

COMPENDIUM OF GUIDELINES, ADVISORIES & ORDERS



NATIONAL TIGER CONSERVATION AUTHORITY
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

Volume II
JANUARY 2020

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COMPENDIUM OF GUIDELINES, ADVISORIES & ORDERS

**Volume-II
JANUARY 2020**



NATIONAL TIGER CONSERVATION AUTHORITY
Ministry of Environment, Forest and Climate, Change Government of India

राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण

National Tiger Conservation Authority

(पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार के अंतर्गत सांविधिक निकाय)

(Statutory Body under Ministry of Environment, Forest and Climate Change, Govt. of India)

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Preface

National Tiger Conservation Authority has been constituted under the Wild Life (Protection) Amendment Act, 2006. Further section 38 O of the Act empowers to exercise the powers conferred on and to perform the functions assigned to it under the said Act for Tiger Conservation. Salient powers and functions of the National Tiger Conservation Authority as envisaged under Section 38O includes approval of the Tiger Conservation Plan, providing support to Tiger Reserve management, Evaluation and assessment of various aspects of sustainable ecology, Laying down normative standards for tourism activities & guidelines for Project Tiger and Approving & co-coordinating research and monitoring on tiger, co-predators, prey & habitat.

The National Tiger Conservation Authority, in the exercise of its powers and performance of its functions has issued certain directions, guidelines, protocols and Technical documents dealing with scientific management of Tiger Reserves in specific and tiger management in general. First Volume of Compendium released by National Tiger Conservation included all such Guidelines, Orders, Advisories, and notifications issued till 2010. Present volume of compendium not only includes all these important Guidelines, Protocols and orders issued after that, but also excerpts of certain judgments pronounced by Hon'ble Supreme Court and High Courts related to tiger reserve and tiger conservation.

I sincerely believe that this volume of compendium shall definitely help the officers in states while dealing scientific management of Tiger Reserves and other tiger bearing areas at landscape level.

(Dr. Anup Kumar Nayak)

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PART A:

IMPORTANT GUIDELINES, ADVISORIES & ORDERS



NATIONAL TIGER CONSERVATION AUTHORITY
Ministry of Environment, Forest and Climate, Change Government of India



Dr. RAJESH GOPAL
Additional Director General of Forest (PT) &
Member Secretary (NTCA)

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Shahjahan Road, New Delhi-110011
Telefax: 23384428
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F. No. 15-9/2013-NTCA

Dated the 5th September, 2013

To,

**The Additional Chief Secretary/Principal Secretary,
Forest Department,
All Tiger Range States.**

Sub: Posting and tenure of Field Directors of tiger reserves-reg.

Sir,

As you are aware, the status of protection and field implementation largely depends on the leadership shown by the Field Director. A Tripartite Memorandum of Understanding (MOU), linked to fund flows has also been implemented since 2009-10, between the National Tiger Conservation Authority (NTCA)/ Project Tiger (PT), State Government and the Field Director, to strengthen field delivery.

The issue was discussed in the 9th meeting of the National Tiger Conservation Authority held on 19th June, 2013, under the Chairmanship of the Minister for Environment and Forests. The Authority has decided for advising the States under section 38-O (2) of Project Tiger / NTCA for obtaining recommendation vis-à-vis the professional competency of the officers included in the said panel. Further, it was also decided that a minimum tenure of three years should be ensured for such officers while posting them as Field Directors of Tiger Reserves (except in cases involving disciplinary action etc.). The professional reasons, not amounting to concurrence and the minimum tenure would strengthen field delivery vis-à-vis the tripartite MOU.

In this context, it is requested that necessary action may please be ensured for due compliance of the decision taken by the NTCA as above.

Yours Sincerely,

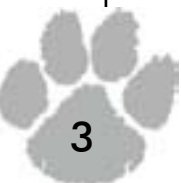
Sd/-

(Dr. Rajesh Gopal)

Additional Director General of Forest (PT) & Member Secretary (NTCA)

Copy to:

1. PCCF(S)/HOFF, All Tiger Range States.
2. Chief Wildlife Warden(s), All Tiger Range States.





Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority
B-1 Wing, 7th Floor, Pt. Deendayal Antyodaya Bhawan,
CGO Complex, Lodhi Road, New Delhi-110003

F. No. 15-24/2019-NTCA

New Delhi, the August 16, 2019

OFFICE MEMORANDUM

Subject: Guidelines for Reward to frontline staff for extra ordinary performance in field.

In exercise of its powers and performance of functions under Chapter IVB of the Wildlife(Protection) Act, 1972, as amended in 2006, the National Tiger Conservation Authority under section 38 O(2) of the said Act, issues following guidelines in respect of the subject cited above;

1. The frontline staff of a **Tiger Reserves and tiger-bearing Landscapes** is responsible for actually implementing the protection/security plan in such areas. In fact, the frontline staff is most vulnerable not only to poachers or forest offenders but also to wild animals. National Tiger Conservation Authority (Normative Standards for Tourism activities and Project Tiger) Guidelines, 2012 also envisages for not only providing funding support for staff welfare but also recognising the effort put in by the frontline staff in protecting the tiger and the forests. The proposal to give reward to such frontline staff in the ranks of Forester, Forest Guard and Watchers for extra ordinary performance in field was recommended by 2nd Technical Committee meeting of National Tiger Conservation Authority held on 19.07.2019. Consequently, the Competent Authority has approved a reward of Rs. 1 lakh each to two Foresters, two Forest Guards and two Watchers/ Protection Assistants/ Tiger Trackers (or any other frontline staff holding equivalent rank/position) from **Tiger Reserves and Tiger Bearing Areas/ Divisions**.
2. This reward is mainly for extraordinary efforts put in by the frontline staff in overall Tiger conservation in tiger bearing areas including following fields;
 - (i) Wildlife Protection and Anti-Poaching Activities
 - (ii) Wildlife habitat management
 - (iii) Wildlife crime detection, investigation and prosecution
 - (iv) Wildlife Monitoring
 - (v) Village Relocation works
 - (vi) People's participation & Eco development activities
 - (vii) Tourism Management/Regulation
3. For selection of frontline staff for this reward following criteria and general principles shall be followed;
 - (i) This reward is proposed to be given to frontline staff for performing extraordinary work continuously for at least two years in any of the fields mentioned in para 2.
 - (ii) The nomination may be initiated by the frontline staff by themselves or by a Range Officer under whom such frontline staff is working.





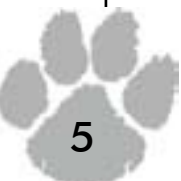
- (iii) The nomination shall be further forwarded by DFO/ Dy Director, Field Director/ Conservator of Forests/ Chief Conservator of Forests to Chief Wildlife Warden State.
 - (iv) The nomination of frontline staff shall be duly recommended and forwarded by Chief Wildlife Warden of the State in the format as suggested by NTCA.
 - (v) There are two awards each for Foresters, Forest Guards, and Watchers level frontline staff to the maximum limit of six. More number of awards can be given to a particular level of frontline staff nominees, in case of non-availability of enough or suitable nomination from other levels of frontline staff.
 - (vi) The reward to all such frontline staff selected for the award includes Rs. One lakh and a Commendation Certificate.
4. Following Selection Committee shall give its recommendation to Member Secretary, NTCA for the purpose of this reward;
- (i) Inspector General of Forests, NTCA – Chairman.
 - (ii) Nominee of ADG, Wildlife, MoEF&CC- Member.
 - (iii) Representative of WWF-India-Member.
 - (iv) Deputy Inspector General of Forests, NTCA- Convener.
5. The nomination with duly filled format given in Annexure-I should reach office of Member Secretary, National Tiger Conservation Authority, New Delhi on or before 30th November.

This issues with the prior approval of Competent Authority.

Sd/-
(Surender Mehra)
Dy. Inspector General (NTCA)

Copy to

1. PS to MEF&CC/ Chairman, NTCA
2. PS to MoS EF&CC/ Vice Chairman, NTCA
3. PPS to Secretary, MoEF&CC
4. PPS to DGF and SS, EF&CC
5. PS to MS, NTCA
6. PS to ADG (Wildlife), EF&CC
7. PCCF and HoFF (Tiger Range States)
8. Principal Secretary, Forests (Tiger Range States)
9. Chief Wildlife Wardens (Tiger Range States)
10. IGF, DIGF, AIGF, NTCA HQ
11. IGF and AIGF, NTCA Regional Offices (Guwahati, Bengaluru and Nagpur)
12. Guard file



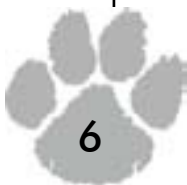


NATIONAL TIGER CONSERVATION AUTHORITY

Format for nomination for reward to frontline staff for extra ordinary performance in field.

1. Name of frontline staff (to be nominated) _____
2. Designation/Level _____
3. Place of posting (Range/Division/Circle/Tiger Reserve) _____
4. Brief description of extraordinary work done by frontline staff in last three years. (not more than 200 words) _____
5. Whether frontline staff (being nominated) has been awarded before, (if Yes, give brief details) _____
6. Recommendations by Range Officer/ Asst. Conservator of Forests (Not more than 100 words) _____
7. Recommendations by DFO/Dy. Director (Please give additional information/comments). _____
8. Recommendation by Field Director /Conservator of Forest / Chief Conservator of Forest _____
9. Recommendation by Chief Wildlife Warden _____

Name and Signature of
Chief Wildlife Warden
(With official stamp)





भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 15-37/2012-NTCA (Vol. I)

New Delhi, the November 28, 2019

To,
The Chief Wildlife Warden,
All Tiger Range States

Sub: Services of Veterinary Doctors in Tiger Reserves.

Ref: Letter No. 8-6/2012-NTCA (ROSZ)/290 dated 03.10.2019, Regional Office, Bengaluru (copy enclosed).

Sir,

Please find reference to the subject cited above. Inspector General of Forest, Regional Office (Southern Zone), NTCA has informed this office regarding the need for placement of full time Veterinary Doctors in Tiger Reserves. You are also aware that while managing the situations of Human Animal Conflict, the role of Veterinary Doctors is very important. Further, there are certain Guidelines and Standard Operation Procedure (SOPs) issued by this Authority for dealing with cases of tiger death, disposal of carcass and management of tiger in human dominated area where it is mandatory to have a veterinary doctor in the concerned team/committee.

In view of this, I am directed to request you to take note of above and take necessary action for ensuring appointment of full time veterinary doctors in tiger reserves in your state.

Encl: As above.

Yours Sincerely,

Sd/-

(Surender Mehra)

Deputy Inspector General of Forest, NTCA

Email: dig1-ntca@nic.in

Tel. (EPABX): + 91 11 24367837-39

FAX: +91 11 24367836



F. No. 15-37/2012-NTCA (Vol. I)

Copy to:

1. Additional Chief Secretary/Principal Secretary, Forests of All Tiger Range States.
2. Principal Chief Conservator of Forest & HoFF, All Tiger Range States.
3. IGS & AIG, Regional Offices, NTCA (Guwahati, Bengaluru & Nagpur).
4. Field Director(s), All Tiger Reserve.
5. PS to ADG (PT).

Sd/-

(Surender Mehra)

Deputy Inspector General of Forest, NTCA



**A PROTOCOL ON PHASE-IV MONITORING
(Continuous Monitoring of Tiger Reserves/Tiger Source Areas)**





SECTION-1

1. BACKGROUND

- 1.1 The Tiger Task Force constituted by the National Board for Wildlife (2005) has endorsed the revised methodology/approach propounded by the erstwhile Project Tiger Directorate (now the National Tiger Conservation Authority-NTCA) and the Wildlife Institute of India (WII) for country level estimation / monitoring of tiger / prey status and its habitat. The said approach, inter alia, comprises of the following:
- (a) Country level assessment of tiger, co-predators, prey and habitat in 17 tiger States once in every four years using the double sampling method having three phases (Phase-I: Spatial mapping and monitoring of tigers, prey and habitat; Phase-II: Assimilation of spatial and attribute data; and Phase-III: Estimating the population of tigers and its prey).
 - (b) Intensive monitoring of tiger source populations in tiger reserves and protected areas in each tiger landscape complex (Phase-IV), and maintenance of a centralized photo-database of tigers at NTCA obtained from camera traps deployed across all tiger reserves.
 - (c) Routine management-oriented monitoring, which, inter alia, comprises of regular monitoring of tiger signs at beat level, which can potentially be integrated with monitoring of law enforcement and patrolling.
 - (d) Survey Design (for all tiger reserves except Sundarbans) for spatially explicit mark-recapture study involving research workers / scientists is at Appendix-I.
- 1.2 The above endorsement of the Tiger Task Force is being implemented and has also been reiterated in the guidelines issued by the NTCA (Technical Document: NTCA/01/07). In a country level meeting of Chief Wildlife Wardens / Field Directors held in May, 2011, it was decided to taken to implement the Phase-IV monitoring from November, 2011. This was followed by a discussion with experts/NTCA members and a meeting with Chief Wildlife Wardens / Field Directors in October, 2011.

As per the decision taken, the minimum standards for the Phase IV protocols were:-

- (1) Camera trap density one pair per 4-5 sq.km.
- (2) Minimum trap nights of a 1000 per 100 sq.km. (i.e. 25 pairs of cameras in 100 sq.km. for 40 days)
- (3) Minimum area coverage of 400 sq.km.
- (4) Closure period of 40 to 60 days
- (5) Minimum of 20 spatial replicates of line transects each of a minimum of 2 km length (for the entire reserve)
- (6) Entire reserve needs to be sampled. Each sampling occasion should cover minimum area of 400 sq.km (100 pairs of cameras) and in case of larger reserves, the area should be covered by dividing the area into 400 sq.km blocks and camera trapping should be done successively, within the closure period of 60 days.

The objective of the NTCA exercise is to, at the least, obtain a minimum number of tigers in a Tiger Reserve (Section-2), but aims to estimate the tiger population size and prey densities





(Section-3) in a reserve using spatially-explicit capture-recapture approaches using software tools such as SPACECAP / DENSITY for estimating tiger population size & DISTANCE for estimating densities of prey.

In brief, the Phase-IV protocol of NTCA contains six components:

- (a) Maintaining daily patrolling log (described in Section-2)
- (b) Carrying out beat-wise monitoring of sign encounters twice a year (described in Section-2)
- (c) Recording from PIP (described in Section-2)
- (d) Obtaining minimum tiger number using camera traps (described in Section-2)
- (e) Obtaining tiger numbers using camera traps (40-60 days closure period) (described in Section-3)
- (f) Obtaining minimum tiger numbers through DNA analysis from Scats (described in Section-3)

The field managers are familiar with some of these components. Under Phase-IV monitoring, emphasis has been given on the use of camera traps for obtaining minimum tiger numbers or preferably, tiger population size estimation and using line transect sampling for estimating prey densities. It must be borne in mind that for data analysis using camera trap data in a mark recapture framework as well as in DISTANCE sampling, the ‘detection probability’ or ‘probability of detecting animals’ is important. Further, it is important to note that more animals in an area may not result in enhanced detection probability, since the latter is governed by terrain features, cover, visibility etc. However, more animals in an area may result in more detections on a line transect or more captures during a camera session.

The phrase ‘detection probability’ is used in line transects, whereas ‘proportions of animals captured’ is used in the context of camera traps. The ‘proportion of capture’ or ‘capture probability’ facilitates estimation of true population size. To illustrate the importance of a detection probability, a simple example is given below:

- 100 spotted deer were introduced in a known area
- The same area was traversed by a team of two persons six times resulting in a count of 62 spotted deer (mean)
- Here, the detection probability = $p^{\wedge} = 62/100 = 0.62$
- After a year, the area was again counted along the same trail resulting in a count of 90 spotted deer
- The population estimation is done as below:
 $90/0.62 = 145$ spotted deer, with the assumption that detection probability has remained constant over the two years.

Thus a generic formula is given for population estimation:


$$\hat{N} = \frac{\hat{C}}{\hat{P}}$$

where, \hat{N} = population

\hat{C} = count/index

\hat{P} = probability of detection





In the above example, the initial figure of 100 spotted deer was known, which is not the situation under wild conditions. Further, two counts / indices can be compared only if we know the probability / estimate the probability of detection. Thus, both in camera trap as well as distance sampling, the analysis part requires estimation of the probability of detection / capture.

Quick Reference Guide

Phase IV involves monitoring of Tiger and its prey on annual basis at Tiger Reserve level, while Phase I to III is done at every 4 year interval for country level monitoring. The following needs to be kept in mind while planning the Phase IV:

Carnivore Population Estimation

- 1) Camera trap density one per 4-5 sq km
- 2) Minimum trap nights of a 1000 per 100 sq km
- 3) Minimum area coverage of 400 sq. km or whatever is the reserve size
- 4) Closure period of 40 to 60 days

Trap night are number of days of operation multiplied by number of pair of cameras. Closure period is time frame within which animal movement in and out of study area, birth and death are going to have no or negligible effect.

Given the importance of estimating detection probability as outlined above, this concept is central to intensive monitoring under Phase IV, unlike in Phases I, II, and III where ‘encounter rates and indices’ were employed more prominently.

However, since at the reserve or source population level tiger and prey density estimation methods which can rigorously deal with detection probability require substantial scientific expertise to design and deploy, it may not always be possible for reserve managers to have access to and be guided by adequately qualified scientists. Therefore, Phase IV intensive monitoring is being seen as a “ladder process” in which tiger reserves will gradually move up the ladder from routine management oriented monitoring to the intensive scientific monitoring scheme.

States/Reserve managers who do not have ready access to trained scientists with expertise in design and deployment of intensive scientific methods may use the first step of the ladder described here under Section-2, as routine management oriented activities. These routines will involve a wide range activities covered under parts A, B, C, D under Section 2 of this protocol and will be generally helpful in management of reserves. One aim of this is to generate minimum number of tigers in each reserve, each year without violating important closure assumptions described later. This routine management oriented monitoring is described in Section 2 of this document.

The next step in the “ladder process” involves use of rigorous distance sampling (for prey) and capture-recapture sampling (for tigers). These may require collaboration with adequately qualified scientists in survey design, implementation and data analysis stages. Here the goal is to generate valid estimates of population density and population size for tigers and important prey species in each reserve, fully meeting all the minimum standards and approaches described in Section 3 of this document.

Where such intensive scientific monitoring of tiger and prey populations is undertaken as described in Section 3, there may be no need for deploying other kind of line transect or camera trap surveys, to avoid unnecessary duplication of work.



SECTION-2 PHASE-IV MANAGEMENT-ORIENTED MONITORING

I. For all tiger reserves except Sundarbans

Part-A

Maintaining Daily Patrolling Log in Patrolling Camp/Chowki Registers

While on regular or targeted patrolling duties the personnel shall record the following information:

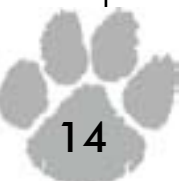
- 1) Each patrolling team shall be equipped with a GPS unit and a digital camera besides the regular equipment (e.g. firearms, wireless, torch, etc).
- 2) The date, time and GPS coordinates of the beginning of the patrol recorded.
- 3) Preferably the GPS unit shall be switched on throughout the patrol in a track log mode. However, due to constraints of technical knowhow or other issues if this is not possible then a GPS coordinate recorded and written down in the record form every 30 min or at major deviations from a straight line path.
- 4) The total number of persons on the patrol are recorded along with number of armed personnel and type of arms. The mode of patrol is also recorded, e.g. on foot, bicycle, motorcycle, 4WD, elephant, boat, etc.
- 5) A record of all illegal activities is entered in the data sheet along with time, date and coordinate stamp. A photograph is also taken of the site with a time date stamp.
- 6) A record of signs and sightings or highly endangered species while on Patrol is also maintained by entering the GPS coordinate, date and time of the sighting /sign as well as recording a digital picture of the same if possible.
- 7) After the end of the Patrol, the GPS track log is either downloaded onto a computer (in MSTRIPES program if this is applicable at the site) or the datasheet with the recorded information deposited at the Range Head Quarters. Data formats for recording Patrol data are provided in Annexure-I.

Part-B

Carrying Out Beat-Wise Monitoring of Signs and Encounters of Animals/Vegetation/Habitat Disturbances Following Phase-I Protocols Twice a Year

The entire tiger reserve would be covered at the beat level, by considering the latter as a sampling unit, as done in Phase-I of the country level assessment by following the standardized eight day protocol (the data collection needs to be done twice a year in the formats provided at Annexures-VII, VIII, IX and X). This would involve beat wise collection of data (in the standardized formats) twice a year relating to tiger/carnivore signs survey, ungulate, encounter rates, habitat status, human presence and pellet / dung counts. Based on such data, beat level maps indicating the spatial presence / relative abundance (index) of prey / predators species should be prepared in the GIS domain for record.

- (i) Beat-wise collection of data in the standardized formats of Phase-I country level assessment process.
- (ii) The data collection should be done twice a year (summer and winter).





(If the tiger reserve is following advanced protocols as described in Section-3 in collaboration with scientific institutions, then the routine monitoring of prey animal signs/encounters, vegetation features and habitat disturbance features should be carried out along transect lines designed on protocols described in Part-E of Section-3. There may be no need for laying of transect lines in each beat as per Phase-I protocol.)

Part-C

Recording Data from 'Pressure Impression Pads' (PIP)

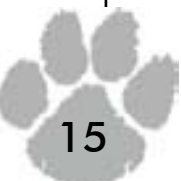
As a part of intensive monitoring of source populations of tigers, data will be recorded from pressure impression pads (PIP's, track plots) in every beat.

- A minimum of 5 PIPs will be permanently maintained in each beat. The dimension of the PIP shall not be less than 6m in length the width of the PIP should equal the foot path, jungle trail or dry nullaha's width on which the PIP is made. GPS coordinates of all PIP's need to be recorded.
- The location of the PIPs within the beat should be such that they maximize the possibility of recording carnivore tracks. Minimum distance between any 2 PIPs should be more than 1.5km.
- The PIPs should be cleaned of debris, leaf litter, gravel and covered with fine dust of about 0.5cm depth. After preparing the PIP, data should be recorded the next morning and the PIP cleared of all tracks. The PIPs should be sampled thrice every month during summer and winter. In case a prepared PIP is disturbed due to rain, traffic etc. then it should be set again before data is collected. The topography and forest type should be recorded for each PIP.
- Trails of all carnivore and mega herbivores species should be recorded e.g. tiger one track set, leopard two track sets, several dhole track sets (as it may not be possible to identify individual track sets due to many tracks by a passing dhole pack), one small cat track (as species level identification may not be possible).
- It is important to note that a track set is constituted by one to many pugmarks made by a single animal traversing the track plot (PIP). One need not identify the gender or individual animal (tiger), but if this information is known, it should be entered in the remarks column. If there are more than one track sets of "same" animal eg. a tiger moving up and down the trail several times, they should be recorded as separate track sets. Data sheet for recording are provided in Annexure-III.

Part-D

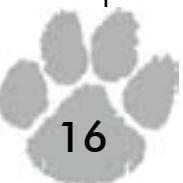
Obtaining the Minimum Number of Tigers in the Tiger Reserve

- (i) Three pairs of camera traps to be deployed per beat and should be left open within a closed period of 40-60 days depending on the reserve.
- (ii) The period of leaving the camera traps open (closure period) is important owing to the fundamental assumption of "population closure" (no deaths / births / immigrations / emigrations in the population). Leaving the cameras open for longer duration will lead to over estimation of tiger numbers.
- (iii) The photographs obtained from camera trapping should be submitted to NTCA for analysis for fixing individual IDs of tigers.
- (iv) A digital camera trap tiger photo database should be prepared for the reserve with location ID, Date and Time Stamps as per format to be provided by NTCA.





- (v) The minimum number of tigers should be ascertained based on individual camera photo traps of tigers obtained within the closure period specified to be 45-60 days.
- (vi) Details of new captures / missing tigers should be recorded.
- (vii) The format for recording the camera trap capture data will be provided by NTCA





SECTION-3

(Advanced Protocol Involving Scientists)

PHASE-IV INTENSIVE MONITORING OF SOURCE POPULATIONS AND TIGER RESERVES

Part-E

Obtaining Tiger Population Size for the Reserve Using Spatially-Explicit Capture Recapture Framework and Obtaining Prey Population Size Using Line Transect Sampling.

(A) Obtaining tiger population size.

- (i) The camera traps deployed as per the survey design in Appendix-1. should be left open for a period of 40-60 days (depending on the areas). Where possible the entire Tiger Reserve must be surveyed. If the survey area is very large, tiger population size can be obtained by sampling a minimum block of 400 square kilometers at a time, but following all other minimum standards in section 3. If deployment of camera traps in an entire reserve or parts of it is not feasible for any reason, fecal DNA samples may be collected over the entire Tiger Reserve for Capture-Recapture analysis. The tiger population size may then be estimated over the entire Tiger Reserve using Mark-recapture methodology.
- (ii) The analysis of the data needs to be done in collaboration with a technical expert / scientist conversant with spatially- explicit capture-recapture process / analysis.
- (iv) The period of leaving the camera traps open (closure period) is important owing to the fundamental assumption of “population closure” (no deaths / births / immigrations / emigrations in the population). Leaving the cameras open for longer duration may lead to over estimation.
- (v) The format for summary record of camera captures and the basics of mark recapture process using camera traps are provided at Annexures-V & VI.
- (vi) The analysis of capture data between years (using open population models) should also be done in collaboration with technical experts / scientists/ WII.

(B) Obtaining prey densities

- (i) Line transects must be systematically placed with a random start according to the survey design mentioned in Appendix-1 and implemented in program DISTANCE.
- (ii) The line transect data should be analysed using the “DISTANCE” software for prey density. The analysis of the data needs to be done in collaboration with a technical expert / scientist conversant with the DISTANCE SAMPLING analysis.
- (iii) The format for collecting line transect data to facilitate analysis using “DISTANCE” software and the basics of DISTANCE sampling using line transects are provided at Annexure-II.

Part-F

Using Scats for DNA Analysis to Obtain the Minimum Tiger Numbers in Reserves Where Camera Trapping is not Possible

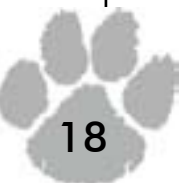
- (i) Collection of tiger scat samples: a) Use disposable surgical gloves to handle scat samples, b) for each scat a new set of gloves should be used to avoid cross contamination, used gloves should be discarded in an environmentally friendly way c) about 20 gms of fresh scat sample should be taken and stored





in a vial/tube containing buffer & / or 70% alcohol. Tubes should be prepared in duplicate with GPS coordinates and date clearly recorded on the tube (alcohol erases permanent marking pens).

- (ii) Obtaining the minimum number of tigers in the area through DNA analysis of tiger scats involving an institution having the domain expertise.



SURVEY DESIGN (For all tiger reserves except Sundarbans) for spatially explicit mark-recapture study involving research workers/scientists

Minimum Standards for monitoring tiger source populations were: Sampling area:

Minimum area of 400 km² or entire Tiger Reserve, if area is smaller than 400 km².

(i) Tiger monitoring by camera trap sampling:

Camera density = 25 double-sided cameras per 100 km².

Sampling effort = 1000 trap nights/100 km².

Closure period = 40-60 days

NOTE: The period of leaving the camera traps open (closure period) is important owing to the fundamental assumption of “population closure” (no deaths / births / immigrations / emigrations in the population). Leaving the cameras open for longer duration may lead to gross over estimation.

(ii) Prey monitoring by line transect sampling:

- 1) Straight or square line transects will be systematically placed with a random start over the study area. These designs must be generated using program DISTANCE.
- 2) At least 20 spatial replicates must be laid out.
- 3) Each transect must be walked at least 4 times during sampling to generate >40 detections for each important prey species.

DESIGN OF SURVEYS ANALYSES OF DATA

- (i) The survey design and analysis of these data needs to be done in collaboration with a technical expert / scientist conversant with the advanced open and closed model mark-recapture and advanced distance sampling methodologies.
- (ii) The format for recording camera capture data and the basic ideas of the mark-recapture process using camera traps are provided at Annexures- V & VI and in published scientific literature.



ANNEXURE-I

**Data Sheet - 6
Patrol Form**

Name of Guard: _____ Date: _____ Forest Division _____ Range: _____
 Beat: _____ No. of Person on Patrol: _____ Armed _____ Unarmed _____

Patrol Type: General Duties, Investigations, Surveillance, Others
 Patrol Method: Foot, Jeep, Motorbike, Bicycle, Elephant and Others

Dt	Tm	L			Lg			An	Pl	Gpn	mgLA			Ann IM IYR			Cf	S			
		Dg	M	S	Dg	M	S				Dtl	Attk	Sp	Gl	Ag	C			Cf 1th	mPl	Tk

M – Male, F – Female, Un – Unknown, Y – Young, Ad – Adult.



Field Formats for Data Collection in Distance Sampling

I. Line Transect Data Sheet for monitoring of ungulate population by DISTANCE sampling:

Observer name: Start time: Date:
End time: ID no. of line transect: Total length: km TR/
Forest division: Range: Beat:
Weather condition: Cloudy/Clear sky
Beginning GPS Lat: N; Long: E
End GPS Lat: N; Long: E

Table with 10 columns: Sighting No, Time, Species*, Total Nos. (Adults & Young), Young, Sighting Distance, Compass Bearing, Forest Type, Terrain Type, Remarks. Rows 1-8.

*Species that need to be recorded on the transect: chital, sambar, nilgai, gaur, barking deer, elephant, rhino, wild buffalo, swamp deer, hog deer, chowsingha, blackbuck, chinkara, wild pig, langur, peafowl, hare, cattle (live stock), and other mammalian species seen.

II. Location of transects in relation to Vegetation and Terrain features

Table with 7 columns: Transect No., Total length (km), Name, Bearing, GPS location (Start, End), Vegetation type, Terrain category. Rows T1-T7.





(Basic Information)

Assessment of prey using line transects following survey design as described in Part - E of Section- 3 and analyzing the data with DISTANCE

Software

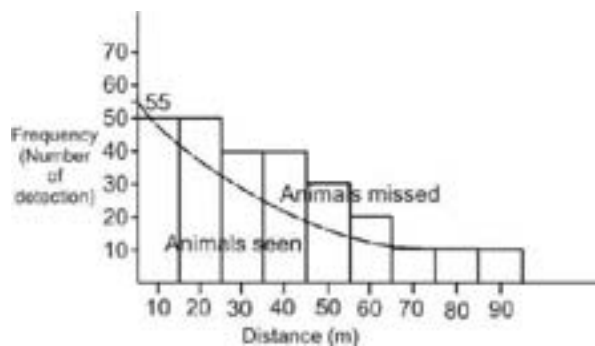
- (i) The use of line transect in estimation of prey density is known as ‘line transect sampling’. This technique of abundance estimation is included under ‘distance sampling’.
- (ii) It provides a direct estimate of density, provided its assumptions are met.
- (iii) It also accounts for the probability of detection.
- (iv) In ‘Distance Sampling’, the fact that the ‘probability of detection decreases with increasing distance from the observer’ is modelled by developing a function, which is used to estimate the ‘probability of detection’ ($\hat{\beta}$). The density (\hat{D}) is estimated as below:

$$\hat{D} = \frac{n}{\alpha \hat{\beta}}$$

where, n = total number of detections

α = total area sampled

- (v) The observer travels along a line of length ‘L’, located randomly in the study area, and counts all the animals which are seen. There is no assumption that all animals are counted, and the counts are assumed to be incomplete. More often, a maximum observation distance ‘w’, which is perpendicular to the transect line on each side, is established. Beyond this distance, no count is made. In some cases, counting of all animals is done without establishing a distance.
- (vi) Let us consider the common approach of establishing the ‘maximum observation distance’ (w). Here, it is important to estimate the ‘detection probability’ or the proportion of animals that are actually seen ($\hat{\beta}$). This is required to correct the actual counts.



(Hypothetical from the transect line histogram plot of the number of detections against the distance from the transect line, with a smooth function fit.)

- (vii) If the number of detections are plotted against distance from the transect line, a smaller number of detections are seen as the distance increases. The detection function to the observed distances is fitted to estimate the detection probability ‘ $\hat{\beta}$ ’:-





$$\hat{b} = \frac{\text{Area under the curve}}{\text{Total area}} = \frac{3500}{4950} = 0.70$$

(viii) Once the detection probability ($\hat{\beta}$) is computed, animal abundance in the survey area can be calculated, as in the case of the strip sampling, using the canonical estimator as before:

$$\hat{N} = \frac{An}{2wL\hat{\beta}}$$

(ix) For animal density (\hat{D}), the abundance needs to be divided by area, resulting in:

$$\hat{D} = \frac{n}{2wL\hat{\beta}}$$

(x) The salient features of this estimation technique are as below:-

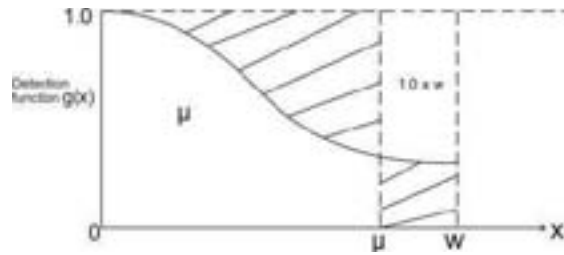
- a. From the transect line, the perpendicular distances (x) to each detected animal of interest are computed by measuring the detecting angles 'M' and detection distances 'r'.
- b. This computation is done as $x = r \sin M$.
- c. Imagine a situation where 'k' transect lines have been laid in some randomized design, having lengths l_1, \dots, l_k , with a total length 'L'.
- d. Further, suppose that 'n' animals are seen at perpendicular distances x_1, x_2, \dots, x_n , and animals beyond a distance (w) from the transect (truncation distance) are not taken into account.
- e. In the above situation, the area surveyed (a) is given by: $a = 2wL$.
- f. Say 'n' animals are seen/detected within this area.
- g. Estimation of animal density (D) is given by:

$$\hat{D} = \frac{n}{cwLP_a}$$

where, P_a = probability of detection of a randomly chosen animal within the area surveyed;

$$P_a = \text{estimate of } P_a$$

- h. Thus, it becomes necessary to give a framework to estimate P_a . In this context, the 'detection function' 'g(x)' is defined as the probability of an animal at distance x from the transect line being detected, given that x is between w and 0 (i.e. $0 \leq x \leq w$). Further, it is also assumed that animals on the transect are certainly detected (i.e. $g(0) = 1$).
- i. A new parameter 'μ' is now defined, which is known as the 'effective strip (half) width'. It is the distance from the transect 'for which as many objects as are detected beyond μ as are missed within μ'.
(Defining a detection function g(x), where $g(0) = 1$; μ = the effective strip width).
- j. If the detection function g(x) is plotted against perpendicular distances 'w' as a histogram, a model for g(x) needs to be specified, and fitted to the distance data.

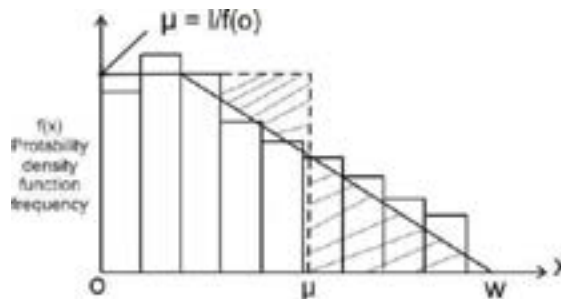


P_a is related to μ . If the definition for $\mu = \int_0^W g(x) dx$, then $P_a = \mu/w$.

$$\hat{D} = \frac{n}{aP_a} = \frac{n}{2wL \hat{\mu}/w} = \frac{n}{2\hat{\mu}L}$$

- k. Now $\hat{\mu}$, an estimate of μ is required. For this another function known as the ‘probability density function’ (pdf) of perpendicular distances $f(x)$ to detected animals is used. This is the rescaled detection function $g(x)$ for integrating into unity; i.e. $f(x) = g(x)/\mu$. Since it is assumed that $g(0) = 1$, hence $f(0) = 1/\mu$.

$$\hat{D} = \frac{n}{2w\hat{\mu}} = \frac{n f(0)}{2L}$$



[Fitting the probability density function (pdf) to the data. The area under this function is 1].

$f(x)$ is the pdf of perpendicular distance p frequencies, plotted on a histogram of perpendicular distance frequencies. These are scaled so that the area of the histogram is 1. By definition, the area below the curve is unity (1). The two shaded areas in the above curve are equal in size, hence the area of the rectangle, $\mu f(0)$ is also unity, resulting in $\mu = 1/f(0)$.

1. Thus the pdf of perpendicular distances are modeled, and the fitted function is evaluated at $x=0$. The DISTANCE Software address this standard statistical issue. A parametric ‘key’ function is selected. However, if the fit provided by it is not adequate, adjustment are done using polynomial or cosine series, till the fit is judged satisfactory by one or more criteria.

- m. Usually, the data are grouped into distance categories before analysis and such grouped data is fitted using standard likelihood methods from the multinomial data.

(xi) The distance software calculates variance and confidence in interval inherently and also besides addressing the estimation of cluster size.





- (xii) The data from a line transects includes: (a) number of individual animals / number of individual animals in a cluster, (b) the perpendicular distance of the animal / centre of the cluster from the transect, (c) name / identity of the transect line where count was made / detected, (d) total length of the transect line.
- (xiii) The transects should be made in all the beats (at least two line transects of 2 km each per beat).
- (xiv) The transect lines may be straight lines or conforming to a continuous shape leading to the starting point. The transects should be randomly laid, separated by at least a distance of 2 to 3 km. and physically marked using GPS for replication.
- (xv) The total walks on a transect (total effort) is computed by adding all the walks done on a transects, and totaling up such walks on all the transects laid in the area.
- (xvi) For low density areas, more efforts may be required on the transects.
- (xvii) Laser range finders and compass should be used for measuring distance and angle respectively.

Assumptions in Line Transect Sampling:

The critical assumptions in line transect sampling, which should be met for a reliable density / abundance estimation are as below:

A. Random location of transect lines with respect to distribution of animals:

This assumption helps in estimating the detection function from the observed distribution of perpendicular distances, leading to the average probability of detection (p). To ensure this assumption, the transect lines should be laid randomly, causing minimum disturbance to the habitat.

B. Detection of animals with certainty on the transect line:

This assumption is fundamental for deriving the density estimator, wherein detection of all objects at 0 perpendicular distance are assumed (i.e. $g(0) = 1$). The density would be under estimated if objects / animals falling on the transects are missed, since bias is a simple function of $g(0)$. Thus, by missing 15% of the animals on the transect line, the density estimate on an average would be less by 15%.

C. Detection of animals at their initial location:

This assumption can be easily met for stationary objects like plants or dung piles of wild animals, but it is difficult to meet for moving animals. It has been pointed out that movement does not create much problem provided it is not in response to the observer. Further, comparatively faster movement of observers also reduces the problem. However, the observers should move as silently as possible to avoid evasive movement of the animals before detection, while trying to detect them. A considerable evasive movement of animals would lead to under estimation.

D. Exact measurements are made:

Proper field measurements are essential to record reliable measurements. Erroneous recordings relating to animals on transect line from a distance makes analysis difficult.

Apart from the above, the other assumptions include:

- (a) Detections are independent events.
- (b) Animals should not be counted twice on the same line.





Hypothetical example of distance sampling:

Effort : 126.0000
 #samples : 42
 Width : 256.0000
 Left : 0.0000000
 #observations : 447
 Model

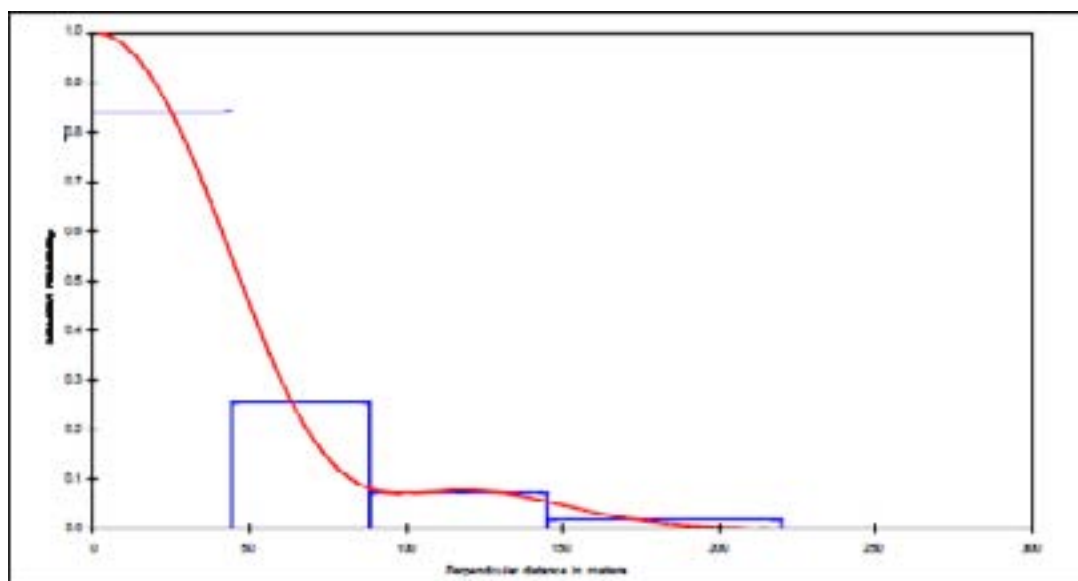
Half-normal key, $k(y) = \text{Exp}(-y^2/(2*A(1)^2))$

Simple polynomial adjustments of order(s): 4, 6

Parameter	Point Estimate	Standard Error	Percent Coef. of Variation	95 Percent Confidence Interval	
A (1)	43.57	1.680			
A (2)	-115.6	34.19			
A (3)	755.9	242.4			
f(0)	0.18600E-01	0.77638E-03	4.17	0.17136E-01	0.20190E-01
p	0.21001	0.87661E-02	4.17	0.19348	0.22796
EWS	53.763	2.2441	4.17	49.531	58.358

Sampling Correlation of Estimated Parameters

	A(1)	A(2)	A(3)
A(1)	1.000	0.427	-0.742
A(2)	0.427	1.000	-0.886
A(3)	-0.742	-0.886	1.000





<i>Cell</i>	<i>Cut Points</i>	<i>Observed Values</i>	<i>Expected Values</i>	<i>Expected values</i>	<i>Chi-square Value</i>
1	0.000	44.2	309	308.43	0.001
2	44.2	88.3	93	93.78	0.007
3	88.3	145.	34	34.07	0.000
4	145.	220.	11	10.67	0.011
5	220.	240.	0	0.05	0.054
6	240.	256.	0	0.01	0.007

Total Chi-square value = 0.08 Degrees of Freedom = 2.00

Probability of a greater chi-square value, P = 0.96098

The program has limited capability for pooling. The user should judge the necessity for pooling and if necessary, do pooling by hand.

There is a need for some pooling to achieve a reliable chi-square test However, the pooling algorithm built into this program would result in no degrees of freedom left. Therefore pooling is left to the user.

One or more expected values is < 1.

Try pooling some some cells by hand to obtain a more reliable test.

Model

Half-normal key, $k(y) = \text{Exp}(-y^{**2}/(2*A(1)**2))$

Simple polynomial adjustments of order(s): 4, 6

<i>Parameter</i>	<i>Point Estimate</i>	<i>Standard Error</i>	<i>Percent Coef. of Variation</i>	<i>95% Percent Confidence Interval</i>	
f(0)	0.18600E-01	0.77638E-03	4.17	0.17136E-01	0.20190E-01
p	0.21001	0.8761E-02	4.17	0.19348	0.22796
ESW	53.763	2.2441	4.17	49.531	58.358
n/L	3.5476	0.39480	11.13	2.8355	4.4386
DS	32.993	3.9214	11.89	26.017	41.839
E(S)	3.7964	0.22495	5.93	3.3794	4.2649
D	125.26	16.635	13.28	96.287	162.94
N	125.00	16.601	13.28	96.000	163.00

Measurement Units

Density: Numbers/Sq. Kilometers ESW: Meters

Component Percentages of Var (D)

Detection Probability: 9.9

Encounter rate: 70.2

Cluster size: 19.9





Data Sheet-5
Track Plot for Carnivores and Mega Herbivores
(Pressure Impression Pad)

Name of Observer: Date: Forest Division Range:
Beat:

PIP No.	Forest Type	Terrain Type	Tiger		Leopard		Sloth Bear	Dhole	Hyena	Jackal	Small Cat	Gaur	Elephant	Rhino	Water Buffalo	Others	Others	Deg N	Min N	Sec N	Deg E	Min E	Sec E		
			Adult	Cub	Adult	Cub																			
1																									
2																									
3																									
4																									
5																									

If track of young carnivores (eg. tiger cubs) are observed, please mention in remarks.

