



## A REVIEW OF HOUSE SPARROW POPULATION DECLINE IN INDIA

*Manu Rani Paul*

*Consortium & Training Academy for Biosciences (CTAB), Second Floor,  
Geo Printers Building, Manarcadu P.O., Kottayam, Kerala, INDIA PIN 686 019*

### ABSTRACT

*Birds are the common denizens of the ecosystem and are considered as indicator species of ecosystem health. Various studies depicted the reduced teemingness of several bird species in most parts of the world. Among these birds, the house sparrow (*Passer domesticus indicus*) is the most familiar species which are co-evolved with man. The disappearance of sparrows has been widely reported from all over the world, including India too. Among Indian states, Kerala is also not an exception. Indiscriminate use of chemical pesticides, decline in insect prey population, change in building construction pattern, well maintained modern gardens in houses instead of weedy gardens which provide feeding grounds for sparrows and electromagnetic waves from cell phone towers are the major drivers of decline. Sparrows are highly sensitive to local environmental parameters which also have contributions in its decline. This paper, inter alia examines the major causes for the decline in the population of sparrows in recent years. An ecological balancing is an urgent necessity to save the sparrows from extinction.*

KEY WORDS: HOUSE SPARROW, ECOLOGY, POPULATION DECLINE

### Introduction

The House sparrow (*Passer domesticus*) belongs to the sparrow family Passeridae. It is one of the most abundant birds with strong nexus with human settlements. House sparrows are originated in the Middle East and get introduced to most parts of the world. These introductions were successful because of its ability to adapt within human settlements quickly. However, currently a very large decline in House sparrow population has been reported from countries all over the world. In India the sparrow population is declining alarmingly by almost 70% in certain places (Dandapat *et al.*, 2010). Sparrows are found in great abundance in cities, towns and villages in the past is now declining mainly from cities compared with towns and villages. A possible reason for the urban decline of House sparrow is electromagnetic radiation (Balmori and Hallberg, 2007).

### Systematic position

|         |   |                   |
|---------|---|-------------------|
| Kingdom | : | Animalia          |
| Phylum  | : | Chordata          |
| Class   | : | Aves              |
| Order   | : | Passeriformes     |
| Family  | : | Passeridae        |
| Genus   | : | <i>Passer</i>     |
| Species | : | <i>domesticus</i> |

### Description

Males and females can be differentiated distinctly - the male have black throat white cheeks and black Bib while the female have brown colour with eyestripe and thick beak. The average size is 14-16 cms. And weight is nearly 26-32 grams. Legs short. Chest unstreaked. Dust-bathing in new seedbeds has been a common characteristic of House Sparrow. House sparrows prefer to make nests in small holes in buildings, thatched roofs and even street lamps. The combined chirping of the occupants is very familiar.

### Status

House sparrow has undergone a drastic decline in the past few decades. Now it is included in the red list which needs high conservation concern and it is included in the IUCN red list. The present decline in house sparrow numbers appears to be widespread all over the world. The uncontrolled use of pesticides resulting in the absence of insects needed by newborn sparrows are one of the major reasons in declining population. Recently, World House Sparrow Day was announced and celebrating every year on March 20 to commemorate about sparrow population decline.

### Behaviour

House sparrows have social structure and are gregarious in all seasons with communal roosting. It shows varied nesting habits usually prefer roofs of houses, crevices in buildings, holes in cliffs and banks, street lights etc. It feeds on grains, seeds, nectar of flowers, insects etc. In urban surroundings it feeds food crumbs left by humans. In all regions of the world it shows limited migration. During breeding season it is seen in pairs or in small groups otherwise it forms large flocks. The male house sparrow defends the nesting site aggressively during breeding season. The male and female partner actively participate in raising chicks. Normal life span is upto 12 years.

House Sparrows tend to forage for food on the ground, using a skipping movement when not in flight. Their flight is direct, with continued flapping and no periods of gliding. House Sparrows aggressively protect a small territory just around their nesting site. House Sparrows use a set of postures, behaviours and vocalizations to communicate, attract mates, deter intruders and warn others.

