ISSN: 2977-0041

Research Article

Journal of Material Sciences and Engineering Technology

Human Wildlife Conflict in and Around Wondo Genet College of Forestry and Natural Resources, Ethiopia

Melese Merewa Reta

Department of Animal sciences and Food Processing, Faculty of Tropical AgroSciences, Czech University of life sciences, Prague

***Corresponding author**
Melese Merewa Reta, Department of Animal sciences and Food Processing, Faculty of Tropical AgroSciences, Czech University of life sciences, Prague

Received: June 06, 2025; **Accepted:** June 16, 2025; **Published:** June 23, 2025

ABSTRACT

From December 2019 to January 2020, the study was carried out in the Wondo Genet district of Sidama regional state, Ethiopia, at Wondogenet College of Forestry and Natural Resources and the neighboring community. Its goal was to look into conflicts between people and wildlife in and around the campus. Data was gathered through the use of questionnaire surveys, focus groups, key informant interviews, direct observation, and literature reviews. The statistical program for social sciences (SPSS), in particular the chi-square test, one-way ANOVA, and Microsoft Excel, was used to examine the data. Descriptive statistics were also used for frequency and percentage analysis.

For the questionnaire study, 180 households 129 male and 51 females were chosen. The primary causes of human-wildlife conflict in the research area are the quantity of wildlife 22(12%), the lack of food for wildlife10(6%), habitat disturbance 14(8%), and waste management systems134 (74%). Crucuta crucuta, Papio Anuibs, and Phacochoerus are recognized as wildlife species that cause conflict between humans and wildlife. The conventional human-wildlife conflict management strategy is closing the door 120 (67%) after chasing 34 (19%). The average result of human-wildlife interaction in the area is property destruction 133 (74%). There was statistically significant difference (X2=14 df=28 p=0.000) in the attitude of respondents towards of their interaction with wildlife.

Keywords: Conflict, Attitude, Wildlife, Human Wildlife Conflict

Introduction

When the needs of wildlife and human populations collide, it's known as human-wildlife conflict (HWC), which costs both locals and wild animals money [1]. It has existed for as long as there have been people, wild animals, and the sharing of resources and landscapes [2]. Damage to agricultural output, where a sizable portion of agricultural production is located close to the vast edge of forest reserve areas, is arguably the most frequent cost imposed on humans by wildlife. However, in recent decades, its frequency has increased, primarily due to the exponential growth in the human population and the consequent expansion of human activities at forest reserve areas [3].

Human- wild life conflict is a worldwide problem both in urban and rural areas. It is intense in developing countries particularly in Africa including Ethiopia mainly in and around protected area where human and wild life lives in proximity [4]. Increasing population in Ethiopia has over exploitation of natural resource which in turn leads to varieties of human wild life conflict. In addition to insects, small mammals, elephants, baboons, warthogs and different primates cause major crop damage when these animals venture out of the protected areas in search of food [5]. Human wildlife conflicts are continuous because the resource concern has a considerable economic value for local residents.

Food security in Ethiopia is precarious relying intimately result in a single crop season that provide a means of achieving food security for human and crop residue as means of feed source for livestock. However, production of agriculture crop is affected by wild vertebrate animals.

Citation: Melese Merewa Reta. Human Wildlife Conflict in and Around Wondo Genet College of Forestry and Natural Resources, Ethiopia. J Mat Sci Eng Technol. 2025. 3(2): 1-4. DOI: doi.org/10.61440/JMSET.2025.v3.51

Crop raiding by wildlife is increasing problem around protected areas and forest areas. An understanding of the ecological and human dimensions of conflict is an important for effective resolution of the problem. Crop damage and livestock losses caused by large wild mammal species mammals affect local people's responses to wild animals. A wide array of human dimensions such as local people's perceptions of the value of wild animals, how they want wildlife to be managed, and how they affect or are affected by their decisions [6]. Many studies have recognized the importance of incorporating these interacting humanrelated factors into management plans. However, most of the studies have focused solely on the ecological side of human–wildlife conflict with no input from the social sciences [7].

Materials And Methods

Description of the Study Area

Wondo Genet College of Forestry and Natural Resources is found in the western escarpment of the central rift valley of Ethiopia extending between 7°06' N and 38° 37' E, 1720-2620 m a.s.l., about 265 km South of the capital city, Addis Ababa and about 24 km East of Hawassa Town. The Shashemane and Kofele districts of the Oromia region border it in North-Western, North Eastern and North and Eastern directions, respectively (Belaynesh Zewdie, 2002). Topographical ly Wondo Genet area comprises the hills of Abaro, Bachil Gigissa, Gariramo, Kentere and Cheko, as well as the depression surrounded by these hills. The height of land varies between 2,580 m a s l at Abaro and 1,600 m a s l around the marshy area [8].

