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# *ANTHROPOLOGY SNIPPET-61*

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# Meghalaya: Indigenous Tribals Holds Key To Protect Endangered Species Gibbons

A typical morning in the village of Phlangwanbroi starts with a melodious yet primitive-sounding song: drifting over from the nearby community forest, a series of whoops, hoots and tones rise in a crescendo.

It's *hooleng jingrwai* – the hoolock gibbon's song.

Perched atop a rain-soaked plateau in the Indian state of Meghalaya, Phlangwanbroi is a Khasi tribal village. The Khasis are a hill-dwelling indigenous minority numbering about 1.2 million within India. Located in the country's remote mountainous northeast, most Khasis in rural Meghalaya continue to practice their hardscrabble traditional lifestyle, relying for the most part on subsistence agriculture and forest resources.

Phlangwanbroi, four neighboring villages and an adjoining community forest make up the Khasi native state of Hima Malai Sohmat, one of 25 such traditionally ruled Khasi enclaves in Meghalaya that are formally recognized by the Indian Constitution. The 40-square-kilometer (15.4-square-mile) community forest of Hima Malai Sohmat has been home to western hoolock gibbons (*Hoolock hoolock*) since time immemorial, villagers say. But an ever-increasing human pressure is gnawing away at the forest, endangering the *hooleng,* as the species is called in the local Khasi language.

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The western hoolock gibbon is threatened globally, too. Conservationists say the future of the IUCN-listed endangered species is very much in jeopardy. An estimated 90 percent of its population has been lost over the past 30 years due to deforestation, hunting, and government neglect. Around 3,000 western hoolock gibbons are believed to remain, some 2,600 of them in northeastern India and the rest scattered in Bangladesh, Myanmar and perhaps southern Tibet.

"Today hoolock gibbons are facing existential threat primarily due to many types of habitat loss — habitat destruction, habitat fragmentation, and habitat degradation," says Narayan Sharma, a primatologist at Cotton University in Guwahati, in neighboring Assam state.

As an exclusively arboreal species that requires contiguous, closed-canopy forests for survival, the hoolock gibbon is particularly vulnerable to the massive ongoing deforestation across northeastern India.

"When a contiguous habitat is reduced to scattered smaller fragments, they become 'habitat islands' in an inhospitable sea of degraded habitat," says Sharma. These conditions can lead to inbreeding, he adds. "The resultant offspring are often weak, sometimes sterile or may have little reproductive fitness."

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Hoolock gibbons rarely move between forest fragments; they may refuse to cross gaps even as small as 200 meters (660 feet). On top of that they're extremely picky about their food, and a restricted home range means limited food options.

Wildlife biologist Kashmira Kakati, whose doctoral research at the University of Cambridge was on Assam's hoolock gibbons, recalls a gibbon family she observed during her fieldwork. "An entire portion of their home range became inaccessible via the canopy because a single connecting tree was felled," she says. "I witnessed severely emaciated juvenile gibbons — a phenomenon that occurs when they've to feed on leaves for prolonged periods in the absence of fruits."

Gibbons are vulnerable to such threats even within protected areas. In the Hollongapar Gibbon Wildlife Sanctuary in Assam's Jorhat district, a railroad that predates the sanctuary's establishment splits the park in two, leaving a small, isolated population in the park's east. "A few years ago, a canopy bridge was erected over the railroad hoping that it would help the two groups connect to each other," says Deben Bora, a forest guard who doubles as a guide for visitors to Hollongapar. "But the gibbons never came anywhere near the bridge."

Similarly, Mehao Wildlife Sanctuary, a key protected hoolock gibbon habitat, is losing its forest cover due to

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illegal logging, land encroachment and expansion of agriculture, notably oil palm cultivation.

## Working within the tribal structure

Tyngshain Dewkhaid, a 42-year-old schoolteacher in Phlangwanbroi, has, like all his fellow villagers, heard the gibbons' song since his childhood. And he's not ready to let it go of it.

"The hoolock gibbons are an important part of Hima Malai Sohmat's soundscape, its life and identity," he says.

There's even a local saying that as long as you hear the gibbon's song, you're within the boundary of Hima Malai Sohmat, Dewkhaid says.

"We must save them."

Dewkhaid was instrumental in forming a local organization, Malai Sohmat Tourism and Multipurpose Cooperative Society, in 2017 in an effort to develop sustainable ecotourism in the area. He says he believes the hoolock gibbons could become a key tourist draw. This, he says, would help convince others in his community to work toward protecting the species.

