

Birdwatchers piecing together *Locustella* jigsaw: Insights into the wintering distribution of the cryptic West Himalayan Bush Warbler *Locustella kashmirensis*

Karthik Thrikkadeeri, Chintan Sheth, Himanshu C, Virag Sharma, Gunjan Arora, Kaushik Sarkar, Maxim Rodrigues, Gary Allport, Sandeep Biswas, Sandip Das, Rajdeep Mitra, Adesh Shivkar, Rajesh Panwar, Prashant Kumar, Prakash Chitragupta, Manash Pratim, Able Lawrence, Rofikul Islam, Kavi Nanda, Jugal Borah, Mark Menezes, Shyamal Saikia, Mittal Gala, Subhadra Devi, Anas Baig, Manas Gupta, Arun Hegde, Chaiti Banerjee, Swarup Sarkar, Sayanta Basak, Samarendra Chowdhury, Prasenjit Bhattacharjee, Anish Bera, Samim Akhter, Santanab Majumder, Niladri Kundu, Sayandeep Maity, Rakesh Singha Dev, Aritra Pal, Debasis Das, Sudipto Shome, Soumya Aon, Kallol Shome, Amitabha Majumder, Anindya Naskar, Jan-Erik Nilsen, Runap Gogoi, Rustom Basumatary, Anand Singh, C Abhinav & Ashwin Viswanathan

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Karthik Thrikkadeeri, Nature Conservation Foundation, Bengaluru 560097, Karnataka, India. Email: rikudoukarthik@gmail.com [KT] [Corresponding author]
Chintan Sheth, Wildlife Conservation Society-India, Bengaluru 560097, Karnataka, India & Faculty of Arts and Social Sciences, The University of Sydney, NSW 2006, Australia Email: cshe0361@uni.sydney.edu.au [CS] [Corresponding author]

Himanshu C., Bainskuan, Sirmaur 173025, Himachal Pradesh, India [HC]

Virag Sharma, Email: virag.sharma@gmail.com [VS] [Corresponding author]

Gunjan Arora, Pocket C-9, Flat #9293, Vasant Kunj, New Delhi, 110070, India. Email: innerconceptsindia@gmail.com [GAR] [Corresponding author]

Kaushik Sarkar, The Habitats Trust, New Delhi 110065, India. Email: kaushik.s@thehabitatstrust.org [KSA] [Corresponding author]

Maxim Rodrigues, The Habitats Trust, New Delhi 110065, India. Email: maxim.k@thehabitatstrust.org [MR] [Corresponding author]

Gary Allport, BirdLife International, Cambridge, CB2 3QZ, United Kingdom. Email: Gary.Allport@birdlife.org [GAL] [Corresponding author]

Sandeep Biswas sbiswas.go@gmail.com [SBI] [Corresponding author]

Sandip Das sandipwildlife@gmail.com [SDA] [Corresponding author]

Rajdeep Mitra, Wildlife Institute of India, Dehradun 248001, Uttarakhand, India. Email: rajdeep221240@gmail.com [RM] [Corresponding author]

Adesh Shivkar, Email: adesh.shivkar@gmail.com [ASH] [Corresponding author]

Rajesh Panwar, Email: rajeshpanwar2002@gmail.com [RP] [Corresponding author]

Prashant Kumar, Dangwal Colony, Ramnagar, Nainital 244715, Uttarakhand, India. Email: birdlifeindia@gmail.com [PK] [Corresponding author]

Prakash Chitragupta bicycle985372@gmail.com [PC] [Corresponding author]

Manash Pratim, Naoholia 786191, Duliajan, Assam, India. Email: manashjinga@gmail.com [MP] [Corresponding author]

Able Lawrence, Email: abledoc@gmail.com [AL] [Corresponding author]

Rofikul Islam, Kaziranga 785609, Golaghat, Assam, India. Email: rofikaziranga@gmail.com [RI]

Kavi Nanda, DLF Exclusive Floors, DLF Phase 5, Gurugram, Haryana, 122002, India. Email: kavinanda7@gmail.com [KN] [Corresponding author]

Jugal Borah, Email: cbipb9054l@gmail.com [JB] [Corresponding author]

Mark Menezes, Email: mark.menezes17@gmail.com [MM] [Corresponding author]

Shyamal Saikia, Email: shyamalsaikia99@gmail.com [SHS] [Corresponding author]

Mittal Gala, Nature Conservation Foundation, Bengaluru 560097, Karnataka, India. [MGA]

Subhadra Devi, Nature Conservation Foundation, Bengaluru 560097, Karnataka, India. [SDE]

Anas Baig [ABA]

Manas Gupta [MGU]

Arun Hegde [AH]

Chaiti Banerjee, Birdwatchers' Society, Kolkata 700064, West Bengal, India. [CB]

Swarup Sarkar, Birdwatchers' Society, Kolkata 700064, West Bengal, India. [SWS]

Sayanta Basak [SBA]

Samarendra Chowdhury [SC]

Prasenjit Bhattacharjee [PB]

Anish Bera [ABE]

Samim Akhter [SAK]
 Santanab Majumder [SMJ]
 Niladri Kundu [NK]
 Sayandeep Maity [SMA]
 Rakesh Singha Dev [RSD]
 Aritra Pal [AP]
 Debasis Das [DD]
 Sudipto Shome [SUS]
 Soumya Aon [SAO]
 Kallol Shome [KSH]
 Amitabha Majumder [AM]
 Anindya Naskar, Zoological Survey of India, Kolkata 700 053, West Bengal, India. [AN]
 Jan-Erik Nilsen [J-EN]
 Runap Gogoi [RG]
 Rustom Basumatary [RB]
 Anand Singh [ASI]
 C Abhinav, Ghurkari, Kangra 176001, Himachal Pradesh, India. Email: drabhinav.c@gmail.com [CA] [Corresponding author]
 Ashwin Viswanathan, Nature Conservation Foundation, Bengaluru 560097, Karnataka, India [AV]
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Introduction

