

here is a subsistence farmer in the Indian wilderness who has changed the very nature of tiger conservation across the country.

"I'm a farmer who lives on the border of one of the most famous tiger reserves in the world," says Hanuman Singh Gurjar. "Isn't it

only natural that I'd take a keen interest in the activities and movements of tigers?"

However, Hanuman has done a lot more than that he has proved himself invaluable as a self-taught tracker of tigers. Raised in the relatively barren area north of Ranthambore National Park, Hanuman has spent his life herding goats and raising crops. From this background alone he realised that he was in a unique position to supply crucial information on tiger behaviour.

The data he has supplied – which had remained hidden to entire legions of trained national-park professionals - has helped to change the way that the authorities

approach tiger conservation, not only around a park that is surrounded by half-a-million people, but also across India.

"In recent years I'd noticed that more and more tigers were coming out of the park, crossing these lands on their way to other high ridges of the Aravali Hills to the north-east," he explains as we stand on the sun-baked floodplains of the Banas River, which forms Ranthambore's northern boundary. When Hanuman talks about the tigers he uses the local word bagh, which seems to reflect the harsh, guttural cough of a hunting tiger - a sound that has been heard through the mudwalled huts of Hanuman's village on many a night.

"One day I followed the trail of the tiger we call Romeo. I knew that along the way he would probably have to kill a cow or a goat – such easy prey for him. This would make the local people angry, and if they could they might even kill Romeo."

LAND AND LADIES

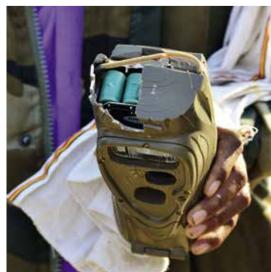
Under pressure from the increasing tiger populations inside the park, Romeo was looking for fresh territory and probably, as his name might suggest, females. Hanuman gathered as much information as he could from his own observations and took it to YK Sahu, the six weeks the farmer worked alone – with no support or pay – and collected so much data with the single camera-trap the Forest Department loaned him that he succeeded in changing the way the experts viewed tiger distribution. They had been stunned back in 2003 when a Ranthambore tiger was killed by a train 180km from the park, but it was considered a freak event that a tiger would ever range so far. However, Hanuman's efforts made it clear that several tigers habitually roam up to 70km outside of Ranthambore – itself a staggering distance. Today Hanuman leads a team of 20 village wildlife

field director of Ranthambore National Park. For the next

volunteers in a project that was set up by YK Sahu and the wildlife conservation organisation Tiger Watch. His men are all professional herdsmen or farmers and receive about £30 per month to monitor the wilderness with their camera-traps. Working in what has become an unofficial national-park buffer zone, they also provide front-line liaison between park officials and villagers. In addition to the camera-traps the men are given mobile phones so they can make their daily reports to the man that they call the 'Tiger Boss': Dharmendra Khandal.



Above: using a single cameratrap, Hanuman Singh Gurjar (left) realised that tigers were dispersing out of Ranthambore. Right: cameratraps are easily damaged by inquisitive animals - this one was mauled by a hyena.



It is an unseasonably chilly November evening when I join the Tiger Boss and local photographer Aditya 'Dicky' Singh (who took many of the photos illustrating this article) around a flickering fire in the garden of Ranthambore Bagh resort. Dharmendra, the softly spoken director of Tiger Watch, abandoned his earlier training as a botanist to concentrate on the fight for a sustainable future for India's national super-predator.

"The future of the tiger – as with so much megafauna all over the world – rests on our ability to create a viable network of protected areas across the country," he explains. "Hanuman Singh Gurjar intuitively realised the importance of this: it was as if he was a messenger who came to us directly from the tigers. Today his team of volunteers is a key part of our fight not only to protect the tigers but also against illegal mining and logging."

Dicky Singh, who co-owns Ranthambore Bagh resort, may know the local tigers better than anyone, having spent thousands of hours tracking and photographing them in the bush. Sadly he is pessimistic about the future of the big cats, and when the subject turns to NGOs and tiger charities his general advice is to avoid them.



Ranthambore is

and pools that

support a high density of prey.

sub-adult male,

charges out of the

grass and into the

water in pursuit

this occasion his

quarry was just

of a sambar

deer - but on

dotted with lakes



have been given for tiger protection ever made it to the parks then we could have saved the tiger a thousand times over," he says. "Tiger Watch and TOFTigers [Travel Operators for Tigers], from which the organisation stems, are exceptions to the rule. With their village volunteers, who have been trained in camera-trapping and GPS use, these guys are leading the way in a growing acceptance that the key to securing the tiger's future lies in creating

"More than just tracking tigers, our village volunteers are community-based forest representatives who act as liaisons between the Forest Department and villagers," the Tiger Boss explains. "Tackling poachers or immobilising and rescuing a tiger that drifts into a populated area is a far easier task if the villagers are willing to help."

