

BI-MONTHLY OUTREACH JOURNAL OF NATIONAL TIGER CONSERVATION AUTHORITY

GOVERNMENT OF INDIA

St rip e s

Volume 1 Issue 3

Mar-Apr 2010



STATUS



STRATEGY

CHALLENGES



CITES

INITIATIVES



FIRST PERSON

PROJECT TIGER: Amount Released during 2009-10

(As on 31.03.2010; Amount in INR lakhs)

Tiger Reserve	State	Total Amount Released to Tiger Reserve	Amount released to State for 2nd All India Tiger Estimation	Total Amount Released to State during 2009-2010
Nagarjunsagar	Andhra Pradesh	94.9100	43.34366	138.25366
Namdhapa	Arunachal Pradesh	14.6200	1.23000	64.71000
Pakke	Arunachal Pradesh	48.8600		
Kaziranga	Assam	165.0000	7.70000	194.29000
Manas	Assam	-		
Nameri	Assam	21.5900		
Valmiki	Bihar	8.0000	0.85600	8.85600
Achanakmar	Chhattisgarh	1,193.5000	44.80320	1,383.50320
Indravati	Chhattisgarh	42.1500		
Udanti-Sitanadi	Chhattisgarh	103.0500		
Palamau	Jharkhand	110.7350	6.40360	117.13860
Bandipur	Karnataka	164.1970	9.59000	657.06200
Bhadra	Karnataka	128.0870		
Dandeli Anshi	Karnataka	144.3700		
Nagarhole	Karnataka	210.8180		
Periyar	Kerala	151.8000	30.26000	311.42000
Parambi Kulam	Kerala	129.3600		
Bandhavgarh	M.P	159.9600	159.91020	2,582.47620
Kanha	M.P	280.1800		
Panna	M.P	175.8950		
Pench	M.P	158.3200		
Sanjay Dubri	M.P	145.8400		
Satpura	M.P	1,502.3710		
Melghat	Maharashtra	155.1850	5.64000	373.51700
Pench	Maharashtra	75.8720		
Tadoba-Andheri	Maharashtra	131.8200		
Sahyadri	Maharashtra	5.0000		
Dampa	Mizoram	2,171.0000	-	2,171.00000
Satkosia	Orissa	127.7300	51.66000	221.74000
Simlipal	Orissa	42.3500		
Ranthambhore	Rajasthan	10,560.0000	-	10,694.17000
Sariska	Rajasthan	134.1700		
KMTR	Tamil Nadu	138.4550	17.80000	258.35400
Mudumalai	Tamil Nadu	51.8540		
Anamalai	Tamil Nadu	50.2450		
Corbett Tiger	Uttaranchal	241.7050	4.50000	246.20500
Buxa	West Bengal	38.5800	0.23500	298.78500
Sunderbans	West Bengal	259.9700		
I) Dudhwa	U.P	285.9570	17.08000	431.51700
II) Katerniaghata	U.P	128.4800		
Total		19751.99	401.01166	20152.99766

Corrigendum: The error on page 8, Stripes Jan-Feb 2010 issue is regretted. It should read 'In August 2009' instead of '2000'

**Challenges**

Nagarjunasagar Srisailam tiger
Pg 5

Volume 1
Issue 3
Mar-Apr
2010

Strategy

M-STRIPES - Monitoring system for Tigers
Pg 8



Status Panna's success story
Pg 10

Challenges

The Similipal landscape
P12

**Initiatives**

Monitoring Tigers in Kaziranga National Park
Pg 14

EDITOR

Dr Rajesh Gopal
Member Secretary NTCA

EDITORIAL

CONSULTANT
Ananda Banerjee

CONTENT COORDINATOR
Inder MS Kathuria

FEEDBACK

Annexe No 5
Bikaner House Shahjahan Road
New Delhi
stripes.ntca@gmail.com

Cover photo
Nanak Dhingra

BI-MONTHLY OUTREACH JOURNAL OF NATIONAL TIGER CONSERVATION AUTHORITY

GOVERNMENT OF INDIA

S t r i p e s

— n o t e f r o m t h e e d i t o r —



Tiger numbers evince considerable interest and rightfully so. In the recent past, there have been suggestions from several quarters for setting targets to double the tiger number in range countries as a part of the Global Tiger Recovery Programme. Howsoever, convincing and catchy this may appear, the suggestion is unrealistic, fraught with practical field problems which are bound to make this unachievable.

India has around 32,000 sq.km. of tiger forests under Project Tiger as core areas. These encompass the six major landscapes within the country having the source populations of tiger. Thanks to Project Tiger, these populations are still viable. The ecologically unsustainable land uses outside such source areas is a major bottleneck for the survival of the spill over tigers from core habitats. Due to this, the man-tiger conflicts are increasing in many tiger districts leading to targeted / non-targeted killing of tigers. Therefore, the need



of the hour is to secure and expand the inviolate space (habitat) for tiger, which can be the best target for the future. As has been our experience since 1972, tiger responds very well to managerial interventions aimed at protection. Given the short gestation of 90 to 100 days, securing and expanding inviolate areas would lead to increase in tiger numbers without man-tiger interface complications. The situation in many tiger range countries may not be much different from India. Therefore, an over enthusiastic projection in tiger number without

ground truthing for the feasibility of securing inviolate space, would make the 'number centric target' counter productive by fostering more conflicts between the tiger and people. This would go against the cause. If the temptation for numbers cannot be resisted, then at the most, it should be projected as a possible realistic outcome of an attainable target of inviolate space.

Dr Rajesh Gopal
Member-Secretary, NTCA

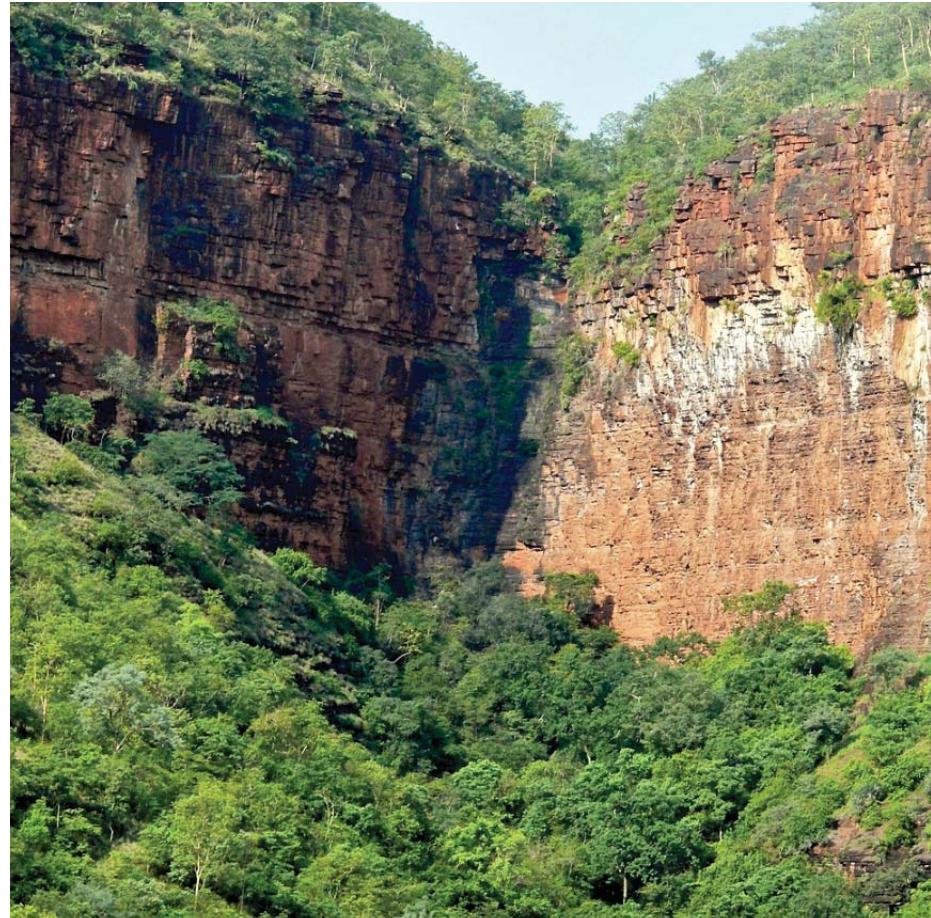
NAGARJUNASAGAR-SRISAILAM TIGER RESERVE

Extracts from a rapid appraisal report of conservation status of Nagarjunasagar - Srisailam Tiger Reserve by Praveen Bhargav, Shekar Dattatri and Ajay Desai for NTCA

