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Research Article

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DECLINE OF HOUSE SPARROW AND COMMON MYNA POPULATION IN DODA REGION OF JAMMU AND KASHMIR, INDIA

Wahied Khawar Balwan^{1*} and Neelam Saba²

¹Department of Zoology, Govt. PG College Bhandarwah (J and K)

²Department of Zoology, Govt. Degree College Doda (J and K)

*Corresponding author: wahied_kb@yahoo.co.in

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Abstract: The House Sparrow (*Passer domesticus*) and Common Myna (*Acridotheres tristis*), once very common birds, have declined markedly in most parts of the India including Doda district of Jammu and Kashmir. Once these birds were distributed widely in Doda district but over the past few years, they became not so common in this region. A study has been conducted during April 2016 to April 2020 to establish the database for their current population and to assess the possible causes of their decline in Doda district. The house sparrow is a symbiotic bird species highly adaptable with human habitation. House construction due to modern trend has resulted in reduced safe nesting for sparrows and mynas. Green spaces in our cities give way to more concrete construction due to which the house sparrow and myna loses its foraging ground. There is a dire need of ecological balancing to save the Sparrows and Mynas from getting extinct.

Keywords: *Acridotheres tristis*, Conservation, Doda, *Passer domesticus*.

INTRODUCTION

Birds are common inhabitants of our ecosystem. House sparrow (*Passer domesticus*, belongs to family Passeridae and Common Myna (*Acridotheres tristis*) belongs to family Sturnidae. Both these were very common and widely distributed birds in India. Besides, Sarus Crane (*Grus antigone*) is another important bird that prefers to reside close to human habitation particularly in wetland.

As they are generally associated with human habitation, they tend to stay in the region with

structures built of many holes under the tiles. These sites may provide nesting sites and green areas for insect food. According to the latest sparrow census reported by various environmental organizations, there has been an 80 percent decline in their numbers during the past decades in India (Samik Ghosh *et. al.*, 2010). The disappearance of sparrows in India has been widely reported, although responses have been quite muted. Their recent decline around the world has put them in the list of the International Union for the Conservation of Nature (IUCN). In

an effort to draw the attention of government agencies and the scientific community for more conservation measures and researches on common bird species and urban biodiversity, March 20 has been designated as World House Sparrow Day (www.worldhousesparrowday.org). The marking of the day is an international initiative by the Nature Forever Society, in collaboration with the Bombay Natural History Society, Cornell Lab of Ornithology (U.S.), Eco-Sys Action Foundation (France), Avon Wildlife Trust (U.K.) and numerous other international organizations. In recent years, India has seen a sharp decline of several bird species including Vulture, Great Indian Bustard, Sarus Crane and Sparrows (Samik Ghosh *et al.*, 2010). Verma (2018), Verma *et al.*, (2016, 2018a, 2018b and 2019) and Prakash *et al.*, (2019) studied the Indian sarus crane from various point of views and narrated an increase in its population in Kaushambi district of Uttar Pradesh, India.

The House Sparrow is typically about 16 cm long ranging from 14 to 18cm. It is a compact bird with a full chest and a large rounded head. Its bill is stout and conical with a culmen length of 1.1 to 1.5 cm, strongly built as an adaptation for eating grains and tiny soft bodied worms present in the ground. Females are usually slightly smaller than males. Younger birds are smaller, males are larger during the winter and females are larger during the breeding season (Irfan and Chauhan, 2018). It is a social bird and gregarious at all seasons. It often forms flocks with other types of birds during feeding (Moller, 1987). Nests are usually grouped together and it nestles mutually. It is engaged in social activities such as dust or water bathing.

The Common Myna is readily identified by the brown body, black hooded head and the bare yellow patch behind the eye. The bill and legs are yellow. There is a white patch on the outer primaries and the wing lining on the underside is white. The sexes are similar and birds are usually seen in pairs. The body length is about 23 cm (9.1 in). Average weight of male is 109.8 g and that of female is 120-138 g. Wing chord of male is 138-153 mm and that of female is 138-147 mm. Bill in

male is 25-30mm and that of female myna is 25-28 mm. Tail in male myna is 81-95 mm and 79-96 mm in females.

Social singing is common in the birds in which they call together in bushes. House sparrow sleeps with the bill tucked underneath the scapular feathers. They often nestle mutually in trees and shrubs outside of the reproductive season. Much collective chirping occur before the birds leave nestle in the morning as well as before and after the birds settle in the nestle in the evening. Scratching of head is done with the leg over the dropped wing (Irfan and Chauhan, 2018).

Adult house sparrow feeds on seeds of grain and weeds. They are mostly found in temperate agriculture areas because of the proportion of seeds in its diet to about 90%. The house sparrow will eat almost any seed, but it usually prefers oats and wheat where it has a choice. In urban areas, it feeds largely on food provided directly or indirectly by humans, such as bread, though it prefers raw seeds. The house sparrow also eats some plant matter besides seeds, including buds, berries and fruits such as grapes and cherries. The bird is also regarded as the familiar friend from early childhood and every person, consciously or unconsciously has been hearing about it in stories and rhymes (Irfan and Chauhan, 2018).

The Common Myna is omnivorous. It feeds on insects, arachnids, crustaceans, reptiles, small mammals, seeds, grain and fruits and discarded waste from human habitation. It forages on the ground among grass for insects and especially for grasshoppers, from which it gets the generic name *Acridotheres*, 'grasshopper hunter'. It is also cross pollinator of flowers such as *Salmalia* and *Erythrina*. It walks on ground with occasional hops and is an opportunistic feeder on the insects disturbed by grazing cattle as well as fired grass fields.