When I first travelled in Ranthambore with Dicky 13 years ago on assignment for CNN, poaching was still rife and tiger numbers were dwindling at an alarming rate.



HOW TO VISIT INDIA'S TIGERS

• Steppes Travel (01285 601630, www.steppestravel.co.uk) offers Pench, Kanha and Bandhavgarh, three of the most rewarding national parks in India.

- Exodus Travels (0845 287 7601, www.exodus.co.uk) offers a variety of tiger-watching tours. including to Tadoba National Park, tiger sightings in recent years.
- Other tour companies that have signed up to responsible tiger-watching initiatives include Audley Travel (01993 838000, www.audleytravel.com), Cox & Kings **(020 3797 4542, www.** coxandkings.co.uk), Encounter the Wild (020 8432 6484, www.encounterthewild.com) and Natural World Safaris (01273 691642, www.natural worldsafaris.com)

Back then a famous tigress called Machali was the undisputed queen of Ranthambore. Her name means 'fish' in Hindi but she was better known as the 'Lady of the Lakes'. After a few long days of driving, during which we found pugmarks the size of a soup-dish and clawmarks gouged frighteningly deep (and frighteningly high up) into tree trunks, Dicky and I spent several days photographing Machali and her latest litter. She was a particularly devoted mother who ultimately raised nine cubs to maturity. We also tracked and photographed a huge male who still bore fang marks in his shoulder as a reminder of the day that he dared to threaten her offspring.

Above: livestock

such as goats are

tigers straying out

of Ranthambore. Left: a female

tiger scolds one of

her three cubs for

moving ahead of

the family group. Below: vehicles in Ranthambore are

allocated certain

routes, yet jeeps

can converge very

quickly when a tiger is sighted.

easy meals for

"OUR VILLAGE VOLUNTEERS ARE

DEPARTMENT AND VILLAGERS."

FOREST REPRESENTATIVES WHO ACT AS LIAISONS BETWEEN THE FOREST

> Often seen frolicking with her cubs, Machali became famous worldwide as

the most photographed tiger that has ever lived. As Dicky pointed out at the time, "Generally speaking, unknown tigers often die an unknown and premature death, while the known ones are more likely to live out their natural life." Machali, now almost 19 years old, is believed to be the oldest tiger ever to have lived in the wild, though at the time of writing she has lost most of her canines and an eye in a fight with a young male.

TIGERS TO TREASURE

If there is a single quantifiable explanation for the success of Ranthambore National Park as a destination for wildlife tourism, it would be this particularly majestic and highly visible tigress. There are those who argue that it is crass to put a monetary value on nature, but it is an undeniable though harsh fact that many parts of the undeveloped world would have lost the vast majority of their wilderness areas if a financial value had not been realised from them, both for those in power and for local communities. TOFTigers which was founded as a pressure group of tour operators, destination-management companies and hoteliers with a commitment to responsible wildlife tourism in India, and funds Tiger Watch – is a leading exponent of the concept that has come to be known as 'tigernomics'. The organisation recently estimated that Machali had earned as much as f_{70} million for Indian tourism since becoming a dominant female at Ranthambore in 1998.

There was a time when 60 per cent of the reserve's tigers were descended from Machali. Today Ranthambore is home to more than 60 individuals. According to the Tiger Boss, the 392km² reserve is approaching maximum density, and males in particular (typically occupying a range of about 40km², overlapping the territories of several females) are being forced outside the park to search for fresh territories.

One such male was a man-eater. "Ustaad made a notorious name for himself when he killed four people over the course of several years," the Tiger Boss says. "Before he was relocated to another area he also unwittingly made a name for his son, Sultan."

"A lot of people – photographers, bloggers and even journalists - who wanted to demonstrate that they're authorities on Ranthambore's tigers instinctively blamed

a network of habitats rather than just protected islands.' **COMMUNITY CONVERTS**

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the killings on Sultan," Dicky explains. "However, Sultan had slipped completely off the radar before the fourth human was killed by Ustaad."

WE'RE DOING TO HELP."

Meanwhile, far to the north, Hanuman had been on Sultan's trail and was eventually able to bring back cameratrap shots that proved not only that the younger tiger was innocent, but that Ranthambore's males were on the move.

