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Cover: Freshly emerged Footman Moth *Nepita conferta* from the cocoon on a brightly painted wall in the Nilgiris. Digital art on Procreate. © Aakanksha Komanduri.

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ARTICLE

Documenting the traditional hunting practices of the Nocte Tribe in Arunachal Pradesh: a case study of cultural legacy for posterity

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Abstract: The study on the Nocte tribe of Arunachal Pradesh critically documents their rich, yet rapidly eroding, traditional hunting practices, which utilise indigenous techniques and primitive tools such as unique traps (e.g., Kut-tai, Waa-khap, and Phaknong) and indigenous flintlock guns. Analysis of interviews with 204 households, grouped by age (18–30, 31–50, and over 50), confirms the continued relevance of these methods, with high utilisation rates for specific indigenous traps (Kut-tai: 15%; Waa-khap: 14.8%; Phaknong: 13.3%) and a significant 72% of hunters still using indigenous flintlock guns. Hunting is primarily motivated by food acquisition (64%) and cultural preservation (17%), underscoring its deep cultural significance. This invaluable knowledge is quickly depleting due to a critical lack of documentation and knowledge preservation, creating an urgent need to document these practices formally. This effort is essential to safeguard this rich heritage and ensure its transmission to future generations, thereby mitigating the erosion of these traditional cultural values.

Keywords: Fishing, hunting techniques, indigenous practices, preservation, rituals, sustainability, taboos, Tirap District, traps, traditional knowledge.

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Author contributions: MT conceptualized, collected data, analysed the data, interpreted, and drafted the manuscript. AM organized and edited the manuscript. KB reviewed and edited the manuscript.

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INTRODUCTION

Traditional knowledge (TK) is a form of knowledge, innovation, and expertise cultivated through extensive experience and developed to fit the specific cultural and environmental context over time (Xue & Guo 2001). TK involves the idea of belongingness, i.e., people and nature are interconnected, and these elements are maintained in harmony and should be treated with care (Whap 2001). It is expressed within kin groups and communities over generations through formal and informal means, such as social interactions, verbal traditions, ceremonial rituals, and various other communal activities (Xue & Guo 2001; Bruchac 2014). This knowledge is also protected by specialists with expertise in ethnomedicine, shamans who perform traditional rituals, and traditional folklore chanters.

Several authors have confirmed that TK encompasses information and skills related to sustenance, encompassing areas like food, medicine, hunting, fishing, agriculture, home gardening, handicrafts, and other capabilities devised to support the local community (Turner 2005; Singh et al. 2009; Mishra et al. 2011). Traditional hunting has been central to the subsistence, culture, and identity of indigenous people across continents (Luz et al. 2015; Fang et al. 2025). It is an age-old tradition, and its practice has been passed down through generations (Aiyadurai 2011) within many indigenous communities globally.

In many indigenous communities, including the Inuit of the Arctic, Amazonian tribes, and African pastoral groups, hunting is governed by a set of rituals, taboos, and ethical codes that regulate the relationship between humans and animals (Colding & Folke 2001; Desjardins & Gotfredsen 2021; Sinthumule 2024). Likewise, in southeastern Asia, indigenous groups employ diverse hunting methods like snares, blowpipes, and poisoned arrows, reflecting their ecological knowledge, but are widely restricted by their national wildlife policies (Loke et al. 2020; Fang et al. 2025).

In India, hunting has historically been an integral activity among tribal communities like Birhor, Chenchu, Nayaka, Ongee, Jarwa, Sentinelese, offering essential protein, fostering social cohesion, and involving rituals closely linked to seasonal cycles and local deities (Padhan 2023). Similar practices are observed within the tribal communities of Odisha, where game animals are hunted during their annual hunting festival known as Chaitra Parah or Choith Porv (Sabat et al. 2025). Furthermore, in Jharkhand, Madhya Pradesh, and Chhattisgarh, hunting remains connected to agricultural rhythms and the reinforcement of communal identity. With wildlife depletion and the enforcement of strict conservation laws, these practices have often been forced into illegality or secret continuation.

While traditional hunting holds immense cultural importance (Adeola 1992), it is generally conducted after the harvest of crops to welcome a prosperous new year void of illness, bad luck, and unpleasant calamities (Aiyadurai et al. 2010; Basar 2018). Since old times, in many northeastern states of India, traditional hunting has been associated as a symbol of honour, pride, and masculinity (Lohe 2014; Khual 2021), for example, skulls of primates are adorned in men's traditional attire, while skulls of large mammals are decorated at houses as a sign of pride and strength (Jugli et al. 2019), symbolising traditional hunting as a cultural purpose.

Arunachal Pradesh, the largest state in the northeastern region, constitutes an integral part of the eastern Himalayan biodiversity hotspot (Myers et al. 2000). The state is renowned as a hub of biocultural diversity, boasting a mosaic of more than 26 major human tribes and 105 subtribes, each characterized by unique dialects, social structures, culinary traditions, and ways of life (Solanki & Chutia 2004). These rich variations of ethnic diversity and biological resources have given rise to the development of various ethnozoological knowledge systems (Kato & Gopi 2009), encompassing domains like food traditions, ethnomedicinal practices, and ritual purposes. The indigenous communities in this state have an intrinsic connection with the forest, as their livelihoods are intricately intertwined with its resources. Their very survival hinges upon their ability to proficiently and responsibly manage the biological wealth provided by the forest (Solanki & Chutia 2004).

