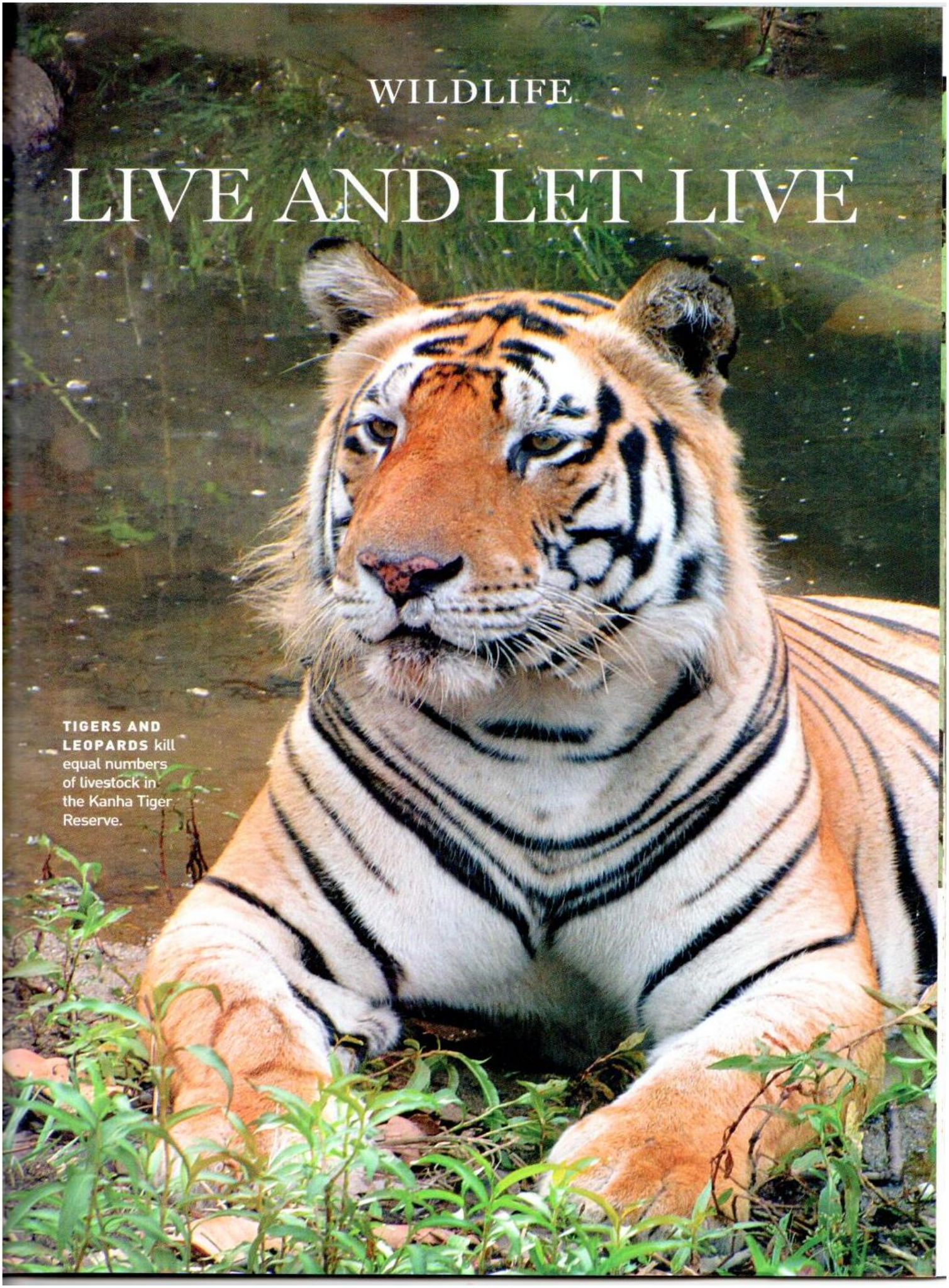
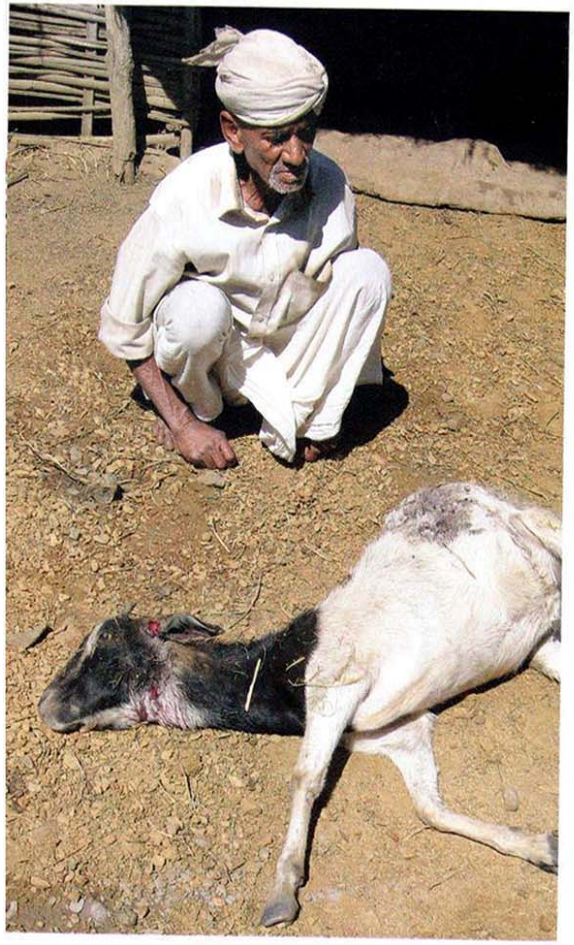
WILDLIFE

