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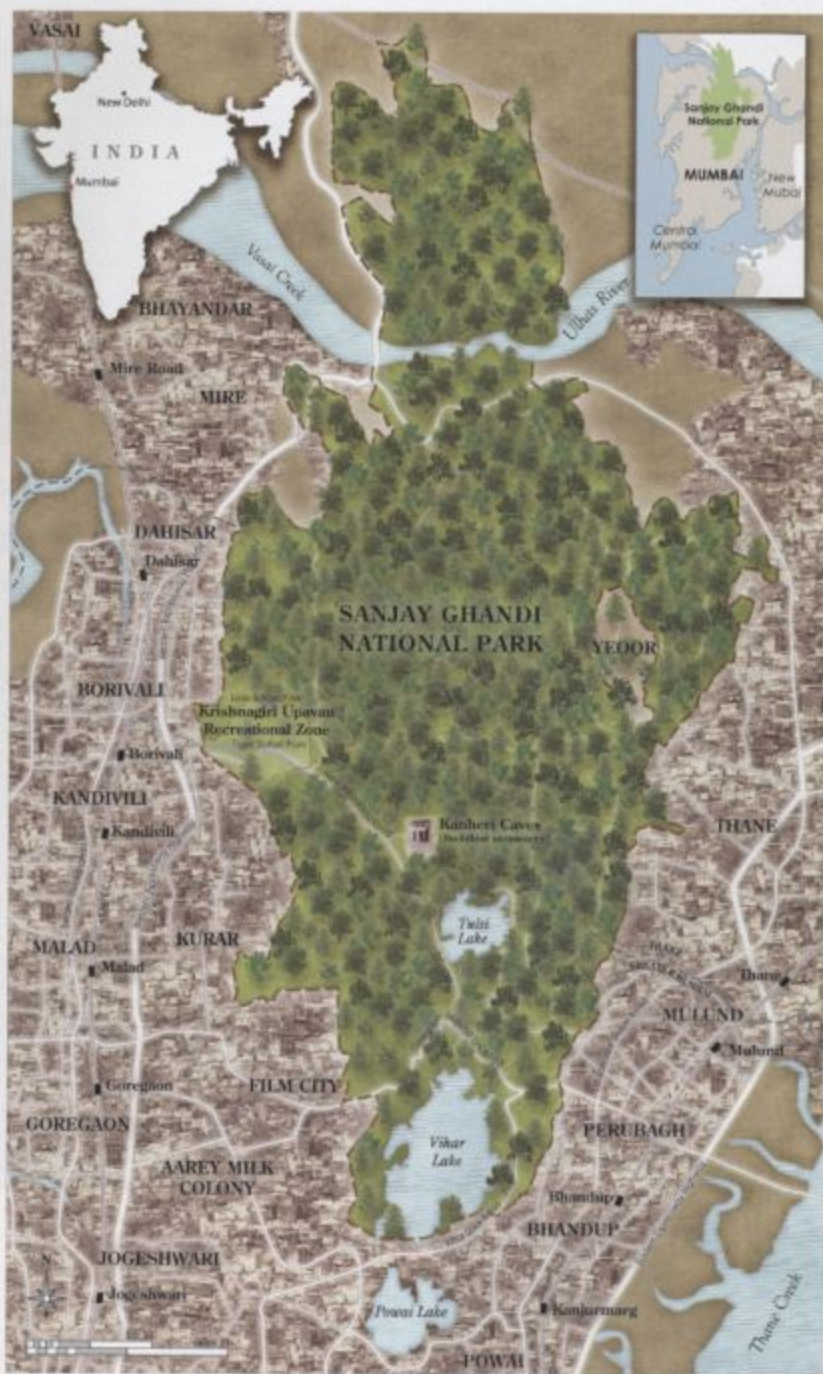


