adjacent to Kamlang and the Namdapha Tiger Reserves and there are high possibilities of exchange of birds between these sites.

![Image of White-bellied Heron](image)

Understanding the distribution patterns is vital for conserving rare and elusive species like the White-bellied Heron. Regular sightings of the species in these areas show that the species occupies a much larger landscape in eastern Arunachal Pradesh. There is a greater need for long term ecological studies and satellite tagging of the birds to positively map their movement and dispersal.

**References**


---

**Austen’s Brown Hornbill Anorrhinus austeni and Beautiful Nuthatch Sitta formosa: Additions to the birds of Meghalaya, with notes on recent records of Rufous-necked Hornbill Aceros nipalensis and Great Hornbill Buceros bicornis**

Meghalaya is part of the Indo-Burma Biodiversity Hotspot (Myers et al. 2000), and is one of the Important Bird and Biodiversity Areas in India (Rahmani et al. 2016). The state has nine Important Bird Areas (IBAs) including Narpuh Reserve Forests and Saipung in Jaintia Hills. BirdLife International (2022a,b) categorises Narpuh Reserve Forests under categories A1 (has globally threatened species) and A2 (has restricted-ranges species), and Saipung under A3 (has Biome-restricted species). Saipung is also a data deficient site.

Here we present new distribution records from 2012–2022, of Austen’s Brown Hornbill *Anorrhinus austeni*, Beautiful Nuthatch *Sitta formosa*, Rufous-necked Hornbill *Aceros nipalensis*, and Great Hornbill *Buceros bicornis*, from parts of Narpuh Reserve Forests, Narpuh Wildlife Sanctuary, Saipung, and neighbouring sites.

**Austen’s Brown Hornbill Anorrhinus austeni**

Austen’s Brown Hornbill *Anorrhinus austeni* is found in parts of north-eastern India, Myanmar, Thailand, Laos, Vietnam, and Cambodia (Kemp & Boesman 2020a) and has been categorized as Near Threatened (NT) under the IUCN Red List of Threatened Species (BirdLife International 2018). In north-eastern India, it has been reported from Jeypore Reserve Forest and Barail Wildlife Sanctuary (Assam), and from several parts of Arunachal Pradesh (Saikia & Devi 2011; Hussain et al. 2015; Datta 2009). Choudhury (2001: 93) recorded Austen’s Brown Hornbill in Nagaland in 1992, but declared it ‘locally extinct in most areas’. Choudhury (2009) also recorded a hunted casque of this species from Manipur but there were no sightings from the wild. Austen’s Brown Hornbill has further been categorized as the “most threatened hornbill in North-east India”, owing to its restricted local ranges (Datta 2009). So far there has been no published records of Austen’s Brown Hornbill from Meghalaya.

270A. Two of the four individuals of Austen’s Brown Hornbill *Anorrhinus austeni* near Khadum village. 270B. Austen’s Brown Hornbill in Narpuh Wildlife Sanctuary.

---

1. Some of our records of Austen’s Brown- and Rufous-necked Hornbill were published separately by Anonymous (2020), and Lato (2020)
At 1000 h on the cloudy morning of 15 January 2018 at 48 m asl, we observed four adult Austen’s Brown Hornbills that were perched on a Duabanga grandiflora in the degraded community forests of Khuddum village on the outskirts of Narpuh Wildlife Sanctuary (hereinafter, NWS) [270A]. Of the four, the two males were regularly calling, while the females were foraging, and preening themselves. We observed this small flock for nearly twenty minutes until before they flew away together. Discussions with the locals revealed that the species had never been seen earlier in the village, or the nearby forest.

A flock of ten to twelve Austen’s Brown Hornbills was observed in January 2020 in NWS at an elevation of 708 m asl [270B]. The birds were continuously calling while perching on an Artocarpus tree. The flock flew away together to nearby trees soon enough, but three individuals came back to the same tree to perch. A smaller flock of Austen’s Brown Hornbill was also observed in NWS in February 2022.

Rufous-Necked Hornbill Aceros nipalensis
The Rufous-necked Hornbill Aceros nipalensis is a monotypic species distributed in parts of Bhutan, north-eastern India, China, Myanmar, Thailand, Laos, and Vietnam (Kemp & Kirwan 2020), and has been categorized as Vulnerable (VU) under the IUCN Red List of Threatened Species (BirdLife International 2020a). In north-eastern India, Rufous-necked Hornbill has been recorded mostly from Arunachal Pradesh—in Pakke Tiger Reserve, Eaglenest Wildlife Sanctuary, and in Namdapha National Park—where it appears to be ‘locally common, despite being rare elsewhere in North-east India’ (Datta & Rawat 2004; Shukla et al. 2016; Naniwadekar & Datta 2013; Ranee & Datta 2015; Birand & Pawar 2004: 18). Choudhury (2001) reported hunted beaks (mistakenly referred to as ‘casques’ in the reports) and feathers but did not record any individuals of this species from parts of Assam, Nagaland, and Manipur. Additionally, there has been a dearth of recent records from Mizoram and Meghalaya (Choudhury 2007). In the last decade, there were only four reports from these states outside the main range of Eastern Himalayas (eBird 2023).