LIVE AND LET LIVE



TIGERS AND LEOPARDS kill equal numbers of livestock in the Kanha Tiger Reserve.



A LIVESTOCK OWNER crouches by his goat, killed by a leopard while grazing in the lantana shrubs behind his home.

ASHISH BAIS

A LIVESTOCK OWNER points to a tiger pug mark located near his dead cow. Evidence like this, proof of an attack by a wild carnivore, is required in order for owners to receive financial compensation from the Forest Department.

Attacks by tigers and leopards on livestock cause devastating losses to owners at the Kanha Tiger Reserve, yet villagers rarely retaliate. Stewardship by local people may be the secret to saving big cats in the wild.

Text & photographs By JENNIE R.B. MILLER

SWEAT running from every pore, Vishal exhaled with relief at the sight of his dead buffalo slumped before him. For two days he had scoured the scorching thorn jungle for its body, his dhoti cut ragged and his limbs aching from climbing through sharp brambles. He needed proof to show how his animal had died, and as Vishal approached the rotting carcass to take a few phone photographs, gagging from the smell of decay, his eyes widened at the sight of an even bigger triumph: sunk deep in the sand were pug marks as large as his chest, the mark of the tiger that had killed his animal. The tiger's pug marks were the final evidence he needed to claim compensation for his buffalo's death and, with time, to recover from the devastating loss.

Two days later, Vishal shared his story as we sat on plastic chairs in the shade of his mud hut in the Kanha Tiger Reserve in central India, drinking milkless *chai*. Like many of the villagers I interviewed, he sat stoically—eyes downcast and limbs limp—until I assured him I would not reveal his identity (villagers' names have accordingly been changed). Then, his anxiety visibly eased, he swirled the steaming black tea in his cup meditatively

TIGER SCRATCHES on a cow's leg. Because this fatally injured cow returned home, the owner cannot legally receive compensation.