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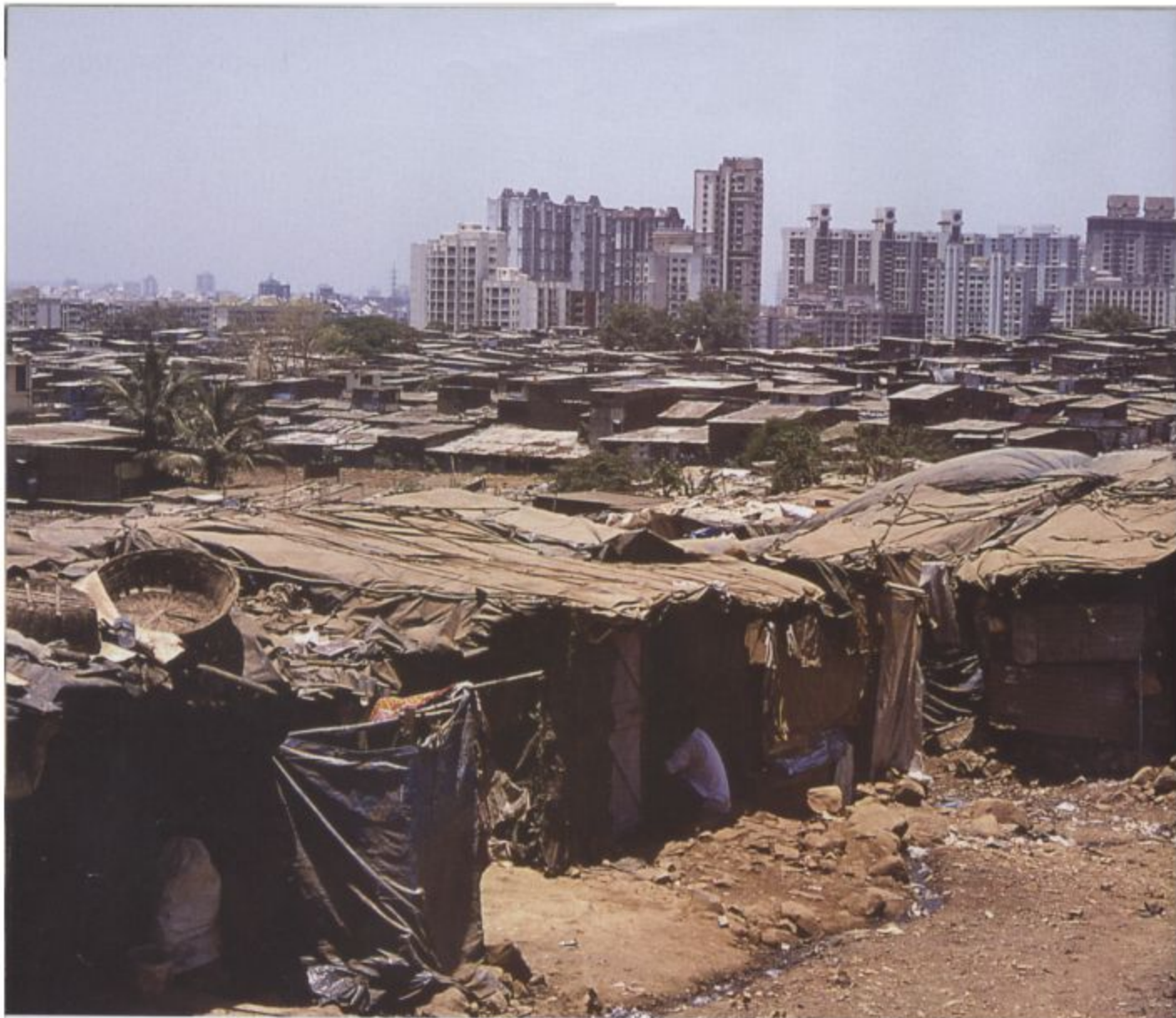


MAN-EATERS OF MUMBAI



- 50 PEOPLE KILLED SINCE 2000
- 23 LEOPARDS CAUGHT ROAMING THE CITY
- WORLD'S HIGHEST LEOPARD DENSITY

It sounds like a film pitch for the nearby Bollywood movie industry. The leopards of Mumbai's Sanjay Gandhi National Park have started leaving the reserve and attacking and killing the locals, prompting widespread fear among citizens and highlighting the pressures placed on the park by an ever-burgeoning city. But could short-sighted park management be to blame? **Clive Grylls** reports



