

Original Article

Avian Nesting Behaviour and Fledgling Rescue in Urban Home Environments: A Joint Study from Backyard Observations

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Abstract - This study documents the nesting behaviour of various bird species in a household backyard alongside the rescue and hand-rearing of a fledgling sparrow. Observations covered multiple nests of pigeons, sparrows, bulbuls, mynas, crows, eagles, and the song thrush (*Turdus philomelos*), from egg-laying to fledging. The rescued fledgling was monitored over three days for feeding frequency, growth, feather development, vocalization, and independence. Data include detailed timings, temperatures, and behavioral observations. Findings reveal species-specific adaptability in urban habitats, parental care strategies, fledgling survival, interspecific interactions, and the role of human intervention in supporting young birds.

Keywords - *Turdus philomelos*, Myna, Semi-urban, Sparrow, *Pycnonotus cafer*, Wing flapping, Bulbul, Nest.

1. Introduction

Avian nesting behaviour is a critical aspect of their life history, directly influencing reproductive success and survival. This behaviour encompasses site selection, nest construction, mate selection, and parental care. This review synthesizes the existing literature on the nesting ecology of three widely distributed and often human-associated birds: the Common Myna (*Acridotheres tristis*), the House Sparrow (*Passer domesticus*), and the American Robin (*Turdus migratorius*). While the myna and sparrow are both cavity-nesters known for their synanthropic (human-associated) nature, the robin represents a more typical open-cup nester, allowing for an insightful comparative analysis.

2. Common Myna (*Acridotheres Tristis*)

The Common Myna is an invasive, highly adaptable bird native to South and Southeast Asia. Its nesting behaviour is a key factor in its successful colonization of new territories.

- **Nest Site Selection:** Mynas are facultative secondary cavity-nesters. They preferentially seek pre-existing enclosures but are capable of building bulky nests in open sites if cavities are scarce.
 - **Literature Finding:** Studies by Tidemann (1993) and Peacock et al. (2007) highlight their strong preference for cavities in urban structures (e.g., roof eaves, ventilation shafts, street lights) and tree hollows.
- **Competition:** They are highly aggressive and often outcompete native cavity-nesters like parrots and some owls for limited nesting sites, a significant

impact noted in regions like Australia (Old et al., 2016).

- **Nest Structure and Materials:** The nest is a large, untidy, domed or cup-shaped structure made from a wide array of materials.
 - **Literature Finding:** Manpreet K dhami (2009) describe the nest as a loose assemblage of twigs, roots, leaves, and paper, lined with softer materials like feathers, grass, and plastic. This reflects their opportunistic foraging behaviour.
- **Breeding Phenology and Parental Care:** They are cooperative breeders, a trait less common in the other two species.
 - **Literature Finding:** Research indicates they can breed multiple times per year in favourable climates. A key study by Mulder and Hall (1995) documented that “helpers” (often offspring from previous broods) assist the breeding pair in feeding chicks and defending the nest, which may enhance fledging success.

3. House Sparrow (*Passer domesticus*)

The House Sparrow is one of the world's most successful synanthropic birds, with its nesting behaviour finely tuned to human habitats.

- **Nest Site Selection:** Like the myna, they are cavity-nesters, but they show a greater tendency to construct fully enclosed, domed nests in semi-enclosed sites.
 - **Literature Finding:** Anderson (2006) notes their nests are found in building crevices, behind signs, in nest boxes, and in dense vegetation like ivy.



They show a strong site fidelity, often reusing and adding to nests year after year.

- **Nest Structure and Materials:** The nest is a bulky, spherical mass of dried vegetation.
 - **Literature Finding:** According to Summers-Smith (1988), the outer shell is typically coarse grass and straw, while the inner cup is lined with feathers, string, and other soft debris. The enclosed dome provides significant insulation and protection from predators and weather.
- **Breeding Phenology and Social Structure:** They are highly social, often nesting in loose colonies.
 - **Literature Finding:** They are monogamous within a breeding season and can raise 2-3 broods annually. Studies have shown that the male initiates nest construction to attract a female, and the pair bond is reinforced through behaviours like the “chatter” call and courtship feeding (Anderson, 2006).