The Nocte tribe residing in Tirap District is one of the 26 major tribes of Arunachal Pradesh (Solanki & Chutia 2004). The Nocte tribe, akin to numerous other indigenous communities within the state, exhibit a distinct and multifaceted cultural expression. Their expertise includes diverse hunting techniques and craftsmanship, manifested in their production of flintlock rifles. Additionally, the Nocte tribe adheres to a set of well-established and deeply entrenched customs. The tribe believes and connects itself with the spirits of nature and therefore depends on nature for its sustenance (John et al. 2022).

Hunting is highly prevalent in the region because of its ethnozoological purposes, for instance, wild meat as food, primate skulls, and hornbill feathers for cultural purposes and as traditional medicines (Gogoi et al. 2018). Therefore, the villagers excel in designing traditional

traps for hunting and fishing; also, different types of traps are mostly designed based on the knowledge of the local biodiversity and the size of the target animals.

With the onset of modernisation and the introduction of the Indian Wildlife (Protection) Act of 1972, the techniques of hunting and traditional knowledge of making and laying traps are eroding. Traditional knowledge forms the cornerstone of many indigenous communities, encompassing a vast array of practices, skills, and cultural beliefs. It is generally passed down orally from one generation to the next, hence written records are hardly available (Chinlampianga et al. 2013). Thus, this study aims to preserve and document their traditional knowledge of hunting through written records and creative methods.

MATERIALS AND METHODS

Study area

The present study was conducted in the Tirap District of Arunachal Pradesh, covering an area of 1,170 km^2. The district lies between 26.633°–27.783° N and 96.266°–95.666° E. It is situated in a unique geographical setting bounded by Burma in the South, Assam in the North, Nagaland in the West, and Changlang District of Arunachal Pradesh in the East (Image 1). The field survey was carried out from August 2022 to January 2024 in 92 villages inhabited by the indigenous Nocte population, which falls under eight circles, viz., Borduria, Khonsa, Namsang, Lazu, Bari-Basip, Dadam, Soha, and Longgo. The region is inhabited by the Nocte tribe, one of the major tribes of Arunachal Pradesh, including its two sub-tribes, the Tutsa and Ollo. The region has a population of 55,022 with a sex ratio of 931 females per 1,000 males and a literacy rate of 52.2% (Census Report 2011, after Longding District was carved out in 2012). The major occupations are agriculture, farming, handicrafts, and handlooms, along with hunting and fishing to sustain themselves (Table 1).

Data collection

Data was collected from 92 villages using snowball sampling (Newing et al. 2011) as the target group of hunters was particularly difficult to reach for interviews. Semi-structured questionnaires and personal interviews with residents of the villages were conducted. A total of 204 households voluntarily agreed to the survey (Table 2). The majority, 91% of the respondents, were male, as hunting is a male-dominant activity. The respondents were sampled into three age groups: 18–30 years, 31–50 years, and >50 years (Alvi 2016). This method was utilized to compare responses across age groups and assess the potential shifts of traditional techniques into modern techniques. Due to the requirement for parental consent, the age group under 18 was excluded from the study.

Interviews were recorded after receiving verbal consents from respondents. As the researcher herself belonged to the same tribe, the local dialect, i.e., Nocte, was used for conversing with the villagers. The villagers developed a sense of security and relief and enthusiastically participated in the survey.

During the fieldwork, morning and afternoon hours were used to interview the elders of the villages, while middle-aged villagers offered their evenings. This was because most of the villagers were farmers and returned

Table 1. Demography of Tirap District.

Name of District	Tirap
Administrative Headquarter	Khonsa
Number of Administrative Circles	8 (viz. Khonsa, Namsang, Lazu, Dadam, Longgo, Bari-Basip, Borduria, Soha)
Total Number of villages	112
Total Number of Towns (Urban Centre)	2 (viz. Khonsa & Deomali)
Total Number of Households	11,185
Total Population	55,022
Male Population	28,894
Female Population	26,128
Rural Population	38,446
Urban Population	16,576
Total Area of Tirap District	1,170 km^2
Total Urban Area	2.58 km^2
Khonsa Town Deomali Town	7.3 km^2
Total Rural Area of the District	1,160.12 km^2
Density of Population	47 persons per sq. km^2
Sex Ratio	931
Literacy Rate	52.2%
Total Literate Population	37,830
Total Literate Male	22,880
Total Literate Female	14,950
Number of Rural Development Blocks	5 (Namsang, Borduria, Khonsa, Lazu, Dadam)
Total Forest Cover	967.47 km^2
Name of Indigenous Tribes	Nocte
Sub- Tribes	Tutsa & Ollo
Important Festival of the District	Loku
Main Crops	Paddy, Maize, Millet, Tapioca