Top: in 1999, 41,000 illegal huts were removed from the park. Today, 130,000 still remain, supporting a population estimated at more than 100,000; **Above:** relatives and neighbours of a leopard-attack victim at the site of the attack. In the past five years, 51 people have been killed and 34 injured in attacks, mostly outside the park

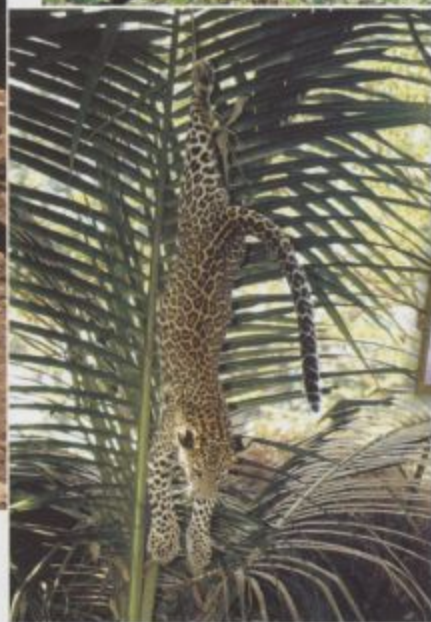
Every day for 15 years, at precisely 4am, 60-year-old Kuldeep Singh would leave his Mumbai home to hike alone along a steep, wooded trail that leads to a plateau overlooking emerald valleys and turquoise lakes. Once there, he would sit in isolation practicing yoga until dawn. It was a ritual that afforded him the solace to contemplate his working life as a busy advocate.

On 12 June 2004, however, Singh didn't make the daily walk alone – nor did he reach the plateau. Two thirds of the way up the trail, a stealthy, invisible assailant began to track him. Soon after, his life was brutally ended.

"When we found Kuldeep's body on a rock, his throat had been severed from ear to ear," says MK Chowdhury, a retired chemist and a friend of Singh's who happened to come along the path some 30 minutes later. "Immediately, I went

down for help, and when I came back, his body had been dragged down a ravine and his upper leg had been eaten to the bone. I cannot blame the leopard – it probably hadn't eaten for days. These hills now are bereft of its natural prey."

In the past five years, more than 50 people have died and many more have been mauled by leopards roaming wild in Mumbai, India's economic capital and most populated city – the world's fifth largest. The leopards stray from Sanjay Gandhi National Park (SGNP), commonly known as Borivali National Park, 103 square kilometres of jungle that lies surrounded by the city's overcrowded areas and desirable northern suburbs. The only large protected area to be located inside a major metropolis, SGNP holds more than 1,000 species of plant, 251 species of bird – more than in the entire UK – and 40 species of mammal. It



Top: illegal wood cutting is putting pressure on the park; Above: signs within the park warn of the danger; Left: a leopard caught by locals outside the park; Below left: guards were brought in to patrol the park in 2004



also boasts the world's highest density of leopards.

The park's two major lakes, Vihar and Tulsi, provide eight per cent of Mumbai's drinking water, while its forests act as a vital sink, absorbing the city's choking

pollution. Some call SGNP the "lungs of Mumbai", and without it, scientists believe the city would drown in its own poison.

Despite this, the park has always had its detractors, who argue that one of the world's fastest-growing cities – with little

room to expand and a chronic housing shortage – can ill afford to devote such a large area to nature. The park's real estate value, they counter, can be counted in billions of rupees and thousand of jobs created. Their rationale has always been that if a similar natural area existed within a major Western city it would have been quickly developed.

