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## Population Crisis of House Sparrow: A Study of Alewa and Pegan

Manish<sup>1</sup>, Dheeraj<sup>2</sup>

<sup>1, 2</sup>M.Sc., Department of Zoology, Shri Guru Gobind Singh College, Chandigarh

Email id: [manishbidhan898@gmail.com](mailto:manishbidhan898@gmail.com)

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### Abstract

The present paper deals with the decline of population of House Sparrow (*Passer domesticus*) in villages Pegan and Alewa specifically though it is somehow common throughout India and the world. Present study tries to explore the major reasons of the depletion of population and suggests certain remedies to conserve the species to restore its earlier position. This study suggested that the regular monitoring of house sparrows and co-occurring avian species is important to understand the population trend of the house sparrow in the study area

**Keywords-** House Sparrow, Decline, Factor, Population Crisis, Reasons, Voice Filtering

### 1. Introduction:-

Gauriyaor house sparrow, regionally known as Chiria, belongs to the family Passeridae. It is a small bird (14-16 cm) with (26-32 gram weight). The sexual dimorphism is quite evident as the male has large black spot or patches on its face and chest the female is brown without such black spots. House Sparrow shares the globe with humans since ancient times as Ericsson asserts, "The house sparrow has associated with human since bronze (Ericsson it 1997)." There was a time when this species had a large population as J.L. Long claims that at their golden age they probably occupy the two third of the Earth surface. Their common feed is grain and small insects such as caterpillar etc., hence it is an omnivore bird. It lies on more than one tropic level (T<sup>2</sup>- T<sup>3</sup>). The area containing the noticeable population of House Sparrow indicates the easy availability of food and habitat since this species takes its safety and food into consideration. Summer Smith reported that the clutch size normally varied 2-8 eggs. Male and the female live together and protect their nest. This species prefer to live in

group and the size of group varies according the population. It is noticed that it does not live alone and mainly the couples are found by the present author. When a single bird is evident pecking, it signifies that the partner may be in the nest or near the nest for protecting then nestlings. The royal society for protection of birds (RSPB), UK, recently added the house sparrow to its Red list (for rapidly decline bird's populations, which pose global conservation concern). It wakes at 4:30 - 5:00 a.m. and returns to its nest for rest with the sunset approximately. Though it takes rest at noon and it remains active mainly in the morning and the early evening. They have low to moderate amplitude with voice avg. 70.6 decibel (Jour 2010) which gives a pleasant voice but it totally depends on the population and the circumstances.

The House Sparrow prefers to build the nest in wall crevices (approximately 3 to 5 m. high), holes or cracks. It takes security and availability of food, safety is the pre-requisite condition, into consideration while selecting the place for nest. This decision is taken by the couple (male - female). The couple attempt to build the nest at a place which is not easily visible to the predators. It is interesting to notice that the sparrow never prefers a place where the food is available but there is risk of security, hence the security of eggs and the nestlings is highly acknowledged. Generally, May to September is the breeding period of House Sparrow when she lays eggs and hatches them.

## **2. Population Status in the World:-**

There is a huge decline in the population of sparrow as Robinson et. al. record "Both rural and urban areas sparrow population have decline 47%-60% respectively in UK since mid-1970 (Robinson et.al. 2005). This species have decline in the Western paleotic during last quarter of the 20th century (Summer Smith -2003) and at the beginning of 21th century (Ravan et al 2003) (Haghow et al 2014). The decline in both urban and rural areas (Summer Smith 2000, 2007), (Crick et al 2002), (Delaet 2007). The decline was first observed in the great Britain (Summer Smith 2003), where 65% of sparrow have been declined in last 32 years 1970-2012 (Hayhow et al 2014). Sparrows decline 71% in the London between 1994-2002 (Ravan et. al. 2003). The first sign of decline was detected in orangegrows where it decreases 90% (1974-2021). Gil Delgado et al 2002. The sparrow decline from whole spin (Vera, Scandal 2016).

### 3. Status of Sparrow in India: -

The population of Sparrow in India has reached to critical a position and at some places such as Lucknow it has almost extinct. The data provided by Pratibha Sharma and Manpreet Binner appears to be alarming. According to an ornithological survey conducted by the Indian Council of Agricultural Research (ICAR), the sparrow population in Andhra Pradesh alone has dropped by 80% and in other states like Kerala, Gujarat and Rajasthan it has fallen by 20%, while the turn down in coastal areas was as sharp as 70% to 80%. In recent years, ornithologists have observed sharp decline in house sparrow population across India in Uttar Pradesh, West Bengal, Punjab, Rajasthan, Delhi, Haryana, Bangalore, Mumbai and Hyderabad. In parts of Thiruvananthapuram, (Kerala), they had disappeared without a trace by 2003. In Lucknow (Uttar Pradesh) recent surveys reveal the complete absence of House sparrows in several sites since 2013. According to Bombay Natural History society (BNHS) the population of sparrow have indeed declined and low number of nests. A survey organized by the Bombay Natural History Society (BNHS) along with the Central Ministry of Environment and Forests indicate that the Hyderabad-Ranga Reddy zone saw a steep drop in the number of house sparrows from 2005 onwards. (Sharma &Binner).