While India's Western Ghats have garnered tremendous national and international attention, the same cannot be said of the Eastern Ghats, despite their incredibly rich biodiversity. Nagarjunasagar - Srisailam Tiger Reserve (NSTR) in the Nallamalla Hill Range, an offshoot of the Eastern Ghats, has the potential to be one of India's finest Tiger Reserves. Freed from 16 years of armed extremist domination, the Reserve is in urgent need of infrastructure, increased staff strength and capacity building. This report is the result of a rapid appraisal carried out from September 9th to 15th 2009 for the National Tiger Conservation Authority (NTCA).

Area and extent: Encompassing an area of 3,568 sq km spread over five Districts of Andhra Pradesh, NSTR is India's largest Tiger Reserve. In 2007, an area of 2527 sq km of the TR was notified as 'Inviolate Area'. In addition, a contiguous area of forest of 1140 sq km, called the Gundla Brahmeshwaram Sanctuary (GBM) - to the south of NSTR - has been proposed as core/ critical tiger habitat. GBM is entirely devoid of human settlements and is therefore an extremely valuable addition that needs to be notified as a Core/Critical Tiger Habitat at the earliest.

Topography and fauna of NSTR:



Hilly terrain cloaked in tropical mixed dry deciduous forest is characteristic of this picturesque Tiger Reserve, which also boasts of plateaus and valleys, gorges and escarpments.

The Krishna River runs through the TR for 130 km. The faunal diversity is remarkable to say the least, and includes tiger, leopard, wild dog, striped hyena, Indian wolf, sloth bear, spotted deer and sambar as well as four species of antelope, namely Nilgai, Blackbuck, Chinkara and Chousingha.

Present status of habitat and status of tigers, co-predators and prey:

The overall quality of the habitat, particularly in the Core/Critical (inviolate) area appears to be good. Encouraging signs of tigers, leopards and wild dogs were observed. Frequent sightings of prey animals in some parts of the TR indicate the potential for long-term persistence of tigers, and provides ecological justification for investments in the NSTR landscape.



Members of the AP Govt's elite anti-naxal force - 'Greyhounds' - on patrol along the periphery of NSTR.

The team's vehicle, as well as NSTR vehicles, were able to move around the reserve without an armed escort. This would not have been possible about 18 months ago due to Naxal presence in the park.

A unique feature:

We would like to draw special attention to the unique fact that NSTR and GBM are connected to, and contiguous with, a mosaic of Reserve Forests and PAs that extend all the way south to the Sri Venkateshwara National Park in Chittoor District. The combined area of this tract, spanning a length of approximately 350 km from north to south, and comprising over 13,000 sq km of mixed deciduous forest and southern tropical thorn scrub, presents an extraordinary opportunity for conservation. The forests and grasslands here are home to rare and endangered species such as Jerdon's courser, Great Indian bustard, Asian elephant and the red sanders tree. The AP Forest Department

has already started planning the linking up of these areas, and needs to be supported and encouraged in implementing this plan.

NSTR - problems and solutions:

The Reserve has several chronic problems, which need to be either resolved or mitigated. Here we present a summary of our findings and recommendations based on our field assessments.

CRITICAL

CONSERVATION ISSUES:

Staff strength & Infrastructure: The Tiger Reserve is grossly understaffed at all levels given its vast extent. Due to the breakdown of administrative machinery during the 16 years of naxal domination, protection



infrastructure in the Reserve is severely crippled. There are no anti-poaching camps, no firearms, no patrolling vehicles and no wireless network. Lack of staff quarters and monetary incentives are major hurdles in attracting and retaining quality personnel.

Dual responsibility: Officers and staff of NSTR are saddled with numerous territorial duties that take their focus away from the task of managing the Tiger Reserve.

Lack of coordination: Several other government departments, including the Integrated Tribal Development Authority (ITDA), appear to be working at crosspurposes with the Forest Department, exacerbating the problems of the Reserve through ad hoc developmental activities that are often incompatible with tiger conservation.

Development activities that are poorly planned and/or which do not follow the terms and conditions stipulated are also creating problems in the Reserve.

Township: The irrigation township of Sundipenta in the heart of NSTR is expanding at an alarming rate. If left unchecked,



The sprawling landscape. Over 200 Chenchu have been employed as 'Tiger Trackers' and 'Protection Watchers', but their wages have not been paid for over ten months due to bureaucratic delays.

its cancerous growth could pose a big threat to the Reserve in the future. Already, the biotic pressures exerted by the combined population of Sundipenta and the temple town of Srisailam (about 25,000) are said to be considerable.

Encroachments: Encroachments in the Nagarjunasagar Division (northeast extreme of NSTR) have severely fragmented the habitat, which is already fragmented by the presence of the Nagarjunasagar reservoir. Encroachments are also present elsewhere. Some illegal settlements by fishermen along the Srisailam Reservoir bring disturbance and anthropogenic pressures to undisturbed areas of NSTR.

Pilgrimage: Several lakh pilgrims visit the Shiva Temple at Srisailam as well as several other smaller temples and shrines in the Reserve every year. While a large number of vehicles ply on the highway through the forest

posing a risk to wildlife, an even larger number of people choose to walk up to the temples through the forest, causing disturbance to wildlife and posing a major fire hazard during the dry season.

Cattle: A large resident cattle population (reportedly 50,000 - 100,000) in and around NSTR and the influx of migratory cattle on a massive scale (reportedly 300,000 +) from June to October and again in the dry season is a major problem. Competition for scarce resources (water and fodder), threat of disease, disturbance to large areas of NSTR and potential for retaliatory killing of cattle-lifters are the major problems posed by these cattle.

Timber smuggling: The park management estimates that approximately 2100 plus cubic metre of timber is extracted illegally for house construction and manufacture of agricultural implements annually. There are

an estimated 1500 carpenters involved in making these items outside NSTR. These goods are apparently sold in the open at an annual fair in Tartur Village, where people from Karnataka and Maharashtra, as well as locals, visit to buy them. There are said to be several hardened gangs and cartels involved in this trade, which the management is hard-pressed to counter effectively.

In addition, fuel wood collection and lopping of trees to provide fodder for cattle and goats is exerting a huge pressure on the trees.

Poaching: Poaching of prey species and small game remains a un-quantified threat; targeted poaching for tigers has also been recorded in the past. Illegal fishing, estimated to be around 2400 plus tons annually, is also threatening the aquatic species, which include many endemic fishes, otters and Marsh Crocodile.

Conflict: Human-wildlife conflict is prevalent in and around the reserve and this could result in increased animosity towards conservation, and in retaliatory killing of wildlife.

