A Merlin Falco columbarius at the southern fringe of its Asian wintering range in Madhya Pradesh, India

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Abstract

The Merlin *Falco columbarius* is a small falcon considered an uncommon winter visitor to northwestern India, with records from the central part of the country being extremely scarce and the species often regarded as accidental in peninsular India. Here, I report a rare, well-documented observation of a Merlin from Bhopal, Madhya Pradesh, in central India. The bird was observed and photographed at Bhoj Wetland, exhibiting behaviours consistent with short-term wintering, such as sustained presence, foraging habitat use, and roosting. To contextualize this sighting, I analysed Merlin reporting frequencies along Asian flyways using eBird data. The analysis reveals that Bhopal lies south of 98.73% of Asian winter records, making this the first record for the state, the southeastern-most record for India, and one of the southernmost for the continent. The habitat -- a wetland-edge mosaic of agriculture and open woodland -- aligns with the known wintering ecology of Merlin and resembles other rare, low-latitude records across Asia. While vagrancy cannot be ruled out, the observation falls within the known migratory capacity of the specie and suggests that inland wetlands in central India may occasionally support overwintering Merlins. This record underscores critical gaps in understanding the non-breeding ecology of Merlins in Asia, highlights the potential but understudied role of Indian wetlands for migratory raptors, and emphasizes the need for telemetry studies and ecological niche modelling to clarify migration patterns and site fidelity in the region.

Introduction and Observation Details

The Merlin *Falco columbarius* is a small falcon widely distributed across the northern Holarctic, breeding in North America and Europe, and wintering southwards into parts of Asia (Rasmussen & Anderton 2012). In the Indian subcontinent it is an uncommon winter visitor, with most records concentrated in north-western India, particularly in semi-arid and open-canopied landscapes (Naoroji 2006; Ganpule & Bhatt 2013). Records from central India are extremely scarce, comprising only 0.23% Indian eBird records since 2010 reported from the region, and one isolated record from western Maharashtra (Simlai & Punjabi 2008). The species is therefore considered accidental or absent from much of peninsular India. Here, I report a rare, well-documented observation of a Merlin from Bhopal, Madhya Pradesh.

The observation was made at Bhoj Wetland, Bhopal (23.22°N, 77.32°E), a Ramsar-accredited wetland legally designated as a protected area. The site lies on the southern bank of the wetland and comprises a mosaic of tillage agriculture, orchards, seasonal marshes, and semi-continuous planted woodland, with scattered dead trees providing open perches. I visited the site on 29 December 2025, following a state-first report of a Merlin on 28 December 2025, and located a Merlin first in flight and subsequently perched atop a dry tree overlooking the wetland. The bird appeared larger than a Common Kestrel *Falco tinnunculus*, with cream and brown underparts and a prominently barred tail. On 30 December 2025, I observed again and photographed the bird at 0824 h after approximately one hour of searching within the same patch of habitat. During observation, the bird displaced a mobbing Large-billed Crow *Corvus macrorhynchos* and shifted perches. It tolerated the presence of two observers approximately 50 m away, and was non-vocal.

The bird showed repeated rapid head movements in short bursts separated by pauses of 2–5 seconds, observed for about 15 minutes, and later flew off across the wetland with strong, direct flight. A Merlin was again observed on 1 January 2026 at 1743 h, flying over a wheat field and perching within an orchard, presumably to roost. Allowing for a one-day observation gap, the bird was present in the area for at least five days. The bird showed a combination of a white trailing edge to the wing, a barred tail, and other characteristics visible in both perched and flight photographs (see Figure 1 & 2). Given the known overlap and variability in plumage among Eurasian subspecies (*F. c. pallidus*, *F. c. aesalon* and *F. c. insignis;* Ganpule & Bhatt 2013) and the absence of conclusive images, the individual is conservatively treated here as *Falco columbarius*.

While the Merlin is known to be uncommon in North-west India, it is not clear whether it might be a visitor, albeit uncommon, to parts of central India. Thus, to contextualize this sighting, I have attempted to check:

A) reporting frequencies of Merlins migrating south along Asian Flyways,

B) if the date and site of observations lie outside of the concurrent typical range of sightings in Eurasia, and

C) if the habitat and duration of stay of the individual seem ecologically consistent, compared to other similar winter records in Asia.