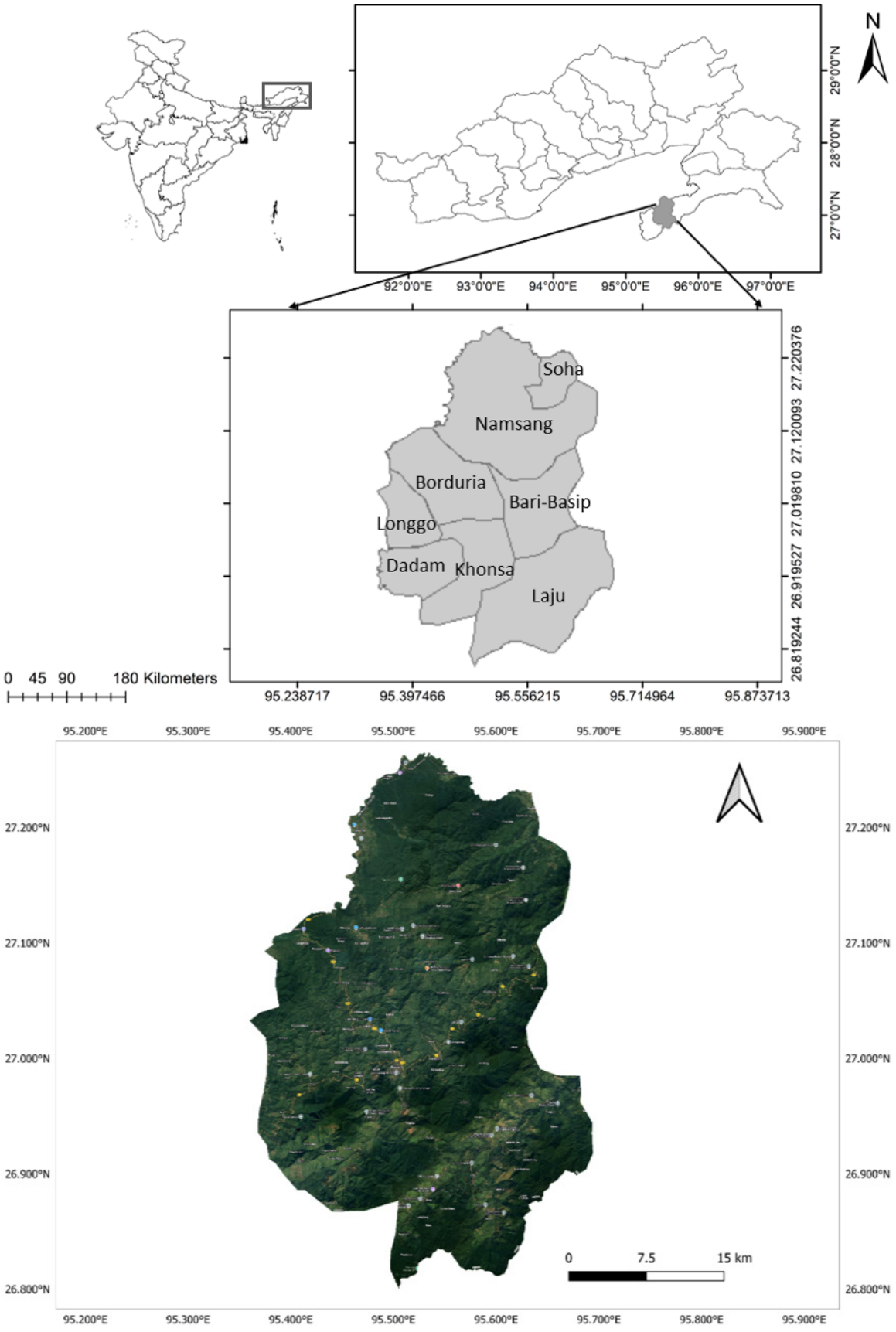

Image 1. Study area map of Tirap District, Arunachal Pradesh.

from their fields in the evening. Focus group discussions with hunters usually took place on rainy evenings or at sundown.

Personal interviews were done with each village's key informants, village chief ('lowang') and village head (gaon bura). Secondary data was collected from the State Library, Itanagar, District Library, Khonsa, and District Museum, Khonsa.

Statistical analysis

Data was analysed using IBM SPSS Statistics *v.* 25 (SPSS, Chicago, USA). The binary logistic regression analysis was conducted to examine the predictors of hunting prevalence among the Nocte tribe. The analysis included four predictor variables (age, education, occupation, and income) that might influence the likelihood of hunting within this demographic. The odds ratio was utilised to compare the probabilities of involvement in hunting. An odds ratio of 1 indicates that a specific perception is equally probable in both groups. An odds ratio greater than 1 suggests that the perception is more prevalent in the first group, while an odds ratio less than 1 indicates that the perception is less likely to occur in the first group (Sarker et al. 2011). To assess the model's goodness of fit and its ability to explain variations in perceptions, both Cox & Snell and Nagelkerke pseudo R^2 values were utilized as metrics for evaluating predictive capacity

RESULTS

A total of 204 households were surveyed, and a total of 134 hunters (regular and recreational hunters) (Table 2) were identified and selected for personal interviews. The maximum number of self-reported hunters was found in the age group > 50 years old (60) followed by 31–50 years (53) and 18–30 years (21).

Rather than following a scheduled hunting pattern, hunters used the traditional method of foreseeing and predicting suitable days and directions of the hunt by conducting 'Tansok' (Nocte = pre-hunting ritual). The 'Tansok' ritual played a central role in the religious and cultural ceremonial practices of the Nocte tribe. The ritual was conducted by the village shaman, or a 'Tanwa' (Nocte = Ritual specialist), using the leaves of *Thysanolaena* sp. to mediate with spirits (Image 2). The ritual was employed within the tribe for several other cultural events, including the naming of babies, the selection of agricultural lands for optimized harvest, and the prognostication of successful hunting expeditions.

Image 2. Demonstration of *Tansok* ritual used for scheduling hunting time. © Miatcha Tangjang.