Remarks:
.....

Details of Digital Photographs taken



ANNEXURE-IV

Format for recording camera trap capture data to obtain tiger numbers at the reserve level

- 1) Place double-sided camera traps at the best locations within a beat to photograph tigers.
- 2) The distance between camera traps within and between beats should be over 1.5 km.
- 3) A minimum of 3 camera traps (consisting of double sided cameras) per beat should be deployed. The number of camera trap will increase as the size of the beat increases, keeping the strategy of one pair of camera traps for 4 sq.km. area (2 km x 2 km).
- 4) The GPS coordinates of each camera location and the dates of deployment should be recorded as given below:

<i>Camera Trap Station ID</i>	<i>Degree, Min, Sec North</i>	<i>Degree, Min, Sec South</i>	<i>Dates deployed</i>	<i>Dates not operating</i>
1 – main Rd nalla				
2- River Junct				
3- temple jnct				
4-.....				

5) Format for daily monitoring of camera traps (beat-wise)

<i>Date</i>	<i>Camera Unit</i>	<i>Camera Trap Station 1</i>			<i>Camera Trap Station 2</i>			<i>Camera Trap Station 3</i>			<i>Remarks*</i>
		<i>Tiger</i>	<i>Leopard</i>	<i>Other</i>	<i>Tiger</i>	<i>Leopard</i>	<i>Other</i>	<i>Tiger</i>	<i>Leopard</i>	<i>Other</i>	
	A – Right Side Camera										
	B – Left Side Camera										
	A – Right Side Camera										
	B – Left Side Camera										
	A – Right Side Camera										
	B – Left Side Camera										
	A – Right Side Camera										
	B – Left Side Camera										
	A – Right Side Camera										
	B – Left Side Camera										



A – Right Side Camera									
B – Left Side Camera									
A – Right Side Camera									
B – Left Side Camera									
A – Right Side Camera									
B – Left Side Camera									

* Non-functioning of camera traps or missing of tiger capture, etc. to be recorded in the Remark column.

- 6) Photographs of tigers, leopards and all mammal species should be downloaded and saved as folders for each species. Each photograph should have a time and date stamp recorded digitally, the camera trap station identity stored in the filename. An appropriate format is to have a species folder e.g. tiger, sub folder for camera trap station id, within which photographs of each of the cameras (from the double sided camera traps) is stored as separate folders. A CD with the above data (points 4, & 5) should be sent to NTCA every 2 months.
- 7) All Photographs of tigers and leopards should be printed and compared visually based on their stripe and spot patterns to identify individuals. In case of >15 tigers/leopard captures the need of software assisted identification may become essential.
- 8) For estimation of the tiger/leopard population after individual identification using closed capture estimators the data needs to be arranged in the format given below:

Trap Occasion (Day)

<i>Tiger/ Leopard ID</i>	<i>Day 1</i>	<i>Day 2</i>	<i>Day 3</i>	<i>.....</i>	<i>Day 35</i>	<i>.....</i>	<i>Day 48....</i>
T-1							
T-2							
T-3							
T-4-.....							



CAMERA TRAP: CAPTURE DATA
(Range Level)

Division..... Range..... Species: Tiger/Leopard

<i>Sl.No.</i>	<i>Beat Name</i>	<i>Observer Name</i>	<i>Camera ID</i>	<i>Tiger ID / Leopard ID</i>	<i>Date of Capture</i>	<i>Remarks</i>



**(Basic Information on Mark Recapture)**

Assessment of tiger population at beat level using photographic mark-recapture camera trapping while analyzing the data with an appropriate softwares like MARK, CAPTURE and CARE. This should result in the preparation of a reserve-level photo- capture database of individual tigers, to be shared with the Chief Wildlife Warden / NTCA / WII.

- (I) The capture–recapture methodology is largely derived from the classical Peterson-Lincoln Estimator which is highlighted below:

Peterson Estimate (Lincoln Index)

The mark-recapture methods based on Peterson Estimate constitute the most important pseudo-sample methods. A large number of variations of this basic method have been evolved, which have been further complicated since the technique is simultaneously utilised to measure movement or mortality. Here the sample of a population is marked after it is caught and then released; subsequently, samples are again taken from the population after recapturing and the proportion of marked individuals are recorded. Using the proportion of marked individuals in the subsequent samples, the total population is estimated. The capture-recapture sampling facilitate estimation of the ‘proportion’ of animals captured which facilitates estimation of true population size.

The simplest form of the mark-recapture estimator is the Lincoln-Peterson estimator; this is known variously as ‘Peterson index’, ‘Lincoln index’ or ‘the Peterson estimate’. This method gives an estimate of actual numbers and hence it is a sample census rather than an index. Peterson, in 1896, described this method for fish populations; however it was first applied for wildlife in 1930 by F.C. Lincoln, for populations of waterfowl.

The model can be derived from the ratio: $\frac{M}{\hat{N}} = \frac{m}{n}$

where, M = total number of individuals marked and released during the first capture period;

\hat{N} = estimated population size (unknown);

n = total sample taken during the second capture period;

m = number of individuals captured in the second capture which were marked.

The above ratio can be rewritten as an estimator:

$$\hat{N} = \frac{Mn}{m}$$

Theoretically this is a very elegant and simple method and can be applied to any vertebrate which can be captured, viz. from fish to cats. However, it is time consuming, laborious and costly and becomes impractical for large areas. Apart from this, several critical assumptions of this method act as constraints:—

1. Each animal has an equal chance of being captured.
2. The behaviour of animals is not influenced by marking.
3. No marks are lost.





4. The individuals which are marked mix randomly in the population after release.
5. There are no immigrations or births in the area under study between the first and second trapping seasons.
6. There is no emigration or differential mortality between the marked and unmarked members of the population.
7. The population is closed; if mortality occurs, then the estimate of N is valid for the initial size of the population. If recruitment occurs then N is valid for the time of recapture.
8. The time spent in sampling is small relative to the inter-sampling period.

The model assumptions can be re-written concisely as follows:

Assumption 1. A well defined population of animals having N individuals exists.

Assumption 2. M of these individuals are marked.

Assumption 3. There exists a sample of n ‘observations’ of animals from the population, having x ‘observations’ marked animals.

Assumption 4. The average probability $\overline{p_m}$ of observing an animal that is marked is equal to $\overline{p_u}$ which is the average probability of observing an unmarked animal.

$$\text{i.e. } \overline{p_m} = \overline{p_u}$$

The formula $\hat{N} = \frac{nM}{m}$ can be used satisfactorily with appropriate assumptions.

Use of Lincoln-Petersen Sample Estimator in camera trapping of tigers

The sample periods can be aggregated into two groups – viz. in a session of 30 days, the first 15 days can be denoted as ‘occasion-1’ and the next fortnight as ‘occasion-2’.

In general, for photo trapping of tigers, the camera traps are set in the study area, covering the animals so that the tigers in the area can encounter the traps at least once (preventing ‘holes’ so that tigers are not missed). The traps are set for several days in succession, and each day is considered as a ‘sample period’. In large areas, the traps can be ‘rotated’ over the area as per a prescribed scheme, and the data collected over the number of days taken to cover the entire area defines the sampling period.

The camera trap data is summarised in ‘capture-history’ data sheets, consisting of rows of ‘i’ and ‘o’, which indicate the periods when an animal was camera trapped. Thus, a history of ‘100101’, indicates that a tiger was trapped in periods 1, 4 and 6 of a study having 6 periods.

Example

m_1 = number of tigers, with known identity, trapped on occasion 1

m_2 = number of tigers trapped and released on occasion 2

m = number of tigers recaptured in period 2 (i.e. trapped at both occasions 1 and 2)

1. The unknown quantity of interest (total number of tigers in the sampled population) is defined as ‘N’.
2. The model parameters are then defined as:





p_1 = probability of a tiger exposed to sampling efforts in the sampled area is trapped on occasion i ($i = 1, 2$)

3. $p=1-(1-p_1)(1-p_2)$ = the probability that a tiger, from the total number of tigers in the sampled population N , is trapped at least once during the study.

4. The ‘detection probabilities’ for the two sampling periods are estimated, by ascertaining the proportion of tigers which were trapped in one occasion are also trapped in the other occasion. Since the population is “closed”, it can be said that the tigers caught during occasion 1 are also present during occasion 2. Thus by “conditioning” tigers trapped in occasion 2, and ascertaining the number of these tigers which were also trapped during occasion 1, p_1 and p_2 can be estimated:

$$\hat{p}_1 = \frac{m}{n_2}, \hat{p}_2 = \frac{m}{n_1}$$

$$\hat{p}_1 = 1 - \left(1 - \hat{p}_1\right) \left(1 - \hat{p}_2\right)$$

The general equation for estimating abundance is:

$$\hat{N} = \frac{C}{\hat{p}}$$

where, \hat{N} = estimate of abundance N (true number of tigers)

C = Number of tigers counted

p = estimate of capture probability ‘ p ’ (probability that a tiger exposed to sampling efforts in the sampled area is captured on occasion i ($i=1, 2$))

For period 1, the following estimator is obtained:

$$\hat{N} = \frac{n_1}{\hat{p}_1} = \frac{n_1}{m/m_2} = \frac{n_1 n_2}{m}$$

For period 2, the following estimator is obtained:

$$\hat{N} = \frac{n_2}{\hat{p}_2} = \frac{n_2}{m/m_1} = \frac{n_1 n_2}{m}$$

The assumptions of the Lincoln-Peterson model are again stated below:-

1. The population is a ‘closed’ one.
2. It is likely that all animals are equally captured in each sample (equal probability of capture).
3. The marks are not overlooked, gained or lost.

A short interval between samples can meet the first assumption. The second assumption is often relaxed, while the last one can be met with proper marking techniques.





Example of Lincoln-Peterson estimate

(camera trapping exercise)

50 camera traps are placed in a tiger habitat along trails, and for two consecutive nights photographs are taken, resulting in the following data:

$n_1 = 10$ tigers camera trapped during the first night

$n_2 = 8$ tigers camera trapped during the second night

$m = 2$ tigers camera were photographed on both the nights

Estimation of Capture Probabilities and Abundance

Capture probabilities of each night (sampling occasion) and for both nights (combined) are calculated as below:

$$p_1 = \frac{2}{8} = 0.25$$

$$p_2 = \frac{2}{10} = 0.20$$

$$\hat{p} = 1 - (1 - p_1)(1 - p_2)$$

$$\begin{aligned} \text{i.e. } \hat{p} &= 1 - (1 - 0.25)(1 - 0.20) \\ &= 1 - (0.75)(0.80) \\ &= 0.40 \end{aligned}$$

Using the Chapman estimator for abundance:

$$\begin{aligned} \hat{N}_c &= \frac{(n_1 + 1)(n_2 + 1)}{(m_2 + 1)} \\ &= \frac{(10 + 1)(8 + 1)}{(2 + 1)} - 1 \\ &= 32 \end{aligned}$$

The Variance and Standard Error for the estimate are as below:

$$\begin{aligned} \text{var } \hat{N}_c &= \frac{(10 + 1)(8 + 1)(10 - 2)(8 - 2)}{(2 + 1)^2 (2 + 2)} \\ &= \frac{(10)(9)(8)(6)}{(3)^2 (4)} = \frac{4752}{36} = 132 \\ &= SE(\hat{N}) = \sqrt{132} = 11.49 \end{aligned}$$

Thus, the estimated number of tigers in the sampled area is 32.

An approximate 95% confidence interval for this estimate is given by:





$$\hat{N} = \pm 1.96SE(\hat{N}) = 32 \pm 22.52 = (54.52, 9.48)$$

The above estimate is not precise and is highly uncertain, perhaps owing to small sample size in studies of elusive animals like the tiger.

(II) Broadly, the mark recapture methods have been categorised on the basis of population ‘closure’ as below:-

- (1) Closed Population Models – Where the total number of individuals in a population does not change due to birth, deaths, immigration or emigration. There are no ‘gains’ or ‘losses’ in the population between sampling occasions. Hence, these are most suitable for short-time period estimators like abundance estimation.
- (2) Open Population Models – Where the population is changing during the study due to births, deaths, immigration or emigration. These gains or losses or both occur between the sampling periods. The time interval between sampling occasions is longer. These models provide scope for estimation of abundance, survival rate and recruitment.

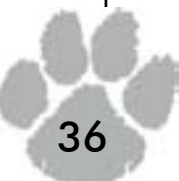
(III) In the Indian context, both models are applicable. The closed population models are good for abundance estimation of tigers and its prey in the country level estimation was carried out after every four years. The open population models are suitable for long term studies (e.g. Phase IV of the new methodology at source sites for monitoring tiger and its prey). In this chapter, the focus would be on the ‘closed population model’ owing to their relevance in the context of tiger estimation.

Capture-Recapture Models for Closed Population Capture-Recapture Data

In the capture-recapture approach, the capture history of the individual animal is maintained as a series of “non-captures” (0’s) and “captures” (1’s).

Hypothetical Individual Capture History of 10 tigers with four Capture (camera trap) occasions

<i>Tiger</i>	<i>Occasion 1</i>	<i>Occasion 2</i>	<i>Occasion 3</i>	<i>Occasion 4</i>
1	1	1	1	1
2	1	1	0	0
3	1	1	1	0
4	1	1	1	1
5	0	1	0	0
6	0	0	1	0
7	0	0	0	1
8	0	0	0	1
9	0	0	1	0
10	0	1	0	0





The first tiger has a capture record of (1111), and was photo captured on all four occasions. The second tiger, having a photo capture record of (1100), was captured on occasions 1 and 2. Rest of the capture history data can be interpreted similarly. Since the capture-recapture data involving a number of animals becomes large, it is usually represented in the form of summary statistics for statistical analysis:-

k = number of capture occasions;

n_j = number of animals captured on the j^{th} occasion ($j = 1, \dots, k$);

u_j = number of unmarked animals captured on the j^{th} occasion ($j = 1, \dots, k$);

m_j = number of marked animals captured on the j^{th} occasion ($j = 1, \dots, k$);

M_j = number of distinct animals captured before the j^{th} occasion ($j = 1, \dots, k$);

($M_1=0$, and M_{k+1} is the total number of distinct animal captured in the exercise);

f_j = number of animals captured exactly j times ($j=1, \dots, k$);

The statistics pertaining to the hypothetical capture history data is provided as a summary below:

Summary Statistics for the Capture History of tigers

J	n_j	m_j	u_j	M_j	f_j
1	4	0	4	0	6
2	6	4	2	4	1
3	5	3	2	6	1
4	4	2	2	8	2
				10 ($M_5=10$)	
TOTAL	19	9	10		10

Description of the statistics:

n_j = column sum for the j^{th} occasion (column) in the capture data (history matrix), with (n_1, n_2, \dots, n_4) .

u_j = first captures out of n_j animals, with $(u_1, u_2, \dots, u_4)=(4,2,2,2)$.

m_j = recaptures out of n_j animals, with $(m_1, m_2, \dots, m_4)=(0,4,3,2)$.

($u_j + m_j = n_j$ i.e. 19)

M_j = cumulative number of first recaptures on the first $j-1$ occasions, thus $M_j = u_1 + u_2 + \dots + u_{j-1}$ and

$(M_1, M_2, \dots, M_5)=(0,4,6,8,10)$;

i.e. there is a progressive increase of marked animals in the population

from $M_1 = 0$ to $M_5 = 10$.

The capture frequency of an animal is denoted by its row sum. Thus (f_1, f_2, \dots, f_k) denote the frequency counts of all the animals which were capture (6, 1, 1, 2). Thus, 6 tigers were photo captured once, one tiger photo captured twice, one tiger photo captured thrice and two on all the four occasions.

The number of animals which are never captured is represented by ' f_0 ', so that $f_1 + f_2 + \dots, f_k = M$ and $f_0 + f_1 + \dots, f_k = N$.

Thus estimation of population size 'N' becomes equivalent to estimation of f_0 , the number of missing animals ($N=M_{t+1} + f_0$).

(IV) There are a number of models to address different sources of variation in capture probabilities, which are available in the software (CAPTURE):



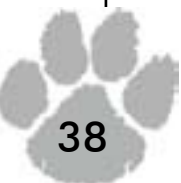
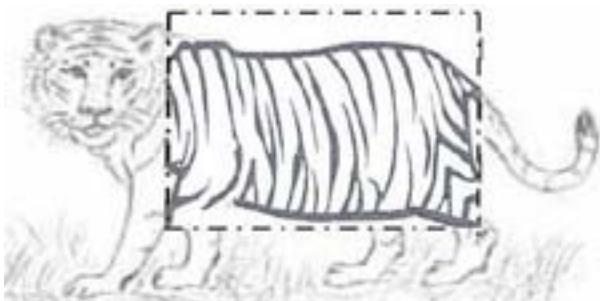


1. M_o : equal probability of capture model
2. M_h : Heterogeneity Model
3. M_{bh} : Behaviour-heterogeneity Model
4. M_t : Time Variation (Schnabel) Model
5. M_{th} : Time-Heterogeneity Model
6. M_{tb} : Time-behavioural Response Model
7. M_h : Heterogeneity Model

(V) Issues relating to survey design (for camera trapping of tigers) Some general considerations are as below:

1. The sampling time in camera trapping of tigers should be 'short' vis-à-vis the tiger populations turn over for meeting the assumptions relating to 'close models'. It has been stated that four to six weeks of sampling through camera trapping may be needed which may be stretched to eight to twelve weeks. Experience in general indicates that a period of six to eight weeks of sampling may be required.
2. The space should provide scope for every animal in the study area to have some chance of being captured.
3. The camera traps should be adequately spread through out the study area and should be checked each day during the sampling period to get a good capture history data.
4. The study area may be divided into a number of potential sampling units, whose size should be just sufficient to set up a single camera trap. Each sampling unit can be considered as a 'grid cell' which can be randomly selected to place camera traps at sites which are promising. In the following day, the camera can be moved to other such sites in the grid cell and the process can be repeated between five to thirty days to get a standard capture history data.
5. If the area is difficult or the number of camera traps are not adequate, then smaller portions of the area can be covered (block-wise) for camera trapping for a short period of time before moving successively to other portions. The total number of days used for camera trapping to cover the entire area (all blocks) is denoted as sample occasion 1. The procedure is repeated to get the capture occasion 2.

The other considerations in camera trapping of tigers include choice of the equipment (camera and the tripping device), choice of sites to set up the traps, spacing of traps and a standard data collection protocol. The tigers are identified visually from photographs using their unique stripe patterns:





Hiby et. al. have used a three dimensional model to match images of living tigers and tiger skins.

The identified individual tigers are numbered and every capture of an individual tiger is assigned to a particular secondary sampling occasions.

The capture history of individual tigers consist from the database in the standard history matrix and are analysed through a suitable computer program CAPTURE or MARK. During analysis, the results are checked to ascertain the violation / non-violation of the closure assumption and finally the statistical tests 'between models' is done to indicate the best fitting model vis-à-vis the data, from which the parameters are obtained. Since tigers are territorial, models which address heterogeneous capture probabilities (like M_{th}) should be used for tigers.

Hypothetical Data relating to individual capture history of 10 tigers with 6 camera trap (capture) occasions: Analysis with software CAPTURE

Tiger	Occasions
1.	100101
2.	101001
3.	010110
4.	100010
5.	101010
6.	101101
7.	001010
8.	101101
9.	010101
10.	101001

Mark-recapture population and density estimation program Page 1

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Input and Errors Listing Input---title='rg2'

Input---task read captures x matrix occasions=6 captures=6 Input---data='Group 1'

Input---format='(a6,6f1.0)' Input---read input data

Summary of captures read

Number of trapping occasions 6

Number of animals captured 10

Maximum x grid coordinate 1.0

Maximum y grid coordinate 1.0

Input---task model selection

Input task population estimate appropriate

** Warning ** Appropriate model has been selected, but no estimator is available.

Processing will be attempted.

*** ERROR *** Population estimator was not specified.





Scanning for a new task card.

Input task population estimate null

Input task population estimate darroch

Input task population estimate zippin

Input task population estimate jackknife

Input task population estimate mh-chao

Input---task population estimate mth-chao

Mark-recapture population and density estimation program Page 2

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rg2

Model selection procedure. See this section of the Monograph for details. Group 1

Occasion	j=	1	2	3	4	5	6	
Animals caught	n(j)=	7	2	6	5	4	6	
Total caught	M(j)=	0	7	9	10	10	10	10
Newly caught	u(j)=	7	2	1	0	0	0	
Frequencies	f(j)=	0	2	6	2	0	0	

1. Test for heterogeneity of trapping probabilities in population.
Null hypothesis of model M(o) vs. alternate hypothesis of model M(h)
Expected values too small. Test not performed.
2. Test for behavioral response after initial capture.
Null hypothesis of model M(o) vs. alternate hypothesis of model M(b)
Chi-square value = 3.819 degrees of freedom = 1 Probability of larger value = 0.05068
3. Test for time specific variation in trapping probabilities.
Null hypothesis of model M(o) vs. alternate hypothesis of model M(t)
Chi-square value = 8.687 degrees of freedom = 5
Probability of larger value = 0.12223
4. Goodness of fit test of model M(h)
Null hypothesis of model M(h) vs. alternate hypothesis of not model M(h)
Chi-square value = 5.581 degrees of freedom = 5
Probability of larger value = 0.34910

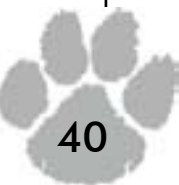
Mark-recapture population and density estimation program Page 3

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rg2

Model selection procedure. See this section of the Monograph for details. Group 1

5. Goodness of fit test of model M(b)
Null hypothesis of model M(b) vs. alternate hypothesis of not model M(b)
Chi-square value = 7.262 degrees of freedom = 4
Probability of larger value = 0.12265





5a. Contribution of first capture homogeneity across time Expected values too small. Test not performed.

5b. Contribution of recapture homogeneity across time

Chi-square value = 7.252 degrees of freedom = 4

Probability of larger value = 0.12316

6. Goodness of fit test of model M(t)

Null hypothesis of model M(t) vs. alternate hypothesis of not model M(t)

Expected values too small. Test not performed.

7. Test for behavioral response in presence of heterogeneity.

Null hypothesis of model M(h) vs. alternate hypothesis of model M(bh)

Chi-square value = 0.667 degrees of freedom = 1

Probability of larger value = 0.41422

Model selection criteria. Model selected has maximum value.

Model	M(o)	M(h)	M(b)	M(bh)	M(t)	M(th)	M(tb)	M(tbh)
Criteria	0.89	0.68	0.44	0.91	0.00	0.75	0.43	1.00

Appropriate model probably is M(tbh) No estimator results from this model.

Mark-recapture population and density estimation program Page 4

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rg2

Population estimation with constant probability of capture. See model M(o) of the Monograph for details.

Group 1

Number of trapping occasions was 6

Number of animals captured, M(t+1), was 10

Total number of captures, n., was 30

Estimated probability of capture, p-hat = 0.5000

Population estimate is 10 with standard error 0.4189

Approximate 95 percent confidence interval 10 to 10

Profile likelihood interval 10 to 11

Mark-recapture population and density estimation program Page 5

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rg2

Population estimation with time specific changes in probability of capture.

See model M(t) of the Monograph for details.

Group 1



Occasion $j =$ 1 2 3 4 5 6
 Animals caught $n(j) =$ 7 2 6 5 4 6
 Total animals captured 10
 $\hat{p}(j) =$ 0.70 0.20 0.60 0.50 0.40 0.60

Population estimate is 10 with standard error 0.0053
 Approximate 95 percent confidence interval 10 to 10
 Profile likelihood interval 10 to 11
 Histogram of $n(j)$

Frequency	7	2	6	5	4	6
7	*					
6	*	*	*			
5	*	*	*	*		
4	*	*	*	*	*	
3	*	*	*	*	*	
2	*	*	*	*	*	*
1	*	*	*	*	*	*

Mark-recapture population and density estimation program Page 6
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 rg2

Population estimation with constant probability removal estimator.
 See model M(b) of the Monograph for details.
 Group 1

Occasion $j =$ 1 2 3 4 5 6
 Total caught $M(j) =$ 0 7 9 10 10 10
 Newly caught $u(j) =$ 7 2 1 0 0 0

Estimated probability of capture, $\hat{p} = 0.714281$
 Estimated probability of recapture, $\hat{c} = 0.434783$
 Population estimate is 10 with standard error 0.0751
 Approximate 95 percent confidence interval 10 to 10
 Profile likelihood interval 10 to 10
 Histogram of $u(j)$



Frequency	7	2	1	0	0	0
7	*					
6	*					
5	*					
4	*					
3	*					
2	*	*				
1	*	*	*			

Mark-recapture population and density estimation program Page 7

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rg2

Population estimation with variable probability of capture by animal.

See model M(h) of the Monograph for details.

Group 1

Number of trapping occasions was 6

Number of animals captured, M(t+1), was 10

Total number of captures, n., was 30

Frequencies of capture, f(i)

i = 1	2	3	4	5	6
f(i) = 0	2	6	2	0	0

Computed jackknife coefficients

S.No	N(1)	N(2)	N(3)	N(4)	N(5)
1	1.833	2.500	3.000	3.333	3.500
2	1.000	0.467	-0.233	-0.833	-1.167
3	1.000	1.000	1.225	1.542	1.750
4	1.000	1.000	1.000	0.956	0.914
5	1.000	1.000	1.000	1.000	1.001

The results of the jackknife computations

i	N(i)	SE(i)	.95 Conf.	Limits	Test of N(i+1) vs. N(i)
0	10				Chi-square (1 d.f.)
1	10.0	0.00	10.0	10.0	2.250
2	8.9	0.00	8.9	8.9	0.002
3	8.9	1.49	6.0	11.8	0.261
4	9.5	2.83	4.0	15.0	0.488
5	10.0	3.57	3.0	17.0	0.000



The data are ill-conditioned. As a best guess, use Average $p\text{-hat} = 0.5000$

Interpolated population estimate is 10 with standard error 0.4567

Approximate 95 percent confidence interval 10 to 10

Histogram of $f(i)$

<i>Frequency</i>	<i>0</i>	<i>2</i>	<i>6</i>	<i>2</i>	<i>0</i>	<i>0</i>
6		*				
5		*				
4		*				
3		*				
2	*	*	*			
1	*	*	*			

Mark-recapture population and density estimation program Page 8

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rg2

Population estimate under individual heterogeneity in capture probabilities.

See model $M(h)$ of Chao (1988). Group 1

Number of trapping occasions was 6

Number of animals captured, $M(t+1)$, was 10

Total number of captures, n ., was 30

Frequencies of capture, $f(i)$

$i=$	1	2	3	4	5	6
$f(i)=$	0	2	6	2	0	0

Average probability of capture = 0.5000

Population estimate is 10 with standard error 0.0000

Approximate 95 percent confidence interval 10 to 10

Mark-recapture population and density estimation program Page 9

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rg2

Population estimate under time variation and individual heterogeneity in capture probabilities.

See model $M(th)$ of Chao et al. (1992).

Group 1

Number of trapping occasions was 6

Number of animals captured, $M(t+1)$, was 10

Total number of captures, n ., was 30





Frequencies of capture, $f(i)$

$i =$	1	2	3	4	5	6
$f(i) =$	0	2	6	2	0	0

<i>Estimator</i>	<i>Gamma</i>	<i>N-hat</i>	<i>se(N-hat)</i>
1	0.0000	10.00	0.00
2.	0.0000	9.74	0.00
3.	0.0000	10.34	0.67

Bias-corrected population estimate is 10 with standard error 0.6687

Approximate 95 percent confidence interval 10 to 13

Mark-recapture population and density estimation program Page 10

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rg2

Successful Execution

Capture Matrix of the tiger capture data analysed above:

<i>Tiger</i>	<i>Occasions</i>					
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1	1	0	0	1	0	1
2	1	0	1	0	0	1
3	0	1	0	1	1	0
4	1	0	0	0	1	0
5	1	0	1	0	1	0
6	1	0	1	1	0	1
7	0	0	1	0	1	0
8	1	0	1	1	0	1
9	0	1	0	1	0	1
10	1	0	1	0	0	1

(VI) Analysis

- Every tiger captured was given a unique identification number viz. (MT-002), after examining stripe pattern on flanks, limbs, forequarters
- Following tiger identification, capture histories (X matrix) were developed and analyzed using the program MARK, CAPTURE and CARE.
- CAPTURE gives various probabilities models of the underlying capture-recapture process, that are likely to have generated the observed capture histories



- Analysis of capture history involves comparison between competing models using a series of hypothesis tests and results of an overall discriminant function test, in order to select the most appropriate abundance estimation model
- Assumption: sampled population was demographically and geographically closed during the sampling period
- Since the entire tiger reserve is camera trapped the total population within the reserve is estimated. Also the same area is camera trapped in consecutive years therefore the population is directly comparable and there is no need to compute density of tigers which adds variability and loss of precision to detect trends.



Capture-recapture Sampling using Camera Trapping [Mark Software Format]

<i>Tiger ID</i>	<i>Trap Occasion (day)</i>						
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>n</i>
1							
2							
3							
4							
5							
6							
7							
N							

Data to be entered as 01 format.



ANNEXURE-VII

Data Sheet for Tiger, Other Animals & Human Sign Encounter Rate

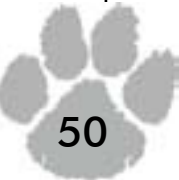
Observer Name: _____ Date: _____ Start Time: _____ End Time: _____
 Begin GPS: Lat: _____ N, Long: _____ E End GPS: Lat: _____ N, Long: _____ E
 Forest Circle _____ Forest Block & Range: _____ Beat _____
 Approx. Kms. travelled: _____ Km. Time Spent in any other activity _____ Min.

SL No	GPS Location (only for tiger sign)			* Animal Species	^ Sign Type	Mangrove Type			Creek Bank Type			Sign		Width of mud flat (water to Mangrove edge)	
	Lat.	Long.				Tall >10'	Medium 4-10'	Small <4'	Steep	Moderate	Gentle	Fresh	Old		
	D	M	S	D	M	S									
1.															
2.															
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															
11.															
12.															
13.															
14.															
15.															

* Animal species to be recorded: tiger, fishing cat, jackal, monitor lizard, crocodile, chital, wild pig, rhesus macaque, humans and others.

^ Sign types to be recorded are pugmark/hoof mark/foot print, scat/pellet (with condition), vocalization and direct sighting.





ANNEXURE-VIII

Encounter Rate on Line Transects

Observer Name: _____ Date: _____ Start Time: _____ End Time: _____
 Begin GPS: Lat: _____ N, Long: _____ E End GPS: Lat: _____ N, Long: _____ E
 Forest Circle _____ Forest Block & Range: _____ Beat _____
 Approx. Kms. travelled: _____ Km.

S. No	Time	Species*	Total Number (Adults & Young)	Young	Mangrove Type			Bank Type			Perpendicular Distance of animal from water's edge	Activity of the animal(s) Basking, foraging, moving, etc.
					Tall >10'	Medium 4-10'	Small <4'	Steep	Medium	Gentle		
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

* Species that need to be recorded on the transect: chital, rhesus, macaque, wild pig, monitor lizard and estuarine crocodile and other mammalian species seen.



ANNEXURE-IX

VEGETATION

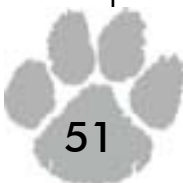
(To be recorded at every 15 minute travel interval)

Name of Observer: _____ Date: _____ Forest Circle: _____

Forest Division _____ Range: _____ Beat: _____

ID No. of Line Transect: _____

Sl No	GPS Reading at every plot from beginning of creek transect			Location of Plot- Left side/ Right side	Tree Species (Descending Order of Abundance, (Give Names)	Grass/Herbs/Sedges Species (Descending Order of Abundance including reg. mangroves, all vegetation < 4 ft.)					Density of Vegetation 0 to 4 0- Open 4- very dense	Remarks
	Lat	Long				1	2	3	4	5		
		Deg	Min			Sec	Deg	Min	Sec			





ANNEXURE-X

Human Disturbance

Name of Observer: _____ Date: _____ Forest Circle: _____
Forest Division _____ Range: _____ Beat: _____
ID No. of Line Transect: _____

SI No	GPS locations of the beginning of creek transect and at every 15 min. travel interval thereafter Wood Cutting 0-4 Lopping 0-4 Fishing evidence seen from the vegetation plot Y/N People Seen from the plot Y/N						Human Disturbances 0-4 Rating, 0-None, 4-Very high
	Lat		Deg		Long		
1	Deg	Min	Sec	Deg	Min	Sec	
2							
3							
4							
5							
6							
7							
8							
9							
10							

Are there any permanent human settlements in the beat? (Yes/No). If Yes, how many? _____. Approximate human population ____, Is there NTFP collection in the beat ____ (Yes/No). If yes, what NTFP is collected _____, Rate NTFP collection on a scale of 0-4, 0-No to 4-Very high _____

Intensity of fishing _____ and tiger prawn seed collection _____ in the beat at 0-4 scale (0 is nil, 4 is very high)



भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 15-4/2012-NTCA (Vol.III)

New Delhi, the September 3, 2019

To,
Chief Wildlife Warden (s)
Tiger Range States

Sub: Advisory for Phase IV Monitoring- reg.

Sir,

You are aware that, The Tiger Task Force constituted by the National Board for Wildlife (2005) has endorsed the revised methodology / approach propounded by the erstwhile **Project Tiger Directorate (now the National Tiger Conservation Authority-NTCA)** for country level estimation / monitoring of tiger / prey status. The **All India Tiger Estimation** exercise is one of the most crucial components of our national tiger conservation efforts. Monitoring efforts began in 2006, and are undertaken every four years, through a three-phase approach. The said approach *inter alia*, also comprises of **Intensive monitoring of tiger source populations in tiger reserves and protected areas in each tiger landscape complex known as Phase-IV Monitoring**, and maintenance of a centralized photo-database of tigers at NTCA obtained from camera traps deployed across all tiger reserves.

The objective of the **Phase IV Monitoring** is to, at the least, obtain a **minimum number of tigers** in a Tiger Reserve. But, with a passage of time, it has been felt that the areas outside Tiger Reserves are equally important, especially from viewpoint of gene flow in tiger bearing landscape. Therefore, it's very important to conduct this monitoring beyond the boundaries of Tiger Reserves also.

Further, it has also been observed during the **All India Tiger Estimation, 2018 (4th Cycle)** that there are certain **low density Tiger Reserves** and other tiger bearing areas, which have recorded no tiger presence during the survey period. But there are reports of tiger presence of in such areas beyond survey period. It has also been observed that certain states could not cover the tiger bearing areas during 4th Cycle of AITE as compared to previous cycles.

As per the Analysis of AITE, 2018 data more than **80% of Tigers of the total estimated population were individually identified/photo-captured** as minimum number of Tigers in country. Therefore, Phase IV Monitoring is an opportunity for all the Tiger States to conduct this exercise for the current year in order to bring the minimum number more close to the estimated population of Tiger.





The funds are being allocated to tiger bearing states for procurement of field equipments for conducting Phase IV monitoring, other field surveys and capacity building of field staffs under **CSS-Project Tiger**.

As per the mandate given in **Protocol on Phase IV monitoring (Technical Document No. 1/2011)**, this field exercise is expected to be conducted by the state forest departments themselves. Though, support for capacity building, training and handholding of field staff may be provided by this Authority through its Regional Offices, other Technical Institutes and Non Governmental Partners. In All India Tiger Estimation 2018 a Grid size of 2 km² has been taken for placing the camera traps, therefore the **same 2 km² Grids** may be taken up for conducting Phase IV Monitoring.

The Tiger Cell of NTCA at WII, Dehradun that act as a data center may also be contacted in case of any information such as grid locations; animal occupancy etc. is required by the states.

All the Tiger Range States are expected to start **Phase IV Monitoring from 15th October 2019** in order to finish the exercise **15th May 2020**. In view of above, the timeline and proposed action may be informed to this Authority while providing information on following points by **30th September 2019**.

1. Tiger Reserve/Forest Division
2. Coordination/Preparatory meetings
3. Capacity Building/Training
4. Field Surveys including camera trappings
5. Data analysis
6. Report Submission

Yours Sincerely,

Sd/-

(Surender Mehra)

Deputy Inspector General (NTCA)

E-mail: dig1-ntca@nic.in

Tel. (EPABX): + 91 11 24367837-39

FAX: +91 11 24367836

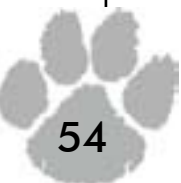
Copy to:

1. Principal Chief Conservator of Forest & HoFF, All Tiger Range States
2. Inspector General, Regional Offices, NTCA (Guwahati & Bangalore)
3. Field Director(s), All Tiger Reserves
4. Director, Wildlife Institute of India, Dehradun
5. AIG, Regional Office, Nagpur

Sd/-

(Surender Mehra)

Deputy Inspector General (NTCA)





F. No. 1-16/93-PT (Vol.III)
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

B-1 Wing, 7th Floor,
Pt. Deendayal 'Antyodaya Bhawan',
CGO Complex, Lodhi Road, New Delhi-110003.
E-mail: aig3-ntca@nic.in
Tel (EPABX): 011-2436 7837-42
Fax: 011 - 2436 7836

Dated: 20.12.2017

To,
The Chief Wildlife Warden(s),
All Tiger Range States

Sub: Advisory to emergent situation of tiger and sympatric species mortality due to electrocution-reg.

Sir,

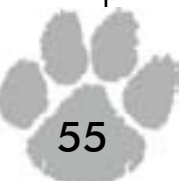
Please find enclosed herewith an advisory to deal with the emergent situation of tiger and sympatric species mortality due to electrocution. In this context, I am directed to request you to comply with suggested actions and take action as appropriate, in the matter.

End: As above.

Yours Faithfully,
Sd/-
(Dr. Vaibhav C. Mathur)
Assistant Inspector General (NTCA)

Copy for Information & Necessary Action:

1. The Field Director(s), All Tiger Reserve.
2. The IGFs/AIGs, Regional Office, NTCA, Nagpur, Bangalore and Guwahati.





Title: Advisory to prevent tiger and sympatric species mortality due to electrocution

Subject: To deal with the emergent situation of tiger and sympatric species mortality due to electrocution

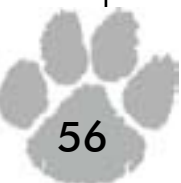
Reference: Generic guidelines for preparation of Security Plan for Tiger Reserves

Purpose: To ensure that dispersing tigers do not fall victim to electrocution in human dominated landscapes

Suggested Actions:

Field Level

- Identification of threat posed by villages based on (i) their distance from Protected Area, (ii) Habitat quality available and (iii) Proportion of forested area in a villages
- Mapping of transmission lines and electric stations/sub stations should be carried out and identify officials manning them. (Maps may be prepared using open source data like Open Street map, Google layers etc., if required)
- Analysis of cropping patterns and land tenure dynamics of tigers to assess when tiger movement shall be intense outside Protected Areas
- Constitution of joint teams comprising Forest officials, Electricity Department officials and members of PRIs/NGOs
- Special patrolling by aforesaid teams along transmission lines in buffer and corridor areas wearing appropriate safety gear
- Instituting a reward system to encourage people to report illegal power fences in operation
- Evolve a mechanism to separate electricity supply for household and agriculture use so as to shut down agriculture supply line during sensitive periods (Dusk to Dawn)
- Installation of sensitive circuit breakers to pin location of electrocution
- Promotion of solar powered fencing around agricultural fields
- Special emphasis for surveying electricity connections to agricultural pumps and similar equipment. Further, an undertaking should be taken from the end user by the agricultural pump/equipment provider and the Electricity Department that the pump/equipment shall be used for legitimate purposes only, failing which confiscation and /or termination of connection shall be carried out.
- Explore possibility of stone wall fencing which shall restrict ungulate movement but are permeable to wild carnivores
- Timely payment of compensation for crop and/ or livestock damage
- Penal action as deterrent for future in form of temporary/permanent disconnection of electricity besides action in accordance with provisions of the Wildlife (Protection) Act, 1972, besides other prevalent Acts of the Electricity Department.





Administrative Level

- Periodic meetings between Forest and Electricity Department, frequency of which may be decided based on sensitivity of seasons, to share information on tripping and action taken in this regard by respective Departments
- Zone wise nodal officials of Departments concerned, should be identified to communicate on a regular basis
- Mass awareness programmes to be organized using extension media, local press clubs, radio and television stations by Departments concerned
- Steps be taken to promote and facilitate crop and livestock insurance schemes
- Possibility of insulating transmission lines, besides routing cables underground should explored in all sensitive areas in discussion with the electricity department



F. No. 15-38/2010-NTCA
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

B-1 Wing, 7th Floor,
Pt. Deendayal 'Antyodaya' Bhawan,
CGO Complex, Lodhi Road,
New Delhi-110003
EPABX No. +91 11 2436 7837-42
Fax: +91 11 2436 7836
E-mail: aig3-ntca@nic.in

Dated: 28th October, 2016

To,
The Chief Wildlife Warden (s),
All Tiger Range States.

Sub: Advisory on Avian Influenza - reg.

Sir,

Reference is invited to the subject cited above. In this context, I am directed to bring to your kind notice, the recent avian deaths due to Avian Influenza virus in the country.

As advised by the Office des International Epizooties (OLE), early detection and warning are keys to effectively dealing with the disease, which necessitates stepping up animal health surveillance in and around tiger reserves. This shall involve observation and documentation of any avian illness and mortality and reporting the same to the nearest Veterinary Health establishment.

Frontline staff dealing with sick and/or dead birds or their parts should exercise due precaution owing to the diseases' public health importance. Protective clothing like gloves, boots and masks are highly advisable.

In view of the migratory bird season, it is important to conduct a stakeholder meeting at tiger reserve level involving State Veterinary health officials to contain the disease if detected.

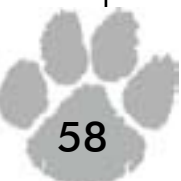
Yours faithfully,

Sd/-

(Dr. Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Copy to: The Secretary General, Global Tiger Forum, New Delhi, in view of migratory birds of the East Asia/Australian flyway.





NATIONAL TIGER CONSERVATION AUTHORITY
(Statutory Body under the Ministry of Environment and Forest, Govt. of India)

Member Secretary

Annexe No. 5, Bikaner House,
Shahjahan Road, New Delhi-11,
Telefax: 2338 4428
E-mail: dirpt-r@nic.in

No. PS-MS (NTCA)/ 2009-Misces

Dated the 18th March, 2009

To,

**All Field Director(s),
All Tiger Reserves**

Sub: Fire protection.

Sir,

As you are aware, under the ongoing Centrally Sponsored Scheme of Project Tiger, considerable central assistance is being provided for preventive / control fire protection measures in tiger reserves, based on reserve-specific Annual Plan of Operation (APO) received from your end. In the recent past, several incidents of forest fire have been highlighted in the print-media which is a cause for great concern. In this context, an update on the forest protection measures / monitoring system in vogue may please be sent to this office by return fax, along with details of any recent fire in the tiger habitat.

Yours Sincerely,

Sd/-
Member Secretary (NTCA)

Copy to:

1. The Principal Secretary (Forests), All Tiger Range States.
2. The Principal Chief Conservator of Forests, All Tiger Range States.
3. The Chief Wildlife Warden, All Tiger Range States.



भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F.No.15-59/2009-NTCA (Part)

New Delhi, the April 8, 2019

To,

The Chief Wildlife Warden(s)
All Tiger Range States

Sub: Fire protection.

Ref.: This Authority letter no. F.No.1-14/2011-NTCA (Part.II) dated April 2, 2019

Sir,

In continuation of this Authority letter referred above, I am directed to say that considerable financial assistance is being solicited under the ongoing Centrally Sponsored Scheme of Project Tiger for preventive/control fire protection measures in tiger reserves, based on reserve specific Annual Plan of Operations.

It is requested that the same may be implemented on a war footing keeping in view the predisposition during the hot summer months.

Detailed action taken in this regard may kindly be intimated on a fortnightly basis to this Authority.