So, over the past 15 years, vote-hungry local politicians have allowed the park's integrity to be compromised. More than 60,000 slum dwellings – housing some 300,000 people – and 3,000 commercial buildings were built illegally within the park's confines over an area of 200 hectares. Meanwhile, chic high-rises have also sprung up along the park's

MUMBAI'S LEOPARDS

Right: Akash Sampat Bhandari, now ten years old, was attacked by a leopard five years ago in the settlement of Ambedkar Nagar, inside the park's southwestern boundary, suffering appalling head injuries;
Below: a young leopard is removed after straying into a garden outside the park



boundaries particularly in the past five years, to encircle it, thus removing what was left of its vital buffer zones.

CROUCHING SQUATTER, LEAPING LEOPARD

As humans encroached on its turf, so the leopard was forced to transgress the national park's increasingly porous boundaries. The populations of the leopard's natural prey – wild pig and chital deer – began to dwindle, victim to poaching and forest fires started deliberately to clear land. Faced with a food shortage, the world's most versatile felid took to hunting on the fringes of the slum villages, preying largely on the stray dogs that roam in packs among the

uncollected rubbish. A study of the SGNP leopards conducted by biologist Ravi Chellam for the Wildlife Institute of India concluded that, based on examinations of their scats, on average, feral dogs made up 60 per cent of their diet.

Hunting so close to human habitation has meant that some leopards have lost their natural fear of people, leading to incidents where children have been snatched from their homes while their parents slept. Other attacks, such as the one on Kuldeep Singh, seem to have been more opportunistic – Singh was simply in the wrong place at the wrong time.

In June 2004, as the monsoon season was starting, leopards killed ten people – by far the highest number of fatalities

Leopard factfile

- Leopards (*Panthera pardus*), also known as panthers, belong to the order Carnivora, family Felidae and sub-family Pantherinae
- The leopard is the most widely distributed of the large cats, with a range that covers Africa and Asia, including the entire Indian sub-continent and the Russian far east
- There are 20 subspecies of leopard worldwide. Africa is thought to be the species' origin. Migration to other parts of its range occurred 170,000–300,000 years ago
- Leopards are considered to be the most adaptable of all the large cats and can be found in a wide variety of habitats, from open plain and tropical rainforest to semi-desert and mountain forest
- Head-body length: 95–150 centimetres; tail length: 60–95 centimetres; height at shoulder: 50–60 centimetres; body weight: 25–90 kilograms
- Leopards vary greatly in body size and coat colour depending on where they live. Those found in drier areas tend to be smaller and have lighter coats
- The leopard's diet is the least specialised of all the large cats. They are able to live very successfully close to human habitation, substituting domestic animals for their natural prey, which can take in anything from beetles to antelope and deer three times their body weight
- Leopards have no recognised breeding season. Litters comprise two or three cubs born at two-year intervals. Cubs stay with their mother for their first year
- Home ranges of male leopards vary in size from 10 to 100 square kilometres, which they defend aggressively and which overlap with at least three females, whose territories are also exclusive from each other

for a single month since the attacks began. More importantly, most of the attacks occurred outside the park's boundaries, and the city's municipal and forestry officials – now faced with a crisis rather than a dilemma – were forced to act.

Expert trappers were brought in to catch the 'rogue' cats and bring them in alive (leopards are protected under India's strict wildlife laws, which cover even man-eating leopards). Such was their success that in the last six months of that year, 23 leopards – a high percentage of the park's total population – were trapped... and not in the park, but in the city.

The trappers' efficiency created another problem – how to tell which of the



captured leopards had turned into 'man-eaters'. Identification by DNA analysis wasn't an option as officials had neither the resources or the expertise.

OVERCROWDING CONCERN

At first it seems illogical that the rise in human deaths at the claws of leopards has occurred since 2000 – and that it's risen sharply since a state-sanctioned reduction in human encroachment into the park. Before 2000, animal-human conflict in the park was rare, even though the leopard population was just as high. In 1997, a High Court Action granted the Forestry Department the authority to evict illegal squatters, which they carried out between 1997 and 1999, reducing

slum dwellings by two thirds and closing all industrial businesses in the park. Given that the human disturbance in the park had been reduced, why then have the attacks on humans increased so sharply over the past five years?

