

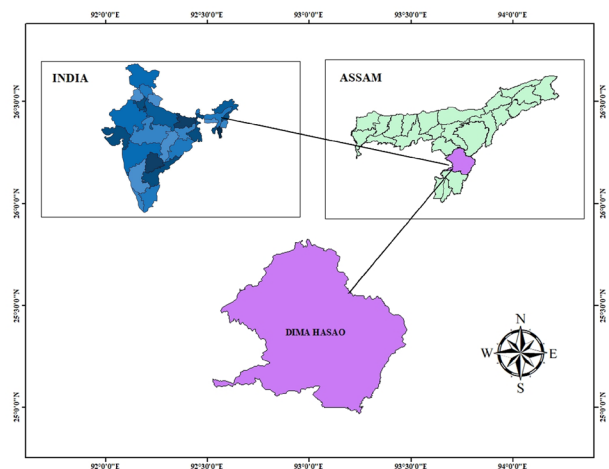
# Daoyung and the Dimasas: folk ethics and hornbill survival in Assam's hills

During a field visit to Dima Hasao, I came across an interesting folk tale about the Great Hornbill (Daoyung). A 73-year-old Dimasa woman explained that while hunting does occur, it is strictly prohibited during the breeding season. Among the Dimasa, hunting Daoyung during the breeding season is considered a serious sin and a violation of cultural norms. This article examines how Dimasa cultural beliefs around the Daoyung conserve the species in the district.

Folk ethics and traditional beliefs have long played a vital role in conserving wildlife and maintaining ecosystem balance. Across cultures, sacred groves, tabooed and totemic species, have acted as informal systems of protection, preventing overexploitation and conservation of biodiversity. Indigenous conservation strategies are categorized as: protection of ecosystems (sacred groves, forests, rivers), protection of species (totems, tabooed



Male and female Daoyung (*Buceros bicornis*) with Dima Hasao map (Source: Map courtesy of Sashanka Gogoi).



animals), and regulation of resource use (closed seasons for hunting, fishing, harvesting). As such, sacred groves are protected for their spiritual significance, which in turn serve as reservoirs of biodiversity, conserving flora, fauna, soil, water, and air while contributing

to carbon sequestration, temperature regulation and traditional knowledge. Such cultural, spiritual, and religious beliefs promote biodiversity conservation and ecological harmony, reflecting a worldview where humans are part of nature (Barre et al. 2009).

**The Dimasas and the Daoyung (Great Hornbill)**

The Dimasas is a group of indigenous people, with the population of 137,184, mainly dwelling in the districts of Dima Hasao, Karbi Anglong and Cachar districts of Assam, and a lesser population in Hojai, Karimganj and Hailakandi districts of Assam and Dimapur district of Nagaland. The earliest records of the Dimasa date back to the Ahom Buranji, where they are mentioned as the “Timisa” during the reign of the Dimapur Kingdom. The Dimasas speak the Dimasa language, a Tibeto-Burman language, and possess Mongoloid features belonging to the Indo-Mongoloid (Kirata) racial group. Presently, Dimasa is a non-scheduled language and the community is recognised as a Scheduled Tribe (under 6<sup>th</sup> Schedule) in the Constitution of India. The term “Dimasa” is derived from three words in their language: Di (water), Ma (great), and Sa (son), meaning “Son of the Great River” or “Son of the Brahmaputra”. For the Dimasas, the forest is more than a source of subsistence; it is an integral part of their cultural and spiritual life, regarding the forests, rivers, and mountains sacred (Medhi & Borthakur 2013; Parbo et al. 2023).