Yours faithfully,

Sd/-

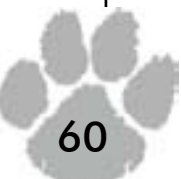
(Dr. Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Email: aig3-ntca@nic.in

Tel. (EPABX): + 91 11 24364837-39

FAX: +91 11 24367836





F.No.15-59/2009-NTCA(Part)

Copy to:

1. The Field Director(s), All Tiger Range States
2. The Regional Offices (NTCA), Guwahati, Nagpur & Bengaluru

Sd/-

(Dr. Vaibhav C. Mathur)

Assistant Inspector General (NTCA)



IMPORTANT

F. No.15-38/2010-NTCA (Part)
Government of India
Ministry of Environment, Forest & Climate Change
National Tiger Conservation Authority

B-I Wing, 7th Floor,
Pt. Deendayal Antodaya Bhawan,
CGO Complex, Lodhi Road, New Delhi – 110003
Email: aig3-ntca@nic.in
Tel. (EPABX): + 91 11 24364837-42
FAX: +91 11 24367836

Dated: 03.10.2018

To,
The Chief Wildlife Warden(s),
All Tiger Range States

Sub: Lion deaths in Gujarat.

Ref: 1. This Authority letter of even number dated 20.10.2015 (copy enclosed)
2. This Authority letter of even number dated 14.06.2013 (copy enclosed)

Sir,

Reference is invited to the subject and letter cited above. In this context, I am directed to say that as reported in the media, certain number of lion deaths in the State of Gujarat have been attributed to Canine Distemper, a viral disease where in dogs (feral on domestic) act as a transmitting host.

In this regard, advisories communicated through letters referred above are hereby reiterated to reduce likelihood of tigers acquiring the said infection.

Action as appropriate may kindly be taken on an urgent basis.

End: As above.

Yours faithfully,

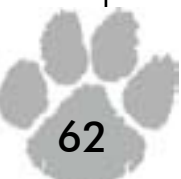
Sd/-

(Dr. Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Copy to:

1. Field Director(s), All Tiger Reserve(s).
2. All Regional Offices, NTCA.





No. 15-38/2010-NTCA
Government of India
Ministry of Environment and Forests
National Tiger Conservation Authority

Annexe No. 5, Bikaner House,
Shahjahan Road, New Delhi-I 10011.

Telefax: 2338 983

E-mail: jdntca@gmail.com

Dated the 14 June, 2013

To,

The Chief Wildlife Warden(s),
All Tiger Range States.

Sir,

Recently there has been media coverage regarding spread of lethal Canine Distemper Virus (CDV) in tiger, in countries like Indonesia and Russian Federation. The said disease is incurable, causing high fever, watery eyes, lethargy, vomiting, diarrhea, progressing to seizures, paralysis and death. The infected animals have also been observed to display strange behaviour, with disorientation, inability to predate, besides logs of fear.

As a precaution, the following preventive measures are suggested:

1. Vaccination of Stray cattle, cats and dogs living around tiger reserves should be done on a regular basis.
2. Incidents of wild animals showing abnormal behavior, as above, must be reported immediately.
3. Tissues of dead animals (brain tissue for CDV) should be collected for pathological analysis.
4. Facilities of deep fridge for storing samples should be ensured in each tiger reserve.
5. Record of each sample collected and their analysis should maintained.
6. Periodic checking of water quality in tiger reserves (pre and post monsoon) alongwith their chemical analysis should be undertaken.

The Field Directors and field staff may please be directed accordingly. A research paper on the detection of 'Peste des Petits Ruminants Virus' (PPRV) in tissues of Asiatic Lion is also, enclosed herewith for your kind perusal.

Yours Faithfully,

End: As above,

Sd/-

(S. P. Yadav)

Deputy Inspector General (NTCA)





Copy to:

1. The Director, Wildlife Institute of India, Dehradun.
2. Field Director, All Tiger Reserves.
3. IG/AIG, NTCA Regional Offices – Bengaluru / Guwahati / Nagpur.

Copy for Information to:

1. PS to MEF.
2. PPS to Secretary (E&F), MoEF.
3. PPS to DGF & SS, MoEF.
4. PS to ADG (WL), MoEF.



F. No. 15-38/2010-NTCA (Part III)
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

First Floor, East Tower,
NBCC Place, Bhishma Pitamah Marg,
New Delhi-110003
Tele: +91 11 24362445
Fax: +91 11 24364250
E-mail: aig3-ntca@nic.in

Dated the 17th December 2014

To,
The Chief Wildlife Warden (s),
Madhya Pradesh and Uttarakhand

Sub: Special Drive in respect of Canine Distemper

Ref: This Authority letters of even no. Dated 14.6.14. and 18.6.14

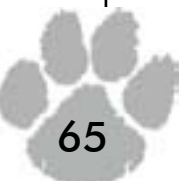
Sir,

Reference is invited to the subject and letters cited above. In this context, I am directed to request you to kindly expedite framing a proposal to create immunity buffers around Panna and Corbett Tiger Reserves, in consultation with district veterinary officials, Indian Veterinary Research Institute (IVRI) and the Wildlife Institute of India, for soliciting financial support under the ongoing CSS-Project Tiger. This needs to be launched as a special, time bound drive.

In this context, the following points are suggested for guidance;

The concept of creating immunization buffers around Tiger Reserves should be initiated keeping in mind the principles of herd immunity; the latter is briefly discussed as follows:

- i. Herd immunity concept proposes that in contagious diseases such as Canine Distemper (CD), the chain of infection is likely to be disrupted when large numbers of a population are immune (vaccinated) or less susceptible to the disease (due to vaccination).
- ii. The rationale behind this is that the exposure of unvaccinated /susceptible animals (tigers in the case of tiger reserves) to infected animals shall be substantially reduced. Hence, greater the proportions of individuals which are vaccinated/ resistant/immune to the disease, lesser are the chances of its transmission. In essence vaccinated animals act as a firewall between tigers and stray animals
- iii. Therefore, a policy of herd immunity can be formulated for stray dogs and cats around Tiger Reserves to prevent the spread of CD and provide a level of protection to a vulnerable, unvaccinated group like tigers





- iv. However, the Nerd immunity threshold i.e. proportion of immune individuals in a population (in the instant case population includes all animals susceptible to CD including tigers) above which a disease may no longer persist needs to be arrived at in and around Tiger Reserves. Possible source of information can be retrospective data available with the local Veterinary & Animal Husbandry office or Veterinary Colleges, which shall help to see secular trends of CD cases in the said geographical area. Analysis of disease data can help establish
- o Virulence of the CD virus prevalent in the area and
 - o The efficacy of commonly used vaccines to see number of cases contracting the disease in spite of vaccination
- Empirical data of different diseases however, has shown that vaccinating 70 to 80% of the population helps in reduction of transmission of the disease. This shall help in designing a vaccination protocol for the envisaged immunization buffers with optimum costs as the entire population need not be vaccinated
- v. If retrospective data is not available, then support from Veterinary Colleges/Animal Husbandry Departments needs to be solicited in conducting a sero-prevalence study of stray dogs and cats around the TR for CD. The sylvatic presence of CD in tiger reserves can be established by;
- Retrospective data on wild animal mortality available with TR management
 - Screening of serum samples of tigers after blood collection subsequent to immobilization
- vi. Site specific preventive measures can be taken keeping in mind the following factors:
- The CD virus is fragile and will perish above 20-25 degrees C in sunlight. Therefore, drying of fomites after washing is sufficient
 - Any case of death if detected in the buffer/adjoining areas, the carcass should be removed and the area disinfected by flaming or 1:30 solution of bleach
 - The CD virus is susceptible to chemicals such as 0.75% phenol, 1:30 bleach solution and detergents
 - Accordingly disinfectant baths can be put up at all entry points to the Park for vehicles coming from outside, staff should be advised to maintain strict hygiene of their premises inside the Reserve
 - Advisories in the form of hoardings, posters, leaflets in dailies can be issued highlighting common signs and forms of CD with graphics with contact numbers for reporting if a CD case is suspected in and around the Reserve

Yours Faithfully,

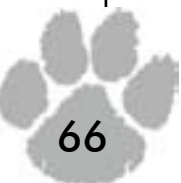
Sd/-

(Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Copy to:

1. The Inspector General of Forests (NTCA), Regional Office, Nagpur
2. The Field Director(s), Corbett and Panna Tiger Reserve.





F. No. 15-38/2010-NTCA
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

B-1 Wing, 7th Floor,
Paryavarati Bhawan,
CGO Complex, Lodhi Road,
New Delhi 110003
Email: aig3-ntca@nic.in
Tel (EPABX): +91 11 24367837-42
Fax: +91 11 24367836

Dated the 20th October 2015

To,
The Chief Wildlife Warden (s),
All Tiger Range States

Sub: Special Drive in respect of Canine Distemper

Ref: This Authority letters of even no. dated 14.6.13 and 18.6.13 and 15-38/2010-NTCA (Part III)

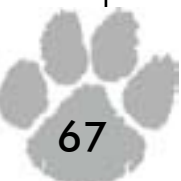
Sir,

Reference is invited to the subject and letters cited above. In this context, I am directed to request you to kindly expedite creation of immunity buffers around Tiger Reserves' under your jurisdiction, in consultation with district veterinary officials, Indian Veterinary Research Institute (IVRI) and the Wildlife Institute of India. Funding support in this context may be solicited under the ongoing CSS-PT. This needs to be done as a special, time bound drive.

In this context, the following points are suggested for guidance;

The concept of creating immunization buffers around Tiger Reserves should be initiated keeping in mind the principles of herd immunity; the latter is briefly discussed as follows:

- i. Herd immunity concept proposes that in contagious diseases such as Canine Distemper (CD), the chain of infection is likely to be disrupted when large numbers of a population are immune (vaccinated) or less susceptible to the disease (due to vaccination).
- ii. The rationale behind this is that the exposure of unvaccinated /susceptible animals (tigers in the case of tiger reserves) to infected animals shall be substantially reduced. Hence, greater the proportions of individuals which are vaccinated/ resistant/immune to the disease, lesser are the chances of its transmission. In essence vaccinated animals act as a firewall between tigers and stray animals
- iii. Therefore, a policy of herd immunity can be formulated for stray dogs and cats around Tiger Reserves to prevent the spread of CD and provide a level of protection to a vulnerable, unvaccinated group like tigers





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- o Virulence of the CD virus prevalent in the area and
- o The efficacy of commonly used vaccines to see number of cases contracting the disease in spite of vaccination

Empirical data of different diseases however, has shown that vaccinating 70 to 80% of the population helps in reduction of transmission of the disease. This shall help in designing a vaccination protocol for the envisaged immunization buffers with optimum costs as the entire population need not be vaccinated

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- The CD virus is susceptible to chemicals such as 0.75% phenol, 1:30 bleach solution and detergents
- Accordingly disinfectant baths can be put up at all entry points to the Park for vehicles coming from outside, staff should be advised to maintain strict hygiene of their premises inside the Reserve
- Advisories in the form of hoardings, posters, leaflets in dailies can be issued highlighting common signs and forms of CD with graphics with contact numbers for reporting if a CD case is suspected in and around the Reserve

Further, advisories of this Authority on the said subject of Canine Distemper virus are reiterated for taking action as appropriate.

Yours Faithfully,

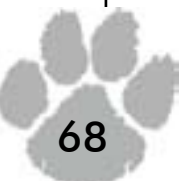
Sd/-

(Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Copy to:

1. The Inspector General of Forests (NTCA), Regional Office, Nagpur, Bengaluru and Guwahati
2. The Field Director(s), All Tiger Reserves





F. No.15-38/2010-NTCA
Government of India
Ministry of Environment & Forests
National Tiger Conservation Authority

Annexe No.-V, Bikaner House,
Shahjahan Road, New Delhi-110011.
Telefax: 2338 9883
E-mail: jdntca@gmail.com

Dated: 18th June, 2013

To,
The Chief Wildlife Warden (s),
All Tiger Range States.

Sub: Threat to Asian Tigers from Canine Distemper Virus-reg.

Sir,

In continuation to this Authority's letter No. 1-12/2003-PT dated 14th June, 2013 and letter of even number dated 14/06/2013 regarding Canine Distemper Virus, I am directed to send inputs received from Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh vide their letter No. 2-19/DI/NRC/2013-14/CWL dated 17/06/2013 (copy enclosed) for your kind perusal and necessary action.

Yours Faithfully,

Encl: As above.

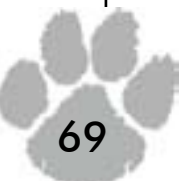
Sd/-
(S. P. Yadav)
Deputy Inspector General (NTCA)

Copy to:

1. The Additional Chief Secretary/Principal Secretary, Forest Department, All Tiger Reserve.
2. The Principal Chief Conservator of Forests, All Tiger Range States.
3. The Field Director(s), All Tiger Reserves.

Copy to Information to:

1. PS to MEF.
2. PPS to Secretary (E&F), MoEF.
3. PS to DGF & SS, MoEF.
4. PPS to ADGF (WL), MoEF.





F. No. 2-19/DI/NRC/2013-14/CWL

Dated: 17/06/2013

To,

Dr. Rajesh Gopal
ADG (PT) & Member Secretary
National Tiger Conservation Authority
Bikaner House, Annexe-V
Shahjahan Road, New Delhi-110011
Fax: 011 -23074272

Sub: Threat to Asian Tigers from canine distemper virus

Ref: No. 1-16/93- PT (Vol.II) dated 11th June, 2013.

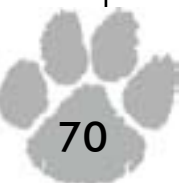
Sir,

With reference to above mentioned subject and query raised vide your letter referred above, a meeting was held under the Chairmanship of Dr. Rishendra Verma, Joint Director (CADRAD) in his chamber on 14.06.2013 at 11:00 A.M. Dr. A. K. Sharma, Principal Scientist (Pathology) & Incharge, Centre for Wildlife Section and Dr S. Nandi, Principal Scientist (Virology), CADRAD were present. The matter was discussed at length in the light of previous publications and the investigation work carried out at IVRI.

The following points emerged out of the discussion.

1. The canine distemper virus (CDV) member of morbillivirus of paramyxoviridae family is widely prevalent among domestic dog population in our country.
2. Chronic encephalomyelitis caused by canine distemper virus has been reported in Bengal tiger in India.
3. Seropositivity of CDV was reported in 87.5% Asiatic lions from Western India in 1998-1999.
4. Evidence of CDV infection has been reported in all families of terrestrial carnivores: felidae, hyaenidae, mustelidae, procyonidae, ursidae and viverridae including red or lesser panda and giant panda.
5. Recently, occurrence of CDV has been detected by PCR in a tigress, two tiger cubs and Red Panda in Virology lab of CADRAD, IVRI.

Thus, it is apparent that canine distemper virus is circulating not only in dog population but also in wild felids in our country.





Recommendations:

1. There is an urgent need to conduct monitoring of sero prevalence of CDV in large cats (endangered species) both in captivity and in wild. It should be made mandatory to look for CDV infection while conducting postmortem of any large felid.
2. The stray dogs should be prohibited from entering the buffer zones of National Parks or in the vicinity of the zoos.

Materials to be collected for diagnosis from sick animals.

1. Heparinized whole blood about 10-15 ml in cold chain at 4°C (Not frozen).
2. Serum 1.0 ml in cold chain (frozen).

From Dead Animals:

1. Tissues for virus isolation: spleen, lymph nodes, lung and brain in cold chain (frozen) or in 50% buffered glycerol.
2. Above tissues (0.5 cm thick) in 10% neutral buffered formalin for histopathological examination.

These materials may be sent to Incharge, National Referral Centre on Wildlife Healthcare, IVRI, Izatnagar in person so as to reach the laboratory at the earliest.

Sd/-
(A.K. Sharma)
Incharge, CWL

Copy to:

1. Director, IVRI, for information.
2. Dr. Rishendra Verma, Joint Director (CADRAD), IVRI, Izatnagar.





PROTOCOL FOR TIGER RE-INTRODUCTION NATIONAL TIGER CONSERVATION AUTHORITY (Adapted from the IUCN Guidelines for Re-introductions)

Capture and Translocation of tigers could be undertaken to address the following two Goals:

Re-introduction means an attempt to establish a tiger population in an area which was once part of its historical range, but from which it has been extirpated or become extinct.

Re-inforcement/Supplementation: addition of tigers to an existing population to enhance its long-term viability.

AIMS AND OBJECTIVES OF RE-INTRODUCTION

a. **Aims:**

The principle aim of any re-introduction should be to establish a viable, free-ranging population in the wild, of tigers which has become locally extinct in the wild. It should be re-introduced within the tigers' former natural habitat and range and should require minimal long-term management.

b. **Objectives:**

The objectives of a re-introduction may include: to enhance the long-term survival of wild tigers in a manner that they could potentially perform their ecological and evolutionary role.

At no times should tiger translocations be viewed as an alternative to, or compromise on habitat connectivity's for sustaining and promoting natural dispersal between populations.

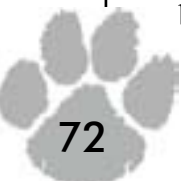
TEAM CONSTITUTION

The Team will consist of representatives from Wildlife Institute of India, State Forest Departments, Qualified Veterinarian and a Qualified Wildlife Biologist. The Team leader would be responsible for coordination between the various bodies and provision should be made for publicity and public education about the project. The provisions of the Wildlife Protection Act shall be adhered to at all times. The proposal, progress, and activities of the translocation exercises should be transparent and communicated through appropriate forum and media so as to gain public support.

The National Tiger Conservation Authority (NTCA) will keep an oversight on the translocation process and may also depute a representative as and when considered necessary.

PRE-PROJECT ACTIVITIES BIOLOGICAL Feasibility Study and Background Research

- An assessment should be made of the taxonomic status of tigers to be re-introduced. They should preferably be of the same evolutionary significant unit as those which were extirpated, unless adequate numbers are not available. Potential source/founder populations should be identified, assessed and prioritized based on a) genetic and geographical closeness to the proposed reintroduction population, b) Impact of removals on the host/founder population (assessed by a PVA if necessary). Preference should be given to tigers obtained from wild stock for reintroduction. If appropriate wild stock is not available then captive stock should be considered. An investigation of historical information about the loss and fate of individuals from the re-introduction area, as well as molecular genetic studies, may be undertaken in case of doubt as to individuals' taxonomic status.





- In the absence of genetic data tigers from the nearest population that likely had habitat connectivity in the historical past with the area where reintroduction is to be made should be the preferred founder population.
- A Population and Habitat Viability Analysis will aid in identifying significant environmental and population variables and assessing their potential interactions, which would guide long-term population management and reintroduction. Population and management plans for the long term (>25 years) should be prepared on the basis of the above analysis. It should be clear from the onset of the reintroduction program that some reintroduced populations will require continuous management and/or supplementation for long term viability. Commitments from the concerned authority and funding support for this sustained effort are a prerequisite for reintroduction.

Choice of Release Site and Type

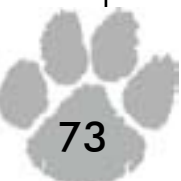
- Site should be within the historic range of tigers. For an initial reinforcement there should be few remnant wild individuals. For a re-introduction, there should be no remnant population to prevent disease spread, social disruption and introduction of alien genes. In some circumstances, a re-introduction or re-reinforcement may have to be made into an area which is fenced or otherwise delimited, but it should be within the species' former natural habitat and range.
- The re-introduction area should have assured long-term protection (whether formal or other wise).

Evaluation of re-introduction site

- Availability of suitable habitat: re-introductions should only take place where the habitat and landscape requirements of tigers are satisfied, and likely to be sustained for the foreseeable future. The possibility of natural habitat change since extirpation must be considered. Likewise, a change in the legal/ political or cultural environment since species extirpation needs to be ascertained and evaluated as a possible constraint. The area should have sufficient carrying capacity to sustain growth of the re-introduced population and support a viable (self-sustaining) population in the long run.
- Identification and elimination, or reduction to a sufficient level, of previous causes of decline: could include disease; over-hunting; poisoning; competition with or predation by introduced species; commercial poaching, habitat loss; and adverse effects of earlier management programmes;. Where the release site has undergone substantial degradation caused by human activity, a habitat restoration programme and/or programmes to resettle humans should be initiated before the re-introduction is carried out.

Suitability of Release Stock of Tigers

- It is desirable that source tigers come from wild populations. If there is a choice of wild populations to supply founder stock for translocation, the source population should ideally be closely related genetically to the original native stock and show similar ecological characteristics to the original population.
- Removal of individuals for re-introduction must not endanger the wild source population. Stock must be guaranteed available on a regular and predictable basis, meeting specifications of the project protocol.





- Individuals should only be removed from a wild population after the effects of translocation on the donor population have been assessed, and after it is guaranteed that these effects will not be negative.
- To minimize impact on the founder / host population, preferably tigresses between the age of 2-3 years (Sub-adults) who have become independent of their mother but are yet to establish their own territories should be targeted. This cohort also has the highest reproductive potential and therefore ideal for starting a new population. Male tigers become sexually mature at the age of 2 years but rarely can they breed till 4 years of age in the wild. This age group (2-3 years) is ideal for translocation for reintroduction as their removal from the host population will not result in male turnovers and subsequent infanticide episodes. All effort should be made not to translocate established breeding individuals from the host population. Potential individual tigers that are to be translocated should be monitored prior to their capture to ascertain their social status, health, and behavior.

Release of Captive Tigers

- Tigers rely heavily on individual experience and learning as juveniles for their survival; they should be given the opportunity to acquire the necessary information to enable survival in the wild, through training in their captive environment; a captive bred individual's probability of survival should approximate that of a wild counterpart.
- Care should be taken to ensure that potentially dangerous captive bred tigers that might be a danger to local inhabitants and/or their livestock are not released. All tigers should be equipped with radio collars and monitored intensively. If the newly released tiger shows behavior that is likely to cause problems for the local people, it should be removed immediately.

SOCIO-ECONOMIC REQUIREMENTS

- Re-introductions are generally long-term projects that require the commitment of long-term financial and political support.
- Socio-economic studies should be made to assess impacts, costs and benefits of the re-introduction programme to local human populations.
- A thorough assessment of attitudes of local people to the proposed project is necessary to ensure long term protection of the re-introduced population, especially if the cause of species' decline was due to human factors (e.g. over-hunting, over-collection, loss or alteration of habitat). The programme should be fully understood, accepted and supported by local communities.
- Where the security of the re-introduced population is at risk from human activities, measures should be taken to minimise these in the re-introduction area. If these measures are inadequate, the re-introduction should be abandoned or alternative release areas sought.
- If tigers pose potential risk to life or property, these risks should be minimised and adequate provision made for compensation where necessary; where all other solutions fail, removal of the released individual should be considered.

PLANNING, PREPARATION AND RELEASE STAGES

- Construction of a multidisciplinary team with access to expert technical advice for all phases of the programme.

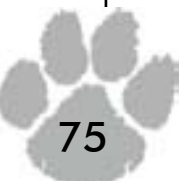




- Identification of short- and long-term success indicators and prediction of programme duration, in context of agreed aims and objectives as per the PVA and population management plan.
- Securing adequate funding for all programme phases.
- Design of pre- and post- release monitoring programme so that each re- introduction is a carefully designed experiment, with the capability to test methodology with scientifically collected data. Monitoring the health of individuals, as well as the survival, is important; intervention may be necessary if the situation proves unforeseeable unfavourable.
- If release stock is wild-caught, care must be taken to ensure that: a) the tigers are free from infectious or contagious pathogens and parasites before translocation and b) the stock will not be exposed to vectors of disease agents which may be present at the release site (and absent at the source site) and to which it may have no acquired immunity.
- If vaccination prior to release, against local endemic or epidemic diseases of wild stock or domestic livestock at the release site, is deemed appropriate, this must be carried out during the “Preparation Stage” so as to allow sufficient time for the development of the required immunity.
- Appropriate veterinary measures as required to ensure health of released stock throughout the programme. This is to include adequate quarantine arrangements, especially where founder stock travels far or crosses international boundaries to the release site.
- Development of transport plans for delivery of stock to the site of re-introduction, with special emphasis on ways to minimize stress on the individuals during transport.
- Determination of release strategy (acclimatization of release stock to release area; behavioural training - including hunting and feeding; group composition, number, release patterns and techniques; timing). Preferably “Soft release” should be the norm.
- Development of conservation education for long-term support; professional training of individuals involved in the long-term programme; public relations through the mass media and in local community; involvement where possible of local people in the programme.

POST-RELEASE ACTIVITIES

- Post release monitoring is required of all tigers. This most vital aspect may be by direct (e.g. telemetry/ Satellite tracking) methods as suitable.
- Demographic, ecological and behavioural studies of released stock must be undertaken.
- Study of processes of long-term adaptation by individuals and the population.
- Collection and investigation of mortalities.
- Interventions (e.g. supplemental feeding; veterinary aid) when necessary.
- Decisions for revision, rescheduling, or discontinuation of programme where necessary.
- Habitat protection or restoration to continue where necessary.
- Continuing public relations activities, including education and mass media coverage. Evaluation of cost-effectiveness and success of re- introduction techniques. Regular publications in scientific and popular literature.





NATIONAL TIGER CONSERVATION AUTHORITY
(Statutory Body under the Ministry of Environment and Forest, Govt. of India)

Bikaner House, Annexe-V
Shahjahan Road, New Delhi- 110011
Telefax: 23384428
E-mail: dirpt-r@nic.in

Most Urgent

No.1501/11/2007-PT (Part)

Dated the November 16, 2007

To,

**The Chief Wildlife Warden
(All Tiger Reserve States)**

Sub: Identification and notification of core or critical habitats in Tiger Reserves.

Sir,

Section 38V (Chapter IV B) of the Wildlife (Protection) Act, 1972 (as amended in 2006) provides for establishing core or critical tiger habitat in tiger reserves on the basis of scientific and objective criteria by the State Government, in consultation with an Expert Committee constituted for the purpose.

Section 38V of the Wildlife (Protection) Act, 1972 involves three distinct processes- (i) identification/delineation of core or critical tiger habitat as per scientific/objective criteria involving an Expert Committee; (ii) identification/delineation of the buffer or peripheral area in consultation with the concerned Gram Sabha and the Expert Committee; (iii) creation of inviolate area on the basis of identified core or critical tiger habitat through relocation, as per the statutory process.

The core or critical tiger habitat are among the most sensitive areas in the country vis-à-vis tiger conservation and hence their identification as well as notification have to be expedited by according topmost priority. You are requested to identify/delineate such areas within the Tiger Reserves of your State by the following process:

- (i) An Expert Committee may be constituted under the Chairmanship of the Chief Wildlife Warden comprising of two experts (one governmental and the other non-governmental).
- (ii) The Committee, in consultation with respective Field Directors shall finalize and delineate the core or critical tiger habitats of tiger reserves using the criteria at para (iii) below, within 10 days from the receipt of this letter.



- (iii) A minimum inviolate space of 800-1000 sq. k.m. should be maintained as the core or critical tiger habitat to support a viable population of tiger in landscape, which is based on tiger life history parameter, territory sizes and population viability analysis, as per the assessment made by Project Tiger (National Tiger Conservation Authority) and Wildlife Institute of India in 2006.
- (iv) The draft proposal containing the reserve-wise delineated core or critical tiger habitats (soft/hard copies along with maps) may be brought for discussion/needful action from this end during the meeting of Chief Wildlife Wardens convened on 29-11-2007

The buffer or peripheral area may be delineated after due consultation process between the Expert Committee and concerned Gram Sabha as required under Section 38V of the Wildlife (Protection) Act, 1972, as amended in 2006. Proposal in this regard maybe sent subsequently by 31-01-2008, along with identified tiger corridors.

A timeframe for subsequent process would be discussed and finalized during the meeting under reference. An early action in this regard is solicited.

Yours Sincerely,

Sd/-

Member Secretary,

National Tiger Conservation Authority

Copy to:

1. PPS to Secretary (E&F)
2. PPS to DGF &SS
3. Principal Secretary, Forest Department (All Tiger Reserve States)
4. Principal Chief Conservator of Forests (All Tiger Reserve States)
5. All Field Directors

Sd/-

Member Secretary,

National Tiger Conservation Authority





NATIONAL TIGER CONSERVATION AUTHORITY
(Statutory Body under the Ministry of Environment and Forest, Govt. of India)

Member Secretary

Annexe No. 5, Bikaner House,
Shahjahan Road, New Delhi-11,
Telefax: 2338 4428
E-mail: dirpt-r@nic.in

F. No. PS-MS (NTCA)/2009-Misces

Dated the April 22, 2009

To,

**The Field Director
(All Tiger Reserve)**

Sub: Field interventions in core/critical tiger habitats.

Sir,

As you aware, the core/critical tiger habitats have been notified by States under section 38V of the Wildlife (Protection) Act, 1972 as amended in 2006. The core/critical tiger habitats are areas of National parks and Sanctuaries where field interventions should be very minimum, as per the directives issued by the Hon'ble Apex Court on 25-11-2005, in IA No. 1220 (Interim Report of CEC in IA No. 548) and IA No. 994. A copy of the said order is enclosed for ready reference.

The Following are important to note vis-à-vis the directives of the Apex Court under reference:

- (i) The field interventions should be as per the approved Management Plan (Tiger Conservation Plan) of the Tiger Reserve.
- (ii) No outside agency can undertake any field work inside the core/critical tiger habitat without the prior permission of the Hon'ble Apex Court.
- (iii) No individual donor can prescribe a field activity of his choice inside the core/critical tiger habitat.
- (iv) The Tiger Conservation Plan for the tiger reserve should be prepared as per the guidelines issued vide NTCA Technical Document 01/07, duly approved by the competent authority as prescribed in the Wildlife (Protection) Act, 1972 as amended in 2006.
- (v) Since the core/critical tiger habitats are meant to be kept inviolate for tiger, artifacts like foundation stone, commemorative exhibits/signages should be constructed in such areas at any cost.



The above directions may strictly be followed in compliance of the Hon'ble Apex Court's directives under reference to ensure the sanctity of our core/critical tiger habitat.

Yours Sincerely,

End: As above.

**Sd/-
Member Secretary (NTCA)**

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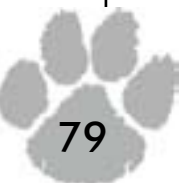
1. PPS to Secretary (E&F) MoEF.
2. PPS to DGF & SS, MoEF.
3. PPS to Addl. DG (Wildlife), MoEF.

**Sd/-
Member Secretary (NTCA)**

Copy also to:

1. Additional Chief Secretary/Principal Secretary (Forests) (All Tiger Reserve States).
2. Principal Chief Conservator of Forests (All Tiger Reserve States).
3. Chief Wildlife Warden (All Tiger Reserve States).

**Sd/-
Member Secretary (NTCA)**





F.No.1-12/2008-NTCA

Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

Annexe No. 05 Bikaner House,
Shahjahan Road, New Delhi-110011
Telefax: 23384428
E-mail: dirpt-r@nic.in

Dated the 26th May, 2009

To,
The Chief Wildlife Warden
All Tiger Range States

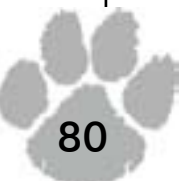
Sub: Creation of Buffer Area – regarding


Sir,

On several occasions clarification has been sought on the status of buffer area of a tiger reserve and collection of minor forests produce (MFP) from such areas.

In this context, I am directed to say that as per section 38V (4) (i) of the Wildlife (Protection) Act, 1972, as amended in 2006, a “tiger reserve” comprises of core/critical tiger habitat areas of National Parks and Sanctuaries which have been notified under section 35 and 18 of the Wildlife (Protection) Act, 1972 respectively. Such areas are required to be kept as inviolate for the purposes of tiger conservation. Hon’ble Supreme Court of India vide its order dated 14.2.2000 in IA No. 548 in W. P. No. 202/1995 *Godaverman v. Union of India* has also prohibited removal of dead, dying diseased, drift wood and grasses from National Parks and Sanctuaries. Hence, collection of MFP should not be allowed from the core areas of tiger reserves.

Further, the buffer area consists of the area peripheral to core area (not having the status of a National Park/Wildlife Sanctuary), identified and established in accordance with the provisions contained in Explanation (i) of section 38 V (4), where a lesser degree of habitat protection is required to ensure the integrity of the critical tiger habitat with adequate dispersal of tigers, and which aim at promoting co-existence between wildlife and human activity with due recognition of the livelihood, developmental, social and cultural rights of the local people. Hence, collection of MFP like bidi leaf (tendu patta) and other forestry operations may be allowed in the buffer area of a tiger reserve, which may comprise of forests/non forests areas, not having the status of a National Park/Wildlife Sanctuary as intended/notified under Chapter IV of the Wildlife (Protection) Act, 1972.





It is pertinent to add that the management of the buffer area (including implementation of forestry activities) should be carried out on the broad principles laid down in para 11.3 of the NTCA Technical Document (NTCA/01/07).

Yours Faithfully,

Sd/-

(S.P. Yadav)

DIG & Joint Director (NTCA)



Dr. RAJESH GOPAL

डॉ. राजेश गोपाल

Addl. DGF (Project Tiger) &

Member Secretary (NTCA)

अति. वन महानिदेशक (बाघ परियोजना) एवं

सदस्य सचिव (रा.व्या.सं.प्रा.)

Bikaner House, Annexe-V

बीकानेर हाउस, एनेक्सी - V,

Shahjahan Road, New Delhi-110011

शाहजहां रोड, नई दिल्ली-110011

Tel. (दूरभाष): 011-23384428

Fax (फैक्स): 011-23074272

E-mail: (O) dirpt-r@nic.in

No. 1-14/2011-NTCA (Part-I)

Dated the 2nd April, 2014

To,

Chief Wildlife Warden(s)

All Tiger Range States.

Sub: Supplementary guidance document for preparing the Tiger Conservation Plan.

Sir,

As you are aware, the draft Tiger Conservation Plans, as received from States, have been examined and commented upon by this Authority, followed by elaborate review and discussion in recent meetings with Field Directors. In this context, a guidance document to expedite preparation of the Tiger Conservation Plan is annexed. This is a supplement to the earlier guidelines issued by this Authority for preparation of Tiger Conservation Plan vide its Technical Document-NTCA/01/07, and is based on the provisions of the Wildlife (Protection) Act, 1972 apart from related guidelines issued from this end.

It is requested that the final version of the Tiger Conservation Plan of tiger reserves may kindly be sent to this Authority by the 15th of June, 2014, so as to enable us to apprise the Hon'ble Apex Court.

End: As above

Yours Sincerely,

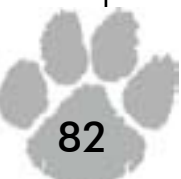
Sd/-

(Dr. Rajesh Gopal)

ADG (PT)) & Member Secretary (NTCA)

Copy to:

1. ACS / Principal Secretary, Forest Department, All Tiger Range States.
2. Field Director(s) of all tiger reserves.
3. All officers of NTCA Regional Office, Guwahati/Nagpur/Bengaluru.
4. All officers of NTCA at Headquarter.





GUIDANCE DOCUMENT FOR PREPARATION OF TIGER CONSERVATION PLAN

(A supplement to Technical Document – NTCA/01/07)

PART-A

FOR THE CORE /CRITICAL TIGER HABITAT

GENERAL PRINCIPLES OF MANAGEMENT

1. Exclusive tiger agenda : fostering as a reproductive surplus area.
2. Ensuring high prey productivity through protection.
3. Preventing depression of tiger density from poaching.
4. Ensuring low human disturbance through village relocation from source areas.
5. Ensuring minimal human impact and remoteness through buffering.
6. Fostering tiger population vis-a-vis the carrying capacity of the habitat.
7. Using the existing carrying capacity for tiger as a basis for habitat interventions
8. No go areas for development of any sort.
9. Promoting the process of populating promising tiger habitats in the landscape with the reproductive surplus (by habitat connectivity with core critical habitat or by active management).
10. Regulated tourism as per NTCA guidelines.

DATA COLLECTION/ANALYSIS

1. Obtain remote sensing data of forest cover (FSI, 23 m resolution) in GIS domain for the core area.
2. Incorporate layers in the GIS : administrative boundaries, topographical features, elevation, protection infrastructure (patrolling camps), rivers, water bodies (natural / man-made), grass meadows, spatial occupancy of major wild ungulates, tiger.
3. Use the Phase-I data of 2010 country level tiger assessment for obtaining beat level average data (cover below canopy) on shrubs, weed and ground cover (as average percentage for the beat), while indicating the same on respective beats in the GIS (source — WIT).
4. Develop a range for the average beat level cover values (as at Sl. No. 3) for highlighting beats falling within a similar value range with a colour code.
5. Use Phase-IV data to indicate tiger presence and relative abundance at beat level.
6. Compute the carrying capacity for tiger using the predictive equation of Hayward et. al. (2007).

Predictive equation of Hayward et. al. (2007) is useful for large predators like tiger:

$$y = -2.158 + 0.377x$$

y = log of predicted predator density

x = log of Preferred prey biomass

where:

Eg. Computing carrying capacity of Tiger in Kanha Tiger Reserve

$$y = -2.158 + 0.377x$$



y = log of predicted predator density

x = log of Preferred prey biomass

<i>Preferred Prey</i>	<i>Density/Km² (Mean ± SE)</i>	<i>3/4th Avg. Female Weight (Kg.)</i>	<i>Available Biomass Kg. per Km² (Mean ± SE)</i>
Chital	33 ± 4.47	30	990 ± 134.1
Sambar	8.51 ± 1.11	150	1276.5 ± 166.5
Wild Pig	5.48 ± 0.96	40	219.2 ± 38.4
Gaur	4.11 ± 0.8	300	1233 ± 240

- ❖ Total Preferred Prey Biomass = 3718.7 (± 579) Kg/Km²
- ❖ Predicted Tiger Density = 16.0 ± 1.0/100 Km² (15-17)
- ❖ Current Tiger Density = 5.32 ± 0.68/100 Km²

Prey densities #/Km² (mean (SE)) from 2010 Assessment

<i>Habitat</i>	<i>Ungulates</i>	<i>Crevids</i>	<i>Chital</i>	<i>Sambar</i>	<i>Nilgai</i>
Mixed Forest (Shivalik)	58.04 (11.39)	54.51 (12.1)	46.71 (13.25)	7.49 (1.79)	2.22 (1.13)
Sal Forest (Terai)	19.11 (2.30)	13.12 (1.87)	13.0 (2.17)	0.14 (0.10)	3.02 (0.81)
Moist Sal-Mixed (Central India)	47.19 (9.32)	39.97 (9.09)	36.93 (10.42)	3.85 (0.74)	0.27 (0.14)
Dry Teak-Mixed (Central India)	51.24 (5.68)	42.13 (4.87)	37.00 (6.06)	5.34 (0.57)	1.38 (0.30)
Dry Thron Deciduous Forest (Central India)	51.97 (1.69)	38.46 (9.76)	31.62 (10.38)	8.24 (1.82)	11.17 (2.69)
Dry Mixed Decidous Forest (E. Ghat)	5.46 (16.9)	4.78 (1.47)	1.84 (0.97)	3.34 (1.09)	Not Assessed
Teak Mixed Forest (W. Ghat)	43.54 (5.85)	37.80 (5.63)	31.36 (6.93)	7.69 (1.18)	Not Assessed
Evergreen Forest (W. Ghat)	14.17 (4.55)	9.66 (4.46)	8.02 (6.86)	2.12 (1.08)	Not Assessed
Scrub Forest (W Ghat)	45.99 (10.33)	45.85 (11.69)	37.07 (14.91)	4.06 (1.11)	Not Assessed

7. In case wild ungulate densities for the reserve have not been computed during the 2010 country level tiger assessment, then such data as available for a similar habitat may be used, while indicating the same.

PREPARATION OF ZONE PLANS AND THEME PLANS

1. Based on generic principles of management, data appraisal and field knowledge propose appropriate zoning for management in the form of Zone Plans, besides overlapping Theme Plans. It is strongly



advised that any proposal for habitat intervention should be based on the existing carrying capacity for tiger as computed. In case, the tiger density is near or close to the carrying capacity, no new habitat interventions should be proposed, but for continuing with the ongoing ones. In case of habitats with poor prey density it should first be determined if the poor density is due to poor protection and subsequent poaching, or due to poor food availability resulting as a consequence of competition with livestock. If these causes are ruled out then appropriate habitat interventions may be required besides in-situ augmentation of prey base. However, such interventions should not change the ecological character of the forest habitat (like providing numerous water sources in an otherwise arid habitat).

2. In case the habitat supports another endangered, endemic or localized wild fauna, it would be advisable to treat such areas of their occurrence within the habitat under a Zone Plan for providing due focus. Likewise, zoning may be considered for unique habitats, areas prone to natural flooding, areas requiring retrofitting safeguards etc.
3. In case of human settlements / villages in the core area, such areas should be dealt under a Zone Plan to facilitate time bound voluntary relocation as per NTCA / Project Tiger guidelines.
4. Portions of the core permitted for regulated tourism as per the NTCA guidelines should be dealt under a separate Zone Plan.
5. Overlapping interventions / safeguards like fire protection, general protection / antipoaching operations, tiger/wildlife monitoring, disease surveillance, capacity building of staff etc. need to be proposed as respective Theme Plans.

Example:

Zone Plan for Unique Habitat Zone Plan for Voluntary Relocation Zone Plan for Tourism

Theme Plan for Protection

Theme Plan for Habitat Intervention

Theme Plan for Capacity Building / Staff Development and Deployment Theme Plan for Tiger / Wildlife Monitoring

6. The Theme Plan for antipoaching operations / surveillance / protection / communication should be shaped as a Security Plan with SOPs, besides a provision for periodic security auditing.

PART-B

FOR THE BUFFER / PERIPHERAL AREA OF A TIGER RESERVE

The need for ensuring ecologically compatible land uses in tiger reserves (buffer / peripheral areas) and corridors have been provided in sections 38O(g) and 38V (3)(b) of the Wildlife (Protection) Act, 1972. Further, under section 38V (3)(c) of the said Act, a provision has also been made to ensure that 'the forestry operations of regular forest divisions and those adjoining tiger reserves are not incompatible with the needs of tiger conservation'. In general, the managerial approach of buffer is applicable to tiger corridor areas as well. Intensive form of land uses like commercial mining, setting up of industries causing pollution and establishment of major hydro electric projects, and discharge of effluence / solid wastes in natural water bodies etc. needs to be avoided in such areas.



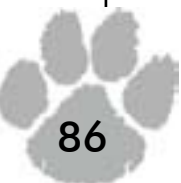


GENERAL PRINCIPLES OF MANAGEMENT

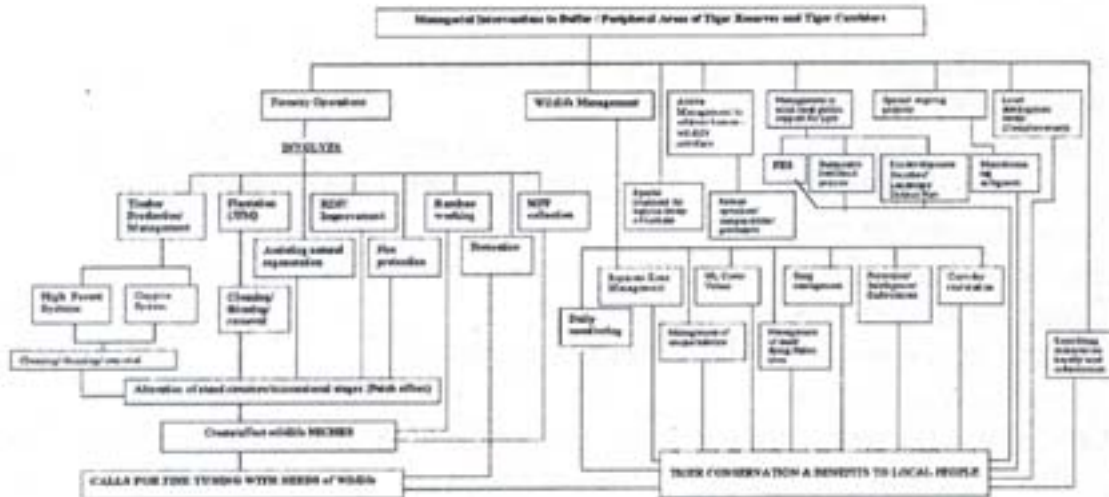
1. Co-occurrence agenda (Wildlife and People).
2. A 'no-go area' for industrial development (but retrofitting safeguards required if such infrastructure already exists).
3. The wildlife status of buffer should not be elevated to that of the core and managerial interventions should be restricted to allow tiger / wildlife gene permeability and low density occupancy while facilitating the meta-population dynamics of tiger in productive patches.
4. Factoring in the landscape context and reducing resource dependency of local people on forests through sectoral integration resulting in ecologically sustainable livelihood option.
5. Using the impact of natural / managerial interventions in the core area as a guide \for dealing with forestry practices and wildlife management in the buffer.
6. Identifying zones of influence vis-à-vis the various land uses operating in the area.
7. Overarching focus on habitat restoration/productivity, reduction of forest resource dependency, providing ecologically sustainable livelihood options to local people, permitting ecologically sustainable land uses, avoiding intensive forms of land uses like mining or heavily used infrastructure and actively addressing human-wildlife interface. In case such land uses are present or permitted appropriate mitigation measures need to be enforced so as not to compromise on the conservation objectives of the buffer.
8. Convergence of ongoing district level schemes is important to provide ecologically sustainable livelihood options for local people. This would reduce their dependency on forest resources while eliciting the much needed public support. A sizeable portion of tourism gate receipts should be recycled and earmarked to Eco development committees for village specific interventions as per the participatory micro plan, with reciprocal commitments to protect wildlife and their habitat on quid-pro-quo basis.

