

Chapter 2 · Guarding the unicorn: conservation at the sharp end

The century-long armed struggle to save Indian rhinos in the north-east Indian state of Assam illustrates how traditional but unfashionable fortress-and-fines conservation can sometimes work and in places may even be essential. But it also raises awkward questions about the negative impacts of conservation, and about whether - as the rest of the book explores - conservationists can devise alternative approaches that impose less of a burden on local people.

My quest to seek out conservation's successes begins three metres above the ground, swaying across a mist-bound sea of grass on the back of a freckle-eared, forty year-old mother of three called Mohan Mala. She's one of a herd of working elephants which spend each dawn transporting groups of wide-eyed tourists into Kaziranga National Park in Assam.

A few minutes into our journey the sun edges into view, colouring the neutral greys of the landscape with greens and yellows, and picking out dew-beaded threads of spiders' webs. Dense elephant-grass extends all around, four or five metres high. A small group of wild boar, bristly-black and curious, stops to sniff at us, then trots busily off. But even from our lofty vantage point, it's hard to spot animals in the towering green sward. It's quiet too: the mist muffles the few birds that are starting to sing, and the elephants walk almost noiselessly.

People come here from around the world for close-up encounters with one of the rarest animals on the planet. Most of the passengers on this morning's elephant convoy are Indian families - children squeezed between mums and dads, grandparents and uncles, all chattering eagerly about what they hope to see. But today I reckon I'm the elephants' most excited customer. Despite the early start, I woke well before the alarm, nervous with expectation: tracking

down Kaziranga's most famous inhabitant is something I've longed to do since I was a child.

The elephants descend with surprising grace to cross the muddy edge of a shallow lake, or *beel*. I glance down at the enormous footprints our convoy is leaving behind - small craters, bigger than dinner plates and inches deep. The line of giants slows as it climbs the other bank, then snakes for a while longer through the shrouded wetness of the grassland. We reach a second *beel*, and suddenly, there it is. Belly-deep in the mud, peering shortsightedly at us. A great armour-plated beast, almost as vast and more extraordinary still than the elephants: an Indian rhino.

Battleship grey, with immense flank-folds and backside-creases, and studded with wart-like bumps on its legs and shoulders, *Rhinoceros unicornis* (named for its single horn) is the species most people have in mind when they think of a rhinoceros. I'm taken back to my first images of this animal - a four-inch plastic replica I adored as a child, photos in a wildlife book I used to treasure and that still sits, dog-eared and broken-spined, on my shelf. Later, the poster on my wall of Albrecht Dürer's famous woodcut that so captivated 16th century Europe - even more exaggerated in its armoured splendour than the real thing. And memories of my young children's astonishment at seeing Indian rhinos in the zoo - one animal so large, even by rhino standards, that the keepers had had to enlarge the door to its house.

Still, nothing has quite prepared me for coming to within a few muddy steps of this immense beast in the wild. This one's a male. He's nearly two metres at the shoulder, around four metres long, and weighs about the same as a couple of family cars. For a time he looks up at us through the morning dampness. We stare back, our wonder tempered with a slight feeling of apprehension: I've seen what's left of a National Park truck which one of his friends took exception to. But apparently content that we're mere protrusions on some

rather misshapen elephants, and not a threat, he snorts, settles back to his wallow, and ignores us.

With their thrilled clients beaming broadly, the mahouts perched up on the elephants' heads to steer them signal to their charges, and we move on. We make our way steadily across a broad plain. As the mist thins, steel-blue hills appear in the distance. A patch of shorter grass, waist-high, opens to our left, then bursts into movement as a herd of swamp deer startles. They bound up, russet-brown leaping through the green, and then re-group, before warily crossing our path and returning to their resting place.

We carry on. Our guides have spotted a pair of brown-tufted ears, golden-edged in the morning light. Another rhino, this time a female, with a young calf in tow. As we approach, they trundle into a pool, the mother keeping a watchful eye on the early morning intruders. Cameras click, while Mohan Mala and the rest of her team stand patiently by. It's the same at the next waterhole: another female, and another youngster - this one only a few months old, with the tiniest nub of a horn.

Kaziranga is one of the best places in the world to see rhinos. After the elephant ride is over, I take a long journey into the Park, and count no fewer than 58 scattered along the shore of one particularly large *beel*. All told, there are around 2000 lumbering about the place. But the truth is they came within a hair's breadth of disappearing completely: when conservation efforts first began in the area at the turn of the 20th century you could have tallied all the remaining rhinos just on your fingers and toes. Less than a score remained. Since then, 100 years of painstaking efforts have increased the population 100-fold: two-thirds of all the world's Indian rhinos now live in Kaziranga. Yet to me, the idea that there are any of these spectacularly rare animals here at all, in one of the poorest, most densely settled, socially complex areas and politically fraught places on earth, is little short of miraculous.

Unlikely survivors

Rhinos the world over have long had a hard time at the hands of people. Roughly half of the rhino species that were around when modern humans first got going about 130 000 years ago - and which roamed not just Africa and Asia but Europe too - have since disappeared. The same is true of most of the rest of the so-called Pleistocene megafauna - the huge-bodied and now extinct mammoths, cave bears and giant deer of Eurasia, the elephant-like mastodons, enormous ground sloths and armour-plated glyptodonts of the Americas, Australia's giant marsupials, New Zealand's flightless moas, and the even larger elephant bird of Madagascar. Because these extinctions happened, for the most part, many thousands of years ago, the exact causes are still disputed.

