

Saving the Hornbill

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During nesting, the only job of the male hornbill is foraging for food.

Senthil Kumar was just a boy when he became a naturalist. It was the early Nineties and the teenager from the seasonally nomadic Kadar tribe that roams the Anamalai hills of the Western Ghats was in the right place. The riparian forests of Vazhachal on the banks of the Chalakudy River in Kerala's Thrissur district had become a hub for research on hornbills. For the researchers someone like Senthil was a godsend. Tribals know the forest and its creatures like no one else can hope to; it is their home. Ecologists and biologists in India, as elsewhere in the world, depend on tribal communities for their field work. Usually this is unacknowledged service. In the odd case when they do get credit, it is more as guides through impenetrable woods than for sharing their traditional knowledge which is absorbed into formal science. The Vazhachal rainforest is one of the world's most important hornbill habitats, the indicator species that defines their robustness. Four of India's nine hornbill species are found here: the Great Indian Hornbill (*Buceros bicornis*), Malabar Pied Hornbill (*Anthracoceros coronatus*), Indian Grey Hornbill (*Ocyroceros birostris*) and Malabar Grey Hornbill (*Ocyroceros griseus*). Understanding the hornbill and its world takes time and effort in challenging terrain and science could not have done without the illiterate Kadars. Senthil was not the only one; other relatives too were part of the process. But their collaboration was a mixed blessing for the forest-dwelling, food-gathering Kadars. They got no recognition for their contribution in terms of information and data. Worse, they were named as the prime culprits behind the dwindling population of the Great Indian Hornbill, listed in Schedule 1 of the Indian Wildlife Protection Act (1972) and considered near threatened by the International Union for Conservation of Nature and Natural Resources (IUCN). There was no scientific evidence for the accusation but everyone who mattered believed it. The Great Indian Hornbill, Kerala's state bird, was vanishing and the Kadars were to blame. Maybe it would have made no difference if the topic had been confined to a few science journals. But it made the news as well, with reporting that never carried their side of the story. One report portrayed the tribe as zealous collectors of hornbill casques. According to this account the more casques a man had the greater his chance of impressing prospective brides and fathers-in-law. It didn't stop there. The men were depicted as manic dancers who wore hornbill casques on their heads for festive occasions and who ambushed hornbill nests with crude weapons. Not one of these increasingly bizarre accounts was true. It's water under the bridge now, but Senthil thinks he knows how this happened. "They must have asked someone who was helping them with their research. And that person must have said Kadars eat hornbill, and then it becomes a scientific truth." Senthil does not deny that at one point they did eat the meat of the Great Hornbill. "Of course we did, and I have heard my elders say it is a delicacy. But we didn't hunt these birds. For starters, we're not hunters. We just collected the birds the way we collected honey from the same trees. Are you telling me we ate all the hornbills here? They were dying because the trees were dying. Did we cut the trees and smuggle timber and build plantations?" Almost a decade later, K. H. Amita Bachan, a young researcher working on his doctoral thesis on plant social structure in Vazhachal would be intrigued by the same question. If Senthil's angst came from a sense of injustice, for Bachan the pressing concern was validating the legitimacy of such conclusions. Without tangible evidence to back your findings, how do you reach a consensus—Bachan prefers to use the term "local consumption"—that hunting by an indigenous community is the biggest threat to a species? "For me, the issue was clear from the outset. If you study one particular species from one particular perspective—for instance the nesting behaviour of hornbills—you're likely to miss many factors that determine the ecosystem dynamics of that species. That is why you come to such lazy conclusions, overlooking far more important factors like habitat destruction. We have six dams on the Chalakudy River which have substantially damaged the riparian ecosystem in the forests of the river basin. Why wasn't this listed as a threat? Why this urge to blame the tribe?" Bachan would find his answers, but only after an exhaustive interaction with the Kadars. In the process, Senthil became a research associate and friend, an association that affected both the political future of the Kadars and Bachan's scientific journey. "Their deep grunts, roars or barks and loud resonance call reverberate in the forest-clad valleys and are responsible for its Malayalam name Malamuzhakk, mountain shaking. It is a large pied bird. Its face is black; neck and tail white, wings black, two white bands on the wings are conspicuous in flight."