The Dimasa belief system is a syncretic mix of Hinduism and Animism, with a strong emphasis on nature worship, which promote harmonious coexistence with the land, animals, plants, or natural features. Geographically bridging Assam’s plains and the hills of Manipur and Nagaland, Dima Hasao lies in the southern Assam within two biodiversity hotspots— Indo-Burma and Eastern Himalaya—and is characterized by its rolling hills, lush forests,

and diverse flora and fauna, with many rare, endangered, and economically important species. About 88.71% of the district is forested, having three reserve forests (Langting-Mupa, Krungming, Barail) (Medhi et al. 2014). Recognized as an important area for avian diversity (about 400 species), the enriched forests of Dima Hasao accommodate five hornbill species — Austen’s Brown Hornbill *Anorrhinus austeni*, Great Hornbill *Buceros bicornis* (Daoyung), Rufous-necked Hornbill *Aceros nepalensis* (Daoyung), Oriental Pied Hornbill *Anthracoceros albirostris* (Daoyung), Wreathed Hornbill *Rhyticeros undulatus* (Daorai) (Ahmed et al. 2024).

The connection with nature is evident in the Dimasa approach to wildlife, as seen in their folk wisdom, such as the belief shared by an elderly Dimasa woman. The elderly lady was an inhabitant of Gadain Shibraipur village of Langting, Dima Hasao aged around 73 years. While she was interviewed regarding the ethnobiology among the Dimasas, she brought up an interesting belief to us. She narrated that killing of hornbills during its breeding season is a sinful act. She explained that during the breeding period, the female Daoyung seals herself inside a hollow tree cavity with her eggs or chicks, relying solely on the male to bring food. If the male is killed during this time, the female and her offspring would likely starve, as the male is their primary provider. Thus, such action would not only result in the death of the male but also the inevitable death of the female and their offspring due to starvation. Her love and respect for nature serve as a reminder to protect the delicate balance of

nature, especially during vulnerable times like the breeding seasons of the hornbill. According to her, such an act is not only ecologically destructive but morally reprehensible—a belief passed down through generations based on long-standing observation and intimate understanding of hornbill behaviour. She further emphasized that killing newborn chicks is viewed as a mortal and unpardonable sin, reflecting the sacredness of all life.

### **Traditional beliefs and modern approaches to hornbill protection**

Hornbills are the world's largest flying frugivorous species, known for their selective diet of ripe fruits (generally figs and lipid-rich fruits). Being great seed dispersers, they play a key role in tropical forest regeneration, making them indicators of a healthy ecosystem (Ahmed et al. 2024).

All hornbill species, except for Ground Hornbills (*Bucorvus*), exhibit a unique and fascinating breeding behaviour, walling up the entrance of the cavity nest. After copulating, the female seals herself within a tree cavity nest, leaving the male alone outside to care for her and her offspring for two to four months. Then, the female lays eggs inside the nest and remains inside the nest throughout the incubation period. The hornbills (either both mates or just the female, based on the species) narrow the entrance, leaving just a slit through which the male can pass in the food (Pawar et al. 2018). Hornbills' dependency on mature forests with large trees with cavities makes them particularly vulnerable to deforestation and habitat modification. In northeast India, large-scale

hunting and habitat alteration from jhuming and uncontrolled seasonal fires contribute to rapid biodiversity loss. Reduced tree density and increased fragmentation negatively affect hornbill populations, disrupting their foraging behaviour and breeding success. The species is further threatened by hunting for feathers, beaks, casque, and bushmeat, especially during the breeding season. Consequently, the Great Hornbill is listed in Appendix I of CITES, categorized as 'Near Threatened' by the IUCN, and protected under Schedule I of the Indian Wildlife Protection (Amendment) Act, 2022 (Pawar et al. 2018; The Wildlife (Protection) Amendment Act, 2022).