West Himalayan Bush Warbler *Locustella kashmiirensis* (hereinafter, WHBW), also known as Himalayan Grasshopper-warbler (BirdLife International 2024), is a small, warm brown warbler that is known to breed in alpine scrub above 3,000 m asl, from north-western Himachal Pradesh, through Uttarakhand, and eastwards to west-central Nepal (Rasmussen & Anderton 2012; Inskipp & Chaudhary 2016; Inskipp et al. 2020a; Abhinav 2021). WHBW has two plumage morphs, grey-breasted and buff-breasted (Rasmussen & Anderton 2012). The typical grey-breasted morph has a white and unmarked chin, with variable spotting ranging from pale grey spots to larger brown or dark grey spots to even larger black spots often forming a gorget (Kennerley & Pearson 2010; Abhinav 2021). WHBW is closely related to Spotted Bush Warbler *L. thoracica* (hereinafter, SBWA) that reportedly breeds at similar elevations in the inner ranges of north-central and north-eastern Himalaya (Rasmussen & Anderton 2012), in Bhutan (Inskipp et al. 2020b; Dendup et al. 2021), as well as Sikkim, West Bengal, and Arunachal Pradesh in India (Stevens 1924; Baker 1933; Ludlow & Kinnear 1937; Matthews & Edwards 1944), and further east into China. Both species were considered conspecific (in the *Bradypterus thoracicus* species complex) until recently, and they were split based on ecological, morphological, vocal, and genetic differences (Alström et al. 2008). In the field, however, the only way to conclusively separate the two species is by their diagnostic songs, which becomes very difficult during the non-breeding season when they tend to be extremely skulking and typically not sing (Kennerley & Pearson 2010; Rasmussen & Anderton 2012).

The wintering range of WHBW has therefore remained an enigma for a long time (Grimmett et al. 2011; Rasmussen & Anderton 2012; Abhinav 2019). In India, the earliest confirmed (by song) wintering evidence of the species was by GAR in 2014 from Pilibhit in the Uttar Pradesh Terai, and then subsequently at the same site in 2015 and 2017. These observations were previously unpublished, but are now documented in this article. The first published wintering evidence of WHBW, however, was from Pong Lake, Himachal Pradesh, where up to three individuals were documented (with vocalisations including song) between December and March in three different years (2019–22; Abhinav 2022). The habitat was marsh and scrub, composed of

Typha sp., *Ipomoea* sp., Munj Sweetcane *Tripidium bengalense*, and *Lantana* sp., surrounding a pond at the periphery of a lake. A WHBW potentially in spring passage was found singing in Dehradun, Uttarakhand (c. 600 m asl) in April 2014 (Barve 2014), and a stressed *Locustella* warbler (likely WHBW in autumn passage based on range) was found in *Lantana* sp. bushes away from water at the same site in November 2017 (Warudkar 2017). It is likely that the only published wintering report from Dehradun (Singh 1999) of a single *B. thoracicus*, hunting for insects in a *Lantana camara* bush in New Forest, Tons Valley in January 1988, was of WHBW. Regular reports of the species with sound recordings by Pratap Singh, dating as far back as April 1998 (P. Sharma, in litt., email dated 24 May 2024), suggest that the species is regular in spring passage in the vicinity of Dehradun. The species has been reported several times in the past from around Corbett National Park as well during winter (e.g., Tak & Sati 2008). Several recent wintering records of *Locustella* spp. from the Terai and Himalayan foothills in western and central Nepal were also assumed by Inskipp et al. (2020a) to be of this species.

Rasmussen & Anderton (2012) suggested that the wintering distribution of WHBW appeared to include the plains of Uttar Pradesh, based on multiple *Locustella* spp. specimens collected by W. N. Koelz from Uttar Pradesh. However, some of these specimens were not definitively identified to species level owing to insect damage (Dickinson et al. 2000). Until the sightings described in this article, no verifiable records were known to corroborate this further. Therefore, prior to the present article, the species was considered an altitudinal migrant from above 3,000 m asl wintering down to the Terai and the western and central Himalayan foothills, with its wintering distribution hypothetically including the plains of Uttar Pradesh.

Our collective understanding of the range and movements of the species has improved rapidly since May 2022. Since then, several birdwatchers (hereinafter, 'birders') across the Indian Subcontinent have independently made great headway in finding and documenting wintering WHBW. In this article, we present recent learnings about the wintering distribution and habits of this species, grouped by geographical region, and additionally raise some new questions about its potential breeding range. Note that we have listed the most recent records from some regions

only if they represent an update in the current knowledge, such as a new wintering location within the region.

Observations

Western Assam

On the morning of 30 May 2022, KT, CS, MGA, SDE, and AV started on a safari, accompanied by two forest staff, in the Bhuyanpara range of Manas National Park, Assam, from (26.76°N, 91.09°E; c. 70 m asl). The safari track was built recently in 2015 (as per satellite imagery, Planet Team 2022), and runs through an extensive area of Terai flooded grassland-type habitat that typically houses grassland specialists (Viswanathan 2022a). Around 0725 h, as they were driving through this habitat, AV heard an insect-like buzzy chirp that likely belonged to a *Locustella* warbler and asked for the jeep to be stopped. Because the bird was singing from within a grass clump in extensive grassland habitat, the group's thoughts immediately went to *Locustella* spp. that may winter in such suitable habitat, in particular Baikul Bush Warbler *L. davidi* (BBWA), SBWA, Russet Bush Warbler *L. mandelli* (RBWA), or Chinese Bush Warbler *L. taksanowskia* (CBWA). AV was familiar with the song of SBWA, and knew that the song in question did not fit BBWA and did not quite fit SBWA, so he proceeded to check the songs of multiple *Locustella* spp. in the following order: CBWA, followed by RBWA, and then SBWA; and thereby produced a sequence of playbacks. The bird immediately responded to SBWA playback by vocalising, came closer to the group, and perched up on a dry reed (*Narenga* sp. or *Themeda* sp.) whilst still singing. The group obtained sufficient documentation in the form of photos, audio, and video (e.g., Gala 2022; Viswanathan 2022b). At the same time, a second bird was also observed singing a short distance away.

The first bird had the structure of a typical *Locustella* bush warbler, with a stout and rather round body, and a short tail. It had a visible dark eye-stripe extending from the base of the dark bill till the ear-coverts. The chin and throat were white, and large dark grey spots demarcated the throat from the breast and belly which had a greyish wash. The rest of the body was a warm brown of varying shades. The group tentatively identified the bird as SBWA on field despite the song not fitting the *trick-i-di* song of SBWA (Grimmett et al. 2011). Back at camp, they once again tried to match their sound recordings with songs of other *Locustella* spp. that occur in eastern Himalaya but could not arrive at a positive identity. The next morning, it struck AV that he had not considered WHBW, a species closely related to SBWA, as a possibility. It had not been considered earlier because its closest and eastern-most known record was aerially over 600 km away in central Nepal (Ghimire 2022). But this bird's song, a repeated buzzy *triptreeez-triptreeez* (as transcribed by Alström et al. 2008; see Fig. 1A), matched perfectly with the primary song of WHBW, confirming its identity as a grey-breasted morph of WHBW. The song only lacked consistency of the introductory *tre-tre-tre-* elements, which may be attributed to individual variation (Alström et al. 2008; Abhinav 2021).