THE AUTHOR surveys the remains of a cow killed and eaten by a tiger near the Kanha tourist gate.

and described the impact of the tiger's attack. The buffalo's milk had been his only source of income. Its orphaned calf would now nurse on his neighbour's buffalo, costing him severely. His three-day search for the buffalo had lost him precious time from ploughing his fields for the upcoming rice season. And with three daughters in need of dowry for their imminent marriages, he would toil for months, even years, before recovering financially. The loss had been a blow, yet leaning back in his plastic chair, clothed in a fresh white dhoti and T-shirt, Vishal seemed to take the damage in his stride. Help would soon arrive, for within a month's time the Madhya Pradesh Forest Department would deliver him a compensation cheque for Rs.10,000, about 80 per cent of his buffalo's market value. This would ease his struggle, Vishal said thoughtfully. Then, gazing into the *chai* between his callused hands, he sighed, "*Aur kya aur kare*?" (And what more can I do?). Vishal had done all that a villager could do, short of what the law forbids: defend his life and livelihood by killing a tiger.

Vishal's mentality is echoed by thousands of other villagers across India who lose livestock to tigers and leopards each year, struggle to regain financial stability, and then move on with their lives. That a few hungry tigers—only 1,700 remain in India—can cause such prolific damage without being attacked in vendetta is astounding. While farmers in other parts of the world poison, shoot, and dynamite countless carnivores, Indians demonstrate a distinctive tolerance. Yet despite the resilience of most of the livestock owners who live alongside tigers, stories of villagers killing big cats continue to flash across headlines, sensationalised by the media's desperation for fang and blood. Although these rare incidences portray the violent reactions of a mere minority, they generate a reputation of retribution for livestock owners as a whole.

I assumed I would meet these tiger killers when I moved to the Kanha Tiger Reserve to carry out PhD research in 2011. My degree depended on it, for the American grant agency funding my expedition expected me to reduce human-carnivore conflict in an effort to protect tigers. Considering that adult cattle in Kanha are worth Rs.10,000 a head—equivalent to five months' salary for the average village labourer—it seemed logical to expect that villagers would remove the carnivores killing such valuable assets. Yet, 10 months and 400 dead livestock later, after a thousand hours of sweating in the jungle alongside livestock owners and forest guards, I finally realised that my search for the elusive tiger killers was futile. The secret to saving tigers could not be found in the few men in India who sought vengeance against them. The answer lay in the men who forgave the tigers.

CULTURE OF CONSERVATION

The secret to such forgiveness lies partially hidden in Kanha's unique conservation programme. At the reserve's core sprawls a national park twice the size of Mumbai, a mosaicked oasis of jungle and grassland free of human inhabitants but for a few lonely patrol camps in

ALTHOUGH THEY RARELY attack villagers in Kanha, leopards often enter the enclosures adjacent to people's homes at night to kill livestock. A leopard jumped through the small crevice below the roof of this bamboo enclosure and killed a goat.

A FEMALE LEOPARD prowls around a fresh goat kill. Mothers with cubs are considered more likely to attack livestock in order to fulfil the high nutrient needs of their young.

FINANCIAL INCENTIVES such as livestock compensation are critical for enabling coexistence between people, livestock and wildlife. This image shows a tiger pug mark framed within cattle dung, a visual symbol that cohabitation is possible.

the park's centre and a dozen small villages along its edge. Extending five kilometres outwards from the national park in all directions stretches a patchwork of protected forests and villages where restrictions on tree cutting and agriculture buffer the park from degradation. This design supports a rich ecosystem with impressive wildlife such as the endangered tiger and swamp deer, which annually attract 175,000 tourists and nearly Rs.5 crore in revenue. While the Forest Department channels most of this revenue into park programmes such as anti-poaching patrols, wildlife monitoring and habitat management, the agency also distributes 20 per cent to village communities to boost education, medical support and economic growth. Of the Rs.1 crore given to local villages, Rs.17,00,000, or 17 per cent, is paid as compensation for the livestock attacked by tigers and leopards each year.