Some scientists argue that the climatic upheavals of the last ice age were responsible. But others point out that these spectacular creatures had survived many previous cycles of glaciation and warming. What's more, they disappeared at very different times in different places - out of step with the changing climate, but suspiciously soon after people first colonised their respective landmasses. The speed of extinctions varied too. They happened quickest in places (like North America) which were suddenly exposed to sophisticated human hunters. If the megafauna survived at all it tended to be in much longer-colonised places (like Africa and Eurasia) where early hunting was presumably less advanced and developed only gradually, perhaps allowing for the evolution of adaptations against predation by people.

Other evidence - like the discovery of the butchered remains of some of these animals in human middens - has led many researchers to conclude that people and not climate were probably responsible for the great majority of extinctions of the megafauna. The relative importance of overhunting and of humans

destroying habitats is still unclear, but most scientists now agree that one way or another people played a large part.

Five species of rhino did survive this prehistoric purge - the white and black¹ in Africa, and the Indian², Sumatran and Javan in Asia. All are now in varying degrees of trouble - victims first of habitat loss, and more recently of spiraling demand for their horns. In Africa, the southern population of white rhinos, which plummeted to less than two dozen animals in the early 20th century, now stands at a healthy 17 000, but the northern race has in all likelihood recently gone extinct in the wild, a casualty of the long-running unrest in the Democratic Republic of Congo. The black rhino, once the most numerous species, collapsed from around 70 000 in the 1960s to 2500 just 30 years later and around 4000 today. The Javan rhino hangs on in two isolated populations totaling around 70 animals. And the small, forest-dwelling Sumatran rhino numbers less than 300, scattered across the remaining forest fragments of Borneo, Sumatra, and Peninsular Malaysia.

Historically, the Indian rhino ranged across a great swathe of the subcontinent, from Pakistan through India, Nepal, Bangladesh and Bhutan, right to the borders of China and Burma. All three Asian species occurred in Assam. But now the Sumatran and Javan rhinos are confined to southeast Asia, and the Indian species survives in just 10 or so protected areas - three in Nepal, and the rest in northern India. The main historical reasons behind the decline were centuries of habitat loss to make way for farming, combined with sport-hunting by powerful élites. Towards the end of the 19th century one particularly keen British colonel - a Fitzwilliam Thomas Pollock - singlehandedly killed 47 rhinos,

¹ Despite these names, all rhinos except the reddish-haired Sumatran species are invariably grey. The label “white” was derived, mistakenly, from the Dutch word “wijd”, describing the broad, lawnmower-action lips of this grazing specialist; “black” was then used to distinguish the second African species, whose mouthparts are instead adapted for browsing. “Square-lipped” and “hook-lipped” are therefore more accurate names for these species, but take a lot longer to type.

² Given its distribution and the testy relations between the countries it inhabits, the Indian rhino is sometimes more diplomatically called the greater one-horned rhino.

while the Maharaja of Cooch Behar in what is now West Bengal reportedly succeeded in dispatching no fewer than 207.

By the turn of the 20th century it was clear that time was running out, and Assam was the only place in India where the species could be saved. Anxious letters were exchanged between senior Raj administrators. After apparently finding only footprints on her trip to spot one of the last few rhinos, Lady Curzon, American wife of the Viceroy, added her influential voice to the calls for protection. She asked her husband to intervene, and by 1905 the area around Kaziranga was provisionally notified as a Reserved Forest - one of the world's first formally protected areas.

Since then, the protection formally afforded Kaziranga has increased a good deal - with its designation being upgraded to a Game Sanctuary, a Wildlife Sanctuary, and in 1974 to a full-blown National Park. The threats the area faces have changed too. With the country-wide banning of rhinoceros killing in 1910, hunting for sport dwindled, but since the 1960s illegal killing of rhinos for their horns has increased dramatically. Unlike the African species - whose horns are also in demand for making handles for traditional Yemeni daggers or *jambiya* - the horns of Asia's rhinos are used almost exclusively in powder form, in traditional oriental medicine.

Contrary to reports in the western media (and even though the adjective for rhinoceros-like is rhinocerotid), the main medical use for rhino horn is not as an aphrodisiac. Instead, it's used primarily as a fever-reducing agent, and there is limited clinical evidence that it does have slight effects, though no more than water buffalo horn. With the growth in population and particularly wealth of China and its neighbours, the price of rhino horn has soared. By the time it reaches the market in China and Hong Kong, a kilo of Asian horn can fetch up to \$40 000 - substantially more than the same mass of gold. The resulting incentives to poach the few rhinos left alive are obvious.

In contrast to the threat from poaching, human-caused habitat loss is less of a problem. The Park protects just over 400km² of grassland, forest and swamp, and there's been limited encroachment into Kaziranga by settlers. One of the neighbours does destroy habitat, however - the mighty, rapidly shifting Brahmaputra. One of the largest rivers in the world not yet under the control of major dams, the "son of Brahma" bounds the northern edge of Kaziranga, and dominates life here. Between June and September the great monsoon-swollen river bursts its bank and spills out southwards across the wide, flat grasslands that cover most of the Park. The floodwaters sweep right up to Kaziranga's southern boundary, where tidily-kept tea estates blanket the base of the Karbi Anglong hills. Meanwhile the surging river washes away great chunks of ground, literally eating up the Park: since the 1960s, Kaziranga has lost around 50 km² of dry land to the forces of erosion. The river does give back what it takes - as the main channel shifts, new backwaters are formed (and turn into the *beels* so beloved of wallowing rhinos), and fresh islands of silt deposited and gradually vegetated. But most of this new land is beyond the Park's northern boundary, and room for the rhinos is being squeezed.

Yet while living with the Brahmaputra makes life difficult, it also makes Kaziranga what it is. The river is the engine that drives the ecosystem. Each year it turns grasslands into breeding grounds for millions of fish that later swim downstream to become food for the rural poor of Bangladesh. It replenishes the soil, and prevents trees from becoming established and gradually turning the wetlands into woodlands. Kaziranga is now one of the last naturally functioning floodplain systems in Asia, where the rise and fall of a great river, unchecked by human interference, shapes and re-shapes the entire landscape. And as such, the Park has become irreplaceable for the once-widespread wildlife that's evolved to live in this dynamic system.