SCOPE OF MANAGERIAL INTERVENTIONS

- (i) Providing ecologically sustainable livelihood options to local people in collaboration with various sectors/organizations.
- (ii) Incentivizing local people for protecting forests and wildlife (PES, Ecotourism).
- (iii) Ensuring retrofitting measures in sectors of development with reciprocal commitments.
- (iv) Ensuring active management in areas where tiger / Co predators / wild ungulates co-occur with people to minimize human-wildlife interface conflicts.
- (v) Ensuring monitoring of tiger / wildlife on a periodic basis in standardized manner, amenable to scientific inference.
- (vi) Ensuring surveillance and protection of tiger and wildlife.
- (vii) Building up the capacity of field staff and local people as a part of an adaptive management to ensure effective implementation.
- (viii) In case the buffer comprises of protected area then managerial interventions should be in conformity with the provisions of the Wildlife (Protection) Act, 1972.



Summary Chart of Managerial Interventions



DATA COLLECTION / ANALYSIS

1. Obtain remote sensing data of forest cover (FSI, 23 m resolution) in GIS domain for the core area.
2. Incorporate layers in the GIS : administrative boundaries, topographical features, elevation, protection infrastructure (patrolling camps), rivers, water bodies (natural / man-made), grass meadows, location of villages, agriculture fields, cash crops, dry nallahs, irrigation canals, roads, rail track, tourism infrastructure, location of industry / hydro power project / mine if any, besides distribution of wild animals.
3. In case of villages / agriculture field / cash crop / industrial infrastructure, use google map (1 m resolution) to get the details, especially with respect to the forest edges.
4. Use the Phase-I data of 2010 country level tiger assessment for obtaining beat level average data (cover below canopy) on shrubs, weed and ground cover (as average percentage for the beat), while indicating the same on respective beats in the GIS (source — WIT).
5. Develop a range for the average beat level cover values (as at Sl. No. 3) for highlighting beats falling within a similar value range with a colour code.
6. Use Phase-IV data to indicate tiger presence relative abundance at beat level.
7. Conduct regeneration surveys of important MFP species in the core area for using as reference data.
8. Conduct regeneration surveys of important MFP species in the buffer area and indicate their beat level status.
9. Obtain a relationship between canopy class interval and mean wild ungulate density (in various forest types as relevant) in the core/critical tiger habitat for using as a reference data.
10. Appraisal of ongoing working plan prescriptions.



APPRAISAL

1. Macro level (larger spatial scale)

- Appraisal for interventions at a larger spatial scale
 - Buffer area vis-à-vis the core size
 - Intensity (need to progressively increase from the source area boundary) of managerial effects across the buffer and corridor
 - Natural species composition
 - Age structure of forest stands
 - Presence of old stands / trees
 - Spatial heterogeneity (different patch sizes)
 - Edges and ecotones
 - Corridors (forest / non-forest cultivation giving cover/ nallah beds/ gulleys/ ravines/ culverts/ bridle paths)
 - Riparian zones
 - Unique habitats
 - Human settlements (villages/hamlets/rural towns, private estates, agriculture lands, tourism infrastructure, varied land uses, special projects, temples, rail/road infrastructure, mining, horticulture, thermal power plant, industries etc.)
 - Proximity / adjacency ratings between various non-forest covers and forest areas (as relevant – eg. sugarcane cultivation to forest, villages, nallah bed etc. for computing juxtaposition / interspersions indices using GIS)

2. Micro level (finer spatial scale appraisal)

- Appraisal for interventions at a finer spatial scale
 - Ongoing forestry practices like selection / coppice system, plantation / JFM / bamboo working, collection of MFP
 - Appraisal of large gaps if any
 - Proximity of raised plantations to agricultural field
 - Ongoing bamboo working vis-à-vis tiger presence
 - Ongoing thinnings and ungulate presence (wild / livestock)
 - Presence of seed bearers / old coppice growths
- Species diversity (monoculture or otherwise)
- Edge effect (inherent : natural openings / frost holes close to forest) (induced : presence of cover crops / young plantations close to forest)
- Status of corridors (whether choked with infrastructure / settlements or free of them)
- Human settlements, agriculture fields and their impact (beats / areas with rights and concessions)
- Tourism infrastructure (location with respect to natural corridor)
- Impact of varied land uses and projects (location of projects / infrastructure and their proximity to core area)





FINE TUNING / MITIGATION STRATEGIES FOR VARIOUS SECTORS IN THE BUFFER

1. Forestry

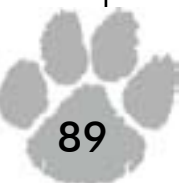
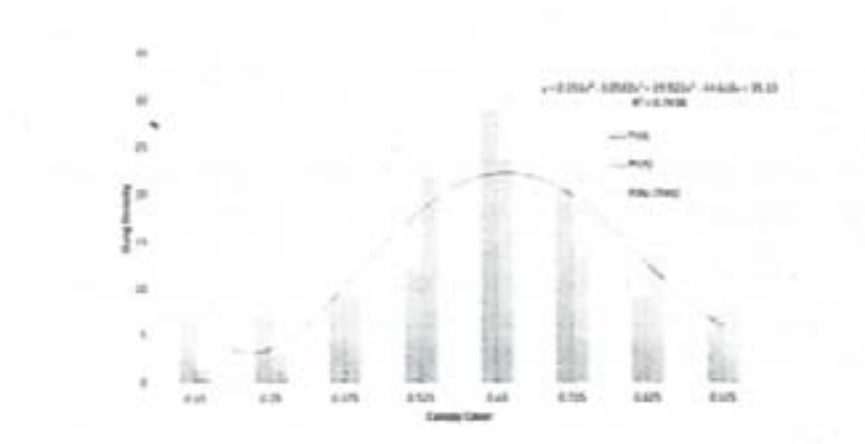
- Ecosystem management required
- Ecological availability of a tree should be ascertained before removal
- A tree should be considered ecologically available if
 - (a) Its removal does not create a gap beyond 43 to 45%.
 - (b) The regeneration of species at various formation levels within a radial distance of twice the crown radius of the tree being selected for felling should have an 'established' status.

Tree fellings/Thinnings

- No clear felling and other silviculture systems promoting concentrated regeneration
- No conversion to uniform forests
- A high forest system with diffused regeneration should be preferred
- Status of regeneration should be an over arching consideration to permit felling
- Areas having considerable disturbance should not be felled

**Tree fellings/Thinnings
Canopy Class and Wild Dung Presence**

<i>Mid-Value</i>	<i>Wild dung</i>	<i>SE</i>	<i>Freq.</i>
0.15	10.52	0.79	6
0.25	11.68	0.71	7
0.375	15.46	1.08	9
0.525	19.56	2.75	12
0.65	47.86	19.30	29
0.725	33.92	14.03	20
0.825	15.22	7.21	9
0.925	11.72		7



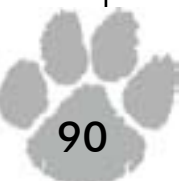


- After due consideration to regeneration/status, the relationship between canopy class and wild ungulate dung presence should be used as a guide to prescribe the stem removal
- Buffer / corridor areas should be managed for wild ungulates at a level which is 30% lower than the optimal levels in core areas
- In general, the relationship between mean ungulate density and canopy class intervals in a sal / tree dominated forests, with polynomial curve fitting shows that the 80% lower bound corresponds to a canopy cover of 43% (computed for sal forests of Central India; similar relationships need to be developed for other forest types to facilitate inference)
- Thus, for sal forests of Central India, the timber harvest in the buffer/corridor area may be permitted in a selective manner so that the canopy cover does not fall below 43% during winter months. This strategy will minimize tiger-human conflict while permitting selective extraction of timber species
- More openings will permit more light while fostering more regeneration thereby attracting wild ungulates and tigers
- The idea behind buffer/corridor management is to sustain it for gene flow, while not elevating its status to that of core area in terms of wildlife abundance

Collection of NTFP

- NTFP collection should not be permitted in areas with maximum disturbance and unestablished regeneration status, as this would adversely affect the demography of such species.
- The regeneration status of NTFP species in the buffer / corridor area should be compared with its status in the core / critical habitat.
- Collection should not be permitted in areas having endangered arboreal fauna.
- No logging / felling should be permitted during NTFP collection.
- Collection should not disturb 'canopy bridges' in an area.
- The timings for NTFP collection should be regulated while avoiding early morning or late evening.
- The patterns of NTFP collection should be studied for prescribing ecologically permissible collection.
- The quantum of NTFP collected in an area should be regulated, considering its consumption by wild animals.
- An estimation of the availability of NTFP (fruit / tuber / leaf) should be done (example: for total fruit crop estimation, considering several categories of branches and the number of fruits per branch etc.).
- Fire should not be used to promote new flush of leaves (usually done for Tendu), as this would lead to forest fire.
- Fruit removal affects frugivory, hence fruit tree should be fostered.
- The density of NTFP species in the buffer / corridor area should be compared with their densities in the core / critical tiger habitat. In low density areas such NTFP species should not be permitted for extraction.

A chart depicting NTFPs collected in various areas within the division over months during a year should be prepared for close monitoring.





Different parts of a tree / plant / shrub / herb are harvested as NTFP and many of them are valuable as medicinal plants. To avoid over exploitation, it is important to prescribe site specific indicators for their ecologically sustainable management, vis-à-vis the regeneration status.

- The nursery techniques of NTFP species (especially those having medicinal value) should be fostered through the community linked to incentives for growing subspecies.
- Regulation through PES (Payment for Ecosystem Services)

Collection of NTFP Indicators to avoid over exploitation of NTFP

<i>NTPF Particulars Harvested</i>	<i>Indicators</i>
Fuelwood	<ul style="list-style-type: none"> • Regeneration status • Intensity of girdling/cutting of young trees (number of stumps per unit area) • Change in the rate of extraction • Quantum of dead/fallen twig branches on forest floor
Leaves	<ul style="list-style-type: none"> • Reduction in canopy cover • Reduction in leaf litter • Regeneration status • Weed invasion • Change in species composition
Fruit/flower/seed.	<ul style="list-style-type: none"> • Regeneration status • Annual productivity per sample tree vis-à-vis the productivity in core/critical tiger habitat • Method of harvesting <p>Season of harvesting vis-à-vis requirements of wild animals (fruit/flower/seeds act as ‘qualifiers’ in a habitat, and their total harvesting would reduce such welfare factors)</p>
Bark	<ul style="list-style-type: none"> • Girdling • Tree mortality • Regeneration status • Number of dead stems per unit area
Rhizome	<ul style="list-style-type: none"> • Regeneration status

Fuel / Fodder Collection

- Grazing should be regulated in a rotational manner, and prophylactic immunization should be done for village livestock.
- Since the unrecorded removal from forest exceeds the recorded removal in many States, fuel / fodder collection should not be permitted in disturbed areas or compartments with poor regeneration status. Such areas should be prescribed a ‘recovery’ period before reopening them for fuel / fodder collection.
- A ‘safe lopping index’, based on site specific studies should be prescribed for fodder removal on a rotational basis.





2. Wildlife management

- Buffer / corridor areas require a ‘coarse filter’ approach for maintaining a variety of plant / animal species
- Day to day monitoring
- Habitat amelioration (compensatory nature)
- Fostering indigenous fodder / fruit species
- Maintaining existing water points
- No drastic habitat interventions
- Cropping pattern / harvesting to factor in cover values
- Inherent / induced diversity indices need to be computed for maintaining the edges (without enhancing them)
- Human-wildlife interface issues to be addressed
- Treatment for riparian zones / unique features
- Retention of dead trees, snags
- Restoration / protection of existing corridors

3. Ecodevelopment / PES / Sustainable livelihood / District level local development

- a) Village level micro planning for benefits to local people on a quid-pro-quo basis (involving VFC/EDC)
- b) Innovative use of JFM / REDD+/ PES / recycling of tourism gate receipts to Ecodevelopment Committees
- c) Benefits from district level developmental works (convergence), interalia, covering
 - (i) public health and family welfare
 - (ii) food and nutrition security
 - (iii) education
 - (iv) natural resource management and water security
 - (v) sanitation
 - (vi) roads
 - (vii) energy
 - (viii) housing, and
 - (ix) livelihoods

4. Mitigation strategy for mining

- Mitigation strategy for mining should have two components :
 - (i) improved / green technology and minimum ancillary development causing minimum habitat loss
 - (ii) site specific mitigation measures for tiger and other wild animals, inputs for providing ecologically sustainable livelihood options to locals, besides offsite ‘offsets’ to achieve more tiger conservation
 - Mitigation measures for exploratory phase





- Mitigation measures for construction / mining phases
- Site specific mitigation measures for tiger / wild animals, while providing sustainable livelihood options (this should include onsite modification of the mined area to its original form and restoration of topsoil with indigenous ground cover or through creation of water body / wetland)
- Offsite compensatory inputs in similar habitats within P2 or P1 areas to strengthen tiger conservation
- Providing livelihood options to local people within the zone of influence

5. Mitigation strategy for dams and hydro power sectors

The impacts include:

- First order impacts (barrier effects, effects on water quality, water quantity, flow regime and sediment load)
- Second order impacts (impact on terrestrial environment affecting primary production-planktons, aquatic flora), morphology (channel form, substrate composition)
- Third order impacts (impact on terrestrial environment affecting invertebrates, fish, birds and mammals)
 - Mitigation measures are required to address impacts due to dams construction as well as its operation
 - The mitigation plan should include onsite as well as offsite initiatives based on best global practices
 - Retention of dead trees in submergence areas as ‘snags’ for water birds and aquatic fauna
 - Prohibiting the reduction of river flow to ‘zero’ or ‘critical’ levels which would have a deleterious affect on local flora and fauna especially aquatic species permitting migration across dams through mitigation e.g. fish ladder etc.
 - Mimicking the water release to the natural flooding regime
 - Ensuring control of aquatic weeds and disease factors
 - Safeguarding downriver flood protection
 - Safeguarding against water pollution
 - Appropriate fish management measures to benefit local communities through the tiger reserve management. Illegal fishing is a problem in tiger reserves like Pench and Satpura
 - Site specific watershed management to safeguard against sedimentation
 - Prescribing timings for use of access roads, and regulation on the maintenance infrastructure and retaining it to the minimum
 - Prohibiting new, associated developmental projects in the core / critical tiger habitat
 - Contributing resource support to the core / critical tiger habitat management as a ‘compensatory’ measure for loss of natural habitat
 - Evolving and implementing a SOP, in collaboration with the tiger reserve management for rescuing wild animals from drowning





- Annual monitoring of the spatial use pattern of wild animals in the area, which should also include monitoring the development of related infrastructure
 - Periodic monitoring of water quality and river ecosystem recovery
 - Fostering re-vegetation of the construction site with indigenous species
6. Mitigation strategy for linear infrastructure and other projects (roads/highways/railways lines/power transmission lines/ irrigation canals/ open mills / wind mills)
- Roads/highways: creation of overpasses / underpasses, speed regulation, closure to traffic
 - Railway lines: SOP for information exchange through wireless, speed regulation, barricades, underpasses,
 - Power transmission lines : insulation, surveillance, MOU with electricity boards, special patrolling, under ground cabling, adequate height,
 - Irrigation canals : covering, crossing for animals movement
 - Open wells: covering, closure of abandoned wells
 - Wind mills: both offsite and onsite measures are required to prevent turbine collisions with avifauna.
7. Tourism
(Strict adherence to NTCA guidelines, while depicting the tourism areas on a map)

PREPARATION OF ZONE PLANS AND THEME PLANS

1. Based on generic principles for buffer, data appraisal (at macro and micro spatial levels) and prior knowledge, propose appropriate zoning for management in the form of Zone Plans, besides overlapping Theme Plans. It should be borne in mind that the management of buffer should foster the co-occurrence agenda (involving wild animals and people) without fostering productivity for wildlife abundance to avoid human-wildlife conflicts.
2. A smaller core area would require more focus and active management of the buffer whereas a larger core area with a patchy buffer would necessitate focus on dispersing wild animals.
3. The planning and management of buffer should be done by the Field Directors who should ensure desired sectoral integration in collaboration with DM / District Collector and other line departments.
4. In case, the tiger reserve has a Foundation with capacity for implementation, the ecodevelopment aspects should be preferably entrusted to such Foundation on a mission mode.
5. The buffer plan of the TCP should be considered as part of a larger master plan for the tiger landscape and should serve as a role model.
6. Example of a buffer plan forming part of TCP:
 - Zone Plan for Forestry
 - Zone Plan for Wildlife Management
 - Zone Plan for Eliciting Local Public Support (Ecodevelopment / Sectoral Integration / PES)
 - Zone Plan for Retrofitting Measures
 - Zone Plan for Water Shed and Soil Conservation





- Zone Plan for Ecotourism
- Theme Plan for Protection
- Theme Plan for Fire Protection
- Theme Plan for Addressing Human-Wildlife Conflicts
- Theme Plan for Tiger / Wildlife Monitoring
- Theme Plan for Fostering Awareness in Local Communities
- Theme Plan for GIS based Time Series Monitoring of Land Use Change
- Theme Plan for Monitoring Permitted Activities in the Ecologically Sensitive Area within the Buffer

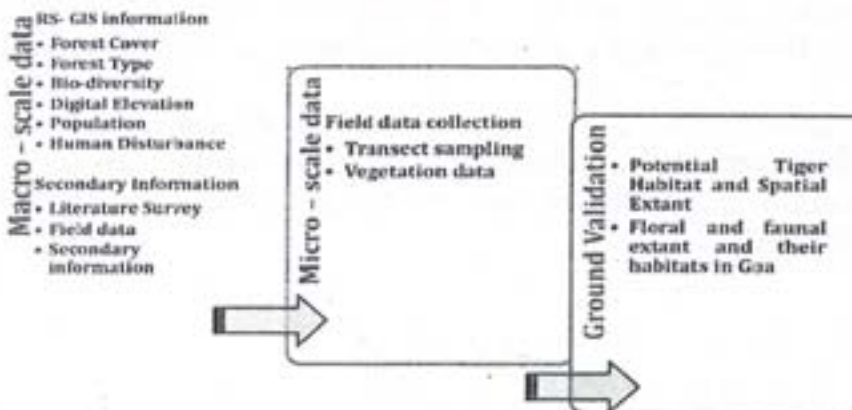
PART-C FOR THE CORRIDOR

The general principles of management, data collection/ analysis, macro / micro appraisal, fine tuning / mitigation strategies for various sectors would be similar to those indicated for buffer. However, the following things are important:

1. Macro level delineation as per 2010 country level tiger assessment (source : NTCA / WII)
2. Micro level ground truthing using transects for spatial presence / abundance of flora / fauna
3. Comparison of wild animal species distribution with reference to a nearest protected area (tiger reserve in the landscape)
4. Profiling of micro water sheds (if relevant)
5. Taking note of natural water courses, unique topographical features
6. For tiger bearing forests, half MMDM (MMDM 2.75 to 5.3 km) or average home range radius (3.05 km) may be taken as the width of the corridor on either side.
7. Identify the bottlenecks and areas where the corridor has been disrupted. Suggest appropriate mitigation strategy in terms of restorative management or policy that may be required to make /keep the corridor functional (eg. avoidance / protection / planting with indigenous species on community land / assisting natural regeneration in degraded forest / gap planting with indigenous species in forest areas).

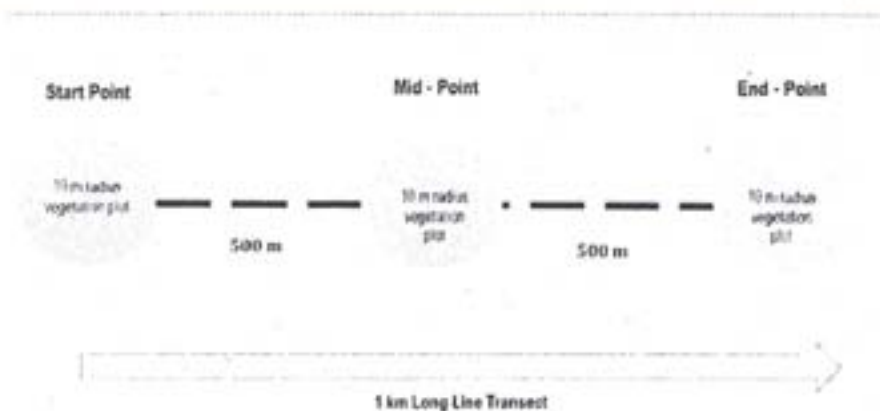
DATA COLLECTION/GROUND TRUTHING/ANALYSIS

Schematic diagram of approach to data analysis

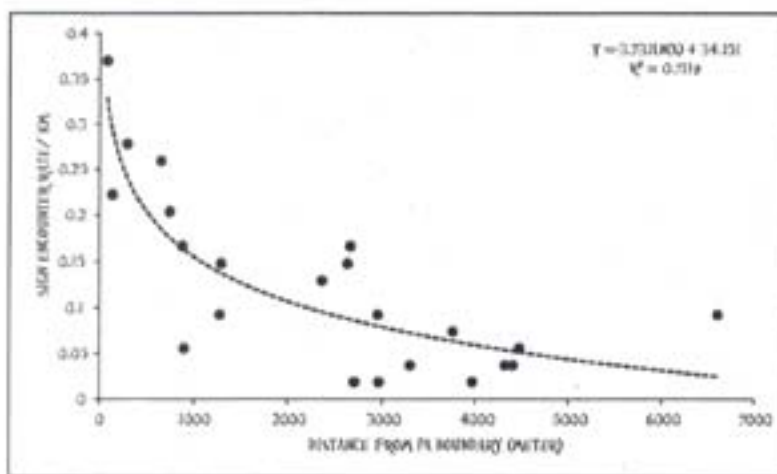




Transect sampling and vegetation plot sampling scheme (suggestive)



Sign Encounter Rate of animals with respect to increasing distance from PA



- ❖ The restorative plan for the corridor should be prepared and implemented by respective forest officers in-charge of such areas, who should ensure desired sectoral integration in collaboration with respective DM / District Collector and other line departments.
- ❖ In case, a nearby tiger reserve has a Foundation with capacity for implementation, the eco-development aspects should be preferably entrusted to such Foundation on a mission mode.
- ❖ The buffer plan of the TCP should be considered as part of a larger master plan for the tiger landscape and should serve as a role model.
- ❖ The entire buffer of a tiger reserve should form part of an ecologically sensitive area, as required to be notified under the EPA. In case, any notification of EPA has already been done, a map indicating the same should be appended.



भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 1-14/ 2011-NTCA (part-II)

New Delhi, the March 12, 2019

To,

The Chief Wildlife Warden(s)
Govt. of Madhya Pradesh, Assam, Chhattisgarh, Maharashtra, Uttarakhand,
Uttar Pradesh & Arunachal Pradesh

Sub: Submission of Tiger Conservation Plan of Tiger Reserves– reg.

Sir,

You are aware that the **Tiger Conservation Plan (TCP)** is mandatory Management document as per the provisions of the Wildlife (Protection) Act, 1972 as amended in 2006. As per section 38(V) (3) (a), The State Governments are required to prepare a ***Tiger Conservation Plan including staff development and deployment plan for the proper management of each area referred to in sub-section (1), so as to ensure; protection of tiger reserve and providing site specific habitat inputs for a viable population of tigers, co-predators and prey animals without distorting the natural prey-predator ecological cycle in the habitat.***

The Act further envisages ecologically compatible land uses in the tiger reserves and areas linking one protected area or tiger reserve with another for addressing the livelihood concern of local people, so as to provide dispersal habitats and corridor for spill over population of wild animals from the designated core areas of tiger reserves or from tiger breeding habitats within other protected areas;

The National Tiger Conservation Authority is mandated to accord approval to tiger conservation plan under section 38 (O) of the said Act. Tripartite agreement has also been signed with State Government and Tiger Reserve while stating compliance of normative guidelines issued by this Authority.

As per the status of TCPs from the various states are pending as below:

1. **Madhya Pradesh**-Panna Tiger Reserve and Bandhavgarh Tiger Reserve
2. **Assam**-Kaziranga Tiger reserve and Orang Tiger Reserve
3. **Chhattisgarh**-Indravati Tiger Reserve
4. **Maharashtra**-Nawegaon- Nagzira Tiger Reserve
5. **Utter Pradesh**-Pilibhit Tiger Reserve
6. **Uttrakhand**-Rajaji Tiger Reserve
7. **Arunachal Pradesh**- Kamlang Tiger Reserve



It is also pertinent to mention here that in case of *Ajay Dubey v. National Tiger Conservation Auth. And Ors, SLP (Civil) No(s). 21339/2011, LAWS(SC)-2012-10-104, Decided on October 16,2012* Hon'ble Supreme Court has also directed that the respective State Governments will prepare within six month from today and submit the same the National Tiger Authority for approval in accordance with section 38(O)(1)(a) of the Act.

In this context I am directed to request you to send composite plans of aforesaid Tiger Reserves to this Authority as early as possible to ensure further central assistance under Project Tiger from next financial year i.e. 2019-20, as this is statutory requirement

Yours Sincerely,

Sd/-

(Surender Mehra)

Deputy Inspector General of Forests (NTCA)

Email: dig1-ntca@nic.in

Tel. (EPABX): + 91 11 24367837-39

FAX: +91 11 24367836

Copy to:

1. Field Director(s), Panna, Bandhavgarh, Kaziranga, Orang, Indravati, Nawegaon-Nagzira, Pilibhit, Rajaji & Kamlang Tiger Reserves.
2. PS to ADG (PT) & MS (NTCA).





F.No.13-1/2013-NTCA (Vol. IV)

**Government of India
Ministry of Environment, Forest & Climate Change
National Tiger Conservation Authority**

B-I Wing, 7th Floor,
Pt. Deendayal Antodaya Bhawan,
CGO Complex, Lodhi Road, New Delhi — 110003
Email: aig3-ntca@nic.in
Tel. (EPABX): + 91 11 24364837-42
FAX: +91 11 24367836

New Delhi, the March 20, 2019

To,
**The Chief Wildlife Warden (s)
All Tiger Range States**

Sub: Financial assistance to areas outside tiger reserves.

Ref.: This Authority letter of even no. Dated February 28, 2018 (enclosed)

Sir,

Reference is invited to the subject and letter cited above. In this context, I am directed to request you to kindly use your good offices to secure coordination between the tiger reserves through which financial assistance is being provided to tiger bearing forests outside tiger reserves, with the territorial Circles/Divisions under whom the areas fall to ensure effective implementation as well as monitoring of the sanctioned items of work.

Yours Faithfully,
**Sd/-
(Dr. Vaibhav C. Mathur)**
Assistant Inspector General (NTCA)

F.No.13-1/2013-NTCA (Vol. IV)

Copy to:

1. All Regional Offices (NTCA), Guwahati, Bengaluru and Nagpur
2. Field Director(s) all Tiger Reserves.

**Sd/-
(Dr. Vaibhav C. Mathur)**
Assistant Inspector General (NTCA)





F. No. 15-31/2012-NTCA
Government of India
Ministry of Environment, Forest & Climate Change
National Tiger Conservation Authority

B-I Wing, 7th Floor,
Pt. Deendayal Antyodaya Bhawan,
CCO Complex, Lodhi Road,
New Delhi - 110003
Email: aig3-ntca@nic.in
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Dated 28.02.2018

To,
The Chief Wildlife Warden(s),
All Tiger Range States

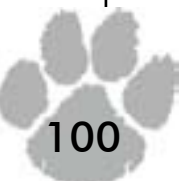
Sub: Financial assistance for tiger conservation in tiger bearing forests outside tiger reserves under the ongoing Centrally Sponsored Scheme of Project Tiger (CSS-PT)

Sir,

Reference is invited to the subject cited above. In this context, I am directed to say that Part A, Chapter 1, Serial no. 7.1, of the National Tiger Conservation Authority (Normative Standards for Tourism activities and Project Tiger) Guidelines, 2012, provide for consolidating and strengthening the “source” population of tiger and its prey in tiger reserves, **protected areas and tiger bearing forests**. In addition, S. no. 10.10 of the said Chapter provides for mainstreaming wildlife concerns in tiger bearing forests and fostering corridor conservation through restorative strategy involving locals.

In order to address this, Part A, Chapter H of the said guidelines outline the details of Project Tiger wherein, S. No. 16.10 elaborates on the activities which are required to be taken up in such areas to ensure tiger conservation takes place, as follows:

- (i) Redressing man-animal conflict
- (ii) Capturing problematic and aberrant wild animals
- (iii) Monitoring of wild animals
- (iv) Anti-poaching operations
- (v) Habitat improvement measures





It has been decided that, from the Financial year 2018-19 onwards, the above activities shall be funded in territorial divisions/PAs adjoining tiger reserves, which harbor tigers, through the Annual Plan of Operations of the adjoining/nearest tiger reserve.

It is therefore, kindly requested to factor in the aforesaid activities in the APO of tiger reserve concerned for financial assistance under the CSS-PT and submit tentative requirement by **15.3.18**.

Final discretion shall rest with this Authority, as per latest available findings of the All India Tiger Estimation.

Yours Faithfully,

Sd/-

(Dr. Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Copy to:

1. The Principal Chief Conservator of Forests and Head of Forest Force, All Tiger Range States
2. The Addl. Chief Secretary/Principal Secretary Forests, All Tiger Range States
3. All Regional Offices, NTCA
4. All Field Director(s)
5. PPS to Secretary, EF & CC
6. PPS to DC& & SS, MOEF & CC
7. PPS to ADG (WL), MoEF & CC





GUIDELINES FOR TOURISM IN AND AROUND TIGER RESERVES

(Issued by National Tiger Conservation Authority in Part B of the National Tiger Conservation Authority (Normative Standards for Tourism activities and Project Tiger) Guidelines, 2012 under section 38(O)(1)(c) of the Wild Life (Protection) Act, 1972 vide F.No. 15-31/2012-NTCA dated 15th October 2012)

Also published in the Gazette of India, Extraordinary, Part-III, Section 4, No. 244 on November 8, 2012.

PREAMBLE

Whereas, healthy natural ecosystems are critical to the ecological well-being of all living entities, and especially for the economic security of people. Tourism in the form of ecotourism has the potential to enhance public awareness, education, and wildlife conservation, while providing nature-compatible local livelihoods and greater incomes for a large number of people living around natural ecosystem which can help to contribute directly to the protection of wildlife or forest areas, while making the local community stakeholders and owners in the process.

Whereas, the Central Government considers it necessary to lay down a framework Guidelines on the selection, planning, development, implementation and monitoring of tourism in tiger reserves of the country with a view to recognise that tiger reserves and their landscapes are diverse, specific State Tourism and Ecotourism Strategies to be developed by the concerned State Governments and Tourism and Ecotourism Plans to be developed by the concerned Authorities.

These Guidelines are framed under section 38-O (c) of the Wild Life (Protection) Act, 1972, (WLPA), the provisions of the Scheduled Tribes and Other Forest Dwellers (Recognition of Forest Rights) Act, 2006, (FRA), Panchayat (Extension to Scheduled Areas) Act, 1996, (PESA) and Part IX of the Constitution of India, besides other laws in force. These Guidelines are in consonance with the Guidelines of the Centrally Sponsored Scheme of Project Tiger.

1. THE NEED FOR GUIDELINES.

- 1.1 The objective of these Guidelines is to move from wildlife tourism to ecotourism which is defined as 'responsible travel to natural areas that conserves the environment and improves the well-being of local people'. Given the conditions in India, it is proposed that ecotourism includes tourism that is community based and community driven. The aim should be to move towards a system of tourism around tiger reserves which is primarily community based tourism. Such tourism should be low-impact, educational and conserve the ecology and environment, while directly benefiting the economic wellbeing of local communities.
- 1.2 The primary objective of tiger reserves is to conserve tiger source populations that also act as an umbrella for biodiversity conservation. These areas provide a whole host of ecosystem services and opportunities for tourism.
- 1.3 Unplanned and unregulated tourism in such landscapes can destroy the very environment that attracts such tourism in the first place. Hence, there is a need to move towards a model of tourism that is responsible and compatible with these fragile landscapes.
- 1.4 Tourism, when practiced appropriately, is an important economic and educational activity. It has the scope to link to a wider constituency and build conservation support while raising awareness





about the worth and fragility of such ecosystems in the public at large. It also promotes the non-consumptive use of wilderness areas, for the benefit of local communities living around and dependent on these fragile landscapes.

1.5 In the absence of proper planning and regulation, there has been a mushrooming of tourist facilities in recent years around tiger reserves which has led to the exploitation, degradation, disturbance and misuse of fragile ecosystems. It has also led to misuse of the term 'ecotourism', often to the detriment of the ecosystems and towards further alienation of local people and communities.

1.6 These Guidelines are applicable to areas in and around tiger reserves.

1.7 PRINCIPLES OF TOURISM IN AND AROUND TIGER RESERVES.

The persons who implement and participate in tourism activities shall, *inter alia*, practice the following principles, namely:—

- (a) adopt low-impact wildlife tourism which protects ecological integrity of forest and wildlife areas, secure wildlife values of the destination and its surrounding areas;
- (b) engage with Gram Sabhas as defined in the Scheduled Tribes and Other Forest Dwellers (Recognition of Forest Rights), Act 2006 (FRA) and Panchayat (Extension to Scheduled Areas) Act, 1996 (PESA) to facilitate decision making;
- (c) ensure free participation and prior informed consent of Gram Sabhas and all other stake holders;
- (d) develop mechanisms to generate revenues from wildlife tourism for the welfare and economic up-liftment of local communities;
- (e) highlight the biodiversity richness, their values and their ecological services to people;
- (f) highlight the heritage value of India's wilderness and tiger reserves;
- (g) build environmental, cultural awareness and respect;
- (h) facilitate the sustainability of tourism enterprises and activities;
- (i) provide livelihood opportunities to local communities;
- (j) promote sustainable use of indigenous materials for tourism activities;
- (k) promote processes for forest dwellers to control and maintain their resources, culture and rights so as to minimize negative impacts.

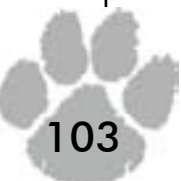
2. GUIDELINES FOR DEVELOPING STATE TOURISM STRATEGY FOR TIGER RESERVES.

2.1 The following paragraphs provide the broad framework for each stakeholder.

2.2 Synergy and collaboration amongst the Central Government, and relevant State Government Departments, forest dwellers, local communities and civil society institutions are vital for ensuring successful implementation of the Guidelines.

2.1. State Governments.

2.1.1. The State-level Tourism and Ecotourism Strategy for Tiger Reserves shall be in tune with these guidelines. Ecologically sensitive land use policies related to tourism shall be specified by the State Government for the landscape surrounding tiger reserves. Adequate provisions shall be made to ensure that ecotourism does not get relegated to purely high-end, exclusive tourism, leaving out local communities. Relevant modifications in State rules and regulations should be carried out in order to ensure adherence to these standards by tourism





developers and operators. All States Governments shall notify the State-level Tourism and Ecotourism Strategy within one year from the date of notification of these Guidelines.

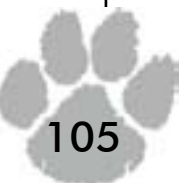
- 2.1.2 The State Governments shall endeavour to develop a State-level policy to favour ecotourism in place of wildlife tourism as a comprehensive plan to ensure that the primary objective of tiger conservation is not compromised and inter alia, include:
- (i) maintaining integrity and connectivity of tiger reserves;
 - (ii) local community rights, participation and benefit-sharing;
 - (iii) sound environmental design and sustainable use of indigenous materials;
 - (iv) conservation education and training;
 - (v) adequate machinery for monitoring and evaluation of the impact of ecotourism activities on wildlife conservation and local communities;
 - (vi) capacity building of local communities in planning, providing and managing ecotourism facilities;
 - (vii) development of appropriate land use and water management planning and regulation for maintaining the ecological integrity of landscape in and around tiger reserves.
- 2.1.3. No new tourist infrastructure shall to be set up within the core or critical tiger habitat of tiger reserves, in violation of the provisions of the Wild Life (Protection) Act, 1972, and the directives of the Honorable Supreme Court.
- 2.1.4 The State Level Steering Committee under section 38U of the Wild Life (Protection) Act, 1972 shall review the implementation of the State-level Tourism and Ecotourism Strategy in Tiger Reserves.
- 2.1.5. The State Governments shall develop a system to ensure that gate receipts from tiger reserves are utilised by their management for specific conservation purposes and shall not to go as revenue to the State Exchequer. This will ensure that resources generated from tourism can be earmarked for protection, conservation and local livelihood development, tackling human-wild animal conflict and welfare measures of field staff.
- 2.1.6. Since the tourism industry in and around tiger reserves is sustained primarily from the non-consumptive use of wildlife resources and the local communities are the ones that bear the brunt of conservation, the State Governments may charge a conservation fee from the tourism industry for eco- development and local community upliftment works. The conservation fee shall be decided on the number of beds in a facility, the duration of operation of the facility (seasonal or year round) and on a luxury classification system such as home stay (fee for which will not be charged up to a 6 bed facility), to high end (which will have the maximum quantum of the fee). The suggested fee structure may range between Rs. 500 to Rs. 3000 per room per month. The rate of conservation fee and tourist facility strata shall be determined by the State Government, and the fund thus collected shall be earmarked to address local





livelihood development, human-wildlife conflict management and conservation through ecodevelopment and not go to the State Exchequer as specified in 2.1.5 above.

- 2.1.7, The fund shall be administered by the Tiger Conservation Foundations with the Tourism Industry having a say in how and where this fund is to be utilized, and mechanisms for which need to be worked out at specific tiger reserves. The fund shall be used for all the villages located within or adjacent to the tiger reserves. Every State Government shall notify the rate of local conservation fee within a year from the date of notification of these Guidelines. The rate of fee shall be revised periodically taking into consideration the cost of operation. The rationale for a local conservation fee should be clearly explained to the public at large, through clear signages at local tourist facilities. The State Government shall put in place a transparent mechanism for utilisation of these funds involving the tiger reserve management through the Tiger Conservation Foundations and Gram Sabhas.
- 2.1.8. A Local Advisory Committee (hereinafter referred to as LAC) shall be constituted for each tiger reserve by the State Government. The LAC shall have the following functions, namely:
- (a) to review the tourism strategy with respect to the tiger reserve and make recommendations to the State Government;
 - (b) to ensure computation of reserve specific carrying capacity and its implementation through periodic reviews;
 - (c) to ensure site specific norms on buildings, and infrastructures in areas inside and close to tiger reserves, keeping in view the corridor value and ecological aesthetics;
 - (d) to advise local self Government and State Government on issues relating to development of tourism in and around tiger reserves;
 - (e) monitor regularly (at least half yearly) all tourist facilities in and around tiger reserves vis-à-vis environmental clearance, area of coverage, ownership, type of construction, number of employees, etc., for suggesting mitigation and retrofitting measures if needed;
 - (f) monitor regularly activities of tour operators to ensure that they do not cause disturbance to animals while taking visitors into the tiger reserves;
- 2.1.9. Local Advisory Committee shall consist of:
- (a) Divisional Commissioner or an officer of equivalent rank to be nominated by the State Government – Chairperson;
 - (b) Member/s of the State Legislature representing the area comprising of the concerned tiger reserve;
 - (c) District Collector/s
 - (d) Tiger Reserve Field Director (Member Secretary) Local
 - (e) Territorial Divisional Forests Officers
 - (f) Honorary Wildlife Warden (if present)
 - (g) Official of State Tourism Department





- (h) Official of the State Tribal Department
- (i) one Block Development Officer or Sub Divisional Magistrate to be nominated by the State Government
- (j) two Members of Local Panchayats to be nominated by the State Government
- (k) one Wildlife scientist to be nominated by the State Government
- (l) one Social scientist to be nominated by the State Government
- (m) one representative of the tourism sector to be nominated by the State Government
- (n) two local conservationists to be nominated by the State Government
- (o) two representative from a local, registered Civil Society Institution to be nominated by the State Government
- (p) Provided that the Gram Sabhas and in case of North Eastern States, the traditional village councils shall be recognized as equivalent to Panchayat Members, wherever such councils exist.

2.1.10 For tourism in a tiger reserve, the Tiger Conservation Foundation shall be the overseeing authority.

2.1.11 Terms of reference and tenure of the Local Advisory Committees shall be determined by the State Government.

2.2. Tiger Reserve Management in the context of tourism.

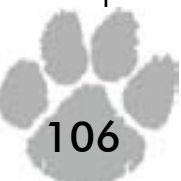
2.2.1 The Chief Wildlife Warden of the State shall ensure that each tiger reserve prepares a tourism plan, as part of the Tiger Conservation Plan vis-à-vis the technical Guidelines of the National Tiger Conservation Authority. The plan shall inter alia, include identification of corridor connectivity and important wildlife habitats and mechanisms to secure them. This site-specific tourism plan forming part of the Tiger Conservation Plan shall be approved as per the provisions of the Wild Life (Protection) Act, 1972. Prior to this approval, no new infrastructure for tourism (except for minor alterations in existing modest home stays) shall be allowed to be developed in and around tiger reserves.

2.2.2 The tourism plan shall, inter alia, include a monitoring mechanism, estimated carrying capacity (a suggested model mechanism to calculate carrying capacity, is provided in Annexure-I and Annexure-II, which may be modified on a site specific basis), tourism zones and demarcation of the area open to tourism on the basis of objective and scientific criteria.

2.2.3 The tourism plan should be consistent with the State Tourism and Ecotourism Strategy and shall also be approved by the LAC and the State Government.

2.2.4 The plan shall:

- (i) identify (using landscape ecological principles and tools) and monitor the ecologically sensitive areas surrounding tiger reserves, in order to ensure the ecological integrity of corridor and buffer areas, and prevent corridor encroachment;
- (ii) assess carrying capacity of the tiger reserve, at three levels: physical, real and effective and permissible carrying capacity of visitors and vehicles as well as residential facilities in and around the tiger reserve (in accordance with Annexure-I, Annexure-II). On the lines of the illustrative calculation provided for vehicular tourist visitation, carrying





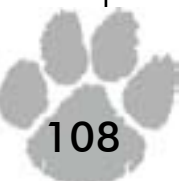
- capacity needs to be computed on a site specific basis for tourist visitation involving elephant, boat and foot travel. Explore the possibility of technological tools (Global Positioning System, wireless, etc.) to manage traffic and spacing of tourist vehicles within tiger reserves;
- (iii) set a ceiling level on number of visitors allowed to enter a tiger reserve at any given time, based on the carrying capacity of the habitat;
 - (iv) indicate the area open to tourism in the reserves to be designated as 'eco-tourism zone';
 - (v) ensure visitor entry into tiger reserves through vehicles registered with the tiger reserve management, accompanied by authorised guide;
 - (vi) develop a participatory community-based tourism strategy, in collaboration with local communities, to ensure long-term local- community benefit-sharing, and promotion of activities run by local communities.
 - (vii) develop codes and standards for privately-operated tourist facilities located in the vicinity of core or critical tiger habitats, eco-sensitive zones or buffer areas, with a view to, inter alia, ensure benefit and income to local communities;
 - (viii) develop monitoring mechanisms to assess impact of tourism activities on the wildlife and its habitat so as to minimize them;
 - (ix) develop generic guidelines for environmentally acceptable and culturally appropriate practices, and for all new constructions;
 - (x) set up lists of Do's and Don'ts for visitors;
 - (xi) provide for subsidized visits of students while fostering educational extension activities.
- 2.2.5 In the case of human animal conflicts, compensation shall be paid within the period as per Citizen's Charter, apart from immediate payment of ex gratia.
- 2.2.6 All tourism activities shall take place only in delineated 'tourism zones' indicated in the tourism plan. The vacant posts in tiger reserves shall be filled up since the staff is also required to manage some tourism in addition to their regular duties.
- 2.2.7 Tigers in India occur across varied habitats that range from high elevation mountain subtropical forests, tropical wet evergreen forests, mangrove swamps, tropical moist or dry deciduous forests and alluvial floodplain grasslands. The densities of large ungulates, the main prey of tigers, vary from 2 to over 60 animals per km² among these different habitats. Breeding tigress's are territorial, and the size of their territories adjust to prey density so as to successfully raise cubs. Male tiger territories cover the territories of two to four breeding tigress territories. Due to variation in habitat specific prey density, breeding tigress territories range from 20 to 200 km² in India. For a demographically viable population it is essential to have a core area that harbours a minimum of 20 to 25 breeding tigresses. For long-term genetic viability the minimum effective population size is believed to be about 500 individuals. Due to the variability in breeding tigress territory size and thus breeding tiger density, the core area needed can be generalized to be between 800-1200 km². This core and surrounding buffer can then sustain a population of about 75 to 100 individual tigers to attain demographic viability. However, genetic viability is possible only through corridor connectivity within the larger landscape where dispersing individual tigers ensure





genetic mixing between different source populations (tiger reserves) in a metapopulation framework. Current tourism zones where only tourist visits are permitted and there are no consumptive uses, tiger density and recruitment does not seem to be impacted. For this reason permitting up to 20% of the core/ critical tiger habitat as a tourism zone should not have an adverse effect on the tiger biology needs, which is subject to adherence to all the prescriptions made in these Guidelines.