Hunting Techniques and Traps

The Noctes used several traditional techniques, traps, and tools for hunting and fishing purposes, as shown in Images 3 & 4. The mechanism of traps changed depending on the size and type of target animal (Table 3).

Indigenous hunting techniques

Hunting with dogs: As one of the oldest hunting methods, using self-trained domestic dogs was common due to their exceptional sense of smell. This technique was preferred for community hunting ('Lojun /Ngamjun'), which was observed during late December to early January after the harvesting of crops. Around 30–40 dogs were unleashed by 'Huthing-te' (Nocte = dog trainers) near animal tracks, and these dogs signalled back by barking when prey was in sight. The 'Bam-takte/ Ngam-bamte' (Nocte = pre-positioned trackers) and hunters then shot the target animal during the chase. In this community hunting tradition, the animal's head was offered to the 'Lowang', (Nocte = village chief), as a symbol of respect. A reward system existed where the first three successful hunters and the leading dog received specific limbs of the animal. Dog trainers and trackers received portions of wild meat, with the remainder being distributed among the villagers.

Persistent hunting: Hunters employed a dynamic tracking strategy, alternating high-speed movement during clear trails with slower, methodical searching (including pauses) when tracks became obscured. This optimized hunting efficiency by capitalizing on clear tracks for rapid progress while allowing thoroughness in navigating difficult terrain. This method necessitated

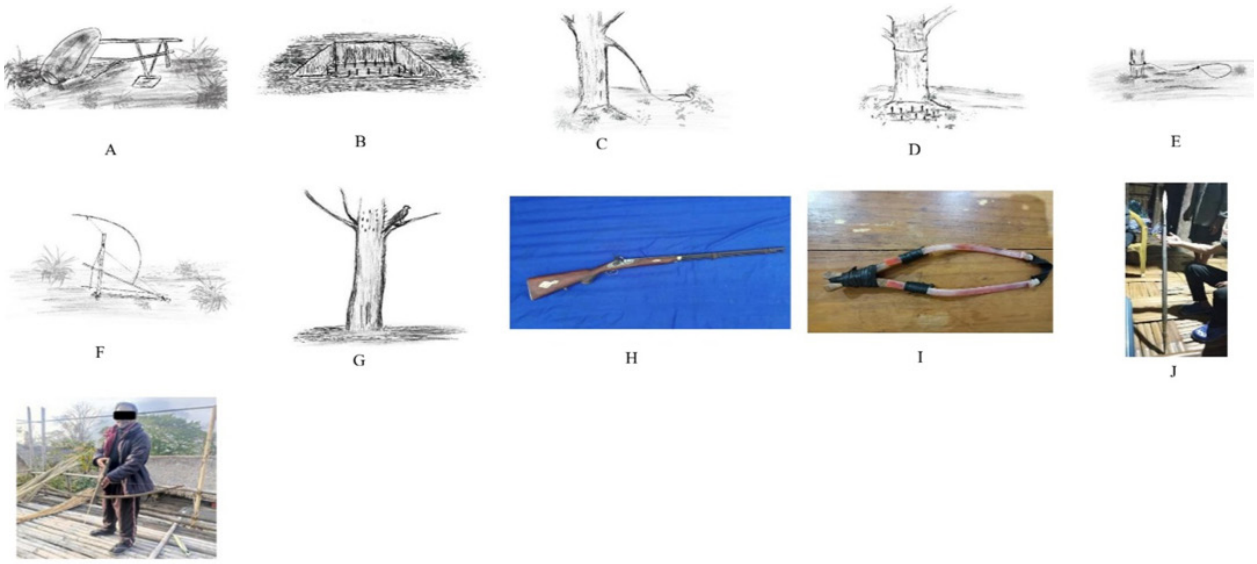

Image 3. Indigenous hunting traps and tools: A—Taai Tzann/Long-pá | B—Chom | C—Kut-tai/Bey | D—Wat-tai | E—Phaknong/Bey | F—Kunthong/Waa-khap | G—Ney/Ney-chah | H—Gun | I—Catapult | J—Spear | K—Crossbow.