There are many more treasures here besides the rhinos. Kaziranga is home to over 1000 wild elephants, and half of the world's wild water buffalo. No less than 500 species of birds have been recorded - about the same as in the whole of France, and including global rarities like Bengal floricans (small bustards), greater adjutants (large storks) and spot-billed pelicans. Gibbons sing in the patches of forest, and the Kaziranga stretch of the Brahmaputra is one of the last strongholds of the *xihu* or Ganges river dolphin, a blind and bizarre-looking beast that for some reason catches fish in the murky waters of the river by swimming on its side. Even the swamp deer that skittered around our dawn elephant party belong to an otherwise near-extinct subspecies. And the population of tigers that keeps them and thousands of diminutive hog deer on their hooves is the densest in the world.

For me, though, almost as marvelous as the creatures themselves is the paradox of their persistence. All these species have been allowed to flourish in a region with a long history of bloody civil unrest, and in a park that's surrounded by more than 70 000 people. Where household incomes are often less than \$10 a month - and where a rhino poacher can earn many times more in a night than a farm labourer can get in a year. So why on earth has this success story been possible?

Tough love

There are two overwhelming reasons. One is the dedication and bravery of hundreds of conservation professionals. They repair roads and camps, keep Kaziranga's jeeps, boats and working elephants in running order, carry out managed burns to hold the growth of grassland trees in check, and undertake annual censuses of the Park's residents. But above all, they patrol for poachers.

Apart from a brief upsurge in the 1960s, poaching rhinos for their horns was a low-level problem over the first 75 years of Kaziranga's existence. Rhino numbers increased steadily, reaching around 1000 animals. But then demand for powdered horn in east Asia escalated, and everything changed. In 1981 two dozen Kaziranga rhinos were killed and their horns hacked off. Three years later, the annual toll had almost doubled. The poachers used a range of methods. They shot animals. They dug deep pits along animal paths and lined with sharpened bamboo stakes which impaled the rhinos that fell into them. And in places where electricity cables cross the Park, they threw wires over the powerlines and back down onto rhino trails, to electrocute passing animals. Laokhowa Wildlife Sanctuary - a smaller reserve nearby, caught up in a separatist insurgency - lost almost all of its rhinos to poachers. Kaziranga had many more animals, but by now was losing nearly 50 a year. Clearly something had to be done.

The man credited with stemming the tide is Shri Paramananda Lahan. Steely, hard-working, and utterly uncompromising in his commitment to Kaziranga's rhinos, Lahan quickly made anti-poaching patrols the Park's top priority. Despite now being long-retired and evidently unwell, he kindly agrees to meet with me at his house. He has a kind face and gentle voice, but a vice-like handshake. "It was tough at first" he recalls. "There were very few roads, so we moved around on elephant, and on foot." Lahan led from the front, tracking poachers, confronting them, exchanging fire. "I was with the guards all the time. We tried to intensify patrols as much as possible. There were only 70 or 80 guards for the whole park, and it took four and a half years, but eventually the area came under control." Rhino killings leveled off, then declined. The population began increasing once more.

Lahan's legacy - carried forward by a succession of equally impressive leaders - is a sophisticated, almost paramilitary anti-poaching operation. There are now nearly 500 front-line staff, stationed across 120 camps scattered through the

Park. The guards are linked to headquarters by radio, wear army-style uniforms, and for the most part carry guns - albeit older and less powerful ones than their adversaries. Each night they go on patrol in their sector, walking silently, searching for intruders and trying to avoid tigers, bears and elephants. Encounters with poachers frequently end in gun battles, with both sides shooting to kill. Four guards have died, twice as many have been seriously injured. Yet for the most part, the poachers come off worse. More than 600 have been arrested; over 100 have been killed.

In reality it's a low-level war. Rhino poaching rates are generally down - in single figures every year from 1998 through to 2006 - but it's an unending fight. "Kaziranga has to be continuously protected", warns Shri Lahan. "If we stop, even though it looks like there are plenty of rhinos, they won't last long." Newcomers have brought new approaches to the anti-poaching work. They've built networks of informants in the villages. If someone suddenly starts buying larger bags of rice in the market, questions are asked. Other groups try to tackle the real villains in all this - the traders, who commission the poaching gangs and move the horns into Burma or Bhutan, and from there to China and Hong Kong. But still most of the work to save the rhinos is done the hard way - on foot, at night, and deep in the heart of the Park.

The unicorn defenders

We clamber into the small Suzuki jeep and set off down the track. To find out more about the life of a rhino guard I've been given permission to travel up to the front line - to a camp called Arimora, far beyond the tourist zone, and right on the Park's northern boundary. My guide for the morning is Dharanidhar ("DD") Boro, the officer in charge of the 240 men protecting the so-called Central Range of Kaziranga. Mr Boro is an interesting man.

He's a Bodo³, from one of the main ethnic groups in Assam. From starting as a village cow-herd he's worked his way up through the Assam Forest Department, en route collecting a law degree and a cabinet full of awards for his contributions to conservation. Round-faced and with a bright-eyed intensity I come to recognize in the many of the leaders I meet on my journey, Mr Boro combines a love of flute-playing and poetry with the same fearsome determination to conserve rhinos as Shri Lahan. He's opened up new fronts in the fight against poachers - getting involved in the lives of the villagers around Kaziranga, trying to persuade them the Park is their property, not his. Even recruiting a network of ex-poachers as informants - as he explains, "if you have a pin in your foot, you use another pin to get it out". But he has Lahan's reputation for toughness too. One of his commendations reads "For more than 100 encounters with well-armed poachers, in which deaths have been common". The amiable-looking man alongside me in the car has shot a lot of people.

