

The case of the Disappearing House Sparrow (*Passer domesticus indicus*)

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Abstract

The fluffy brown sparrows are 15cm in length and distributed all over India up to 4000m in the Himalayas. The disappearance of sparrows has been widely reported in India. The sparrow population in Andhra Pradesh alone had dropped by 80 per cent, and in other states like Kerala, Gujarat and Rajasthan, it had dipped by 20 per cent, while the decline in coastal areas was as sharp as 70 to 80 per cent. But reliable information on sparrow populations is not available. No one is actually counting and keeping a record of the sparrows. The spread of diseases due to decline in sparrow population is an alarming danger. Introduction of unleaded petrol, use of chemically treated seeds, flow of electromagnetic waves from cellphone towers, reducing areas of free growing weeds or reducing numbers of badly maintained buildings, competition for food by other species etc. are possible reasons for this disappearance. The BirdLife International, Royal Society for the Protection of Birds (RSPB), a UK-based organisation and the Bombay Natural History Society (BNHS) have taken plan for the protection of sparrow population.

Key words: Alarming danger, disappearance, house sparrow, India, plan, reasons

Introduction

As far as bird diversity is concerned, India is a blessed country. It has more than 1200 bird species which is over 13 per cent of the world's bird species. But unfortunately, India is the third among the countries having the largest number of rare and threatened species followed by Brazil and Indonesia. Habitat loss is the greatest threat to most of the Indian birds (Rahmani 2008). There are 35 bird protected areas in contrast to more than 500 protected areas in India. About two years ago, fast disappearing of vultures across the country was reported. Today, environmentalists and forest officials fear that unless certain pesticides are not banned, we may altogether lose the species in about one year (Times of India 2004). The UN Food and Agriculture Organisation (FAO) predicts that 24 per cent of the world's mammal population will become extinct by 2020. Nearly 12 per cent of India's birds are facing extinction. The Bird Life International and the IUCN (International Union for the Conservation of Nature) have listed 12 species in India as 'critically endangered' (the highest and immediate risk of extinction). These are in dire need of a 'conservation ICU (intensive care unit)'. It may not be possible to conduct a census for these species, but there are growing indications that their numbers are declining.

The House Sparrow (*Passer domesticus*), a member of family Passeridae, is considered to be a relative of the Weaver Finch Family. Sparrows are relatively sedentary birds and don't travel more than a kilometre or two in search of food. They prefer thatched houses and bungalows to concrete structures such as flats to build their nests.

The little *chidiya* (sparrow), the heroin of Indian folklore and a part of the civilisation, is stepping towards extinction. Once the great poet Premendra Mitra wrote (in Bengali)-

*"Chodui chodui choduiti
Furuth furuth ore
Kari Kather Bhitare theke
Bariye se kon bhore"*

means- the little house sparrow (*Chodui*) flies so nicely and comes from the beam of roof at very morning. But it is very unfortunate to say that the coming generation may not be able to see the little bird if the present situation is going on. The sparrow population has declined by almost 70 percent in certain places in India.

The Royal Society for Protection of Birds (RSPB), UK, recently added the house sparrow to its Red List (for rapidly declining bird populations, which pose global conservation concern).

Distribution

A small plump brownish bird, which is a widely

distributed species in most parts of Europe and Asia, is slowly disappearing from urban areas (Gulati 2005). The ancient Romans introduced the house sparrow to Europe from North Africa and Eurasia. The birds have been introduced to most of the Americas, sub-Saharan Africa, New Zealand and Australia. In Australia, between 1863 and 1870 they were first released in Victoria and then to other areas including Sydney, Brisbane, and Hobart. The House sparrows were introduced independently in a number of American cities in between 1850 and 1875 as a means of pest control. Now in North America, the population reaches approximately 150 million. House Sparrows kill adult bluebirds and other native cavity nesters and their young, smash their eggs, and take over their nesting sites (Gowaty 1984). In the United States and Canada, the House Sparrow is not protected by law. It is now the most widely distributed wild bird on the planet (Anderson 2006). India encompasses almost all the ecosystems to be found on the planet, ranging from the hot and humid evergreen forests of the north-east and south-west to the scorching deserts making up most of the western state of Rajasthan, providing habitats for variously adapted species, both residents and migrants, the latter numbering about 250 species. This 14 to 16 cm long bird is abundant in temperate climates. They survive in all temperatures from the humid coastal regions to the hot plains to the chills of Kashmir and beyond to Ladakh, up to 15,000 feet above sea level. A sparrow survives for around three years in the open and up to 13 years in captivity. Wherever people build home, House Sparrows sooner or later come to share their abodes. The abundance of spilled grain used for feeding horses and the artificial nesting cavities provided by man helped the sparrow along (Lowther and Cink 1992).