Most experts agree that one of the root causes for the trend was the closure by the building boom of important corridors that had previously allowed leopards to migrate and disperse to other suitable habitats. Hemmed in by development, young leopards seeking to establish their own territories had little choice but to move into industrial grounds and even gardens on the park's periphery.

"The major driver for leopards leaving the park is not people but other

leopards, because the park cannot sustain enough territories to support them," says Ravi Chellam of the Wildlife Institute of India. "At best it can only hold six or seven leopards."

Incredibly, between 2001 and 2004, annual censuses placed the mean leopard population within the park at 38. And these surveys didn't take into account the cats that have established territories beyond the park perimeter.

During these years, leopards at large that were reported by the public were routinely trapped and released back into the core area of the park, irrespective of whether an attack on a human had occurred in the vicinity of where the animal had been caught. ■

MUMBAI'S LEOPARDS

Leopard-conservation hot spots around the world

The leopard is the most widely distributed of all the large cats, and its ability to adapt to almost any environment, including man-made ones, such as sugar fields and tea plantations, has meant it has fared a lot better than its larger cousins, the lion and the tiger.

In sub-Saharan Africa, they are still locally common and their numbers may exceed 200,000. In India, it's generally thought that their population may be as high as 14,000. In Southeast Asia, their numbers are far less secure, and from Myanmar to Indo-China, they exist only in fragmented local populations, cut off by loss of habitat and human persecution. In Malaysia – where good forest still exists – they may be common, but there has never been a census to record numbers in Southeast Asia.

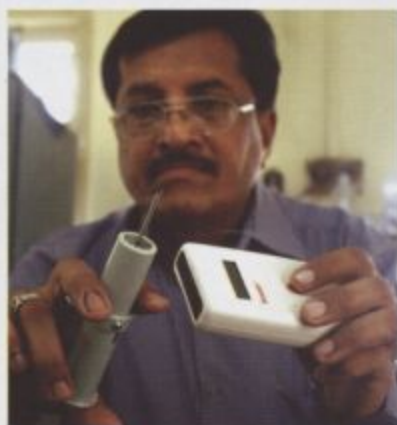
Leopards are, for the most part, nocturnal and extremely secretive, making reliable censuses virtually impossible.

"There has been relatively little scientific research on the leopard. Funding organisations have shown little interest in projects, which puts off potential researchers," says Peter Jackson of the Cat Specialist Group, an association of more than 200 of the world's leading wild cat experts.

The leopard is classified as vulnerable in the IUCN Red List of Threatened Species and is afforded Appendix 1 status under CITES, which bans international commerce in a species that, if traded, might face extinction. Despite this, leopards in India and Southeast Asia are still being heavily poached for their skins and body parts, which are smuggled into the Tibet Autonomous Region and elsewhere in China to be used in traditional medicines and clothing. In August last year, the Environmental Investigation Agency and the Wildlife Protection Society of India found leopard skins for sale and many locals wearing costumes adorned with freshly killed leopard and tiger pelts that had been acquired from India in the past two years. In the Chinese town of Linxia, in one street alone, 60 whole snow leopard pelts and 160 leopard skins were openly on display, despite China being a full signatory to CITES.

The rarest cat in the world, the Amur leopard, found only in the Russian far east, and numbering only 30–40 individuals, also faces a daunting future as a result of an oil pipeline that will bisect its only territories. WWF is campaigning to have the pipeline re-routed and is working with the local community to raise the cat's profile.

Earthwatch (UK) has just launched a project in the Wasgamuwa region of Sri Lanka to conduct a census of the country's endemic leopard subspecies, and reduce the friction between the cats and farmers whose livestock they consider to be prey.



Top: captured leopards are often kept in very small cages; **Above:** Dr Batwe, the park veterinarian, shows off new equipment to be used to insert and read microchips that will allow leopards to be identified in the future

Chellam argues that this policy of local translocation may be another cause of the sudden 'spike' in leopard attacks over the past five years. Leopards have a very acute homing instinct, and once caught and translocated to another area have been known to travel hundreds of kilometres back to the territory they had established before they were trapped.