- 2.2.8 There is also a need for fostering the buffer and peripheral areas for carrying out the greater part of ecotourism to benefit local communities.
- 2.2.9. Conservation of the tiger, our National animal, is the paramount objective of tiger reserves and generating public support through regulated tourism is an invaluable tool for harnessing public and community support for tiger conservation. Regulated tourism results in enhanced awareness and is of educational value especially for the younger generation. Non-consumptive regulated, low-impact tourism, could be permitted within core or critical tiger habitat without in any way compromising the spirit of core/critical tiger habitat for tiger conservation. With this importance of tourism in tiger conservation in mind, it is recommended that a maximum of 20% of the core or critical tiger habitat usage (not exceeding the present usage) for regulated, low-impact tourist visitation may be permitted. In case the current usage exceeds 20% the Local Advisory Committee may decide on a timeframe for bringing down the usage to 20%. Such area may be demarcated as tourism zone and there should be strict adherence to site specific carrying capacity. Restoration of buffer forest areas shall be done through its unified control under the respective Field Directors of tiger reserves vis-à-vis the Guidelines of the Project Tiger and the National Tiger Conservation Authority. Further, no new tourism infrastructure shall be created in the core areas. Existing residential infrastructure inside core or critical tiger habitats shall be strictly regulated to adhere to low ecological impacts as decided by the Local Advisory Committee on a site specific basis.
- 2.2.8.1. Any core area in a tiger reserve from which relocation has been carried out, shall not be used for tourism infrastructure.
- 2.2.10. Forest dwellers who have been relocated from core or critical tiger habitat to the Buffer shall be given priority in terms of livelihood generation activities related to community-based ecotourism in the tiger reserve. Tiger reserve management shall make a special effort in this regard, besides a periodic review to ensure its compliance.
- 2.2.11 Tourism infrastructure shall conform to environment-friendly, low- impact aesthetic architecture, including solar energy, waste recycling, rainwater harvesting, natural cross-ventilation, proper sewage disposal and merging with the surrounding habitat. Violations of these norms will be appropriately dealt with by the LAC. Any violation of the guidelines will be referred to the appropriate authorities under intimation to the NTCA, for taking action in accordance to the relevant provisions of the law.
- 2.2.12. The District Revenue and tiger reserve authorities shall ensure that all tourist facilities within a zone of influence (to be identified by the LAC) in the context of core/critical tiger habitats in tiger reserves must adhere to all environmental clearances, noise pollution norms,



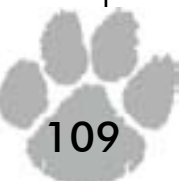


and are non-polluting, blending in with surroundings. Severe penalties must be imposed for non-compliance.

- 2.2.13. Permanent tourist facilities located inside core or critical tiger habitat, which are being used for wildlife tourism shall be phased out on a time frame decided by the LAC. Strict plans ensuring low impact adherence by these facilities shall be developed and approved by LAC for implementation. There shall be no privately run facilities such as catering, etc., inside the core or critical tiger habitat where night stay is permitted. Such existing facilities if any, are to be run by the Tiger Conservation Foundations.
- 2.2.14. All tourism facilities located within the zone of influence (as determined by the LAC) in the context of the tiger reserve shall adhere to pollution norms (noise, solid waste, air and water, etc.), under the respective laws or rules for the time being in force. Outdoor high intensity illumination shall not be utilized as it disturbs nocturnal wild animal activities.
- 2.2.15. There shall be a complete ban on burying, burning or otherwise disposing non-biodegradable or toxic waste in and around the tiger reserve. Proper plan for disposal for degradable waste shall be developed and strictly implemented.
- 2.2.16. Management of habitat to inflate animal abundance for tourism purposes shall not be practiced within the core or critical habitat. Visitors shall keep a minimum distance of more than 20 meter from all wildlife; cordoning, luring or feeding of any wildlife shall be prohibited. Minimum distance between vehicles while spotting wildlife shall be maintained at 50 meters. Vehicles shall not monopolize a wildlife sighting for more than 15 minutes.
- 2.2.17. To avoid the number of visitors and vehicles exceeding carrying capacity, tiger reserve managers shall establish an advance booking system to control tourist and vehicle numbers. Rules of booking shall be transparent and, violators shall be penalized.
- 2.2.18. Tiger reserve authorities shall delineate an adequate and appropriate area for the visitor facility outside the protected area.
- 2.2.19. Tourism activities in a tiger reserves shall be under the overall guidance of the respective Tiger Conservation Foundations and the LACs.

2.3. Tourist facilities and Tour operators.

- 2.3.1. Tourism infrastructure must conform to environment-friendly, low-impact, low height aesthetic architecture; renewable including solar energy, waste recycling, water management, natural cross-ventilation, no use of asbestos, discharge of only treated sewage, no air pollution, minimal outdoor lighting, and merging with the surrounding landscape.
- 2.3.2. The use of battery operated vehicles shall be encouraged to minimize pollution wherever terrain permits.
- 2.3.3. A 'curriculum' shall be developed for training of guides and drivers in the art, craft and ethics of wildlife tourism, resulting in certification. All guides and drivers shall compulsorily go through a short course in interpretation and rules and regulations followed by an oral examination before being certified by the Tiger Conservation Foundation. Courses may be scheduled during the non-tourist season. All certified guides and drivers shall wear appropriately designed uniforms with name tags and badges. This will instil a sense of pride, discipline and accountability. Prior to every tourist season, certified guides and drivers





shall go through a refresher course or workshop. These shall also build up their capacity to identify birds and provide natural history information on other species, to slowly wean them away from a tiger-centric obsession. A periodic assessment of their performance shall be reviewed by the LAC before reissuing their licences.

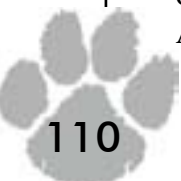
- 2.3.4. All tourist facilities falling within the zone of influence of a tiger reserve shall be reviewed regularly by the Local Advisory Committee vis-à-vis environmental clearance, area of coverage, ownership, type of construction, number of employees, etc., for suggesting mitigation and retrofitting measures if needed.
- 2.3.5. All tourist facilities, old and new shall aim to generate at least 50% of their total energy and fuel requirements from alternate energy sources that may include solar and biogas.
- 2.3.6. The use of wood as fuel shall be prohibited, except for campfires for which wood must be procured from State Forest Department or the Forest Development Corporation depots.
- 2.3.7. In order to allow free passage to wildlife, developments shall be sensitive to the conservation of flora and fauna, and the corridor value of the area in and around tiger reserves.
- 2.3.8. Tourist facilities and tour operators shall not cause disturbance to animals while taking visitors on nature trails.
- 2.3.9. Any violation of the guidelines shall be referred to the appropriate authorities under intimation to the National Tiger Conservation Authority, for taking action in accordance to the relevant provisions of the law.

2.4. Temple and Pilgrimage Boards.

- 2.4.1. Pilgrim sites located inside tiger reserves shall be in accordance with the Forest (Conservation) Act, 1980, Wild Life (Protection) Act, 1972 and the Environment (Protection) Act, 1986 to prevent any further expansion. This shall be periodically reviewed by the LAC.
- 2.4.2. All transit camps and places of stay for such pilgrimage shall be restricted to nominated days in a year. The protected area managers shall work with the temple authorities to develop a system for controlling the number of pilgrims so as to maintain the ecological integrity of the area. This mechanism shall be developed within three years of the notification of these Guidelines.
- 2.4.3. All rules relating to tourism facilities including noise, building design, use of alternate energy and free passage to wildlife shall apply to such pilgrim facilities.
- 2.4.4. Temple boards shall negotiate terms of revenue sharing with local communities and channel a minimum of 10 percent of gross revenue collected into development of local communities through the Gram Sabha.
- 2.4.5. The tourist operators, drivers and temple controlling authorities shall be given an exposure on the value of forest ecosystem and their ecological services and alongwith the do's and don'ts during visits to forests and tiger reserves.

2.5 These Guidelines shall be applicable to the tiger reserves notified under section 38V of the Wild Life (Protection) Act, 1972. The State Government shall lay down Guidelines on similar lines for tourism in other protected areas.

2.6 Contravention of any provision of these guidelines or conditions laid therein by any person or organization shall be liable of an offence under sub- section (2) of 38-O of the Wild Life (Protection) Act, 1972.





ESTIMATION OF CARRYING CAPACITY*
(Illustrative Calculation for vehicle based tourist visitation,
Example: Kanha Tiger Reserve)

(a) **Physical Carrying Capacity (PCC):** This is the “maximum number of visitors that can physically fit into a defined space, over a particular time”. It is expressed as:

$$PCC = A \times V/a \times Rf$$

Where, A = available area for public use

V/a = one visitor / M²

Rf = rotation factor (number of visits per day)

In order to measure the PCC to Kanha, the following criteria must be taken into account:

- Only vehicular movements on forest roads are permitted.
- The “standing area” is not relevant, but “closeness” between vehicles is important.
- There is a required distance of at least 500 m (1/2 km.) between 2 vehicles to avoid dust (2 vehicles / km.).
- At least 3 1/2 hours are needed for a single park excursion.
- The protected area is open to tourists for 9 months in a year and 9 hours per day.

Linear road lengths within the tourist zone are more relevant than area, and the total lengths are:

Kanha	107.2 Km
Kisli	72.56 Km
Mukki	103 Km
Total	282.76 or 283 km

Due to constant vehicular use, the entire road length of 283 km. is prone to erosion, out of which around 90 km. is affected more

Rotation Factor (Rf) = Opening period / Average time of one visit

Physical Carrying Capacity (PCC) = 283 km. × 2 vehicles/km. × 2.6 = 1471.6 or 1472 visits/day

*Hector Ceballos-Lascurain 1992-Tourism, ecotourism, and protected areas, IV World Congress on National Parks and Protected Areas, IUCN, Gland, Switzerland.

(b) **Real Carrying Capacity (RCC):**

RCC is the maximum permissible number of visits to a site, once the “reductive factors” (corrective) derived from the particular characteristics of the site have been applied to the PCC. These “reductive factors” (corrective) are based on biophysical, environmental, ecological, social and management variables.

$$RCC = PCC - Cf_1 - Cf_2 \dots \dots Cf_n,$$

Where Cf is a corrective factor expressed as a percentage. Thus, the formula for calculating RCC is:





$$RCC = PCC \times \{(100 - Cf_1)/100\} \times \{(100 - Cf_2)/100\} \dots \dots \dots 100 - Cf_n$$

Corrective Factors are “site-specific”, and are expressed in percentage as below: $Cf = M_l \times 100$

Where: Cf = corrective factor

M_l = limiting magnitude of the variable M_t = total magnitude of the variable

(i) Road erosion: Here the susceptibility of the site is taken into account.

Total road length = 283 km. (M_t)

Medium erosion sink = 50 km. (weighting factor: 2)

High erosion risk = 40 km. (weighting factor: 3)

$$M_l = 50 \times 2 + 40 \times 3 = 100 + 120 = 220 \text{ km.}$$

$$M_t = 283 \text{ km.}$$

$$Cf_e = (220/283) \times 100 = 77.8 \text{ or } 78\%$$

(ii) Disturbance to Wildlife:

Here, species that are prone to disturbance owing to visitation are considered. The Central Indian barasingha, a highly endangered, endemic species found only in Kanha has a courtship period of about 1 month in winter, during which it is extremely sensitive to disturbance. Likewise, the peak courtship activity for spotted deer lasts for two months before the onset of regular monsoon. As far as tigers are concerned, newborns are seen between March and May and also during the rains; hence an average value of two months in a year can be considered as the matter phase.

$$\text{Corrector Factor (Cf)} = (\text{limiting months/year} \times 100) / (12 \text{ months/year})$$

Corrective Factor for barasingha;

$$Cf_{w1} = (1/9) \times 100 = 11.1\%$$

Corrective Factor for spotted deer;

$$Cf_{w2} = (2/9) \times 100 = 22.2$$

Corrective Factor for tiger ;

$$Cf_{w3} = (2/9) \times 100 = 22.2$$

Overall corrective factor for disturbance of wildlife in Kanha National Park;

$$Cf_w = Cf_1 + Cf_2 + Cf_3 = 11.1 + 22.2 + 22.2 = 55.5 \text{ or } 55\%$$

(iii) Temporary Closing of Roads:

For maintenance or other managerial reasons, visitation to certain roads may be temporarily restricted within the Protected Area. The Corrective Factor in this regard is calculated as:

$$Cf_1 = (\text{limiting weeks/year} \times 100) / (\text{total weeks/year})$$

In Kanha, an average value of 2 limiting weeks per year may be considered as the “limiting weeks”, and thus the corrective factor works out to:

$$Cf_1 = \{(2 \text{ weeks/year}) / (36 \text{ weeks/year})\} \times 100 = 5.5\%$$

Computation of RCC

$$RCC = 1472 \times \{(100 - 78)/100\} \times \{(100 - 55)/100\} \times \{(100 - 5.5)/100\}$$

$$= 1472 (0.22 \times 0.45 \times 0.95) = 138.4 \text{ or } 138 \text{ visits/day}$$



(c) Effective Permissible Carrying Capacity (ECC):

ECC is the maximum number of visitors that a site can sustain, given the management capacity (MC) available. ECC is obtained by multiplying the real carrying capacity (RCC) with the management capacity (MC). MC is defined, as the sum of conditions that protected area administration requires if it is to carry out its functions at the optimum level. Limitations in management like lack of staff and infrastructure limit the RCC.

For Kanha, owing to the paucity of staff the MC is around 30%. Hence, $ECC = 138 \times 0.30 = 41.4$ or 40 vehicles / day.

Thus, the Effective Permissible Carrying Capacity on any single day is only 40 vehicles, which should be allowed entry as below:

(Forenoon) = 25 vehicles (inclusive of both entry points) (Afternoon) = 15 vehicles (inclusive of both entry points)

During peak season (winter months/summer holidays), the staff strength shall be increased (only 10%) by deploying “special duty” personnel; this would enhance the ECC to 55 vehicles per day. Further, increase in the number of vehicles would lead to deleterious effects on the habitat.



BRIEF NOTE ON LIMITS OF ACCEPTABLE CHANGE

- (1) The Encyclopedia of Ecotourism¹ defines carrying capacity as “the amount of tourism-related activity that a site or destination can sustainably accommodate; often measured in terms of visitor numbers or visitor-nights over a given period of time, or by the number of available accommodation units; management techniques such as site hardening can be employed to raise a site’s carrying capacity”.
- (2) Over a period of time, the carrying capacity framework has come up for criticism especially in the context of wild life, nature based or ecotourism. One of the major criticisms being that the carrying capacity model does not take into account the social implications while arriving at the number of visitors allowed entering a protected area.
- (3) Over the past approximately 10 years, the concept of Limits of Acceptable Change has evolved and found to be far more relevant to ecotourism.
- (4) The definition of Limits of Acceptable Change as defined by the Encyclopedia of Ecotourism is “a land management philosophy that identifies specific indicators of environmental quality and tourism impacts, and defines thresholds within which the conservation goals of a protected area are met”.
- (5) The Limits of Acceptable Change is a planning model and does not merely look at the level of use and impact of tourism but on identifying the desirable environmental and social conditions for visitor activity. The process entails the listing of existing conditions and identifying the optimal limits for both physical and social conditions.
- (6) The model involves a 9-step process, which have been articulated differently by different policy making bodies across the world. Below is the 9-step process as propounded by the United Nations Environment Programme (UNEP)²:
 - (i) Identify special values, issues and concerns attributed to the area.
 - (ii) Identify and describe recreation opportunity classes or zones.
 - (iii) Select indicators of resource and social conditions.
 - (iv) Inventory existing social resource and conditions.
 - (v) Specify standard for resource and social conditions in each opportunity class.
 - (vi) Identify alternative opportunity class allocations.
 - (vii) Identify management actions for each alternative.
 - (viii) Evaluation and selection of a preferred alternative.
 - (ix) Implement actions and monitor conditions.
- (7) What is important to note is that the model uses a process which is systematic, explicit, defensible and rational and involves public participation, this last element being most important if benefits of ecotourism are to accrue to communities.





(8) It is suggested that the Tiger Conservation Foundation in consultation with the Local Area Committee may suitably decide on the implementation of the Limits of Acceptable Change model in and around tiger reserves.

End Notes :1 David B, Weaver (Ed.) (2001), “The Encyclopedia of Ecotourism”, CABI Publishing, U.K. 2 Eagles, Paul F.J., McCool, Stephan F & Haynes Cristopher D (1998) “Sustainable Tourism in Protected Areas: Guidelines for Planning and Management”, UNEP.





F. No. 15-1(7)/2015-NTCA
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

B-1 Wing, '7th Floor,
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CGO Complex, Lodhi Road,
New Delhi 110003
EPABX: 011-24367837-42
Fax: 011-24367836
Email: aig3-ntca @nic.in

Dated: 18.08.2015

To,
All Chief Wildlife Warden,
Tiger Range States.

Sub: Filming/Tourism in Monsoon Season in the Tiger Reserves.

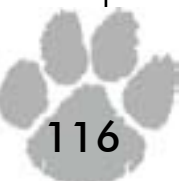
Sir,

I am directed to say that the Competent Authority has approved closure of all Tiger Reserves as per recommendation of Technical Committee NTCA held on dated 28.07.2015, for a minimum period of three months, extending up to 5 months, keeping in mind the following factors:

- i. Breeding period of wild animal especially Tigers
- ii. Condition of forest roads and repair thereof
- iii. Safety of eco tourists/visitors

The period of closure for the said duration shall be decided by respective states based on local prevailing conditions.

Sd/-
(Dr. Vaibhav C. Mathur)
Assistant Inspector General of Forests (NTCA)





भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest & Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F.No.7-16 /2010 –NTCA (Part-II)

New Delhi, the October 11, 2019

To,
Chief Wildlife Warden(s),
All Tiger Range States.

Sub: Phasing out of tourism (Night Stay) from Core Areas of Tiger Reserves-reg.

Sir,

You are aware that tourism in Tiger Reserves is regulated and managed as per the prescriptions given in Tiger Conservation Plan approved by National Tiger Conservation Authority under section 38V of the Wildlife (Protection) Act, 1972. The basic principle behind the regulation and management of tourism in Tiger Reserves is to adopt low-impact wildlife tourism, which protects ecological integrity of forest and wildlife areas, secure wildlife values and its surrounding areas while maintaining the Core Areas as inviolate space.

In view of above, I am to bring following Guidelines, provisions of the Act and relevant directions of Hon'ble Apex Court to your kind notice in this regard;

1. The tourism in Tiger Reserves is governed by *National Tiger Conservation Authority (Normative Standards for Tourism activities and Project Tiger) Guidelines, 2012* notified under 38 O 1 (c) vide F. No. 15-31/2012-NTCA dated 15.10.2012, which were further re-iterated by Hon'ble Apex court in *Shri Ajay Dubey Vs National Tiger Conservation Authority and Ors, SLP (civil) No.(s). 21339/2011, LAWS(SC)-2012-10-104, Decided on October 16, 2012*. Para 2.2.12 of these Guidelines provides for phasing out of permanent tourist facilities from core critical areas of Tiger Reserve as below;

“Permanent tourist facilities located inside core or critical tiger habitat, which are being used for wildlife tourism shall be phased out on a time frame decided by the LAC. Strict plans ensuring low impact adherence by these facilities shall be developed and approved by LAC for implementation. There shall be no privately run facilities such as catering, etc., inside the core or critical tiger habitat where night stay is permitted. Such existing facilities if any, are to be run by the Tiger Conservation Foundations.”

2. In context of directives by Hon'ble Apex Court dated 25.11.2005 in *I.A. No.1220 (Interim Report of CEC in I.A. No. 548) and I.A. No. 994 in W.P.C. No. 202/1995*, an Advisory was issued by this Authority vide letter No. 1-16/93-PT (Part-I) Dated the 12th August, 2010 for not using patrolling





camps / chowkis / watch towers inside a Tiger Reserve (Core as well as Buffer) for accommodating tourists or facilitating tourism.

3. Core Areas of Tiger Reserves are mainly constituted of National Parks and Wildlife Sanctuaries, where the *proviso* under Section 33 (a) of the Wildlife (Protection) Act, 1972 is applicable as below;

“Provided that no construction of commercial tourist lodges, hotels, zoos and safari parks shall be undertaken inside a Sanctuary except with the prior approval of the National Board.”

4. In *I.A. No. 2354-2355 in W.P. (Civil) No. 202/1995 T.N. Godavarman Thirumulpad Vs. Union of India and Ors. decided on 05- 07-2018*, Hon’ble Supreme Court has directed as below;

“Forest Rest Houses / Inspection Bungalows located within the forest area including the Protected Areas shall not be transferred to private and commercial entities in the name of public-private partnership or by whatever name such an arrangement is called, for promotion of any form of tourism including Ecotourism.”

Above directions have been re-iterated by F.No 12-17/2016-NTCA dated 18.07.2018 of this Authority also.

In view of compliance of above provisions of the Wildlife (Protection) Act, 1972, Guidelines of this Authority and directions of Hon’ble Apex Court, you are requested to furnish the details of permanent tourism facilities (Night Stay) available inside the Core Areas of Tiger Reserves, extent of phasing out done so far after the aforesaid guidelines of 2012 by this Authority and timeline in which these permanent tourism facilities will be phased out completely from Tiger Reserves at earliest.

Yours Faithfully,

Sd/-

(Dr. Anup Kumar Nayak)

Member Secretary (NTCA)

Email: ms-ntca@nic.in

Tel. (EPABX): + 91 11 24367837-39

FAX: +91 11 24367836

Copy to:

1. Principal Secretary, Forest, All Tiger Range States
2. Principal Chief Conservator of Forest (HoFF), All Tiger Range States
3. Inspector General, Regional Offices, NTCA (Guwahati & Bangalore)
4. Field Director(s), All Tiger Reserves
5. AIG, Regional Office, Nagpur

Sd/-

(Dr. Anup Kumar Nayak)

Member Secretary (NTCA)





No. 1-16/93-PT (Part-I)

Dated the 12th August, 2010

To,

**Chief Wildlife Warden(s),
All Tiger Range States.**

- Ref:** 1. Directive of the Hon'ble Apex Court dated 25.11.2005 in I.A. No.1220 (Interim Report of CEC in LA. No. 548) and I.A. No. 994 in W.P.C. No. 202/1995.
2. Section 38V of the Wildlife (Protection) Act, 1972.
3. Forest (Conservation) Act, 1980 and the Rules / Guidelines issued therein.
4. Letter No. PS-MS (NTCA)/2009-Misc. dated 22.4.2009.
5. Guidelines of CSS-PT No. 3(1)/2001-PT dated February, 2008.
6. Guidelines for preparation of Tiger Conservation Plan, Technical Document: NTCA/01/07.

Sir,

Reference is invited to the directive of the Hon'ble Apex Court, and the statutory provisions contained in the Acts along with advisory/guidelines cited above.

In this context, the following is stated:

- (i) The patrolling camps / chowkis / watch towers inside a tiger reserve (core as well as buffer) should not be used for accommodating tourists or facilitating tourism. As these structures have been constructed under Project Tiger, for the sole purpose of accommodating the frontline field staff (at places with wireless), it needs to be ensured that they are solely used for patrolling / antipoaching work.
- (ii) Tourists should not be allowed to patrol the core / critical tiger habitat owing to the risk involved vis-à-vis the intensive legwork in a formidable terrain with wild animals. Further, exposing tourists to sensitive patrolling routes / paths / spatial presence of animals, besides the patrolling strategy would make the habitat vulnerable by exposing such details which may be confidential for apprehending the offenders / poachers. Besides, there can be no method by which a poacher entering a wildlife habitat under the garb of a tourist can be identified. Likewise, there is no mechanism available to ensure that sensitive information pertaining to wildlife protection is not advertently/inadvertently passed on to miscreants / poachers. The frontline staff would also be burdened with the task of acting as "caretakers" for the tourists, besides attending to their possible health related emergencies. Needless to point out, patrolling is effective and successful only if it is organized discretely. Patrolling is a technical / specialized task requiring considerable physical fitness and a knowledge of a terrain which by and large, is done at odd hours. While the tourists would not be in a position to undertake this task, there is also a risk of patrolling strategy and related details getting exposed to poachers.
- (iii) Under no circumstances forest produce material should be used for making a temporary / permanent construction to facilitate tourists in the core / critical tiger habitat.





- (iv) It is reiterated that provisions under section 38V of the Wildlife (Protection) Act, 1972 should be implemented in letter and spirit for ensuring the inviolate status of the core / critical tiger habitat.
- (v) The guidelines / advisories issued from the Project Tiger/NTCA may be strictly followed for organizing intelligence based patrolling in tiger reserves.

Yours Sincerely,

Sd/-

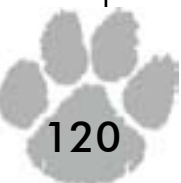
APCCF & Member Secretary (NTCA)


Copy to:

- 1. APS to MEF.
- 2. PPS to Secretary (E&F).
- 3. PPS to DGF & SS, MoEF.

Copy for information to:

- 1. PS to Chief Secretary(s) of all tiger States.
- 2. Additional Chief Secretary(s)/ Principal Secretary(s) of all tiger States.
- 3. PCCF(s) of all tiger States.
- 4. Field Director(s), All Tiger Reserves.





TOURISM ADVISORY/ GUIDELINES FOR TOURISM IN TIGER RESERVES
*(Issued by letter No. 1-16/93-PT (Part-I), Dated the 12th August 2010 by
National Tiger Conservation Authority.)*

Reference:

1. Directive of the Hon'ble Apex Court dated 25.11.2005 in I.A. No.1220 (Interim Report of CEC in I.A. No. 548) and I.A. No. 994 in W.P.C. No. 202/1995.
2. Section 38V of the Wildlife (Protection) Act, 1972.
3. Forest (Conservation) Act, 1980 and the Rules / Guidelines issued therein.
4. Letter No. PS-MS(NTCA)/2009-Misc. dated 22.4.2009.
5. Guidelines of CSS-PT No. 3(1)/2001-PT dated February 2008.
6. Guidelines for preparation of Tiger Conservation Plan, Technical Document: NTCA/01/07.

Reference is invited to the directive of the Hon'ble Apex Court, and the statutory provisions contained in the Acts along with advisory/guidelines cited above. In this context, the following is stated:

- (i) The patrolling camps / *chowkis* / watch towers inside a tiger reserve (core as well as buffer) should not be used for accommodating tourists or facilitating tourism. As these structures have been constructed under Project Tiger, for the sole purpose of accommodating the frontline field staff (at places with wireless), it needs to be ensured that they are solely used for patrolling / anti-poaching work.
- (ii) Tourists should not be allowed to patrol the core / critical tiger habitat owing to the risk involved vis-à-vis the in pensive legwork in a formidable terrain with wild animals. Further, exposing tourists to sensitive patrolling routes / paths/spatial presence of animals, besides the patrolling strategy would make the habitat vulnerable by exposing such details which may be confidential for apprehending the offenders / poachers. Besides, there can be no method by which a poacher entering a wildlife habitat under the garb of a tourist can be identified. Likewise, there is no mechanism available to ensure that sensitive information pertaining to wildlife protection is not advertently/inadvertently passed on to miscreants/poachers. The frontline staff would also be burdened with the task of acting as "caretakers" for the tourists, besides attending to their possible health related emergencies. Needless to point out, patrolling is effective and successful only if it is organized discretely. Patrolling is a technical/ specialized task requiring considerable physical fitness and a knowledge of a terrain which by and large, is done at odd hours. While the tourists would not be in a position to undertake this task, there is also a risk of patrolling strategy and related details getting exposed to poachers.
- (iii) Under no circumstances forest produce material should be used for making a temporary / permanent construction to facilitate tourists in the core / critical tiger habitat.
- (iv) It is reiterated that provisions under section 38V of the Wildlife (Protection) Act, 1972 should be implemented in letter and spirit for ensuring the inviolate status of the core / critical tiger habitat.
- (v) The guidelines / advisories issued from the Project Tiger/ NTCA may be strictly followed for organizing intelligence based patrolling in tiger reserves.



PRIORITY

IGF & Director (Project Tiger)
Ministry of Environment & Forests
Government of India

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Telefax: 23384428
E-mail: (O) dirpt-r@hub.nic.in
(R) rajeshgopal@vsnl.net

No.PS-DIR(PT)/2005-MISCE.

Dated the May 9, 2005

To,

**The Field Directors
(All Tiger Reserves)**

Subject: Special anti-poaching strategy for the monsoon.

Reference:

- (1) This Ministry's letter No. F.1-6/2001-PT, dated 11-09-2001
- (2) This Ministry's letter No.1-18/2002-PT, dated 18-06-2002.

Sir,

Reference is invited to the circulars cited above. As you are aware, during monsoon our Protected Areas and Tiger Reserves become inaccessible, which calls for a specific protection strategy considering the terrain and other site-specific problems. During this period, the Tiger Reserve/Protected Area is vulnerable to illicit grazing, felling of trees as well poaching, which necessitate surveillance at some sensitive places, viz.:

- Footpath/bridal paths linking Protected Area/Tiger Reserve to outside
- Natural salt licks
- Habitat close to electric transmission lines
- Beehive bearing trees
- Habitat close to human settlements and prone to cattle influx
- Areas close to weekly countryside markets

An appraisal of sensitive points in the habitat and evolving a protection strategy with a round the clock communication through wireless network is absolutely necessary to deal with the situation. The chowkies/patrolling camps may be designated as nodal points for dissemination of information, which should be regularly supervised by senior officers. Special care should be taken of the staff posted in such remote areas to ensure necessary medical assistance, as and when required. Since some areas are endemic to malaria (including cerebral malaria), prophylactic dose may also be required as per medical advice. In case the Tiger Reserve has trained department elephants, such squads may be





deployed at sensitive areas to complement foot patrolling. Some staff members may specifically be deployed for gathering information relating to poaching with a mechanism for day -to- day exchange for vital information. A roster may also be prepared indicating the details of officers/staff and the area entrusted to each for protection.

The Centrally Sponsored Scheme of Project Tiger provides funding support for deployment of anti- poaching squads as well as paramilitary forces (if required). Therefore, in case the situation warrants, proposal for such a deployment may be sent to this Ministry at the earliest. The funding support required for anti-poaching measures may please be faxed to this Directorate at the earliest for the needful.

The field staff may be directed to exercise considerable care and caution, so that the local people are not subjected to undue harassment while implementing the protection strategy. To make the effort participatory, the possibility of establishing reciprocal commitments with locals for protecting the habitat should be given top priority to prevent undue park-people conflicts in the landscape.

An early response in this regard is requested from your end.

Yours Sincerely,

Sd/-

Member Secretary (NTCA)

Copy to:

1. Principal Secretary /Secretary (Forests) (All Tiger Reserve States)
2. Principal Chief Conservator of Forests (All Tiger Reserve States)
3. Chief Wildlife Wardens (All Tiger Reserve States)

Copy also to :

1. PPS to Secretary (E&F)
2. PPS to DGF & SS
3. PPS to Addl. DGF (Wildlife)

Sd/-

Member Secretary (NTCA)





F. No. 15-22/2013-NTCA
Government of India
Ministry of Environment, Forest Climate Change
National Tiger Conservation Authority

B-I Wing, 7th Floor,
Pt. Deendayal Antyodaya Bhawan,
CGO Complex, Lodhi Road,
New Delhi — 110003
Email: aig3-ntca@nic.in
Tel. (EPABX): + 91 11 24364837-42
FAX: +91 11 24367836

Dated 23.04.2018

To,

The Chief Wildlife Warden(s),
Andhra Pradesh, Chhattisgarh, Rajasthan, Maharashtra, Uttar Pradesh, Arunachal
Pradesh and Tamil Nadu

Sub: Submission of proposal for notifying Eco sensitive Zones of Tiger Reserves

Sir,

Reference is invited to the subject cited above. In this context, I am directed to request you to kindly furnish proposal for notifying Eco Sensitive Zones around Tiger Reserves, as per list enclosed herewith, as per advisory issued by this Authority in the matter which states;

1. The entire buffer zone should be included in the Eco Sensitive Zone
2. A radial cushion of minimum 1 km should be kept from the critical tiger habitat wherever the buffer is disjunct/absent
3. Where a Protected Area forms part of the buffer, then a minimum 1 km cushion should be demarcated around the said buffer also

An expeditious response is kindly requested.

Enclosed: As above

Yours Faithfully,

Sd/-

(Dr. Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Copy to:

1. NTCA Regional Offices, Guwahati, Bengaluru and Nagpur
2. The Field Director(s) concerned





GUIDELINES FOR TAKING NON-FORESTRY ACTIVITIES IN WILDLIFE HABITATS (Issued by Wildlife Division of Ministry of Environment and Forests vide

F. No. 6-10/2011 WL Dated: 19 December 2012)


1. General Policy:

National Parks, Sanctuaries and Conservation Reserves are notified under the Wildlife Protection Act, 1972 as dedicated areas rich in, and representing the unique biodiversity of a place. Such protected areas are considered very important for conservation of biodiversity, and for ensuring the healthy populations of its floral and faunal components, for the present and future generations alike. However, the rising human population and its growing demands for socio-economic development put increasing stress on forests including protected areas both directly and indirectly. This calls for a balance that has to be struck between development and conservation implying that any activity involving use or diversion of any part of a notified protected area may be considered only under **most exceptional** circumstances, taking fully into account its impending impact on the biodiversity of the area, and consequently on the management of the Protected Area. A critical part of this balanced approach is to spell out the feasibility of mitigation to address the impacts without compromising the management objectives of the Protected Area. The activities to be taken up in the identified wildlife habitats also need to comply with the orders of the Hon'ble Supreme Court in addition to the statutory requirements as provided in the Wild Life (Protection) Act, 1972.

2. Scope:

Measures to protect the wildlife and biodiversity in general include *inter alia*, notification of suitable wildlife habitats as Protected Areas (National Parks, sanctuaries etc.) under the Wild Life (Protection) Act (WLPA), 1972. Recommendations of the National Board for Wildlife (NBWL) are prescribed in the Act for regulating any activity inside such areas. Hon'ble Supreme Court through a number of orders has further made it essential to seek the recommendations of this advisory body for regulating activities in the adjoining areas to the Protected Areas. Protection of other forests is ensured through the Forest (Conservation) Act 1980 wherein, recommendations of the Forest Advisory Committee are prescribed for this purpose. Protected areas cover generally the known habitats of wildlife including important flagship species. Tiger Reserves represent specifically notified areas under the WLPA focusing on conservation of the charismatic big cat under the Project Tiger in view of the specially threatened status of this national animal. With a view to ensuring conservation of elephants, the national heritage animal, 'Project Elephant' is operational. Technical and financial assistance is provided by the Central Government for conservation of elephants in the designated elephant habitats in the country. But presently such habitats are not legal entities. Though many existing elephant habitats are part of the existing Protected Areas, a proposal for enabling notification of such important habitats as elephant reserves under appropriate legal provisions is also under consideration of the government in the Ministry of Environment and Forests. It is expected that once the legal provisions for declaration of elephant reserves is in place, such areas will also be included under the regulatory regime under Wild Life (Protection) Act 1972 as proper legal entities.

These guidelines prescribe the process of obtaining recommendations of the Standing Committee of NBWL under the Wild Life (Protection) Act 1972 with respect to the areas, for which this process is mandatory under the law, and also in compliance to relevant Hon'ble Supreme Court orders.



These guidelines replace the guidelines dated 15.03.2011 issued earlier in this regard, along with all amendments made therein.

3. Activities inside Protected Areas:

The process of consideration of any proposal for use of areas inside the protected areas, as a mandatory requirement under the present statutes, involves consideration and recommendation of the **National Board for Wildlife**. However, as the **Standing Committee of National Board for Wildlife** has been delegated the powers of the National Board for Wildlife, such cases are to be referred to the Standing Committee of National Board for Wildlife for consideration and recommendation. Details of such situations where such reference is warranted are described below:

3.1 Activities inside Wildlife Sanctuaries:

Section 29 of the \Wild Life (Protection) Act, 1972 provides for the seeking the recommendation of the **State Board for Wildlife** (*a Board chaired by the State Chief Minister*) for any diversion of land or produce including water, etc. from a Sanctuary.

A per the proviso under Section 33 (a), no construction of commercial tourist lodges, hotels, zoos and safari parks can be undertaken inside a sanctuary except with prior approval of the Standing Committee of NBWL.

Further, in view of the directions dated 9th May 2002 of Hon'ble Supreme Court in Writ Petition (Civil) No. 337/1995, all such proposals in respect of a Sanctuary or a National Park also require Supreme Court's approval based on the recommendation of the **Standing Committee of National Board for Wildlife** (*a Committee chaired by the Minister in charge of the Ministry of Environment and Forests*)

3.2 Activities inside National Parks:

Section 35 (6) of the Wild Life (Protection) .Act, 1972 provides that the recommendation of the **National Board for Wildlife** (*a Board chaired by the Prime Minister*) is essential for any use or diversion of the habitat of any wild animal, or produce including water, etc. in a National Park.

This proviso is also applicable with respect to National Parks in view of Section 35(8) of the Act. In the circumstances, any activity proposed within the boundaries of a National Park or Wildlife Sanctuary shall require the recommendation of the Standing Committee of NBWL, and the approval of the Hon'ble Supreme Court.

Section 33 (8) of the Wild Life Protection Act, 1972 provides that no construction of commercial tourist lodges, hotels, zoos and safari parks can be undertaken inside a National Park except with prior approval of the Standing Committee of NBWL.

3.3 Activities inside a Tiger Reserve:

A Tiger Reserve notified under the provisions 38V (1) of WLPA may include an existing Protected Area or other forests (as the buffer areas). The Tiger Reserve, once notified gets conferred protection on par with a Wildlife Sanctuary under section 38V (2). Further section 38W makes it mandatory to obtain approval of Standing Committee of NBWL for any activity including alteration of boundaries of Tiger Reserves. Therefore, any proposal involving any area under the notified Tiger Reserve will also be governed by the relevant provisions applicable to the Wildlife Sanctuaries and therefore, will be referred to the Standing Committee of NBWL for consideration.



3.4 Activities inside Conservation Reserves:

The Ministry of Law and Justice has opined that activities to be taken up inside a Conservation Reserve can also be dealt with in the Standing Committee of NBWL. Therefore, the procedure indicated under para 4 below needs to be followed for planning and executing any activity inside Conservation Reserve also.

3.5 Activities in areas other than Protected Areas:

In addition to the notified protected areas as described above, the consideration of the Standing Committee of NBWL has been prescribed in certain circumstances. which are listed below:

3.5.1 Activities within 10 Kms from boundaries of National Parks and Wildlife Sanctuaries:

In pursuance to the order of Hon'ble Supreme Court dated 4th December 2006 in Writ Petition (Civil) No. 460/2004, in case any project requiring Environmental Clearance, is located within the eco-sensitive zone around a Wildlife Sanctuary or National Park or in absence of delineation of such a zone, within a distance of 10 kms from its boundaries, the User agency/Project Proponent is required to obtain recommendations of the Standing Committee of NBWL.

3.5.2 Activities within areas connecting the Tiger Reserves, notified by NTCA for controlling the land use as per section 38 O (g):

Section 38 O (g) of the Wild Life Protection Act, 1972 entrusts the responsibility to NTCA to ensure that areas connecting Tiger habitats are not diverted for ecologically unsustainable habitats except in public interest and with the approval of NBWL. Proposals for any activities in such areas duly notified by NTCA, and recommended by it in accordance with these provisions, to be covered under such regulation will be permitted only after seeking recommendations of the Standing Committee of NBWL. Violation of this provision is required to be dealt with by the NTCA.

4. Procedure to be followed for consideration of Proposals by the standing committee of National Board for wildlife:

- 4.1 The User Agency/Project Proponent is required to submit the proposal in the prescribed proforma that has been prescribed by the Ministry of Environment and Forests, and is available on the website of the Ministry (<http://moef.nic.in/modules/others> to be filled in) (**Annexure-I**).
- 4.2 The prescribed proforma has **five** parts and each part is required to be filled in by the User Agency; concerned Divisional Forest Officer/Park Manager; Concerned Chief Conservator of Forests; Concerned Chief Wildlife Warden and the Forest Secretary.
- 4.3 The proforma also seeks information in detail on the biodiversity of the area in question; maps. of the area, other activities already in place; possible impacts of the proposal, etc.
- 4.4 The User agency is required to submit Part-I and Part-II of the proforma duly filled in to the concerned Forest Officer, who in turn, forwards the same to the Chief Wildlife Warden through the Chief Conservator of Forest.
- 4.5 The Chief Wildlife Warden, after giving his specific comments on the proposal, shall forward 15 copies of the same to the Government of India, through the Forest Secretary **after obtaining the recommendation of the State Board for Wildlife on the proposal.**





- 4.6 The proposal so received from the State Chief Wildlife Warden will be placed before the Standing Committee of NBWL, chaired by Minister of State (I/C) Environment and Forests. The meeting of the Standing Committee is convened once in 2-3 months.
- 4.7 In cases where the area proposed for diversion is large and/or the impact of the project on wildlife is considered to be serious, site inspections may be conducted by the members of the Committee or further studies/ surveys may be conducted by experts on the instruction of the Standing Committee of NBWL.
- 4.8 The site inspection reports are generally considered in the next meeting of the Standing Committee to enable the Committee to make its recommendation.
- 4.9 After the Standing Committee of NBWL recommends the proposal the User Agency /State Government is required to approach Hon'ble Supreme Court for final clearance in view of the Court orders dated 13.11.2000.
[Note: Hon 'ble Supreme Court vide their order dated 13. 11.2000 had directed that there shall be no dereservation /denotification of National Parks and Sanctuaries without approval of the Supreme Court. Therefore, to take up any such activity, a clearance from Hon'ble Court is mandatory.]
- 4.10 In case of Border Roads, proposals of the Ministry of Defense, a simplified proforma for simultaneous clearance under the Forest (Conservation) Act, 1980 and wildlife clearance is being adopted under 'A Single Window System'.

5. Proposals for survey work to be carried out inside National parks and wildlife sanctuaries;

In case any kind of survey work and/or Environment Impact Assessment (EIA) studies, that is a prelude to future diversion of land, are to be taken up in areas involving a wildlife habitat, then also the entire procedure, as prescribed in paragraph 4 above would need to be followed.