The species was later photographed by RB from the same vicinity in the following year on 24 April 2023 (Basumatary 2023).

Uttar Pradesh

On 22 November 2014, GAR was birding in the floodplains of the Sharda River in the Haripur Forest Range (28.58°N, 80.30°E; c. 170 m asl). This area falls in the buffer zone of Pilibhit Tiger

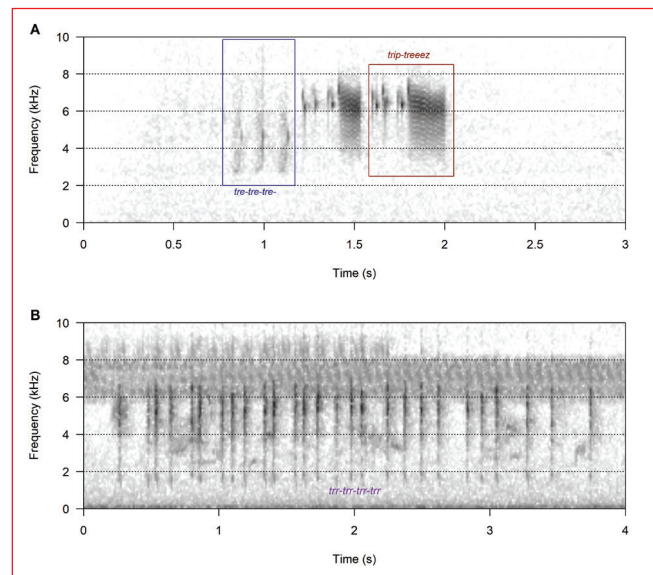


Fig. 1. Spectrograms of West Himalayan Bush Warbler vocalisations, generated by Karthik Thrikkadeeri using the R packages *seewave* (Sueur et al. 2008) and *warbleR* (Araya-Salas & Smith-Vidaurre 2017). (A) One strophe of West Himalayan Bush Warbler primary song, containing introductory *tre-tre-tre-* elements as well as *trip-treeez* elements (as transcribed by Alström et al. 2008). Image created from a sound recording by Andrew Spencer (Spencer 2019). (B) *trr-trr-trr-trr* calls of West Himalayan Bush Warbler. Image created from a sound recording by Sandip Das (Das 2023).

Reserve (PTR) in Uttar Pradesh, near the south-western border with Nepal. The river here flows from north-west to south-east, and breaches its banks during the south-west summer monsoon. The area stays flooded for up to four months, starting in June, before the water recedes. The floodplains on the southern bank of the river, that span up to a width of approximately 1.5 km, consist of scattered mixed forest, grassland, and shrubs. The grassland was then dominated by *Mallotus nudiflorus*, Kans Grass *Saccharum spontaneum*, and *Narenga porphyrocoma*, as well as shrubs like *L. camara*.

At 0730 h, a bush warbler-like bird, with a broad, short, and stiff tail, emerged on a horizontal blade of grass in the dense *Saccharum* sp. patch near a body of stagnant water. It had muted brown upperparts, a pale white supercilium and throat, light grey ear-coverts, and a slightly darker breast with buffish-brown flanks. The undertail-coverts appeared patterned dark fulvous-brown with pale white edges. At 0800 h, about 200 m further, two more birds of the same species were found in a *Tamarix dioica* bush. At least one bird was singing a constantly repeated two-note song that included metallic clicks and chuckles between notes, which to the ear sounded like *click-teeze-teeze*. After consulting field guides and Tim Inskipp, in the absence of a song recording, the species was tentatively identified as WHBW.

GAR visited the area again on the evening of 29 December 2014. At 1730 h, he found a potential WHBW making a foraging call (*tch-tch* notes), and at 0830 h the next day found two more individuals nearly 1 km further along towards the river. During the next visit on 09 February 2015, three birds were found, and a recording of the song finally obtained. The sound recordings and photographs were then sent to Per Alström, to ascertain whether they matched his own sound recordings and observations, which he confirmed (in litt., email dated 19 September 2015). GAR visited the area again on 06 February 2017, when two birds were photographed and sound-recorded. Similar habitats were

explored in search of more individuals, but none were found. In the past flood seasons, the river had been changing course and cutting south. It had washed away almost 400 m of land and many trees. At least one promising habitat for WHBW where two birds had been found in previous years had been swept away. *M. nudiflorus* had quickly emerged in the floodplain on the earlier course of the river, but it remained arid and treeless.

After many years, in 2022, a team from The Habitats Trust that included KSA systematically surveyed PTR in collaboration with the Uttar Pradesh Forest Department. On 27 September 2022, they incidentally spotted an unidentified *Locustella* sp. in the Chaugebi grassland of the Mahof Range. Later, on 27 October 2022, the team recorded three singing individuals of WHBW from the famous Bankey Taal grassland (28.47°N, 80.71°E; c. 280 m asl) in Dudhwa National Park (DNP). Subsequently, they encountered the species frequently across different Protected Areas in the region, including the Kishanpur Wildlife Sanctuary and the Katarniaghat Wildlife Sanctuary. While the northern-most record in their surveys was from the Laggabagga beat in Barahai Range (PTR), and the western-most from Bhim Taal Grassland in the Mahof Range (PTR), the species could very well also occur in suitable riverine patches of the Mala Range (PTR). The eastern-most and southern-most records are both from the Sujauli Range in the Katarniaghat Wildlife Sanctuary. The latest date of confirmed presence of the species in the general region before spring departure is 10 June, as of May 2024 (eBird 2024).

The team found that WHBW was widespread in the landscape. Including revisits, the species was encountered 55 times at 35 different patches across 26 grasslands during the systematic surveys. It was also recorded in the grasslands along the River Sharda on both banks, between the Kishanpur Wildlife Sanctuary and the Sampurna Nagar Range of the DNP buffer zone. In each encounter, 1–3 individuals were observed. All records were of naturally singing individuals, as the bird was seen very rarely but interestingly sang through the winter (e.g., Rodrigues 2022). WHBW was mostly encountered near wet grasslands with thick clumps of *S. spontaneum*. Some individuals were also found in dry grassland but only in the presence of grasses that were 1–2 m high.