Over the past few months, Dewkhaid has been conducting a community awareness and sensitization campaign "to help people learn to appreciate the environment and

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wildlife in general and the hoolock gibbon in particular" in the five villages of Hima Malai Sohmat.

But for this to happen, Dewkhaid says, he first had to win the support of the political authorities in Hima Malai Sohmat. In line with Khasi traditions, the local administration has three tiers: "The *syiem* [chief] is at the top, the founding clan members in the middle, and the masses at the bottom," he says.

"So for any conservation efforts to take wing here, you need to have the backing and blessing of the syiem and the political elites as well as the community."

Dewkhaid says it took more than a year to convince these elites of the value of his project.

"It's bearing fruit now," he says. "Recently we've been able to reach a breakthrough: banning the hunting of gibbons inside Hima Malai Sohmat's territory."

As part of the community awareness program, he is screening a series of wildlife and conservation documentaries in the five villages of Hima Malai Sohmat, with the support of a small team of conservationists from the Wildlife Conservation Society (WCS), who are currently in the area to survey the gibbon population in the community forest.

One evening in May, a crowd of about 100 villagers huddled in the courtyard of a small concrete house in

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Phlangwanbroi, while a few young boys sat on the roof for a closer view of the screen.

There was a mix of curiosity, enthusiasm and befuddlement in the air; few in the village own a television or smartphone.

A few minutes later, the celebrated David Attenborough film *Great Barrier Reef* appeared on the screen. The visuals of exquisite marine life left the crowd awestruck.

Once the film ended, Dewkhaid explained in the local language what the film had just depicted: coral reefs, marine biodiversity, and so on. Then he shifted to the topic of hoolock gibbons and why they must be conserved, explaining how frugivores like hoolock gibbons contribute to the regeneration and growth of the forest by dispersing seeds and acting as natural pollinators.

According to Dewkhaid, the awareness campaign seems to have achieved at least one of its goals: in the past two years, there have been no reports of gibbons hunted in the area.

Yet there are challenges galore.

“In Hima Malai Sohmat, the traditional slash-and-burn agricultural, often blamed by governments and conservationists alike for forest loss and degradation, has considerably declined in the recent years,” says

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Dewkhaid. But, he says, it has paved the way for a new evil, equally harmful if not more so: broom grass (*Thysanolaena maxima*) cultivation.

"Broom grass is a highly invasive species. It sucks all the nutrients of the soil and often leads to water scarcity in the area it is grown," says Biang Lana Syiem, leader of the WCS team surveying Hima Malai Sohmat's gibbon population.

But broom grass is extremely attractive to impoverished farmers: it requires relatively little labor to cultivate, fetches a high price, and is always in demand.

"Unless we're able to provide them with alternative livelihood options, it will be next to impossible to convince them to give up broom grass cultivation," says Dewkhaid.

Villagers are also expanding bay leaf plantations at the expense of the community forest, he adds.

This transition to sedentary monocropping threatens to upset the traditional land-tenure system, says A.K. Nongkynrih, a professor of sociology at North-Eastern Hill University in Shillong, Meghalaya. Khasi customary land laws dictate that land under permanent cultivation belongs to individuals or clans, while any land lying fallow for more than three years reverts to community control. Land that has been burned and cultivated is then

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generally left to regenerate, reverting back to the community. Plantations, however, remain under private control, leading to a loss of communal land and potentially complicating conservation efforts.

**Expanding palm oil plantations, such as this one in the Mehao area, are an emerging driver of deforestation and a cause of hoolock gibbon habitat loss. Image by Prakash Bhuyan.**

**Where gibbons are family**

While conservationists are working within traditional tribal structures to protect the gibbons in Hima Malai Sohmat, some 700 kilometers (435 miles) away in the northeastern state of Assam, another group of local conservationists is working within a different cultural context to stop this rare ape species from vanishing. In the village of Barekuri in eastern Assam's Tinsukia district,

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Mohit Chetia spends much of his time looking after two special members of his family: a pair of western hoolock gibbons that has been living for the past 15 years in a couple of trees adjacent to a bamboo grove in his homestead farm. As there is no fruit tree to feed on, the pair depends primarily on the bananas and other fruits Chetia provides them every day.