Preliminary Surveys

The preliminary survey was conducted for one week through informal interview with residents (elders), scouts, experts and managers. Its purpose is not only to bring together the researchers with the study area and some responsible bodies, but also to obtain general background information on the course of Wondo Genet College of Forestry and Natural Resources; its interconnection between wildlife and the college community.

Pilot Survey

The pilot survey was carried out before the actual data collection. The major use of the pilot survey is to assess the questionnaire against its clarity to respondents; its applicability and suitability for the particular study. Based on the feedback of the pilot survey, the questionnaire was revised and developed.

Sample Size Determination

This study applied the simplified formula developed by Yamane, (1967) and reviewed by Israel, (2012);

$$n = 1 + \text{-------} N^{N}(e)_{2} = 180 \qquad \textit{Equestion 1}$$

Where 'n' is the sample households' size, 'N' is the total household's size and 'e' is level of precision. The above formula was widely applied in several survey researchers and up to ±10% precision level (e) is acceptable [9].

Questionnaire Survey

In order to elicit human-wildlife conflict data, questionnaires were designed for local community members. A series of questions that are easy and convenient to answer but can describe the intended objectives and answer the research questions was formulated into a questionnaire. The questions aim to elicit local perspectives on the type of activities occurring within with the forest and impact experienced. Local views on conflict management techniques was be solicited. Finally, any ideas about additional measures that could complement currently used techniques to reduce future conflicts was seeking from community members. Therefore, a questionnaire comprising series of both structured and semi-structured questions was administered to randomly selected households. Key informants' interview, focus group discussions (FGD), and direct Observations was employed.

Data Analysis

Statistical package (software) SPSS version16 were used to analyze the data. Each question was being coded to run SPSS 20 (Ki-square and Cross-sectional descriptive statistics was carried out to calculate frequencies, and to allow cross-tabulations. Result of FGD was analyzed by content analysis method and narrative fashion. Descriptive statistics a form of percentage and frequency to analysis and present the respondents giving each response, and so may sum to over 100% in the cases of multi-response questions was used.

Result and Discussion

Demographic Characteristics of Respondents

Of the 180 respondents 129 (72%) were males while the rest of 51 (28%) females. Most of half 44 (24%) of the respondents were in the high school level of educational back ground (Table1).

Table 1: Demographic Characteristics of Respondents

Age Class	Within a college	Out of the college	Total	%
Young (21-39) years	32	60	92	51%
Adult (40-59) years	26	18	44	24%
old (>60) years	16	28	44	24%
Total	74	106	180	100%
Sex	Within a college	Out of the college	Total	%
Male	53	76	129	72%
Female	21	30	51	28%
Total	74	106	180	100%
Educational Background	Within a college	Out of the college	Total	%
BSc, Degree	34	8	42	23%
High School	18	26	44	24%
Elementary	8	18	26	14%
Cannot write and read	14	54	68	38%
Total	74	106	180	100%
Marital status	Within a college	Out of the college	Total	%
Married	54	73	127	71%
Single	16	22	38	21%
Divorced	4	11	15	8%

Total	74	106	180	100%
Family Size	Within a college	Out of the college	Total	%
1-5 peoples	63	80	143	79%
6-10 peoples	10	18	28	16%
>10 peoples	1	8	9	5%
Total	74	106	180	100%

Perceived Cause of Human and Wildlife Conflict

All respondents reviled that they had conflict with wild animals with in a college and around the college community. Four reasons were suggested as a perceived cause for conflict between human and wildlife. These were increased number of wild animals, habitat disturbance, waste management and shortage of food for wild animals (Figure1).

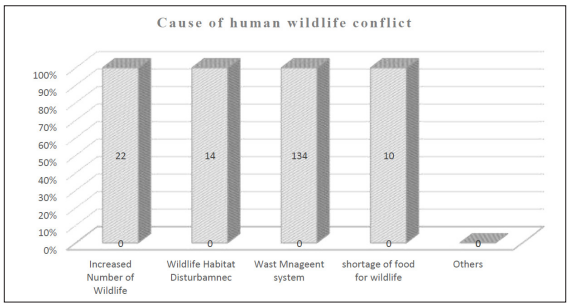

Figure 1: Perceived causes of human wildlife conflict at the study area

The outcome evidently showed that there was conflict between human and wild animals in study site as increased number of wild animals; habitat disturbance, waste management and shortage of food for wild animals have been major causes that the college community faced. Several studies in different localities have revealed increased number of wild animals, habitat disturbance, waste management and shortage of food for wild animals jointly accounted for the greatest portion of human wildlife conflict [10].