Kanha's livestock compensation programme is essential to maintaining the well-being of both people and wildlife. Kanha's residents depend heavily on domestic

THE TIGER'S LARGE, MUSCULAR BODY enables it to kill cattle and buffaloes, whereas the smaller leopard more commonly attacks goats, pigs and young cattle.

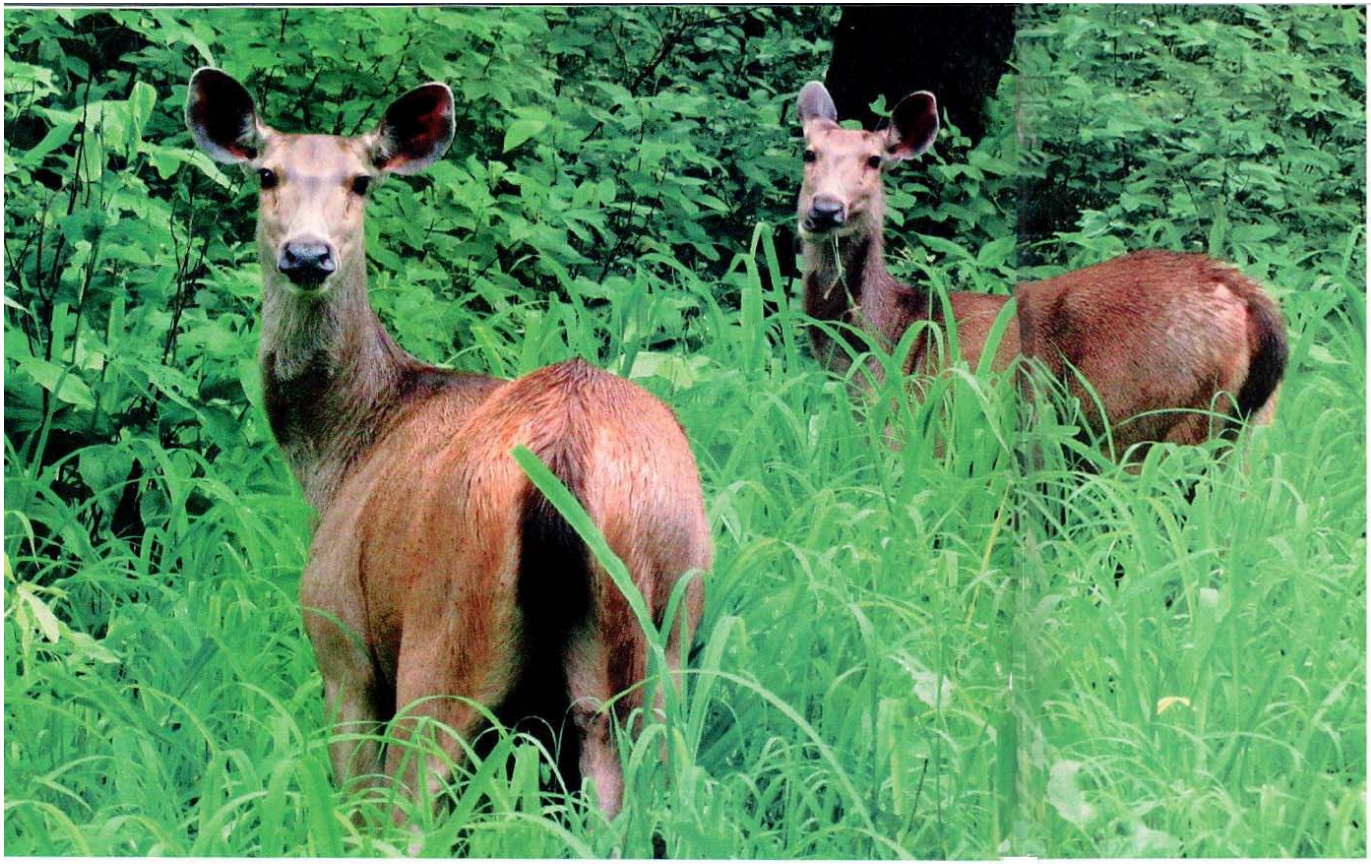
animals for income, household needs and even investment. They sell cow milk and goat meat, pull carts and plough fields with oxen, and trade animals to pay dowries or pay off debt. Livestock dung fuels cooking fires, insulates home walls and floors, and fertilizes vegetable gardens and rice fields. As a result, people often treat animals like members of the family, hand-feeding and washing young calves and sheltering animals on grass beds inside the main house. More than 85,000 cattle, buffaloes and goats graze in the fields and forest patches of Kanha's buffer area alongside an estimated 120 tigers and leopards, effectively creating a 24/7 all-you-can-eat meat buffet for the carnivores. The result is carnage: big cats kill more than one animal every day throughout the park, totalling roughly 400 livestock each year. Three out of every four families in Kanha have lost livestock to tigers or leopards.