FORMS

(All documents to be submitted in triplicate and signed in blue ink)

PART I

**Proposal for Investigation and Survey in the National Park / Sanctuary
(Details to be provided by the Applicant)**

1. Name of the Organization
2. Aims and Objectives of the Proposed Project
3. Location and .Map (1:50,000 scale) of the area duly authenticated by the competent authority to be investigated/ surveyed
4. Whether investigation/ survey requires clearing of vegetation
5. If yes, please specify the extent (in Ha.)
6. Opinion of the Officer In Charge of the NP/ WLS (Attach signed copy)
7. Opinion of the Chief Wildlife Warden (Attach signed copy). The following be included in the opinion:
 - i) Brief history of the protected area
 - ii) Current status of wildlife
 - iii) Current status of pressures on protected areas.
 - iv) Projected impacts of projects on wildlife, habitat management and access/ use of resource by various stakeholders.
 - iv) Contiguous wildlife areas which would benefit wildlife if added to national park/sanctuary.
 - v) Other areas in the State which have been recommended by State Government, Wildlife Institute of India, BNHS, SACON, IISC, IUCN or other expert body for inclusion in protected area network

Signed	Signed	Signed
Project Head Name Organization	The Officer In Charge of the NP/ WLS Office Seal	The CWLW Office Seal



PART II
(To be filled in by the Applicant)

1. Project details:
 - (i) Copy of the Investigation and Survey report. (The report should include the dates of survey and the names of the investigators, surveyors and all officials of the concerned NP/ WLS who remained present during the period.
 - (ii) Self contained and factual project report for which NP/WLS area is required (Enclose copy of Project Appraisal document)
 - (iii) Map (duly authenticated by the Divisional/District Head of the Department dealing with Forests and Wildlife) on a scale of 1: 50,000 showing the boundaries of the NP/WLS, delineating the area in question in red color).
 - (v) Self contained and factual report of at least two alternatives considered by the project authorities along with technical and financial justification for opting national park/ sanctuary area.
 - (vi) Copy of the Bio diversity Impact Assessment report in case the Proposal involves diversion of more than 50 ha. NP /WLS area.
2. Location of the project/scheme
 - (i) State/Union Territory
 - (ii) District
 - (iii) Name of the National Park/ Sanctuary
3. Details of the area required (in Hectares only)
(Provide break up of the land use under the project, e.g., construction of dam, submergence, housing for staff, road etc)
4. Details of displacement of people, if any, due to the project
 - (i) Total number of families involved in displacement
 - (ii) Number of scheduled caste/Scheduled tribe families involved in displacement
 - (iii) Detailed rehabilitation plan
5. Any other information relevant to the proposal but not covered in any of the columns above.

Signed by
Project Head

Name

Organization

Date of submission to the Head of the National Park/Sanctuary



PART III

(To be completed by the Officer -in- Charge of the National Park/ Sanctuary completed and submitted to the Chief Wild Life Warden or officer authorized by him in this behalf within 30 days of the receipt of PART - II)

1. Date of receipt of the PART II
2. Total Area (Ha.) of national park/sanctuary
3. Total area (Ha.) diverted from the NP/WLS so far for development purposes
4. List the past projects and the area (Ha.) diverted

Name of Project Area	Diverted	Year of Diversion
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5. Positive impact(s) due to the diversion of area for the projects referred to in column 4 above

Name of the Project(s)	Positive Impact	Scientific Basis of Assessment
------------------------	-----------------	--------------------------------

 (Attach separate sheet, if required)
6. Negative impact/s due to the diversion of area for the projects referred to in column 4 above

Name of the Project(s)	Negative Impact	Scientific Basis of Assessment
------------------------	-----------------	--------------------------------

 (Attach separate sheet, if required)
7. Management Plan Period

Attach copy of the Management Plan/Management Scheme/ Recommendation of Chief Wildlife Warden
8. List Management actions taken/ proposed to be taken in the whole Block/ Zone in which the proposed area is located.
9. Type of forest in which the proposed area falls.
10. Location of the proposed area w.r.t. the critical/intensive wildlife management areas/ wildlife habitats (attach Map to scale).
11. List the likely POSITIVE AND NEGATIVE impact/ s of the proposed project giving scientific and technical justification for each impact.
12. Provide COMPREHENSIVE details of the impact of the proposal in terms of Sections 29 and/or section 35 (6) of the Wild Life (Protection) Act, 1972 as the case may be.
13. Whether the project authorities have ever committed violation of the Wild Life (protection) Act, 1972 or Forest Conservation Act, 1980. If yes, provide the EXHAUSTIVE details of the offence and the present status of the case.

(Concealing or misrepresenting the facts will lead to rejection of the case in addition to any other penalty as prescribed under Law)
14. Have you examined the Project Appraisal document and the alternatives as provided in PART - II?
15. Have you examined the Bio diversity Impact Assessment Report?
16. If Yes, please give your comments on the recommendations given in the report?
17. Dates and duration of your field visits to the proposed site.



18. Do you agree that the present proposal of diversion of NP/WLS area is the best or the only option and is viable.
19. Any other information that you would like to bring to the notice of the State Board for Wildlife, National Board for Wildlife or Standing Committee that may be relevant and assist in decision making.
20. Do you recommend the project.
(Please provide full justification to support your recommendations)

Signed by

The Officer In Charge of the NP/ WLS Official Seal

Date of submission to the Chief Wild Life Warden or any other officer authorized by him in this regard



PART IV

(To be completed by the Chief Wildlife Warden within 15 days of the receipt of PART - II and Part- III)

1. Date of RECEIPT of P ART- II and Part- III by the Chief Wild Life Warden or the officer authorized by him in this regard
2. Do you agree with the information and recommendations provided by the Officer in - Charge in PART III?
3. If not, please provide the reasons
4. Have you visited the site yourself and held discussions \rith the applicant?
5. (a) Do you agree that the present proposal for permitting use of NP/WLS area is the best option or the only option, and IS viable?
5. (b) Whether the proposal sub-judice? If yes, give details.
6. Please provide specific comments w.r.t, Section 29 of the Wild Life (Protection) Act, 1972
7. Any other information that you would like to bring to the notice of the State Board for Wildlife, National Board for Wildlife or its Standing Committee that may be relevant and assist in decision making
8. Do you recommend the project?
(Please provide full justification to support your recommendations)
9. Conditions, if any, to be ensured in the interest of protection and conservation of wildlife for allowing use of the area?

**Signed by
The Chief Wildlife Warden**

Name
State
Official Seal

Date of submission to the State Government



PART V

(To be completed by the Department in Charge of Forestry and Wild Life in consultation with the State Board for Wild Life within 30 days of the receipt of PART - II, PART- III and PART- IV)

1. Date of RECEIPT of PART- II, PART- **III** and PART - IV by the Department
2. Do you agree with the recommendation(s) of the Chief Wildlife Warden
3. If not, please provide the reasons.
4. Did you provide PART **II**, PART- **III** and PART - IV to the members of the State Board for Wild Life?
5. Attach copy of the opinion of the State Board for Wild Life
6. Give details of the recommendations of the State Government

**Signed by
The Principal Secretary**

Name
State
Official Seal

Date of Submission to Central Government



Guidelines for Roads in Protected Areas

(Recommendations of the Sub-Committee of National Board for Wild Life issued by Wildlife Division, Ministry of Environment, Forests and Climate Change vide

F.No. 6-62/2013 WL, dated 22nd December 2014)

In pursuance to the decision taken by the Standing Committee of the NBWL in its 28th Meeting held on 20th March 2013, a sub-committee under the chairmanship of Dr. M.K. Ranjit Singh, Member, National Board for Wildlife, was constituted by the Ministry of Environment and Forests vide O.M. No. 6-62/2013-WL, dated 26th June 2013. The terms of reference of the sub-committee are as follows:

- To frame a comprehensive guideline for construction/repair of roads passing through PA in the country.
- Design best practices for such roads passing through PAs so as to have better wildlife conservation.

The 1st meeting of sub-committee was convened on 2nd July, 2013. The second meeting of the sub-committee was convened on 6th August, 2013. The list of participants who attended both the meetings are given in Annexure-1.

PREAMBLE

Background

Roads are an essential part of India's development, providing vital connectivity and transportation across the country. Yet, when they intersect natural areas (as opposed to being situated in already-modified human-dominated landscapes), roads have wide-ranging and complex impact on natural areas and wild species inhabiting these areas. Within India's Protected Areas, the extensive impact of roads remains poorly understood, except in the obvious and serious instance of wild animal mortality due to road accidents. Elsewhere, it was well established that roads have detrimental ecological effects in both terrestrial and aquatic natural ecosystems. Roads further fragment the already highly fragmented natural habitats. They break forest contiguity, impinge on forests and well-worn migratory paths of animals, break tree cover and canopy, slice vegetation—all of which gravely impact wildlife. Roads cause soil erosion and landslides. Crucially, roads are the first step to ancillary development and increasing human footprint in the area, thus leading to accelerated developmental, tourist and hunting pressures, increase in pollution, litter, and various disturbances. Unless great vigilance and checks are provided, roads provide conduits for illegal extraction of timber and forest produce and for poaching, particularly at night, from vehicles. It is very difficult to provide the requisite surveillance and it is well established that PAs have suffered loss of vegetative cover and poaching after construction of roads. In PAs in the mountainous region, construction of roads and their widening has grave consequences, including landslides and erosion, as the debris from road cuts on hillsides is invariably tipped over the sides. A background paper on linear intrusions into natural areas, including roads, commissioned by the National Board for Wildlife in 2011, provides an exhaustive review of the current state of knowledge on this topic 1 and a companion document 2 provides detailed guidelines by which their negative impact on natural habitats and wild species, can be minimized.

BASIC PRINCIPLES

We wish to reiterate a point articulated clearly and emphatically in the National Wildlife Action Plan-2002-2016, which states that the "*Ministry of Surface Transport... to plan roads, highways, expressways in such*





a manner that all national parks and sanctuaries are by-passed and integrity of the PA is maintained. Wildlife corridors also need to be avoided, or mitigative measures (such as restricting night traffic) need to be employed.” This principle must serve as the cornerstone of any road plan that is being conceived in the vicinity of any wildlife or Protected Area, and envisages the Ministry of Surface Transport to work in coordination with the Ministry of Environment & Forests, and other relevant authorities and experts. Further, we believe that this principle must apply to all other roads being planned by any other agency at the national, state, or local levels. The implication of this action point articulated in the National Wildlife Action Plan (NWAP) is also that plans be made proactively by relevant agencies to realign existing roads passing through protected areas, in a way that PAs are bypassed and, subsequently, decommission roads that intersect PAs.

If there are viable alternative alignments—as observed in a number of cases—to roads that otherwise intersect PAs, those within PAs must gradually be phased out and eventually decommissioned, while the alternate roads should be improved. This must be done in active coordination with the relevant ministries, departments and authorities, as noted above.


In planning roads, within and in the vicinity (defined here as roads that are situated inside and within 1 km radial distance) of protected areas, we recommend that following fundamental principles must be followed in order of priority: Avoidance, Realignment, Restoration.

1. **Principle of Avoidance:** The foremost option would be to altogether avoid roads that are within or in the vicinity of any Protected Area and to find alternatives that are socially and ecologically more appropriate.
2. **Principle of Realignment:** This follows as a corollary of the first principle. Road projects must investigate and demonstrate that they have considered other alternative routes that avoid natural areas of high ecological value. This must be an integral feature of a project proposal and implementation documents. Realignments must also be developed in a transparent manner through consultation with local communities affected by the routing and subject to ecological and wildlife considerations. User agencies seeking clearances for roads must demonstrate as to how they have taken these factors into account, before their proposals can be considered for approval by the SC-NBWL.
3. **Principle of Restoration:** In natural areas, existing roads that are in disuse (e.g., old logging roads), or evaluated to be inefficient or detrimental to their objects, shall be targeted for decommissioning and subsequent ecological restoration, as the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

The Deputy Inspector General of Forests (WL) briefed the committee regarding the existing guidelines for roads within Protected Areas, viz.:

- (i) Decision of the Standing Committee of IBWL, as per decision taken during the meeting held on 14.6.2000. This held that roads that have already been tarred should continue to be maintained and repaired properly, in the current form. No roads inside the National Parks and Sanctuaries should be widened or upgraded.
- (ii) During the meeting of 14th October 2011, it indicated that “No widening of existing roads shall be permitted, and the status of finishing of the surface of the repaired road(s) shall remain same as that





of the original road(s), i.e., un-tarred roads shall remain un tarred after repairs, and only originally tarred roads shall be repaired and tarred “

Recommendations

The committee recommends the following: ·

1. The status quo of the roads passing through National Parks and Core Critical Tiger Habitats (CTH) shall remain the same. The roads could be maintained and repaired in the best manner possible in their current form and present width. No widening or up gradation is to be allowed. If it is an existing tarred road, it shall be maintained as such and no widening of the tarred surface or the widening of the road itself, may be done.
2. For Wildlife Sanctuaries and Conservation Reserves, the same norms as in the case of National Parks and Core, Critical Tiger habitats, shall apply. However, in case of Sanctuaries and Conservation Reserves, culverts and metalling in sections of roads that become impassable or ‘all weather roads’ for approach/connectivity to villages within the Protected Areas, can be considered for approval in the Standing Committee of NBWL. If necessary in such cases, required maintenance could be taken up by the Forest Dept. on the recommendation of the Standing Committee of NBWL. It may be stressed again, that the width and status of the existing roads shall remain the same and no up gradation will be allowed. In considering such proposals, the method of such road construction/improvement such as blasting, borrow-pit digging, etc., the impact upon movement of animals from one habitat to another/wildlife corridors, access of water, etc. would be criteria for consideration.
3. Where roads approaching/passing by National Parks/Core-Critical Tiger Reserve/Wildlife Sanctuary are within a radius of 1 km thereof, or within the Eco Sensitive Zone, whichever of the two is lesser, would be treated on same basis/guidelines as are applicable to the Protected Areas category that it is in proximity of.
4. Presently, as Community Reserves are outside the purview of Section 29 of Wildlife (Protection) Act, 1972, the committee decided not to delve into the matter of roads passing through such PAs.
The committee recommended that, no change of current ownership and maintenance of roads passing through the Protected Areas should be permitted. However, in specific cases where such a transfer is required to better manage roads so as to cause minimal impacts on wildlife, as in the case of transfer of certain PWD /other roads which pass through PAs, back to the concerned Forest Dept; such transfers could be considered.
5. Roads being managed by the Forest Department for the purpose of patrolling and tourism, were of equal concern like other roads inside Protected Areas. It was noted that there was a large network of such roads in several National Parks/Tiger Reserves/Wildlife Sanctuaries. No new roads should be constructed by the concerned Forest Departments and if so required to be constructed, the approval of the National Tiger conservation Authority (in case of Tiger Reserves) and concerned State Boards for Wildlife in case of non-Tiger Reserve for other PAs must be obtained. The concerned authority should be able to demonstrate and justify the grounds for construction of the new roads within PAs, in the conservation interest of the concerned PA.



6. The committee also agreed that the Wildlife Institute of India should formulate guidelines - for making road's by the Forest Departments, for protection purposes, in Protected Areas, Critical Wildlife Habitats and designated corridors.

Management of Roads within PAs:

Mitigation: For existing roads, repairs and maintenance of existing roads, and for repairing roads that are impassable during monsoon/all-weather roads as described in the recommendation above, it is imperative that mitigation measures are included in the project planning, design, budget, implementation, and monitoring stages. This requires measures to minimise detrimental effects of roads on ecology, wildlife, local communities and users. This shall be considered only for existing structures and for new cases, where the options given earlier have been comprehensively considered and overruled, with adequate justification. These are also subject to requisite approvals from the state authorities and boards, the Ministry of Environment and Forests and its statutory bodies, such as the National Board for Wildlife, Forest Advisory Committee, and the National Tiger Conservation Authority, as relevant to each case.

An exhaustive set of management measures have been recommended in the NBWL's draft guideline document mentioned above (pages 8-13, and 17-21). While fully endorsing these recommended management measures, for ready reference, some of the key management considerations applicable for already existing roads, are herewith highlighted:

- Ban on night traffic (dusk to dawn) is essential to save animals from disturbance from the constant flow of traffic, and thus allow them passage. It is recommended that night traffic bans should be initiated and applied in Core Critical Tiger Habitats, National Parks and Sanctuaries. There are such existing bans in various Tiger Reserves and NPs. Night passes may be provided for villagers/communities living within the PAs.
- Strong regulations controlling timing and traffic volumes need to be built in for all roads through Protected Areas and critical habitats.
- Speed reduction is a must to reduce wild animal mortality, and can be achieved through imposed speed limits and speed breakers.
- Vehicles should not be allowed to stop within PAs.
- No use of horns within the PA, and no littering.
- Speed restrictions and other guidelines that spell out rules and avoidance of disturbance to wildlife and habitats along roads in PAs, must be prominently conveyed through well-designed signboards, at entry and exit points and all other relevant locations.
- Establishment of check posts by the forest department, at both entry and exit points.
- Wherever possible, natural animal crossings existing across roads should be retained or encouraged. For instance, overlapping tree canopy in closed canopy evergreen/semi evergreen forests is an essential attribute for the movement of arboreal species. Passage to waterholes and daily movements of animals must also be safeguarded.
- Underpasses: well-designed tunnels, culverts, pipes, and other structures can function as underpasses below roads and bridges, for a wide-range of terrestrial and aquatic species. Underpasses can also be deployed below railway lines/highways for passage of large bodied animals, viz elephants, tigers.





- During maintenance works on existing roads, the underlying principle should be that work must be carried on in a speedy manner, with minimal disturbance to wildlife and with adherence to all rules and regulations that govern wildlife and PAs.
- No work should be allowed between 6 pm to 8 am (just before dusk to just after dawn).
- The labour force required for road maintenance must have their camps outside, the concerned PA.
- No firewood cutting or fuel collection from within the PA.
- Waste/debris should not be dumped in the PA/or adjoining rivers/nullas/water bodies.
- No taking of any material like sand, gravel etc from the PA. All materials for construction, road maintenance etc should be brought from outside.
- No vegetation/tree should be cut or damaged/ during the maintenance.
 1. Raman, T. R. S. 2011. Framing ecologically sound policy on linear Intrusions affecting wildlife habitats: Background paper for the National Board for Wildlife. Available from: envfor.nlc.in/assets/Linear%20intrusions%20background%20paper.pdf.
 2. NBWL. 2011. Draft guidelines for linear infrastructure intrusions in natural areas: roads and power lines. Available from: <http://envfor.nic.in/assets/FIRST0raft%20guidelines%20roads%20and%20powerlines.pdf>





Guidelines for Seeking Recommendations of Standing Committee of National Board for Wildlife for Activities in Protected Areas

(Issued by Wildlife Division of Ministry of Environment, Forest and Climate Change vide F.No. 6-74/2012 WL (pt) dated 11.03.2016 and 24.03.15)

1. General Policy:

National Parks and Wildlife Sanctuaries are notified as a part of the forest management as dedicated areas for harbouring the representative biodiversity of a place and for providing reproductive surplus to the forests providing harvest based sustainable utilization. Therefore such protected areas are extremely important for conservation of biodiversity, and for ensuring the survival of its floral and faunal components, not only for the present but also for future. However, the rising human population and their growing demands for socio economic development have placed tremendous stress on forests including such areas both directly and indirectly. Keeping in view the fact that a balance has to be struck between development and conservation, any activity involving use or diversion of any part of a notified Protected Area may be considered only under **most exceptional** circumstances, taking mainly into account inevitability, its impending impact on the management of the Protected Area, and feasibility of mitigation thereof without compromising the objective thereof. Additionally, such activities to be taken up in the identified wildlife habitats also need to be governed by the orders of Hon'ble Supreme Court as well as the statutory requirements as provided in the Wild Life (Protection) Act, 1972.

2. Activities inside Protected Areas:

The process of consideration of any proposal for use of areas inside the Protected Areas, as a mandatory requirement under the present statutes, involves consideration and recommendation of the **National Board of Wild Life**. However, as the **Standing Committee of National Board for Wildlife** has been delegated the powers of the National Board for Wildlife, such cases are to be referred to the Standing Committee of National Board for Wildlife for consideration and recommendation. Such provisions of law, where such reference is warranted are described below:

2.1 Wildlife Sanctuaries:

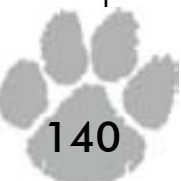
Section 29 of WLPA provides for consultation with the State Board for Wild Life before any decision is taken by the state government for permitting any activity within a WLS. Presently, in view of the directions dated 9th May 2002 of Hon'ble Supreme Court in Writ Petition (Civil) No. 337/1995, all such proposals also require recommendation of the **Standing Committee of National Board for Wildlife**, before seeking its approval for such activities.

2.2 National Parks:

Section 35 (6) provides for consultation with the National Board for any such activity within a National Park.

2.3 Other Provisions

Section 33 (a) provides for **prior approval** of the National Board for any construction of commercial tourist lodges, hotels, zoos and safari parks inside a sanctuary. This proviso is also applicable on National Parks in Section 35 (8). Section 26 A (3) provides for recommendation of





the National Board for alteration of boundary of a sanctuary. Section 35(5) provides for similar recommendation for alteration of boundary of a National Park.

2.4 Activities inside a Tiger Reserve:

The PAs constituting a Tiger Reserve attract all the provisions applicable for National Parks or Sanctuaries. Section 38-O (g) and 38W provide for approval of NBWL for activities within and in areas linking protected areas or tiger reserves, alteration of boundaries or de notification of Tiger Reserves.

2.5 Activities inside Conservation Reserves:

The Ministry of Law and Justice has opined that activities to be taken up inside a Conservation Reserve can also be dealt with in the Standing Committee of NBWL. Therefore, the procedure indicated under para 3 below needs to be followed for planning and executing any activity inside Conservation Reserve also.

3. Procedure to be followed for consideration of Proposals by the Standing Committee of National Board for Wildlife:

3.1 The User Agency/Project Proponent is required to file the application online as provided in the User Manual of Online Submission and Monitoring of Environmental, Forests and Wild Life Clearance – a Single Window Clearance System, attached herewith. (User manual has been uploaded on the website. <http://www.moef.nic.in/division/orders-and-releases>)

3.2 The user agency can apply for Forest, Wildlife and Environmental Clearances on the single portal. The user agency can also track the movement of the proposal through different stages of processing through the online clearance system.

3.3 The roles of various agencies involved in the process and actions required to be taken are provided in the manual. In case of difficulty, the details of concerned to be contacted have also been provided.

[**Note:** *Hon'ble Supreme Court vide their order dated 13.11.2000 had directed that there shall be no dereservation/ denotification of National Parks and Sanctuaries pending further orders. Therefore, to take up any such activity, approval from Hon'ble Court is mandatory at present.*]

4. Time lines to be followed by various agencies involved in processing the proposals:

Following time lines will be adhered by all the officials responsible for the activities indicated;

1	DFO/Wildlife Warden	i.. Initial scrutiny in 5 days of receipt of the proposal ii. 30 days after receipt of complete proposal for site inspection, consultation with Conservator of Forests/ Chief Conservator of Forests/ Addl. Principal Chief Conservator of Forests and forwarding to the Chief Wildlife Warden
2	Chief Wildlife Warden	20 days from receipt of proposal for scrutiny and recommendation to the State Government for placing before the State Board for Wildlife.
3	Consultation with State Board for Wildlife and recommendation of State Government	The activity involves decision of the State Government, consultation with State Board for Wildlife and thereafter, recommendation of State Government to Ministry of Environment, Forest and Climate Change enclosing the copy of the minutes of the State Board for Wildlife. Therefore, this stage may take up to 90 days (3 months), as the State Board for Wildlife is chaired by Hon'ble Chief Minister.



4	Ministry of Environment, Forest and Climate Change	i. Initial scrutiny in 5 days of receipt of the proposal. ii. 30 days after receipt of complete proposal for Standing Committee of National Board for Wildlife.
5	Consultation with Standing Committee of National Board for Wildlife	Meetings of Standing Committee of National Board for Wildlife are ordinarily convened once in 3 months.

5. Proposals for survey work to be carried out inside national parks and wildlife sanctuaries:

In case any kind of survey work and/or Environment Impact Assessment (EIA) studies are to be taken up in areas involving a Protected Area, and are covered under section 29 or 35(6) of WLPA, then, also the entire procedure, as prescribed in paragraph 3 above would need to be followed.

6. Activities referred by other agencies

There may be cases where chairperson of NBWL or Standing Committee of NBWL or Honourable Supreme Court of India or any other statutory agency may desire examination of any proposal by the NBWL or its Standing Committee. In such cases the agenda will be proposed in accordance with the scope of reference made to the Standing Committee, which can be submitted direct to the Member Secretary, National Board for Wild Life, Ministry of Environment, Forests and Climate Change.





F.No.5-3/2007-FC
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(FC DIVISION)

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi-110510

Dated the 8th September, 2009

To,
The Principal Secretary/Secretary (Forest)
All States/UT Governments.


Sub: Diversion of forests land for non-forestry purposes under Forest (Conservation) Act, 1980- guidelines for relocation/rehabilitation of villages from National Parks/ Wildlife Sanctuaries/Tiger Reserves – regarding

Sir,

The ministry of Environment and Forests, Government of India has receiving representations from different States/UT Governments stating that the clause ‘legal status of forests land shall remain unchanged’ precludes possibility of relocated villages, who are by and large tribals, from becoming absolute owners of the land allocated to them and by retaining the status of land as ‘forests’ several ongoing developmental works in the district are not implemented in the area, which deprives the relocated people from their due benefits. After careful examination of the issue, the matter was taken up with the Central Empowered Committee (CEC) which recommended to the Supreme Court for relaxation of its order dated 13.11.2000 in WP (C) No. 337/1995, to permit Ministry of Environment and Forests (MoEF), to allow change in the legal status of the forest land approved for diversion under the Forest (Conservation) Act, 1980 for the relocation of villages from the National Parks/Sanctuaries.

The Hon’ble Supreme Court of India vide its order dated 21.11.2008 in IA 1658 in WP (C) No. 202/1995, referring to the CEC’s report for permission for change in the legal status of the forest land diverted under Forest (Conservation) Act, 1980 by the MoEF, for rehabilitation of villagers of three villages in Andhari Wildlife Sanctuary, Maharashtra, ordered that “... we make it clear that despite the order passed by this Court on 13.11.2000, the MoEF is permitted to change the legal status of the forest land approved under the Forest (Conservation) Act, 1980 for relocation of these villages for the purpose of extending the boundary and for rehabilitation of the tribal people residing there”. It is also informed that the Hon’ble Supreme Court of India vide its order dated 09.05.2008 regarding correction of the judgment dated 28.03.2008 has already accorded full exemption from payment of





Net Present Value (NPV) to the relocation / rehabilitation of villages from National Parks / Wildlife Sanctuaries / Tiger Reserves to alternate forest land. In this connection, this Ministry's letter of even number dated 05.02.2009 may kindly be referred to.

In view of the above, I am directed to convey the approval of the Central Government for changing the legal status of forest and, with retrospective effect covering all such cases of diversion of forest land, diverted under Forest (Conservation) Act, 1980 for relocation/rehabilitation of villages from National Parks/Wildlife Sanctuaries/Tiger Reserves from 'forest land' to revenue land'.

It is further reiterated that this stipulation is strictly restricted to relocation/rehabilitation of villages from National Parks/Wildlife Sanctuaries/Tiger Reserves.

This is issued with approval of competent authority.

Sd/-

(C.D. Singh)

Sr. Assistant Inspector General of Forests

Copy to:

1. The Principal Chief Conservator of Forests, All States/UTs.
2. The Chief Wildlife Warden, All States/UTs.
3. The Nodal Officer (FCA), O/o the PCCFs, All States/UTs.
4. All Regional Offices of MoEF located at Bhopal, Shillong, Bangalore, Bhubaneshwar, Lucknow and Chandigarh.
5. The RO (HQ), MoEF, New Delhi.
6. Monitoring Cell, FC Division, MoEF, New Delhi.
7. Guard File.

Sd/-

(C.D. Singh)

Sr. Assistant Inspector General of Forests



**REPORT OF THE CENTRAL EMPOWERED COMMITTEE IN IA NO. 3924 OF 2015 IN
IA NO. 1658 IN WRIT PETITION (CIVIL) NO. 202 OF 1995
(Dated : 26th December 2018)**

REPORT OF THE CEC IN IA NO. 3924 OF 2015 IN IA NO. 1658 IN WRIT PETITION (CIVIL) NO. 202 OF 1995 FILED BY THE GOVERNMENT OF INDIA, MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE (MOEF&CC) THROUGH THE NATIONAL TIGER CONSERVATION AUTHORITY SEEKING CLARIFICATION OF THE ORDER DATED 21.11.2008 OF THE HON'BLE SUPREME COURT PERMITTING CHANGE IN LEGAL STATUS OF FOREST LAND APPROVED UNDER THE FOREST (CONSERVATION) ACT, 1980 TO REVENUE LAND IN RELOCATION/REHABILITATION CASES FROM CRITICAL TIGER HABITATS AND CORE AREA OF PROTECTED AREAS (NATIONAL PARKS AND WILDLIFE SANCTURIES)

Dated : 26th December 2018

1. The Assistant Inspector General, National Tiger Conservation Authority (NTCA) has filed IA No. 3924 of 2015 in IA No. 1658 in WP (C) No. 202 of 1995 before this Hon'ble Court with the following prayer:
 - (a) Clarify its order dated 21.11.2008 in IA No. 1658 in W.P. (C) No. 202 of 1995 permitting change in legal status of forest land approved under the FC Act, 1980 to revenue land in all such relocation/rehabilitation cases from Critical tiger habitats and core areas of Protected Areas (National Park and Wildlife Sanctuaries); and
 - (b) Pass such other order and further orders as this Hon'ble Court may deem fit and proper in the facts and circumstances of the case.”
2. This Hon'ble Court in the above IA has vide its order dated 03.08.2018 directed the CEC to file its Report within six weeks. This Report is being filed after hearing the officials of the MoEF&CC and the Member Secretary, National Tiger Conservation Authority (NTCA) in a meeting taken by CEC on 26th September, 2018 and after going through the records made available to the CEC.
3. Earlier the CEC has filed its Report dated 28.9.2006 before this Hon'ble Court on an Application filed before it by the Member Secretary, Tiger Conservation Authority seeking permission of this Hon'ble Court for change in the legal status of the forest land approved under FC Act by MoEF&CC to revenue land for rehabilitation of villagers of three villages namely, Kosla, Botezari and Palasgaon in Andhari Wildlife Sanctuary in District Chandrapur, Maharashtra. The CEC has in its above Report recommended modification of the following order dated 13..11.2000 of this Hon'ble Court in Writ Petition (Civil) No. 337 of 1995. “pending further orders, no de-reservation of forests / Sanctuaries / National Parks snail be affected”.
4. After considering the Report dated 28.9.2006 of the CEC this Hon'ble Court by order dated 21.11.2008 permitted MoEF&CC to change the legal status of the forest land approved under the FC Act, 1980 for relocation of the three villages for the purpose of extending the boundary and for rehabilitation of the tribal people residing therein.



5. Pursuant to the above order dated 21.11.2008 of this Hon'ble Court MoEF&CC vide letter dated 8.9.2009 conveyed approval of the Central Government for changing legal status of the forest land to revenue land with retrospective effect covering all such cases of diversion of forest land diverted under FC Act, 1980 for relocation rehabilitation of villages

from National Parks / Wildlife Sanctuaries / Tiger Reserves (Annexure A-4 of IA No. 3924 of 2015). While the order dated 21.11.2008 of this Hon'ble Court is specific to the relocation of the three villages in Andhari Wildlife Sanctuary in District Chandrapur, Maharashtra the letter dated 8.9.2009 of MoEF&CC has conveyed the general approval for changing the legal status of forest land diverted under PC Act, 1980 for relocation of villages in respect of all such cases from the Sanctuaries and National Parks.

6. It has been stated by NTCA that as per the records available with them pertaining to the 18 States so far 177 villages (out of the 751 identified villages) have been relocated

from core / critical tiger reserves as per provisions in Section 38 V(5) of Wildlife (Protection) Act, 1972.

Further out of 177 villages as many as 122 villages have been rehabilitated on

forest land. However only in 42 cases out of 122 cases the forest land has been de-notified. The remaining 55 villages out of 177 have been rehabilitated on revenue and. A copy of the

letter dated 20.12.2018 received from NTCA is enclosed as **ANNEXURE R-1** to this Report.

7. The Applicant, NTCA, has prayed to extend the exception to the directions in the order dated 13.11.2000 granted in the order dated 21.11.2008 in IA No. 1658 in Writ Petition (Civil) No. 202 of 1995 to all such cases of voluntary village relocation / rehabilitation from core critical tiger habitats and core areas of Protected Areas (National Parks and Wildlife Sanctuaries) to the periphery of forest land being undertaken as per provisions in Section 38 of Wildlife Protection Act, 1972. The prayer has been made on the following grounds:

(i) Section 36 V (5) Wildlife (Protection) Act, 1972 has outlined the procedure for voluntary village relocation from core/critical tiger habitat areas of tiger reserves which has been operationalised through the NTCA;

(ii) Retention of the legal status of the relocated forest land as forest deprives of developmental benefits to the relocated families who are mainly tribals and which is working counterproductive to voluntary relocation as well as protection and conservation of the wildlife;

(iii) A total of 751 villages have been identified in notified / core / critical tiger habitats for relocation out of which only 177 villages have so far been relocated. The change in legal status of the relocated land to revenue will encourage the villagers to come forward for voluntary relocation;

(iv) The change in status of the relocated land from forest to revenue. Fosters several on-going developmental activities in the relocated areas which is precluded if status remains that of forest land;

(v) relocation of the villages from the core of the protected areas and the tiger reserves helps in conservation of the natural resources and will result in significant improvement in the ecological function of National Parks Wildlife Sanctuaries:

8. The CEC after detailed deliberation with the officials of the MoEF&CC and the NTCA is of the considered view that the order dated 21.11.2008 of this Hon'ble Court in I.A. No. 1658 in WP (C) 202 of 1995 may be extended to all such cases of relocation/ rehabilitation of the villages from the core/





critical tiger reserves and core of the protected areas (National Parks and Sanctuaries) to the periphery of Reserve Forest/ Sanctuaries / National Parks subject to the following conditions:

- a) Resettlement/ relocation within the boundaries of the notified forest land be considered only if suitable non-forest land is not available within the vicinity of the protected area from where the relocation is proposed;
- b) The District Collector concerned shall furnish to the NTCA a certificate of non-availability of land suitable for relocation of the villages located within the protected area and tiger reserves before any proposal of relocation within the forest is approved;
- c) The land identified for relocation / rehabilitation should not result in fragmentation of the forest/ wildlife habitat;
- d) The relocation activity shall be undertaken solely as a process of consolidation of the wildlife habitat;
- e) The relocation shall be undertaken only along the fringes of the forest such that all facilities to the resettled families can be provided without recourse to further diversion of forest land for providing infrastructure.
- f) The land / villages within the forest which have been vacated shall be brought under the protected area network through enabling notification under the Wildlife Protection Act after extinguishing all the existing rights over the vacated land:
- g) The extent of land de-reserved / de-notified for resettlement shall not be more than the extent vacated by the settlers in the core area; and
- h) The payment of NPV and cost of CA may be exempted in all such cases of voluntary relocation / rehabilitation of families from the protected areas undertaken within the forest land;

This Hon'ble Court may please consider the above Report and may please pass appropriate order in the matter.

Sd/-
(Amarnatha Shetty)
Member Secretary

Dated: 26th December, 2018





F. No. 8-34/2017-FC
Government of India
Ministry of Environment, Forest & Climate Change
(FC Division)

Indira Paryavaran Bhavan
Jor Bagh Road, Aliganj
New Delhi – 110003

Dated 20 the May, 2019

To,
The Principal Secretary (Forests),
All States/Union Territory Governments,

Sub: Order of the Hon'ble Supreme Court dated 28.01.2019 on I.A. No 3924/2015 in WP (Civil) 202/1995 regarding changing status of forest land to revenue land in case of voluntary relocation of villages-reg.

Sir,

I am directed to refer to Hon'ble Supreme Court order dated 28th January, 2019 wherein the Hon'ble Supreme Court, based on recommendation made in the CEC report dated 28.09.2018, in which it has extended the scope of its order dt. 21.11.2008 to all such cases of relocation/rehabilitation of the villages from the core/critical Tiger Reserves and core of the Protected Areas (National Park and WL Sanctuaries) to the periphery of Reserved forests/Sanctuaries/ National Park subject to following conditions:

- a) Resettlement/relocation within the boundaries of the notified forest land be considered only if suitable non-forest land is not available within the vicinity of the protected area from where the relocation is proposed;
- b) The District Collector concerned shall furnish to the NTCA a certificate of non-availability of land suitable for relocation of the villages located within the Protected Area and Tiger Reserves before any proposal of relocation within the forest is approved;
- c) The land identified for relocation/rehabilitation should not result in fragmentation of the forest/wildlife habitat;
- d) The relocation activity shall be undertaken solely as a process of consolidation of the wildlife habitat;
- e) The relocation shall be undertaken only along the fringes of the forest such that all facilities to the resettled families can be provided without recourse to further diversion of forest land for providing infrastructure;





- f) The land/ villages within the forest which have been vacated shall be brought under the protected area network through enabling notification under the Wildlife Protection Act after extinguishing all the existing rights over the vacated land;
- g) The extent of land de-reserved / de-notified for resettlement shall not be more than the extent vacated by the settlers in the core area; and
- h) The payment of NPV and cost of CA may be exempted in all such cases of voluntary relocation/ rehabilitation of families from the protected area undertaken within the forest land.

In this regard, it is informed that in compliance of the above order of the Hon'ble Supreme Court dt. 28.01.2019, the approval of the competent authority of the MoEF&CC is hereby conveyed for change in the legal status of forest land to revenue land in respect of all the 122 villages in 18 states (as mentioned in letter vide 12-12/2015-NTCA dated 20.12.2018 of NTCA to Member Secretary, CEC), which have been relocated to forest areas from the National Parks/Wildlife Sanctuaries/Tiger Reserves. Copies of letter of NTCA to CEC dt. 20.12.2018, Hon'ble Supreme Court orders dt. 21.11.2008 & 28.01.2019, Report of CEC dt. 26.12.2018 are enclosed.

It is also to inform that in future, all relocation/rehabilitation cases involving forest land shall be considered for change in legal status of the forest land on case to case basis as per the provisions under Forest (Conservation), Act, 1980, subject to condition at para-1 above.

The issues with approval of the Hon'ble Minister, EF&CC.

Yours Faithfully,

Sd/-
Shrawan Kumar Verma
Deputy Inspector General of Forests

Copy to:

1. Principal Chief Conservator of Forest, all States/UTs Governments.
2. Nodal Officer, the Forest (Conservation) Act, 1980, all States/UTs Governments
3. All Regional Offices, MoEF&CC
4. PPS to Member Secretary, CEC
5. PPS to the Secretary, EF&CC/PPS to the DG of Forests & Spl. Secretary, MoEF&CC
6. PPS to all ADGFs (Incl. NTCA)/IGFs, MoEF&CC
7. Monitoring cell (FC Division)
8. Guard file





Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

F. No. 12-12/2015-NTCA

New Delhi, the February 11, 2019

To,

The Chief Wildlife Warden(s)
All Tiger Range States

Sub.: Order of the Hon'ble Supreme Court dated 28.01.2019 in I.A. No. 3924/2015 in WP (Civil) 202/1995 regarding changing status of forest land in context of voluntary village relocation.

Madam/Sir,


Reference is invited to the subject & order cited above. In this context, I am directed to inform that the Hon'ble Apex Court in I.A. 1658 in WP (C) 202/1995 permitted the Ministry of Environment, Forest and Climate Change to change the legal status of forest land to revenue under the Forest (Conservation) Act, 1980 for relocation of Kolsa, Botezari and Palasgaon (Single) villages from the Tadoba Andhari Tiger Reserve vide their order dated 21.11.2008.

2. Consequently, the MoEF & CC vide their letter no. 5-3/2007-FC dated 8.9.2009 conveyed approval of the Central Government for changing the legal status of forest land with retrospective effect covering all such cases of diversion of forest land, diverted under Forest (Conservation) Act, 1980, for relocation/rehabilitation of villages from National Parks/Wildlife Sanctuaries/Tiger Reserves from "forest land" to "revenue land".

3. However, the FC Division of the MoEF&CC had referred the matter to this Authority as the aforesaid order named only 3 villages of the Tadoba-Andhari Tiger Reserve, which rendered it unsuitable for blanket implementation, and deemed their aforesaid letter void.

4. This Authority sought comments of the Ministry of Law and Justice which advised to file a Clarificatory Application before the Apex Court in the matter, which this Authority duly did vide letter of even no. dated 8.10.2015, which was registered as I.A. 3924 of 2015 in WP(C) 202/1995. This Authority had prayed the Hon'ble Apex Court to clarify its order dated 21.11.2008 in IA No. 1658 in W.P. (C) No. 202 of 1995 permitting **change in legal status of forest land approved under the FC Act, 1980 to revenue land in all such relocation/rehabilitation cases from critical tiger habitats and core areas of Protected Areas (National Parks and Wildlife Sanctuaries).**

5. The Hon'ble Apex Court referred the matter to the Central Empowered Committee (CEC) who filed their report no. 50/2018 dated 26.12.2018 (enclosed) based on which the Hon'ble Court passed order dated 28.01.2019 in I.A. 3924 of 2015 (enclosed) which is reproduced verbatim as below :



“Report No. 50 of 2018 of the CEC dated 26.12.2018 is accepted since it is not objected by the National Tiger Conservation Authority (NTCA). The Application is disposed of”.

- 6 Hence, in all cases of voluntary village rehabilitation carried out from core/critical tiger habitats of Tiger Reserves, National Parks and Wildlife Sanctuaries, on notified forest land, it may be ensured that a proposal for change in legal status should also be furnished concomitantly so that rehabilitated people may avail benefit of welfare schemes/amenities unhindered.

Yours faithfully,

End. As above

Sd/-

(Dr. Valbhav C. Mathur)

Assistant Inspector General (NTCA)

F.No. 12-12/2015-NTCA

Copy to:

1. All Field Director(s).
2. PPS to Secretary, EF &CC
3. PPS to DGF & SS
4. PPS to ADG (FC)
5. PPS to ADG (Wildlife)
6. All Regional Offices of the NTCA
7. All Regional Offices of the MoEF&CC

Sd/-

(Dr. Vaibhav C. Mathur)

Assistant Inspector General (NTCA)



भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest & Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 15-37/2012-NTCA (Vol-I)

New Delhi, the December 12, 2019

To,

**The Chief Wildlife Warden(s),
All Tiger Range States.**

Sub: Advisory for Retirement of Captive Elephants in Tiger Reserves-reg.

Sir,

You are aware that state forest departments throughout the country manage captive elephants in Elephant Camps. Some of these elephant camps are established in Tiger Reserves, where the elephants are used for various activities including tourism & patrolling.

Director, Project Elephant vide his letter No. 9-5/2003-PE dated 08.01.2008 has issued **Guidelines for care & management of captive elephants**, with respect to housing of elephant, care of elephant, feeding of elephant work load of elephant, records to be kept and acts which are tantamount to cruelty to elephants. Further, these guidelines also prescribe for retirements of captive elephants as below;

1. An elephants shall normally be allowed to retire from its work on attaining an age of 65 years.
2. Healthy elephants above 65 years of age shall be allowed to be put to light work under proper health certificate from the veterinary doctor.

In this regard, I am directed to request you to take necessary action for retirement of elephants attaining an age of 65 years so that the related guidelines are strictly adhered to. All such captive elephants qualifying for retirement as per above guidelines shall not be used for the purpose of tourism and any other kind of rides etc. A copy of these guidelines is enclosed with a request to provide information regarding number of elephants in captivity in various camps in Tiger Reserves with their age and retirement status to this Authority at the earliest.

End: As above.

Yours Faithfully,

Sd/-

(Surender Mehra)

Deputy Inspector General of Forest (NTCA)

E-mail: dig1-ntca@nic.in

Tel. No. +91 11 2436 7837-39

Fax: +91 11 2436 7836





F. No. 15-37/2012-NTCA (Vol-I)

Copy to:

1. ADG (WL), Ministry of Environment, Forest & Climate Change.
2. The Director, Project Elephant, Ministry of Environment, Forest & Climate Change.
3. Field Director(s), All Tiger Range States.
4. PS to ADG (PT) & MS (NTCA), New Delhi.

Sd/-

(Surender Mehra)

Deputy Inspector General of Forest (NTCA)

Guidelines for Care and Management of Captive Elephants

(Issued by Director, Project Elephant vide letter No. 9-5/2003-PE dated 8-1-08)

Ownership Certificate:

1. All States/UTs would carry out a fresh survey of the captive elephants in their territory within a period of six months and report the number to the ministry. All the captive elephants shall be microchipped for which chips have been provided in adequate numbers to the states/ UTs. Fresh ownership certificate should be issued in the form annexed for a period of five years and should be renewed every five years in case there is no violation of the norms to be followed.
2. Illegal elephants i.e. those which have not been declared under the declaration of the Wild Life Stock Rules 2003 or are found without valid documents will be confiscated.
3. It would be mandatory for the owners to declare in writing in advance to the nearest Divisional Forest Officer or to the authorised officer by the state government of the pregnancy of the female elephants in order to get fresh ownership certificate of the calf. The certificate would be issued to the calves of the legal cows only physically ascertaining that they are genuine offspring or after getting the DNA test done.