4. American Robin (*Turdus migratorius*)

The American Robin, a member of the thrush family (Turdidae), exhibits the classic nesting strategy of its genus, which is distinct from the two cavity-nesters above.

- **Nest Site Selection:** Robins are open-cup nesters. They select a wide variety of horizontal substrates with adequate support.
 - **Literature Finding:** A seminal study by Sallabanks and James (1999) reports nest sites include tree branches, building ledges, window sills, and dense shrubs. They show less specificity for a cavity but require a sturdy foundation. Height from the ground is variable, but it is often a trade-off between safety from ground predators and exposure to aerial ones.
- **Nest Structure and Materials:** The nest is a substantial, neat cup, famously built by the female.
 - **Literature Finding:** The foundation is made of coarse grass, twigs, and paper, cemented together with a layer of mud. The inner cup is smoothly lined with fine, dry grass. The use of mud is a defining characteristic of many thrush species and provides structural integrity (Young, 2005).
- **Breeding Phenology and Parental Care:** They are territorial and typically monogamous within a season.
 - **Literature Finding:** They commonly produce 2-3 broods per season in the north, and even more in southern climates. Both parents participate in feeding the young, which is a classic “altricial” strategy where chicks are born helpless and require intensive care. The female alone incubates the eggs, while the male often stands guard (Vanderhoff et al., 2020).

4.1. Study Area and Aim

Urban and semi-urban environments create unique ecological niches for birds, requiring adaptations in nesting,

foraging, and survival behaviours. Understanding these adaptations necessitates a detailed examination of both natural nesting behaviour and fledgling development, particularly in backyard settings where human presence intersects with avian life. This study combines two interlinked observations: the nesting behaviour of multiple bird species in a household backyard in Kashmir and the rescue, hand-rearing, and developmental monitoring of a fledgling sparrow.

The nesting study documented various species, including pigeons (*Columba livia*), house sparrows (*Passer domesticus*), common mynas (*Acridotheres tristis*), crows (*Corvus splendens*), red-vented bulbuls (*Pycnonotus cafer*), eagles, and the song thrush (*Turdus philomelos*), across multiple microhabitats. Observations were conducted daily from March to July 2025, with specific times ranging from 9:00 AM to 10:30 AM and temperatures between 26 and 30°C.

4.2. Key Observations Included

Pigeons: Upper hall rooftop, 21 June 2025, 9:00 AM, 27°C, fragile nest with small blue eggs, parents absent most times.

Sparrow and Myna nests: Under tin shelter, 21 June 2025, 9:15 AM, 27°C, multiple nests; sparrows active in groups, mynas dominant, occasionally displacing sparrows. Bulbuls: Plum tree, 21 June 2025, 10:30 AM, 27°C, chicks hatched ~18–19 June, actively fed by parents.

Mulberry tree sparrows: Nest predated by a cat; parents distressed.

Eagle: Tall tower, large defended nest, vigilant parent. Song Thrush: 2 July 2025, nest with well-grown chicks nearing fledging; evening songs with unique tonal qualities. Interspecific interactions were recorded: mynas dominated sparrows, crows disturbed smaller birds, and pigeons remained shy, bulbuls in pairs on fruit trees. Feeding included pigeons, sparrows, mynas, and bulbuls consuming grains, mynas feeding on worms, crows, and eagles, which are carnivorous. Small garden holes were created by mynas while foraging.

The fledgling rescue study focused on a sparrow chick rescued from a backyard nest, observed over three consecutive days:

Day 1: Chick weak, featherless, fed every 20–30 minutes; temperature 26–28°C; soft vocalizations.