Contextual Analysis

Global Merlin observations were downloaded from eBird and filtered to include only complete checklists since 2010. Duplicates and group checklists were collapsed into one unique list per sampling event, and breeding and non-breeding ranges were latitudinally separated using strong breeding codes supported by photographic evidence (eBird Data. 2025), and month of observation. The southernmost confirmed breeding record in Eurasia (Aqmola oblysy, Kazakhstan; 50.49°N, 69.99°E) was used to define breeding limits, and area south of a two-degree latitudinal buffer (<=48°N) was considered non-breeding range. This yielded 3390 non-breeding records from October to March.

The median winter latitude of unique checklists was 37.4°N, and only 1.27% of all winter checklists in Asia and Africa lay south of Bhopal's latitude (23.22°N), with very few other Asian records extending this far south. No Indian records on eBird lay South-west of the observation site. Reporting frequencies were calculated for each country that visually lies within paths of Asian flyways (BirdLife International 2026), and grouped in five-degree bins (see Figure 3).

It was found that while Bhopal lies in a trench between latitudes of relatively higher reporting frequency, frequency in central India remains exceptionally low, and that this is the southeastern-most record in India. The observation occurred in late December, well outside the breeding season, which begins in south Eurasia around May (Karyakin & Nikolenko 2009), and within the temporal window of winter records across Eurasia (see Figure 4)

Moreover, Merlins are known to establish short-term home ranges during stopovers (Raim et al. 1989). This is a likely scenario with the Merlin observed in Bhopal, with high prey availability at the site suggested by the presence of other raptors with overlapping diets, including Eurasian Sparrowhawk *Accipiter nisus* (Nirav Bhatt *pers comm., 6-1-2026*; Petty et al. 1995), and by the abundance of larks (Alaudidae), wagtails (Motacillidae) and hirundines, which are common non-breeding diet for Merlins (Forsman 2006).

This record represents the current southern fringe of the Merlin's documented wintering range in Asia and is among the southernmost records from the continent. The wetland-associated open landscape, with agricultural fields, marshes, sparse tall trees, and edge habitats, closely matches known wintering habitats of Merlins across their range (Hilty 2003; Rivera-Milán 1995). Other rare Asian records on eBird at similar latitudes – in Uttar Pradesh and Gujarat, India (Menezes 2013; Multani 2023), Thailand (Bunkhwamdi 2014), Cambodia (Reth 2020), and Vietnam (Stejskal 2018), Oman (Eriksen 2017) and other records in UAE and Saudi Arabia, and all records in Egypt – have also occurred in comparable inland wetland-edge or coastal open habitats. These records are typically singular and sporadic, suggesting ecological consistency, but rarity or low detectability. Furthermore, the repeated sightings over several days therefore suggest temporary wintering rather than a single transient passage, though vagrancy (Veit et al. 2022) or misorientation cannot be confidently ruled out.

A visualisation of reporting frequencies against latitudes reveals that although Bhopal lies well south of the peak concentration of winter records along Asian Flyways (see Figure 5), it remains spatially and temporally plausible for long-distance migrants like raptors (Ram et al. 2024). Additionally, though Merlins in Asia appear to winter predominantly closer to breeding latitudes, the species is a capable long-distance migrant; in the Americas, Merlins are recorded as far south as Ecuador (Clark 1985). Thus, although unusual, the Bhopal record falls within the species' known physiological capacity, and in a rarer, yet known trench in reporting frequency of the range. Presence at lower latitudes along the East Asia-Australasian and East Asia-East African flyways (see Figure 6) indicates that this observation does not exceed the species' known migratory capacity. But, unlike other well-studied falcons like Amur Falcon *Falco amurensis* (Symes & Woodborne 2010), Merlin migration across Asia remains scarcely studied, compared to American and European populations (Feldsine & Oliphant 1985; Raim et al. 1989; Nygaard 1999; Ganpule & Bhatt 2013).

