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Pray for prey? Agonistic responses of free-ranging dogs and cats to urban wildlife in and around Kolkata, India

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Abstract

The introduction and promotion of free-ranging as well as domestic pets is a significant way in which humans have impacted native animal populations. Domestic and feral dogs (*Canis familiaris*) and cats (*Felis catus*) can cause considerable harm to native and urban wildlife, either directly through predation or indirectly via disease transmission and fear-induced behavioural or demographic changes. We have collected data from incidents observed during our daily commute, including cases of wildlife being killed by dogs and cats in various parts of Kolkata. Many wild animals associated with urban cities are being found, attacked, and killed by these animals. According to our study, 74.2% of wildlife were killed by domestic or stray cats, and 25.8% by domestic or stray dogs. Among them, 54.8% are mammals, 19.4% are birds, 9.7% are insects, 9.7% are reptiles, 3.2% are fish, and 3.4% are amphibians. Of these victims, many are in threatened list of protection under the IUCN as well as India's Wildlife (Protection) Act, 1972. Our study shows that unorganised control of the population of dogs and cats significantly affects the human-associated wildlife and the native ecosystem as well.

Keywords: Urban wildlife, feral, stray, predation, native ecosystem

Introduction

In the Upper Palaeolithic era (35,000 BP), dog domestication most likely started much earlier than that of any other animal or plant. This early, probably unconscious process is called proto-domestication to distinguish it from the actual domestication process, which has been dated to approximately 14,000 BC (Galibert *et al.*, 2011) ^[2]. Cats are among the first domesticated animals in history, having been domesticated around 11,000 years ago during the Neolithic period. The ancestors of cats migrated from Africa to Europe and Asia some 11,000 years ago. In Egypt, cats have been domesticated since approximately 4,000 BC. The Egyptians of the time liked to keep cats to control mice and other pests. Over time, cats progressively transformed into pets and companions for people. In Europe and Asia, cats were also widely used to control mice and other pests (Xuan, 2023) ^[14].

Significant human impacts during the current Anthropocene period have led to global environmental degradation, defaunation, and loss of biodiversity. The introduction and promotion of free-ranging domestic pets worldwide is a major way humans affect native animal populations. Domestic dogs (*Canis familiaris*) and cats (*Felis catus*) can cause considerable harm to native wildlife, either directly through predation or indirectly via disease transmission and fear-induced behavioural or demographic changes. Nearly every human community has domestic dog and cat populations, and as the human population expands in size and spreads geographically, so too do these domestic animals, making the threat increasingly concerning (Morin *et al.*, 2018) ^[8].

One of the domestic animals that is thought to be the biggest threat to wildlife preservation is the feral cat, *Felis catus*. This is particularly true for island ecosystems, as there is a lack of data for mainland countries (Mori *et al.*, 2019) ^[7]. In the United States, cats kill between 6.9 and 20.7 billion mammals and between 1.4 and 3.7 billion birds annually, according to a comprehensive review of the literature conducted to quantify the mortality caused by cats (Turner, 2022) ^[13]. According to Loss *et al.* (2013) ^[4], domestic cats that roam freely kill between 6.3 and 22.3 billion animals and 1.3 to 4.0 billion birds annually (Loss *et al.*, 2013)

[5]. Free-ranging domestic cats *Felis catus*, from domesticated pets to wild cats, affect biodiversity through competition, disease, fear effects, predation, and hybridization (Trouwborst *et al.*, 2020) [12]. Domestic dogs are increasingly recognized as a threat to the conservation of native species. Their impacts are frequently on par with those of other invasive predators, such as cats and rats. Home *et al.* (2018) [3] carried out the first sub-continent scale study of the effects of dogs on native species in India using reports from national print media and an online key informant survey. Dogs reportedly attacked 80 species, including 31 vulnerable species listed on the IUCN Red List and four Critically Endangered species (Home *et al.*, 2018) [3].