A number of hypothesis have been put forward as possible causes of the decline of house sparrows and common mynas in urban-suburban habitats like predation, competition, lack of nest sites, disease, food availability and pollution

(Summers-Smith, 1999). An investigation has been conducted during April 2016 to April 2020 to know why the population of house sparrow and common myna, once a very common bird, declined so dramatically in Doda region of Jammu and Kashmir. Another objective of this investigation was also to see if surrounding environment has any impact on the maintenance of sparrow and myna population.

MATERIALS AND METHODS

The study was carried out in Doda town and Bhaderwah region of Doda District. Doda (33° 8' 44.64" N/75° 32' 52.14" E) is a district (Fig.1) located in the east of Jammu province of the Jammu and Kashmir union territory, (India) situated at an altitude of 5000 feet above the sea level. The entire district is hilly known for its rich mineral deposits. The district is pre-dominantly rural and has agricultural and pastoral economy.

RESULTS AND DISCUSSION

During survey the information collected through the personal contact from local people of 20-70

Two sites (Doda town and Bhaderwah of Doda district) were selected to collect the opinions of 20-70 years old local people regarding the reason for decline of sparrow. An extensive data sheet was prepared to ascertain the causes of decline of house sparrow and common myna.



Fig. 1: Location of the Study area in J & K, India.

years age group of both the study area was summarized in Table 1.

Table 1: Public Survey Report on the cause of decline of House sparrow and Common Myna population.

Age Group	Number	Comment
60-70 years	20	There was a time when the trees and roof top of houses were full of sparrows and Mynas. Major decrease in past five years.
50-60 years	25	Drastically declined only after mobile phones came to area.
<50 years	30	The decline is very prominent and is due to digital revolution.

House sparrow and Common Myna once an integral part of our immediate environment, but they have been disappeared almost two decades ago. The common bird that lived in the cavities of our houses and polished off our leftover food today sits on the red list of the endangered species and least concerned status of the international Union for Conservation of Nature (IUCN) respectively. According to the locals in Doda region, there was a time when the trees as well as roof tops of houses were full of sparrows and they were seen everywhere. Years ago, a good

abundance of Sparrow and Myna population was present in the adjoining areas of district due to the presence of old fashioned houses, agriculture covered under different types of trees and plants and mostly people of the areas with tidy gardens that was helping this bird in many ways. Past few years the population of this species has abruptly being declined in the area. A number of hypotheses have been derived as the possible causes of the decline in House Sparrows as well as Common myna. Some possible reasons include:

1. Loss of habitat is the primary factor that has bested sparrows and mynas from the streets and homes. Due to high rate of urbanization (Holloway, 1996) old type of building has been changed to new concrete type of houses called as modern houses or renovated buildings where sparrows and mynas do not find their nesting sites making it most important reason of decline of these species.
2. Loss of tree canopy near roads due to construction of shopping complexes, mega buildings, apartments and to extend width of the roads sides for which the trees are cut down without understanding ecological importance of the trees or simply ignoring the reality fact.
3. Digital revolution particularly the installation of cell phone or mobile towers is also a possible reason for the decline of these two species. The impact of electromagnetic radiation (mobile towers) in this rural area was found to be possible cause of maximum decline of House Sparrow and Common Myna in the Doda region. Even earlier studies of Singh *et.al.*, (2013) ; Irfan and Chauhan (2018) correlates with the present studies.
4. Many toxic chemicals are now added continuously to the natural environment, either as pesticides, industrial effluents or combustion emissions. Some of these chemicals are now regarded as important sources of bird population declines, influencing their distribution and abundance patterns on both local and widespread scales (Newton, 1998). Use of different type of organochemicals in gardens, parks and change in agricultural patterns is also a reason for the decline of these species (Altizer, *et al.*, 2004 and Hole, *et al.*, 2002).
5. Increase of predation also resulted in decline of House Sparrow in particular. Due to lack of nesting sites, sparrow was forced to form nests in tree holes and outside human habitations where it fell prey to predator like owl, crow, cats and reptiles like snakes (Samik Ghosh *et. al*, 2010; Singh, *et.al.*, 2013).
6. House sparrows have the potential to serve as a reservoir of disease in urban and suburban areas (Juricova *et. al.*, 1998). The infectious disease salmonella is common during winter and spring in free living wild house sparrows (Macdonald, 1978). In case of fatality, the birds show enlargement and congestion of the liver and spleen with liver, lung, muscle and skin abscesses. The spread of disease may be promoted by the close proximity of birds in gardens for communal feeding with bird table and feeders (Macdonald, 1978). As disease spreads between individual birds, they will become weak prone to more diseases. If an individual lacks immunity, it becomes vulnerable to diverse types of diseases. Disease is increasingly seen as a response not only to parasite infection but also to overall condition of the host. This makes it hard to separate the effects of disease between the food shortage and other environmental conditions. Therefore deaths from disease are often unlikely to be additive to other mortality (Newton, 1998).

CONCLUSION

This study was conducted to provide insights into drastic decline of House Sparrow and Common Myna in the Doda town and Bhaderwah regions of Doda district. It is time for every human to wake up and to act positively for regaining the ecological balance and consistency. There is need to work out for the conservation and protection of these species. In conclusion, when House sparrows and Common Mynas are rare, we tend to like them and when they are common, we tend to hate them. Our fondness is fickle and predictable and says more about us than them. They are just sparrows and mynas neither lovely nor terrible, but just birds searching for sustenance and finding it again and again where we live.

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