### 4. Material and Method: -

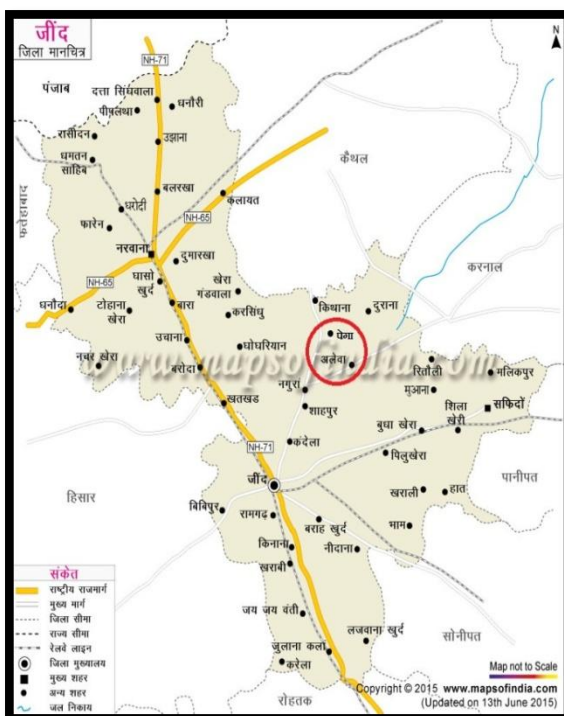
Field Survey, Voice filtering, Public Survey, Counting method, Site visit.

Study Area:- The author of present research selected two villages Alewa&Pegan (29°28'35.994"N 76°27'7.8624"E) of district Jind, Haryana (India) for study from February 2017 to March 2018. The research sites selected for study are less noisy and full of trees and hence favorable for the species like House Sparrow. The author noticed the presence of 286 male and 244 female approximately in 2017 and in Pegan 184 male and 244 female approximately while figure in 2018 is 160 male and 110 female at Alewa and 103 male and 80 female at Pegan.

### 5. Result: -

The present data displays 44.04% in male at Alewa and 57.78 % in female while at Pegan the decline is 44.02 % in male and 67.21% in female. The given data explicates a sharp decline. The data was collected by the author as per best of his knowledge though it might vary.

Place.	Alewa	Alewa.	Alewa	Pegan	Pegan	Pegan.
Period.	2017	2018	2019	2017	2018	2019
Male.	286	160	65	184	103	34
Decline %	55.94%		40.62%	55.97%		33%
Female.	244	110	40	244	80	29
Decline %	45.08%		36.36%	32.78%		36.25%
Average	265	135	53	214	92	31
Total	530	270	105	428	183	63
Decline %	50.94%		38.88%	42.75%		34.42%



<https://www.pixoto.com/images-photography/animals/birds/common-house-sparrow-6281659914911744>

### 5.1 Major factors Responsible for Decline in Population:-

Decline in house sparrow population is reported from different part of the world (Moss,2001;Prowse,2002; Summer Smith,2003) with multiple reasons.

1. **Predation:** - Sparrow is a small bird and it is an easy target of the predators such as crow. During the selected period the author notices a tangible increase in the population of crow that may be a significant cause in decline of sparrow.

2. **Competition**: -Competition for food is a noticeable factor among **Corvus spp., Columba, Columba livia, Red Lapwing Bird, Acridotherestrictis** and six species of other small Sparrows (noticed in field of present study). Evidently, the House Sparrow is the smallest and hence, weakest among the species mentioned above, therefore she would be among the last ones in pecking.

3. **Habitat Loss**: -Home is a place where everyone feels safe and secure but, unfortunately the habitat for Sparrow like birds are declining day by day with the arrival of new technologies, change in the architecture of houses, deforestation and the most influential is the rapid growth of human population. The so called development of humans is a fatal blow for the species sharing the earth with humans. The deep inquiry regarding the habitat location of Home Sparrow exhibits that they prefer Acasia tree for building their nest besides the old houses (better if it is inhabitant) but Acasia tree is their first choice but unfortunately the number of Acasia tree has fallen alarmingly. Therefore, this loss of habitat is also proved a nail in the coffin of sparrow. The surviving Acasia trees are located on the panchayati land mainly and on the periphery of the village. It reduced the habitat as well as the security of the species.

4. **Scarcity of Food**: - as discussed above the common food of sparrow is invertebrates, beetle, caterpillar, fly larva, seed, grain etc. but it is reduced due to the use of insecticide and pesticides.