Scientific classification

Kingdom: Animalia Phylum: Chordata
 Class: Aves Order: Passeriformes
 Family: Passeridae Genus: *Passer*
 Species: *P. domesticus*

Binomial name: *Passer domesticus*

General Features of *Passer domesticus*

Local Name: Gouriya (Hindi, Urdu), Guora (Nepali)
 Size: 14-16 cm - Wingspan : 19 - 25 cm
 Weight : 26 - 32 g - Small, Stocky songbird
 Bill thick - Legs short
 Chest unstreaked - Wing bars

Monogamous

·Most common breeding months: March to August

·The male chooses nesting site, and prefers to return to it every year

Mortality is highest in the 1st year of life

Male: They are characterized by grey crown, cheeks and underparts, black on the throat, upper breast and between the bill and eyes. During summer the bill is

blue-black, and the legs are brown. The plumage is dulled by pale edgings in winter, and the bill is yellowish brown.

Female: They do not possess black on head or throat, nor a grey crown; upperparts are streaked with brown.

Juvenile: They are deeper brown, and the beak is dull yellow. Ubiquitous in nature

Sound: Calls a slightly metallic "Cheep, Chirrup". Song a Series of cheeps, shrill monotonous

Food: They eat seeds especially waste grain, live stock feed, weed, seeds and insects. They are primarily seedeaters but also eat insects especially during the breeding season (Lowther and Cink 1992).

Behaviour: The House Sparrow is gregarious at all seasons. They live in groups and feed on grains, insects, kitchen scrap and flower buds.

The Sparrow's most common call is a short and incessant chirp. It also has a double call note *phillip*. Sometimes, the older birds utter a long *churr*. At least three broods are reared in the season.

Social Organization: In pairs or small family groups when breeding, otherwise gregarious, forming larger flocks, sometimes of hundreds of birds. They are highly vocal. The male house sparrow is highly territorial, aggressively defending the nesting site during breeding season.

Migration: House sparrow is a summer visitor (March - October) to higher elevations in Baluchistan and in the Himalayas

Mating Behaviour: House sparrows are monogamous, forming long term pair bonds. They have multiple broods, but it is rare that more than two of these will be successful.

Breeding Behaviour: Courtship display begins by male selecting a nest-site and remains as it advertisement calling, a quite chirrup, repeat at a rate of 1 call every 1-2 sec., sometimes accompanied by wing shivering and tail raising, if female approaches and shows interest in the nest, male becomes excited, jumping about in stiffly held posture, wings held out slightly and drooped head held high with black throat feathers erected. At this time male goes in and out nest site, but prevents female from entering, sometimes for 2-3 days. During nest building, male may present female with nest material and touch bills, bill touching also precedes copulations.

Breeding Season: Chiefly March-June in the north continuing till Sept.-Oct. in central India; throughout the year in Southern India.

Reproduction: The House sparrow lays five to six eggs, profusely dusted, speckled or blotched with black, brown or ash-grey on a blue-tinted or creamy white ground. The incubation period of all the birds varies around 10-12 days. The reproductive success increases with age and this is mainly by changes in

timing, with older birds breeding earlier in the season (Hatch and Westneat 2007). Clutch Size-Usually 4-5 eggs. Range 1-8.

Nest Type: A ball of dried vegetation, feathers, strings and papers with an opening one side. The male selects the nest site and does most of the nest building, although the female may help. Nesting begins in March- April.

Foraging: Forages primarily on ground (by hopping).

Recent Population Decline

In most of Europe, populations of House Sparrows are decreasing. In the Netherlands, this species is even considered an endangered species (BBC News 2008), and the population has dropped in half since the 1980s. Similar decline in population have also been recorded in the United Kingdom.

The British Trust for Ornithology estimated that the sparrow population in London had declined by 71 per cent between 1994 and 2002. Edinburgh, Dublin, Glasgow, Hamburg and Berlin are other European cities that have reported a sparrow decline.

A study by a conservation biologist, Cagan Sekercioglu, at Stanford four years ago had predicted that about 10 per cent of all bird species are likely to disappear and another 15 per cent could be on the brink of extinction by the year 2100. Important processes i.e. decomposition, pollination and seed dispersal will likely decline as a result.

Situation in India

In recent years India also has seen a dramatic decline of sparrow populations. In recent years, ornithologists have observed sharp decline in house sparrow populations across Bangalore, Mumbai, Hyderabad and other cities in India. Six years ago, soon after the once common sparrow had gone on UK's Red list, a Rajya Sabha MP raised the question in Parliament: is the sparrow population in India decreasing? And if so, what is the government doing about it? The government's answer was standard: there were reports of decline in "certain cities of the country". But it was not a matter of concern, it reassured the MP, because "there is no immediate threat to its extinction". A year later, however, an ornithological survey conducted by the Indian Council of Agricultural Research confirmed birdwatchers' worst fears: the sparrow population in Andhra Pradesh alone had dropped by 80 per cent, and in other states like Kerala, Gujarat and Rajasthan, it had dipped by 20 per cent, while the decline in coastal areas was as sharp as 70 to 80 per cent. In the few urban pockets where bands of volunteers decided not to wait for the government to act and started a head count of sparrows, the findings were even more alarming. In parts of Thiruvananthapuram, for instance, where volunteers had noticed

small flocks of six to eight sparrows till 1998, they had disappeared without a trace by 2003.