Day 2: Feather growth noted, more alert and responsive, early wing-flapping; feeding intervals maintained; vocalizations strengthened.

Day 3: Increased wing-flapping and hopping, preening observed; self-feeding behaviours emerged; vocal calls clear; temperature 26–28°C.

By integrating natural nesting in backyard habitats with hand-reared fledgling development, this study provides a comprehensive view of avian adaptation to urban environments, highlighting species-specific strategies,

survival challenges, and developmental processes relevant to urban ecology and conservation.

4.3. Materials and Methods

Study Area: Backyard in Kashmir with fruit trees (plum, mulberry, fig, pomegranate, peach, and quince apple), tin shelters, rooftops, and tall towers.
Study Period: March–July 2025.

Observation Protocol: Daily monitoring of nests, timing noted, temperature recorded, behaviours of parents and chicks noted.

Fledgling Rescue Protocol: Rescued sparrow hand-fed every 20–30 minutes; growth, vocalizations, wing-flapping, and independence monitored over three days.

Species Considered: Pigeons, sparrows, mynas, bulbuls, crows, eagles, and song thrush.

5. Results

Table 1. Combined Observations of Bird Nesting and Fledgling Development

Date & Time	Species	Location / Nest	Temp (°C)	Nest / Behavior	Eggs / Chicks	Threats / Interactions	Feeding / Growth Notes (Fledgling)
21 June, 9:00 AM	Pigeon	Upper hall rooftop	27	Fragile nest; parents are absent most of the time	Small blue eggs	None	-
21 June, 9:15 AM	Sparrow / Myna	Tin shelter	27	Multiple nests; sparrows active, mynas dominant	Eggs not visible	Mynas displacing sparrows	0
21 June, 10:30 AM	Bulbul	Plum tree	27	Well-structured cup nest	Chicks hatched ~18–19 June	None	-
Continuous	Eagle	Tall tower	27–28	Large, defended nest; vigilant parent	Eggs suspected	Aggressive defense	-
Continuous	Dense evergreen tree	Unknown	27	Partially visible nest	Eggs unclear	-	-
Continuous	Mulberry tree	Sparrow	27	Nest predated by a cat	Eggs lost	Cat predation	-
Early Spring	Mynas / Sparrows	Garden soil	26–28	Small holes were dug while foraging	-	-	-
Continuous	Backyard fruit trees	Bulbuls, Sparrows, Mynas, Crows, Eagles	26–28	Habitat use and feeding preferences recorded	-	Crows disturbed smaller birds.	-
3 Days (Rescue)	Sparrow chick	Home shelter	26–28	Hand-fed, observed growth	1 chick	-	Day 1: weak, featherless, fed every 20–30 min; Day 2: feather growth, wing-flapping; Day 3: hopping, preening, beginning self-feeding, vocalizations clear



Fig. 1 Song Thrush observed near nesting site



Fig. 2 Nest of Song Thrush containing nestlings during the early developmental stage and the feathered stage of development



Fig. 3 Rescued fledglings of a House Sparrow under care after nest fall



Fig. 4 Hand feeding of a House Sparrow fledgling during rescue care

6. Discussion

- Nesting behaviour revealed species-specific habitat selection, interspecific interactions, and predation risks.
- Song thrush observations provided rare data on full-cycle nesting from eggs to fledging.
- Fledgling rescue study highlighted developmental stages, feeding frequency, feather growth, vocalization, and behavioural independence.
- Urban backyards serve as critical microhabitats, balancing natural survival strategies and human-mediated care.
- Findings underscore the importance of monitoring, conservation, and responsible intervention for fledgling survival.

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7. Conclusion

This study demonstrates the resilience and adaptability of birds in urban home environments. Both natural nesting behaviour and human-supported fledgling care provide essential insights into survival strategies, interspecific interactions, and developmental biology. Backyards are valuable ecological spaces that can sustain diverse avian life, and careful monitoring and intervention can enhance fledgling survival and overall urban bird conservation.

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