On 30 November 2022, VS visited Sheikha Jheel (27.86°N, 78.22°E; c. 200 m asl) in Shekha Bird Sanctuary which spans 25 ha and is situated 17 km east of Aligarh, Uttar Pradesh. This freshwater lake is perennial and came into existence after the formation of the Upper Ganges Canal in 1852 which flows adjacent to the lake. While attempting to photograph Moustached Warbler *Acrocephalus melanopogon*, in habitat dominated by *T. bengalense* and reeds, VS accidentally photographed a different skulking warbler. This bird was shy and disappeared into the reeds within a few seconds. It had warm brown colouration, a short tail, a thin black bill, a whitish supercilium, and distinctive markings on the undertail. He contacted AV and CA for an opinion on its identity, who based on these features suspected it to be either WHBW or SBWA, but emphasised that visuals and contact calls alone were insufficient for a definitive identification.

VS revisited the location on 11 December 2022 but did not hear any calls. He tried playback, to which a bird responded with calls but no song. However, after 5–6 min, the bird began to sing (including the *trip-treez* strophe; see Alström et al. 2008; Fig. 1A) and VS obtained a sound recording, thereby confirming its identity as WHBW (Sharma 2022). He managed to obtain record shots showing a possible buff-breasted morph, and subsequently

found two more WHBW from two different reed-beds on the same day. One of these birds responded with song to playback but became silent thereafter, before responding again to further playback after a few minutes. All three birds mostly responded with generic *Locustella*-type *trr-trr-trr-trr* calls (see Fig. 1B).

Earlier in the year, on 30 January 2022, PC had photographed a *Locustella* warbler in the Terai-like grasslands of the Ghagra/Saryu River (26.80°N, 82.09°E; c. 110 m asl) near Faizabad Cantonment, Ayodhya, Uttar Pradesh (Chitragupta 2022). These grasslands had been in particular focus that winter due to the presence of wintering Moustached Warbler and Hodgson's Bushchat *Saxicola insignis*. After two hours of waiting and trying playbacks of several warbler species, the bird finally responded to the song of WHBW. However, at the time there was no evidence that either WHBW or SBWA wintered in the area, and the bird was therefore not identified to the species level in the absence of a song recording. Subsequently, more reports of *Locustella* sp. followed in nearby Lucknow, until 07 May 2023 when AL managed to record a singing bird and therefore easily identify it as WHBW, at Ghagra Ghat near Barabanki (Lawrence 2023). Based on this evidence and the confirmed presence of the species in Aligarh and further north in the Uttar Pradesh Terai, previous photographs of *Locustella* sp. in the landscape were probably of this species.

PC found WHBW to be abundant in suitable habitat around the Faizabad Cantonment in subsequent years. He noted it to be extremely shy and skulking, exhibiting quick movements and preferring thick, marshy, and densely reeded, Pink Morning Glory *Ipomoea carnea* habitat where it foraged in the upper levels of the vegetation. It was responsive to playback but was not as bold as Smoky Warbler *Phylloscopus fulgiventis*, Dusky Warbler *P. fuscatus*, or Moustached Warbler, with which it was frequently associated.

On 10 March 2024, MM and ASI discovered a wintering WHBW population (up to five birds based on subsequent visits, as of May 2024) at an oxbow lake (at 25.37°N, 81.75°E; c. 90 m asl) in Prayagraj (Allahabad) District (Menezes 2024). They were observed in a habitat of aquatic shrubs and herbs (*I. carnea*, *Celosia argentea*, and *Alternanthera* sp.) growing along the shore of the lake. This aquatic vegetation was adjacent to cultivation of wheat *Triticum* sp. and Pea *Lathyrus oleraceus*. The birds foraged on the stems of the aquatic plants above the surface of the water, up to a height of 30 cm. When singing, they were observed seeking out higher perches on bare stems of *I. carnea*. Prayagraj is further south and east of the previously documented wintering range of WHBW in Uttar Pradesh (Lucknow and Ayodhya), and was the one remaining well-birded region in the State where the species had not been documented yet.

Uttarakhand

On 22 November 2022, HC visited the Asan Conservation Reserve (30.43°N, 77.67°E; c. 420 m asl), a Ramsar site in Dehradun, Uttarakhand. While birding on the edges of the wetland at around 1100 h, he noticed two warblers calling and foraging in *L. camara* bushes. On closer approach, both of them flushed and perched on a Curry Leaf Tree *Berberis koenigii*. He waited for some time in this marshy area with abundant *Typha* sp. and fern growth, and in a few minutes one of the birds came out in the open to feed. The bird was relatively bold and frequently broke cover in this manner, providing ample time to obtain good photos. It was a small brownish bird, with a short round-tipped

tail and with prominent white on the throat and upper breast. The supercilium, part of the ear-coverts, the centre of the belly, and the undertail-covert tips were also white, while the legs and the base of the lower mandible were pale pink.

The birds were still around when HC revisited the next day, and he was able to record their vocalisations and thereby confirm their identity as WHBW. They uttered a harsh and rapidly repeating *trr-trr-trr-trr* (see Fig. 1B), and infrequently interspersed this with parts of song phrases. After song playback, these song phrases occurred more frequently, and also included the typical clicking and buzzing *trip-treez* (see Alström et al. 2008; Fig. 1A), but without the introductory *tre-tre-tre* clicks. HC next observed these birds on 10 December 2022. When CA and HC visited the location again on 24 January 2023, they found that the original bushes had been cleared, but managed to locate one WHBW in *Typha* sp., around 100 m away.

On 15 February 2023, RM observed a *Locustella* sp. foraging in Elephant Grass *Arundo donax* clumps beside a small canal, in the grassland patch within the Wildlife Institute of India campus, Dehradun. The bird was initially seen moving in the dense grasses while making the harsh and rapid *trr-trr-trr-trr* call (Fig. 1B), but it later crossed the canal and moved to another grassland patch, allowing RM to obtain photographs of the bird in the open. Suspecting either SBWA or WHBW, playback was used; the bird responded in some time, and the song was recorded. Based on the location and the characteristic song, it was identified as WHBW. The species was later recorded multiple times from the campus (e.g., Bhattacharya 2023; Miranda 2023).

On a foggy morning on 30 March 2023, ASH, along with several others, was waiting patiently in the Dhikala range of Corbett National Park (CNP), anticipating a glimpse of a tiger that had been moving in the Terai grassland near the landmark Mota Sal area (29.58°N, 78.83°E; c. 360 m asl). Soon after the dawn chorus of birds began, he distinctly picked up a series of high-pitched buzzy clicks which he narrowed down to a *Locustella* bush warbler, having previously heard several song recordings. On-field comparisons with songs on the Merlin app helped him identify it as WHBW. He estimated at least two birds singing continuously from amidst tall grass, and later managed to spot and photograph one individual. This bird was chased by another individual, but returned to the same spot and continued singing from a relatively open perch, seemingly in response to the other singing individual in the vicinity. The bird did not appear shy, and seemed comfortable even with three jeeps in close proximity. ASH later heard at least three more singing birds in the area, and other local guides reported the bird from the same location some days later as well.