"At 103 square kilometres, the park is just a small island. So if you catch a leopard outside of it and put it in the middle, for a leopard it's a leisurely two-

hour amble to return to where it came from," says Chellam.

A further problem arises, Chellam says, when a leopard returns to its former territory to find it occupied by another transient juvenile looking for its own territory and who has moved into the vacant territory only hours after the original leopard was trapped. Studies in Africa and other parts of India have shown that when this has occurred, the behaviour of leopards suddenly becomes stressed, with attacks on humans much more likely to occur. It's for this reason that the translocation of leopards has been discontinued in most other areas around the world. In India, however, it's still the commonest way of dealing with 'problem' animals.

Injured or pest leopards caught in other parts of Maharashtra, the state of which Mumbai is capital, are taken to the park's specialised rescue centre for veterinary rehabilitation. Many observers have accused park authorities of allowing SGNP to be used as a 'dumping ground' for the rehabilitated leopards, now reliant upon humans for sustenance and no longer fearful of them.

"There seems to be a suggestion that prior to the attacks that occurred in June 2004, when the park's troubles were at their highest, that leopards caught in other parts of the state were released into the park," says Chellam.



Above: a leopard captured outside the SGNP is released back into the park; **Right:** during the last seven months of 2004, 27 leopards were caught outside the park

This charge is strongly denied by AR Bharati, the recently retired park director. "Let me make it very clear that leopards brought in from outside were never released into SGNP. They are all in the rescue centre in cages," he tells me unequivocally.

However, when I went to photograph the caged leopards, the present director, Dr Munde, refused permission. He also prevented me from interviewing the park's chief veterinary officer, Dr KD Batwe. "Why would you want to interview him?" said Munde. "His only job is to feed the animals." In truth, Batwe would have had to supervise every leopard release in the park.

CATS, COVER-UPS, CONTROVERSY

Two sets of figures that I obtained collating the leopards caught, released and held captive in the park for 2004 differ in vital areas. The first figures, given to me by Munde, show that of the leopards caught that year, ten were released back into the park and that nine were held captive in the rescue centre.

Figures given to me by PS Yaduvenu, Munde's manager, were seven and 12 respectively. Both are supposedly official Department of Forestry figures for that year. Mysteriously, the figures show that



no leopards were trapped for three months leading up to the escalation of attacks in June and only one leopard was released – even though in previous months in 2004 and all through 2003 there had been regular trappings and releases.

When I emailed Yaduvenu and asked him for figures for 2004, detailing the dates and numbers of leopards transferred to the rescue centre from other forestry divisions and whether any of these animals were ever released, I received no answer. Environmentalists and scientists alike believe that there is a cover up.

At a meeting of the State's Wildlife Advisory Board in October 2005, the principal chief conservator of forests stated that no more releases of captured leopards would be made in Maharashtra. "The problem is that no-one really knows whether this policy will be implemented

since the Forestry Department never shares routine information with the public," says Bittu Saghal, editor of *Sanctuary*, India's leading wildlife periodical.

A 'study project' recommended by the Ministry of Environment and Forests and set up by the Bombay Natural History Society in November 2004 to place the remaining leopards in SGNP under a continuous monitoring regime involving the use of microchip insertion, DNA sampling and scat analysis, has stalled through lack of funding.

Today, there are 25 leopards in Mumbai's national park. Although last year there were only two reported fatalities, if leopard numbers increase, they will again move out of the park to establish new territories. Without proper scientific management of the park there is bound to be another deadly upsurge in leopard-human conflict.

Further information

WWF India: wwfindia.org

Cat Specialist Group: catsg.org

CITES: cites.org

Earthwatch UK: earthwatch.org

City Forest: Mumbai's National Park by Sunjoy Monga, whose photographs appear in this story, features 200 images from SGNP. This 160-page hardback book is published by India Book House and is available from amazon.co.uk for £30