Transportation of Elephants:

1. For transportation of elephants, necessary permission from CWLW (Chief wildlife Warden) or any officer authorised by the government in this behalf shall be obtained as per Section 48 A of the Wild Life (Protection) Act 1972.
2. A valid health certificate from a veterinary doctor to the effect that the elephant is fit to travel by road or rail, as the case may be, and is not showing any sign of infectious or contagious disease shall be obtained.
3. In the absence of such certificate, CWLW shall not give permission for transport.
4. Permission, if any, should be given for transport to a particular destination and for a fixed period. It would be incumbent for the owner to bring back the elephant to the place of residence within this period.
5. Before the issue of transport permit, CWLW or the authority issuing the permit would obtain no objection from the CWLW of the state where it is to be transported about the availability of the adequate housing facility at the place where it is to be kept.
6. It will be mandatory for the owner to inform the CWLW of the state within 30 days where it has been transported.
7. Except for the return journey, no permission for the further onward transport of the elephant to other states will be given by the CWLW of the state where it is in transit.
8. In case any captive elephant is found in any state without valid transport certificate, it is liable for confiscation.
9. CWLWs may consider banning of captive elephants entry in municipal limits under Section 40 (2).



Norms and Standards for Transportation:

- (a) The elephant shall be properly fed and given water before loading.
- (b) Necessary arrangements shall be made for feeding and watering the elephant en route.
- (c) No elephant shall be made to walk for more than three hours at a stretch.
- (d) While transporting elephants by walk during nights, two prominent reflectors shall be placed at the front and hind portion of the elephant.
- (e) No elephant shall be made to walk more than 30 kms a day and any transportation for more than 50 kms shall be carried out in a vehicle.
- (f) Trucks with length less than 12 feet shall not be used for carrying elephants except calves (height below of and 1.59 m).
- (g) One truck shall not be used to carry more than two weaned calves (height below 1.50 m) or one elephant with one unweaned calf or one adult/sub-adult elephant (height below of and 1.51 m).
- (h) At least a 12 hour rest should be allowed to elephants for every 12 hours of journey by trucks.
- (i) Cow elephants in advanced stage of pregnancy shall not be transported by trucks.
- (j) While transporting elephants by rail, an ordinary goods wagon should not carry more than three adult elephants or six calves on broad gauge, or not more than two elephants or three calves on meter gauge, or not more than one adult elephant or two calves on narrow gauge.
- (k) While transporting elephants by truck or train, care shall be taken to maintain constant speed avoiding jerks and sudden stops and reducing affects of shocks and jolts to the minimum.
- (l) Each truck or wagon carrying elephant should have at least two attendant mahouts.
- (m) Sedatives, if necessary, shall be used to control nervous or temperamental elephants only as prescribed by the veterinary doctor.
- (n) Vehicle breakdown is one of the most common problems contributing to unsuccessful translocation. Therefore, it should be ensured that the vehicle is in order and a trained mechanic with tools must accompany the vehicle. The vehicle must have drainage facility to keep it dry and must have a water storage facility.

Housing of Elephants:

- (a) The owner shall provide a stable (tethering place) in a clean and healthy environment with sufficient shade to keep elephants during its rest period;
- (b) Each elephant must be ensured a minimum floor area as specified below:-
 - (i) Weaned calf (height below 1.50 m) - 5m × 2.5 m
 - (ii) Sub-adult elephant (height 1.50 m to 2.25 m) - 7m × 3.5 m
 - (iii) Adult elephant (height above 2.25 m) and cow elephant with unweaned calf -9m × 6m
- (c) In the case of covered sheds, the height of the structure shall not be less than 5.5m.
- (d) Corrugated iron sheets or asbestos when used for roofing of elephant stables shall be covered with cooling materials like gunny bags, grass, cadjan leaves etc.





Care of Elephant:

- (a) The mahout shall ensure that the elephant gets a thorough bath every day.
- (b) If the elephant is found sick, injured, unduly stressed or pregnant the mahout shall report the condition to the owner, who in turn shall consult a veterinary doctor for providing treatment expeditiously.
- (c) Routine examination including parasitic checks shall be carried out regularly and preventive medicines including vaccination be administered at such intervals as may be prescribed by the veterinary doctor.
- (d) The owner shall arrange for a medical check-up of the mahout responsible for the upkeep of the elephant at least once in two years to ensure that they do not have any diseases, which may infect the elephant.
- (e) The organisers of festivals where elephants are used shall submit in writing the programmes with details to the station house officer and the Range Officer having jurisdiction over the area, who in turn shall ensure the implementation of the provisions in these rules.
- (f) The owner shall inform within 24 hours, to the Chief Wildlife Warden or the nearest forest officer, the cases of attack of anthrax, rinderpest, hemorrhagic septicemia, surra or any other contagious diseases and shall follow the instructions issued by the authorities regarding the treatment of the animal or disposal of the carcass. The Chief Wildlife Warden or an officer authorised by him shall ensure proper veterinary assistance and advice.
- (g) The owner shall obtain prior permission of the Chief Wildlife Warden or the officer authorised by him before undertaking distortions, sterilisation, vasectomy, tubectomy or any other population control measures for the elephant and shall ensure the assistance of a competent veterinary doctor for these measures.
- (h) The elephant showing symptoms of 'musth' shall be examined by a Veterinary Doctor;
- (i) No drugs or intoxicants shall be used to suppress 'musth' except on a written prescription by a veterinary doctor.
- (j) The owner of the elephant shall ensure that in case of 'musth', the elephant is secured properly and does not become a hazard to the public at large;
- (k) An elephant in 'musth' shall not be put to any work.
- (l) No owner shall put to work, any elephants pregnant of 12 months or above, or any cow elephant having a sucking calf of age below 6 months, or any elephant of height below 5 feet.
- (m) No owner shall permit the use of nylon ropes or chains/hobbles with spikes or sharp edges for tying the elephants.
- (n) Weight of the chains and hobbles shall be commensurate with the age and health of the elephant.
- (o) No owner shall permit any type of harness which may expose the back or other sensitive organs of the elephant to pain and injury.
- (p) No owner shall permit his elephant to be trained by a trainer who is not approved by the Chief Wildlife Warden or the officer authorised by him for the purpose.
- (q) The owner shall report within 24 hours, to the Chief Wildlife Warden or to the officer authorised by him, the death of an elephant and the tusks, if any, shall be declared within one week to the Chief Wildlife warden for obtaining ownership certificate.





- (r) The owner shall get the post-mortem examination of the elephant done by a veterinary doctor and shall submit the report to the Chief Wildlife Warden or the officer authorised by him within 15 days of the death.

Feeding of Elephants:

- (a) The owner or the person who is managing the elephant on contract or the person who has taken the elephant for his own purpose shall ensure timely supply of wholesome feed with variety in required quantity to each elephant. Green fodder shall be supplemented by ration as prescribed by the veterinary doctor;
- (b) The minimum feed supply for elephant shall be as follow:

Height of Elephant	Green Fodder
Below 1.50 m (weaned alf)	Not less than 100 kg
1.50m to 1.80m	Not less than 150 kg
1.81m to 2.25m	Not less than 200 kg
Above 2.25 m	Not less than 250 kg (or 5% of its body weight)
- (c) Supply of sufficient quantity of succulent food to the elephant shall be ensured during hot climate;
- (d) The owner or contactor or hirer of the elephant shall provide sufficient potable drinking water to the elephant, preferably from a river or any other source of running water.

Work Load of Elephant:

- (a) The scale of load including gears, riders and materials for the elephant shall be as follow:

Height of Elephant	Load
Below 1.50 m	Not to be used for carrying load
1.50m to 1.80m	Not exceeding 150 kg (to carry only fodder and trainer)
1.81m to 2.25m	Not exceeding 200 kg
2.26m to 2.55m	Not exceeding 300 kg
Above 2.55m	Not exceeding 400 kg
- (b) The load scale shall be reduced by 50% in hilly or other difficult terrain.
- (c) The elephants of height below 2.10 m shall not be deployed for logging operations.
- (d) The elephants of height from 2.10 m to 2.25 m shall not be used for dragging timber logs exceeding 750 kg in weight.
- (e) The elephants of height above 2.25 m shall not be engaged for dragging logs exceeding 1000 kg in weight;
- (f) Ill-designed logging harness such as exposing elephants back bone and chest to extreme strain and injuries, using tusks and jaws regularly for dragging timber logs, timber hauling over steep areas or rocky areas etc. shall not be done.



Retirement of Elephants:

- (a) An elephant shall normally be allowed to retire from its work on attaining an age of 65 years;
- (b) Healthy elephants above 65 years of age shall be allowed to be put to light work under proper health certificate from the veterinary doctor.

Records to be kept:

- (a) Every owner shall maintain the following records and registers in respect of the elephant in the form given in Appendix-II and such records and registers shall be produced before the officers authorised by the government in this behalf for inspection at such time as may be called for.
 - (i) Vaccination record
 - (ii) Disease and treatment record
 - (iii) Movement register
 - (iv) Feeding register
 - (v) Work register

Cutting Tusks:

- (a) The owner of the tusker shall apply for permission of the Chief Wildlife Warden or the officer authorised by him in this behalf, for cutting or shaping the tusk through a letter sent by registered post, including the location where it will be done and the name of the competent person who would perform the operation at least one month in advance.
- (b) The Chief Wildlife Warden shall issue the permission within three weeks to carry out the operation in the presence of an officer not below the rank of Forest Range Officer or Forest Veterinary Officer or Assistant Forest Veterinary Officer as instructed by the Chief Wildlife Warden.
- (c) The authorised officer shall report to the Chief Wildlife Warden, the details of the cut portion such as, length and weight of the tusk;
- (d) In case permission is not granted, the owner shall be intimated of the reason for rejecting the request in writing;
- (e) The Chief Wildlife Warden, based on a written request with the details shall issue permit to the owner for keeping the cut tusks in accordance with the provisions of the Act.

Acts which are tantamount to cruelty to elephants:

The following acts shall be considered as acts of cruelty to elephants and are prohibited:

- (a) beating, kicking, over-driving, over-loading, torturing or treating any elephant so as to subject it to unnecessary pain or suffering or being an owner permitting, any elephant to be so treated.
- (b) employing in any work or labour or for any purpose, any elephant which by reason of its age or disease, infirmity, wound, sore or other cause it unfit to be so employed or being owner permitting any such elephant to be employed.
- (c) willfully and unreasonably administering any injurious drug or injurious substance to an elephant or intoxicants to control elephants particularly to suppress 'musth' without proper veterinary advice.





- (d) conveying or carrying whether in or upon any vehicle or not, an elephant, in such a manner or position as to subject it to unnecessary pain or suffering or cause accident.
- (e) Keeping or confining an elephant, in any cage or receptacle, which does not measure the specification given in rule 4.
- (f) keeping for unreasonable time, an elephant chained or tethered upon an unreasonably short or unreasonably heavy chain or cord;
- (g) using an elephant for drawing any vehicle or carrying any load, more than nine hours a day or for more than five hours continuously without a break or rest for the elephant or exposes the elephant to hot climatic conditions without ensuring enough succulent food and electrolytes;
- (h) failing to provide an elephant, with sufficient food, drinking water or shelter;
- (i) abandoning an elephant in circumstances, which will render it to suffer pain by reason of starvation or thirst;
- (j) offering for sale any elephant, which is suffering from pain by reason of mutilation, starvation, thirst, over-crowding or other ill treatment;
- (k) not providing adequate veterinary care to a sick, injured or pregnant elephant;
- (l) cutting the tusks of a bull elephant too short so as to expose horn cord/pulp;
- (m) forcibly weaning away an elephant calf below 2 years of age from its mother;
- (n) using heavy chains and hobbles with spikes or sharp edges or barbed wires for tying elephants;
- (o) using “peti” (belly band) on cow elephants in advanced stage of pregnancy;
- (p) using pad and Nundah of improper size on working elephant exposing its spinal cord to injuries;
- (q) marching a sick, injured or pregnant elephant or a young calf over very long distances or for a long duration at a stretch;
- (r) marching an elephant over tarred roads or otherwise, during the hottest period of the day and for a long duration at a stretch without rest for religious or any other purpose;
- (s) transporting elephants on trucks of inadequate size or trucks with uneven floor, or tying them in an improper manner subjecting them to severe jerks during journey by truck;
- (t) transporting elephants in trucks for over 12 hours at a stretch;
- (u) transporting elephants through any conveyance without making arrangement for adequate fodder and drinking water during the journey;
- (v) carrying load on an elephant without proper pad;
- (w) making an elephant carry load unevenly balanced on its back;
- (x) making the elephant stand in scorching sun for long duration, or put the ceremonial gears or decoration for unreasonably long duration, or burst crackers from or near the elephants for ceremonial purpose;
- (y) using an elephant in such a manner so as to cause any injury, over- stress or strain to the elephant for tourism purposes;
- (z) using an elephant for sports and games such as tug-of-war, foot ball etc. in such a manner so as to cause over stress or strain to the elephant.





REGISTRATION CERTIFICATE OF OWNERSHIP OF AN ELEPHANT

NAME OF OWNER: _____

ADDRESS: _____

Description of the Elephant

- 1. Name of the elephant : _____
- 2. Age : _____
- 3. Sex : _____
- 4. Colour : _____
- 5. Colour of eyes : _____
- 6. Height : _____
- 7. Length : _____
- 8. Neck girth : _____
- 9. Chest girth : _____
- 10. Weight of the animal : _____ kg
- 11. No. of nail : Front Rt _____ Front Lft _____
Hind Rt _____ Hind Lft _____
- 12. Length of Tusk/tusks along the curvature : Rt _____ cm Lft _____ cm
- 13. Any other identification marks : _____

- 14. No. of the Insurance Certificate : _____
dated _____ of _____
- 15. No. of Veterinary Certificate : _____
dated _____ of _____
- 16. Present market value : Rs. _____
- 17. Source of purchase : _____
- 18. Registration valid up to : _____

Place _____

Date _____

Signature of the issuing authority with date
Office Seal



FORM FOR CERTIFICATE OF FITNESS TO TRAVEL ELEPHANTS

(This certificate should be completed and signed by a veterinary doctor)

Date and Time of Examination:

Number of Elephants:

Name of Elephants:

Age/Sex:

Number of Cages:

1. That, at the request of (consignor) _____, I examined the above mentioned elephants in their travelling cages not more than 12 hours before their departure.
2. That each elephant appeared to be in a fit condition to travel from the _____ area to _____ by road/rail and is not showing any signs of infections or contagious diseases.
3. That no cow elephant appeared to be under advanced stage of pregnancy.
4. That the elephants were adequately fed and watered for the purpose of the journey.
5. That the elephants have been vaccinated.
 - (a) Type of vaccine/s
 - (b) Date of vaccination/s

Signed

Address

Qualifications

Place: _____

Date: _____





FORM OF RECORDS AND REGISTERS TO BE KEPT

1. Vaccination Record

- (a) Name of the Elephant:
 (b) Sex:
 (c) Age:

<i>Date of Vaccination</i>	<i>Name of Disease</i>	<i>Due date for next Vaccination</i>	<i>Signature of the Veterinary Surgeon</i>

2. Disease and Treatment Record

- (a) Name of the Elephant:
 (b) Sex:
 (c) Age:

<i>Date of Treatment</i>	<i>History</i>	<i>Description by Veterinary Surgeon</i>	<i>Diagnosis</i>	<i>Treatment</i>	<i>Prevention Measure</i>	<i>Signature of Veterinary Surgeon</i>

3. Movement Register

- (a) Name of the Elephant:
 (b) Sex:
 (c) Age:

<i>Date</i>	<i>Place to Move</i>		<i>Time</i>		<i>Signature of the Mahour</i>
	<i>Starting</i>	<i>Finding</i>	<i>Starting</i>	<i>Finding</i>	

4. Feeding Register

- (a) Name of the Elephant:
 (b) Sex:
 (c) Age:
 (d) Ration prescribed by the Veterinary Surgeon:

<i>Date</i>	<i>Type of Food</i>	<i>Quantiry give Date</i>	<i>Signature of Mahour</i>





5. Work Register

- (a) Name of the Elephant:
- (b) Sex:
- (c) Age:
- (d) Admissible quantum of work:

<i>Date and Weather</i>	<i>Type of Work From</i>	<i>Duration</i>	<i>Signature of Mahour</i>





NATIONAL TIGER CONSERVATION AUTHORITY
(Statutory Body under the Ministry of Environment and Forest, Govt. of India)

Member Secretary

Bikaner House, Annexe-V
Shahjahan Road, New Delhi-110011
Telefax: 23384428
E-mail: dirpt-rfonic.in

Dated.: 19.02.2006

F. No. 6(4)/2005-PT (part III)

To,

**The Chief Wildlife Wardens
(All Tiger Reserve States)**

Sub: Clarification on concerns vis-à-vis Wildlife (Protection) Amendment Act, 2006.

Sir,

Some concerns have been raised on the recent amendment to the Wildlife (Protection) Act. It is pertinent to add that the Chapter IV (b) on the 'National Tiger Conservation Authority' has neither repeated nor overridden other parts of the principal Wildlife (Protection) Act, 1972 relating to national parks, sanctuaries, conservation or community reserves. The amendment has the effect of:

- (a) Enabling designation of tiger reserves.
- (b) Ensuring tiger conservation plan for each such area.
- (c) Creating a Tiger Conservation Authority to ensure implementation amongst other provisions.

The recent amendment is compatible with and is in addition to and not in derogation of the principal wildlife (Protection) Act, 1972.

Based on the decision taken during the first meeting of the National Tiger Conservation Authority held on 28.11.2006 under the Chairmanship of the Minister of Environment and Forests, the following clarification are issued, in pursuance of sub-section (2) of Section 380, of Chapter IV (b) of the "Wildlife (Protection) Amendment Act, 2006:

- (a) The tiger reserves notified by the State Government prior to coming into force of the Wildlife (Protection) Amendment Act, 2006 shall be eligible for receiving financial assistance. The Field Directors are required to prepare and submit the Tiger Conservation Plan before the expiry of the



present management plan after working out the compliance of sub-section (4) of Section 38 V for delineating core and buffer areas.

- (b) The areas of national parks, and sanctuaries included in a tiger reserve, where the process of final declaration is yet to be completed, shall be completed under Chapter IV read new Chapter IV B of the Act.
- (c) Provisions of sub-section (2) of Section 38 V of Chapter IV (b) shall be applicable only to the buffer or peripheral areas of a tiger reserve and not to areas notified as national park or sanctuary or those which are in the process of being so and form part of a tiger reserve.
- (d) The process of settlement of rights in areas included in a tiger reserve, where final notification for constituting national park or sanctuaries is yet to be issued, the proceeding would be conducted as per the provisions provided in Chapter IV read with Chapter TV B of the Act.
- (e) As per the procedure followed in the past, which required the States to send proposals for constituting tiger reserves to the Project Tiger, the States may continue to send such proposals to the National Tiger Conservation Authority, so as to enable the Authority to ensure the desired requisites vis-à-vis the normative guidelines for declaration of such areas, apart from making provisions for their funding support.

Yours Sincerely

Sd/-

Member Secretary (NTCA)

National Tiger Conservation Authority

Copy to: The Field Director (All Tiger Reserves States)

Sd/-

Member Secretary (NTCA)

National Tiger Conservation Authority





NATIONAL TIGER CONSERVATION AUTHORITY
(Statutory Body under the Ministry of Environment and Forest, Govt. of India)

Member Secretary (NTCA)

Annexe No. 05 Bikaner House,
Shahjahan Road, New Delhi-110011
Telefax: 23384428
E-mail: dirpt-r@nic.in

No. PS-MS (NTCA)/2008-Miscle.

Dated the 6th November, 2008

To,

The Chief Wildlife Warden

Govt of Tamil Nadu, 6 D, Panagal Building, No. 1, Jeenis Road, Chennai.

Sub: Applicability of section 28, 29 and 33 (a) in Project Tiger areas.

Ref: Your letter No. WL5/59746/2008 dated 31.10.2008.

Sir,

Please refer to the correspondence cited above. The desired clarification is as below:

(Applicability of section 28, 29 and 33(a) in Project Tiger areas)

A Tiger Reserve has been legally defined for the first time in the Wildlife (Protection) Amendment Act, 2006, comprising of two units, viz. core and the buffer. The core or critical tiger habitat has been explained under section 38V, which are inviolate areas of National Parks and Sanctuaries included in the tiger reserve. The buffer or peripheral areas require lesser degree of habitat protection but their aim is to promote coexistence between wildlife and human activity

Under sub-section 2 of section 38V, provisions of sub-section 2 of section 18, sub-section (2), (3) and (4) of section 27, sections 30, 32 and clauses (b) and (c) of section 33 of the Wildlife (Protection) Act have been made applicable to safeguard the interest of wildlife in areas which do not have the status of a National Park or a Sanctuary, but form part of a tiger reserve (i.e. the buffer or peripheral area). Since there is no overriding of any earlier provisions of the Act relating to chapter IV of the Wildlife (Protection) Act, 1972, section 28 is applicable to those areas of a tiger reserve which have the status of a National Park or Sanctuary.

Since the core or critical tiger habitat under section 38V of the Wildlife (Protection) Act, 1972, as amended in 2006, has to be kept inviolate for tiger conservation, no film shooting can be permitted in such areas.

Yours Sincerely,

Sd/-

Member Secretary



DETAILED GUIDELINES OF PROJECT TIGER

*(Issued under National Tiger Conservation Authority (Normative Standards for Tourism activities and Project Tiger) by this Authority
F. No. 15-31/2012 - NTCA dated 15th October, 2012)*

13. Introduction.

13.1. 'Project Tiger' is an ongoing Centrally Sponsored Scheme of the Ministry of Environment and Forests. The revised guidelines incorporate the additional activities for implementing the urgent recommendations of the Tiger Task Force, constituted by the National Board for Wildlife, chaired by the Hon'ble Prime Minister. These, inter alia, include support for implementing the provisions of the Wild Life (Protection) Act, 1972 as amended by the Wild Life (Protection) Amendment Act, 2006, which came into force with effect from the 4th September, 2012. The activities are as follows:

- (i) antipoaching initiatives;
- (ii) strengthening infrastructure within tiger reserves;
- (iii) habitat improvement and water development;
- (iv) addressing man-animal conflicts;
- (v) co-existence agenda in buffer and fringe areas with landscape approach;
- (vi) deciding inviolate space and relocation of villages from critical tiger habitats within a timeframe by providing a better relocation package, apart from supporting States for settlement of rights of such people;
- (vii) rehabilitation of traditional hunting tribes living in and around tiger reserves;
- (viii) providing support to States for research and field equipments;
- (ix) supporting States for staff development and capacity building in tiger reserves;
- (x) mainstreaming wildlife concerns in tiger bearing forests outside tiger reserves, and fostering corridor conservation in such areas through restorative strategy involving local people to arrest fragmentation of habitats;
- (xi) providing safeguards and retrofitting measures in and around tiger reserves and tiger bearing forests for wildlife conservation;
- (xii) strengthening the infrastructure of National Tiger Conservation Authority at the Centre;
- (xiii) carrying out independent monitoring and the evaluation of tiger reserves;
- (xiv) establishment and development of eight new tiger reserves;
- (xv) provision of project allowance to all categories of staff working in tiger reserves;
- (xvi) providing residential amenities to facilitate basic education to children of frontline field staff posted in tiger reserves;
- (xvii) providing assistance to States for fostering ecotourism to benefit local people.

13.2. 'Project Tiger' was launched in April, 1973 with the objective "to ensure maintenance of a viable population of Tigers in India for scientific, economic, aesthetic, cultural and ecological values, and to preserve for all times, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people".



13.3. The 'Project Tiger' has been successfully implemented, and at present, there are **41 Tiger Reserves in 17 States**, covering an area of **63874.68 sq. km.** Apart from the above, 5 have been given in-principle approval, and for another 6, the State Governments have been advised, besides according approval for one tiger reserve in Karnataka. The selection of reserves has been guided by the need to conserve unique ecosystem and habitat types across the geographic distribution of tigers in the country.

13.4. Conservation of endangered species and their habitat, strengthening and enhancing the Protected Area Network, control of poaching, monitoring, research and ensuring people's participation in Wildlife Conservation have been accorded high priority in the National Wildlife Action Plan and the Wildlife Conservation Strategy, 2002.

14. Past funding pattern and major activities supported under the Scheme.

During present plan period, 100% Central Assistance is being made available to States for expenditure on all non-recurring items; for recurring items, the Central Assistance is restricted to 50% of the expenditure, while the matching grant is provided by the Project States. The activities and field inputs under 'Project Tiger', inter alia, include : **(Non recurring)** strengthening of protection, deployment of armed squads in tiger reserves, creating basic infrastructure for management, roads, wireless, civil works, habitat development, augmenting water resources, compensatory ameliorative measures for habitat restoration, eco-development, village relocation, use of Information Technology in crime detection, establishment of a digitized database in tiger reserves having collaborative linkage with Project Tiger Directorate in the Geographical Information System (GIS) domain, monitoring and evaluation of tiger reserves, monitoring of habitat status, carrying out All India Estimation of Tigers, co-predators and prey animals in the Geographical Information System (GIS) domain with the state of art technology, continuous monitoring of tiger populations in various tiger range States (tiger reserves and other forest areas outside tiger reserves), fostering wildlife viewing for tourists in tiger reserves, providing compensation to villagers for human deaths and livestock depredation by carnivores in tiger reserves, staff welfare measures, providing 'Project Allowance' to all categories of staff working in tiger reserves, establishment of veterinary facility, and fostering research and research projects relating to tiger conservation, replacement and purchase of new vehicles for existing and new tiger reserves to ensure staff mobility. **(Recurring)** creation and deployment of local work force for patrolling and barriers, habitat improvement, providing salt licks, water facility, fire protection measures, maintenance of various items, publicity and extension and legal assistance.

15. Constitution of the National Tiger Conservation Authority (NTCA).

15.1. The Central Government had launched 'Project Tiger' to promote conservation of the tiger, since the significance of its conservation has ramifications beyond State boundaries. Management of forests and wildlife is primarily the responsibility of concerned States. The field implementation of the project, protection and management in the designated reserves is done by the 30 project States, who also provide the matching grant to recurring items of expenditure, deploy field staff and officers, and give their salaries. The Project Tiger Directorate of the Ministry of Environment and Forests was mandated with the task of providing technical guidance and funding support.

15.2. The implementation of 'Project Tiger' over the years has highlighted the need for a statutory authority with legal backing to ensure tiger conservation. On the basis of the recommendations



of National Board for Wild Life under the Chairmanship of the Hon'ble Prime Minister, a Task Force was set up to look into the problems of tiger conservation in the country. The recommendations of the said Task Force, inter alia include strengthening of 'Project Tiger' by giving it statutory and administrative powers, apart from creating the Wildlife Crime Control Bureau. It has also recommended that an annual report should be submitted to the Central Government for laying in Parliament, so that commitment to 'Project Tiger' is reviewed from time to time, in addition to addressing the concerns of local people. Broadly, the urgent recommendations of the said Task Force are as below:

- (i) Reinvigorating the constitution of governance.
- (ii) Strengthening efforts towards protection of tiger, checking poaching, convicting wildlife criminals and breaking the international trade network in wildlife body parts and derivatives.
- (iii) Expanding the undisturbed areas for tiger by reducing human pressure.
- (iv) Repair the relationship with local people who share the tigers habitat by fielding strategies for coexistence.
- (v) Regenerate the forest habitats in the fringes of the tigers protective enclaves by investing in forest, water and grassland economies of the people.

- 15.3 The tiger reserves are faced with ecological disturbances and various other problems. Fragmentation of habitats occurs owing to overuse of forest habitats, apart from conflicting land uses leading to loss of habitat. There are also in some cases, significant village population with large number of cattle, which graze in the forests, leading to ecological degradation, apart from major sources of regular or intermittent disturbance, such as temples and commercial entities, such as, tea estates. This also leads to man-animal conflicts, resulting in tiger and prey mortality.
- 15.4. Several constraints affect field implementation of the project, such as, delayed release of Central Assistance given to the States for Field Units, staff vacancies, ageing of field staff, lack of capacity building initiatives, weak enforcement and monitoring of protection work, etc. The events in the recent past have highlighted the fact that there is a need in the States for greater commitment and vigilance. The field administration managing the tiger reserves require capacity building and supervision.
- 15.5. There is also an urgent need to strengthen the system at the Central Government level (Project Tiger Directorate), which has the mandate to oversee and guide tiger conservation in the country. Involvement of States and strengthening the field administration, supervision of the project and building a participatory base by including interests of local people living in and around tiger reserves are extremely important.
- 15.6 Considering the urgency of the situation, 'Project Tiger' has been converted into a statutory authority National Tiger Conservation Authority (NTCA) by providing enabling provisions in the Wild Life (Protection) Act, 1972 through an amendment, namely, the Wild Life (Protection) Amendment Act, 2006. This forms one of the urgent recommendations of the Tiger Task Force appointed by the Prime Minister. The NTCA would address the ecological as well as administrative concerns for conserving tigers, by providing a statutory basis for protection of





tiger reserves, apart from providing strengthened institutional mechanisms for the protection of ecologically sensitive areas and endangered species. The Authority would also ensure enforcing of guidelines for tiger conservation and monitoring compliance of the same, apart from placement of motivated and trained officers having good track record as Field Directors of tiger reserves. It would also facilitate capacity building of officers and staff posted in tiger reserves, apart from a time bound staff development plan.

- 15.7. Despite three decades of 'Project Tiger' and the efforts of the Centre and State Governments, tiger continues to remain one of the most endangered large predators in the world. The causative factors are many, and to name a few, we may mention the important ones like loss of habitat due to agriculture expansion and development, revenge killings by people due to man-animal conflicts and above all, the demand for the body parts and derivatives of tiger in the illegal international market. These factors contribute to the decimation of our in-situ population in the wild. Therefore, continuance of a focused, species-specific, multifaceted, ecosystem project like 'Project Tiger' becomes important and crucial at this juncture to address the threats faced by the tiger and its habitat.
- 15.8. The three key imperatives in tiger conservation which necessitate a 'project mode' are, namely, a focused approach to prioritize actions, in the interest of tiger conservation (within and outside the tiger reserves), eliciting the support of local stakeholder communities and ensuring the necessary infrastructure for protection and management. Considering the fact that conservation of tiger has ecological and national significance transcending State boundaries, the Central Government provides funding support and technical guidance to States through the ongoing Centrally Sponsored Scheme of Project Tiger and other schemes for wildlife conservation. Tigers are present in the forests of seventeen States in our country at present, which also include their protected areas and tiger reserves.
- 15.9 The distribution of tigers and their density vary in States due to several ecological and human reasons, such as, the forest cover, terrain, natural prey availability, presence of undisturbed habitat and the quality of managerial efforts taken towards protection. Since tigers are at the top of the ecological "food -chain", their conservation results in the overall conservation of all other species of plants and animals occupying the ecosystem. We can say that tigers are indicators of the well being of the ecosystem. A healthy tiger population indicates that the other ecological components in its habitat are equally robust, since tigers need large amount of prey and good habitat. The investments made in a project of this kind are more than justified.
16. Ongoing activities and additionalities to be supported under the revised Centrally Sponsored Scheme of Project Tiger.
 - 16.1. Anti-poaching activities (ongoing) (non recurring for antipoaching squad and Tiger Protection Force deployment, and recurring for wages towards patrolling camp labourers and watchers). The antipoaching operations in tiger reserves are site specific. However, the following activities, inter alia, would form part of the protection strategy in tiger reserves, namely:
 - (i) Providing 100% support to tiger reserves for raising, arming and deploying Special Tiger Protection Force (STPF).
 - (ii) Deployment of antipoaching squads.





- (iii) Establishing and maintenance of existing patrolling camps/chowkis and deployment of camp labourers for patrolling.
- (iv) Organising vehicular patrolling by constituting squads (Tiger Protection Force), comprising of field staff, labourers and police or SAF or ex-army personnel or homeguards with wireless handset and paraphernalia for apprehending offenders, apart from prescribing a patrolling calendar for the squad.
- (v) Establishing and maintenance of wireless network.
- (vi) Organising surprise raids jointly with the local police in railway stations, local trains, bus-stops, buses, catchers and cafeteria.
- (vii) Ensuring special site-specific protection measures during monsoon as 'Operation Monsoon' – considering the terrain and accessibility of Protected Areas.
- (viii) Deployment of ex-army personnel and home guards.
- (ix) Deployment of local work force for patrolling, surveillance of water holes, manning barriers.
- (x) Procurement of arms and ammunition.
- (xi) Procurement/maintenance of elephant squads.
- (xii) Rewards to informers.
- (xiii) Legal support for defending court cases.
- (xiv) Procurement of vehicles, boats.
- (xv) Procurement field gear, night vision device.

16.2. Strengthening of infrastructure within Tiger Reserves (ongoing) (non recurring for new civil works and recurring for maintenance).

The following activities, inter alia, would form part of reinforcing the infrastructure of tiger reserves (including support to new tiger reserves):

- (i) Civil Works (staff quarters, family hostels, office improvement, patrolling camp, house keeping buildings, museum, culverts).
- (ii) Maintenance, creation and upgradation of road network.
- (iii) Maintenance and creation of wireless tower.
- (iv) Maintenance and creation of fire watch tower.
- (v) Maintenance and creation of bridges, dams, anicuts.
- (vi) Maintenance, creation of firelines and firebreaks.
- (vii) Maintenance and creation of earthen ponds.
- (viii) Procurement and maintenance of vehicles (Gypsy, Jeep, Truck, Tractor etc.).
- (ix) Habitat improvement works.
- (x) Procurement of hardware, software / Geographical Information System (GIS).
- (xi) Procurement of compass, range finder, Global Positioning System (GPS), camera traps
- (xii) Procurement of satellite imageries for management planning.
- (xiii) Map digitization facility for management planning.





(xiv) Monitoring system for Tigers' Intensive Protection and Ecological Status (M-STriPES) monitoring.

(xv) E-surveillance.

16.3. Habitat improvement and water development (ongoing) (recurring).

These, inter alia, may include: weed eradication, removal of gregarious plant growth from grasslands, grass improvement, water retention structures and the like. These initiatives would increase the forage and browse values of the habitat for wild animals.

16.4. Addressing man-animal conflict (ensuring uniform, timely compensation for human deaths due to wild animals, livestock depredation by carnivores, crop depredation* by wild ungulates) (compensation for crop loss is a new component) (non recurring).

16.4.1. This would involve:

- (i) Payment of compensation for cattle lifting, death of human beings and crop depredation* due to wild animals.
- (ii) Creation of crop protection structures.
- (iii) Procurement and deployment traps, cages to catch problematic animals.
- (iv) Procurement of tranquilizing equipments, rescue vehicles and drugs.

16.4.2. The above initiatives are extremely important to avoid as well as redress the “park-people” interface conflicts.

(*would be supported as per prevailing norms of the State, in the delineated buffer area as explained in Section 38V of the Wild Life (Protection) Act, 1972, as amended in 2006.)

16.5. Co-existence agenda in buffer and fringe areas (landscape approach, sectoral integration, ecologically sustainable development programme, livelihood options and eco-tourism) (new activity in case of tiger reserves where buffer has not been notified so far) (non recurring).

The fringe areas around tiger reserve have corridor value, and their ecological sustainability is important to prevent the area from becoming ecological sinks on account of over use of resources and unwise land use. This calls for delineation of buffer zone around a tiger reserve to incorporate such fringe areas so that it can fulfill the following objectives, namely:

- (i) Providing ecologically viable livelihood options to local stakeholders for reducing their dependency on forests.
- (ii) Conserving the forest area through restorative inputs involving local people for providing habitat supplement to wild animals moving out of core areas.

A comparative assessment of the forest cover status of outer fringe areas of tiger reserves up to a radial distance of 10 kms. has been done in collaboration with the Forest Survey of India. The States are required to delineate the fringe or buffer area around the core zones of tiger reserves, and submit a Tiger Conservation Plan as required under section 38 V of the Wild Life (Protection) Act, 1972, to ensure wildlife conservation while addressing the livelihood issues relating to local people.

16.6 Rehabilitation package for traditional hunting tribes living around tiger reserves (new activity) (non recurring).





There is an urgent need to launch a rehabilitation and development programme for the denotified tribes and tribes involved in traditional hunting, living around tiger reserves and tiger corridors. The following denotified tribes and communities are involved in traditional hunting of wild animals: Behelias, Ambalgars, Badaks, Mongias, Bavariyas, Monglias, Pardhi, Boyas, Kaikads, Karwal Nat, Nirshikaris, Picharis, Valayaras, Yenadis, Chakma, Mizo, Bru, Solung and Nyishi. While this list is not exhaustive, around 5,000 such families are required to be taken up under a welfare programme (forming part of NTCA initiatives) during the Plan period. The rehabilitation and welfare package should be evolved in a site specific, consultative manner with livelihood options, to include: wages for such people towards their deployment in foot patrolling for protecting wildlife, providing agricultural land with irrigation, basic health care, housing and related community welfare inputs and basic education facilities. The experience gained in the past for settling denotified tribes by the salvation army is required to be considered dispassionately while structuring the programme.

16.7. Research and field equipments (ongoing) (non recurring).

The All India tiger estimation using the new methodology approved by the Tiger Task Force has resulted in a permanent monitoring protocol for the field units. The format and protocol used for the Phase-I data collection in the new estimation process should be adopted for day-to-day field monitoring. Further, assistance would be provided for fostering field oriented research and to equip the staff with facilities like Global Positioning System (GPS), camera traps, night vision, range finder and related accessories including hardware and software. As decided in the 1st meeting of the National Tiger Conservation Authority, the tiger reserves are required to carry out the day to day monitoring of wild animals using the refined process in the GIS domain, which would enable “forecasting” vis-à-vis wildlife protection.

16.8. Staff development and capacity building (ongoing) (non recurring).

This would involve:

- (i) Capacity building and training.
- (ii) Providing project allowance and special incentives.
- (iii) Specialized training in the use of Global Information System (GIS), antipoaching operations.
- (iv) Specialized training in jurisprudence and wildlife forensics.
- (v) Study tours for appraisal of good practices in other reserves.
- (vi) Dissemination workshops.
- (vii) Specialized training in park interpretation.
- (viii) Specialized training in management planning.

The above inputs are extremely important for enhancing the skill of field staff. Several instances of poaching occur for want of specialized training in crime detection and related skills.





- 16.9. Deciding inviolate spaces for wildlife and relocation of villagers from core or critical tiger habitats in tiger reserves within a timeframe and settlement of rights (settlement of rights is a new activity) (non recurring).
- 16.9.1. The Wild Life (Protection) Act, 1972, as well as the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, require that rights of people (Scheduled Tribes and other traditional forest dwellers) recognized in forest areas within core and critical tiger and wildlife habitats of tiger reserves and protected areas may be modified and resettled for providing inviolate spaces to tiger and wild animals. This requires payment of compensation (rights settlement in addition to the relocation package offered under the Centrally Sponsored Scheme at present). Chapter IV of the Wild Life (Protection) Act, 1972 (section 24) provides for acquisition of rights in or over the land declared by the State Government under section 18 (for constituting a Sanctuary) or section 35 (for constituting a National Park). Subsection (2) of section 24 of the said Act, authorizes the Collector to acquire such land or rights. Therefore, payment of compensation for the immovable property of people forms part of modifying or settling their rights which is a statutory requirement.
- 16.9.2. The ongoing study and the analysis of the available research data on tiger ecology indicate that the minimum population of tigresses in breeding age, which are needed to maintain a viable population of 80-100 tigers (in and around core) require an inviolate space of 800-1000 sq km. Tiger being an “umbrella species”, this will also ensure viable populations of other wild animals (co-predators, prey) and forest, thereby ensuring the ecological viability of the entire area or habitat. Thus, it becomes an ecological imperative to keep the core areas of tiger reserves inviolate for the survival of source populations of tiger and other wild animals.
- 16.9.3. Based on the recommendations of the professional agency, a new package for village relocation and rehabilitation has been proposed, with the following options and norms, which adequately covers the “National Rehabilitation and Resettlement Policy, 2007”, while taking into consideration the difficulties and imperatives involved in relocating people living in forest areas.
- 16.9.4. The proposed package has two options, namely:
- Option I** – Payment of the entire package amount (Rs. 10 lakhs per family) to the family in case the family opts so, without involving any rehabilitation and relocation process by the Forest Department.
- Option II** –Carrying out relocation and rehabilitation of village from protected area and tiger reserve by the Forest Department.
- (i) In case of option I, a monitoring process involving the District Magistrate of concerned District would be ensured so that the villagers rehabilitate themselves with the package money provided to them. In this regard, a mechanism involving handholding, preferably by external agencies should also be ensured, while depositing a considerable portion of the amount in the name of the beneficiary in a nationalized bank for obtaining income through interest generated.



(ii) In case of option II, the following package (per family) is proposed, at the rate of Rs. 10 lakhs per family, namely:

(a)	Agriculture land procurement (2 hectare) and development	:	35% of the total package
(b)	Settlement of rights	:	30% of the total package
(c)	Homestead land and house construction	:	20% of the total package
(d)	Incentive	:	5% of the total package
(e)	Community facilities commuted by the family (access road, irrigation, drinking water, sanitation, electricity, tele-communication, community center, religious places of worship, burial and cremation ground)	:	10% of the total package

(iii) The relocation process would be monitored and implemented by the following two Committees, namely:

State level Monitoring Committee consisting of:

- (a) **Chief Secretary of the State** - **Chairman**
- (b) **Secretaries of related departments** - **Members**
- (c) **State Principal Chief Conservator of Forests** - **Member**
- (d) **Non-official members of respective Tiger Conservation Foundation** - **Members**
- (e) **Chief Wildlife Warden** - **Member- Secretary.**

District level Implementing Committee for ensuring convergence of other sectors, consisting of:

- (a) **District Collector** - **Chairman**
- (b) **Chief Executive Officer (CEO)** - **Member**
- (c) **Representative officials from Public Works Department (PWD), Social Welfare, Tribal Department, Health Department, Agriculture Department, Education Department, Power and Irrigation Departments** - **Members**
- (d) **Deputy Director of the tiger reserve or protected area** - **Member Secretary**

(iv) **The above cost norms are indicative in nature to facilitate flexibility for State and site specific situation, and may be modified to allow inter component as well as inter family adjustments by respective State Governments as per site specific requirements.**

(v) **The relocated village would be taken up on a priority basis for eco development as well as local development through convergence of District level schemes.**



- (vi) **The labour oriented works involved in the relocation process would be preferably implemented through the villagers who are being relocated, so that they derive benefits out of the same apart from ensuring the field implementation to their satisfaction.**
- (vii) **In case resettlement has been done on a forest land, the new settlement will be eligible for access to forest resources for their bonafide use through the Village Level Committee and Gram Sabhas.**
- (viii) **The District Administration would facilitate fair price shop, education, health centre close to the relocated site.**
- (ix) **“Handholding” after relocation would be ensured through the forest department with ongoing ecodevelopmental inputs through Central assistance and district administration involving convergence of schemes. In this effort help of competent independent agencies may be sought wherever available.**
- (x) **The relocated villagers would be given priority for livelihood options emanating from the protected area.**
- (xi) **In case the cost of relocation including settlement of rights per family exceeds Rs. 10 lakhs, the State Government has to meet the extra cost.**
- (xii) **The relocation process would be an open ended one, since the progress of relocation process would depend on performance by States.**

16.10 Main streaming wildlife concerns in tiger bearing forests and fostering corridor conservation through restorative strategy involving locals to arrest fragmentation of habitats (new activity) (non-recurring).

16.10.1. The forests connecting tiger reserves or protected areas have tigers and other wild animals in most of the States. At present, there is no Scheme for addressing wildlife concerns in such areas, where restorative as well as protective inputs are required. The Wild Life (Protection) Act, 1972, provides for addressing such corridor areas. This, inter alia, would involve the following, namely:

- (i) Redressing man-animal conflict.
- (ii) Capturing problematic and aberrant wild animals.
- (iii) Monitoring of wild animals.
- (iv) Antipoaching operations.
- (v) Habitat improvement measures.

16.10.2. The communities living in fringe areas of National Parks, Sanctuaries and tiger reserves suffer from frequent depredation of their crops on account of damage caused by wild herbivores like blue bull, black buck, wild pig and elephants. The situation becomes acute in certain pockets, since people depend on a single annual rain fed crop with low productivity. This is one of the major reasons for man-animal conflicts around our Tiger Reserves and Protected Areas, and is a serious bottleneck in enlisting the much needed local support for wildlife conservation.