HIGH PRIORITY

RECOMMENDATIONS:

Staff strength: State Government must urgently increase officer and staff strength and initiate capacity building to establish a credible and effective protection mechanism.

Dual responsibility: State Government must unburden the Field Director and Divisional Forest Officers of NSTR from all Territorial Division duties so that they may focus their energies exclusively on managing the Tiger Reserve. Ideally, key NSTR officers presently leading the recovery process must be

retained for at least two more years to ensure consolidation of gains achieved and continuity.

Protection Force: In lieu of the proposed armed Special Tiger Protection Force, the sensitization/utilization of the elite Greyhounds (Police) force under an appropriate coordination protocol - or joint command - should be carefully considered.

Infrastructure: NTCA must immediately provide adequate funding for creating/rebuilding protection infrastructure, including staff quarters,

Relocation: State Government / NTCA must fast-track the process of relocation of around 1100 families living within the core/critical tiger habitat with necessary funding, including the 16 crore rupees already deposited by user agencies.

Coordination: State Government must ensure primacy of Forest Department amongst government agencies operating in the NSTR landscape to ensure proper management. Conservation of Tiger Habitat must be made the main administrative objective.

dawn for all vehicular traffic.

Township: State Government must identify and shift all unnecessary infrastructure and human artifacts out of Sundipenta Irrigation Township, which is situated on Reserved Forest land.

Tiger Conservation Plan: NTCA must critically evaluate the new Tiger Conservation Plan by referring it to an independent panel of ecologists /conservationists to determine ecologically prudent short /medium/long-term management objectives.

Science: AP Forest department must establish a rigorous sampling based monitoring program for estimating tiger, co-predators and prey populations within the notified core/critical habitat by a competent independent institution, with participation of appropriately trained NGOs/amateur naturalists.

Alternatives: Alternate materials for agricultural implements and house construction material for local people should be found and encouraged so as to minimize timber removal from the forest. Alternate sources of energy for cooking and other needs need to be explored and encouraged to minimize dependence on fuel wood from forests.

Income generation: The State Government must encourage education, alternate sources of income and livelihoods, income enhancing mechanisms, etc. for the local populace so as to minimize peoples' dependence on forests. Such dependence is severely eroding the landscape's ability to provide key ecosystem services like water catchment and climate moderation, which are critical to people locally and regionally.



A very recent photo of a tiger in NSTR by A.K.Naik, FD of Nagarjunsagar Srisailam TR,

permanent anti-poaching camps, appropriate patrolling vehicles and a wireless network.

Nodal authority: State Government must empower the Chief Wildlife Warden as the senior-most nodal officer to interface with the NTCA, in order to streamline the administration of the TR.

Notification: State Government must immediately complete the process of notification of the 1140 sq km GBM Sanctuary as a Core/Critical tiger habitat, as agreed before the NBWL.

Road diversion: The Guntur-Kurnool State Highway that now divides NSTR and GBM Sanctuary and runs through the forest for 30 km is a horrendous death trap for animals, resulting in hundreds of roadkills every year. An excellent alternative highway already exists between Kunta and Kurnool via Giddalur that involves an additional distance of a mere 25 km. The State Government must take steps to immediately divert all heavy vehicles through this alternative highway. Further the State Highway through the forest must be closed between dusk and

M-STRIPES

MONITORING SYSTEM FOR TIGERS' - INTENSIVE PROTECTION AND ECOLOGICAL STATUS

Field Protocols & Customized Software for Analysis, Mapping & Inference
National Tiger Conservation Authority - Wildlife Institute of India - Zoological Society of London



MICHAEL VICKERS

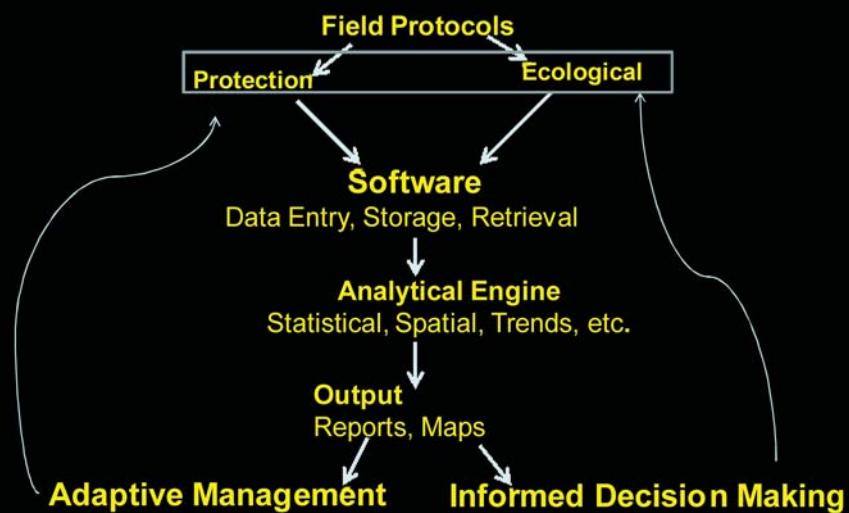
AIMS

- Assist in effective patrolling and protection
- Evaluate status and trends of carnivores and ungulates at regular intervals
- Monitor habitat change
- Evaluate human pressures
- Generate reports to provide quantitative information for management effectiveness assessment and decision making

SYSTEM FEATURES

- Provide user friendly Field Protocols (inc training and material, data quality control), Data Storage and Report Generating Tool
- Administered and maintained at protected areas, landscapes, States and NTCA
- Captures detailed information on population status and trends, animal mortality, illegal activity, human pressures, patrol effort, habitat status for monitoring and guiding management
- Provides a comprehensive GIS and statistical tool for processing and reporting information needed for conservation and management purposes

M-STRIPES



FIELD PROTOCOLS & EQUIPMENT

- Phase I Data collection
 - Carnivore Sign Survey
 - Ungulate Line Transect
 - Human Pressure Assessment on Plots on Transects
 - Ungulate Dung on Plots on Transects
 - Habitat Status on Plots on Transects
- Fixed Location PIP's (track plots) for Tigers (min. 5 in each beat monitored once a week)
- GPS Units (or PDA's) and Data Collection Forms
- Training of Tiger Reserve Staff in Data Collection and Software Entry