From Central Range HQ it's a short drive past the lush, even bushes of a well-manicured tea plantation and across the NH-37 highway into the Park itself. Once inside, we drive north along a causeway, great stands of elephant-grass stretching away on either side, and the faintest snow-clad peaks of the Tibetan Himalayas just visible in the farthest distance. Elephant turds are scattered along the road like giant Christmas puddings. The next *beel* reveals the elephants themselves, loafing massively around the edge. A small group of wild buffalo rest in the foreground, their huge sickle-shaped horns reflecting in the water.

The signs of rhinos are all around. Their well-trodden trails (known locally as *dandis*) lead off from either side of the road. Every few hundred metres we pass an enormous roadside latrine - the accumulation of months of nightly

³ Somewhat confusingly, Bodo is pronounced "Boro". This presumably explains why Boro is one of the commonest Bodo surnames.

dunging by the local rhinoceros. At one, a copper-red and green junglefowl - svelte progenitor of the domestic chicken - scratches for insects, then dashes for cover as we get near. From the dungpiles and trails it's clear that Kaziranga's rhinos are creatures of habit: easy targets for determined poachers.

We cross the Diphalu River by hauling the car along a rope ferry, and soon we're there. Arimora. A simple hut raised 3m up on concrete stilts to withstand the floodwaters from the Brahmaputra right alongside: immense, brown, and deceptively sluggish. This is conservation's front line - 1600km upstream to the Tibetan glaciers that feed the river, another 1300km downstream to where its delta floods the great mangrove swamps of the Sundarbans - yet only a few minutes by boat from the islands where the poaching gangs wait their chance. Arimora and its ilk are where the survival or otherwise of the Indian rhino is being decided.

I meet more of its guardians - seven middle-aged men in khaki, old but well-maintained .315 rifles slung over their shoulders. They explain that they spend a month at a time out at this small, spartan camp, then get a couple of days at home with their families. By local standards the job is quite well paid - permanently-employed guards get around 8000 rupees (about US\$160) per month - but it can be lonely, and it's frequently dangerous. For company, each camp has a cat; to help come to terms with the risks, each has its own Hindu shrine as well.

Praying for good luck seems like a sensible idea. The wildlife the guards are trying to protect poses enough of a hazard: Mr Boro recounts grisly stories of tiger attacks and marauding sloth bears. But the guards' real worry is being ambushed by poachers. It's a nightly danger. They tell me that they patrol their area every evening, usually in a group of three. They walk for 10 or 15 km along the roads and *dandis*. To avoid detection by poachers they don't use

torches, and they communicate with other guards using a private system of animal calls - mimicking frog croaks and bird whistles. They find poachers every few weeks, their presence typically betrayed because unlike the guards they don't wear boots, and so leave different tracks. Then the guards patrol until they find them.

The ensuing gun fights seem chaotic affairs. Bhimlal Saikia - recruited, like most of the guards, from a nearby village - recalls a September night 15 years ago. "It was one o'clock, and there was a full moon. Poachers had tried to kill a rhino. They missed, but we heard the shot, and several groups of guards came into our area. Then we waited, for a long time. At 4.45 the poachers suddenly moved towards our group. There were six of them and only three of us. They were wearing khaki, so we thought they were guards and shouted 'stop'. They didn't, so we knew who they were. They kept coming. One of them had a .303 rifle, so I shot him. He died straight away. The others ran away." Were there repercussions for him, I ask? "The next day the Range Officer came over with the police. They found the poacher's rifle and ammunition. I didn't get any problems, but they moved me to another camp, so other poachers couldn't come after me."

Each man around me tells a similar story, of dark encounters, of confusion punctuated with gunshots, of people dying over rhinos. I'm struck by how matter-of-fact, how unembellished their accounts are. No euphemisms, no tall tales. This is simply what these men do, in the name of conservation. And right now, things are getting worse. Poaching is on the rise again in Kaziranga: more than 20 rhinos killed in 2007, the worst year for over a decade. The guards go patrolling again in a few hours. I hope there are no poachers out there tonight.

I wish the guards luck, and say goodbye. On the way home Mr Boro relaxes a little more. He talks about how proud he is of his men. He tells me his own stories from the field, and about the fragility of the Kaziranga ecosystem.

“Every creature has interactions with another. If we lose one finger, our hand won’t work as well. So it is with species.” We cross back over the Diphalu on the little ferry, and then drive through a narrow cane break - a jungle of sprawling, spine-coated rattans climbing through the lush bankside vegetation. Just as we get out into the open again, the jeep brakes sharply. My guide has spotted something astonishing, 200m off to our left. Lifting my binoculars, I finally see it: crouching by the sunlit edge of a small pool, the most sought-after animal in India. A tiger, glowing amber against the green. I gasp. I can’t believe my luck. Tigers are relatively common in Kaziranga, but are rarely seen, even when the vegetation has been burnt back. At this time of year they’re scarcely encountered at all. The huge cat sits up - it’s seen us too - walks three paces, and is gone.

Everyone in the jeep is delighted for me. We drive on, big smiles all round, and the talk turns to tales of tigers. Ones that were seen more than fleetingly, ones seen rather too close for comfort, ones almost walked into while out on patrol. The female that became a cattle killer and recently attacked the Park staff who were trying to... - but Mr Boro is interrupted mid-sentence by his mobile phone. It’s his director, and it’s bad news. Informants have reported that a group of poachers has entered the Park from the west and is heading towards the Central Range. The atmosphere in the car changes abruptly. Stories of past adventures stop immediately, and we rush back to headquarters.