From the Jaintia Hills of Meghalaya, we have recorded Rufous-necked Hornbill throughout our study period from 2012 to 2019, across multiple sites of Narpuh Reserve Forest (60 sq. km of which were declared as NWS in 2014). The first set of observations were made between December 2012 and October 2014 when we heard calls and saw multiple individuals seven times. All encounters were between 0640 and 0820 h, except once, when the distinct call of the species was heard at 1445 h on 13 February 2013. In addition to these, we recorded two freshly hunted adult females of the species from the eastern parts of Narpuh Reserve Forests, in both 2012 and 2013. Our most recent records of the species include one male seen at 100 h on 29 March 2018, calling from the upper canopy of a Ficus tree in the dense community-occupied forests of Khongoi village (259 m asl) [271A]. It called for 20 m. Another individual could be heard nearby, although we could not spot it. In NWS we also recorded a female RH, along with a male, on a Meyna spinoa on the 11 September 2019 [271B]. Both, the male and the female were seen again on 12 September 2019 on an unidentified tree in NWS.

Great Hornbill Buceros bicornis
The Great Hornbill Buceros bicornis is also monotypic, and has been categorized as Vulnerable (VU) under the IUCN Red List of Threatened Species (BirdLife International 2020b). The Great Hornbill is distributed in parts of the Western Ghats, Himalaya, Myanmar, China, Vietnam, Malay Peninsula, and Sumatra (Kemp & Boesman 2020b). In north-eastern India, it has been reported from Arunachal Pradesh, in both protected and non-protected areas, and from Assam in Nameri National Park, Raimona National Park, and Barail Wildlife Sanctuary (Saikia & Saikia 2011; Naniwadekar et al. 2015; Hussain 2015; Choudhury 2021). The species has also been recorded in Lengteng Wildlife Sanctuary, Ngengpui Wildlife Sanctuary, and village forests in Mizoram (Saikia & Lalthanzara 2015; Birand & Pawar 2004). Choudhury (2001) declared the Great Hornbill ‘locally extinct’ from Nagaland. In Meghalaya, the Great Hornbill has been recorded in Balphakram National Park in the Garo Hills (Hussain 2015), but no record exists from the Jaintia Hills thus far.

At 0930 h on 10 January 2018, while crossing a muddy road leading to Khuddum village next to the Lukha River, Aavika observed one Great Hornbill at 130 m asl. As it flew overhead, its large body size identified it as a male. Aavika watched it flying towards a patch of community forest with betel leaf plantation, one of the major cash crops in the Jaintia Hills. Betel leaf is grown in an agroforestry fashion by cutting down canopy leaves and supporting the betel vine along mature tree trunks. This sighting adds to the existing records of the Great Hornbill, observed in degraded habitats and plantations, in north-eastern India (Datta 1998; Datta et al. 2018).

Beautiful Nuthatch Sitta formosa
The Beautiful Nuthatch Sitta formosa, categorized as Vulnerable (VU) under the IUCN Red List of Threatened Species (BirdLife International 2020c), has been reported from parts of north-eastern India, Bhutan, South China, Myanmar, North Thailand, Laos, and North Vietnam (Harrap 2020). In India, the Beautiful

---

1 ‘Although belonging to the group of large Hornbills, it differs conspicuously from them in being destitute of a casque, that remarkable addition to the bills of its relatives; instead of this the culmen is swollen at the base, and slightly elevated’ (Elliott 1862).
Nuthatch has been reported from the eastern Himalayan states of Sikkim, Arunachal Pradesh, and West Bengal (Darjeeling Himalayas) (Acharya & Vijayan 2010). From Sikkim, Bulger (1869) obtained a specimen through a hunter from Tendong Hilltop (2,000–2,600 m asl). The Senchal region of Darjeeling is the type locality of this species and also known as a historical stronghold where it is a breeding resident (Stevens 1923: 1008).