On 09 May 2023, RP was birding in Baur (Haripura) Reservoir (29.13°N, 79.30°E; c. 230 m asl), Haldwani when he heard the song of WHBW coming from *Ipomoea* sp. bushes lining the edge of the water. He was familiar with the bird and its song from previous experience in its breeding grounds. There was only one individual in the area, and it sang continuously as it does in the breeding grounds. The latest date of confirmed presence at this location before spring departure is 11 June (Pradhan, 2023; Rawat 2023; eBird 2024).

On 15 May 2023, PK heard a singing WHBW near Phool Taal, a large pond in the Garjiya zone of CNP. He immediately recognised the bird, as he had been following recent discussions on the species and had familiarised himself with its song. He continued to hear the bird at the same location for almost a

week, during which time he glimpsed the bird once, but he could not find it again afterwards. The following year, on 24 April 2024, PK managed to record a bird singing from the same location, and two singing birds were also reported on 30 May 2024.

West Bengal

In March 2023, seeing the recent evidence from grasslands of Uttar Pradesh and Assam, MR suspected the possibility of WHBW occurring in West Bengal. On 17 March 2023, MR examined available sound recordings on eBird of closely related species, and flagged a number (>5) of misidentified recordings of SBWA from southern West Bengal, as belonging to WHBW.

One such observation was by ABE from Mahishrekha Forested Patch (22.46°N, 87.99°E; c. 5 m asl), Howrah on 29 December 2021 (Bera 2021), which is now possibly the oldest report of WHBW from West Bengal. Another was on 24 December 2022, when a group comprising SBI, SAK, AM, SMJ, NK, DD, SUS, SAO, and KSH had found a warm brown *Locustella* sp. in Baruipur Marshes, South 24 Parganas (22.36°N, 88.38°E; c. 10 m asl). It was foraging in dry Indian Jointvetch *Aeschynomene indica* branches piled up beside a *Typha* sp. reed-bed, and briefly afforded close-up views in the open. Based on past experience with *Locustella* spp. in the region, SAK and SBI had originally assessed this bird as SBWA considering the plumage. They had used playback and recorded the very short vocal response, which they had assumed was an undocumented variation of SBWA song.

Similarly, on 02 March 2023, SDA, SC and PB had visited Sahapur (22.79°N, 88.42°E; c. 5 m asl), a large wetland with cultivable land as well as numerous thick reed-beds of *Phragmites* sp. and *Typha* sp.; they had found a particularly bold *Locustella* sp. responding to SBWA playback, with the regular *trr-trr-trr-trr* call (Fig. 1B) and short bursts of song, from a patch that had been burned some days prior for cultivation. Although they had been surprised by the unusual levels of boldness and vocalisation, they had not considered WHBW as a possibility and had been convinced it was SBWA (see Das, in prep., for insights on *Locustella* spp. in the region).

On closer inspection of records after this discovery, it was found that on several occasions in the past, other birders in West Bengal had also recorded similar songs and originally reported them incorrectly as SBWA. It became clear that several wintering WHBW, of both morphs, had already been documented in the past two winters (2021–22 and 2022–23) in the State. Southern West Bengal in particular emerged as a regular wintering site for the species, exclusively from previously uploaded sound recordings on eBird that were retrospectively re-identified.

This raised the question of why there were so many old (and new) reports of *Locustella* spp. from West Bengal. With its extensive marshy and riverine grassland habitats, West Bengal is a hotspot for wintering warblers. Several birders in the region have been on the lookout for *Locustella* spp. and other cryptic warblers over the last few years, so much so that SBI, SDA, and AV had formed a WhatsApp group called 'Locustella Discussion' on 18 February 2021 just to discuss *Locustella* identification in the region (see section 'Birders and their networks' for insights). Since the discovery of wintering WHBW in the region, it has been consistently observed to be less secretive than the other wintering *Locustella* species, and to respond to SBWA playback with a short burst of its own primary song. However, local birders have not had the chance to gather more detailed information

such as its abundance relative to the locally common BBWA and SBWA.

Bangladesh

On 18 March 2023, J-EN and GAL visited the Kamargaon grasslands at Padma-Char (23.51°N, 90.20°E; c.5 m asl), a site located along the Padma River (the Ganga and Brahmaputra rivers after they have merged) in Bangladesh. Padma-Char is seasonally inundated, but in the dry season there forms a patchwork landscape of recession agriculture and natural grasslands reaching c.20 sq. km in extent (see location in Allport 2023a). The site is regularly visited by birders from around Dhaka looking for grassland birds. J-EN had previously reported both BBWA and SBWA at the site in March 2021 as well as February/March and December 2022, mostly in stands of 1–3 m tall, recently burned Elephant Grass *A. donax*. On 18 March, several birds were heard giving *Locustella*-type calls, so both BBWA and SBWA songs were played at intervals; in response, multiple BBWA and a single SBWA gave short bursts of song and showed briefly. At one stop, a *Locustella* warbler responded rapidly to the playback and presented itself in full view, enabling good quality photographs. It did not sing, but gave a sharp *tswik* and short grating calls. An image of this bird was posted online but did not reach a conclusive identification. However, several birders from the region noted that just a day prior, WHBW had been discovered in West Bengal, and should therefore also be considered as a candidate.

Although J-EN and GAL resolved to return to the same areas of *A. donax* before dawn to continue their search, they were unable to do so for two months, until 13 May 2023 which was also Global Big Day 2023. They expected *Locustella* species to have departed for breeding grounds by the second week of May, so a bird singing strongly, immediately on their arrival in the habitat at 0515 h, took them by surprise. By now, they had familiarized themselves with the songs of all three *Locustella* species, and were immediately able to identify the singing bird as WHBW. It responded to playback, and they obtained audio and video recordings of the singing bird (see Allport 2023b). The details of this sighting were peer-reviewed by the Birds Bangladesh team, and it was accepted as the first record of WHBW for the country (S. Chowdhury, in litt.). The species was subsequently reported from the location multiple times.

Eastern Assam

On 21 March 2023, MP and RG visited Maguri Beel (27.58°N, 95.38°E; c. 110 m asl) in Tinsukia, Assam, and saw a *Locustella* sp. that was similar to SBWA but paler in colour (Pratim 2023). It was warm brown above, and a buffy breast and black bill were noted in the field. Its undertail could not be observed as it quickly went into some bushes, and although it sang for a few seconds, rain prevented any sound recording. Later, the bird did not respond to either SBWA or WHBW song playback. MP was familiar with SBWA song, having guided extensively in the region, and suggested that the bird's song matched WHBW. Subsequently, RI visited the same site on 27 May 2023, and found a singing WHBW that was both photographed and sound-recorded, confirming the presence of the species in the region (Islam 2023), over 1,000 km away from the eastern-most known breeding site in central Nepal (Ghimire 2022).

