

# SWEAT BEHIND THE STRIPES

*A week with 'Project Tiger' in Rajaji*



*By Jennie R. B. Miller*

“Aamgaddi male, Mundal female, Mithawali male,” Sunit flipped through the photographs like trading cards. In each photo, a tiger’s flank displayed prominently against the dark jungle, the orange and black stripes illuminated by the camera’s flash. The time, date and camera ID were stamped boldly across the bottom of the photo as statistics of the tiger’s “capture” and would be used to calculate the tiger population of the Rajaji National Park in Uttarakhand. Since 2010, two-dozen researchers like Sunit Das have joined the National Tiger Assessment and scoured the jungles of 39 tiger reserves with one aim: to document and protect the world’s largest remaining meta-population of tigers.

To get an insider’s perspective on the high profile National Tiger Assessment of India, I spent a week in March 2011 with the Project Tiger team in Rajaji. Based at the Chilla gate on the

eastern side of the park, the team stayed comfortably in a Forest Department guesthouse but wrestled daily with the undulating terrain of the Shivalik foothills of the Himalaya. I joined them for daily transects and camera trapping, often leaving before sunrise and returning in the afternoon, dust-covered and hungry from the morning’s work.

Early in my visit, one thing became clear: the researchers that form India’s Project Tiger team are reverently dedicated to saving the tiger from extinction. Many of them recent college graduates, they have foregone traditional career paths, company bonuses and urban luxuries to brave the forests of India in pursuit of an animal that is part reality, part fantasy. “Since I was a child I’ve wanted to work on tigers,” says Sanskruti Marathe, her eyes alive with excitement, “This is like a dream come true.”

## DEDICATED TO THE CAUSE

Aspirations can quickly dim when the daily grind consists of dusty jeep rides and steep climbs to remote locations to check camera traps. Yet the week that I spent with Sanskruti, Sunit and their team in Rajaji was filled with banter, laughter and fervent enthusiasm that climaxed whenever a tiger was caught on camera. The latest technology for studying carnivores, camera traps are digital cameras equipped with movement or infrared heat sensors to automatically snap a photo “capture” when an animal passes. Each trap site is set with two cameras facing one another in order to capture photos of the unique spot or stripe profile on both sides of an animal, thus enabling its identification. Cameras are laid in two kilometre grids over rough terrain that researchers must check every few days in

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case the equipment malfunctions or is destroyed by elephants (see box on page 55). Combined with carnivore sign surveys, ungulate transects and vegetation plots, the work demands early mornings, long days and hours of walking.

But with 1,700 of the 3,500 world's wild tigers surviving in India, the Project Tiger team members consider themselves lucky to have been chosen for the work. In January 2010 dozens of researchers were trained at the Wildlife Institute of India (WII) and released in small teams into the tiger reserve network across India. Their task: capture as many tigers on film as possible in 45 days. Collaborating with the Indian Forest Department, the researchers lived in field stations to check cameras and conduct transects in all kinds of weather, pausing only during the monsoon when the roads became impossible to navigate. In the monsoon months, they returned to WII to rest and analyse the data they had collected. "In Bandhavgarh, we had to go out at noon in the blazing heat to ensure the traps were checked before dark," Sanskruti recalls, "It was like that from March through May—I don't know how we managed to finish."

### RIGOURS OF THE FIELD

The day after I arrived, the group elected me to join teammate Anil Dashahre and three assistants to check cameras in the Amgad Rao area, their highest trap site both in terms of tiger movements and, literally, the elevation. "Good place for tiger signs," they urged, and I, eager to learn, naively jumped at the opportunity. We left the field station at 10 a.m. with the sun burning brightly, and ventured out on foot after a 20-minute roller coaster jeep ride through thick grass and rocky river beds. Five minutes in, we nearly bumped into a herd of elephants grazing ahead in the mixed forest, their trunks quietly plucking leaves from the branches. "*Hathi—jao!*" our assistant Bhuda commanded and we rapidly retreated to the opposite hillside.

Anil directed our course as we trekked over pugmarks, scat and bones – tiger, leopard, hyena, jackal, porcupine – and I began to see the forest as a 'crime scene' of wildlife interactions, riddled with signs of survival and mortality. Plains turned to mountains and I quickly found myself scrambling up boulders

and tree roots. We reached the highest camera trap by 1:00 p.m., panting from the effort, only to be greeted by a camera of empty scenes, triggered by shaking tree branches. Anil simply shrugged—a typical day in the work for Project Tiger. We descended, disheartened but determined, and painstakingly made our way downstream through the tangled vegetation to the comfort of a bumpy return jeep ride and a late lunch of *dal* and rice that awaited us at the field station.

### YOUNG GREEN WARRIORS

Like most Project Tiger researchers, Anil has worked in multiple reserves, shifting every few months into a new team once the camera trap regime was complete. Anil has studied the tiger populations of Tadoba-Andhari, Sariska and, now, Rajaji. Sanskruti worked in Bandhavgarh prior to joining him in Sariska and Rajaji. Backed by such field experience, they form the emerging generation of Indian ecologists who, with their landscape-based approach, see the forest for the trees. Though the National Tiger Assessment focusses on the tiger, the top carnivore serves as a keystone



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Project Tiger teams evaluating tiger populations across the country work in extremely harsh conditions. Long days, endless walks and little or no rest are the norm. The author joined a team in Rajaji to understand the inner workings of the process and was treated to countless sightings that only a frequent visitor to a forest can experience. She began to fully understand the joy of finally capturing a tiger *Panthera tigris* (facing page) on camera after many days of waiting and was able to spot some of the park's other prolific wildlife such as this herd of nilgai *Boselaphus tragocamelus* (above) peacefully grazing in a quiet patch of forest.



species whose protection benefits smaller carnivores, prey and plant species and thus the entire ecosystem.