"The jungle has risks but gives us life in return," a villager explained while trekking beside me during one of my livestock surveys, his red *gamcha* bulging with the plump mushrooms he had collected during our walk. Throughout the three seasons I hiked Kanha's hills to survey livestock carcasses, I saw people harvest a cornucopia from the jungle: mahua fruits for pressing into wine, wild onions and potatoes for cooking, bamboo for building baskets and fences, and grasses for feeding livestock. Many villagers view their livestock losses as repayment for nature's bounty and an exchange that sustains the ecosystem. Such strong reverence for nature, both its gifts and risks, is an intrinsic value of the Hindu and Islam faiths followed by the majority of people in central India. This deep-rooted respect is another reason why most people permit the loss of the occasional animal to their carnivorous neighbours without seeking revenge.

KANHA BEAT GUARDS trace a tiger's pug marks near a freshly killed bull as evidence for a livestock compensation report.

TO DISCOURAGE VILLAGERS from poisoning carcasses and retaliating against large cats, the Forest Department burns livestock kills immediately after collecting evidence for compensation.

COWS IN KANHA are left to graze without a herder for most of the year when crops are not in the field.



A JACKAL pauses while hunting.

SAMBAR grazing in the tiger reserve.

The acceptance of nature's risks, in addition to the hassle of paperwork and bureaucracy, is strong enough to inhibit some villagers from reporting livestock losses to the Forest Department for financial compensation. But those who do—about 60 per cent of the families that lose livestock—receive rewarding returns: the Forest Department awarded compensation for 90 per cent of the 392 livestock losses that I surveyed, and paid the amount within a month of the attack. For a family whose livelihood consists of its livestock, quick compensation may mean the difference between being able to feeding itself and killing a tiger.

But Kanha's conservation programme has not always sustained coexistence between people and wildlife. Since the park transitioned to a tiger reserve in 1972, the Forest Department has moved 28 villages from the core, angering residents and inflaming activists in an ethical debate over conservation versus human rights. The livestock compensation programme during this period suffered from poor funding and inefficiency, further instigating mistrust among villagers. "Ten years ago compensation came six to twelve months after an attack," one villager recalled. "You couldn't trust the Forest Department to help you." In those days, many people protected their livelihoods by poisoning big cats with livestock carcasses laced with fatal pesticides. The deadly combination of rampant retaliation and pervasive poaching thinned tiger populations worldwide through the 1990s and the 2000s and eliminated tigers entirely from India's famous Sariska Tiger Reserve in 2005. The loss of tigers in Sariska, once one of the country's most renowned ecotourism destinations, instigated a national and international outcry over India's negligence of its endangered wildlife and prompted the government to strictly enforce bans on poaching and retaliation killing throughout the country.

