Original Research Article

Community knowledge and attitudes towards the critically endangered Mountain Bongo in Mount Kenya Wildlife Conservancy

ABSTRACT

Aims: To assess local community knowledge and attitudes towards the conservation of the critically endangered Mountain bongo in Mt Kenya Wildlife Conservancy.

Study design: Descriptive research design was used.

Place and Duration of Study: The study was conducted in the community neighboring Mount Kenya Wildlife Conservancy and the Mt Kenya Forest during the month of March 2020.

Methodology: The survey targeted approximately 500 households that are less than 3 kilometers from the conservancy and forest boundaries. Households were considered as sampling units and these were selected using systematic random sampling technique where one household was selected after every 3 households. The interviews were conducted in a semi-structured manner and colored photographs of the Mountain bongo and 12 other selected mammals found in the region were used to assess respondent's basic knowledge about the animals.

Results: The results captured 142 informants where 71.8% of the respondents could identify the mountain bongo but only 18.3% were aware of its vernacular name. Knowledge on habitat requirements, feeding habits, threats and conservation value differed significantly from what was expected ($p<0.05$). Based on logistic regression, the knowledge could be predicted based on gender and age and whether one had a previous interaction with the animal. We found that 57% of the respondents supported bongo conservation whereas 40.8% were undecided and this was associated with lack of knowledge about the animal. In addition 27.5% of the respondents appreciated mountain bongo because of attracting tourists, 12.0% felt that the antelope was attractive, 8.5% liked its size, 4.2% liked its products such as bushmeat, 4.2% liked its aggressiveness and 0.7% liked its interesting behaviour.

Conclusion: Although bongos could be identified by most respondents, basic ecological knowledge of the animal is limited in the community. A pro-conservation attitude towards bongos exists in the community, but the utilitarian value attached to it and its habitat could be a threat to its conservation in the Mt Kenya. Local community support for conservation of

the Mountain bongo in Mt Kenya was influenced by gender, age and knowledge of the animal and these factors should be considered when creating conservation awareness in the community.

Keywords: *knowledge, endangered, Mountain bongo, attitude, community, conservation.*

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1. INTRODUCTION

Biodiversity has numerous social, economic and ecological functions from which present and future humans could benefit. Threats such as destruction of habitats [1], overexploitation of species [2], spread of invasive species [3,4], diseases [5] and climate change [6,7] are however prominently deflating these benefits. Since most of these threats are anthropogenic in nature, it is recommended that biodiversity conservation be approached from a socio-ecological perspective [8,9,10]. One of the scopes of socio-ecological perspectives is the recognition of indigenous communities' knowledge on local flora and fauna [11,12] which is crucial to conservation of biodiversity and ecosystems. Local community knowledge on threatened species has the potential to influence attitudes and behavior of the community towards wildlife [13] which ultimately affects the effectiveness of conservation efforts [14,15].

Interest on traditional knowledge about native flora and fauna has increased recently with realization that conservation of endangered species hinges on the support of local people [16]. Appreciating their traditional systems of biodiversity conservation is therefore important. Information on indigenous knowledge systems including classification and naming of native plants and animals can provide valuable insights, observations, and interpretations relating to the state of the biological, physical, and spiritual environments [17]. In wildlife conservation, the knowledge can also guide habitat restoration in order to prevent further loss of biodiversity and support species recovery [12,18]. Additionally, assessing local people's knowledge on endangered species is important for the planning and implementation of environmental education programs, and addressing community based conservation issues which guarantees an effective engagement of local residents in conservation efforts [19,20].

Despite the need to promote and safeguard local ecological knowledge, there is an emerging evidence that the knowledge is slowly being lost in most communities of the world [18, 21, 22]. This indigenous knowledge is mostly undocumented and therefore at risk of being lost to future generations [23]. This loss can be demonstrated for instance when community members fails to identify, describe and give cultural values of native flora and fauna. Among the factors that have been suggested to cause this loss include gaps in human development [24,25], limited economic opportunities for native people [26], education systems that do recognize traditional knowledge and culture (28, [21, 27; 29], limited land rights [30], urbanization [31,32], rural-urban migration of youth, passing on of elders, and lack of respect for traditional knowledge as a knowledge system [20,25,27].