Discussion

While this note does not predict novel migration grounds for Merlins in the Indian subcontinent, it helps add context to a rare record in a previously unknown range of the species in India. This record also reprises a gap in the species' wintering ecology, mentioned in Ganpule & Bhatt 2013, recommending telemetry and ringing to track breeding grounds, migration paths of individuals wintering in the subcontinent, and to delineate site fidelity of individuals. Additionally, further study based on ecologically modelling the distribution of Merlin in Asia, especially in their non-breeding range, would likely help to better estimate a possible range of presence. Considering all above stated parameters, this observation can be interpreted

as certainly a rare, but plausible instance of a Merlin wintering at the southernmost fringe of its range, and relies on future observers and birders to document a novel migratory pattern for the species, or prove vagrancy.

Furthermore, this sighting highlights the importance of inland wetland zones as potential stop-over sites, or even wintering habitat, a phenomenon recorded for many raptor species (Chiatante et al 2025; Alvarez et al 2024). In the Indian subcontinent, wetlands are increasingly recognized as critical habitat for migratory waterbirds (Sundar & Kittur 2013), yet their role in supporting migratory raptors remains comparatively understudied with only a few studies on the topic (Kumar et al 2022). The occurrence of Merlin in a wetland-associated landscape in central India suggests that such habitats may offer suitable foraging opportunities, even outside the species' regularly documented wintering range. Given the rapid alteration and loss of wetland habitats across the subcontinent (Bassi et al 2014), documenting their use by migratory raptors gains added significance and reinforces the inclusion of raptors into quality assessments of wetlands and their avifauna.

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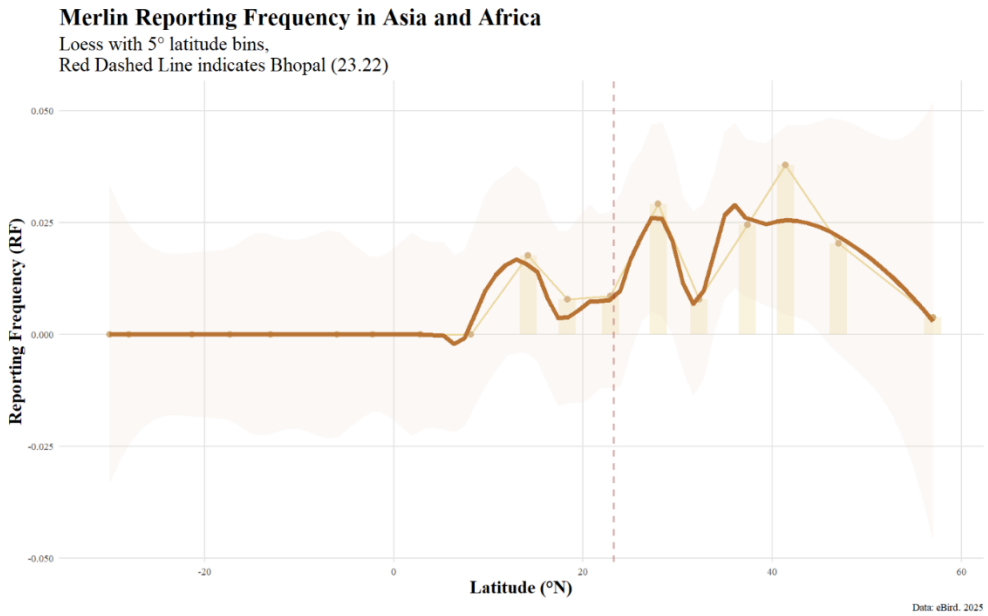
Images and Figures:

Figure 1. In-flight photo of Merlin, showing tail bars, and well-marked upperwings with a white trailing edge. (Image by Mandar Tijare)

Figure 2. Merlin showing overall cream colour, with heavy brown streaks, pale yellow feet and cere, and prominent supercilium. (Image by Mandar Tijare)