In an attempt to preserve its threatened wildlife populations and ecotourism industry, the Madhya Pradesh State Forest Department restructured its livestock compensation programme to reimburse owners within a month of their loss. Less than a decade later, renewed warmth is apparent between many forest guards and villagers, who now turn to the local guards for help on matters ranging from property disputes to marriage advice. Although poaching continues to threaten tigers and leopards that leave the safety of Kanha's boundaries, retaliation killing has ceased within the park. Yet while quick compensation is easing livestock losses and saving tigers, the programme comes with ominous trade-offs, requiring villagers to sacrifice time, effort, and even physical safety.

Three men paced in line before me through the dim bamboo jungle, my research assistant and a guard walking close behind me. We crept quietly along the narrow earthen footpath, our swinging arms softly brushing walls of vegetation, our ears straining to detect what our eyes could not. A branch cracked in the jungle ahead and crows cackled in response. "Did you hear that?" my assistant whispered shakily, "The tigress is near." One man in our line coughed, another cursed, and suddenly the men burst into song, their unified voices reaching ahead through the bamboo and surrounding boulders, alerting the tigress of our presence. My heart raced as we turned two blind corners, my mind struggling to rehearse how to fight off 150 kilograms of charging tigress. When we reached the site where two cows lay dead from an attack early that morning, oozing entrails confirmed that the tigress had fed until moments before our arrival. With several men standing watch around us, the two livestock owners enacted their version of the attack using clues from the jungle: the tigress stalked in this bush (see the pug marks), then sprang to the throat of this grazing cow (see the hoof scuffs in the dirt) and leapt to strangle the second (see the hair tufts on the branches). The men's performance displayed both their fear and their familiarity: they had read these gruesome signs before when the tigress last killed. With eyes scanning the bushes for a flash of orange, the men urged me to finish my survey so that the tigress could return to her meal and, satiated, allow them a few days of safe grazing.

Besides the danger of stumbling onto a feeding tiger, livestock owners must take other risks in order to claim compensation for their livestock. The odds of finding a livestock carcass in a dense jungle of impenetrable thorns and rugged terrain are poor at best. As I accompanied villagers on these pursuits, my thick boots plodding over the tracks of their flimsy flip-flops, I often found myself wondering in astonishment, how did these men find their animals in this dark jungle? Livestock was rarely killed near the village, and we often stumbled through several kilometres of treacherous terrain, tripping over veiled vines, dodging prickly palms, and wading through winding streams. We climbed a crumbling hillside mined with

thistles to reach a pig from Attariya devoured by a leopard amidst scattered dog skulls. We crawled beneath a sprawling shrub land of shoulder-high lantana thorns into a shadowy tiger den to find the bones of a bull from Manjhipur. We descended a dry ravine to discover a calf from Bamhni, its measly remains ringed in the tracks of a leopardess and her cubs.

For those owners who succeed in finding their animal's carcass, victory is short-lived unless it is accompanied by evidence of a wild animal attack. Upon reaching these scenes, our skin scratched by spines and sticky with sweat, the villagers and I search for signs of the attacker: pug marks running along the wet sand, claw marks arching up a tree trunk, a pile of faeces steaming beside the carcass. This ephemeral evidence is rare enough that we enthusiastically celebrate our discoveries, knowing that the carnivore signs will guarantee compensation for our efforts. Yet even after this tiresome search and meticulous detective work, the procedure for compensation is far from finished. After finding evidence, the owner will leave the jungle and walk several more kilometres along dusty roads to the nearest Forest Department camp. Then, with a forest guard by his side, the owner will retrace his steps to officially report the kill and file a compensation claim.