Golap’s story

The struggle between Kaziranga’s rhino poachers and its rhino defenders is deadly serious, but it’s also deeply human. I get an extraordinary and unexpected opportunity to understand what that means when I meet up with a local journalist and rhino activist called Uttam Saikia. Slight, charming, and with a fiercely intelligent gaze, Uttam divides his time between writing for local news agencies and running a small, Kaziranga-focused NGO called Bhumi

which works to raise awareness of the area and ease conflicts between the Park and neighbouring villagers. In the last few months his investigative talents have helped Uttam get close to several of the poachers responsible for the latest upsurge in rhino killings - but he's not simply after catching them: he wants to help them get out of poaching forever.

We talk about his work, about Bhumi's radical ideas for rehabilitating poachers and setting them up with a fresh start. And then Uttam comes up with an idea that changes everything. One of the most wanted men in this part of Assam - linked to several rhino deaths this year alone, and on the run from the police and the Forest Department - is close by, and apparently wants to talk. Uttam phones him, I hastily rearrange other plans, and we fix a time the following day. As a lifelong conservationist (and someone who, as a child, went on sponsored walks to Save the Rhino), I'm about to come face to face with the enemy.

The poacher who wants to talk is called Golap Patgiri. When we arrive at the meeting place - a poorly-lit café with no other customers but plenty of flies - he's already there, sitting at a rickety oilskin-topped table with his back to the street. Golap is tall and thin, wearing old but carefully ironed shirt and trousers and a careworn face that seems much older than his 41 years. He also looks completely terrified. Uttam introduces me, but Golap scarcely looks up. We sip at scalding-hot chai, and wait, in silence. I worry Golap has changed his mind, but then he says a few, hushed words to Uttam. It turns out he's worried the waiter is listening in. He still wants to talk, but we need to go elsewhere. He agrees to get into our jeep and drive to his village.

We travel out along a bumpy cycle track perched between rice paddies. Simple bamboo homes stand on stilts by the edge of the water, and small mud-caked children work the flooded fields, trying to scoop up tiny fish using what appear to be large, open-weave trays. I start thinking of what trying to live on \$10 a

month must actually be like. The children shriek at each other, then grin broadly and wave at us. But life is tough. We pass a village right next to the Park where a rhino was killed in broad daylight, just last month. So far this year seven have been poached around here.

Golap's village is nearby. We park, take off our shoes, and climb the ladder into his house. His three year-old son, Bharat, rushes up to hug his dad, squeezing tight around his legs. Uttam and I are shown to the only mat, and offered rice wine and something that tastes like rice pudding. Golap sits on the bamboo-slatted floor, Bharat curled up on his lap. More at ease, he at last starts his story - softly, almost conspiratorially, all the while looking down at the floor.

"I used to work in the Park - for nearly 10 years I worked as a 'casual' guard. This meant we did the same work as the permanent guards, but we only got paid 1500 rupees [around \$30] a month. We wanted to be made permanent, but they never had the money. Then in April 2000, they said they couldn't afford us any more. So I had no money, and a family to support. It was a very difficult time." He explains that social convention meant he felt unable to take menial work: "I'd had a good job. Everyone knew I was a guard for 10 years. So how am I supposed to start ploughing or labouring? It would bring me too much shame. I thought for a long time. And then I started to think about going to kill rhinos."

Golap tells me he put his plan into action in late 2005. He travelled to Dimapur, just over the border into the neighbouring (and distinctly less lawful) frontier state of Nagaland. There he met two men from Mizoram⁴, and struck a deal to escort them into Kaziranga. "On 10 November I brought them down from Dimapur. I didn't come through the village. I didn't want my family to

⁴ Another of Assam's unruly and mountainous neighbours, which together with Nagaland and Manipur seem to harbour most of the rhino poachers and horn traders operating in India's north-east.

know. The men brought a .303 rifle and some food, and we spent the night on the edge of the Park.” I ask Golap if he was frightened, but he says “No - our gun had a longer range than the guards’ .315s. If they came in front of us, we would kill them, otherwise we would die. As we entered the Park we thought we were either going to die or become rich.”

At this point Bharat wriggles on his dad’s lap, eager for attention. Golap strokes his hair gently. The little boy settles. “At seven the next morning we killed a rhino. We cut off its horn. Then we spent all day hiding in the jungle, because we couldn’t come out. Finally, at 11pm we came out, and took the horn straight back to Dimapur. From there we went to Imphal [the capital of Manipur], and sold the horn - but it was small, so we only got 6 lakhs [600 000 rupees, or around \$1200] for it. My share was 2 lakhs.”

Uttam tells me Golap’s account is pretty typical. Most poaching is done by gangs of three - a shooter, a bearer, and a guide. While the first two are often Nagas or other hill people with links to the traders, they usually recruit disaffected locals to help them find their way around the Park - marginalized Karbi or Mishing tribespeople, migrant workers laid off from the tea plantations, or (as with Golap), experienced former guards knowledgeable about how anti-poaching patrols work. In Golap’s case it was a profitable arrangement. The gang struck again, three months later, but this time weren’t so lucky.

“The next time, I went back to Dimapur, and brought them down here again, near the village. We entered the Park in the night-time but we didn’t find a rhino until two the next day. We shot it in the head.” Golap goes on to describe how he took the horn, but on their way out his accomplices got caught and beaten by villagers patrolling for cattle thieves. “I got away, but the villagers called the Forest Department people. The men from Mizoram told them my name.” After a month the authorities found Golap and arrested him.

He had hidden had the horn and wouldn't tell them where. "Everyone was angry and everyone beat me", he says. "I went to jail, but after 25 days I paid bail, and came back home. I sold the horn, and got 1.6 lakh [around \$320]."

