



Figure 1: A flock of House Sparrows perching on traditional roofs in village Malari (3050 m elevation) in Niti Valley of Chamoli District in the summer of 2022

FEATHERS AND FOOTSTEPS: Exploring the House Sparrow - Human Relation - ship in the Himalayas

- RENU BALA

Within the majestic expanse of the Himalayas, Earth's highest mountain ranges, lies an environment of unparalleled challenges—a realm where survival is a demanding test for all living organisms, including humans. As we ascend the Himalayas, where the familiar tree line gives way to rugged brown slopes and the melody of mountain rivers echoes through these rugged terrains, a breathtaking panorama unfolds. At an elevation exceeding 3500 meters, where the air becomes thin, jackets are pulled tighter, and a noticeable chill prevails, the house sparrow (*Passer domesticus*) emerges as an unexpected protagonist. In this seemingly unforgiving altitude, where hypoxia affects many, this passerine bird not only endures but thrives, embodying a remarkable story of adaptation and tenacity.

In late October 2021, as I initiated my reconnaissance surveys of house sparrows into the higher reaches of Uttarakhand, I found myself captivated by their large flocks at altitudes reaching 3500 m near the temples of Kedarnath and Badrinath in Uttarakhand. I noticed that these sparrows were larger and fluffier than their counterparts in the plains, sparking curiosity. I found it intriguing that, despite heavy snowfall in Kedarnath, these sparrows were flocking around the bushes near the temple. It was a testament to their adaptability and resilience

in such challenging environmental conditions.

These initial encounters set the stage for further exploration, which led to similar sightings of large house sparrow flocks in the remote villages of Niti Valley (Chamoli district) during my visit in the summer of 2022. These villages, situated in highly remote locations, include Niti, the last village in the valley at an elevation of 3450 m. I spent my days surveying these villages, searching for the nests of house sparrows. The sparrows prefer nesting in the crevices formed by stacked rocks that make up the walls, which are around 1.5 feet wide—a cozy spot for them to build their nests. To my surprise, a single rock wall of a house had more than 15 active nests of house sparrows. This observation hinted at how the traditional way of living in these villages has significantly benefited house sparrows.

This led me to wonder—do these sparrows stay in these high-altitude villages throughout the year, or do they migrate with the residents as they move to their winter homes in October-November? Summer-Smith (1993) mentioned that the *P. d. parkinini* subspecies, found in the higher Himalayas, is an altitudinal migrant, descending to about 2000 meters in winter. However, whether house sparrows nesting in these villages exhibit altitudinal migration or not is unknown. To understand this better, I decided to conduct a survey of these locations during the peak winter of January 2023.

As I set foot in Niti, a profound silence enveloped the village, accompanied only by the soothing sounds of the Dhauli Ganga River filling the air. In this quiet haven, not a soul was in sight, and my search for the familiar chirps of sparrows proved unsuccessful. The absence of human activity and house sparrows added to the stillness, creating an atmosphere where nature's whispers were the only audible companions. Then I moved down to Gamshali, the next village about 5 km from Niti situated at 3360 meters. A similar story unfolded here as well—no humans, no house sparrows, but large flocks of plain mountain finches *Leucosticte nemoricola*, over 200 of them, in the trees and bushes.

The trend continued at Bampa and Malari villages, where plain mountain finches had taken over the winter-scape. I then descended to the small village of Fagti situated at around 2300 meters elevation where, once again, only plain mountain finches were in sight.

After spending two days in Fagti, I proceeded to a comparatively larger village, Tapovan, at an elevation of 2000 meters. Tapovan boasted a few shops, small restaurants, and an ongoing hydro-power project. Here, my expectations were finally met as I heard the familiar chirps of house sparrows. The sparrows, however, were in larger flocks than I had seen during the summers—more than 150 of them foraging in the expansive bushes near the main road. This observation reinforced the notion that sparrows tend to migrate down with locals to lower-elevation areas where ample food resources are available during the harsh winter months.



Figure 2: House Sparrows flock at the Naga camp of the Indo-Tibetan Border Police (ITBP) in Nelong Valley, Uttarkashi District (October 2022)

The story doesn't end here; in October and early November, I explored other remote locations in Nelong and Jadhong in Gangotri National Park in Uttarkashi. These sites are devoid of civilians and house only Indian armed forces. Surprisingly, these camps had a substantial population of house sparrows. According to these personnel, sparrows stay there throughout the winter. This exploration seeks to verify whether the presence of humans at altitudes as high as 3850 meters can indeed sustain the sparrows during severe winters. If proven true, it might establish the intriguing connection between humans and sparrows, reinforcing the notion that sparrows seem to follow suit wherever humans reside, thriving alongside them.

My observations hint at a connection between human settlements and sparrow migration patterns. This behavior highlights the adaptability of sparrows to human-altered landscapes, showcasing their capacity to thrive in such environments. Interestingly, while house sparrows in urban areas have experienced a drastic

decline, these challenging terrains appear to be a stronghold for them. Sparrows, known for sticking close to us, show a surprising resilience in extreme cold and hypoxic environments, whereas in our bustling cities, they have quietly disappeared. These findings spark some thought-provoking questions. Do house sparrows at higher elevations undergo morphological adaptations and changes in feather structure for better thermoregulation in these cold environments? Are there physiological changes to cope with lower oxygen levels in these hypoxic surroundings? Exploring these aspects in house sparrows in the Uttarakhand Himalayas offers a valuable opportunity to comprehend the species' adaptation to such environments. The ongoing project on house sparrows of Uttarakhand, of which I am a part, seizes this chance to explore these intricacies and study these aspects in detail.

About the Author

Renu Bala is a PhD scholar with the Wildlife Institute of India (affiliated with Saurashtra University) and is currently working on the Uttarakhand House Sparrow Project under the mentorship of Dr. R. Suresh Kumar. Her research focuses on the population ecology and nesting behaviour of house sparrows in the Uttarakhand Himalaya. In addition, she is investigating the population genetic structure, morphological variations, and hemato-physiology of house sparrows within the region, thereby shedding light on the evolutionary dynamics of the species.

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