In this study, our interest was assessment of the local community knowledge and attitudes towards the endemic Mountain bongo in areas adjacent Mt Kenya Wildlife Conservancy and the Mt Kenya Forest. Presently, limited information is available about the status of Mountain bongo populations in the wild [33] despite being listed as critically endangered in the IUCN Red listing [34]. Currently, there are efforts to reintroduce the captive bongo population to Mt Kenya Forest. However, recent studies have shown that the local communities engages in activities such as farming, grazing and hunting in the forest which are a threat to restoration

of Bongo population in Mt Kenya Forest [36]. Additionally, there are concerns about limited data on local community knowledge and perceptions about the subspecies that can be used to identify specific threats and opportunities for engaging the native community in conservation of the antelope.

According to Ali *et al*. [35], the knowledge–attitude - behaviour framework can be used to gauge public knowledge and attitudes towards threatened species as well as the public's current actions and willingness to act in favour of conservation outcomes. Given that attitudes are a strong predictor of a person or group's intentions to behave in a particular manner [36,37,38] such as complying with wildlife protection regulations, assessing attitudes and perceptions of humans toward wildlife provides insights on the degree to which people are willing to support conservation of wildlife [39]. In the case of the Mountain bongo, there is paucity of knowledge on local community's awareness on the plight of the subspecies and their attitudes towards its conservation. Given this background, the current study was undertaken to assess local community's basic ecological knowledge of the bongo and gauge their attitudes towards the species in comparison with twelve other wildlife species found in the region. Our findings provide important insights into the status of local community knowledge on the critically endangered bongo and their perceptions towards the antelope that can promote future conservation planning in Mt. Kenya Forest.

2. MATERIAL AND METHODS

Comment [u2]: Inform the authorization of the ethics committee in research with humans for the development of this study

2.1 Study area

The data was collected in north western part of Mt Kenya Wildlife Conservancy (MKWC) at a location between latitude 0°2'1.77"S to 0°2'9.55"S and longitude 37°6'51.55"E to 37°6'24.70"E (Figure 1). The local communities (Kanyoni, Kwamwea and Kwahuku) in this area largely comprise of farming Kikuyu tribe and occupy land adjacent to MKWC, Mt Kenya Forest, and the William Holden Wildlife Education Center. Mount Kenya Wildlife Conservancy is a private enterprise which has been offering a breeding facility for the Mountain bongo since 1970's. The conservancy also hosts an animal orphanage offering refuge to different species of wild animals rescued from different parts of the country. Adjacent the conservancy is the largest water tower in Kenya, Mt Kenya Forest, which is managed by the Kenya Forest Service. In the year 2020, a bongo sanctuary was established in the forest with the aim of reintroducing the captive bred mountain bongo for in-situ conservation. To enhance conservation education and more so mountain bongo awareness, the William Holden Wildlife Education Center, located adjacent to the MKWC has been educating and training the local community, learning institutions and visitors from around the country and beyond. Small scale holder farming is the main economic activity of the resident community. Some residents grow food crops within the forest based on Shamba System where they are allowed to grow crops in between growing rows of replanted tree plantations. The locals are also known to depend on the forest for grazing pasture, firewood and bushmeat which are illegal activities [36].

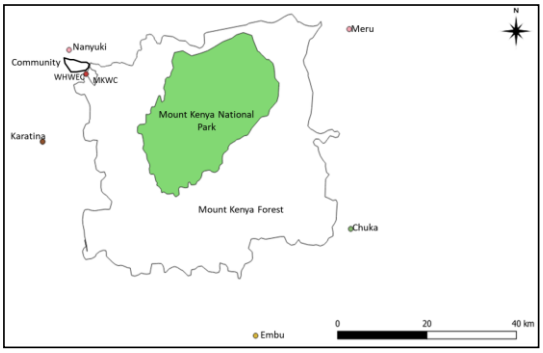

Figure 1: Map indicating the locations of Mount Kenya Forest, Mount Kenya Wildlife Conservancy (MKWC), William Holden Wildlife Education Center (WHWEC), surveyed community and the major towns around the mountain