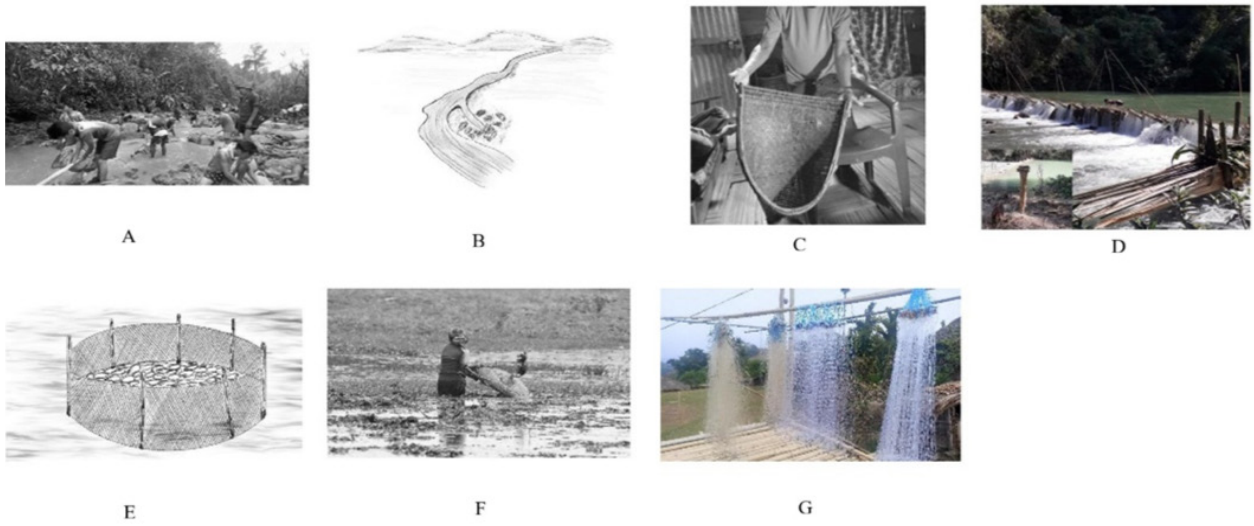

Image 4. Indigenous Fishing Techniques and Traps: A—Noknyu-ngakat/Juruh | B—Jo-chan | C—Chelang | D—Haptang (in the inset bottom left- Hapsak) | E—Longphongtook | F—Boak-nak | G—Fishing net (Chaak).

a profound understanding of animal behaviour and considerable physical stamina.

Sit and wait hunting: In this technique, a high-raised platform was made of bamboo, which was placed on the branches of fruiting trees where the hunters positioned themselves concealed between the leaves. Hunters patiently waited for the animal to arrive and struck at the right time upon sighting.

Indigenous fishing techniques and traps

Noknyu-ngakaat/Juruh: Also known as community fishing, Noknyu-ngakaat is a fishing technique observed once a year. A bifurcated river stream is chosen where one side of the stream is blocked using twigs, leaves, and bamboo. On the other stream, a blockade of the same type is made, leaving a small opening. Another full barricade is made just 20–30 m after this blockade. Leaves, fruits, and roots of *Juglans regia*, and *Zanthoxylum armatum* are beaten and smashed violently in the upstream river. The sap produced from the thrashing agitates the fish and sedates them. The fish rush towards the small opening of the barricade and

Table 2. Demography of the respondents.

	Number of respondents and percentage
Age	
18–30	66 (32.4)
31–50	57 (27.9)
>50	81 (39.7)
Gender	
Male	185 (91)
Female	19 (9)
Education	
Illiterate	31 (15.2)
Primary	16 (7.8)
Above Primary	159 (77.9)
Occupation	
Farmer	78 (38.2)
Government Employed	22 (10.8)
Student	43 (21.1)
Others (Private sector)	37 (18.1)
Unemployed	24 (11.8)
Annual Average Income	
<50,000	156 (76.5)
50,000–1 lakh	44 (21.6)
>1 Lakh	4 (2.0)
Involvement in Hunting	
Non-hunters	68 (33.3)
Recreational Hunters	75 (36.8)
Self-claimed hunters	61 (29.9)

get caught, unable to exit through the second barricade. The team responsible for sedation fires a gunshot to signal the downstream team that the sedation process has been initiated. This technique demands muscular strength and endurance.

Jo-chan/Nga-chan: In this technique, a temporary river path is created to minimize the water level of the original path and fishes are caught when the water level slowly goes down and clarity increases. A winnowing fan made of bamboo which is locally known as 'Chelang' (Nocte = fishing sieve) (Image 3C) is dipped underwater to catch fish and flail.

Hap-tang: When the water current reduces, a large dam structure is constructed across the river, and shallow bamboo traps called 'hap-sak' are installed at chokepoints of the dam where fish get trapped. After the fish are collected at their maximum, the dam structure is left unattended so that villagers can also take fish from the trap when they pass by it. The bamboo dam was washed off with heavy rain and strong water currents.

Longphongtook/Longkuan: The literal translation of Longphongtook is 'piling of stones'. This trap is set for the winter season in September when water currents are less. A shallow river spot is chosen to construct this trap. Stones and boulders are piled on top of each other while bigger boulders are set in the middle to provide a slight entrance for fish to get in. The trap is approximately 1 m in height. Marks are made as a sign of ownership of Longphongtook, and the trap is then left undisturbed for three months. In January, preparations are made to trap to take out the fish that have resided inside for warmth during the winter. Bamboo poles are inserted around the trap and nets are wrapped around it to prevent fish from escaping. This is one of the oldest and most sustainable fishing techniques used by the Noctes.

Boak-nak: In this method, people throw mud and pebbles continuously in knee-deep waters to make it murky and cloud the fish's vision. Fishes are then simply caught by hand. This is a simple method that is generally used by women and children.

Chaak (Nocte = Fishing Net): Fishing nets have also become popular among the villagers as an effective and convenient method of catching fish.

Use the pattern of indigenous hunting traps and tools

The primary motivation of hunting was acquiring food, accounting for 64% of responses, followed by cultural preservation (17%), recreational activity (14%), and commercial pursuits (5%). The findings indicated that most hunting activities were driven by practical considerations, specifically food acquisition and cultural practices, rather than being purely recreational.

The Noctes depended on traditional traps for hunting and fishing. Among the various indigenous traps utilized, 'Kut-tai' (15.0%), 'Waa-khap' (14.8%), and 'Phaknong' (13.3%) were predominantly employed for hunting (Figure 1). In contrast, the 'Jochan' trap was primarily used for fishing, accounting for 20.5% of their fishing activity; 72% of hunters utilised indigenous flintlock guns for shooting large and mid-sized animals caught in traps. In contrast, other hunting tools such as crossbows (2%), spears (23%), and catapults (3%) are less commonly employed, although they remain part of the hunting equipment (Figure 2).