After WHBW emerged as a possibility for birders in the region, many actively searched for the species during the winter

of 2023–24. Throughout the winter, one or more individuals were repeatedly found in the grasslands of Maguri Beel and the nearby Dibru Saikhowa. On 23 February 2024, JB found a single individual in Dikrong Grassland (26.98°N, 93.97°E; c. 100 m asl) in Lakhimpur District (Borah 2024), and subsequently found more birds wintering in the landscape. SHS searched without success for the species in Majuli District from October 2023 to March 2024, using WHBW song playback whenever he came across a *Locustella* sp., but only SBWA responded by singing on occasion. However, on 21 May 2024, he heard a single phrase of WHBW song at 1745 h in grassland at Kamalabari Ghat (26.92°N, 94.17°E; c. 100 m asl) and attempted to confirm its identity through playback. A second distant individual began singing in addition to the one that was initially heard (Saikia 2024). Both individuals were in similar habitat, dominated by *S. spontaneum* interspersed with *Tamarix* sp. and *Typha* sp., near a water body. On 24 May 2024 at 1720 h, he found another individual in a different habitat of bushes and *Phragmites* sp. reeds, that responded with song after 1–2 min of playback. This individual appeared to be in moult.

Haryana

During March–May 2024, KN and GAR documented up to four birds and both morphs of WHBW at Chandu Budhera (28.48°N, 76.92°E; c. 230 m asl), a wetland complex on the outskirts of Sultanpur National Park, Gurugram. The first bird was noticed on 09 March 2024 at c. 1030 h (Nanda 2024) when it was giving a series of continuous loud *chuck* calls in a patch of *Saccharum* sp. and *Typha* sp. reeds (Fig. 3). When this call was played back, it perched on a small *Neltuma juliflora* bush, giving sufficiently clear views for KN to observe that the bird had a typical banana-shaped *Locustella* structure, and a greyish breast with tiny dark spots forming a necklace across the upper breast. They were discussing the key features for identification of the species, when an explosive *tre-triptreez-triptreez* song from the reeds cleared all doubt that this was indeed WHBW. The species was observed at this location until as late as 25 May.

All individuals were found in reed patches with some amount of water at their base or adjacent to them [78]. Other similar patches of *Typha* sp. and *Saccharum* sp. reeds away from water, on relatively dry ground, did not show any evidence of WHBW. KN and GAR also explored extensive reed patches in other parts of the wetland complex but did not detect the species in any of them.

Discussion

Wintering distribution

The observations reported here, particularly the southern-most records in both Uttar Pradesh and West Bengal, now confirm that WHBW can show long-distance migratory behaviour, much like the closely related SBWA which typically winters further east of Uttar Pradesh (Alström et al. 2008). Evidently, the winter (i.e., non-breeding) distribution of WHBW spans much of northern India and the Ganga and Brahmaputra plains (Fig. 2). It winters as far west as Pong Lake, Himachal Pradesh (Abhinav 2022); as far south-west as Gurugram, Haryana, and south of River Ganga in Aligarh, Uttar Pradesh; as far south as Prayagraj, Uttar Pradesh; as far south-east as West Bengal and Bangladesh; and as far east as eastern Assam.

Given that the species appears to migrate considerable distances southwards, and perhaps also eastwards (breeding

status is uncertain in eastern Himalaya, but see next section, 'Breeding distribution'), to winter in grassland habitat, WHBW may in fact be widespread in the Ganga and the Brahmaputra floodplains during winter. The southern records reported here corroborate the suggestion by Rasmussen & Anderton (2012) of WHBW wintering in the plains of Uttar Pradesh, and also point to the possibility that some of Koelz's damaged *Locustella* sp. specimens from the state (Dickinson et al. 2000) included WHBW.

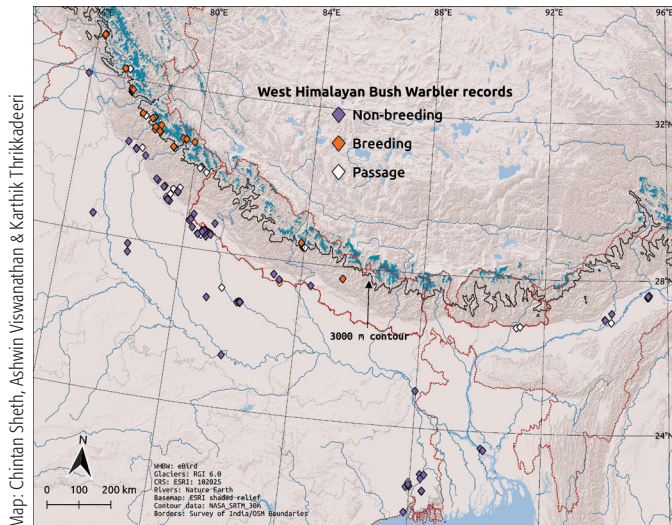


Fig. 2. Distribution of all-time West Himalayan Bush Warbler records on eBird as of May 2024, including those discussed in this article, demarcated by elevation (3,000 m contour line; accessed via Google Earth Engine, Gorelick et al. 2017) and season. Season limits are assumed based on existing eBird records of the species in likely migration between breeding altitudes in the mountains and non-breeding altitudes in the plains: autumn passage from 28 September (earliest likely autumn migration; Prince 2017) to 21 November (latest likely autumn migration; Warudkar 2017) and spring passage from 24 April (earliest likely spring migration; Kumar 2024) to 12 June (latest likely spring migration; Mathur 2023). Thus, orange diamonds represent records in the assumed breeding season (13 June–27 September), purple diamonds represent those in the assumed non-breeding season (22 November–23 April), and white diamonds those in autumn or spring passage.



Kavi Nanda

78. Habitat of *Saccharum* sp. and *Typha* sp. reeds with *N. juliflora* bushes, at Chandu Budhera, Haryana, where West Himalayan Bush Warbler was found on 09 March 2024.