2.2 Sampling

A survey to collect information on sociodemographic characteristics of informants and their level of traditional ecological knowledge about the mountain bongo and 12 other species of wildlife found in the wider Mt Kenya region was conducted in March, 2020. The 12 wildlife species included lion, leopard, black and white colobus, wildebeest, buffalo, waterbuck, hartebeest, eland, Impala, olive baboon, African elephant, and common zebra. The survey targeted approximately 500 households in the area of less than 3 kilometers from the conservancy and/or the forest boundary. Households were considered as sampling units and these were selected using systematic random sampling technique where one household was selected after every 3 households.
Only one participant (>15 years) in each of the selected households was interviewed. The survey respondents were chosen using Kish grid selection method. The interviews were conducted in a semi-structured manner with open-ended questions to encourage discussions. Colored photos of the animals were used to aid in identification. Generally the study sought information on whether the respondent had a previous encounter with the real animal and whether the informant could tell the vernacular name of the animal, habitat of the animal, and then a general assessment of his or her attitude towards the animal.

2.3 Data Analysis
Data entry, coding and analyses was done using the Statistical Package for Social Sciences (SPSS). Descriptive statistics of numerical variables and frequencies were used to analyze demographic characteristics of the respondents. Chi-square goodness of fit was used to test for differences between expected and observed frequencies of variables while Chi-square test for associations was used to test for association between the demographic characteristics of respondents and their knowledge and attitudes towards wildlife.

Logistic regression was used to predict knowledge and attitudes towards wildlife species based on the demographic characteristics of the respondents. Additionally, odds ratios (OR) was used to interpret the models.

3. RESULTS
3.1 Demographic characteristics of the respondents
Data from 142 respondents were used for the analyses. Out of these, 51.4% (73) were females whereas males were 48.6% (69). The age categories were; below 18 years (36.6%, n=22), 18 to 35 years (31.7%, n=36.6%), 35 to 55 years (31.7%, n=45) and above 55 years (16.2%, n=23). Farming was the main economic activity for most of the respondents (47.2%, n=67), those in formal employment were 10.6% (n=15), those in business were 23.9% (n=34) whereas 18.3% (n=26) were learners in schools and colleges. Most of the respondents had attained primary level of education (43.0%, n=61), whereas 37.3% (n=53) had secondary level education, 12.0% (n=17) had college or university level and 7.7% (n=11) had no formal education.

3. 2 Community knowledge on Bongo
There was a significant difference in the numbers of respondents who could tell the vernacular names of the 13 common animal species found in the region (2 =289.257, df=12, p=0.00). Out of 142 respondents, only 18.3% could tell the local name of the

mountain bongo. Almost all the respondents (96.48%) could tell the local name of the African elephant (Table 1) whereas only 6% of the respondents could tell the local name of the wildebeest. The ability to tell the vernacular name of a species was significantly correlated with 'having seen' the actual animal (r=0.619, p=0.024). As shown in Table 1, animals that most of the respondents had seen included olive baboon, the black and white colubus monkeys, buffaloes and the common zebra. The results also showed that 71.8 % could relate mountain bongo to specific taxa. Out of these respondents, 59.2% had a previous opportunity to see the animal. The respondents revealed that they had seen the species at the Mt Kenya wildlife conservancy and none had seen bongo at Mt. Kenya forest.

Table 1. Assessment of community knowledge of vernacular animal names

Common name	Scientific name	Vernacular name	Have ever seen the animal		Know the vernacular name	
			Frequency	Percent	Frequency	Percent
Lion	*Panther leo*	*Simba/Muruthi*	41	29	83	58
Leopard	*Panther pardus*	*Ngari*	76	54	67	47
BWcolobus	*Colobus abyssinicus*	*Nguyo*	97	68	96	68
Wildebeest	*Connochaetes taurinus*	*Nyumbu/Ngunu*	61	43	8	6
Buffalo	*Syncerous caffer.*	*Mbogo*	95	67	99	70
Waterbuck	*Kobus ellipsiprymnus*	*Koru*	68	48	18	13
Hartebeest	*Alcelaphus buselaphus*	*Thwariga*	63	44	27	19
Bongo	*Tragelaphus eurycerus*	*Ndongoro*	84	59	26	18
Eland	*Taurotragus oryx*	*Thuruai*	65	46	20	14
Impala	*Aepyceros melampus*	*Thwariga ya weru*	65	46	38	27
Baboon	*Papio anubis*	*Nugu*	130	92	128	90
Elephant	*Loxodonta africana*	*Njogu*	87	61	137	96
Zebra	*Equus quagga*	*Wamishore/ Wamiridu*	90	63	69	49