Public health and conservation are seriously threatened by the large number of uncontrolled, free-ranging dogs (*Canis familiaris* Linnaeus, 1758) in India's cities and rural areas (Pal, 2001). The Indian stray dog, also called the domestic

dog (*Canis lupus familiaris*), makes up a percentage of the country's free-roaming dog population and affects public health, urban ecological processes, and social dynamics (Paul *et al.*, 2014, Saha, 2025) [10, 11]. Now-a-days free ranging dogs become feral in both in urban and rural areas. Not only in the cities, but this feral population of dogs create severe threats to the wild animals in the forested areas, especially in the reserve forests where human habitation exists. Preferentially, the dogs attack mega carnivores while capturing prey, thus impacting the forest ecosystem.

Methodology

Data collection from various areas of Kolkata (Figure 1) for this study took place from March 2025 to July 2025. We used a Canon PowerShot SX430 IS camera for photography. We gathered data on IUCN status and IUCN global population trends from the IUCN website.

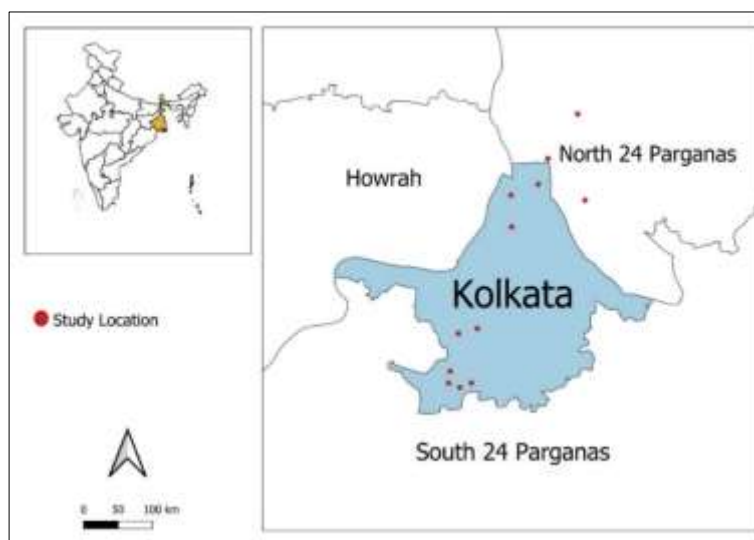


Fig 1: Study Area

Result and Discussion



Fig 2: Wildlife being killed by stray dogs (*Canis lupus familiaris*) and cats (*Felis catus*) in Kolkata

We have gathered data from incidents encountered during our daily commute, including cases of wildlife being killed by stray dogs (*Canis lupus familiaris*) and cats (*Felis catus*) in various parts of Kolkata (Figure 2). Many wild animals associated with the city are being found, attacked, and killed by the free-ranging dogs and cats (Figure 2), according to preliminary data collected over the last three to four months from different locations in Kolkata. Some of these species are unknown, but most are of least concern based on the global IUCN Red List status (Table 1). According to our

study, 74.2% of wildlife were killed by domestic or stray cats, and 25.8% by domestic or stray dogs. In our overall data, 54.8% are mammals, 19.4% are birds, 9.7% are insects, 9.7% are reptiles, 3.2% are fish, and 3.4% are amphibians. Of these victims, 87.1% are classified as least concern, and 3.2% as data deficient, according to IUCN status. The IUCN global population trends of victims are 54.8% stable, 19.4% decreasing, 3.2% increasing, and 22.6% unknown (Figure 3).