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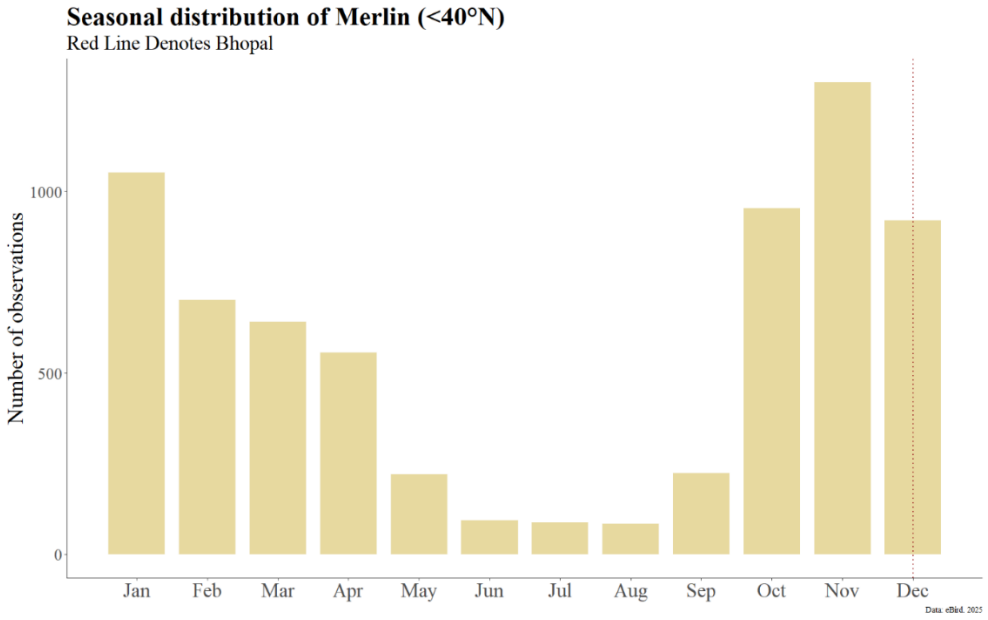
209 *Figure 3*. Latitudinal variation in reporting frequency of Merlin Falco columbarius across Asia and Africa based on eBird
210 data. The smoothed trend represents a LOESS fit using 5° latitude bins, with shaded bands indicating uncertainty. The
211 dashed red line marks the latitude of Bhopal (23.22°N).



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213 *Figure 4.* Monthly counts of observations from Asia and Africa indicate a strong winter peak (October–February), with very
214 few checklists during the summer months, reflecting seasonal emigration from the region.

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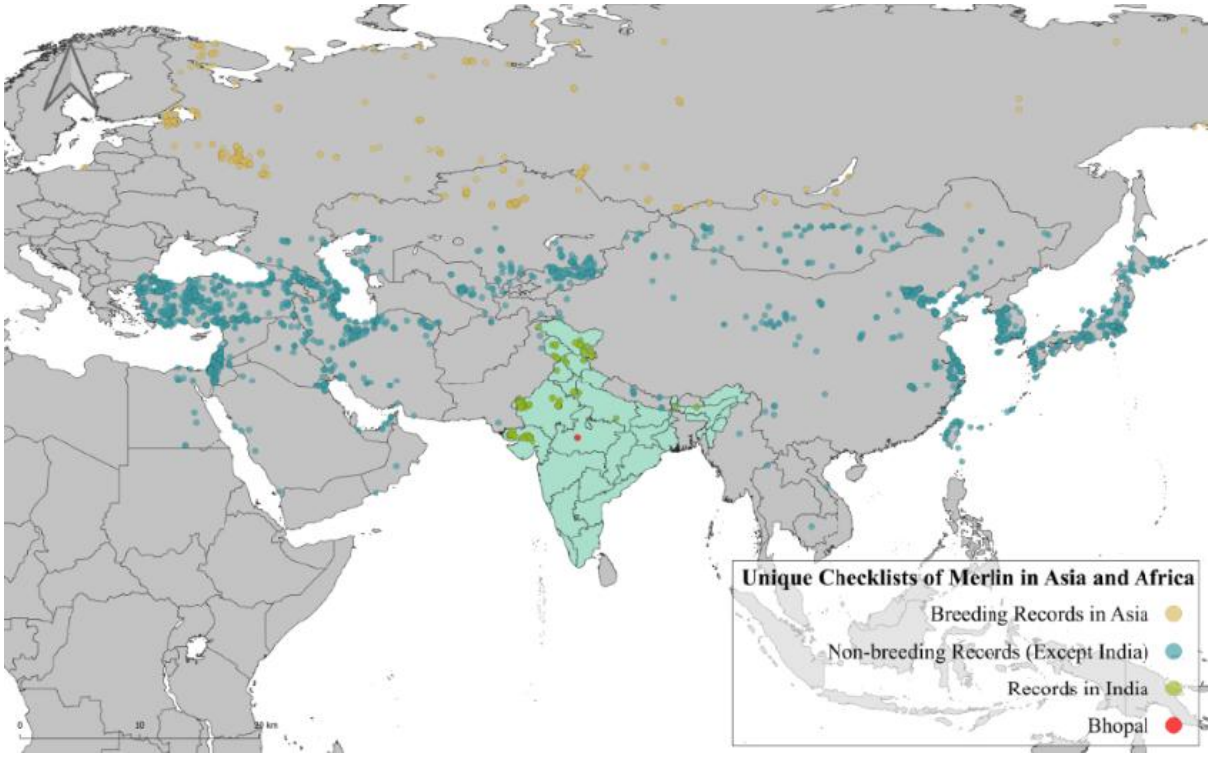

