



AMBIENT APPRAISAL

Who lets the Dog Out? Stray Dogs Emerging as a Potential Threat for Blackbuck and Other Wildlife in Western Haryana, India: A Preliminary Assessment

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Study Area: Fatehabad & Hisar, of Haryana, India
Coordinates: 29°25'8.2"N, 75°34'36.7"E;
29°01'05.02"N; 75° 41'41.36"E

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Introduction:

Dogs (*Canis familiaris*) are characterized as generalist as well as opportunistic predators due to high variation in their diet ranging from scavenging on garbage, human faeces, reptiles, and birds to medium size wild animals etc. For years, dogs survived and lived as companions of humans and remained dependent on anthropogenic food subsidies and that's why they were always found around human settlements. Along with this, in some areas, they have generally assumed the role of subordinate mesopredators due to the presence of large predators in Africa and North America where guilds of predators are relatively diverse and intact (Butler *et al.*, 2004; Ritchie & Johnson, 2009). They are potentially effective predators the world over and capable of killing a significant number of species across the range of taxa and body sizes (Vanak *et al.*, 2010; Young *et al.*, 2011). A single free-ranging dog has killed about 500 Kiwis (*Apteryx australis*) in New Zealand out of a population of 900 Kiwis in a few months (Taborsky, 1988). Most importantly, domestic dogs have contributed to the extinction of 11 vertebrate and are a potential threat to 188 threatened species globally (Doherty *et al.*, 2017). As per estimation by the World Health Organization, India alone is home to more than 25-30 million domestic dogs and

Abstract

Two sites in a semi-arid region of western Haryana were evaluated for the stray dog sighting using Scan sampling on an opportunistic basis/random encounter while conducting ecological studies for a period of two years from 2019-20. Monthly mean sightings were calculated from field visits based on random encounters. The chasing and group or pack hunting behaviour exhibited by stray dogs were also observed randomly in single, pair and moderate size packs. Significant presences of dogs were found during the present investigation and data on blackbuck and other wildlife casualties by dogs were also obtained from State Forest Department (2016-2020) revealing that it is a serious concern for wildlife and providing the baseline information to categorize them as only predator in this region. The establishment of dog sterilization cum vaccination centres and regular dog census in wildlife dominated regions are suggested to understand and mitigate this issue and for long term conservation of wildlife in the state of Haryana.

definitely, a matter of serious concern, even if they consume a meagre of wildlife in their diet, will have a high impact on wildlife. In India, stray dogs are preying on varieties of wildlife including blackbuck (Jhala & Giles, 1991; Jhala, 1993). Dogs are generally used to facilitate hunting, protect owner property, or reduce human-animal conflicts by safeguarding livestock from predators or peoples (Khan, 2009). When they are neglected or no longer needed, they often become either feral or free-roaming. In some regions, they are most abundant carnivore and significantly affect the ecosystems (WHO-WSPA, 1990).

Dogs have been considered a trusted companion of human beings all over the world since time immemorial and have passionately as a dependable support for their pursuit of food and safer havens of living. This has gradually reached a situation where dogs now occupy a distinguished space of companionship in the life of humans. The vast majority of people take them as an emotional subject. On the other hand, in Haryana, many wildlife species are sharing the same landscape with humans for survival on the marginal land around human settlements. But the ubiquitous presence of stray dogs in certain wildlife dominated areas of western Haryana has come to pose an altogether different matrix of ecological and social issues. To evaluate the threat directly posed by stray/feral (un-

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owned) dogs in western Haryana, a survey was conducted. Significant presence of stray dogs have been reported in and around the Hisar district where they reportedly chase and prey on Blackbuck and Nilgai; the population of both the ungulates harbouring in isolated patches within restricted habitat surrounded with high human habitation (Delu *et al.*, 2021). Therefore to address this issue, a study has been conducted to record the opportunistic sighting of stray dogs, and their chasing or hunting mechanism more specifically on blackbuck in two non-protected wildlife dominated areas of semi arid region of western Haryana.

Methodology:

Study area descriptions: two sites in the semi-arid region were selected; in and around the Badopal area of district Fatehabad and the Mangali-Rawatkhhera region of Hisar district. Both the sites are dominated by the *Bishnoi* community which has high reverence and tolerance towards blackbuck due to religious sentiments. The sites lie in biogeographic province 4-A, Semi-arid, Punjab Plains (Rodgers *et al.*, 2000) with 'Trans-Gangetic Plains Regions' agro-climatic zone under the 'Arid to Semi-arid' climatic region, and characterized by aridity, scanty rainfall and extremes of temperature. The xerophytes are the dominant vegetation in sites and are characterized as 'tropical thorn forests'. These sites are natural patches surrounded by a semi-arid agroecosystem with high human habitation. The cultivation of fields at Mangali-Rawatkhhera desert land mainly depends on the rainfall. Adjoining fields are used to grow crops such as wheat, maize, other cereals, cotton, and pulses. The Blackbuck and Nilgai are the two main ungulate species harboured there along with the other fauna and flora of the semi-arid ecosystem.