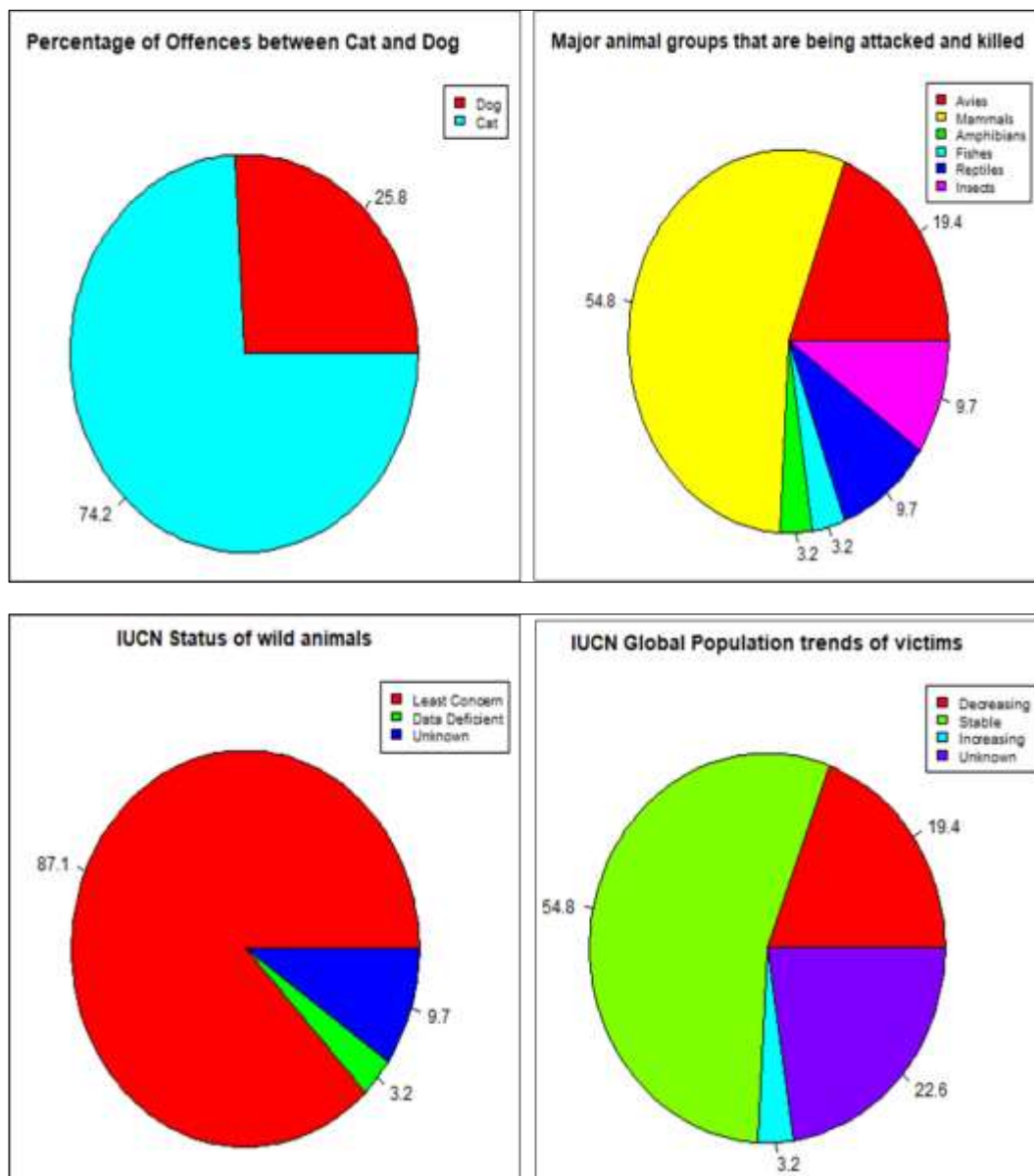


Fig 3: Graphical representation in percentage of stray dogs (*Canis lupus familiaris*) and cats (*Felis catus*) and wildlife conflict in Kolkata.

Table 1: Data of wild animals being encountered, attacked and killed by the free-ranging dogs and cats in Kolkata (IUCN, 2025).