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Logistic regression was used to understand whether knowledge on the local name of the Mt bongo could be predicted based on gender, age and previous opportunity to see the animal (Table 2). The model test results showed that these variables significantly predicted the dependent variable (Wald χ^2 =30.155, df=5, p=0.000). In the case of gender, men were 3.434 times more likely to know bongo's local name. Increase in respondent's age was associated with increasing odds of knowing the local name. Respondents who had previously seen the animal were also significantly more likely to know the local name (odd ratio 0.064).

Generally, 76.8 % (109) of the respondents believed that the mountain bongo is only found in Mt Kenya wildlife conservancy whereas 23.2% did not have any idea of where they are found. The respondents differed significantly (χ^2 =2 49.620, df=2, p=0.000) regarding the bongo diet.

Table 2: Logistic regression analysis of some predictors of the ability to know vernacular name of mountain bongo

Independent variables (Reference category in brackets	*B*	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B) (Odds ratio)*
Gender (Male)						
Female	1.234	.467	6.994	1	.008	3.434
Age (Over 56 years)			1.061	3	.787	
Below 18 years	.607	.924	.431	1	.511	1.834
18-35 years	-.083	.791	.011	1	.916	.920
36-55 years	.010	.802	.000	1	.990	1.010
Seen the animal previously (Yes)						
No	-2.756	.674	16.695	1	.000	.064
Constant	2.595	.844	9.466	1	.002	13.400

B indicates the standard regression coefficient; S.E, standard error around B, Wald is the Wald chi square test, df are the degrees of freedom, Sig. is the significance level and Exp (B) is exponentiation of the B coefficient (odds ratio).

Fifty three percent of the respondents believed that the mountain bongo fed on grass, 6% said that they fed on trees, whereas 41% had no idea (Table 3). A majority of the respondents (53%) felt that the mountain bongo could be a source of bush meat while 20% didn't associate bongo with bush meat. Additionally, most of the respondents (57%) were not aware of any threats to the mountain bongo population. However, thirty percent of those interviewed identified hunting as the main threat to the survival of the mountain bongo in the wild while 11% cited climate change and 3% blamed translocation by the government agencies.

Table 3: Assessment of local community basic ecological knowledge about mountain bongo

Question	Responses	Frequency	Percentage	χ^2 Statistic
1. Have you ever seen a live bongo?	No	58	40.8%	4.761, df=1, p=0.029
	Yes	84	59.2%	
2. Have you ever seen or heard about the bongo?	Yes	102	71.8%	27.070, df =1, p=0.000
	No	40	28.2%	
3. Where do you find bongos?	Mt Kenya Wildlife Conservancy	109	76.8%	40.676, df=1, p=0.000
	I don't know	33	23.2%	
4. What do bongos feed on?	Grass	75	52.8%	49.620, df=2, p=0.000
	Trees	9	6.3%	
	I don't know	58	40.8%	
5. What do you think is the major threat to survival of bongos	Climate change	15	10.6%	99.296, df=3, p=0.000
	Hunting	42	29.6%	
	I don't know	81	57.0%	
	Destruction of the forest	4	2.8%	
6. Do you think people kill bongos for meat?	Yes	76	53.5%	27.099, df=2, p=0.000
	No	28	19.7%	
	I don't know	38	26.8%	

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Concerning the most preferred animal among the thirteen species presented, we found that the respondents differed significantly (χ^2 =, df =12, p=.000) with the majority of the respondents (18%) picking the leopard while 16% preferred the mountain bongo (Figure 2).

