



# Feral Pigeons and their relationship with humans: a dense assessment of totally urbanized bird species in 3 specific sites under LMRC Metro Stations at Lucknow city, Uttar Pradesh, India

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## ABSTRACT

Feral pigeons, also known as city pigeon or street pigeon, are among the most successful avian settlers in our cities. The average feral pigeon population in the world is around 1 pigeon per 10–20 city inhabitants, these estimates to world population between 165 million to 330 million. These feral pigeons live everywhere where people do, unlike their ultimate ancestor Rock Dove (*Columba livia*), who used to live in the faces of the cliffs of central and western Palearctic and north Ethiopian regions, as well as in those of the Indian Subcontinent. *Columba livia* is a wild bird whose domestication has led to a large number of pigeon breeds. The occasional loss or straying of domestic birds determined the origin of feral pigeons, which are now widespread all around the world. Feral pigeons are not referred to as a different species but only varieties of rock pigeons. However, “variety” is not a recognized taxonomic category, but it is used here because feral pigeons cannot be considered under the taxonomic group “sub-species” as they are population stemming from domesticated ancestors. Survey of pigeons in the proposed study area started from January to April 2023 in morning from 8.30 a.m. to 11.30 a.m. Point count method was used for the survey at systematic interval of 20 meters.

**Keywords:** Domestication, Pigeons, Domesticated ancestors, Feral Pigeons, Taxonomic category

## INTRODUCTION

The pigeon is a member of the bird family Columbidae consisting of doves and pigeons. The scientific name of pigeon is *Columba livia*, and there are 12 subspecies of it (Gibbs et al., 2010). The ancestral rock dove is also commonly known as the rock pigeon. This calls attention to the fact that a “dove” and a “pigeon” are biologically the same animal and the difference between both is a baseless social construction. Ornithologists draw no substantive behavioral or physical distinctions between the two.

The average length of an adult of the nominate subspecies of the rock dove is about 29 to 37 cm (11 to 15 in) with a wingspan of 62 to 72 cm (24 to 28 in) (Shah, 2008). Though overfed domestic and semi domestic individuals can exceed normal weights, the weight for wild or feral pigeons ranges from 238g to 380g (Cornell, 2008). Among standard measurements, the length of wing chord is around 22.3 cm, the tail is around 9.5 to 11 cm long, and the

bill is around 1.8 cm (**Gibbs et al., 2010**). The head, neck, and chest of the adult rock dove is bluish-grey while its neck and wing feathers show glossy yellowish, greenish, and reddish-purple iridescence. The species show almost no sexual dimorphism, but the iridescence on female's neck is less intense and more restricted to the rear and sides, whereas that on the breast is often very unclear. The bare skin round the eye is bluish-grey while the iris is orange, red, or golden with a paler inner ring. The beak is grey black in color with a conspicuous white cere, and the feet are purplish red in color (**Gibbs et al., 2010**).

The rock pigeon has a naturally gifted ability to "home" over long distances because it relies on skills other than memorization. This prolific ability of pigeons was accidentally discovered by humans when pigeons released far from home found their way back to where they used to live, abandoned or traded far from home. Thus, the domestication of pigeons and unexpected consequences lead to the discovery of their "domestic abilities". This discovery became the basis for the increased domestication of pigeons (**Merton, 1936**).

## STUDY AREA

To carry out the short-term study, three different sites for population of pigeons were identified around the city of Lucknow. The largest city and capital of the Indian state of Uttar Pradesh, Lucknow is also the state's second-largest urban agglomeration. A humid subtropical climate characterizes Lucknow, with chilly, dry winters lasting from mid-November to February and hot; dry summers lasting from mid-March to mid-May. **Three sites** that were selected for study of pigeon population were:

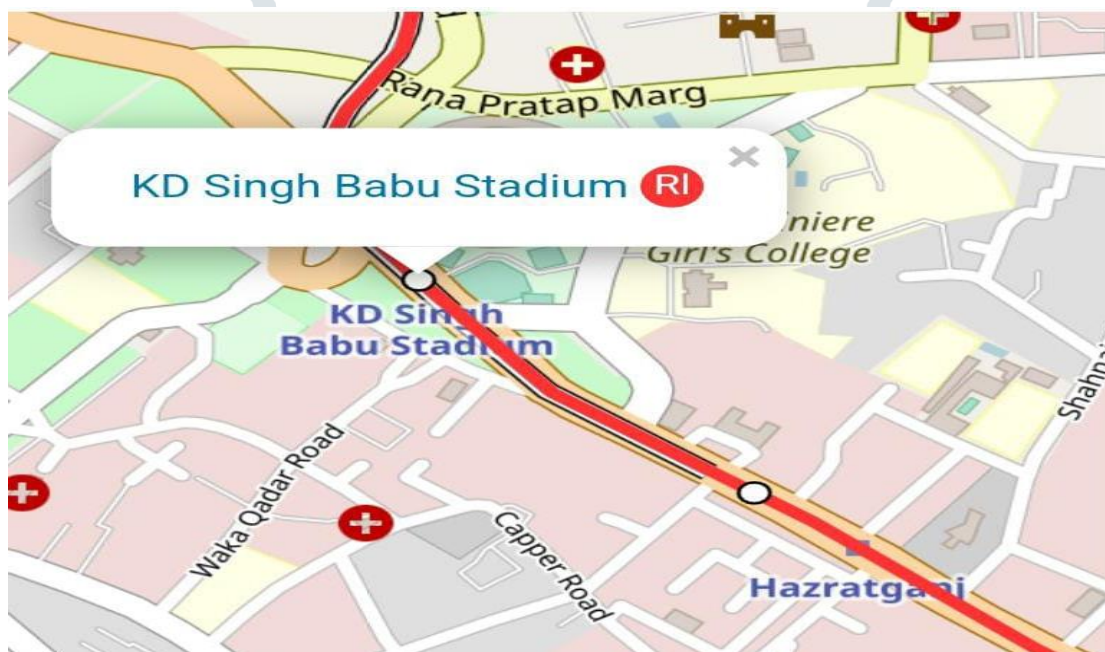
1. Isabella Thoburn College Metro Station (I.T. College)
2. University of Lucknow Metro Station
3. K.D. Singh Babu Stadium Metro Station



Site No.1. Map 1. Showing Metro Station of Isabella Thoburn College (I.T. College)



Site No. 2. Map 2. Showing Metro Station of University of Lucknow



Site No. 3. Map 3. Showing Metro Station of K.D. Singh Babu Stadium

## METHODOLOGY

Survey of pigeons in the proposed study area started from January to April 2023 in morning from 8.30 a.m. to 11.30 a.m. Point count method was used for the survey at systematic interval of 20 meters. Observational recordings were done using diary & pen while photographic recordings with Nikon D500 with Tamron 150-600 G2.