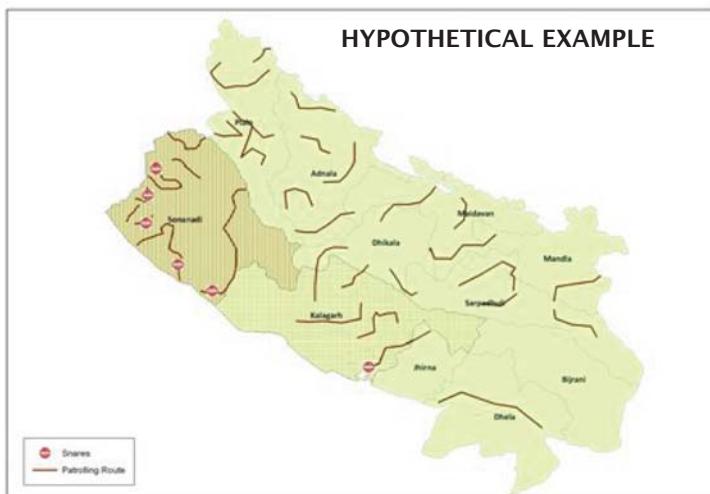


Tiger / Carnivore Sign Survey

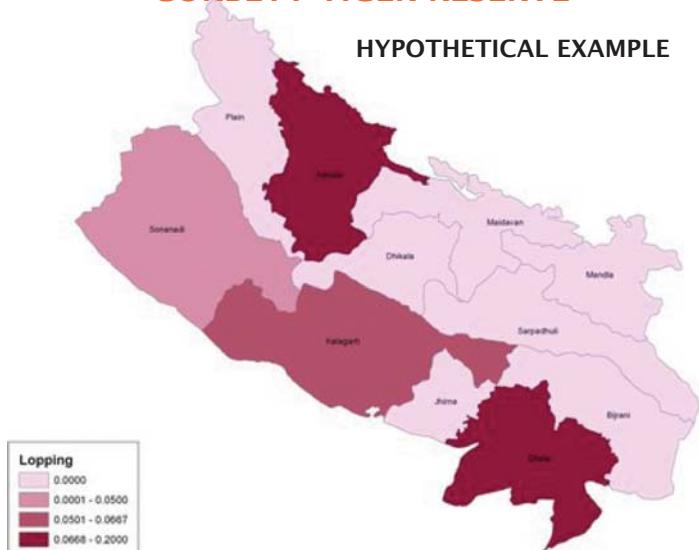


- Intensive search for tiger / carnivore sign
 - 3-5 searches each of 4-8 km
 - Minimum 15 km search in most likely areas in each Beat
 - Record distance covered and time spent in each search

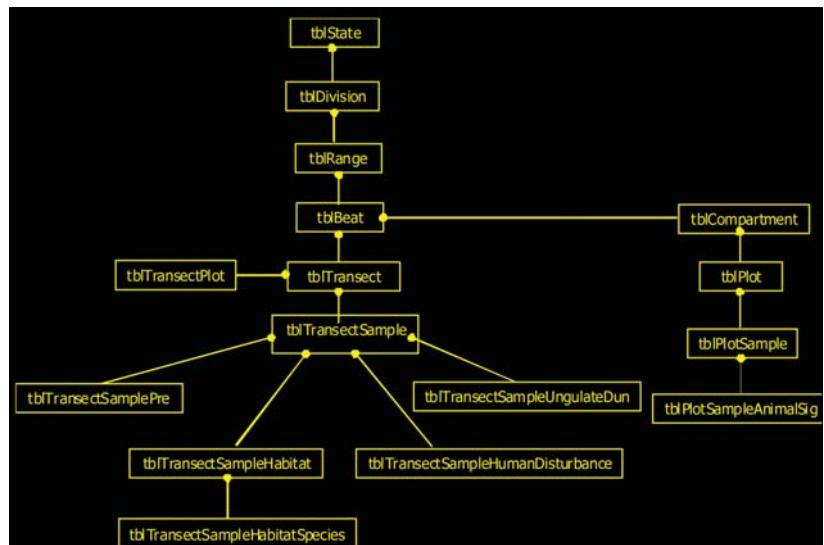
SPATIAL MAPPING AND TRENDS OF ILLEGAL ACTIVITIES



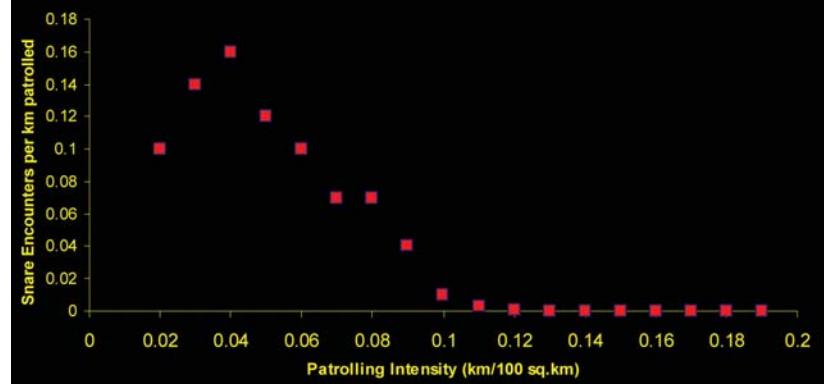
HUMAN DISTURBANCE IN CORBETT TIGER RESERVE



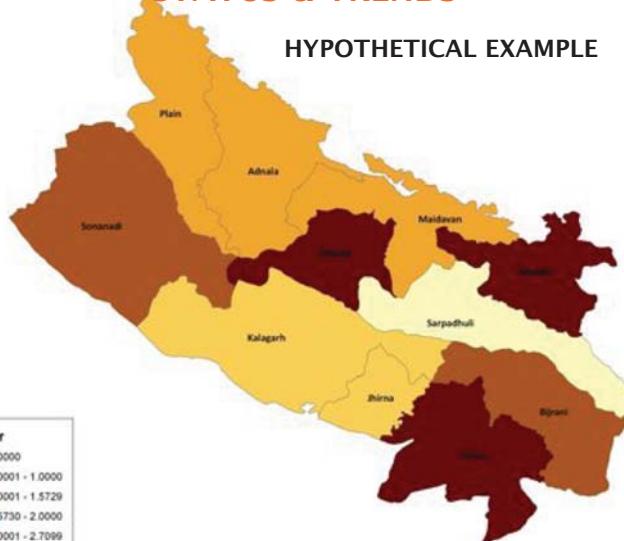
AN ENTITY RELATIONSHIP DIAGRAM



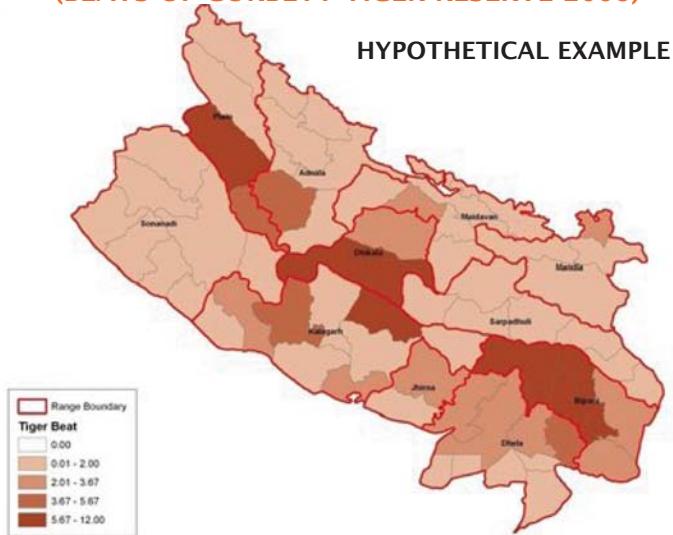
Patrolling Intensity VS Illegal Activities



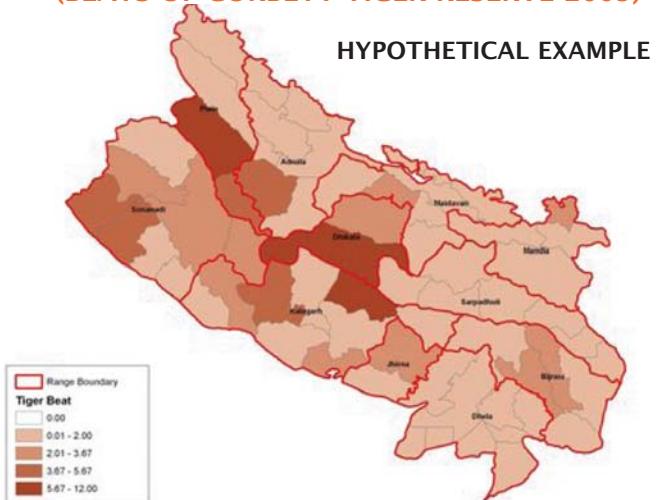
SPECIES DISTRIBUTION, STATUS & TRENDS



TIGER SIGN ENCOUNTERS (BEATS OF CORBETT TIGER RESERVE 2006)