The species appears to spend the winter in a variety of grassland-type habitats, including around *Typha* sp. adjacent to water, either as dominant reed-beds (Inskipp et al. 2020a), or interspersed with grasses such as *Saccharum* spp. and scrub or herbaceous vegetation such as *Lantana* sp. and *Ipomoea* sp. (Abhinav 2022). These wintering habitat preferences are similar to those of SBWA (Madge & Kirwan 2020), which also winters in the foothills and plains of northern India and Bangladesh, in

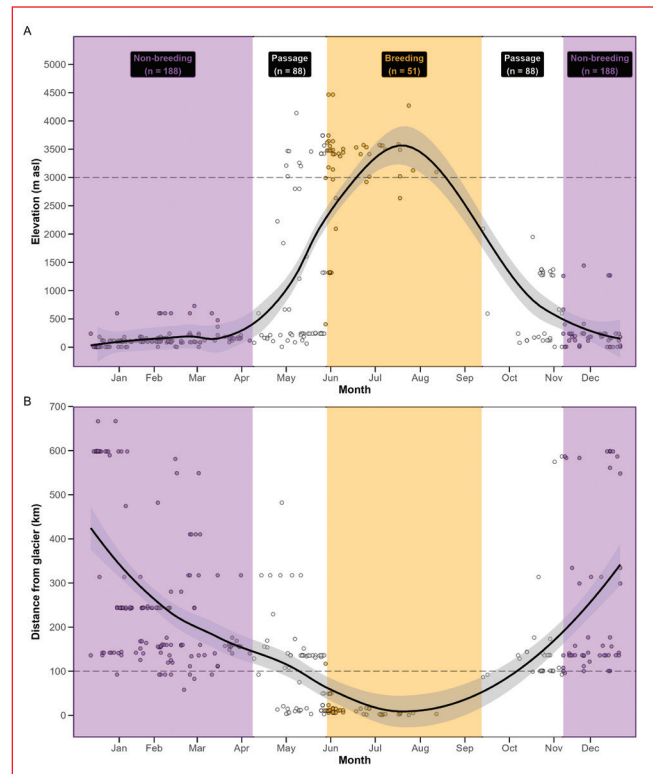


Figure: Chintan Sheth & Karthik Thirikkadeeri

Fig. 3. Seasonality of all-time West Himalayan Bush Warbler records on eBird as of May 2024, including those discussed in this article, based on (A) elevation (m asl), and (B) distance from glacier (km) of the eBird checklist locations (Y-axis). Checklist locations were linked to an elevation raster downloaded using the *elevatr* R package (Hollister et al. 2023), to obtain elevations for each West Himalayan Bush Warbler record; distance from glacier was calculated using glacier polygons by RGI Consortium (2017). X-axis represents the twelve months of a year, with axis ticks corresponding to the median day of each month. Each point represents a single eBird record of West Himalayan Bush Warbler, and colours represent the three seasons (orange: breeding, n = 51; purple: non-breeding, n = 188; white: passage, n = 88). Smoothed LOESS lines have been fit through the raw data for visualizing the seasonality patterns.

some cases together with BBWA. Moreover, Brown Bush Warbler *L. luteoventris* too may winter in some of these regions, given the recent breeding season report from Uttarakhand (Mohan et al. 2020). Therefore, grassland-type habitats in these floodplain regions of north and north-eastern India need to be surveyed more frequently and extensively, using playback (responsibly and in moderation; see Sibley 2016) to induce and preferably record song, and to thereby ascertain species identity.

Previous observations suggested that WHBW typically returns during May to alpine scrub habitat above 3,000 m asl, where it is known to breed (Abhinav 2021), with some evidence then suggesting that passage migration to higher elevations is in late April (eBird 2023). However, observations from across its wintering range now indicate that WHBW can occur at low elevations until quite late in the season (Fig. 3A)—the latest among the ones discussed here being 11 June. The species therefore also seems to have a relatively short window for spring migration (Fig. 3A), raising further questions about the breeding whereabouts of the birds reported late in the season, and far from the closest known breeding site in the Western and Central Himalaya, such as the eastern Assam birds.

Breeding distribution

Well-documented breeding records of WHBW have all been from alpine habitats with short scrub, grassy or herbaceous

vegetation (Abhinav 2021). Data presented in this article (Fig. 2, Fig. 3A) suggest that 38 out of the 51 breeding season records (13 June–27 September) are from open habitats above 3,000 m asl, such as alpine meadows in the western and central Himalaya. Notably, 18 of these 38 observations are within a 7 km aerial distance from the closest glacier (Fig. 3B), and three [Annapurna record by Inskipp and Chaudhary (2016); Sach Pass records by Abhinav (2018a, 2018b)] are within a kilometre (aerial distances calculated using QGIS 3.22.4 field calculator; glacier polygons as per RGI Consortium 2017). The absence of more observations at similar altitudes is possibly because meadows and other open habitats close to glaciers are difficult for birders to access. The breeding season of the species also coincides with the Indian monsoon, which with frequent landslides or road closures makes accessing some of these high-altitude areas from the plains challenging.

Among the observations discussed in this article are those of multiple singing individuals in close proximity documented far east and south of the known breeding range of the species, relatively late in the season, and in lowland grassland-type habitat. We urge more concerted surveys in these habitats during the breeding season (June–September) to better understand the seasonality of this species. However, given our current understanding of WHBW, these habitats are very different from its well-documented breeding habitats at high altitudes and hence are unlikely to harbour breeding WHBW. Where then are these individuals headed to breed?

We can only speculate that there are previously undocumented high-altitude breeding sites closer to or in eastern Himalaya. Districts or states with alpine scrub habitats suitable for breeding are reasonably well surveyed in neighbouring West Bengal (3847 'complete' eBird checklists from May to August, as of August 2023), Sikkim (1673) and Bhutan (710). However, it is unknown whether the breeding habitats themselves are well surveyed, and this drab and secretive species is also easily overlooked. As the name suggests, WHBW was previously thought to be a strictly western Himalaya breeding bird (from north-western Himachal Pradesh, India to Uttarakhand, India) until Inskipp and Chaudhary (2016) reported singing birds in west-central Nepal and Manshanta Ghimire found the species during the breeding season in central Nepal (Ghimire 2022). This latter site in central Nepal is the eastern-most known breeding site of the species, but is aerially more than 1,000 km west of Tinsukia in eastern Assam, India. Our reports, particularly those from Assam, therefore indicate that the breeding range may extend even further eastwards, perhaps into the alpine scrub and meadow habitats (3,000–4,500 m asl) of eastern Nepal, Sikkim, Bhutan and Arunachal Pradesh—areas where SBWA has been thought to breed such as Jigme Dorji National Park in Bhutan (Inskipp et al. 2020b; Dendup et al. 2021); could that population of SBWA actually be of WHBW, or is that an area of overlap?