—Salim Ali (Birds of Kerala) Generally frugivorous, arboreal and secondary cavity-nesters, the large, stately hornbill is indispensable to the rainforest. A healthy population of hornbills mean a healthy ecosystem. With its jumbo beak splashed with an iridescent yellow, resonating toc-toc-toc calls and the whoosh of flapping wings flaps, it is an important agent of seed dispersal. You could call it the gardener of the rainforest as it seeds most of the new growth through its excretions on its flights through the trees. No hornbills means no rainforest. Hornbills depend on massive old growth trees for their nests, usually hollows formed by splintered branches. In disturbed, degraded and low altitude forests, such trees are present only in riparian areas. That underscores the importance of Vazhachal. Nests here are most commonly found in seven species of trees: Pali (*Palaquium ellipticum*), Elavu (*Bombax ceiba*), Thanni (*Terminalia bellirica*), Kalpayin (*Dipterocarpus Indicus*), Kulavu (*Kingiodendron pinnatum*), Vellakil (*Dysoxylum*

malabaricum), and Vellapayin (*Vateria indica*). Hornbills mate for life. Typically, courting starts around September. During this period they inhabit the upper branches of high canopy trees. Their long bills impede binocular vision, but their razor-sharp hearing and sight make them sensitive to the slightest disturbance on the ground. Courting is a season of music. Early morning and late evening, the lovers exchange metrical kock-kock duets, and their bills make cadenced clapping sounds. Nesting in Vazhachal begins around the middle of December. Once the site is selected, the male and the female ensure the nest is properly prepared. The female cleans it thoroughly and then begins to seal the entrance with layers of her own excreta. Only a tiny slit is left through which the male feeds her regurgitated fruit. She lays two or three eggs at a time with a clutch success of one or two. Once the female completes the process of self incarceration, she sheds her flight feathers. These feathers and the excreta below the nesting trees are



the tell-tale signs of nests.

A hornbill chick inside its nest. If the male has an accident during incubation, the whole family is doomed. The male's only job is to provide food, and he forages on around 44 species of fruiting trees, including 15-19 species of energy rich, sugary figs (*Ficus*). The clutch size and nesting success are heavily dependent on these trees. The male feeds his mate three or four times a day. He calls constantly to signal his arrival and the female responds by tapping gently on the trunk with her beak. He then regurgitates each fruit and passes it through the slit. One feeding session lasts five to 20 minute with over 100 reasonably sized fruits passed. The female is fastidious when it comes to matters of taste and spits out anything that doesn't meet her standards. Incubation lasts 30 to 40 days, with frequency of feeding increasing steadily. The hatchlings get protein-rich food like snakes, lizards, eggs and nestlings of other birds for two or three weeks. During his field study, Bachan has documented males carrying long snakes rolled in their beaks, which the female shreds before feeding the hatchlings. The female, identified by a distinct white band around her eyes, emerges from her self-imposed captivity only after the chick is about one-and-a-half months old. Hornbills have no major predators in the wild. Humans—in physical form and through various markers of civilisation—present the greatest threat. The male is extremely sensitive to human presence during incubation and approaches the nest only after thoroughly scanning the surroundings. But indiscriminate forest clearing for mines, dams, roads and plantations, means nesting trees are increasingly hard to find. The Chalakudy basin is a brutally abused region with six dams along the 144-kilometre river and the controversial Athirappilly hydroelectric project in the pipeline. If sanctioned, it will toll the death knell for hornbills here. The other major threat is from fire. In the summer of 2004, fires that started at nearby plantations—mostly tea, coffee and teak—and human settlements ravaged the forests. Only a few patches of rainforest and wet riparian stretches in the deep interiors emerged unscathed. The buttresses and root systems of massive evergreen trees, which are not fire resistant, were damaged, and in a month's time many of these trees collapsed, depriving the hornbills of nesting habitats. The 1,500-2,000 people in the 10 Kadar settlements of Vazhachal forest division too have suffered, like hornbills, habitat destruction. This ancient tribe endemic to the Anamalai hills depends on the collection of non-timber forest produce like honey, white dammar, black dammar and wild nutmeg. Fishing in the Chalakudy is their other important source of livelihood. The depletion of their natural habitat has left the Kadars on the verge of cultural extinction. Hydrel projects in the Parambikkulam and Sholayar valleys had already resulted in their displacement. The people of the Perumbara Girijan Colony in Malakkappara where Senthil lives, for instance, dwelt in Chadanthodu in the deep interior before the Sholayar dam came. "When these dams come, it's not just our houses that we lose. Our trees also go. And when the trees go, where will we collect our honey and dammar? This is how we have lived for ages. Now we are forced to seek other ways", says Senthil. Shrinking forests have forced many tribals to work as labourers, either with the forest department or in Chalakudy town. The jobs are mostly menial: cleaners in hotels; shop attendants; construction and so forth. For people who consider themselves Kings of Anamalai, this is "a crash down into a life of slaves, devoid of both the pleasures and the hardships of the forests that define who we are." Senthil once worked in a photocopy shop in the town, an experience he does not want to remember. "I felt suffocated. I had to run back to the forests, even if that meant I would be jobless. Even you guys find it difficult to survive with these jobs, so tell me how people of the forests can survive there?" As his area of focus expanded from hornbills to their ecosystem, Bachan was forced to re-evaluate Indian notions of ecosystem conservation. They do not recognise the importance of indigenous tribal communities. According to him, the present legal definitions of forests and systems of conservation are inspired by colonial models that define forest as timber and forest lands as property belonging to the state over which