Barekuri has been home to hoolock gibbons for centuries, although the population has diminished along with the dense tropical forest that once blanketed the area.

Today Barekuri is hailed as a model of peaceful coexistence between humans and hoolock gibbons, where villagers have been protecting the species with little government support. Villagers count 22 hoolock gibbons in the area, living in privately owned groves and orchards.

The people of Barekuri associate gibbons with humans, invoking their "human-like families and characteristics" and consider themselves linked with the animals locally known as *holou*. And it appears that most villagers' care and concern for the hoolock gibbons stems from the sense that these apes are part of their families. For instance, Chetia, who is a subsistence farmer, has a small tea plantation near the grove where the pair of gibbons lives. This tea plantation was a vital source of income for Chetia's family. Even so, worrying that it might harm the gibbons, Chetia stopped spraying pesticides and

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herbicides on the tea plants, meaning that the plantation is no longer yielding any profit.

***Mohit Chetia offers bananas to a female western hoolock gibbon that has been living for 15 years in his homestead farm in the village of Barekuri, Tinsukia, Assam.***

"I'd rather take the economic hit than harm the holous. They are family," Chetia says.

Villagers in Barekuri told Mongabay they've been urging the government to declare the village a hoolock gibbon reserve, but nothing has come of it yet. So for their part, they're contemplating planting at least five canopy-bearing trees in each household to help replenish the habitat of this arboreal kin.

The traditional beliefs prevalent among the villagers in Barekuri are helping stave off the decline of the remaining gibbon habitat. As Chetia says, "In Barekuri, we believe it is a bad omen to see the hoolock gibbon walking on the ground. So people here generally think twice before felling a tree, to make sure that they're not cutting down a tree used by the hoolock gibbon."

In contrast to Hima Malai Sohmat, where local people depend heavily on the forest that hosts gibbons and a transition from shifting agriculture to cultivation of permanent cash crops is currently underway, the villagers in Barekuri are settled agriculturists who mostly cultivate wet rice in fields far away from the orchards that the gibbons call home. "The villagers in Barekuri don't necessarily depend on the orchards for their livelihoods.

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It's not much of an economic issue for most of them to spare a little space for the gibbons in these orchards," says Deborshee Gogoi, a wildlife cartoonist based in Tinsukia district.

Yet the situation is far from ideal for hoolock gibbons in Barekuri. They're threatened by the presence of live electric wires, domestic dogs, and dietary stress for want of food sources.

"The takeaway from the Barekuri story is that the community can really contribute a lot in conserving a non-predator species like the hoolock gibbon," says Dilip Chetry, a primatologist with the Assam-based biodiversity conservation nonprofit Aaranyak.

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***The presence of live electric wires, such as these in the Mehao area, are a constant threat to hoolock gibbons.***

**Eastern hoolock gibbons**

Driving 120 kilometers (75 miles) north from Barekuri, the lush green fields of the easternmost corner of Assam gradually give way to the Mishimi Hills of Lower Dibang Valley district in Arunachal Pradesh state.

The Mehao Wildlife Sanctuary, the only protected area in India established to protect the eastern hoolock gibbon (*Hoolock leuconedys*), is located here. A sister species to the western hoolock gibbon, the eastern species is listed by the IUCN as vulnerable, and is found mostly in Myanmar. The total population is estimated to stand at more than 10,000 individuals, with a 2013 survey putting the number perhaps as high as 50,000.

The species' only known habitats in India are in Arunachal Pradesh and a small part of Assam. (And, in fact, there is some taxonomic debate about the gibbon population in Mehao; some primatologists contend it represents a distinct gibbon species.)

Field surveys conducted in 2008 and 2009 identified 157 groups of gibbons within the sanctuary, with an average of about three gibbons per group. The villages on its fringes also host a substantial population of gibbons, estimated in a 2014 study at 116 individuals.
A combination of threats has imperilled this vulnerable population and its habitat: conversion of forest land for commercial cash crops, logging, hunting, and

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infrastructure development. In certain forest fragments, the stress is so acute that gibbons have a home range of less than 1 hectare (2.5 acres), whereas naturally, they require an area of about 35 hectares (86 acres).

***Conservationist and nature photographer Anoko Mega works for hoolock gibbon conservation in Mehao, Lower Dibang Valley district, Arunachal Pradesh.***

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Anoko Mega, program coordinator with the Abralow Memorial Multipurpose Society, a nonprofit based near Mehao Wildlife Sanctuary, says he is intervening in his "own small ways," to change the species' seemingly bleak future.