Rooted in spiritual and ecological knowledge, the Dimasa's traditional wisdom functions as an informal conservation system, where spiritual beliefs, customs, and taboos foster the protection of forests and wildlife without reliance on scientific enforcement. Similar beliefs exist among other indigenous groups in northeast India and beyond. In Arunachal Pradesh, the Idu Mishmi considers the Great Hornbill as sacred bird, and its consumption disrupts spiritual balance, bringing misfortune, illnesses, or death (Nijhawan & Mihi 2023). Among the Tangsa and Wancho tribes of Arunachal Pradesh, Great Hornbill, Rufous-necked Hornbill, Wreathed Hornbill, and Oriental Pied Hornbill are believed to possess evil spirits, and fear of bringing them home may cause bad omens and deadly diseases (Jugli et al. 2020). The Ao, Nyishi, and Karbi tribes of Nagaland, Arunachal Pradesh, and Assam respectively further protect hornbills as totemic symbols of prosperity (Nigam et al. 2025;

Sangma 2020; Sridharan et al. 2023). Besides, the Garo and Khasi emphasize preserving old-growth trees for nesting, the Apatani support hornbills through agroforestry with alder trees, and the Angami and Konyak impose seasonal hunting bans based on lunar cycles (Nigam et al. 2025). These culturally embedded taboos and folk ethics serve as community-based conservation strategies protecting the hornbill and their forest habitats by discouraging their hunting through moral and spiritual restrictions.

The indigenous ethics, when aligned with modern ecological strategies, reflect as a dynamic biodiversity conservation tool, predominantly for hornbill conservation. The Nyishi tribe of Arunachal Pradesh has substituted the use of hornbill beaks in traditional headgear with fiberglass replicas, reducing hunting pressures; programs like the Hornbill Nest Adoption Program (HNAP) launched by the Nature Conservation Foundation (NCF) in 2012, and artificial nest boxes, women's involvement in conservation education, and hornbill-based ecotourism in Pakke Tiger Reserve to engage local hunters-turned-conservationists to protect nests, and thereby to diversify livelihoods and strengthen management. Similarly, in Nagaland's Hornbill Festival exhibition, with ornaments made from real beaks having shifted to replicas and cultural motifs, linking heritage celebrations with awareness and conservation-friendly livelihoods, and the Valparai Hornbill Monitoring Programme in Tamil Nadu has worked with habitat restoration, planting nesting trees, and promoting sustainable agroforestry (Nigam et al. 2025).

Thus, the reinterpretation of indigenous belief systems with scientific approaches can lead to encouragement of long-term, community-driven hornbill conservation.

The Great Hornbill stands for its great cultural and ecological significance (Pawar et al. 2018). However, the indigenous knowledge on the Daoyung among the Dimasas has been transmitted orally, encouraging cultural reverence and conservation awareness. While the species is recorded in local avifaunal (Ahmed et al. 2024) and ethnozoological surveys (Parbo et al. 2023), research in Dima Hasao remains limited. Critical gaps exist in systematic data on population size, density, and trends, as well as breeding ecology, nesting site distribution, habitat use, movement patterns, and landscape connectivity in fragmented forests. The seasonal availability of fruiting trees, impacts of human activities such as hunting and logging, contributions of traditional knowledge to conservation, local genetic diversity, and effects of land-use change and climate variability are also poorly documented.

Conservation of the Great Hornbill in Dima Hasao is to be achieved by resolving these gaps through evidence-based approaches, through population surveys, nest monitoring, habitat mapping, and ethnobiological studies.

### Conclusion

Indigenous communities often link forests and wildlife to their cultural and spiritual beliefs, leading to traditional conservation practices. Cultural taboos, such as bans on hunting during reproduction, further support species

conservation for future generations. Among the Dimasas, killing the Daoyung, especially males during the breeding season, is both an ecological and spiritual violation, disrupting the forest ecosystem integrity. The traditional ethics not only strengthen legal compliance but also ensure that conservation strategies are rooted in local values, creating a holistic and sustainable approach to preserving biodiversity, particularly the Great Hornbill, in the context. Initiatives to reduce hunting pressures, support sustainable livelihoods, restore habitats, and to promote conservation education are taken, which eventually safeguard hornbills and preserve cultural heritage for the long term.

On a closing note, the integration of indigenous and local ecological knowledge, such as the Dimasa community's reverence for the Great Hornbill, with modern science can strengthen community-led biodiversity protection and conservation in the midst of today's global ecological challenges.

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