TIGER SIGN ENCOUNTERS (BEATS OF CORBETT TIGER RESERVE 2009)



SYSTEM PROCESS

- Computes adequacy of sampling effort and advises to sample more if required statistical power is not achieved
- Conduct Spatially Paired Statistical Comparisons
- Conduct Trend Analysis (Regression)
- Interpret Results at Appropriate Spatial Scales (Beat, range, 10x10 km Grid, Circle and State) both Statistically and Biologically
- Output User Friendly Results as Maps and Tables

APPLICATIONS

- Monitoring population status, trends, and spatial occupancy
- Mapping of illegal activities and their trends
- Guiding Park Management for patrolling - spatially and in intensity
- Mapping and trend analysis of human impacts
- Understanding interrelations between above parameters
- Export of data for in-depth analysis in desired format
- Entry, Analysis, Interpretation, and use of Phase I data at field level
- Ready reports at desired spatial & temporal scales and for evaluating management effectiveness and guiding decision and policy making

TABLES FOR CARNIVORE OCCUPANCY ESTIMATES

Spatial Scale	Occupancy estimates (Season / Year)				
	Tiger	Leopard	Dhole	Hyena	Etc...
Beat ID-1	0.10	0.09	0.10	0.09	...
Beat ID-2	0.12	0.05	0.12	0.05	...
Beat ID-3	0.07	0.09	0.07	0.09	...
Beat ID-4	0.06	0.34	0.06	0.34	...
Beat ID-5	0.03	0.23	0.03	0.23	...
Beat ID-6	0.18	0.14	0.18	0.14	...

TABLES FOR CHANGES IN CARNIVORE OCCUPANCY

Spatial Scale	Change in Occupancy (Year 1 – Year 2)				
	Tiger	Leopard	Dhole	Hyena	Etc...
Range 1	↓	↔	↓	↓	...
Range 2	↔	↑	↔	↓	...
Range 3	↔	↔	↔	↔	...
Range 4	↔	↔	↔	↔	...
Range 5	↔	↔	↔	↔	...

↓ = > -20% negative change
 ↑ = > +20% positive change
 ↔ = no significant change
 ↑ = no sighting data

INDIA leads Range States to Agreement with the European Community on Tiger Conservation at CITES



Coming into the 15th Conference of the Parties to CITES, Sweden, on behalf of the European Community, had submitted a proposal for the revision of Resolution Conf. 12.5 on the conservation and trade in Tigers. Considering the vigorous objections raised by some range States to the proposal, the United Kingdom, on behalf of the European Community, entered into negotiations with the range States in an attempt to achieve consensus on the revision. While India was in agreement with the spirit of the most of the recommendations made by the European Community, it had some concerns regarding the proposal. In particular, it shared China's reservations about a specific reference to compliance measures being incorporated in the resolution and the onerous reporting requirements that the proposal sought to impose on the range states, especially considering the fact that many range states were not able to comply with even the current reporting requirements.

India however was extremely

[keen] that the language regarding "operations breeding tigers on a commercial scale", taken from Decision 14.69 from the 14th Conference of the Parties, be retained, either through incorporation in the Resolution, or through the continuation of Decision 14.69. China objected to this on the grounds that it was outside the scope of the Convention, despite the fact that the 14th Conference of the Parties had voted this through with a comfortable majority.

After prolonged deliberation and dialogue between India, China, the United Kingdom, the CITES Secretariat and the other range States, a consensus position was eventually achieved. Based on this consensus, a revised proposal was put forward by the United Kingdom, on behalf of the European Community, and this proposal was adopted unanimously by the Conference of the Parties without any objections. The salient features of this consensus position are that:

- Decision 14.69 dealing with "operations breeding tigers on a commercial scale" will be retained

as it is.

- the specific reference to compliance measures will not be incorporated in the resolution

- the reporting requirements have been reworded so as to take into account range States concerns.

- A new paragraph encouraging Parties to provide financial and technical assistance to range States has been incorporated in the Resolution.

this position ensures that the hard fought victories from the 14th conference of the Parties have not been lost, strengthens the enforcement related aspects of the Resolution and takes range States concerns into account. As such, it seems to be a win win situation for all.

Additionally, the United States proposed the adoption of a decision, directing the Standing Committee to update the information contained in the new Annexes I-III of the Resolution, and report back to the 16th Conference of the Parties, as it was out of date. The conference adopted this decision unanimously as well.



Panna's new generation above.
Facing page inset is the male tiger

Panna's Success Story

First mile stone of success in Tiger Reintroduction programme

By **R.Sreenivasa Murthy** (CHIEF CONSERVATOR OF FORESTS AND FIELD DIRECTOR,
PANNA TIGER RESERVE)

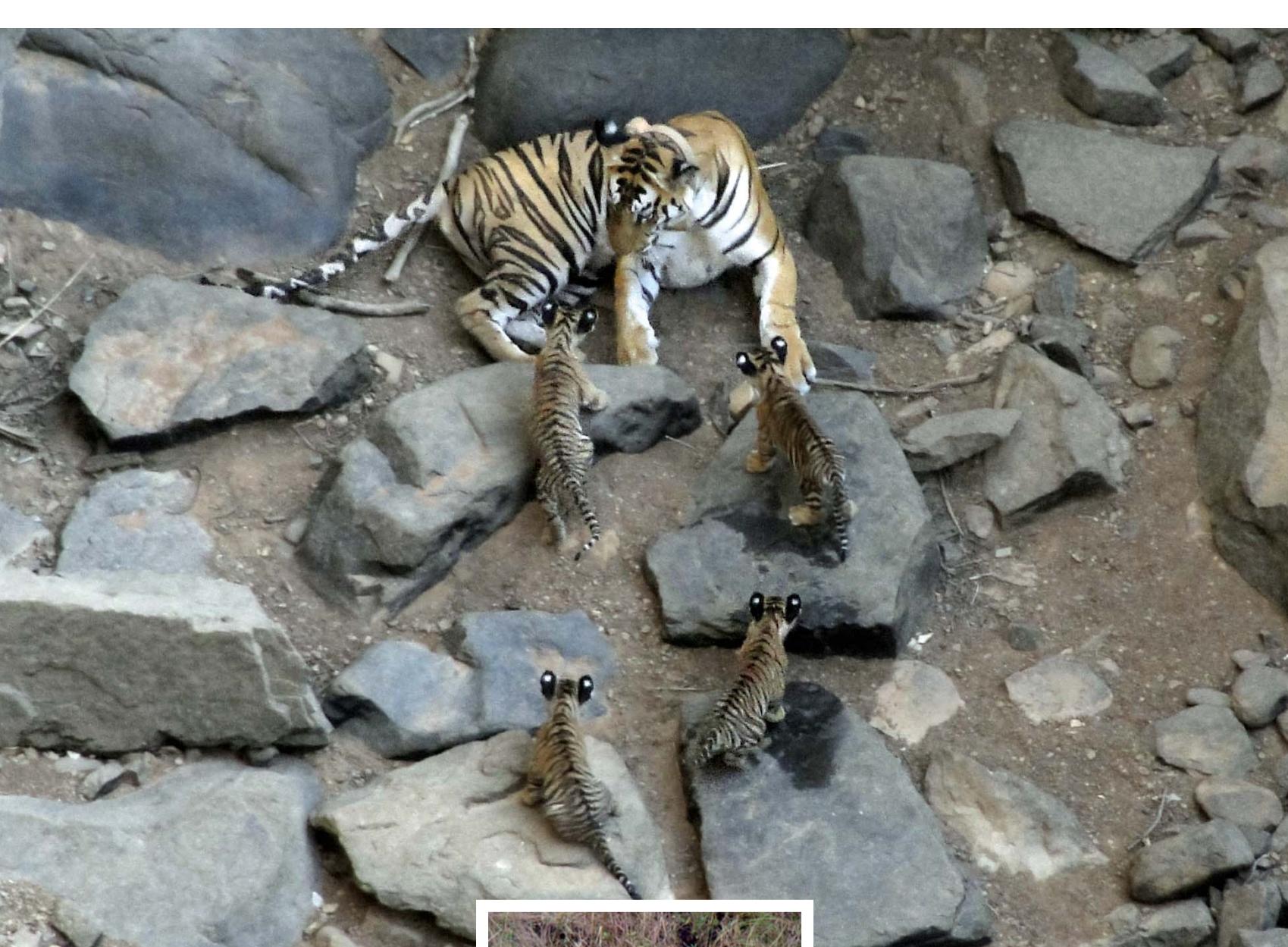
Panna Tiger Reserve has achieved its first mile stone of success in Tiger Reintroduction programme.