Possible reasons for decline in Population

· Introduction of unleaded petrol: Denis Summers-Smith's theory was that the unleaded fuel, believed to be eco-friendly, had harmful byproducts. The fuel uses Methyl Tertiary Butyl Ether (MTBE) as an anti-knocking agent. Along with byproducts of combustion, this kills small insects. The insecticidal nature of the byproducts makes the food for those birds feeding on insects scarce. Though adult sparrows can survive without insects in their diet, they need them to feed their young.

* Field bean theory: Formerly, urban households in India used to buy field beans as pods in vegetable markets. When the pod was broken, larvae (*Helicoverpa armigera*) came out, to be promptly devoured by sparrows. But now that fresh seeds are available in packets, these larvae have disappeared, depriving the sparrow.

* Reducing areas of free growing weeds or reducing numbers of badly maintained buildings: The decline is due to lack of holes for nesting in modern houses and cutting of hedges from gardens. Old spacious buildings are being replaced by match-box flats.

* Mono-culture (single variety) grasses that have become a fad and that are grown for beautification by destroying various native varieties of grasses, depletion of other flora and fauna that they depend upon.

* Receding tree cover - reducing bushes and grass patches in cities and towns.

* Paved gardens with no mud to bathe in.

* Hedges being replaced by wrought iron fences.

* Use of chemically treated seeds: A sparrow feeds mainly on seeds. Similarly, the treated grains available in the market are also a slow poison for the bird. On an average each sparrow will eat a staggering figure of 1000 caterpillars per year which is better than a chemical pesticide with harmful side effects.

* Increased predation by owls and cats and competition for food by other species, including pigeons, crows and mynahs

* One possible fallout could be increased spread of mosquito-borne diseases among humans (Mudur 2008).

* The criss-crossing cable wires and the flow of electromagnetic waves from cellphone towers injure the sparrows. It causes irritation, it reduces their reproductive capacity.

* Sparrows are gregarious birds that they like to go around in gangs. When number drop below a certain level they all go.

* Air pollution.

Alarming danger: A new study has indicated that the

loss of birds may contribute to the spread of diseases among humans. High bird diversity appears to protect humans from exposure to the West Nile Virus which, like several other infections, is transmitted by mosquitoes. Where there are more birds to bite, mosquitoes will bite proportionately fewer people, partly reducing their chances of either picking up or spreading the infection. Recently, the Bombay Natural History Society (BNHS) has sent a proposal to India's environment and forests ministry seeking financial support for a nationwide project to search for sparrows.

The alarming decline in sparrow population indicates that air pollution levels in the metropolitan cities are rising dangerously; or, since sparrows are mainly grain eaters, it could mean that the grains that the people are consuming contain higher amount of pesticides than before (Luis).

Present and future plan in India

The impact of climate change on birds is yet to be studied in India. The climate change will re-arrange the distribution of birds and disrupt the migration patterns. Since 1960 house sparrows have been studied extensively using nest boxes at the M S University campus in Baroda. Goyal (2005) studied the population density of house sparrow in different localities of Haridwar, Uttarakhand, India. The study was conducted to find out reasons and consequences of changing population pattern of house sparrow. Population pattern was studied using Point count and Line transects methods. It was found that house sparrows do not inhabit dense forest and are more abundant in agricultural field as compared to residential colony. There is a definite decline in their number over the last decade. This is because of loss of nesting sites, food sources, increase in predators and pollution. Rajashekar and Venkatesha (2008) studied abundance, sex ratio and seasonal occurrence of *Passer domesticus indicus* adults in the Bangalore region in India during 2005–06.

To fight this decline, Mohammed Dilawar, one of the winners of Time magazine's Heroes of the Environment-2008 started the Box Initiative from Mumbai city by putting up little wooden boxes on trees, which sparrows could use as nests. Dilawar also kept little feeders with grains, insects and water to help the sparrows settle (Parmar 2008). Three years ago Common Birds Monitoring Programme started in different areas of the country and currently grounded due to lack of funds and policy guidelines. The BirdLife International, Royal Society for the Protection of Birds (RSPB), a UK-based organisation and the Bombay Natural History Society (BNHS) have identified 466 sites for the long-term protection of threatened and common Indian birds. These sites are denoted as Important Bird Areas or IBAs.

Recently, Sparrow Club encourages bird lovers to become members of the club. Members will receive a sparrow shelter to install in their yard or society premises, an adoption certificate and training on how to monitor the birds. Other activities include the plantation of plant bushes and new hedgerows within the farm's perimeter. Sparrow populations can be supported by providing regular supplies of weed seeds.

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