The Beautiful Nuthatch has been recorded in Arunachal Pradesh from Mouling National Park, Eaglenest Wildlife Sanctuary, Dihang-Dibang Biosphere Reserve, the Upper Siang region, and the proposed Tsangyang Gyato Biosphere Reserve (Srinivasan 2008; Rahmani et al. 2016; Mize et al. 2014; Datta-Roy et al. 2018). The species was also sighted in the Barail Range in Assam and Manipur (Baruah 2015; Choudhury 2009). A hunted Beautiful Nuthatch was once seen in a wild meat market of Nagaland (Bhupathy et al. 2013). Only one historical record exists from North Cachar, which was reported as unconfirmed by Stuart Baker (1907). While Choudhury (2014) lists Narpuh and Saipung forests as potential areas for the occurrence of the Beautiful Nuthatch in Meghalaya, there have been no confirmed reports of this species from the state so far (Stuart Baker 1907; Harrap 2020; Rasmussen & Anderton 2012).

On 10 January 2018, between 0745 and 0815 h, Rajkamal observed a Beautiful Nuthatch on the bark of a large mature tree belonging to the Fagaceae family. It was in a dense forest patch north-westwards of Artan village, along the banks of the Artan River in Saipung (1,375 m asl). The bird was seen in a mixed-flock with Striated Yuhina Staphidea castaniceps, Long-tailed Minivet Pericocetus ethologus, Large Niltava Niltava grandis, Orange-bellied Leafbird Chloropsis hardwickii, Lesser Racket-tailed Drongo Dicrurus remifer, and several species of warblers. Rajkamal identified the species based on its, relatively, larger body size compared to the other nuthatches, along with the distinctive blue with blackish marks on its dorsal side, and was able to observe the bird for over twelve minutes. A pair of Rufous-necked Hornbill was also observed nesting on the same tree.

The next morning, Rajkamal spotted a Beautiful Nuthatch one kilometre east of the previous day’s location, at an elevation of 1,255 m asl. The bird was again part of a mixed-flock comprising Blue-winged Minla Actinodura cyanuroptera, Blyth’s Shrike-babbler Pteruthius aerolatus, White-tailed Robin Myiornis leucura, Rufous-backed Sibia Leioptila annectens, and White-naped Yuhina Yuhina bakeri. He also spotted a Red-headed Trogon Harpactes erythrocephalus nearby.

We used citizen science-based eBird data to generate a comprehensive map of the existing records, and of our observations (eBird 2023). The inset maps in [272] convey that our observations of Austen’s Brown Hornbill, and the Beautiful Nuthatch are new for both, the Jaintia Hills, and for Meghalaya, whereas that of the Rufous-necked Hornbill, and Great Hornbill are first records for the Jaintia Hills; emphasising the importance of the biodiversity of this less explored region. It is also worth mentioning that these sightings were made in both, existing protected areas, and non-protected areas of the Jaintia Hills, where the forests are critically threatened by limestone mining, cement industries, and agriculture cash-crop monoculture expansions (Cosswami et al. 2016; Cosswami & Ganesh 2019). It is thus crucial to study and protect habitats of such threatened species with dwindling populations in both, protected areas, and community-owned forests since these make up a large percentage of forest cover in Meghalaya and north-eastern India.

The authors would like to thank the Science and Engineering Board (SERB), Department of Science & Technology, Government of India, for the financial support. The authors also thank the Department of Forests and Environment, Meghalaya, for permissions, support, and full cooperation during the surveys between 2012 and 2019. We also wish to thank our field assistants, Roilin Talang, James Biate, and Vanramthang, and many other members of local communities from the villages of Artan and Khaddum without whose help, hospitality, and knowledge of the landscape, it would have been difficult to explore those parts of Meghalaya.

### Bibliography


We would like to take this opportunity to thank the editorial board of Indian BIORDS, and all our external referees who helped us with manuscripts that were published in volume 18: A. M. K. Bharos, Andrew Spencer, Ankit Vikrant, Antero Lindholm, Anthony David Fox, Antti Piironen, Asad R Rahmani, Ashish Jha, Ashwin Warudkar, Avin Deen, Balakrishnan Petho, Biswapriya Rahut, Carol Inskip, Chinmay Rahane, Chris Bowden, David Raju, David Wells, Dibyendu Ash, Dipu Karuthedathu, Fanny Riand, George K. Gnanaskandan, Praveen J. Nagi, Parveen Shaikh, Paul Donald, Parveen Shaikh, Per Alström, Peter Clement, Phil D Round, Pooja Pawar, S. Prasanth Narayanan, Pronoy Baidya, Rachakonda Sreekar, Raman Kumar, Ramit Singal, Rohan K. Menzies, Rohit N. R., Samir Kumar Sinha, Sanjay Sondhi, Santanu Manna, Sayam Chowdhury, Serge Dumont, Shashank Dalvi, Sudhir Vyas, Swetapradip Purohit, Tirth Inskip, Toni Bakley, Vicky Prakash, Vivek Ramachandran, and Wich’yan Limparungpatthanakij.

— Aasheesh Pittie & Praveen J.