The team's research background reflects the biodiversity that their project aims to preserve: Sanskruti previously studied human-wildlife conflict and bats, Anil trained in botany, Sunit worked on ungulate ecology and their fourth teammate, Nilanjan Kundu, researched biodiversity in sacred groves. Put together, their varied talents and knowledge represents the 'ecosystem approach' necessary to keep species alive in a human-dominated landscape such as India.

The Project Tiger team in Rajaji is one small piece of a burgeoning worldwide effort to strengthen tiger conservation efforts. In November 2010, the Year of the Tiger, leaders of the 13 tiger range countries gathered at the Tiger Summit in St. Petersburg, Russia, to discuss strategies to conserve the 3,500 individuals still living in the wild. This meeting was recently followed by an International Conference on Tiger Conservation in March 2011 where India announced a 20 per cent rise in the tiger population, from 1,411 individuals in 2006 to 1,706 in 2010. The latest count includes some landscapes that were not surveyed in the previous study yet the 2010 report stands as a testament to expanding research efforts and increased on-the-ground anti-poaching efforts throughout the country.

### CONSERVATION LEADERS IN THE MAKING

On my last day at Rajaji, the team received a call from their Principal Investigators, Dr. Y.V. Jhala and Dr. Qamar Qureshi at WII, "Time's up – pack it in and head back to town." In under two months the team had captured photos of seven adult tigers and two cubs, evidence that the population had grown since previous years. With the mission accomplished, most of the team looked forward to the company and comforts of civilisation awaiting them in Dehradun but a few were disappointed that the field adventure was ending. "I've been having a great time. With experience from this research I plan to continue on to do my PhD on carnivores," said Nilanjan.

I met up with Sanskruti a few days later at WII, where she had begun analysing data from Rajaji and from surveys in other tiger reserves. Lazily sipping *chai* and wearing a skirt and heels, she hardly looked the part of a researcher working on camera traps in elephant country. "When I first started fieldwork," she told me,

The fate of countless animals such as this Black-headed Oriole *Oriolus larvatus* (top) is intrinsically linked to that of the tiger and the census figures collected by the team will go a long way in ensuring that these forests are effectively managed. Counting tigers however, is not easy. A tired field assistant checks a camera (middle) in the hope that not all the images will be blank. Researchers also have to battle damaged equipment such as this broken camera (above) that can be expensive and a logistical nightmare to replace.



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Rajaji is home to an incredibly diverse population of butterflies including this blue tiger butterfly (above) resting on a plant.

“my parents couldn’t handle the thought of me working all day in the sun. Now when I tell them that I was charged by a tusker male, they hardly care. They simply say, ‘You can take care of yourself, Sanskruti.’”

After just a week at Rajaji, it was clear that the deepest impact of Project Tiger lies not in the tiger trend lines but in the impassioned youth who, raised in a culture of increasing environmental awareness, have grown up infused with a desire to

### ELEPHANT DAMAGE

“One step and he smashed the whole machine!” Sunit lamented as we stood over a shattered camera trap. We had arrived at the site to find the camera in pieces, its plastic cover splintered and wooden protection post bent a few metres away. As if to mock our attempts, the culprit had left us a pile of dung besides the damage. With 12 cameras of the total 40 destroyed in two months, the team had run out of spares and would have to proceed with a single armed camera at certain sites until they soon received backup machines from headquarters at WII.

Of all the logistical challenges with camera traps including damage from humidity and sun, stolen units from poachers and malfunctioning devices, elephants are by far the costliest threat. Spooked by the flash, the animals throw or step on the units, smashing the fragile machines with ease. Cameras range from \$70-500 (Rs. 3,400-22,500) per device and with two cameras per trap, each including batteries and a SIM card, elephants can damage more than \$1,000 (Rs. 4,500) in a single visit. To protect the traps, researchers across Asia and Africa have designed protective cases of plastic, wood and metal, painted in camouflage and adorned with spikes. Though the amount of damage has dropped, the search continues for a fully elephant-resistant model.

preserve and protect India’s remaining wild lands. Project Tiger has shaped rising generations into nature docents, wildlife photographers, hikers and amateur birders. Many have defied conventional expectations and left engineering, medicine and law to hit the trail and combine on-the-ground science with activism to save India’s endangered wildlife.

From the Indian vulture, Ganges river dolphin and Bengal tiger to orchids, herps

and butterflies, young researchers are persevering in the field to learn and to defend India’s wild nature. Fuelled by a taste for the wilderness, these rising leaders will carry the Project Tiger mantle through what promises to be very difficult times ahead. They will stay inspired for, in Sanskruti’s words: “Once you catch a glimpse of the king, you can’t forget that power and dominance. It’s our job to ensure that things stay that way.” 



WII

Elephants *Elephas maximus*, such as this herd (above), are often the culprits behind ruined camera trap systems. Spooked by the flash, they smash the gadgets, costing the researchers thousands of rupees in destroyed equipment. Twelve out of 40 cameras were trampled by the pachyderms in Rajaji alone, leaving the team crippled until reinforcements arrived from the Wildlife Institute of India.