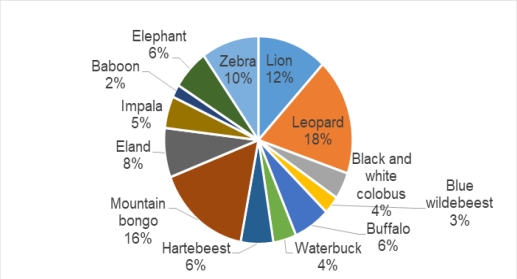

Figure 2. Preference of the bongo in comparison with other selected wildlife species around Mount Kenya wildlife conservancy

Generally, there was a pro-conservation attitude towards the animals (Figure 3). As for the mountain bongo, 57.0% of the respondents would like the antelope to be conserved. Still, the support for elephants (51.4%), lion (48.6%) and the leopards (40.0%) conservation was high. Comparatively, a higher proportion of the respondents did not support conservation of non-human primates including baboons (48.6%), the black and white colobus monkeys (40.0%) and also the African elephant (34.5%). These animals were considered destructive to crops and property (Table 4).

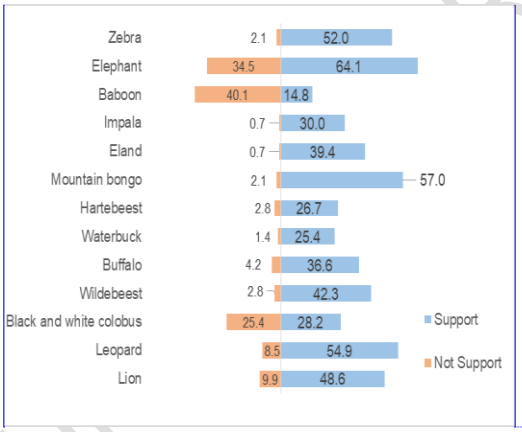

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Figure 3: Assessment of support for conservation of bongo in comparison with other selected wildlife species (excluding those who did not respond).

As summarized in table 4, the respondents differed significantly concerning their reasons for supporting conservation of specific species of animal (χ^2 = 38.0070; df=4, p=0.000). Despite tourist attraction being the main reason, perception that the species was charismatic came out strongly. Those supporting bongo conservation (27.5%) felt that it was attracting international tourists in the area. In addition 12.0% felt that the antelope was attractive, 8.5% its outstanding size, 4.2% is a source of products such as bushmeat, 4.2% due to its

aggressiveness and 0.7% its interesting behaviour. A binary logistic regression was run to predict support for conservation of a reintroduced mountain bongo population based on gender, age and knowledge of the animal. These variables significantly predicted support for conservation (Wald χ^2 =28.030, df=5, p<0.001) of a reintroduced population. The results showed that men were 3.070 times more likely to support conservation compared to women whereas those who had knowledge of the antelope were 9.389 times more likely to support conservation of the antelope (Table 5).

Table 4: Summary of the main reasons given for supporting conservation of selected wildlife species

	Support conservation and Reasons								
	Attract tourists	Pro-cons	Attractive	Size	AB	IB	Total	Don't support	UD
Lion	32(22.5)	0(0.0)	3(2.1)	17(12)	17(12.0)	0(0.0)	69(48.6)	14(9.9)	41.5
Leopard	30(21.1)	3(2.1)	26(18.3)	9(6.3)	10(7.0)	0(0.0)	78(40)	12(8.5)	36.6
BW colobus	8(5.6)	6(4.2)	19(13.4)	1(0.7)	1(0.7)	5(3.2)	40(28.2)	36(25.4)	46.5
Wildebeest	28(19.7)	1(0.7)	6(4.2)	11(7.7)	14(9.9)	0(0.0)	60(42.3)	4(2.8)	54.9
Buffalo	25(17.6)	3(2.1)	7(4.9)	9(6.3)	8(5.6)	0(0.0)	52(36.6)	6(4.2)	59.2
Waterbuck	27(19.0)	2(1.4)	5(3.2)	2(1.4)	0(0.0)	0(0.0)	36(25.4)	2(1.4)	73.2
Hartebeest	6(4.2)	2(1.4)	0(0.0)	7(4.9)	6(4.2)	0(0.0)	21(14.8)	4(2.8)	82.4
Bongo	**42(29.6)**	**6(4.2)**	**17(12.0)**	**12(8.5)**	**6(4.2)**	**1(0.7)**	**84(59.2)**	**3(2.1)**	**40.8**
Eland	27(19.0)	2(1.4)	7(4.9)	13(9.2)	7(4.9)	0(0.0)	56(39.4)	1(0.7)	59.9
Impala	6(4.2)	3(2.1)	21(14.8)	3(2.1)	1(0.7)	0(0.0)	34(23.9)	1(0.7)	88.0
Baboon	11(7.7)	0(0.0)	3(2.1)	4(2.8)	5(3.2)	6(4.2)	29(20.3)	57(40.1)	39.4
Elephant	29(20.4)	4(2.8)	4(2.8)	20(14.1)	16(11.3)	0(0.0)	73(51.4)	49(34.5)	14.1
Zebra	31(21.8)	9(6.3)	6(4.2)	7(4.9)	3(2.1)	2(1.4)	58(40.8)	3(2.1)	57.0