Method: scan sampling (Altman, 1974) on an opportunistic basis/random encounter was used to record the dogs sighting in the Badopal area in 2019 and 2020 and from Mangali-Rawatkhhera area in 2020 while studying the wildlife behaviour. Local people's perceptions were also helped during data collection.

The monthly average of sightings was calculated from field visits and the chasing behaviour of dogs was noted opportunistically in a random manner with binoculars from vantage points. The chasing behaviour of dogs was reported more specifically to Blackbuck than Nilgai.

A Nikon COOLPIX P900 digital camera and Nikon ACULON binoculars (8×42, 8°) were used for photography and taking observations from long distances without disturbing the normal activity of the animals.

Results:

Observations on stray dog's average frequency of chasing the Blackbuck and other wildlife by the investigator and people at Badopal, Mangali and Rawatkhhera villages, during the field survey of the present investigation

revealed that there was a significant presence of feral dogs throughout the year (Fig.-2) but maximum sightings were observed during the breeding season of Blackbuck between February to March as well as August and December because, at the time of parturition, females are more prone. Newborn to small young ones were more prone to dogs's attacks, sub-adults were also on their radar, though the adult males were not much affected by the presence of stray dogs in the habitat. 5.5, 5.3 and 4.5 were the mean annual sighting of stray dogs at BA 2019, BA 2020 and M-R 2020 respectively (Fig.-1).

Chasing Mechanism: The stray dog's packs were reportedly attacked by the wildlife but sometimes they attacked single-handedly or in a pair. Interestingly attacks were also observed by the packs of dogs, the latter followed a strategy in which more than two dogs spot the weakest or youngest one in the herd and chase the prey and if any member is of the predatory pack is exhausted, another dog replaced that exhausted one, consequently after a long chase, the prey got tired and ultimately attacked at their posterior region to control it. Total 9, 7, and 12 chasing as a single were reported from BA 2019, BA 2020 and M-R 2020 respectively. Chasing by stray dogs in pairs and by forming packs were reported 14, 10, 8 and 8, 6, 5 from BA 2019, BA 2020 and M-R 2020 respectively (Fig.-2). The possible risk of zoonotic disease transmission always remained high as the same habitat was also shared by wild animals and stray dogs.

Interestingly, a similar trend is also very much evident in the information gathered from Haryana State Forest Department and which was also published in the different national and vernacular daily newspapers explaining the severity of dogs on wildlife, from January 2016 to May 2020 in the Hisar Division and within 4 years 361 blackbucks were killed only by dogs followed by illness (23), other reasons (23) and poaching (4). Along with Blackbuck, these mongrels are also posing a severe threat to large-bodied antelope Nilgai/Rojh and a total of 1641 killed followed by 25 Peafowl, 29 Chinkara and 35 Monkey were also killed by the dogs (Table-1).

Discussion:

Stray or free-ranging dogs have emerged as a potential predator for wildlife dominated areas of western Haryana. Anthropogenic activities have caused irreparable loss to the native species in their natural habitat. Many immediate and long-lasting effects include habitat loss, infectious disease, and exotic species have been evaluated worldwide for their impact on wildlife and among them, the stray/ free-ranging dogs have been ranked high (Hughes & Macdonald, 2013). Domestic dogs also have a negative impact on local wildlife through predation, food competition, fear-mediated behavioural changes, disease transmission and hybridization (Banks & Bryant, 2007;

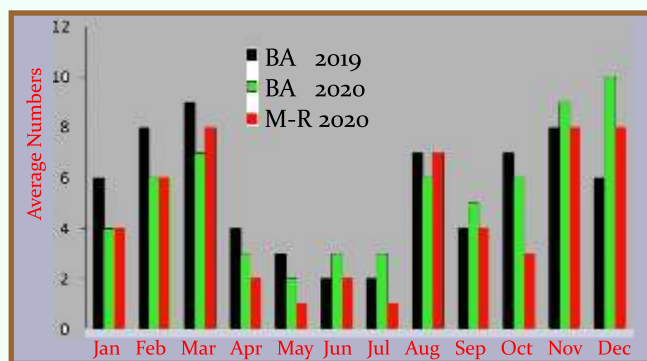


Figure-1: Dogs sighting at two locations; BA; Badopal area and MA; Mangali-Rawatkhara