However, the emergence of modern firearms, which offered superior accuracy and efficiency, has rapidly diminished the reliance on these traditional trapping methods, posing a significant challenge to the preservation of indigenous practices such

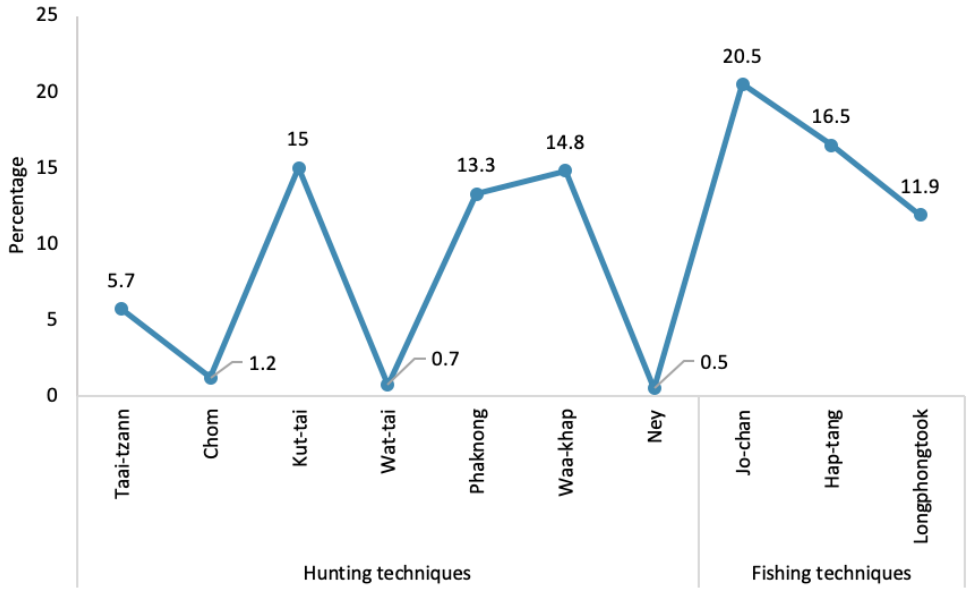

Figure 1. Indigenous hunting and fishing traps used by the Noctes.

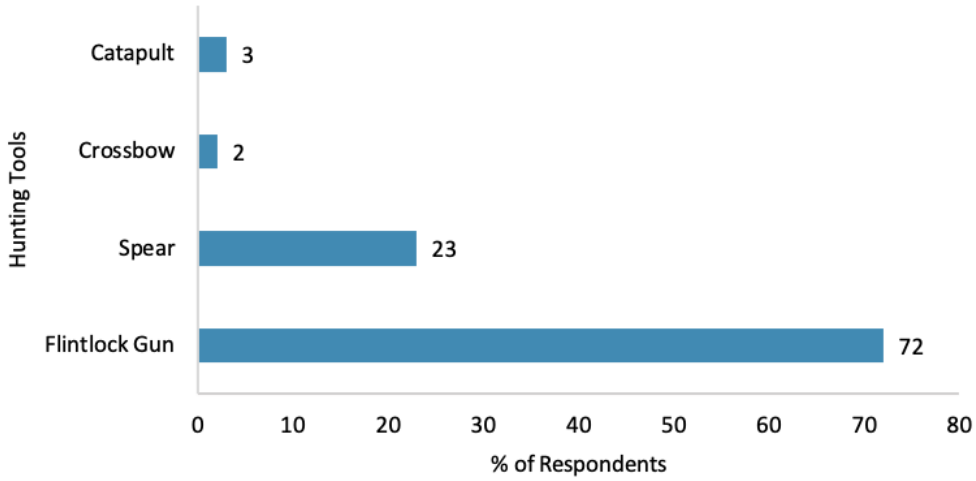

Figure 2. Indigenous hunting tools utilised by the Nocte tribe.

as 'Chom', 'Wat-tai', and 'Ney', which are being increasingly replaced by more contemporary hunting technologies

Sharing of the hunt

In the Nocte tradition, there are established customs and regulations for distributing the spoils of both communal and individual/group hunts. During community hunts, the harvested animal was divided among the hunters in a systematic manner. As customary law, the head of the captured animal was offered to the Village Chief (Lowang) as a tribute. The first, second, and third shooters who successfully hit the animal were rewarded with the prey's right hindlimb, right forelimb, and left forelimb, respectively. The left hindlimb was rewarded to the lead hunting dog. In the case of individual or group hunts, the hunters have full ownership over the captured animal. However, if they borrowed weapons from others for the hunt, a portion of the catch is typically offered to the weapon's owner as a gesture of gratitude.

Similarly, in the context of community fishing, there were specific customs for sharing the catch. The largest fish caught was presented as a tribute to the village chief, followed by the next biggest fish, which was offered to the 'Raam-Waa' (Nocte = event informer). Subsequently,

Table 3. Descriptions of different indigenous hunting traps/tools.