indigenous people have no rights.

There are nearly 2,000 people in the Kadar settlements, and they have suffered habitat destruction too. The Indian Forest Act of 1927 continues to be the fundamental law in India for matters relating to the environment. Such a framework, he says, rejects all possibilities of a model based on co-existence. The present approach to conservation can be traced to Yellowstone National Park in America, the world's first national park where, says Bachan, "the enjoyment of white people" and "the removal of indigenous people" were the guiding principles, not "an ecologically sustainable system of ethics". "All colonial states have followed this principle and even wild life conservationists go by this model which focuses on creating reserve forests and inviolate forest areas in the name of conservation, denying the tenurial and cultural rights of indigenous people," he says. "In this model, the dependence of local people on their habitat is pictured as the gravest threat to the ecosystem. Its only possible remedy is the eviction of these people. Now this is an act of injustice not just from a sociological point of view but from an ecological perspective as well. "What you're saying is this: adivasis, who have always lived here with all those species now listed as endangered, are not part of the ecosystem, while we, people who have no organic connection with this ecosystem, are the people with the right to devise successful plans to 'protect' it. It is the easiest way to justify our own acts of destruction and to continue unchecked with such activities: we have after all these adivasis to blame." In the Anamalai hills, only 34 per cent of the original forest remains. Even this is heavily degraded because of fragmentation and selective felling of old growth trees. The rest of the land has been converted into secondary degraded forest with the major contributing factors being timber extraction (17 per cent), forest monoculture, mainly teak (12 per cent), tea, coffee and other private plantations (13 per cent), and reservoirs of dams and canals (three per cent). Land occupied by around 40 tribal villages in the region, limited to a few hectares, amounts to less than 0.0002 per cent of this area. "What these figures tell us," according to Bachan, "is that any top-to-bottom conservation model which does not recognise the importance of co-existence in ecosystem management will only result in further damage to the overall ecological



balance."

A group of Kaders being trained for research on hornbills.