Many supposed SBWA records from central and eastern Himalaya (both historical and contemporary) need to be re-examined with special focus on song, despite the morphological affinity of those birds with typical Chinese-breeding SBWA populations. This group of closely related species has had a long history of taxonomic confusion and misidentification: for instance, the earliest published account of '*L. thoracica*' from Uttarakhand in the breeding season (Whympers 1911) was likely of a WHBW; eggs described (Whympers 1915) as

belonging to *Tribura thoracica* [= *L. thoracica*] and *T. mandellii* [= *L. mandellii*], presumably based on morphology of the adults, were likely of grey-breasted and buff-breasted morphs of WHBW respectively (see Alström et al. 2008). Some past records and accounts of *B. thoracicus* (before the species complex was split) from Nepal in the breeding season—in the form of repeated sightings (Lelliott 1981), nest and eggs (Thiollay 1977, 1980), and fledgling specimen (Martens & Eck 1995)—do not contain sufficient information to definitively rule out present-day WHBW. How much is the true overlap in ranges of these sister species? Interestingly, there is scant verifiable documentation of breeding SBWA birds in Nepal, despite decent coverage of the region in the breeding season, including extensive surveys of eastern Nepal by Diesselhorst (1968); supposed SBWA specimens obtained by B. H. Hodgson were likely misidentified (Baker 1933). However, multiple SBWA were recently found singing in breeding habitat in Upper Dibang Valley, Arunachal Pradesh (Viswanathan 2024), which appears to be the first verifiable record of the species from India during the breeding season (June–September); given the habitat, behaviour, and season, this is perhaps also the first known Indian breeding locality of SBWA.

We therefore urge more surveys in the high-altitude areas of eastern Nepal, West Bengal, Sikkim, Bhutan, and Arunachal Pradesh during the breeding season to better understand the breeding ecology and range limits of WHBW and SBWA. These high-altitude habitats are not easily accessible to birders; however, some high-altitude areas in northern Sikkim (Lachen and Lachung valleys) and western Arunachal Pradesh (West Kameng and Tawang) are of suitable elevation and habitat and are accessible during the breeding season. Owing to the high level of morphological similarity between the two species, we recommend special attention to songs until further insights emerge regarding visual identification.

On visual identification



79. West Himalayan Bush Warbler in non-breeding plumage without any hint of spotting: possible buff-breasted morph in West Bengal on 24 December 2022 (left; photo by Kallol Shome); potential grey-breasted morph in Uttar Pradesh on 18 December 2022 (centre; photo by Virag Sharma); potential grey-breasted morph in Pong, Himachal Pradesh on 27 March 2022 (right; photo by C. Abhinav).

GAL and J-EN further studied the identification of the bird seen on 18 March 2023 in Bangladesh (Allport 2023a). The buff-breasted morph in breeding adults is known to be unique to WHBW (Alström et al. 2008; Rasmussen & Anderton 2012), making the species distinctive and separable from SBWA when in breeding plumage. However, specific morphological details (in other words, visual identification pointers) of this morph are difficult to arrive at based on existing literature, most of which predates the species split. For easy reference in future efforts, we summarise here what is currently known about visual identification of the buff-breasted morph of WHBW, based on

the plates in Kennerley & Pearson (2010), the high-quality photographs in Abhinav (2019), and the details in Table 2 in Alström et al. (2008). This morph in breeding adults shows a complete lack of clear breast spotting unlike SBWA, and the upperparts and face are bright buffish in tone compared with the grey of SBWA. Since the bird seen on 18 March was in uniform plumage (but with moderately abraded primaries), it may have been in breeding plumage; and with bright buffish tones to the plumage and an unspotted breast, this bird was visually identifiable as WHBW.

However, more substantive insights on visual identification of this morph require further concerted analyses. For instance, this morph has been misidentified in the past as Brown Bush Warbler (Alström et al. 2008). Additionally, the buff-breasted morph of WHBW may also be unique in non-breeding plumage [79], but it is unclear whether WHBW and SBWA have different non-breeding plumages that confound this inference. In the coming years, a thorough analysis of available photos, as well as studies of in-hand birds using mist-netting and detailed examination of museum specimens, may reveal consistent visual differences between the two species across morphs and plumages. In eastern India and Bangladesh during winter, several other *Locustella* species can co-occur with WHBW. Visual separation is therefore complex, but there is some early indication that the amount of white on the undertail-coverts (Alström et al. 2008) and behaviour (Das, in prep.) may be key. These sister species (particularly WBHW and SBWA) being extremely similar biometrically, despite dissimilar songs and genetics, also raises the question of potential hybridisation.

Birders and their networks

Our findings also bring to light the important and increasingly powerful role of birders and their networks in advancing our knowledge on birds. This sequence of rapid parallel discovery and learning over the last two years was facilitated by birding community forums such as WhatsApp and Facebook groups, through the far-reaching conduits of instant communication and feedback that they provide. Moreover, the universal accessibility and openness of the information repository eBird (Sullivan et al. 2014), with its knowledge base being constantly updated, also played a major role in facilitating this discovery.

These together not only enabled real-time updates, discussions, and conclusions regarding individual sightings among concerned and interested birders, but also alerted and motivated others elsewhere to be on the lookout for similar surprises—which involved them learning appropriate songs and preparing for responsible playback attempts. Discoveries catalysed by birding community discussions and using community-sourced knowledge have occurred at a smaller scale in the past (e.g., Menon et al. 2022). We expect, and look forward to, more future instances where birders and their networks will undoubtedly play a significant role in furthering our understanding of other poorly-known South Asian birds.

The *Locustella* jigsaw

Locustella spp. are extremely difficult to spot and to identify during the non-breeding season when they typically do not sing, due to their skulking habits and very similar contact calls. This partly explains why the wintering distributions of other species such as RBWA and Brown Bush Warbler also remain largely unknown (see Carey 2021; Madge 2020). Birders in

West Bengal and Assam have made considerable strides in uncovering the wintering distributions of SBWA and BBWA. In another recent first, SDA found RBWA wintering in bushes adjacent to paddy fields in Changlang District, Arunachal Pradesh in December 2022 (Das 2022). Similarly, Gogoi et al. (2024) recently obtained the first media documentation of wintering CBWA from India.

Our observations piece together a small part of the *Locustella* jigsaw. However, several more pieces lie waiting to be found, in alpine habitats of central and eastern Himalaya during summer, and in the marshy and riverine grassland habitats of northern and north-eastern India and Bangladesh during winter. What is the western edge of the SBWA distribution, and the eastern edge of the WHBW distribution? Where do they overlap, and do they potentially hybridise? Such questions call for stronger and more focused efforts in exploring these regions, which with the growing birding community in South Asia, is far from challenging. We therefore urge birders to keep their eyes, and especially ears, out for these enigmatic unassuming brown birds and their “tricky” songs.

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