Tiger Reintroduction programme of Panna Tiger Reserve was initiated in March 2009 with reintroduction of two females from Bandhavgarh and Kanha Tiger Reserves. Females' settlement in Panna National Park was not that arduous. A male

tiger was brought from Pench Tiger Reserve (Madhya Pradesh) in the month of November 2009.

But the tiger reintroduction programme hit a major road block when this male tiger after staying inside the park for around 10 days moved out of the park in the contiguous forests of Chattarpur, Damoh and Sagar districts. It travelled in southern direction for most of the time and traversed around 400km. Tracking of this

male tiger in new terrain was a herculean task (where the GPS radio collar fitted to the tiger malfunctioned). A contingent of more than 70 people led by Field Director camped outside the park and finally with the help of expert veterinarians from Wildlife Institute of India, brought him back on 26th December 2009. During this travelogue the male tiger crossed human habitations, highways and railway lines



effortlessly without being seen for most of the time. Out side the park, protection of the tiger was a major issue. But the team's efforts and a bit of luck helped. This straying out by male tiger is attributed to 'homing' instinct of wild animals and this is the first time this theory was experienced in the case of a tiger.

Mean while all the three reintroduced tigers are monitored and given security on 24x7basis. It was in the first week of April 2010 that based on the restricted movement pattern and behavior of the tigress brought from Bandhavgarh, first signs of she getting pregnant was noticed by the management and the location of this tigress was isolated from



disturbance due to tourism etc., Based on our observation and daily monitoring records it can be said with certainty that this tigress delivered on 15/16th of April 2010. But this news got

confirmed on 7.5.10 when she shifted the cubs for the first time. Initially only 3 cubs could be counted due to the bushy nature of the site. But latter verifications yielded four cubs. Thus with the arrival of four cubs Panna Tiger Reserve has touched its first milestone of success in Tiger Reintroduction Programme. As on date all the cubs and the tigress are doing fine.

Tiger Reintroduction Programme at Panna Tiger Reserve, Madhya Pradesh Forest Department is technically supported by Wildlife Institute of India, Dehra Dun and WWF-India, New Delhi and financed by National Tiger Conservation Authority, New Delhi.

Extracts from a rapid field assessment of conservation status of Similipal Tiger Reserve by Bivash Pandav, Suresh Kumar Mishra, S. P. Yadav and M. D. Madhusudan

A committee was set up by the National Tiger Conservation Authority on 14th July 2009 to visit Similipal Tiger Reserve and undertake:

- (1) An appraisal of the damage to infrastructure/habitat due to leftwing extremism;
- (2) Assessment of present status of tiger, co predators and prey animals, and protection efforts; and
- (3) Provide suggestions for restoring the area and eliciting local support to strengthen protection.

Accordingly, the committee undertook a field visit between 1st and 8th August 2009 together first hand information for an appraisal. During the visit, the committee met a wide range of people including field protection staff, senior officials of Similipal TR and the Orissa Forest Department, senior officials of the civil administration, local villagers and civil society organizations. The committee solicited their views, as appropriate, on the status of the reserve, the threats it faces, and its management challenges. The committee also visited several sites in the core and buffer zones of Similipal TR, which had recently witnessed attacks by left wing extremists. Recent efforts to assess the status of tigers and their prey in the reserve were also reviewed.

The committee found:

1. extensive damage to vital park

The Similipal landscape



Log house at Jenabil Range before (top) and after (bottom) the extremist attacks.

management infrastructure including range and beat offices, forest antipoaching camps, communication networks, and also,

to the morale of park staff. As an inevitable consequence, reserve protection has slackened and threats from poaching and



Range office at Chahala which was blown up and burnt down during the extremist attacks.(top) and (bottom) Destroyed staff facility in Joranda

smuggling have grown stronger, but there are sincere efforts by the reserve management to re-establish presence and control on the ground.

2. reliable reports on recent presence and activity of tigers both in the core and buffer zones of the reserve, and signs of large mammalian prey, but no quantitative tiger or prey population assessments were possible. There are strong indications that the status of the wild dog is extremely precarious in Similipal TR, and may even be locally extirpated.

3. serious challenges faced by the reserve in managing its relationships with local communities along its fringes as well as inside the reserve itself.

The reserve and civil administration need dedicated professional/technical support immediately to engage seriously with local communities in and around the park, and particularly, to complete the long pending process of resettling four villages from the core zone.

4. Several issues pertaining to staffing policies and human resource management practices of the tiger reserve and state forest department. While seeming like small and routine issues, they have

the potential to seriously hamper effective management of the reserve.

Based on its extensive learnings, the committee recommends that:

1. with transitional support from a larger, competent paramilitary force, the NTCA must help Similipal secure its park staff, rebuild its damaged infrastructure, and strengthen measures against poaching and timber smuggling. This deployment must take a few serious caveats into account, and be in consonance with larger state and central policies of dealing with left wing extremism.

2. alongside measures such as the deployment of a transitional paramilitary force, serious affirmative steps must be taken, based on a sound understanding of the local sociocultural contexts, to regain support of local communities. The very constructive attitude of both the civil and forest administration in this regard must be strongly backed by the NTCA.

3. The park's current system of monitoring tiger pugmarks on pugmark impression pads, while remaining an important tool for local monitoring of tiger distribution and activity, cannot provide reliable population estimates. Well designed photographic capture recapture surveys should be the method of

choice to estimate tiger numbers. However, a very sincere outreach effort is necessary, mainly on the part of NTCA to help states transition from pugmarkbased censuses to camera trapping sample surveys, and this must be carried out as a genuine partnership between agencies providing technical expertise and park managements.

4. a serious knowledge based effort, with professional support from technically competent agencies, must be commenced through the assistance of NTCA to help understand local communities in and around Similipal. This understanding should guide the identification of candidate villages for relocation and for locally appropriate strategies to alleviate resourceconflicts between people and the reserve. Such an agency is crucial in facilitating greater coordination between the forest and civil administrations to make voluntary relocations fair and speedy.

5. the range of administrative and human resources management related issues pertaining to Similipal Tiger Reserve, and State Forest Department must be decisively resolved, if necessary, by soliciting help from the highest levels of state and central administration.