"We're taking a three-pronged strategy: creating mass awareness about hoolock gibbon conservation; planting trees in gibbon-occurring areas; and convincing

landowners not to fell the trees on which gibbons are taking shelter," says Mega.

One such effort was to convince local farmer Eketo Mendo not to fell trees on his land that host a gibbon family. In his farm in the village of Abango, the family of three hoolock gibbons — a couple and their juvenile son — can be seen swinging from tree-tops in forest spanning about 4 hectares (10 acres). Supported by a grant from the Mumbai-based Sanctuary Nature Foundation under its Mud on Boots project, Mega recently planted more than a hundred saplings on the plot of land Mendo spared.

"Giving in to my persuasion, he's agreed to keep that forest patch intact and spare that part of his farm for the gibbons. But it's an economically pressing decision for a subsistence farmer like him to leave a plot uncultivated," Mega says. It's very hard to convince landowners if there's no economic incentive to offer in return, he adds. "Without any money, it's a near impossible task."

However, cultural taboos do come in handy. The Idu-Mishimi, the tribe both Mega and Mendo belong to, believe that killing hoolock gibbons — *aame epaan* in the Idu-Mishimi language — is a sacrilege of the highest order.

"Let alone killing, even to spot the aame epaan is considered a bad omen," Mega says.

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The Idu-Mishimi and the Adi, another indigenous tribe, are the two communities that inhabit the villages on the fringes of Mehao Wildlife Sanctuary. While Adis hunt hoolock gibbons, Idu-Mishimis don't because of their adherence to the age-old cultural taboo.

Therefore, Mega says, "hoolock gibbons living in Idu-Mishimi areas are safe from hunting."

Two decades ago, David Pulu, now a 42-year-old Idu-Mishimi tribesman from Roing village, shot dead a hoolock gibbon in Mehao, mistaking it for some game animal.

"It's a nightmare I don't want to recall," Pulu, who had to do an elaborate propitiatory ritual to make up for the profanation, says remorsefully about the incident. "Such a thing should never happen to any Idu-Mishimi man.

"For us, Idu-Mishimis, killing the aame epaan is like killing someone from your own family."

As a result, in Idu-Mishimi areas, simply working to make sure people are able to maintain traditional cultural practices is key to conservation.

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*Abralow Memorial Multipurpose Society, a non-profit based in Roing, Lower Dibang Valley, led by Anoko Mega organizes eastern hoolock gibbon conservation awareness programs in the Mehao area. This photograph is from one such awareness program held at a government school in Injono village. Image courtesy of Anoko Mega.*

**The way forward**

"To protect hoolock gibbons, we need to check habitat loss and further fragmentation of habitats at the earliest and start at war footing the restoration of their habitats," primatologist Sharma says. "Measures such as creating corridors between fragmented habitats by planting trees and establishing canopy bridges would also help.

"Basically what we need is sustained conservation efforts."

But such sustained efforts need to take into account the specific factors at play in each habitat. The ongoing

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problems of deforestation and encroachment in parks and sanctuaries show that simply declaring an area protected isn't enough.

"It is imperative that we adopt a context-specific approach to hoolock gibbon conservation that takes cognizance of each habitat's unique issues," says Aaranyak's Chetry.

As the cases of Hima Malai Sohmat, Barekuri and Mehao show, there is no one-size-fits-all conservation solution for hoolock gibbons. Each gibbon habitat has its own challenges, as well as unique cultural strengths to draw on.

In Hima Malai Sohmat, if villagers could be given economic alternatives to broom grass and bay leaf cultivation, and enough income so that human interference in the forest is reduced, it could go a long way to protecting hoolock gibbons. By contrast, gibbon habitat isn't so tightly connected to the livelihood practices of villagers in Barekuri. There, villagers themselves are calling on the government to establish a gibbon reserve.

On other hand, in the Idu-Mishimi villages of Mehao Wildlife Sanctuary, gibbons are safe from hunting because of a cultural taboo, but habitat loss is still taking a toll on them. There, local activists demand a halt to the use of mechanized chainsaws, and rigorous enforcement of regulations within the protected area.

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Strategies that could be effective in one habitat seem likely to fall flat in others. Fortunately for hoolock gibbons, grassroots initiatives, deeply informed by local realities, are already working to protect these rare animals.

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