Fig. 1 : Pecking



Fig. 2 : Pecking

5. **Increase hygienic Conditions**: - Man has become pro conscious about hygiene and prefer to live in pucca houses free from the interference of stray animals and the birds. It lessens the opportunity of making nests in human habitats. Even children do not have that much association due to the lack of direct association of such creatures. Modern man has abhorrence from the bird's nest, excreta etc. so they keep house neat and clean they refuse nesting in the house so put the building by packing our holes space by exhaust fan cover the iron net and glows fitting over the ventilation space.

6. **Architecture Style**: - The architecture of human abode is getting changed fast. Preferably the modern type of building is an enclosed, iron net over windows, use of glass that resist the

entry of birds. The introduction of Air Conditioning machines also negate the possibility of entry of the birds. The external walls do not have niches or holes or they are occupied by A.C., exhaust fan, kitchen chimney etc. It reduces the open space and hence it reduces the lodging of birds, due to that they have to build their nests in open area where they are vulnerable to predators and the security of their nestlings is on stake. Sparrows prefer to build nest in wooden roof or thatched roof but now such roofs have been replaced by concrete ones. A new trend of pets such as birds, fish, dogs, rabbits, is also evident that disowns the birds their liberty and they merely become the entertaining source of man.



Fig. 3: Nest in wooden beam



Fig. 4: Sparrow sitting on inhibiting building

**7. Crop Pattern:-**The present research reports that there is almost fixed crop pattern in the selected area where wheat, paddy, millet, cotton jawar and maize, mustard and barseem are major crops. Generally, wheat and rice dominate and approximately they cover 80% of arable land. Such crop pattern offers less opportunity of feeding to birds. It has been mentioned in the beginning of the article that pesticide, insecticide and weedicide is used to gain maximum possible production. The remains of harvest such as stubble, straw etc. are mainly managed by fire. This fire kills the birds; destroy the eggs of the birds that lay eggs only on land. It destroys the vegetation as well. Not only has this but it also harmed the fertility of land and it also destroys the natural food of sparrow because it kills the small organism or invertebrates as well. Though government is much concerned and taking measures. Government imposes a fine as well. Such steps are fruitful and the burning of stubble is reduced to a tangible amount.

**8. Global warming: -** The global warming also put negative effect (32- 42 degree Celsius in the reporting area increasing the temperature in the summer season the Sparrow moves here and there in search of food and water so due to increasing pipeline system for irrigation reduce the wastage of water evaporation openly reduce the water reservoir or pool so they have no drinking water openly so birds get die due to hunger and thirst. According to

Summer Smith(2000) theory a pollutant such as MTBE(methyl tertiary butyl ether) from vehicle emission a harmful byproduct of unleaded fuel could cut down invertebrate's numbers such as aphids.

9. **Disease:-** The infection diseases Salmonella is common during winter and spring in house Sparrow (McDonald 1978) if the individual lack their immune system then it is easy to attack other different of diseases.

10. **Nest Overlap:-**Generally House Sparrow, Crow (*Corvus*)and Egret (*Ardeaalba*) are rivals and their relation is of prey and predator and they prefer Acasiatreeas their abode. During the present study an interesting and startling vie was traced where on a single *Acasia* tree the nests of Crow and Sparrow were found adjacent. In addition to that two baby sparrows were present in the nest. It is a matter of further study why the Sparrow chose such site? It may signify the lack of lodging due to that she did compromise with safety of nestlings.

11. **Sound Pollution:-***The sparrow found in all over the land near human society may be peaceful area or in the crowded area (2010).* It is reported that the large population is found in the undisturbed area such as old and unused houses. During feeding if they hear any noise they get afraid and instantlyflew away towards safe place and generally return after 1-2 minutes and resume their previous position. It signifies that the Sparrow does not feel comfortable with unwanted sounds. The statement mentioned above was verified by the researcher during the study when he noticed this activity 87 times in two days at the same place. But, it is also a fact that in highly populated or noisy area such as bus stand, railway station, grain market etc. they become habitual of such noise.

12. **Electromagnetic Radiation**–This is the era of technology and the network of technology bases on the electromagnetic rays. But such radiation harms the birds. To maintain it many towers have been installed, comparatively more in urban area than that of rural. Balmori asserts, “Electrosmog and moreover the contingency about the urban decline of common House sparrow in correlation with electromagnetic radiation.” (Balmori 2003 & 2007).

## 6. **Conclusion:-**

This study provides baseline information about the cur-rent status of the house sparrow population. Therefore, it can be said that all the species are complementary and have equal right to live on the earth but the interference of man in the world of non-humans disturbs the balance and so is the biodiversity. Though, the present study highlighted the depletion of the population of House Sparrow and the factor responsible but it is an indication towards the

whole chain of being. At the end we may have lost the small glorified gift (House Sparrow) of nature that helps in natural pest-control and maintain the food web. Birds are more sensitive towards environment and they are capable to feel minute changes which humans ignore and such ignorance has caused the extinction of many species and many more are in red zone meaning near the extinction. A detailed and long-term study should be focused on understanding the exact reason behind the declining trend of the population of the house sparrow in urbanized habitats.

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