MONITORING TIGERS IN KAZIRANGA NATIONAL PARK

The overall goal of this project is 'Long term conservation of source population of tigers in the Kaziranga National Park through intensive monitoring and ensuring habitat connectivity to nearby tiger inhabiting areas.'

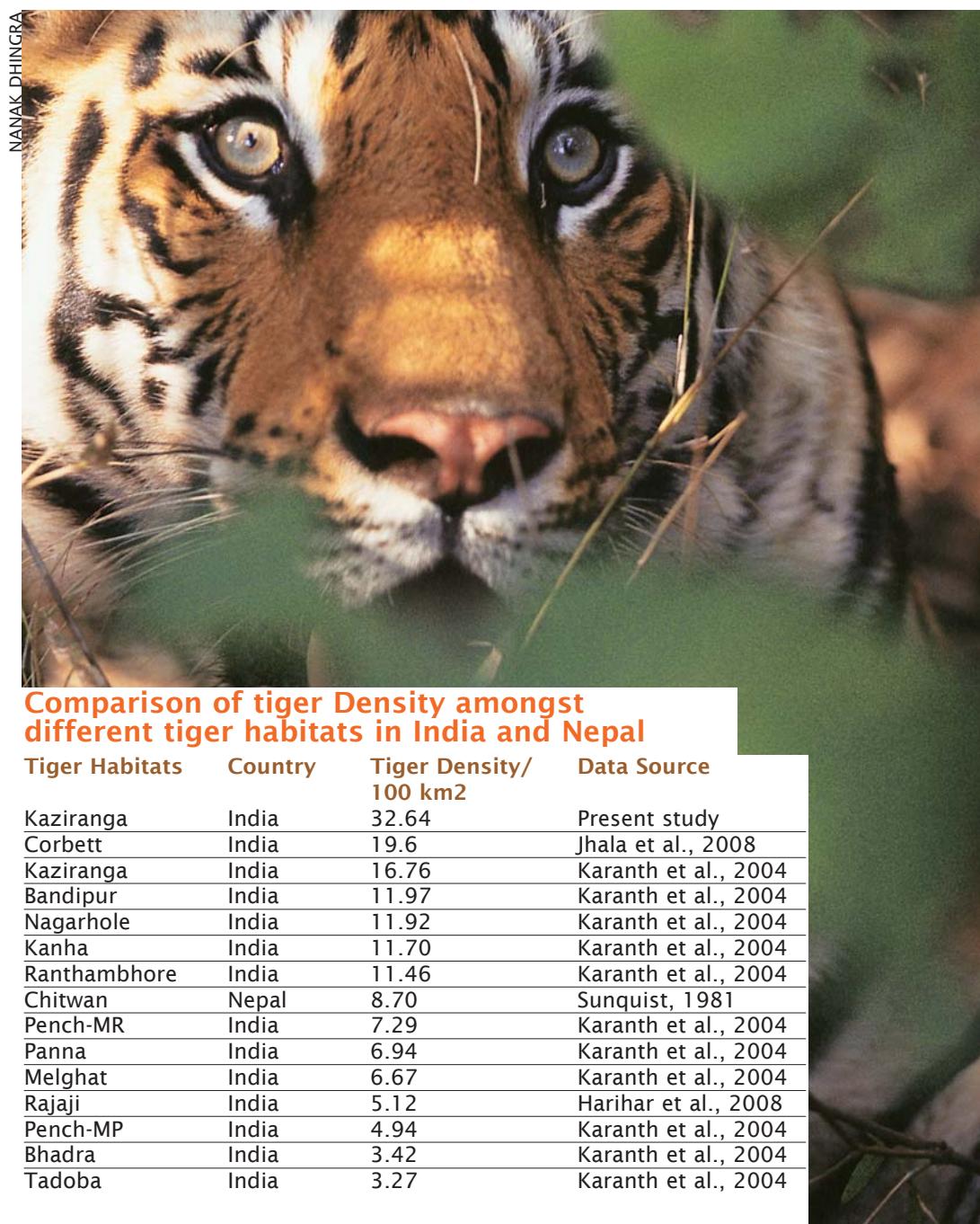
The study was spread over 50 days during January-March 2009 and camera trapping was carried out at 50 trap locations in two blocks in the park. For data analysis the survey duration was divided into 25 sampling occasions. The total sampling effort realized was 1250 trap-days. The effort yielded 249 photographs (of both flanks taken by two facing cameras) out of which 242 were used for analysis (cubs below one year of age and poor quality photographs were discarded).

Individual tigers have their unique pattern and are easily identified by comparing the stripe pattern (Karanth and Nichols, 2002). Based on the unique stripe pattern 38 individual tigers were identified in the sampled area. The 38 individuals included 20 females, 15 males and 3 individual of unknown sex.

This is the second study to address the population of tigers and prey animals and their ecology in the Kaziranga National Park. Karanth and Nichols (1998) estimated the density of tigers in the park as 16.8 tigers / 100 Km² that is considered one of the highest in the world.

Considering the high density of tigers, human-tiger conflict on the fringe areas of the park may go up and suggest that the management take necessary steps to minimize such conflicts.

Excerpts from a report prepared by M Firoz Ahmed, Jimmy Borah, Chatrapati Das, Ajit Basumatary, R. N. Sarma, D. D. Gogoi, S. N. Buragohain, N. K. Vasu, B. K. Talukdar, Y. V. Jhala and Q. Qureshi





STRIPESmail



I am very grateful to receive the journal and elated to be in your mailing list. Being from Nagpur, (which I believe is the heartland of the most important tiger belt in the world) I can vouch for every word written about Pench and Tadoba. Just like the tigernet website, this journal also comes across as an honest tool which has not used politically correct diplomatic language but taken the bull by its horns. Tiger has a fighting chance and I wish all the best to NTCA.

Sir, my home in Nagpur is just 30 Km away from Bor sanctuary which is estimated to have about 5 tigers and it always brings me a smile to know that!!

**Vedang V. Bakshi
Mumbai**

Please communicate my deep appreciation to the authorities concerned for bringing out such a wonderfully documented magazine.

**Arin Ghosh
Former Director, Project Tiger**

Thanks for sending this wonderful newsletter.

**Asad R. Rahmani
Director, BNHS-India**

Thank you for the excellent issue of STRIPES ! It is very informative and I really enjoyed reading it.

With best wishes

**Belinda Wright
Executive Director, Wildlife Protection Society of India (WPSI)**

Please keep me in the mailing list of this excellent journal.

Please also let me have the plan allocations for each tiger reserve for 09-10 and if already allocated that or proposed for 10-11

**A.K.Mukerji
Former DGF**

The STRIPES product is quite fascinating, specially once you get beyond the photographs. I found the piece on the NCTA initiatives over the last three years the most fascinating piece as well as the back cover. It confirms what you were telling me...NCTA has initiated a lot of relevant things that will begin to show results soon. The more promising ones of the NCTA initiatives to me were:

The anti poaching activities, including the STPF. Enhanced Village rehab package. Scientific methodology for population and prey estimation. The notification of core tiger habitats for 30K sq Kms. The pursuit of illegal trade via CITES, at least once with China, Nepal and Russia. The creation of a wild life crime data base with TRAFFIC.

I would love to learn more about the tri-partite MOU system with States Nepal India MOU; Protocol with China; reports due 20 Oct 2009 from TRCs re CITES 14.69 and 14.65; and what are the specifics of the second issue re infrastructure (out of the four listed). I was also fascinated by the back cover, which provides a much needed and rounded off answer to Why tiger. Looking forward, I am wondering about the merits of undertaking a task to better quantify the back cover page; and strengthening the effort to report in STRIPES these major initiatives and identifying states/reserves achieving real results. I do believe that telling the full India story - including progress on these initiatives and plans to deal with the four issues, will be a valuable addition to the global knowledge exchange that has been triggered by GTI, and in which GTF could be a potential partner. With best wishes.