Figure 5. Spatial distribution of unique eBird checklists reporting Merlin *Falco columbarius* across Asia and Africa (eBird Data. 2025). Visually, Bhopal lies within an entirely new range, and is one of the southernmost records in India and along the Central Asian Flyway.

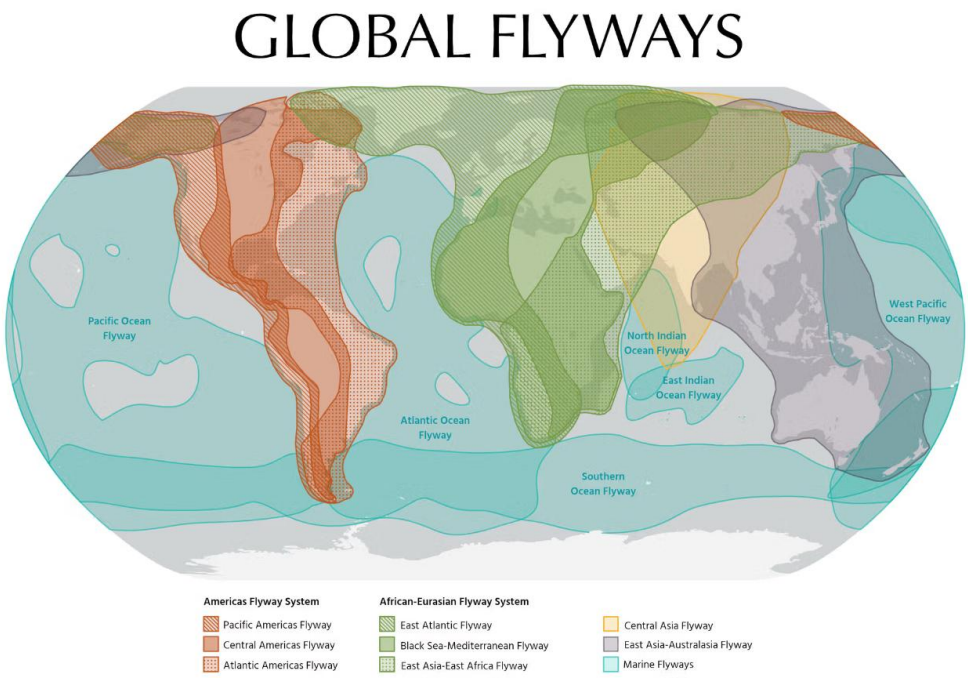

Figure 6. Major migratory flyways of birds, illustrating principal routes used during seasonal movements between breeding and non-breeding areas. (Image Source: BirdLife International 2026)