The case has yet to be settled in court, but Golap's exposure as a poacher has already cost him a great deal. After his release, he was pretty much ostracized by his people: "The villagers told one another not to mix with me, not to go to my house. My father said that if you kill a rhino it is very, very bad". Most of Golap's neighbours agreed, and forced him to move away from the village, his wife, and his children. Golap stops talking, and draws his arm close around his son: even now, this is a rare trip home.

After a pause, Uttam quietly takes up the thread. It seems that things didn't end there. Despite the beatings, despite the reaction from his village, Golap carried on poaching, and led gangs into Kaziranga three more times. Each time they killed a rhino, and each time they managed to evade the guards. But news of Golap's involvement got out, and he became a wanted man - unable to go home, and unable to go near the Park for fear of being shot on sight.

With the Forest Department and police closing in, Golap turned to Uttam's Bhumi organisation for help. He says that despite the poaching he has very little money: "Everything I had has gone to lawyers and to the police". Golap tells Uttam he now wants to stop poaching for good, rejoin his village, and become an informant. "I want to become a good man," he says. Uttam believes him, and through Bhumi is trying to raise enough money to set him up in a small business. There's no shop in the village, and Golap wants to become a shopkeeper. Uttam believes building alternative livelihoods like this is essential. "I want to give Golap the opportunity to restart his life - for himself, and so that his children respect him. But it's really up to him."

First though, Uttam's trying to negotiate an agreement between Golap and the Forest Department: the authorities drop all the cases against him, and in exchange one of the most wanted rhino killers vows to go straight, and never enter the Park again. It's a gamble all round - but unless both parties take the risk, more deaths seem inevitable: most likely more rhinos, possibly a guard, quite probably Golap. As a sign of good faith, Uttam asks Golap to give up a handmade gun he has stashed away. Golap says he's keen. Just before we leave, he talks about surrendering in the next few days. Of all things, he's in a particular hurry because Bhumi is organizing a 220km cycle ride next month to raise awareness about Assam wildlife, and he wants to take part: poacher turned proselytiser. But Golap is also tired of being on the run; he wants to go back home, and be welcome there once more.

"Father, please go away"

The villagers' reaction to Golap brings home to me the second big reason why rhinos are still wandering around Kaziranga. Rhinos remain (as do elephants, buffalos and tigers) because very many Indians want them. You don't have to spend long in Assam to realize that local people are tremendously proud of Kaziranga in general, and its rhinos in particular. The rhino is the state animal, and a stylized rhino is the logo of choice for almost all enterprises Assamese, from bus companies and tea estates to the state oil company and the local squadron of the Indian Air Force. Pride in rhinos brings large numbers of Assamese tourists to Kaziranga. It makes rhinos and what happens to them a frequent talking point for journalists and politicians. It's even meant that the Forest Department has received the occasional helping hand from ULFA⁵, one

⁵ The United Liberation Front of Assam - "a revolutionary political organization engaged in a liberation struggle against India", or a banned terrorist organization, depending on your viewpoint. ULFA allegedly went out of its way to assassinate several rhino poaching ringleaders in the early 1990s. As one former Forest Department employee told me, "Why not? It makes good sense. ULFA is an Assamese organisation, and anyone who loves Assam loves rhinos".

of the main militant groups fighting the Indian government for an independent Assam.

More broadly, local people's respect for big and distinctly dangerous creatures is manifest in quite extraordinary tolerance of the damage that they cause. Across much of India, large mammals persist in areas of dense human settlement to a degree which is unparalleled just about anywhere else. There are over one billion Indians, living at an average density of over 300 people per square kilometre - three times the population density of the European Union, and ten times that of the US - yet somehow they manage to coexist with sizeable populations of elephants, leopards and wolves.

The human costs are very significant. Large animals variously eat crops, damage fields, flatten homes, attack livestock, and even injure and kill people. In an average year in the state of Madhya Pradesh alone, such human-wildlife conflict costs poor rural communities over \$170 million; over 600 people are injured by tigers, leopards, or bears, and of these, 30 or so die. Across India as a whole, elephants kill around 300 people annually. In the most shockingly affected area - the mangroves of the Sundarbans, along India's border with Bangladesh - tigers routinely kill up to 100 people each year. And then eat them.

Even more striking than this dreadful toll, though, is the Indian public's general acceptance of it. Not long ago in Europe, the first bear seen in Germany since 1835 lasted only a few weeks before accusations of killing sheep (not to mention raiding a rabbit hutch) led to it being shot dead. Yet in India, even when they kill humans, rogue wild animals are usually spared: on average, only one elephant is killed for every 10 people killed by elephants.

The reasons? Everyone I've asked attributes this extraordinary tolerance to firmly-held religious beliefs in the rights of other creatures. While not many

people go as far as those Jains who sweep the floor in front of them to avoid treading on insects, for most Hindus and Buddhists (which in practice means most Indians) all animals are divine. The great god Ganesh has an elephant head. Other animals too are the living incarnations of deities. Deep-rooted fatalism is also important. A common remark when people are killed by animals translates roughly as “This had to happen. This death was in his destiny”.

The Assamese pay a particularly high price for their acceptance of their fellow creatures. The state has one-fifth of all of India’s elephants in one-fortieth of its area. On average these kill 60 men, women and children a year - and as conflicts grow, thanks to remaining habitat patches shrinking, and corridors between them being converted to farmland, the death rate is rising. Crop-raiding is less devastating, but much more common. Around Kaziranga, villagers report that over a quarter of their rice harvest is lost each year to wildlife. Elephants are the main culprits, but wild boar, deer, rhinos, wild buffalo, monkeys and even parakeets all raid the fields, leaving poor farmers poorer still.