**Anand seth
World Bank**



It's almost 45 years I have been dealing with issues related to tigers and yet my knowledge is only peripheral. Such is the complexity of the issue. So I think that awareness, education and science are the most important tools to manage tigers.

A charismatic animal, the tiger has inspired many individuals and organisations to do their bit. Governments have spent large sums of money. NGOs have mobilised national and international funds and have highlighted the issue globally.

But it is a great challenge to save the tiger in India, a country of 1.2 billion people and over 700 million cattle. About 70 per cent of India's population is till earning less than one US dollar a day and therefore depend heavily on the natural resources available in the forests.

A section of people strongly believes that humans and tigers can co-exist. In the very recent past, it has been scientifically proved that tigers move away from human habitations. A solitary, elusive animal, the tiger requires sufficient space to breed and survive.

So while there are commendable efforts to spread awareness through publications, films and photography, to collate information regarding tiger mortality, to carry out seizures and anti-poaching operations or utilising the best scientific inputs regarding tiger biology or habitat, the basic question still remains: Are we really saving the tiger?

Very few look at the role of the forest staff. Till a decade ago, foresters were blamed for all debacles happening in the forests. Few of us tried to categorically emphasize that with 40 per cent vacancy in the frontline staff, an ill-equipped and over-worked force cannot tackle the free loot of forest resources.

Who saves tigers?

At the forefront of the battle, the ground staff needs all the support says P K Sen

NANAK DHINCRA



According to one estimate, Rs 40,000 crore worth of forest produce (including minerals) are extracted from India's forests annually. Around 50 frontline staff are seriously assaulted or killed in protecting the wilderness. But how many of us try to raise our voice to highlight the plight of the forest guard? They need immediate and sufficient logistical support.

I never faced any challenge from any naxal group. Even today, forest personnel enter naxal-affected areas from Dantewada to Palamu. Senior forest officials do not require protection to move inside forests while even a district-level police or administrative officer is escorted by security vehicles on our highways.

It is my considered opinion that failure on the part of administration to handle development activities and stop corruption has led to the present crisis. It cannot be blamed on foresters who only try to safeguard the country's natural heritage against severe odds. We need to change our mindset.

There is no shortcut in

conservation and let me prescribe an outline of a strategy for securing the future of the tiger.

- Dedicate two per cent of the country's land mass for the tiger and make this area inviolate.
- Emphasize education, awareness and science for better field results
- Recruit youth to fill frontline staff vacancies with a 10 per cent reserve strength for illness/leave/emergency etc.
- Appoint dedicated senior officers as range officers and above. Constitute awards/rewards to inspire field staff.
- Ensure specialized training of field staff in information gathering, anti-poaching and legal matters.
- Limit the field staff's daily shift to eight hours and give them legal protection.
- Create family station for frontline staff with education, health and other basic facilities.

Author was Director, Project Tiger, during 1996-2001 and Chief Wildlife Warden Bihar from 1994 to October 1996

LIST OF CORE AND BUFFER AREAS OF TIGER RESERVES IN INDIA, notified under the Wildlife (Protection) Act, 1972, as amended in 2006 (as on 06.04.2010)

Sl. No.	Year of creation	Name of Tiger Reserve	State	Area of the core /critical tiger habitat (In Sq. Kms.)	Area of the buffer /peripheral (In Sq. Kms.)	Total area
1	1973-74	Bandipur	Karnataka	872.24	118.27*	990.51
2	1973-74	Corbett	Uttarakhand	821.99	466.32	1288.31
3	1973-74	Kanha	Madhya Pradesh	917.43	NA	917.43
4	1973-74	Manas	Assam	840.04	2310.88	3150.92
5	1973-74	Melghat	Maharashtra	1500.49	NA	1500.49
6	1973-74	Palamau	Jharkhand	414.08	NA	414.08
7	1973-74	Ranthambore	Rajasthan	1113.364	NA	1113.364
8	1973-74	Simlipal	Orissa	1194.75	1555.25	2750.00
9	1973-74	Sunderbans	West Bengal	1699.62	885.27	3470.27
10	1978-79	Periyar	Kerala	881	NA	881
11	1978-79	Sariska	Rajasthan	681.1124	NA	681.1124
12	1982-83	Buxa	West Bengal	390.5813	367.3225	757.9038
13	1982-83	Indravati	Chhattisgarh	1258.37	1540.70	2799.07
14	1982-83	Nagarjunsagar	Andhra Pradesh	2527	NA	2527
15	1982-83	Namdapha	Arunachal Pradesh	1807.82	NA	1807.82
16	1987-88	Dudhwa (DNP 490.29 + Kishanpur WLS 203.4) Katerniaghat-(extension)	Uttar Pradesh	693.70	NA	693.70
	1999-2000			400.09	NA	400.09
17	1988-89	Kalakad-Mundanthurai	Tamil Nadu	895	NA	895
18	1989-90	Valmiki (Not received)	Bihar	840*	NA	840*
19	1992-93	Pench	Madhya Pradesh	411.33	NA	411.33
20	1993-94	Tadoba-Andheri	Maharashtra	625.82	1101.7711	1727.5911
21	1993-94	Bandhavgarh	Madhya Pradesh	716.903	NA	716.903
22	1994-95	Panna	Madhya Pradesh	576.13	NA	576.13
23	1994-95	Dampa	Mizoram	500	NA	500
24	1998-99	Bhadra	Karnataka	492.46	NA	492.46
25	1998-99	Pench	Maharashtra	257.26	NA	257.26
26	1999-2000	Pakke	Arunachal Pradesh	683.45	NA	683.45
27	1999-2000	Nameri	Assam	200	144	344
28	1999-2000	Satpura	Madhya Pradesh	1339.264	NA	1339.264
29	2008-2009	Anamalai	Tamil Nadu	958	NA	958
30	2008-2009	Udanti-Sita Nadi	Chattisgarh	851.09	991.45	1842.54
31	2008-2009	Satkosia	Orissa	523.61	453.25*	976.86
32	2008-2009	Kaziranga	Assam	625.58	548	1173.58
33	2008-2009	Achanakmar	Chattisgarh	626.195	287.822	914.017
34	2008-2009	Dandeli-Anshi	Karnataka	814.884	NA	814.884
35	2008-2009	Sanjay-Dubri	Madhya Pradesh	831.25*	NA	831.25*
36	2008-2009	Mudumalai	Tamil Nadu	321	NA	321
37	2008-2009	Nagarahole	Karnataka	643.35	NA	643.35
38	2008-2009	Parambikulam	Kerala	390.89	252.772	643.662
39	2009-10	Sahyadri (including Chandoli NP : 317.67 and Koyna WLS : 423.55) = 741.22 Total Area)	Maharashtra	741.22	NA	741.22

TOTAL

32878.36

11029.0781

44786.82

* Not yet notified. NA - Notification Awaited

Total core area notified (32878.36 - 840 - 831.25 = 31207.11 sq.km.)

Total buffer area notified (11029.0781 - 118.27 - 453.25 = 10457.5581 sq.km.)



A male tiger in the Bandhavgarh Tiger Reserve checks out one of the cameras used for this years census work. PHOTOS BY RUPA MUKHERJEE

THE NEW HOT SHOT PHOTOGRAPHER!