Not all livestock owners are lucky enough to complete this process. One-third of the carcasses I visited were clean of clues, all traces of the killer rinsed away by rain or scrambled in the loose dirt. Without proof of a wild carnivore attack, the Forest Department will not award compensation. Forsaken by the whims of weather and nature, desperate owners still make the long journey to get a forest guard without any assurance that their efforts will be rewarded. The outcomes of these situations rest on the verdict of a single forest guard. In some tiger reserves, these scenarios invite bribery and fraud, not only diminishing payments to livestock owners but also inflating their frustration. These are the reserves in which tigers die, poisoned by the hand of a desolate villager abandoned and abused by corrupt conservation. And these are the bleak circumstances I expected to encounter during my stay in central India. But the forest guards in Kanha contradict the stereotype.

MANAGEMENT FOR THE PEOPLE

One such forest guard is a senior officer overseeing Garhi, a vast agricultural region that buffers the park's eastern interior core jungle. Most leopard attacks in Kanha occur in Garhi, sometimes eight in a single week, and he visits them all. Despite the long hours, the guard's amber eyes sparkle and his hands dance as he describes his work. Having grown up in a district near Kanha, he relates well with the park's residents, casually asking people about the health of their families as we walk through villages. Late in the afternoon, the forest guard and I accompany a livestock owner to a fresh goat carcass located a few feet inside the national park's core zone. The guard explains

A PYTHON exposes itself for a rare sighting.

A BANYAN TREE at the entrance of the tiger reserve.

that grazing livestock is illegal inside the core and that villagers are fined heavily if their animals tread beyond the boundary. But since tigers and leopards can drag their prey up to 200 metres before eating, it is possible that livestock found dead along the core-buffer boundary was grazing legally before the cat attacked. The owner nods in agreement, and points to the tree where he had been sitting when a leopard lunged from the bushes 5 m away, broke his goat's neck, and dragged the animal into the forest before the man could even rise to stand.

As the guard carefully writes the owner's description in his report, I recognise the importance of mutual trust throughout the process. The checks and balances of a fail-proof system are limited here in the jungle, and individuals can easily benefit to the detriment of the greater good. Rumours from other tiger reserves tell of villagers falsifying claims and guards reaping profits from compensation transactions. Yet the system works in Kanha when it has failed elsewhere because the people of Kanha feel as valued as the tiger.

Kanha exemplifies one of the most sustainable models of conservation, where global priorities to save a species translate into on-the-ground efforts to support local people who in turn serve as stewards of the species.

And in Kanha, these local efforts now reflect global values: not a single person, forest guard or villager, could recall a tiger or leopard killed as retaliation in the park within the previous five years of my visit. Kanha supports a viable coexistence between people and carnivores achieved in few other places around the world, and this is due not only to the park's devoted forest guards but also to the work of a concerned and benevolent director.

"People do express their anger after having lost their cattle," Kanha's Field Director, J.S. Chauhan, told me. During my time in Kanha, we frequently met in his office, where he would describe the tactics forest guards use to defuse such tense conflicts: empathy and personal experience. "By and large, forest guards either hail from the same community or belong to the nearby area," said Chauhan, emphasising that this familiarity enabled them to connect with villagers in crisis. "They also have faced similar problems at one time or the other. Their role is very crucial in terms of pacifying the initial anguish and negating the possibility of revenge killing."

As we talked together in his office, Chauhan would loom above me from across his desk. He often sported pressed khaki pants and a plain collared shirt beneath a navy vest displaying the Kanha emblem, a golden tiger walking through green grass. Chauhan would sit upright and forward as he spoke, his fingers folded before him on a clean, broad desktop stacked neatly with papers. Without fail, our discussions were paused periodically by a clerk who would sidle up to Chauhan and pass him papers while pointing to places on each page where Chauhan would carefully sign. A few minutes later the clerk would gather his papers and depart, and Chauhan would delicately return his pen to its leather case, snap it shut and, to my relief, resume our conversation mid-sentence. He was clearly good at multitasking, a necessary skill for the director of one of India's most prominent parks and flourishing tourism programmes. But with his kind, bright eyes, square glasses and tired smile, Chauhan struck me more as a fatherly figure than a government administrator.