Indigenous hunting traps/Tools	Mechanism	Target species
Taai Tzann /Long-pá (Nocte =Deadfall Trap)	It requires a large rock supported by sturdy sticks with pointy ends that keep the rock in position. A bait is used to lure animals in, and when the trigger stick is moved, the animal is hit down by the rock.	Rodents
Chom	A type of booby trap in which a pit is dug out, and bamboo spikes are partially inserted. The pit is then covered with twigs and leaves.	Bear, Wild boar
Kut-tai/Bey	A sturdy tree branch is pulled down and tied with a long string, mostly cable wires or roots of creepers, to one end of the branch and the other end is made into a noose using a scaffold knot. The tree branch is then supported to the ground using bamboo sticks, which act as a trigger, and upon movement, the animal gets caught in the noose.	Bear, Barking Deer, Sambar
Wat-tai	The tree *Artocarpus* sp. is used as bait to lure the bear. A bell is tied around the tree, while bamboo spikes are inserted close to the tree on the ground. When the bear approaches the fruit, it startles upon hitting the bell and stumbles on the bamboo spikes, inflicting major injuries to the bear.	Bear
Phak-nong/Bey	A noose is created from the roots of creepers at the height of the animal's head, and its position is maintained by sticks and bushes or simply laid on the ground. The loose end of the string is tied to a tree trunk.	Barking deer
Kun-thong/Waa-Khap	Sticks are placed at proper angles to create tension on the trigger, which drops on contact, making the animal immobile. It is placed on fruiting tree branches or on the ground, which easily attracts birds and rodents.	Birds and rodents
Ney/Ney-chah	Resin is pre-collected and smeared on small sticks, which are placed on tree trunks and branches bearing fruits. A live bird is caught and used as bait to lure other birds to the tree.	Birds
Wantho (Nocte = Gun)	Traditional Flintlock guns are a dominant tool in hunting due to their effectiveness and ease of use. Compared to tools like spears or bows, guns offer greater accuracy and power, allowing hunters to take down prey from a safer distance.	All mammals and birds
Chunu/Thunu (Nocte = Catapult)	Their projectiles, typically clay balls or pebbles, lack the power to hunt large mammals at a distance. Catapults usually serve as a training tool for young hunters.	Birds and rodents
Pá (Nocte = Spear)	Spears were employed for both throwing and thrusting, making them adaptable to various hunting scenarios and prey sizes. Early versions used sharpened wood or stones, while later iterations incorporated more durable materials like metal.	Bear, Barking deer
Chanchuan (Crossbow)	Crossbows allowed for a stable shooting platform and eliminated the need for upper body strength to hold the draw, making them easier to use for hunters of various physical abilities. Crossbows boast a longer effective range, allowing for more precise shots at greater distances.	Barking deer, Sambar, Wild Boar

the remaining fish were distributed to the assembled group based on their age hierarchy. After the village chief and 'Raam-Waa', the oldest man present received the third fish, and the process continued until everyone in the gathering had received their portion.

Influence of demographics on hunting trends

The binary logistic regression analysis provides evidence supporting the hypothesis that hunting was prevalent within the Nocte tribe, particularly influenced by age and education levels. The results indicated that younger individuals (aged 18–30) were significantly less likely to engage in hunting compared to older age groups (31–50), which had a positive coefficient of 1.469 (Table 4), indicating that individuals in the 31–50 age group were four times as likely to hunt compared to those aged 18–30. Additionally, individuals with primary level education were 13 times more likely to participate in hunting compared to those without formal education, signifying a strong positive correlation between educational attainment and the likelihood of engaging in hunting activities. The occupation variable revealed a significant negative coefficient for students, leading to an odds ratio of 0.125, suggesting that students were substantially less likely to engage in hunting activities when compared to individuals in other occupations. Furthermore, the income variable was not statistically significant ($p = 0.972$), indicating that income did not have a significant impact on the likelihood of hunting among the Nocte tribe. The model was further supported by a Nagelkerke R^2 value indicating that approximately 82.8% of the variability in hunting prevalence can be attributed to the predictor variables included in the analysis. Additionally, an overall correct prediction percentage of 92.6% demonstrated high accuracy in predicting whether individuals from the Nocte tribe engage in hunting based on the specified predictors.

DISCUSSION

For several tribes in Arunachal Pradesh, hunting and trapping are ancient and deeply ingrained traditional practices. It is a practice characterized by a diverse collection of techniques and traps, with subtle variations marking the uniqueness of each tribe's approach to this ancestral art (Tana et al. 2014; Aiyadurai 2022). The study unveils the traditional knowledge, hunting

Table 4. Binary logistic regression model of the influence of demography over hunting trends.

Predictor variables	Coefficient (B)	Significance (p)	Odds ratio Exp (B)	95% CI	
				Lower	Upper
Age (18–30) (30–50)	-1.808 1.469	**<0.001** **0.011**	0.164 4.344	0.080 1.397	0.336 13.514
Education (Primary)	2.575	**0.019**	13.125	1.533	112.402
Occupation (Student)	-2.081	**<0.001**	0.125	0.040	0.386
Income	18.632	0.972	0.000	-	-

Statistically significant estimated are written in bold; Hosmer & Lemeshow test χ^2 = 1.008 | df = 6 | p = 0.985 | -2Log likelihood = 74.559 | Nagelkerke R^2 = 0.828 | Overall percentage of correct prediction = 92.6%.