While the eviction of adivasis proceeds apace, for both conservation and development projects, little attention is paid to the threat of unbridled tourism in wildlife sanctuaries and national parks. Just scan the pile of garbage around the Athirappilly waterfalls, one of Kerala's prime tourist attractions and a hotspot for cinema shooting, for a sense of the hazards of ecotourism. For Bachan this frenzied emphasis on tourism is part of a "criminal process of mainstreaming the forests, in the same way that tribes are also mainstreamed: one is an ecological crime, the other a sociological one. Ecotourism means more people, more vehicles and more intrusion, increased carbon emission, which means ecotourism actually exposes these fragile ecosystems to a world of high-carbon mainstream civilisation." What started out as a pure conservation project has evolved into a political movement which gathered momentum with The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, known popularly as Forest Rights Act (FRA). The introduction to this Act states: "The forest rights on ancestral lands and their habitat were not adequately recognised in the consolidation of state forests during the colonial as well as in independent India resulting in historical injustice to the forest dwelling Scheduled Tribes and other traditional forest dwellers who are integral to the survival and sustainability of the forest ecosystem." The Act provides for the restitution of deprived forest rights—both individual rights over cultivated land in forest areas and community rights over common forest resources. It vests decision-making power to commune gatherings—(hamlet level Adivasi Grama Sabha) on matters pertaining to land, tenure, resource and sustainable forest management rights. This could be the first measure that opens up the possibility of a paradigm shift, transforming colonial frameworks of environmental management to ecologically sustainable perspectives. For the Kaders of Vazhachal division this is a dream come true. All these years, the ownership of the honey and white dammar they collected rested with the forest department. Now they have

rights over their resources. They can fix the price for the products they collect; have a major say in determining the extent of ecotourism; stall the Athirappilly project—both the Congress-led UDF and CPI (M)-led LDF root vociferously for it and if sanctioned, it will drown two settlements in Vazhachal Forest Division—and all future hydel projects too, because all projects would first require the consent of the Grama Sabha. “The nine tribal settlements (Kadar and Malayan) are now able to take decisions, and any developmental or conservation activities need to be done after taking their consent,” says Iju C. Thomas, assistant coordinator, Western Ghats Nilgiris Landscape Programme, WWF. “If local communities are located in the area and use it or even if any area has any cultural significance for local communities, they need to play a major role in the management of these areas.” However, Abdul Naser Kunju, the divisional forest officer of Vazhachal division says that tribals are often misled by tribal activists and conservationists. “The hornbill conservation programme is not a community conservation programme: it’s a Kerala forest department initiative that uses tribesmen as paid employees. FRA won’t change the status quo as far as conservation policies are concerned. In theory, FRA will empower them to sell goods they collect without depending on VSS, but in practice they will only be further exploited by retailers in the town.” Kunju encourages the tribals to maintain their relationship with VSS. It’s important for a conservation model to balance coexistence-based policies and inviolate reserve forest-based policies. With respect to this programme, the Kadars are justified in feeling aggrieved in how they were portrayed, “especially given the extent of habitat destruction for development models,” says Riney Pillai, a senior wildlife assistant. “However, that does not mean that one should do away with inviolate reserve forests because that is just as unscientific and as extreme a measure as putting the entire blame on Kadars. With FRA, the present conservation model will be further strengthened, as they would have greater rights over their habitat.” The regular discussions and meetings that the Kadars used to have in connection with the hornbill programme had by the time the Act came into existence in 2008 became venues for political discussions. When FRA was introduced, the meetings turned into comprehensive discussions on the steps to ensure its successful implementation. Bachan too was an active participant; so much so that Western Ghats Hornbill Foundation published an exhaustive field guide to the law. The technical knowledge gained from hornbill monitoring about using GPS turned out to be pivotal in preparing the community resource maps that marked the areas of NTFP collection. Senthil believes the rights they now enjoy owe a lot to the hornbills he has spent the last decade following. “It’s not just we who observe the birds; the birds must be observing us too. After all they can fly, while we cannot”, he says.



Senthil Kumar He does not forget to add that the community still needs the bird’s “power and



blessings” to overcome the challenges to ensure a flawless implementation of FRA. [Fountain Ink](http://FountainInk.com)

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