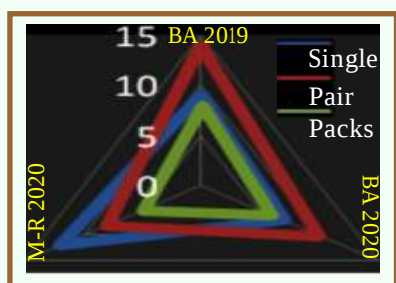


Figure-2: Observed Chasing by Dogs at BA and M-R.

Table 1: Wildlife death record of Hisar Division from January 2016 to May 2020 (Source – State Forest Department, Haryana)

Death by	Black Buck	Peacock	Chinkara	Monkey	Nilgai/Rojh	Others
Dogs	361	25	29	35	1641	14
Poaching	4	12	2	3	46	53
Illness	23	23	4	3	31	7
Others	23	8	0	33	287	15
	411	68	35	74	2005	89

Bergman & Bender, 2009; Ritchie *et al.*, 2014; Furtado *et al.*, 2016; Zapata-Ríos & Branch 2016; Bassi *et al.*, 2017; Doherty *et al.*, 2017).

Stray dogs share a habitat mostly with wildlife, of them few are endangered species in Haryana and India. Home *et al.* (2017) reported that dogs generally attack 80 species of wildlife and out of these 31 species have been included in the IUCN Red List of threatened species, including four Critically Endangered species of India. Dogs were reported to attack mainly by forming packs and 45% of their chase leads to the death of the prey. Approximately 48% of the incidents have been reported in and around the protected areas, suggesting their large-scale edge effect in protected areas in India. Stray dogs have been found as the main factor responsible for wildlife injury and mortality among all other factors as per the record of the wildlife rescue centre at Jodhpur, Rajasthan (Bhardwaj *et al.*, 2018). The present study also assessed the threats to wildlife by dogs at study sites of western Haryana and found them potential and emerging, only predators for blackbuck and other fauna. The dogs attacked the wildlife by forming packs and

more sightings and casualties were reported during the breeding season, especially during parturition time as the mother and the fawns are more prone to attack.

It is noteworthy to mention that in northern Indian plains, outside the protected areas, no wild predator is surviving, except a very limited number of Wolves in sporadic locations. Historically Cheetah (*Acinonyx jubatus*) and Wolves (*Canis lupus pallipes*) were the main predators of the Blackbuck (Jhala & Isvaran, 2016), as Cheetah went extinct from the Indian Subcontinent, therefore, in western Haryana, there are no large carnivores species harbouring to predate on Blackbuck or any other wild herbivores. Over the years, this space of large carnivores is being filled by these dogs and are emerging as a potential only predator for wildlife especially juveniles and subadults in locally confined populations of Blackbuck and Nilgai surrounded by high human habitation in Haryana.

Conservation implications and Suggestions: Dogs generally perpetuate themselves as stray when their owners disown them or born on the streets, for many reasons therefore they escaped from their owners. As a result, they freely and unrestrictedly breed and form themselves into a local population. The breed of mongrels or crossbreeds become a major cause of concern, forming a sizable local population and now emerged as a major problem at wildlife dominated areas surrounded by high human habitation and leads to becoming a major predator outside the protected areas in human-dominated landscapes. A detailed countrywide or state-specific SOP (Standard Operating Procedure) is required to mitigate dog-wildlife conflicts. The establishment of dog sterilization cum vaccination and wildlife rehabilitation



Plate-1: a) Adult male blackbuck after natural death at Badopal, b) A sub adult male killed by feral dog at Balashmand, c) Female killed by dog, d) A large group of dogs in blackbuck habitat, e) Dogs sharing habitat with blackbuck and Nilgai at Dhangar, Fatehabad, f) Fearless adult male Blackbuck and Nilgai

centre can be a solution at the local level where wildlife harbours outside protected areas. There should be strong legislation to restrict disowning pet dogs for preventing them to shift into a stray category. Dogs' census around wildlife dominated areas is suggested for risk assessment. In the context of Haryana, most of the mammalian and other wildlife are restricted into local confined populations surrounded by high human habitation and agricultural intensification, therefore in future there will be more dog-wildlife conflicts which is also a risk of spread of zoonotic disease, as these dogs also visit human surroundings of human settlements, so overall awareness and groundwork in this regard is a time of need to stop this only predator for wildlife in western Haryana.

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