SL. No.	Domesticated Dog/Cat	Killed Species	Killed Species IUCN Status	Killed Species IUCN Global Population Trends	Location in Kolkata and Date
\	Cat	Common Wolf Snake (<i>Lycodon aulicus</i>)	Least Concern	Stable	Barisha March, 2025
2		Short-tailed Bandicoot Rat (<i>Nesoka indica</i>)	Least Concern	Unknown	Barisha March, 2025
3		House Shrew (<i>Suncus murinus</i>)	Least Concern	Stable	Barisha April, 2025
4		House Rat/ Black Rat (<i>Rattus rattus</i>)	Least Concern	Stable	Barisha April, 2025
5		American cockroach (<i>Periplaneta americana</i>)	Unknown	Unknown	Barisha April, 2025
6		Jungle Babbler (<i>Argya striata</i>)	Least Concern	Stable	Barisha April, 2025
7		House Mouse (<i>Mus musculus</i>)	Least Concern	Stable	Barisha April, 2025
8		House Rat/ Black Rat (<i>Rattus rattus</i>)	Least Concern	Stable	New Alipore May, 2025
9		Common Myna (<i>Acridotheres tristis</i>)	Least Concern	Increasing	Barisha May, 2025
10		House Sparrow (<i>Passer domesticus</i>)	Least Concern	Decreasing	Shobhabazar May, 2025
11		Rock Pigeon (<i>Columba livia</i>)	Least Concern	Decreasing	Belgachia May, 2025
12		Spotted Snakehead (<i>Channa punctatus</i>)	Least Concern	Stable	Putiary May, 2025

13		House Rat/ Black Rat (<i>Rattus rattus</i>)	Least Concern	Stable	Dum Dum July, 2025
14		Rock Pigeon (<i>Columba livia</i>)	Least Concern	Decreasing	Saltlake June, 2025
15		House Shrew (<i>Suncus murinus</i>)	Least Concern	Stable	Barisha July, 2025
16		Oriental garden lizard (<i>Calotes versicolor</i>)	Least Concern	Stable	Barisha July, 2025
1	Dog	Small Indian Mongoose (<i>Herpestes auropunctatus</i>)	Least Concern	Unknown	Sokher Bazar May, 2025
2		Domesticated Cat (<i>Felis catus</i>)	Unknown	Unknown	Durganagar May, 2025
3		Rock Pigeon (<i>Columba livia</i>)	Least Concern	Decreasing	Taratata March, 2025
4		Indian Rat Snake (<i>Ptyas mucosa</i>)	Least Concern	Decreasing	Barisha April, 2025
5		House Rat/ Black Rat (<i>Rattus rattus</i>)	Least Concern	Stable	Barisha April, 2025
6		Common Palm Civet (<i>Paradoxurus hermaphroditus</i>)	Least Concern	Decreasing	Silpara April, 2025
7		Indian Bull Frog (<i>Hoplobatrachus tigerinus</i>)	Least Concern	Stable	Paschim Putiary May, 2025
8		House Rat/ Black Rat (<i>Rattus rattus</i>)	Least Concern	Stable	College Street May, 2025

Based on the data we are collecting, domesticated dogs and cats that roam freely can significantly affect the conservation of both non-threatened and threatened wildlife species, whose populations are already declining due to factors like habitat degradation. Campaigns promoting responsible cat ownership and restricting free-ranging behaviour, especially at night, are essential to reduce the negative impact of domestic dogs and cats on wildlife. Nonetheless, estimates of the overall prey population, insights into cat predatory behaviour, and objective data interpretation are needed for future research. Capture feral dogs and cats, sterilize, vaccinate, and return them to their natural habitats in order to stabilize the population. Wildlife impact studies are needed to monitor the decline of species due to disease and predation, and strays' population mapping is needed to help prioritize sterilization and intervention zones. It remains unclear whether the media will consider and report less significant discoveries.

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