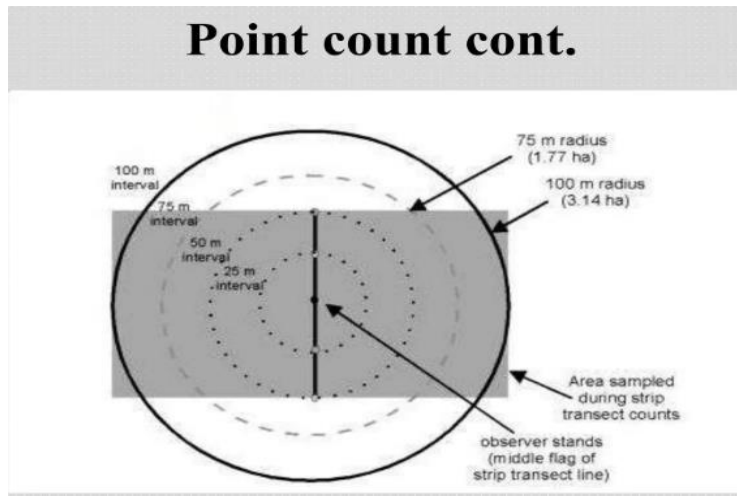


Diagram showing Point count method

## RESULT AND DISCUSSION

### Pigeon population at three sites of Lucknow Metro Station



Figure.1. I.T. Metro Station



Figure.2. University of Lucknow Metro Station



Figure.3. K.D. Singh Babu Stadium Metro Station

## OBSERVATION TABLE

Table 1. Showing Pigeon Population at three sites of Lucknow Metro Station

S.No.	Sites	Date & Day	Species count
1.	Isabella Thoburn College Metro Station	1) 06/01/23 Friday	15( $\pm$ 2)
		2) 07/01/23 Saturday	12( $\pm$ 2)
		3) 08/01/23 Sunday	13( $\pm$ 2)
		4) 02/02/23 Thursday	13( $\pm$ 2)
		5) 03/02/23 Friday	11( $\pm$ 2)
		6) 5/02/23 Friday	15( $\pm$ 2)
		7) 1/03/23 Wednesday	14( $\pm$ 2)
		8) 7/03/23 Tuesday	12( $\pm$ 2)
		9) 8/03/23 Wednesday	13( $\pm$ 2)
		10) 1/04/23 Sunday	10( $\pm$ 2)
		11) 5/04/23 Wednesday	14( $\pm$ 2)
		12) 6/04/23 Thursday	12( $\pm$ 2)
2.	University of Lucknow Metro Station	1) 27/01/23 Friday	7( $\pm$ 2)
		2) 28/01/23 Saturday	3( $\pm$ 2)
		3) 29/01/23 Sunday	5( $\pm$ 2)
		4) 10/02/23 Friday	6( $\pm$ 2)

		5) 11/02/23 Saturday	7(±2)
		6) 12/02/23 Sunday	5(±2)
		7) 10/03/23 Friday	7(±2)
		8) 11/03/23 Saturday	7(±2)
		9) 12/03/23 Sunday	4(±2)
		10) 16/04/23 Sunday	5(±2)
		11) 17/04/23 Monday	4(±2)
		12) 21/04/23 Friday	4(±2)
3.	K.D. Singh Babu Stadium Metro Station	1) 27/01/23 Friday	8(±2)
		2) 28/01/23 Saturday	8(±2)
		3) 29/01/23 Sunday	5(±2)
		4) 13/02/23 Monday	6(±2)
		5) 14/02/23 Tuesday	9(±2)
		6) 16/02/23 Thursday	7(±2)
		7) 13/03/23 Monday	10(±2)
		8) 28/03/23 Tuesday	9(±2)
		9) 29/03/23 Wednesday	8(±2)
		10) 22/04/23 Saturday	4(±2)
		11) 23/04/23 Sunday	6(±2)
		12) 25/04/23 Tuesday	8(±2)

**Table 2. Representation of Number of Visits and Recorded Species Number**

S.No	Visit Site	1	2	3	4	5	6	7	8	9	10	11	12	Total
		1.	Isabella Thoburn College Metro Station	15	12	13	13	11	15	14	12	13	10	
2.	University of Lucknow Metro Station	7	3	5	6	7	5	7	7	4	5	4	4	64
3.	K.D. Singh Babu Stadium Metro Station	8	8	5	6	9	7	10	9	8	4	6	8	80

**Table 3. Showing Estimated Average Number of Pigeon Population**

S.N.	Study Sites	Total number of species found in 3 visits	Average species number in 3 visits
1.	Isabella Thoburn College Metro station	154	$154/12 = 12.83$
2.	University of Lucknow Metro Station	64	$64/12 = 5.33$
3.	K.D. Singh Babu Stadium Metro Station	80	$80/12 = 6.6$
<b>Estimated total average no. of Pigeon Population in 12 visits on 3 sites</b>			<b>25</b>