COPING WITH CONFLICT

As the tigers move through community lands where natural prey is relatively scarce, conflicts with farmers and livestock herders increase. According to Tiger Watch's figures, 59 domestic animals were killed near Ranthambore by tigers last year. Compensation is provided at a rate that is more generous than the market prices, so their village volunteers also act as go-betweens who can minimise cheating.

In the last year Hanuman and his team have been

Above: kicking up a huge splash of water, two young tigers play-fight in an area of wet grassland. Left: data collected by **Tiger Watch** volunteers such as Amarsingh Gurjar (right) is playing a crucial role in the creation of tigersafe habitat.

responsible for peacekeeping interventions in several villages where tigers encroached, and have given first aid to two people who were attacked. They have also pursued bushmeat poachers, and fishermen who often use powerful pesticides to stun their prey. In one incident they camera-trapped a tiger and, a few snaps later, a poacher with an automatic rifle, who was later identified and charged. They have even been instrumental in deactivating home-made bombs built from gunpowder and shrapnel placed inside balls of dough - these incredibly dangerous devices are intended to kill animals like boar, but double as landmines that could easily kill villagers instead.

If Hanuman Singh Gurjar has been a messenger from the tigers then his Tiger Watch team-mate Amarsingh Gurjar is the man who received the tiger's blessing on behalf of them all, as he explains to me as we talk on the desert banks of the Banas River. One evening last March Amarsingh set his camera-trap and retired to bed. He placed his rough-hewn *khatiya* (the camp bed that villagers use) beside his field to deter deer and boar from eating his precious crops during the night.

"When I woke the next morning I felt scared, elated and panicky all at the same time," Amarsingh says. He twists the curling tip of his perfectly waxed Rajasthani moustache, and I find it hard to imagine that he could ever be so disturbed. Until I hear what happened: on that March morning he discovered that a huge tigress had left an image of her rear end on his camera-trap at 11.36pm - and pugmarks just inches from his sleeping head.

"Bagh to soonghkegaya," he says – the tiger sniffed him and left. "It was like she wanted to tell us that she approved of what we're doing to help. 'You are my saviour and I will not hurt you,' the tiger told me."

MARK EVELEIGH is a freelance photojournalist whose work has appeared in publications including The Sunday Times and the Guardian.

♠ FIND OUT MORE

For more information on protecting India's tigers visit www.tigerwatch.net and www.toftigers.org

& tourism

Conserving big cats delivers enormous financial rewards. explains Julian Matthews.

he fabled city of Jaipur in Rajasthan does not seem like the birthplace of a new vision, but so it may prove. For a decade TOFTigers has campaigned for the country's burgeoning nature-tourism industry to be used as a conservation tool, and the authorities at the Forest Department in Jaipur are finally waking up to the idea. 'Tigernomics' - putting a monetary value on these beautiful cats - is the force at work, and is perfectly illustrated by the Ranthambore female famous worldwide as Machali.

As an entrepreneur, Machali is nothing short of incredible. During her reign in the park, the tiger has generated £70 million for the local economy and created thousands of jobs. She has produced lodges and services, built hospitals and schools, and commissioned films and books. The cost of protecting her? A mere $f_{12,000}$ a year – a staggering return on investment. If anyone still wants proof that tigers are more economically valuable alive than dead, then here it is.

BIG CATS. BIG BUCKS

Indeed a WWF report last year highlighted the astonishing return on investment of visitor revenue in and around protected areas across the globe. Tourists spend a colossal £400 billion each year visiting some 92,000 reserves, yet only £6.5 billion is ploughed back. The findings suggest that any government that invests properly in conservation could reap extraordinary returns.

In addition there is little doubt that tourism in India is about to rocket. The country has an increasingly affluent population with a strong desire to

experience their natural heritage first-hand. India's best-known parks already receive a total of four million visits each year - 95 per cent of which are by Indians themselves – but this number is expected to jump into the tens of millions in the coming decades.

The advent of tourism is a tangible economy that transforms parks into vibrant 'economic zones', converting farmers and grazers into gamekeepers and guides, overgrazed landscapes into biodiverse meadows, and denuded forests back into tiger hotspots. These parks provide a myriad other 'ecosystem services' too, such as clean air and water,

with an estimated value of hundreds of millions of pounds a year.

However, the arrival of visitors in such numbers brings challenges such as land speculation and overdevelopment, which India must address through a sustainable approach to tourism - while the visitors themselves owe it to the wildlife that they love to spend their money in a responsible way. Iulian Matthews is the founder of TOFTigers.



TIGERS