BW indicates black and white colobus. Pro-cons indicates pro-conservation; AB aggressive behaviour, IB, interesting behavior; and UD, undecided. Values in brackets are the percentages.

Table 5: Logistic regression analysis of some predictors of local community attitudes towards conservation of the Mountain Bongo

Independent variables (Reference category in brackets	*B*	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B) (Odds ratio)*
Gender (Male)						
Female	1.122	.571	3.854	1	.050	3.070
Age (Over 56 years)	-	-	5.460	3	.141	-
Below 18 years	-2.201	1.311	2.819	1	.093	.111
18-35 years	-.068	.802	.007	1	.933	.935
36-55 years	-1.010	.877	1.326	1	.250	.364
Know the animal (Yes)						
No	2.240	.558	16.111	1	.000	9.389
Constant	-4.866	1.129	18.579	1	.000	.008

B indicates the standard regression coefficient; S.E, standard error around B, Wald is the Wald chi square test, df are the degrees of freedom, Sig. is the significance level and Exp (B) is exponentiation of the B coefficient (odds ratio).

4. DISCUSSION

Our findings suggest that a majority of the local community members have seen or heard about the mountain bongo. Though, a few number of mountain bongo are believed to occur in Mt Kenya forest [33,34,40] no encounters with wild bongos in the forest was reported in this study. The ability to tell the vernacular name of animals was used as a first step to assess indigenous knowledge about local fauna. The results showed that some animal names were well known using the local dialect. Generally, this knowledge was significantly associated with previous encounters with the animal. Still the level of popularity of the

selected 13 wildlife species varied significantly in the community. Despite more than half of the respondents having had seen the mountain bongo, only a few of them could tell its vernacular name. The results showed that knowledge about bongo could be predicted on the bases of gender, age and exposure to the animals. Men were more knowledgeable about mountain bongo compared to women, a pattern of knowledge distribution that has been reported elsewhere for other wildlife species [41,42]. Level of education did not statistically correlate with the ability to tell the local name. This was not surprising given that local names are not used in the formal education system which means that those who had never gone to school could still know the names. This view is supported by the observation that the ability to tell the local name was significantly associated with increase in age of the respondents. The aged had little or no formal education and were more likely to know the local names of the bongo and other species. As observed by Turi [29], traditional knowledge is deprioritized in favour of scientific knowledge and notions of rationality and practicality in many parts of the world.

The study established that there were more people who could tell the vernacular names of the African elephant, buffalo and the lion despite revealing that they had never seen the real animals. This was due to a strong cultural attachment they have with these animals. This is common in many cultures of the world where certain animals are favoured by people because they are friendly [43] or useful or due to perceptions, beliefs, and experiences that societies have built around them over the years [44]. Such animals would be widely known among the members of the community. In this study, the African elephant, buffalo and the lion are among the most respected animals in many African societies and are largely associated with aggression, courage and strength. These animals predominantly feature in traditional folklore, myths and beliefs of the local communities.

Generally, most of the respondents believed that the mountain bongo is only found within the conservancy and none in the wild. This could be as a result of lack of opportunity to see bongos in any other place including the Mt Kenya Forest where a small population still inhabits the area around Ragati valley [40]. Other areas in Kenya where the subspecies has been described include Cherengani Hills, Londiani forest and crater, Mau highland forest, Aberdare mountain range and the mountain area of Ol Doniyo Eburru [33,34,45].