"Front-line staff have traditionally been conservative while assessing the amount of compensation," Chauhan once shared. He described the State laws for filing livestock compensation, which often mandate strict requirements, as poorly suited to life in the jungle. For example, the law does not allocate compensation for livestock fatally injured by a tiger if the livestock returns home to die. Instead of battling to change the law, Chauhan urges his officers to award compensation to owners whenever possible. "My office has issued instruction to the front-line staff to be liberal and just while assessing the compensation," explained Chauhan. "I feel that the situation has considerably improved now."

This policy requires sincere dedication from forest guards, who must visit each livestock carcass and meticulously complete a detailed four-page assessment of the attack scene, including the owner's personal information, livestock quality, and tracings of any tiger or leopard pug marks. While some officers shared with me their

PEACOCK DANCE on a road in the tiger reserve.

scepticism about the impact of their efforts and accused villagers of becoming lazy and dependent on government money, many more conveyed the Garhi forest guard's confidence that compensation was helping the people who needed it most. Regardless of their individual opinions, Kanha's forest guards work together as a unit to distribute compensation funds and support the local people who on a daily basis face the threat of a cat attack.

LIVING WITH FEAR

One of my last days in Kanha revealed the final secret to successful local stewardship. After morning monsoon showers, my assistant and I trailed behind livestock owner Premlal into a glistening, light-dappled jungle near his village to survey the site where his cow had recently been attacked. As we began to sweat in the humid mist, we heard a leopard growl echo through the trees on our left, perhaps a kilometre away in the distance. Following Premlal's lead, we paused, nervous smiles twitching our lips as we considered whether to move forward through the dense foliage. While leopards are more timid than tigers and rarely attack people, proceeding with caution could help avoid a confrontation.

As if to answer our thoughts, a tiger's roar soon after descended through the thick vines from the hillside to our right. The hair on my neck bristled with adrenaline and my foot involuntarily stepped back, stories I had heard of tigers attacking men on foot flashing through my mind. Although tigers had killed only a handful of people in Kanha over the last decade—a mix of forest guards and villagers walking through the dense forest of the park's core—their attacks were typically unforeseen, ferocious and fatal.

Fuzzy with fear, my mind struggled to decide our next move, wavering between our work ahead and the village's safety behind. The decision quickly became clear when, seconds later, the jungle to our left erupted like an orchestrated symphony with the nearby frantic cough of the langur monkey's specialised alarm call for leopard, indicating that the spotted cat was approaching. I exchanged a wide-eyed look with Premlal: two cats were two too many. We swivelled on our boots and hurried back to the village, the dappled light casting leopard print patterns on every leaf.

Many Kanha residents have a story like our quick retreat that morning, and their deliberate avoidance of tigers and leopards exposes a fear fierce enough to prevent most contact between people and big cats. The act of living with carnivores evokes a visceral response, an ingrained intuition that the human role in nature is not just predator but also prey. This primal hierarchy of the food web rests on a moral mandate that is long forgotten by many cultures removed from nature but is still innate to many Indian villagers living near the wild: live and let live. For thousands of years, this tenet has enabled man and cat to minimise confrontation and curtail conflict through compromise. Although many human cultures throughout the world now prefer to kill rather than compromise with carnivores, the philosophy of live and let live continues to enable coexistence between the local people and big cats of Kanha. The values I uncovered in the park are representative of a larger ethic of environmental protection prevalent, yet rarely recognised, in many parts of India. Throughout the country, local people stand at the front line of conservation, sustainably managing jungles and living alongside wildlife. The motivation behind their tolerance—respect and fear for nature reinforced in moments of crisis by financial compensation—offers lessons for conservation programmes across the planet. As long as India's culture and conservation can sustain these values, local stewards will continue to play a critical role in protecting tigers and leopards by sharing the jungles as they have for thousands of years. □

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