They try their best to defend their crop. The flat paddy landscape is punctuated with fragile, stilt-legged look-out posts called *tangis*, from where dusk-till-dawn sentries can give early warnings of approaching animals. Villagers then try to chase the would-be crop raiders back with burning torches, drums and firecrackers. One of Golap’s neighbours explains. “We fight every night to protect our crops from wild animals. We use fire and spears and drumming to chase them back to the Park. We never try to kill them - we just chase them back.” They sometimes succeed, but often don’t. “By itself, one elephant can eat two or three quintals⁶ in a night. Sometimes 50 or 100 elephants come, and destroy the whole area. Our houses can get broken too. And sometimes even tigers come, and injure cattle and people.”

⁶ A quintal is a unit of mass which helpfully means different things in different places; in India it is equivalent to 100kg.

On the way back from the village, my driver offers to take me to meet one of his neighbours, so I can see the impact of crop-raiding at first hand. It's late in the afternoon, and the lush greens of the paddies and the Park floodplains beyond are intensifying in the yellowing sunlight. I start at a sudden gunshot far in the distance. I scan the horizon, and spot a rhino a couple of kilometers off, making its way from the cover of the Park, into a field. It's the time of day for crop-raiding to begin, and ripening rice grains are very tempting. Two more volleys, and then I realize they're not gunshots, but firecrackers. The rhino alerts, looks around, and trots back towards the Park - one unwelcome visitor successfully dissuaded. But many more are not.

We walk along the raised mud walls between paddies, to the edge of a field flattened by elephants 15 days before. Matiram Phukon, a slight 56-year old man wearing a jumper and dhoti, gestures at his ruined crop. "They came in the night - six or seven of them. We tried to drive them back to the Park with fire and drumming, but they are very dangerous. They ate only some of the rice, but they trampled a lot more." Altogether he reckons he lost around a quintal that night - one thirtieth of his entire crop. And that was before the rice had properly seeded. Now the grains are ripening, and Matiram's expecting the elephants to return any night soon.

I ask him about compensation. It is supposed to be paid, but it's very little, and arrives late if at all. Most villagers have given up applying. "I told the Forest Department, but they didn't come. Nobody came." One study conducted around the area suggests Matiram's experience is typical: local people pay a punishing price for living near the Park. I look around at the destruction, and try to comprehend what losing the return on months of hard work, time after time, must be like for someone struggling to feed his family. What does he feel about elephants, about Kaziranga, when he has to live next to them?

Matiram breaks into a broad, gap-toothed smile, and then says something that staggers me. “We don’t want to hurt the elephant. We also care for the elephant. If he comes and eats our crops, we feel angry. But not all the elephants or rhinos are doing that, and we’re only angry with the ones that come to eat. The rest of the time, we love Kaziranga.” My translator, sensing my astonishment, tells me what happens in his own village. “I have a rice field too, and after planting I lay a coconut, some gram, a betel nut and an oil lamp onto some banana leaves, and pray to Ganesh that he will not come and destroy our crops. We believe it helps: one time the elephants came across the edge of my field, but didn’t destroy it. A lot of people do this thing.” And if they destroy the crops anyway? “Then we say to them, ‘Father, please go away’”.

We leave the field just as the sun sinks below the skyline, turning the clouds orange and pink and purple. Matiram walks towards his hut, and I climb into the car for the short ride back to my comfortable lodge - shocked, amazed, and extraordinarily humbled. I may send a few readily-afforded pounds to the conservation organisations that help support parks like Kaziranga, but when I compare my contribution to that of Matiram and his family and neighbours, I’ve no doubt who the real conservationists are.

Which way conservation?

Mr Boro’s men risking their necks nightly for five or so dollars a day; Golap on the run and ostracized from his community for trying to make a bit more than a farmer’s pittance; Matiram matter-of-factly ruing his crushed crops but forgiving the perpetrators: Kaziranga embodies conservation at the sharp end. It forces us - by which I mean wildlife-loving, mostly western, mostly comfortably-off conservationists - to confront some stark realities.

Shri Lahan's ruthlessly enforced protection regime for Kaziranga's rhinos makes us wince: conservation's not supposed to be about shooting poor people, whatever they've done. Despite being responsible for the deaths of five rhinos and being prepared to kill his ex-colleagues, Golap Patgiri doesn't strike me as an evil man (and I'm no longer sure he's the real enemy!). Under the same difficult circumstances how many of us would have done the same thing? And the price that Matiram and his neighbours pay, year in, year out, because they're not as intolerant as the rest of us when it comes to living alongside damaging and dangerous creatures: for all our rhetoric about the need to share the planet with other species, which of us would willingly put ourselves in Matiram's shoes? We - the mostly well-off conservationists and nature-lovers who want to live in a world with rhinos and tigers and elephants - are free-riders in the system, and we owe Matiram Phukon and millions like him a huge debt for their forbearance. But the tolerance of poor farming communities across India (and indeed, large parts of Africa and Latin America) can no longer be taken for granted, and many are beginning to argue that more of us should be footing a fairer share of the bill.

Conservation is responding. Concerns about its human costs are leading to changes in the way it is being practised on the ground, in Assam and beyond. Mr Boro's ideas about engaging with local people are becoming the norm, Uttam Saikia's more radical proposals to provide alternative routes out of poverty are becoming widespread. In some places those paying the up-front costs of conservation are beginning to receive payments for continuing to do so from distant beneficiaries.

I'll find many more examples of these sorts of innovative approaches to conservation through the rest of this book - places where conservation is working because it's directly addressing poverty, because it improves local people's everyday lives, or even because it makes good business sense. Linking conservation to communities is the way of the future. And Kaziranga's future,

like that of many other wonder-filled places, will come to depend on how far it contributes to the wellbeing of the ordinary people that live around it.