practices, hunting tools, techniques, and the traditional rituals that hold deep cultural importance for the Nocte tribe. Although the Nocte tribe's hunting traditions hold deep cultural and subsistence significance, these practices are not legally sanctioned under the Indian Wildlife (Protection) Act of 1972, which prohibits hunting of wild species across India. Current practices thus represent a continuation of pre-1972 traditions that persist informally, similar to other tribal groups of Northeast India (Aiyadurai et al. 2010; Lohe 2014; Reena 2019). It is also driven by the potential medicinal uses of animal parts (Velho & Laurance 2013) and for cultural purposes. The Noctes uphold the sacred tradition of hunting, relying steadfastly on age-old diverse traps and methods for hunting and fishing which are locally crafted. The use of age-old traditional techniques like 'Long-pa', 'Chom', 'Hapsak', and 'Waa-khap' is similar to several tribes of Arunachal Pradesh, viz., Wancho (Tag et al. 2008; Reena 2019); Nyishi (Tana et al. 2014); Mishmis (Aiyadurai 2022), and the Nagas (Lohe 2014) of Nagaland and Manipur. While similar hunting techniques and traps were observed during the study, the hunting traps 'Wat-tai' and 'Ney-chah' were found original to the Nocte tribe.

The fishing techniques are among the most sustainable methods used by the Noctes. The use of *Juglans regia* and other wild plants (Wangpan et al. 2023) as fish poison and traps made locally with bamboo, cane, and stones are relevant and most nature-friendly methods. Similar fishing techniques and traps are used by the indigenous tribes of northeastern India (Gurumayum & Choudhury 2009).

While traditional fishing methods continue to exist, some have turned to quicker, yet destructive methods which include the use of dynamite, batteries, generators, and harmful chemicals like dichloro-diphenyl-trichloroethane (DDT) and pesticides. The aim of documenting these techniques is to curb the harmful effects of this equipment and protect the environment.

Extensive and unregulated hunting and trapping practices significantly threaten wildlife populations. Controlled trapping can be valuable for ecological balance (Heffelfinger et al. 2013; White et al. 2015). Winter is the most preferred season for hunting and setting traps (Aiyadurai 2022; Chetia et al. 2022); while monsoon is unfavoured due to heavy rainfall and mainly due to the breeding activity within wildlife populations. This strategic approach reflects a subtle understanding of the ecosystem dynamics among the Nocte society. Also, taboos related to specific species help in conserving several animals (Landim et al. 2023).

Overall, the indigenous people have developed a rich collection of trapping techniques, forming a cornerstone of their cultural heritage and subsistence strategies. These practices, meticulously honed over generations, represent an effective adaptation to local environments and a deep understanding of animal behaviour. Unlike written documents, this knowledge is primarily transmitted through oral traditions and embodied skills, making it vulnerable to loss in the face of modernisation.

It's crucial to recognise the potential ecological benefits of these indigenous trapping methods. Unlike modern industrial practices, these techniques are often highly selective, targeting specific animals and minimising bycatch. With the decline of the animal population and recognising the anthropogenic threats towards the wildlife population, the youths of several Nocte villages have now formed groups that engage in raising awareness towards prohibiting hunting and conserving wildlife. The village panchayat has also supported the initiative and has enacted policies to restrict harmful equipment within its forest territory. While also encouraging to shift towards alternate use of animal products for cultural purposes, for example,

ceramics and wood-based armlets are used instead of ivory, and artificial hornbill feathers have replaced the original feathers. Also, few people have voluntarily surrendered firearms following the 'Airgun surrender abhiyan' a wildlife conservation initiative by the Arunachal Pradesh Forest Department, to demonstrate their commitment to reduce anthropogenic pressure on wildlife populations. Since the Noctes depend on healthy ecosystem resources for their sustenance, they are inherently motivated to manage these resources sustainably. Therefore, documenting their indigenous knowledge of wildlife management practices becomes essential to understanding the cultural dimensions that can aid conservation efforts. However, while these practices embody ancestral knowledge, ecological understanding, and communal identity, they may also conflict with existing conservation mandates established under the Indian Wildlife (Protection) Act, 1972, which seeks to protect endangered fauna. Reconciling these differing perspectives necessitates culturally sensitive dialogue and collaboration between local communities and governing agencies. Developing community-led conservation models and inclusive policy frameworks that integrate indigenous ecological knowledge within the legal conservation paradigm can ensure both cultural preservation and biodiversity protection in a balanced and ethically sound manner.

CONCLUSION

The hunting and trapping practices of the Nocte tribe embody a delicate balance between cultural heritage, ecological stewardship, and sustainable resource management. These practices are not driven solely by the need for sustenance but are imbued with spiritual significance passed down through generations as a sacred tradition. Rituals and taboos associated with hunting are strictly followed to obtain a successful hunt. This intricate knowledge of the land and its inhabitants forms the foundation of their cultural identity and shapes their approach to resource management. Navigating the challenges of modernization and environmental degradation necessitates both the preservation of this traditional knowledge and the embrace of community-based conservation strategies. This can be achieved by reviving traditional hunting rituals that promote selectivity and respect for wildlife, alongside implementing penalties for using highly destructive hunting and fishing equipment. Collaborative wildlife management plans, incorporating the Nocte community's knowledge and expertise, should be established alongside quotas and monitoring programs developed with wildlife officials. By combining the indigenous knowledge of the Nocte people with these recommended practices, a future can be secured where the tribe's cultural traditions seamlessly co-exist with the long-term well-being of both wildlife and human communities. This collaborative effort, blending indigenous knowledge with contemporary conservation practices, will pave the way for a harmonious relationship between humans and nature and ensure sustainable well-being of upcoming generations.

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