### Possible reasons for decline

Decline in House sparrow population is reported from different part of the world (Moss, 2001; Prowse, 2002; SummersSmith, 2003) with multiple reasons. The causes for the decline of sparrow are not scientifically proved, but several factors have attributed to their decline. Change in agriculture patterns and increased use of pesticides results in a decline in invertebrate prey. Decline in insect food badly affects the survival of young chicks and their population can be increased by providing more insects (The Royal Society for the Protection of Birds, 2015). Poison residues from contaminated food grains also have devastating effects on sparrows. Sparrows prefer thatched houses and Bungalows for nest building. Modern trends in house construction reduced safe nesting places for sparrows. Hygienic practices of modern man in fear of bird droppings keeps away birds like sparrows from houses by fixing nets in the windows and ventilation .

The sparrows are forced to nest in open places which make it easy for predators to kill these birds. Hedges which provide shade and hiding places for birds are replaced by iron and concrete fences. Paved gardens in new houses without any mud keep away birds. Single variety grasses grown for beautification in gardens reduced much native variety of grasses whose seeds are food for these birds. Modern means of transport resulted in urban decline of the house sparrow as sparrows were deprived of leftover food grains in the roads. Moreover the roads also became unsafe for them to feed. Now a day's people aware of the decline of House sparrow from urban and sub urban areas initiated the movement of fixing man made nests for them (Chethan, 2012).

It is noted that the boxes placed in high noise level zone remain inactive. Buildings with concrete roof and rolling shutter doors are extremely good nesting locations for house sparrow but the shopping mall buildings of recent pattern with glass fittings in the exterior do not provide much space for constructing the nests. Pollutants from motor vehicles seem to do little harm to house sparrows in towns and cities but modern houses with clean tidy gardens affected their feeding and nesting for which they need old fashioned houses and weedy gardens (Monika, 2005). There has been a steep fall in House sparrow population that is about 75% since 1994 in London and studies show a correlation between the disappearance of sparrow and the introduction of phone mast GSM towers (Girish, 2010). The electromagnetic radiation is proved to affect reproduction, circulatory and central nervous systems and may cause microwave syndrome which leads to decline in general health (Kamath *et al.*, 2014). The criss cross electric cables also do harm to them. Loss of birds increases the number of harmful insects like mosquitoes which were vectors of numerous pathogens.

## Conclusion

Impact of climate change in the decline of sparrow population in India is yet to be studied. The above mentioned causes have a role in the decline of sparrow population in India. Detailed studies are required to elucidate the real status. As sparrows are closely associated with humans and human habitats; drastic decline in house sparrow population is a matter of great concern. Perhaps it is a warning signal of the approaching dooms day. It is time for humanity to wake up and to act for retaining the ecological balance and harmony.

## Bibliography

1. Balmori, A. and Hallberg, O. The urban decline of House Sparrow (*Passer domesticus*); A possible link with electromagnetic radiation. *Electromagnetic Biology and Medicine*, 2007: 141-151.
2. Chetan, J.S. Improved design of nestbox for Indian House sparrow, *Passer domesticus*. *Bioscience Discovery*. 2012: 97-100.
3. Dandapat, A., Banerjee, D. and Chakraborty, D. The case of the disappearing House Sparrow. *Veterinary World*. 2010: 97-100.
4. Girish, K. Report on cell tower radiation. Cell tower radiation report, Mumbai, 2010.
5. Kamath, V., Mathew, A.O., Lewlyn L, Rodrigues, R. Indian sparrows on the brink of extinction: population dynamics combined. *International Journal of Renewable Energy and Environmental Engineering*, 2014.
6. Monika G. Preliminary Survey of House sparrow (*Passer domesticus*) in three Different Areas of Haridwar, Uttaranchal . Dissertation, Haridwar, 2005.
7. Moss, S. The Fall of the Sparrow. 2001 BBC Wildlife, Nov 2001
8. Prowse, A. The urban decline of House Sparrow. *British Birds*, 2002: 143-146.
9. Summers-Smith, J. Denis. Changes in the House Sparrow Population in Britain. *International Studies on Sparrows*, 2003:23-37.
10. The Royal Society for the Protection of Birds. Giving nature a home. January 2015.