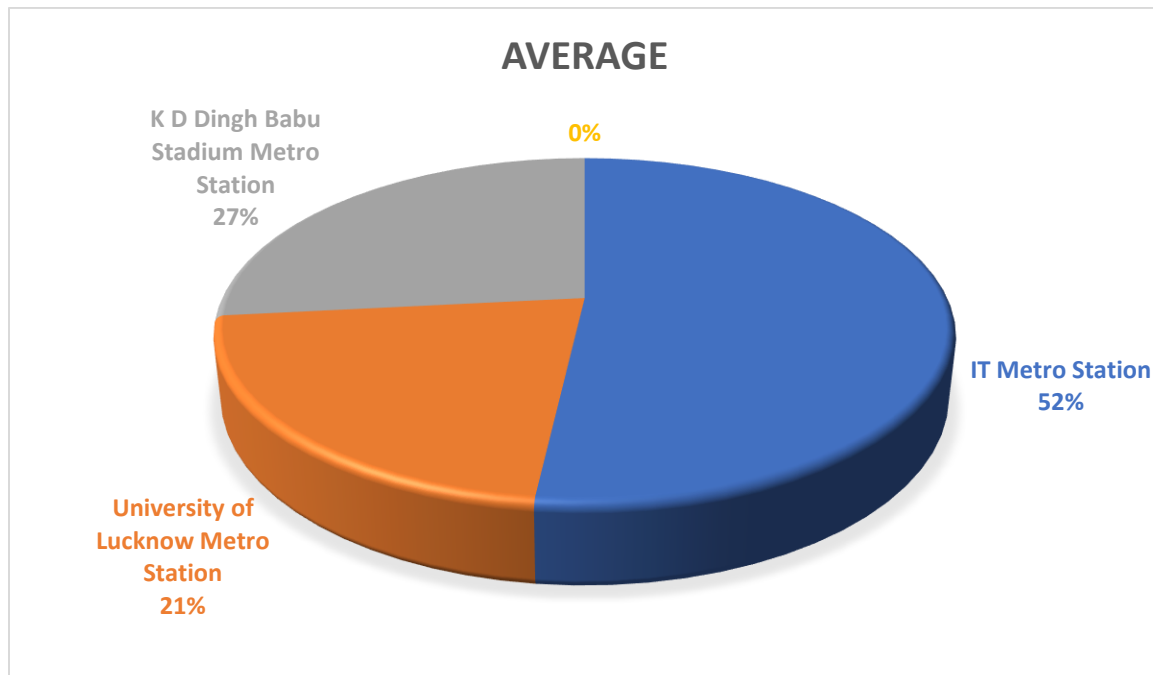
The study was done at 3 specific sites under LMRC metro stations, Lucknow, Uttar Pradesh i.e., Isabella Thoburn College (I.T.) Metro Station, University of Lucknow Metro Station and K.D. Singh Stadium Metro Station.

**Table 1.** Shows the **number of Pigeons Population** in Lucknow city at specific sites during study period of 4 months on 3 visits. According to survey it found that the Isabella Thoburn College Metro Station (I.T. metro station) shows the maximum number of pigeon's population from all of the mentioned sites whereas the University of Lucknow Metro Station shows the minimum number of pigeon's populations.

**Table 2.** Shows the **total no. of species count** during 3 visits on each site. I.T. Metro Station has about ( $\pm 154$ ) species, University of Lucknow Metro station about ( $\pm 64$ ) species and K.D. Singh Stadium Metro Station about ( $\pm 80$ ) species.

**Table 3.** Shows the **average data table** for Pigeon population. At I.T. Metro Station shows the average of 12.83 species, University of Lucknow Metro Station shows the average of 5.33 species and K.D. Singh Stadium Metro Station shows the average of 6.6 species. Estimated total average number of Pigeon Population in 3 sites was 25.

**Graph 1. Pie Chart showing % of total occurrence of pigeon population**



#### Calculation for the % at different sites

1. Isabella Thoburn College Metro station (I.T)

$$12.83 \div 25 \times 100 = 51.32\%$$

2. University of Lucknow Metro Station

$$5.33 \div 25 \times 100 = 21.32\%$$

3. K.D. Singh Stadium Metro Station

$$6.6 \div 25 \times 100 = 26.4\%$$

#### CONCLUSION

The species has suburbanized itself and relies on humans for food. As seen in the present study, pigeon feeding as well as the importance of regular food resources from humans play an important role in determining the population distribution. Pigeons selected for areas closer to pigeon feeder sites where people regularly feed pigeons in bulk amounts. They also select public places where food is provided in the form of casual feeders, who feed pigeons smaller amounts on an irregular basis. The human attitude towards pigeons in the city was mostly influenced by whether they fed pigeons or not. Most of the people showed a positive attitude towards the bird because bird feeding, like any other form of wildlife interaction, can cause a positive attitude and appreciation towards wildlife. Despite knowing the large population of the pigeons around the city, almost half of the respondents were against



any control measures and the ones which suggested any control measures supported non-lethal techniques. This shows people's considerable tolerance and empathy towards wildlife in the city. This has created a dilemma that the pigeon population has increased due to pigeon feeding, which causes human-wildlife conflict, yet these people are against any control measures for the bird. Through this issue of pigeon, it must be understood that the concept of nuisance species relies on complex dynamics which includes ecological and behavioral characteristics of the animal (here, their abundance and foraging behavior), but also involves their interaction with socio-political processes. So, the species needs to be understood more diligently as it has turned into a multidimensional nuisance.

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