Despite most of the literature reporting on Mountain bongos being browsers [46,47,48], 41% of the respondents were not aware of their feeding habits a clear indication on the need of communicating such information to the community during education and outreach programmes. Additionally, most of the respondents were not aware of any threats to the conservation of bongos. This is in spite available literature highlighting the precise cause of the precipitous decline of the bongo population (from over 1000 to less than 100) in the wild. These causes include rapid human population growth, increased hunting pressure, habitat loss and epizootic events [49,50,51,52]. From the results of this study it can inferred that community perceives illegal hunting, climate change and translocation as the main threats to bongo population. Apparently, majority of the respondents believed that the bongos could serve as a source of bushmeat and are suitable for hunting. This revelation is worrying given that hunting is believed to be the main cause for bongo population decline and local extinction in Kenya [54, 55] and could jeopardize reintroduction efforts.

From this study, more than half of the respondents had a pro-conservation attitude towards mountain bongo conservation. Even though bongo conservation received greatest support compared to the other animals, it was surprising to find that a relatively high

proportion of the respondents were undecided on whether to support its conservation or not. The attitude towards a species was strongly associated with perception of the benefits that could be derived from the animal such as the ability to attract tourists. Animals with attributes of charisma (aesthetic) and an attraction to tourists were more liked. It has been established that animal's beauty could be associated not only with the respondents' willingness to protect the species but also with its attributed dangerousness and usefulness [56, 57]. It is recognized that human societies have a long and complex relationship with wild animals, varying between appreciation, reverence, retaliation, utilization and acceptance [58]. The development of such cultural predisposition for emotional reactions toward wild animals is linked to either positive or negative effects depending on the species [59, 60]. Understanding such attitudes is important in the management of the species since it could be used to predict intentions which in turn are predictors of actual behaviour [61, 62].

For the case of the mountain bongo, almost two-thirds of the respondents showed a pro-conservation attitude and this was linked to the appreciation of the antelope as a tourist attraction and the perception that the animal was beautiful. Physical characteristics have been useful to classify animals depending on the emotions they produce on people [56]. For example large, charismatic species that have traditionally been regarded as dangerous but intelligent at the same time motivate emotions that may result in actions for their protection, as it has occurred for lions (*Panthera leo*) and leopards (*Panthera pardus*) [56]. In addition, we found that animals that were deemed as destructive such as baboons, the black and white colobus monkeys and also the elephant had the least support for conservation. Such attitudes towards wildlife are connected to individual and collective idiosyncrasies [63] that are correlated with emotions caused by a particular relationship with the animal [44, 64]. The attitudes of a population can affect its tendencies toward eco-friendly behaviors and policies [61].

Attitudes towards wildlife differ among individuals according to variables such as gender [65, 66] age [[65, 66] education level [65] and individual's emotional state and affective responses [67]. In our model, we found that men were more likely to support conservation of bongos compared to women. An increase in age was associated with increased odds for supporting conservation and those who had knowledge of the mountain bongo were more likely to support its conservation.

Conservation implications

This study attempts to assess local community's knowledge of the critically endangered mountain bongo including their attitudes towards conservation of the subspecies. Findings from this study suggest existence of scarce ecological knowledge of the bongo in the community given that less than a quarter of the respondents could tell the vernacular name of the subspecies. It would be valuable to use vernacular name in addition to common and scientific names during awareness sessions about a species. Understanding, acknowledging and promoting residents' knowledge and perceptions about wildlife is an important part of a process of engaging with them and building constructive relationships in support of conservation. Such awareness and education programs should address the low scores observed concerning basic knowledge about the antelope including its ecological requirements and threats. The findings also suggest the need to improve on understanding of the bongo especially among women and the young members of the community.

The findings from this study also revealed that mountain bongo is valued by the community neighboring Mt Kenya Wildlife Conservancy given the perception that it supports tourism in

the area and its charisma. This appreciation of bongo by the community could mean that a combination of strategies aimed at improving local participation in bongo conservation initiatives (such the establishment the Mountain Bongo Sanctuary in Mt. Kenya Forest), boosting of public education and awareness campaigns will promote bongo conservation in the region. In particular, the pro-conservation attitude towards conservation of bongo in the study area is encouraging but the overarching perception of the bongo as a source of bushmeat should raise concern about the occurrence of illegal hunting of animals in the area which could continue to be a threat to the restoration of Mountain bongo population in Mt Kenya Forest.

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