife Monitors

Function of baboon/wildlife monitors

Baboon/wildlife monitors are a group of individuals that monitor the behaviour and movements of baboons. They also prevent baboons from entering residential areas where they are known to raid accessible food sources and subsequently create human/baboon conflict. Monitors can also play an educational role e.g. informing residents on the implementation of preventative methods such as keeping food sources away from baboons.

Baboon/wildlife monitors have been used with great success in the Cape Peninsula, Overstrand and the Overberg, where the effectiveness of baboon monitors has contributed to minimising human/wildlife conflict. Pezula Private Estate has a monitoring programme in place with some success and have agreed to share their experience and knowledge.

Suggestions for baboon/wildlife monitors operating in Knysna

The initiation of such a project will depend largely on the availability of funding from all or some of the three tiers of government, as it is expensive to implement. However, the residents, represented by KBAG, expect that a baboon monitoring programme such as those implemented within the Cape Peninsula, Overstrand and the Overberg be afforded to the impacted residents of Knysna. The residents are not seeking more but certainly will not accept less.

Knysna Municipality will champion and lead the development of the programme based on the frequency and nature of baboon conflict incidents and raids reported by residents. The KBMF in conjunction with the community (or the responsible party as agreed to by the Forum) will assess the need for further baboon monitor deployment in Knysna.

Management options regarding implementing baboon/wildlife monitors

High percentage of baboon raids – baboon/wildlife monitors should be implemented as soon as possible.

Low percentage of baboon raids – establish the frequency and time period of raids and

implement baboon /wildlife monitors based on this information.

Training of Knysna baboon/wildlife monitors

For the Baboon Monitoring Programme to be effective, the monitors will have to be trained and the KBMF will determine the most appropriate body to do this.

8.7 How To Deal With Repeat Baboon Raiders

A repeat raider is a specific baboon that has been clearly identified and has been proved to repeatedly create human/wildlife conflict on an on-going basis.

Before dealing with repeat raiders with the protocol set out below, a combination of preventative measures should have been implemented beforehand and have been proved to be ineffective. A protocol for dealing with raiding baboons has been supplied by Cape Nature and is attached as Appendix E.

8.8 How To Deal With Injured Baboons

The KBMF should identify a suitable veterinarian who is willing to deal with injured wildlife in Knysna. Emergency situations for the services of a veterinarian must also be included in the budget of the monitoring programme. An appropriate liaison person will be nominated for Knysna residents to contact who will alert the veterinarian and who will also liaise with other role players if necessary.

Based on the extent of the injury to the animal, the veterinarian should make the final decision on the most appropriate treatment or action to be taken in consultation with CapeNature.

9. BUDGET

To effectively implement this management plan certain budgetary requirements will need to be met. An annual operational budget will have to be drawn up by the KBMF and the sources of income should be established. Initially funding to implement management actions as set out in the management plan will have to be sourced on an ad hoc basis.

APPENDIX C

Legislation with Relevant Extracts

The extracts from the legislation listed below only refer to certain important provisions and must be read with the understanding that other provisions of these pieces of legislation and that of other relevant legislation could also be applicable to management actions aimed at preventing or mitigating human/baboon conflict.

- **Firearms Controls Act No. 60 of 2000**

This act aims to establish a comprehensive and effective system of firearms control; and to provide for matters connected therewith. An important provision in this act is article 120(7) that states that it is an offence to discharge a firearm, an antique firearm or an airgun in a built up area or any public place, without good reason to do so. It must be realized that other provisions of this act will also be applicable relating to the discharging of firearms.

- **Animal Protection Act No. 71 of 1962**

To consolidate and amend the laws relating to the prevention to the cruelty to animals.

Article 1 (a) states that any person who overloads, overdrives, overrides, ill-treats neglects, infuriates, tortures or maims or cruelly beats, kicks, goads or terrifies any animal; shall, subject to the provisions of this Act and any other law, be guilty of an offence and liable on conviction to a fine or to imprisonment for a period not exceeding twelve months or to such imprisonment without the option of a fine. Other articles of this act might also be applicable.

- **Western Cape Nature Conservation Ordinance 19 of 1974 and Provincial Notice 955 of 1975**

The purpose of this ordinance is to regulate wild animals and plants and the establishment of nature reserves. Article 27 of this Ordinance deals with the hunting of wild animals and

Article 29 stipulates prohibited ways of hunting and are some of the most relevant provisions applicable to this management. Furthermore, regulation 42A(1) of Provincial Notice 955 of 1975 states that no persons may feed or attempt to feed any baboon (*Papio hamadryas ursinus*) or vervet monkey (*Ceropithecus pygerythrus*) in a built up area or public place.

Local Government Municipal Systems Act, No. 32 of 2000 Establishes core principles, process and mechanisms relating to local government. According to Article 1 of this Act, unless inconsistent with the context – "basic municipal services" means a municipal service that is necessary to ensure an acceptable and reasonable quality of life and, if not provided, would endanger public health or safety or the environment.

- **Convention on International Trade in Protected Species of Wild Fauna and Flora (CITES II)**

CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. According to article 2 of Western Cape Nature Conservation Ordinance 19 of 1974 "protected wild animal" means any species of wild animal specified in Schedule 2 or Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington, 1973; provided that it should not include any species of wild animal specified in such Appendix and Schedule 1.