But for all that old style, fortress-and-fines conservation may make us feel uncomfortable, for all that many conservationists may want to move away from it as swiftly as possible, perhaps it has its place. Where would Kaziranga's rhinos be now without the guns and the guards that have protected them by brute force and bravery over the past quarter century? Many would argue nowhere - they would have gone the way of just about every rhino population without an armed guard. And what then would we prefer had happened? Guns and rhinos, and a nagging sense that there ought to be a better way; or guilt-light, bottom-up, community-centred conservation and very probably no rhinos at all? Kaziranga and the prospects for its future force us to face a fundamental question - what exactly does conservation want to do, and how does it best meet its own legitimate objectives in the face of overwhelming human poverty?

Another century of rhinos?

So what does the future look like for Kaziranga? Will its 2000-odd rhinos remain, beyond the 2000s? Will my great-grandchildren and yours live in a world which still has space for unicorns, and will Golap's and Matiram's great-grandchildren see them when they look beyond their fields? Over the short to medium term, the future of Kaziranga and its spectacular inhabitants will depend, as in the past, on keeping poaching under control, and on maintaining the backing of the local community.

The bravery of the Park's rangers and the commitment of their leaders will continue to be vital, but other anti-poaching initiatives look like becoming increasingly important too. If it succeeds, work to track down and prosecute the traders and break up the supply chains that smuggle poached horns into China would yield disproportionate dividends. Efforts by Bhumi and others to

rehabilitate key poachers may also prove very worthwhile. And strategic reintroductions now underway to put rhinos back into other reserves where they've been wiped out should help spread risks.

What about prospects for the continued tolerance of wildlife by Assam's rural poor? All the signs are that human-wildlife conflict is set to worsen. As human populations grow and expand, animals are inevitably coming into ever-more frequent contact with farmers and their fields. And as traditional ways of life become exposed to western values, commercialization is beginning to take hold, and attitudes are starting to harden. To counter this, ways of spreading the economic benefits of the Park among its neighbours are being developed, and should help: some enlightened tourist operations employ only local people, visitors can spend money on community-made handicrafts, and so on. But realistically, there are limits. Kaziranga already has 70 000 people living on its doorstep. The Park would have to be generating revenues of many millions of dollars each year to have significant impacts on most of its neighbours' household budgets - and that seems a very distant prospect.

There are larger scale issues too, starting to loom over the horizon. Most of them are about the need to conserve animals and plants and the places they live not as if they were static entities, but to consider the dynamic processes that maintain them, have shaped their evolution, and are now coming under threat. The importance of processes is something that dawned on most conservation scientists (me included) about 15 years ago, but it's something that real-world practitioners have been wrestling with for much longer.

In Kaziranga, the dominant process to be accommodated is the flooding and shifting of what has euphemistically been labeled "the naughtiest river in India" - vital to the Park's existence, but challenging as well. One great challenge the Brahmaputra's bad behaviour presents is the need to replace what it's washed away with newly formed land - and progress is slowly being

made in expanding the Park's boundaries northwards to achieve this. A second set of problems arises from the need for animals to escape particularly serious flood events by moving to higher ground. In the past, they moved south, onto the forested slopes of the Karbi Anglong Hills: the uplands and the floodplains formed one ecologically interconnected unit. But the hills lie beyond the Park, and the wrong side of the busy NH-37 highway. Many animals trying to cross it die in the attempt - buffalo, deer, wild boar, even elephants. Those that make it to the hills - especially the rhinos - risk being killed by hunters. Those that stay behind risk being drowned; in some years floods kill more rhinos than the poachers do.

There are some helpful responses to these flood-related problems. Park staff have devised an early-warning system so they know in advance if the river is likely to burst its banks. Working with the army, they've built dozens of little plateaus - earthwork-arks where wildlife can sit out the worst of the flooding without having to leave the Park. Hearty roadside mottos entreat drivers to drive safely: "No hurry, no worry!", "Care makes accidents rare!", "Speed thrills but kills!", and my particular favourite, "Horn do!". And during peak flooding times, dozens of volunteers descend on the NH-37 to escort slow-speed convoys of lorries through the Park.

Taking a wider view, though, it's clear that the long-term future of Kaziranga will depend on thinking beyond its current boundaries. The Park will face - indeed, is already facing - new threats, often from far away. Proposed schemes to generate hydro-electricity from one of the world's largest untamed rivers risk fundamentally altering the entire Kaziranga ecosystem. Pollution from upstream agricultural intensification could do much the same. And plans to expand the NH-37 into a six-lane superhighway could, if not re-directed, greatly increase the isolation of the Park. Politicians who pride themselves on the marvels of Kaziranga need to think through the likely impacts of all of these proposals on its survival. They also need to give serious consideration to

the idea of extending protection southwards into the Karbi-Anglong Hills, so that an entire functioning landscape is conserved, rather than one large but increasingly vulnerable fragment.

So is there hope? Keeping well-armed, highly profitable poaching operations from taking over; maintaining good relations with tens of thousands of neighbours who can't afford to carry on losing their crops to wild animals; re-routing major transport proposals; implementing landscape-wide conservation; and (quite literally) making-up lost ground: in many ways these problems seem overwhelming. But wind back just over 100 years, to a time with fewer than 20 rhinos, no outside interest, zero protection, and lots of trigger-happy autocrats, and prospects must have seemed far bleaker. The story of Kaziranga shows us in spectacular style that the improbable is possible. If the immense dedication of Assam's conservation professionals continues, and the extraordinary respect of its people for their fellow creatures endures, then my guess is that there still will be unicorns roaming Kaziranga in the 22nd century. If we all want them enough, they will be there. And future generations will be the richer for that.