Problematic Wild Animal's Species

A total of 3 wild animal species (Phacochoerus-africanus, Papio Anubis, and crucuta crucuta were identified and ranked by respondents. Sixty-one (61%) of respondents ranked Papio Anubis followed by Papio Anubis, twenty-three (23%) as the main problematic wild animals with in the college (Figure 2). Ranking was done according to the problem that the animals faced on the college community.

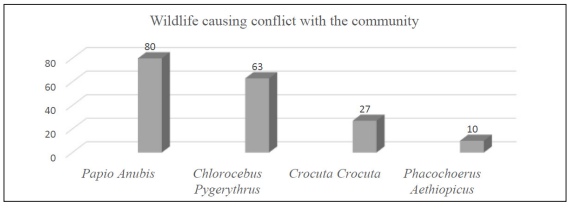

Figure 2: Rank of Problematic Species of Wild Animals

Human and Wildlife Conflict Management Options

About 19 (61%) of the respondents were used closing the door followed by (19%) chasing as the human wildlife conflict management option (Figure 3).

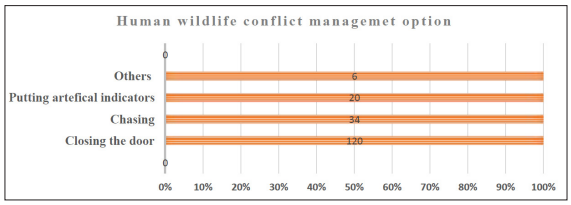

Figure 3: Human Wildlife Conflict Management Options

The successful management choice for problematic wild animals' vertebrates was sixty-one (61%) closing the door and nineteen (19%) chasing; all other measures were described as supplementary and only marginally effective (Figure 3). Due to the fact that these management solutions are affordable, simple for all household members to implement, and cost-effective, cites reports from numerous localities [11].

Consequences of Human-Wild Animal's Conflict

Of the total respondents 18 (58%) reviled that property damage as one of the series consequences in the college community followed by human damage 7(23%) figure 4.

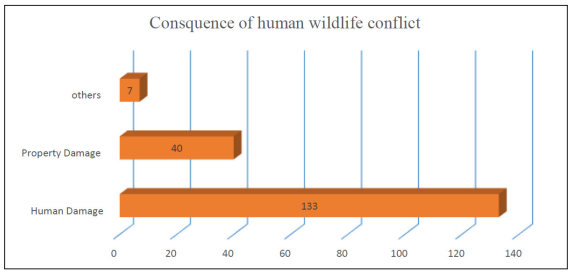

Figure 4: Consequences of Human-Wild Animal's Conflict

The majority of key informants indicated that the college community is at risk for significant property damage due to the rise in wild animals, habitat disturbance, and waste management. Additional habitat degradation, a lack of food, a lack of cover in natural habitats for wildlife, and obstruction of corridors led to frequent human-wildlife conflict and, ultimately, both human and wildlife deaths. In other locations, comparable outcomes were documented [12]. In retaliation for agricultural loss and livestock predation by wildlife, farmers have slaughtered a large quantity of wildlife.

Conclusion

According to the report, perceived conflicts between humans and wildlife include habitat disruption, waste management, an increase in the population of wild animals, and a scarcity of food for wild animals. Respondents selected and ranked crucuta crucuta, Papio Anubis, and Phacochoerus-africanus as problematic wild animals. For troublesome wild animals' vertebrates, closing the door and then nineteen chasing were the most successful control options; all other tactics were deemed supplemental and just marginally successful.

Authors Contribution

The researchers or investigators were in charge of carrying out the study in accordance with the methodology, adhering to ethical clearance guidelines when appropriate, committing to routine oversight of operations and financial behavior by the relevant funding agency, Hawassa University, providing publications or any research products to the same office, and fostering the growth of a research culture.

Funding

This research was fully funded by Hawassa University College of Forestry and natural Resources, Hawassa, Ethiopia.

Acknowledgment

For its assistance with the fund throughout the data collecting, I am grateful to Hawassa University College of Forestry and Natural Resources. I also like to express my gratitude to the locals that live around Wondo Genet College of Forestry and Natural Resources for their cooperation and readiness to help with the data collection.

Conflict Interest

By its very nature, my research is my own original effort, and there are no conflicts of interest. Other than supplying the funds and logistics, the funding organization plays no part in the data collecting, interpretation, or analysis.

Data Availability Statement

All of the original data used in this study are available for additional analysis and to demonstrate its uniqueness and reliability.

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