- 16.10.3 Under Section 11 of the Wild Life (Protection) Act, 1972, the State Chief Wildlife Wardens and officers authorized on his behalf can permit killing of wild animals causing destruction to life and property, including standing crops. However, rural communities do not favour such killings due to religious sentiments attached to these animals. Trapping and translocation of such wild animals which gain a pest value is neither feasible nor cost effective. Therefore, the situation calls for adequately compensating the stakeholder communities around tiger reserves from this recurring loss. This would be supported as per prevailing norms of the State, in the delineated buffer area as explained in Section 38V of the Wild Life (Protection) Act, 1972, as amended in 2006.
- 16.11 Safeguards and Retrofitting measures in the interest of wildlife conservation (new activity) (non recurring).
- Several tiger reserves are affected on account of heavily used infrastructure like roads, railway tracks and others. The high tension electric lines passing through many reserves cause mortality of wild animals due to electrocution by poachers. In the interest of wild animals several safeguards as well as retrofitting measures may be required, which would be supported on a site-specific basis.
- 16.12 Providing basic infrastructure/Project Tiger Headquarter expenditure for consultancy, field visits by expert teams, all India tiger estimation/ continuous monitoring of tigers (Phase-IV), support for monitoring tigers outside tiger reserves through NTCA grant, developing a National Repository of Camera Trap Photo Database of tiger, strengthening of NTCA at the Centre and Regional Offices, besides establishing a monitoring lab (non recurring).
- 16.13 Independent monitoring and evaluation of tiger reserves (ongoing) (non recurring).
- The independent monitoring of tiger reserves was carried out using as many as 45 parameters by a panel of experts, based on International Union for Conservation of Nature format. The monitoring reports were peer reviewed by the International Union for Conservation of Nature and placed before the Parliament. An independent Management Effectiveness Evaluation was again carried out in 2010-2011, which would be repeated again in subsequent years.
- 16.14 Establishment and development of new tiger reserves (new activity) (recurring and non recurring as indicated for various activities).
- 16.14.1 'Project Tiger' has a holistic ecosystem approach. Though the focus is on the flagship species 'tiger', the project strives to maintain the stability of ecosystem by fostering other trophic levels in the food chain. This is essential to ensure an ecologically viable population of tiger, which is at the 'apex' of the ecological food chain. The community pressures on forests are ever on the increase in developing countries, and India is no exception. As a sequel, the tiger habitat has become fragile and weak at several places, warranting a focused conservation approach. Our protected areas and tiger reserves are analogous to "islands" in an ocean of the other- use patterns. Empirical evidences from 'island biogeography' indicate that "isolated" reserves lose their species rapidly owing to 'ecological insularization'. Further, apart from fragmentation, the situation is aggravated by degraded forest cover owing to biotic pressure, dislocated prey – predator ratio, absence of effective measures to ensure the desired level of protection





and lack of eco developmental initiatives for the fringe dwelling stake holders to reduce their dependency on forest resources. Since 'Project Tiger' would go a long way in redressing the above situation, the Steering Committee of Project Tiger in its meeting held on 23rd January, 2003 recommended inclusion of new tiger reserve areas so as to increase the total area of 'Project Tiger' from existing 37761 sq. kms. To 50,000 sq. kms. during the X Plan period.

16.14.2 In-principle approval has been accorded for declaring the following tiger reserves:

<i>Sl. No.</i>	<i>Name of Tiger Reserve</i>	<i>State</i>
1.	Ratapani	Madhya Pradesh
2.	Sunabeda	Odisha
3.	Pilibhit	Uttar Pradesh
4.	Mukundara Hills (including Darrah, Jawahar Sagar and Chambal Wildlife Sanctuaries)	Rajasthan
5.	Sathyamangalam	Tamil Nadu

16.14.3 Further, the following areas have been suggested, by the National Tiger Conservation Authority to States, for creation as tiger reserves are given below:

<i>Sl. No.</i>	<i>Name</i>	<i>State</i>
1.	Nagzira-Navegaon	Maharashtra
2.	Bor	Maharashtra
3.	Suhelwa	Uttar Pradesh
4.	Guru Ghasidas	Chhattisgarh
5.	Mahdei	Goa
6.	Srivilliputhur Grizzled Giant Squirrel / Megamalai Wildlife Sanctuaries / Varushanadu Valley	Tamil Nadu

16.14.4 Final approval has been accorded for the Kudremukh Tiger Reserve (Karnataka).

16.15 Provision of Project Allowance to staff (all categories) of Project Tiger (providing project allowance to Ministerial staff is a new component) (non recurring).

16.15.1 The officers and staff of tiger reserves receive Project Allowance as approved by the Expenditure Finance Committee and Cabinet Committee on Economic Affairs during IX plan period as detailed below:

- | | | | |
|-----|---|---|----------------------|
| (a) | Field Director | - | @ Rs. 1000 per month |
| (b) | Deputy Director | - | @ Rs. 750 per month |
| (c) | Assistant Director/
Research Officer/Veterinary Officer
(equivalent rank) | - | @ Rs. 650 per month |
| (d) | Forest Ranger and equivalent rank | - | @ Rs. 500 per month |





- (e) Forester and equivalent rank - @ Rs. 450 per month
- (f) Forest Guard and equivalent rank - @Rs. 350 per month

16.15.2 The offices of tiger reserves are located in remote places. More often than not, the ministerial staff prefer postings elsewhere in regular Forest Division offices, as a result of which the routine official working in the Project Tiger Office are adversely affected. Further, several ongoing complimentary schemes from the Collector Sector are also dovetailed in tiger reserves as a part of the eco development strategy to benefit the stake holders. Such ongoing schemes, enhance the office work and therefore, able ministerial support becomes extremely crucial. However, to attract the best talent, it is proposed to extend the project allowance to ministerial staff working in tiger reserves as indicated below:-

- Class II - Rs 500 (per employee per month)
- Class III - Rs 350 (per employee per month)
- Class IV - Rs 200 (per employee per month)

16.15.3 The above rates were doubled for the existing categories of eligible employees with the approval of the Ministry of Finance with effect from the 1st September, 2008.

16.16 Staff welfare activities (non recurring).

The field staff of tiger reserves serve in remote and difficult areas, often subjected to endemic diseases like malaria, dengue, water-borne infections, apart from facing the risk of chance encounters with wild animals. Further, such postings are normally 'non- family postings', and the frontline personnel has to bear the cost of maintaining his family in a nearby village or town having the basic schooling and medical facilities. It is relevant to add, accommodation in such rural areas are seldom readily available. In addition, the field staff of a tiger reserve, unlike his counterpart in Territorial Forest Divisions, has also to bear the brunt of local community dwelling in fringe areas, owing to restrictions on the latter for free access to forest resources. Thus, the role of a frontline field personnel in a protected area or tiger reserve is different from his counterpart in regular Forest Divisions. The physical assault on the staff of tiger reserves and protected areas by people nurturing a grudge against the management is more common, often resulting in casualties. Therefore it becomes essential to provide amenities for staff welfare, to attract the best talent in the working age group. During the Plan period, staff welfare inputs like residential accommodation for the children of frontline staff in nearby towns or villages, supply of kerosene, medicine, field kit, mosquito net, torch and the like would be supported.

16.17 Fostering Tourism/Ecotourism in tiger reserves (new activity) (non recurring).

'Tourism' in the context of tiger reserves is contemplated as "ecotourism", which needs to be ecologically sustainable nature-tourism. This is emerging as an important component of tourism industry. It is distinct from 'mass tourism', having sustainable, equitable, community based effort for improving the living standards of local, host communities living on the fringes of tiger reserves. Ecotourism is proposed to be fostered under 'Project Tiger' to benefit the host community in accordance with tiger reserve specific Tourism Plan forming part of the Tiger Conservation Plan, subject to regulation as per carrying capacity, with a focus on buffer areas. Since, tourism has been happening in areas of national parks and wildlife sanctuaries which





are now designated as core and critical tiger habitat, regulated low impact tourism (visitation) would be allowed in such areas subject to site specific carrying capacity. However, no new tourism infrastructure should be permitted in such core and critical tiger habitats. Further, the buffer forest areas should also be developed as wildlife habitats with the active involvement of local people living in such areas. This would provide extended habitat to tiger population for its life cycle dynamics, besides benefitting local people from ecotourism activities in such areas while reducing the resource dependency of people on core and critical tiger habitats and human-tiger interface conflicts. The opportunities for stakeholders would include management of low cost accommodation for tourists, providing guide services, providing sale outlets, managing excursions, organizing ethnic dances and the like.

- 16.18 Change in the funding pattern in respect of North Eastern States by increasing the central share from the existing 50% to 90% for Recurring Expenditure, with the States' share becoming 10%. The ongoing support for Non-Recurring Expenditure would continue to be 100%.**

There is considerable delay in the release of central assistance to the field formations (tiger reserve) by the North Eastern States under the Project Tiger Scheme, owing to non availability of matching State share for recurring activities, despite allocation from the Centre. There has been a demand for increasing the central share in the recurring component of funding support. Accordingly, the central share has been increased from 50% to 90% for recurring items of expenditure.

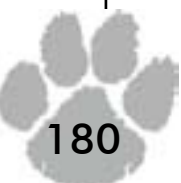
- 16.19 Raising compensation for man-animal conflict to Rs. 2 lakhs in case of loss of human life, 30 per cent of the same for grievous injury and cost of treatment for minor injury (Non-Recurring).**

The human-wildlife interface is extremely sensitive due to spill over of wild animals from core areas of tiger reserves. The loss on account of such depredation needs to be compensated adequately in a time bound manner to avoid 'revenge killings'. The compensation on man-wildlife conflict has been doubled from Rs. 1 lakh to Rs. 2 lakh in the case of loss of human life, while the compensation for serious injury has been retained at 30% of the amount of compensation on death, besides meeting the cost of treatment of minor injuries to people due to wildlife.

- 16.20 Acquisition of private land for making the core and critical tiger habitat inviolate (Non-Recurring).—**

In several tiger reserves, there are private land holdings/estates within the core and critical tiger habitats of tiger reserves. The above component has been included under the Project Tiger Scheme for providing 100% central assistance to States to acquire such areas, if necessary, for making the core/critical tiger habitat inviolate.

- 16.21 Establishment of Tiger Safari, interpretation and awareness centres under the existing component of 'co-existence agenda in buffer and fringe areas', and management of such centres through the respective Panchayati Raj Institutions (creation – Non-Recurring; maintenance – Recurring).**





The Tiger Safaris may be established in the buffer areas of tiger reserves which experience immense tourist influx in the core/critical tiger habitat for viewing tiger. The interpretation and awareness centres would also be supported in such buffer areas to foster awareness for eliciting public support. The management of such centres would be through the respective Panchayati Raj (PR) institutions.

16.22 Re-introduction of Cheetah in the States of Madhya Pradesh and Rajasthan under the Scheme at a cost of Rs. 50 crore after ensuring the historical co-existence of Cheetah with other carnivores, especially the tiger.

Reintroduction of large carnivores has increasingly been recognised as a strategy to conserve threatened species and restore ecosystem functions. The Cheetah is the only large carnivore that has been extirpated, mainly by over-hunting in India in historical times. Based on the recommendations of an expert group involving the Wildlife Institute of India, the Ministry of Environment and Forests has decided to take up reintroduction of cheetah in the States of Rajasthan (Shahgarh area) and Madhya Pradesh (Kuno-Palpur and Noradehi Wildlife Sanctuaries). The said States would receive 100% support towards village relocation, habitat management and restoration, holding facility, veterinary facility, training professionals, monitoring, procurement of cheetah, eco-development in the fringes and maintenance.

17. State to enter into Memorandum of Understanding.

The Tiger Reserve States would be required to enter into a Tripartite Memorandum of Understanding with the Ministry of Environment and Forests, as provided in the format at **Appendix-C**.

18. The Tiger Reserves would receive funding support under the ongoing Centrally sponsored Scheme of 'Project Tiger' on the basis of a reserve specific Tiger Conservation Plan as required under Section 38V of the Wildlife (Protection) Act, 1972, as amended in 2006. This should be prepared in accordance with the guidelines issued by the National Tiger Conservation Authority. Till the preparation and approval of the Tiger Conservation Plan vis-à-vis the provisions of the Wild Life (Protection) Act, 1972, the tiger States would be required to send an interim Indicative Tiger Conservation Plan which should form the basis of the Annual Plan of Operations to obtain funding support under 'Project Tiger'.

19. The centrality of Panchayati Raj Institution should be ensured through consultation for deployment of local workforce, issues relating to man – animal conflicts, livelihood options, village relocation and eco-tourism.





F. No. 7-9/2010-NTCA (Part)
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

B-1 Wing, 7th Floor,
Pt. Deendayal 'Antyodaya' Bhawan,
CGO Complex, Lodhi Road,
New Delhi-110003
E-mail: dig-ntca-mef@nic.in
Tel. (EPABX) 011-24367837-39
Fax: +011-2436 7836

Dated : 28.11.2018

To,
The Chief Wildlife Warden(s),
All Tiger Range States.

Sub: Compliance of the statutory provisions in context of infrastructure Development Projects-reg.

Sir,

Reference is invited to the subject cited above. In respect of infrastructure development projects, especially in context of linear development, the statutory role of this Authority is clearly outlined in the Wildlife (Protection) Act, 1972 which is **re-iterated** as follows;

1. Section 38 (O) (1) (b) of the Wildlife (Protection), Act, 1972;

The Tiger Conservation Authority shall have the following powers and perform the following functions, namely: -

“Evaluate and assess various aspects of sustainable ecology and disallow any ecologically unsustainable land use such as, mining, industry and other projects within tiger reserves,”

2. Section 38 (O) (1) (g) of the Wildlife (Protection) Act, 1972:

The Tiger Conservation Authority shall have the following powers and perform the following functions, namely: -

“ensure that the tiger reserves and areas linking one protected area or tiger reserve with another protected area or tiger reserve are not diverted for ecologically unsustainable uses, except in public interest and with the approval of the National Board for Wildlife and on the advice of the Tiger Conservation Authority,”





Accordingly, the “flow” of obtaining clearance in respect of the aforesaid sections is re-iterated as under.

1. Project proposal involving area falling within a Tiger Reserve:

In respect of projects falling within a notified tiger reserve, be it core or buffer, irrespective of area involved, the project proposal need wildlife clearance. Therefore, the project proponent shall have to submit proposal to the Chief Wildlife Warden of the concerned State and (*) the proposal shall be placed before the State Board for Wildlife (SBWL). The proposal (**) shall be forwarded for consideration of the Standing Committee (SC) of the National Board for Wildlife (NBWL). The Standing Committee of NBWL shall refer it to the National Tiger Conservation Authority for its advise as per provisions of section 38 (O) (1) (b) of the Wildlife (Protection) Act, 1972. The NTCA shall after due scrutiny advice the SC of NBWL for allowing or disallowing the project. There may be areas within the buffer where legal status of the land can be other than forest. Herein too, section 38 (O) (1) (b) shall be invoked and the Chief Wildlife Warden can refer the matter directly to the NTCA.

2. Project proposal involving corridor/linking area, irrespective of legal status of land:

In such projects, the project proponent may have to seek wildlife or forest clearance or both. The latter clearance shall be necessitated in case legal status of the land is forest.

In respect of wildlife clearance, the project proponent shall have to submit proposal to the Chief Wildlife Warden of the concerned State and (*) the proposal shall be placed before the State Board for Wildlife (SBWL). The proposal (**) shall be forwarded for consideration of the Standing Committee (SC) of the National Board for Wildlife (NBWL). The Standing Committee of NBWL shall refer it to the National Tiger Conservation Authority for its advise as per provisions of section 38 (O) (1) (g) of the Wildlife (Protection) Act, 1972. The NTCA shall after due scrutiny advice the SC of NBWL for allowing or disallowing the project.

I am directed to request you to follow the above statutory provisions in letter and spirit particularly in respect of all projects falling within the notified tiger reserves and its corridors for wildlife clearance irrespective of area involved and requirements of obtaining forest clearance or not.

This issues under section 38 (O) (2) of the Wildlife (Protection) Act, 1972 and approval of the Competent Authority.

Yours Faithfully,

Sd/-

(Nishant Verma)

Deputy Inspector General of Forests (NTCA)



Copy to:

1. The Field Director(s), All Tiger Reserves.
2. The Inspector General of Forest (WL), MoEF&CC, New Delhi.
3. The IGF/AIGF, NTCA Regional Offices, Guwahati, Nagpur & Bengaluru.
4. PS to ADG (PT) & MS (NTCA).

Note: The words '*if found sustainable*' (*) and '*if agreed upon*' (**) deleted vide F.No. **7-9/2010-NTCA (Part) dated 30.12.2019**



भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest & Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F.No.1-7/2009–NTCA (Part-II)

New Delhi, the December 27, 2019

To,

Chief Wildlife Warden(s),
All Tiger Range States

Sub: Order issued under section 11 (1) (a) and 12 (a) (b) of the Wildlife (Protection) Act, 1972.

Ref: This Authority's letter of even number dated 12.09.2019.


Sir,

Reference is invited to this office even letter dated 12.09.2019. It is clarified that speaking order of hunting of wild animal issued by the Chief Wildlife Warden under section 11(1) (a) of the Wildlife (Protection) Act, 1972 need to be invariably sent to this Authority for information in case of Tiger. No prior permission needs to be taken in this regard.

However, following needful action shall be taken in such situations;

1. All efforts shall be made to **capture or tranquilize** the identified Tiger (which has become dangerous to human life or disabled or diseased beyond recovery) while issuing speaking orders to that effect by the Chief Wildlife Warden.
2. The Tiger captured, tranquilized shall be rehabilitated back to wild, while ensuring **minimum trauma** to the animal.
3. Chief Wildlife Warden has to take the final decision on whether a tiger has to be **released back in the wild or transferred to a zoo** while issuing a speaking order.
4. Failing all such efforts, in case of **permission for killing such animal**, a speaking order in writing and stating reasons therefore, to be issued by Chief Wildlife Warden.
5. Copies of such orders with respect to Tigers shall always be sent to this Authority.
6. Standard Operating Procedure for **Dealing with the emergency arising due to straying of Tigers in human dominated landscape** and other related SOPs/Advisories/Guidelines issued by this Authority should also be adhered to while dealing with such situation.





Further, in view of section 38 O (f) & (k) of the Wildlife (Protection) Act, 1972 and various Advisories/SOPs issued by this Authority, cases of capture and collaring of Tigers for the purpose of education, scientific research and monitoring shall require prior permission of this Authority as well as Central Government (Ministry of Environment, Forest & Climate Change) under section 12 (a) & (b) of the Act.

Yours Sincerely,

Sd/-

(Dr. Anup Kumar Nayak)

Member Secretary (NTCA)

Email: ms-ntca@nic.in

Tel. (EPABX): + 91 11 24367837-39

FAX: +91 11 24367836

F.No.1-7/2009–NTCA (Part-II)

Copy to:

1. The Additional Director General of Forest (Wildlife), Ministry of Environment, Forest & Climate Change
2. The Add. Chief Secretary/ Principal Secretary/ Secretary, Forest, Govt. of Tiger Range States
3. The Field Director(s), All Tiger Range States
4. All Regional Offices, NTCA (Bengaluru, Nagpur & Guwahati)

Sd/-

(Dr. Anup Kumar Nayak)

Member Secretary (NTCA)



F.No.7-25/2012-FC
Government of India
Ministry of Environment, Forest and Climate Change
(Forest Conservation Division)

Indira Paryavaran,
Bhawan Aliganj, Jorbagh Road,
New Delhi -110003

Dated: 24th October, 2016

To,
The Principal Secretary (Forests),
All States/ Union Territories.

Sub.: Guidelines for diversion of forest land for non-forest purposes under the Forest (Conservation) Act, 1980- Guidelines for laying transmission lines through forest areas *-reg.*

Sir,

In continuation of this Ministry's letter of even number dated 5th May 2016 on the above-mentioned subject where under this Ministry sent a copy of revised guidelines for laying transmission lines through forest areas as, I am directed to say as below:

(i) The norms/ standard for laying underground insulated cables through forest areas shall be as below:

<i>Line Voltage</i>	<i>Trench Width</i>	<i>Trench Depth</i>
33 KV	600 mm	1200 mm
11 KV	300 mm	900 mm

(ii) For laying double circuit (D/C) underground cables through forest areas trench width shall be twice the afore-mentioned width stipulated for the single circuit cable.

(iii) The following shall be ensured while laying and maintenance of 11 KV and 33 KV transmission and distribution lines in areas critical from wildlife point of view:

- (a) Laying/maintenance of lines shall conform to IS 5613, Rural Electrification Corporation Limited (REC) Construction Standards and applicable guidelines of Central Board of Irrigation and Power;
- (b) Suitable guard spikes may be provided on 400 Volts, 11 KV and 33 KV poles at height of 4 ft. and 7 ft. toward off animals coming close to poles and likely to damage it by rubbing against them;
- (c) Tower accessories as stipulated in Indian Electricity Rules, 1956 shall be provided on all the towers;



- (d) Concerned Electricity Department should undertake rigorous exercise to inspect the lines so as to ensure that mandatory ground clearances are not violated as stipulated in the Indian Electricity Rules, 1956. Lines should be inspected periodically, say, at least once in a year by electricity Department officials and corrective actions shall be taken in this regard. Maintenance of the minimum ground clearance and periodical inspection should be certified by an officer not below the rank of an Executive Engineer;
- (e) Joint inspection of every transmission/distribution line by officials of Electricity Department and Forest Department may be undertaken twice in a year, say, once before onset of monsoon and once after monsoon so as to identify any need for lopping of trees and ensuring necessary action in this regard;
- (f) Every tripping of an Electric line should be investigated by the owners of such line and they should take suitable measures to avoid recurrence of the same;
- (g) Forest Department shall inform the concerned power supplier/line owner of the area about every electrical accident occurring in and around forest area involving human/animals which in turn shall submit an accident report in Performa as given at Annexure-XI II of Indian Electricity Rules, 1956 duly completed in all respects to Electrical Inspector of the State. All electrical accidents should be investigated by Electrical Inspector and suitable measures should be taken as proposed in the investigation report.

- (iv) In case of the demand for **reduction in the width of right of way (Ro W) of transmission lines in forest areas in the cases where ABC cables are used in place of overhead lines**, it is clarified that as per definitions in Measures relating to Safety and Electric Supply, Regulations, 2010, conductor is defined as bare or insulated and as such the vertical & horizontal clearance specified in Regulation 61 have to be maintained for both bare and insulated conductors like ABC *etc.*
- (v) To prevent death of animals like elephant *etc.* in the forest areas due to electrocution by the distribution lines, in the forest area the distribution companies shall preferably use ABC or underground cable. In case of the overhead lines, the clearance above ground of the lower conductor of 11 KV and 33 KV overhead lines should be as per the CEA regulation 58(3) and 58(4) or above maximum trunk height of the elephant, whichever ever higher.

Yours faithfully,

Sd/-

(Nisheeth Saxena)

Sr. Assistant Inspector General of Forests

Copy to:-

1. Prime Minister's Office (*Kind attn.:* Shri Ajeet Kumar, Deputy Secretary), South Block, New Delhi.
2. Secretary, Ministry of Power, Government of India, Shram Shakti Bhawan, New Delhi.
3. Principal Chief Conservator of Forests, all States/Union territories.



4. Nodal Officer, the Forest (Conservation) Act, 1980, all States/Union territories.
5. All Regional Offices, Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India (GoI).
6. Joint Secretary in-charge, Impact Assessment Division, MoEF&CC,GoI.
7. All Assistant Inspector General of Forests/Director in the Forest Conservation Division, MoEF&CC,GoI.
8. Deputy Secretary (ROHQ) Division, MoE F&CC,GoI.
9. Sr. Director (Technical), NIC, MoEF&CC, GoI with a request to place a copy of the letter on website of thisMinistry.
10. Sr. PPS to the Secretary, Ministry of Environment, Forest and Climate Change, Gol.
11. PPS to the Director General of Forests & Special Secretary, MoEF&CC,GoI.
12. PPS to the Addl. Director General of Forests (Forest Conservation), MoEF&CC, Gol. 1 3. PPS to the Inspector General of Forests (Forest Conservation), MoEF&C C, Gol. 1 4. Guard File.

Sd/-

(Nisheeth Saxena)

Sr. Assistant Inspector General of Forests



F. No.15-5/2008-NTCA (Part-III)
Government of India
Ministry of Environment, Forest
National Tiger Conservation Authority

Annexe No. 05 Bikaner House,
Shahjahan Road, New Delhi-110011
E-mail: jdntca@gmail.com
Telefax: 2338 4428

Dated the 9th January, 2013

To,

The Chief Wildlife Warden(s),
Uttar Pradesh, Uttarakhand, Rajasthan, Madhya Pradesh, Arunachal Pradesh,
Karnataka, Maharashtra, Tamil Nadu, Assam, Odisha.

Sub: Guidelines for constituting the Special Tiger Protection Force (STPF) – Option-II (comprising of forest personnel)-reg.

Ref: This Authority's letter No. 15-5/2008-NTCA (Part-I) dated-11th August, 2009.

Sir,

In supersession of guidelines issued reference, I am directed to forward herewith "Guidelines for constituting the Special Tiger Protection Force (STPF) – Option-II (comprising of forest personnel)" for necessary action and implementation.

Yours Faithfully,

Encl: As above.

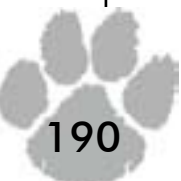
Sd/-


(S. P. Yadav)

Deputy Inspector General (NTCA)

Copy to:

1. PS to MEF.
2. PPS To Secretary (E&F).
3. PPS to DGF & SS, MoEF.
4. Regional Offices of NTCA- Guwahati/Bengaluru/ Nagpur.





GUIDELINES FOR CONSTITUTING THE SPECIAL TIGER PROTECTION FORCE (STPF) OPTION-II (Comprising of Forest Personnel)

1. Preamble

The policy initiative announced by the Finance Minister in his Budget speech of 29.02.2008, inter alia, contained action points relating to tiger protection (para 114, Sl. No. 73). A one time grant of Rs. 50.00 crore was proposed to the National Tiger Conservation Authority (NTCA) for raising and deploying the Special Tiger Protection Force. The instant guidelines are issued for providing a second option (comprising of forest personnel) for the same.

2. Central Assistance (100%) would be provided to States under the ongoing Centrally Sponsored Scheme of Project Tiger for raising, arming and deploying the STPF.

3. Description of the STPF:

(A) Name of the Force:

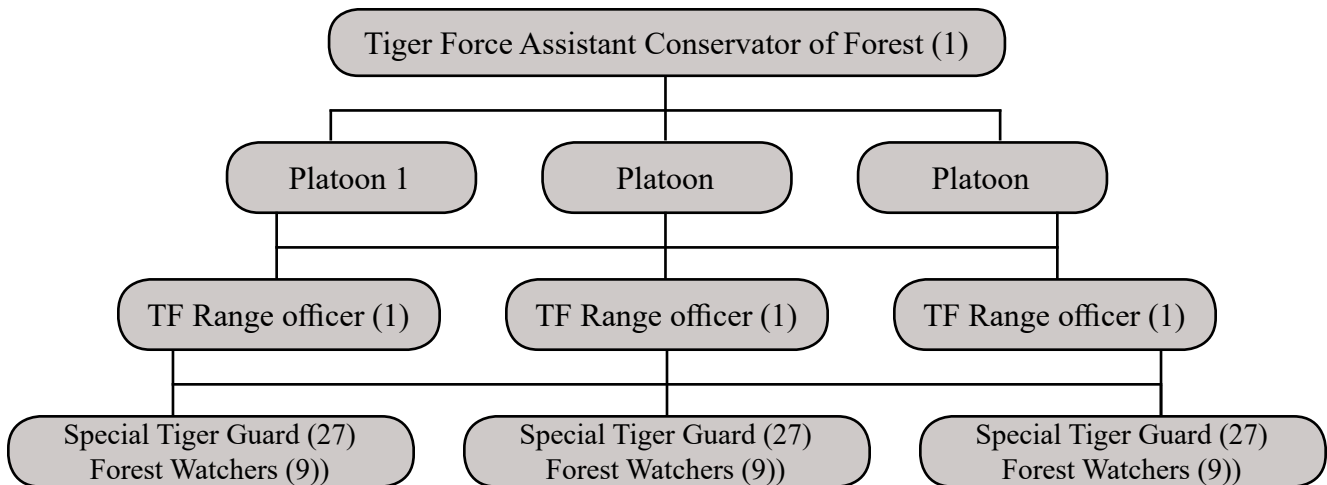
Special Tiger Protection Force (STPF), to be raised, armed and deployed by the tiger States in tiger reserves as a specialized force for tiger protection, on the lines of 'India Reserve Battalion', with 100% central assistance under the ongoing Centrally Sponsored Scheme of Project Tiger.

(B) Composition of the Force:

- (i) The STPF will not be "Armed Force of the Union", but a modest, dedicated force comprising of forest personnel as suited to tiger reserves, not conforming to the large scale of Central Forces.
- (ii) The STPF would be comprised of 13 companies, and would be a specialized Force with its own structure and composition as required for tiger reserves.
- (iii) Each company (of 112 personnel) of the STPF would be headed by the Tiger Force Assistant Conservator of Forests and three Tiger Force Range Officers.
- (iv) The STPF personnel would serve in the force till the age of 40 years, and should be later absorbed by the Forest Department on posts outside the Tiger Reserve, while ensuring new, suitable substitutes. In States having more than one tiger reserve, the STPF personnel would normally be posted in a reserve for a minimum tenure of three years.
- (v) In all, there would be 90 Special Tiger Guards in a company, who would be equivalent to the rank of a regular Forest Guard in the State Forest Department. To deploy local forest dwelling people like Van Gujjars, Gonds etc., 30% of this strength should be drawn from such local people. However, since such locals may not possess the academic qualifications prescribed by the States for appointment as Forest Guards, they may be appointed by creating a lower cadre of 'Forest Watchers' through appropriate relaxation of academic requirements, without comprising the physical standards. The appointment of all personnel would be done by the respective State Governments as per their rules and procedures. The STPF should be recognized as a separate cadre with due identity having professional competence through specialized training.

(C) Structure of a company:

- (i) Each company would comprise of three platoons, with each platoon under a Tiger Force Range Officer, assisted by 36 Special Tiger Guards.



The cost details relating to salary, procurement of vehicles, arms and ammunition, infrastructure are provided in Annexures-I to V.

(D) Overall command and control:

- (i) The Tiger Force Assistant Conservator of Forests in-charge of the STPF and other personnel would work under the overall control and supervision of the Field Director of a Tiger Reserve. The administrative, operational command would be under the control of the Field Director of the tiger reserve. The NTCA, through the Centrally Sponsored Scheme of Project Tiger would be required to pay the deployment charges to the State Government or reimburse such costs relating to STPF, on the lines of India Reserve Battalion. The reimbursement / payment would be 100% central assistance from the ongoing Centrally Sponsored Scheme of Project Tiger. The deployment charges in this regard would be borne under Project Tiger.\
- (ii) Only during an emergency situation, the Ministry of Environment and Forests, GoI would have the authority to ask the State for deployment of the STPF companies from one reserve / area to another within the same State using the first right of call. Otherwise, the STPF would be under the overall administrative control of the State Authorities, recruited and deployed with 100% central assistance on the lines of India Reserve Battalion. The Government of India will also have full authority to ask the State Government to make the companies available for deployment elsewhere in other tiger reserves within the State, or in sensitive interstate borders for tiger protection. It will also have the right to decide the number of companies to be posted in each tiger reserve.

(E) Recruitment:

- (i) The recruiting authority for the STPF would be the local Forest Department of the State, subject to the educational qualifications and physical standards prescribed by them. However, to ensure uniformity across States and to provide special identity to the STPF, it is important to include representatives from the State Police Department and the Paramilitary Forces alongwith State officials in a specially constituted Selection Committee for final selection.
- (ii) Recruitment to the posts of Special Tiger Guards / Forest Watchers of the STPF companies would be done by locally from the State where the Tiger Reserve is situated, while the Tiger





Force Assistant Conservator of Forests and the Tiger Force Range Officers would be appointed to the force on deputation from the State Forest Department.

- (iii) The Assistant Conservator of Forests and the Range Officers would be selected on deputation from the State Cadre to the STPF through a Selection Committee comprising of State Government officials and representatives from the Police and Paramilitary Forces to ensure required physical standards, aptitude and age below 40 years.
- (iv) On attainment of the age of 40 years, STPF personnel would be transferred out of the Tiger Reserve to other units of the State Forest Department. The State Governments must concur to absorb the STPF personnel in the regular establishment of their Forest Department after such personnel attain the age of 40 years for posting in any area within the said Department, other than tiger protection.
- (v) In all, there would be 90 Special Tiger Guards in a company, who would be equivalent to the rank of a regular Forest Guard in the State Forest Department. To deploy local forest dwelling people like Van Gujjars, Gonds etc., 30% of this strength should be drawn from such local people. However, since such locals may not possess the academic qualifications prescribed by the States for appointment as Forest Guards, they may be appointed by creating a lower cadre of 'Forest Watchers' through appropriate relaxation of academic requirements, without comprising the physical standards. The appointment of all personnel would be done by the respective State Governments as per their rules and procedures. The STPF should be recognized as a separate cadre with due identity having professional competence through specialized training.

(F) Legal immunity to STPF for discharging the official mandate:

- (i) The STPF personnel, being forest officers, will have policing powers as conferred to them by law.
- (ii) The State Government would be required to confer powers to the STPF personnel under sub-section (3) of Section 197 of the Code of Criminal Procedure, 1973 (2 of 1974), and all powers enabling it in that behalf, the power to use fire arms to combat tiger poaching and related offence within the tiger habitat, through a notification. In this context, sub-section (2) of Section 197 of the Code of Criminal Procedure, 1973 (2 of 1974) should be made applicable to all personnel of the STPF.
- (iii) Whenever, firing is resorted to by the STPF personnel, each such incident shall be enquired into by the Executive Magistrate; any proceeding, including instituting a criminal case or arrest can be initiated only if it is held, as a result of the Magisterial Enquiry, that the use of fire arms has been unnecessary, unwarranted and excessive, only after such report has been accepted by the Government after due examination.

(G) Other features:

- (i) The STPF, not being an "Armed Force of the Union", would be used only for tiger protection, and under no circumstances would be requisitioned in aid of Civil Authority, for any other district work. A draft MOU to be formalized between the Government of India through the NTCA and the State of deployment is appended as Annexure-VI.





- (ii) The initial funding support for raising, arming and deploying the STPF would be provided from the one time grant given to the Project Tiger / National Tiger Conservation Authority (NTCA), and would be supported subsequently in an ongoing manner through 100% central assistance from the ongoing Centrally Sponsored Scheme of Project Tiger.
 - (iii) The Field Director of the Tiger Reserve would be required to provide monthly reports on the deployment / initiatives done by the STPF to the NTCA / Project Tiger.
- (H) Financial implications:
- (i) The total Recurring Cost (per annum/per company) works out to Rs. 3.625 crores.
 - (ii) The total Non-recurring Cost (per company — one time grant) works out to Rs. 1.579 crore.
- (I) Training:
- (i) The STPF companies would receive special training from the State Police Department as well as the Paramilitary Forces, based on a special syllabus for skill development, combating poaching, and enabling intelligence based enforcement in a forest terrain.
 - (ii) The training of the STPF would be on the pattern of a special syllabus of basic training which would include wildlife crime control and wildlife management, as prescribed by the Ministry of Environment and Forests through the National Tiger Conservation Authority, in consultation with the Ministry of Home Affairs.
 - (iii) A Special Capsule Course at the Wildlife Institute of India and the State Police Academy should be organized for the Assistant Conservator of Forests and the Range Officers to impart the necessary skills relating to the STPF.
 - (iv) A specialized commando training (including physical fitness) should be designed with the help of State Police and National Security Guard for the STPF personnel.
 - (v) Arrangements will be made for regular physical training of STPF in collaboration with the available resources.
 - (vi) Specialised trainings would be provided in enforcement procedures by noted agencies including international visits if the need arises.
 - (vii) The STPF would be given a special identity through the State by prescribing a special uniform to enable recognition.
 - (viii) The training cost incurred by the State in the context of STPF would be supported under the Training component of the ongoing Centrally Sponsored Scheme of Project Tiger (need based).
- (J) Deployment of STPF:
- During the initial phase, the STPF would be deployed in 7 sensitive tiger reserves of the country (out of the 13 identified), having considerable source populations of tiger, based on the outcome of the all India tiger estimation using the refined methodology.
- (K) For core / critical tiger habitats having high relative abundance of tigers, the States should preferably explore the 'Police option' of STPF, and may resort to the 'Forest option' only if the same is not found feasible. The STPF should be developed as a 'commando-force' to be effective.





ANNEXURE-I

**FINANCIAL IMPLICATIONS OF STPF PER ANNUM (Salary etc.)
(13 companies, 39 platoons)
(in ₹.)**

Sl. No.	Designation	Strength	Pay Scale	Mean Pay	Grade Pay	DA	Ration Money Allowance	Kit maintenance Allowance/washing Allowance	Total per person per month	Total per person per year (X12)	For total strength per year
1.	Assistant Conservation of Forests	13	(S-17) PB-3 Rs. 15600-39100	27350	5400	21288	0	300	54338	652056	8476728
2.	Range Officer	39	(S-10) PB-2 Rs. 9300-34800	22050	4200	17063	860	60	44233	530796	20701044
3.	Forest Guard	1053	(S-6) PB-1 Rs. 5200-20200	12700	1900	9490	860	60	25010	300120	316026360
4.	Forest Watchers	351	(S-6) PB-1 Rs. 5200-20200	12700	1800	9425	860	60	24845	298140	104647140
	Total	1456		74800	13300	57266	2580	480	148426	178112	449851272





FINANCIAL IMPLICATION FOR ARMS AMMUNITION

(per company)

(Amount in Rs.)

<i>Sl.No.</i>	<i>Name of weapon/ammunition</i>	<i>Rate</i>	<i>Number</i>	<i>Cost</i>
1.	Rifil 5.56 mm INISAS	25775	112	2886800
2.	Carbine 9 mm IAIDP	10934	3	32802
3.	Pistol 9 mm Auto IAI Action Skeleton	11600	3	34800
4.	Day Vision Binoculars	40000	5	200000
5.	Night Vision Binoculars	100000	5	500000
6.	Carts SA Ball 9 mm	13	20000	260000
7.	Carts SA Ball 9 mm for Pistol	13	25200	327600
	Total	188335	46328	4242002

**ANNEXURE-IV****FINANCIAL IMPLICATION FOR INFRASTRUCTURE**

(per company)

(Amount in Rs.)

<i>Sl.No.</i>	<i>Building</i>	<i>Number</i>	<i>Total Cost</i>
1.	ACF Quarter	1	500000
2.	RO Quarter	3	1500000
3.	30 Men Barrack	2	1800000
4.	Mess	1	900000
5.	Office Building	1	400000
6.	Parade Ground/Play Ground	1	1500000
7.	Total	26	6600000

FINANCIAL IMPLICATION FOR RAISING NEW ESTABLISHMENT

(Recurring Cost - per company, per annum)

(Rs. In crore)

<i>(Salary etc.)</i>	<i>Recurring cost for uniform maintenance</i>	<i>Recurring cost for vehicle maintenance</i>	<i>Procurement of ammunition</i>	<i>Total Recurring cost</i>
3.46	0.005	0.10	0.06	3.625

(Non-Recurring - per company)

(Rs. In crore)

<i>Cost Infra-structure</i>	<i>Tentage</i>	<i>Procurement of Arms ammunition/ equipment</i>	<i>Procurement of Vehicles</i>	<i>Total Non-recurring cost</i>
0.66	0.005	0.424	0.49	1.579

(Cost for 13 companies in 5 years)

(Rs. In crore)

<i>Item</i>	<i>Amount</i>	<i>Years</i>	<i>Total</i>
Non-recurring	1.579	1	1.579
Recurring	47.125	5	235.625
Total			237.204

**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE MINISTRY OF ENVIRONMENT AND FORESTS
(NATIONAL TIGER CONSERVATION AUTHORITY)
BIKANER HOUSE, SHAHJAHAN ROAD
NEW DELHI
AND GOVERNMENT OF**

This Memorandum of Understanding made this day of between the Ministry of Environment and Forests, acting through the National Tiger Conservation Authority, Annexe No. 5, Bikaner House, Shahjahan Road, New Delhi-110011 (hereinafter referred to as the 'NTCA') of the First Part and the State Government of _____, acting through (designation and office address) (hereinafter referred to as the State Government), of the Second Part.

Whereas the NTCA is providing funding support for raising, arming and deploying the Special Tiger Protection Force (herein referred to as the 'STPF') for protection of tiger in tiger reserve, hereinafter referred to as the "_____".


And whereas the Ministry of Environment and Forests through the NTCA is ready and willing to extend financial support for the raising, arming and deploying of STPF, on the terms and conditions given below for the year.....

NOW, THEREFORE, IT IS HEREBY AGREED between the Parties as follows:

ARTICLE I.

The State Government has agreed and affirmed that: -

- (a) The STPF must be raised as per the prescribed standard pattern and scale for transport,
- (b) communication, arms and ammunition etc.
- (c) The non-recurring as well as annual recurring expenditure for raising, arming and deploying
- (d) the STPF would be borne by the NTCA.
- (e) The Government of India (NTCA) would exercise the right of first call on the STPF and shall
- (f) have the full authority to ask the State to make the battalion available for deployment anywhere within the State for tiger protection, as and when required.
- (g) The State Forest Department shall recruit the STPF personnel and would make them available to the Forest Department for deployment in the tiger reserve, on deputation for a period of three years, whose age shall be less than 40 years.
- (h) The administrative as well as operational command of the said force would remain with the
- (i) Field Director of the tiger reserve, who will be the appointing / disciplinary authority also.
- (j) The STPF companies would be recruited locally from the District(s) within which the tiger
- (k) reserve is located.
- (l) The STPF personnel, being forest officers, will exercise policing powers as per law.

- 
- (m) The State Government would be required to conform powers to the STPF personnel under sub-section (3) of Section 197 of the Code of Criminal Procedure, 1973 (2 of 1974), and all powers enabling it in that behalf, the power to use fire arms to combat tiger poaching and related offence within the tiger habitat, through a notification. In this context, sub-section (2) of Section 197 of the Code of Criminal Procedure, 1973 (2 of 1974) should be made applicable to all personnel of the STPF.
 - (i) Whenever, firing is resorted to by the STPF personnel, each such incident shall be enquired into by the Executive Magistrate; any proceeding, including instituting a criminal case or arrest can be initiated only if it is held, as a result of the Magisterial Enquiry, that the use of fire arms has been unnecessary, unwarranted and excessive, and such report has been accepted by the Government after-examination.
 - (j) The STPF, not being an “Armed Force of the Union”, would be used only for tiger protection, and under no circumstances would be requisitioned in aid of Civil Authority, for any other district work.
 - (k) The Field Director of the Tiger Reserve would be required to provide monthly reports on the deployment / initiatives done by the STPF to the NTCA.
 - (l) The STPF companies would receive special training from the State Police Department as well as the Central Paramilitary Forces, based on a special syllabus for skill development, combating poaching, and enabling intelligence based enforcement in a forest terrain.
 - (m) The training of the STPF would be on the pattern of a syllabus of basic training which would be prescribed by the Ministry of Environment and Forests, on the basis of the ongoing syllabus prescribed by the Ministry of Home Affairs for the India Reserve Battalion.
 - (n) Every month, one week will be spared on rotation for each platoon, during which the STPF personnel would be sent to the local Police Department for training to ensure their fitness, apart from maintenance of fire arms.
 - (o) Recruitment of the personnel for STPF would be made by constitution of a Selection Board by the State, comprising of members (one each) from the Central Police Forces and the NTCA respectively.
 - (p) The recruitment process shall be completed within two years of the date of sanction as per the following schedule:
 - (i) Recruitment: Within 6 months from the date of sanction.
 - (ii) Induction training: Within one year after recruitment (1½ years from the date of sanction).
 - (iii) Initial provisioning, procurement of uniform, equipment etc.: Concurrently with recruitment / training, i.e. within 18 months from the date of sanction but not exceeding two years.
 - (iv) Deployment: After 1½ years from the date of sanction.
 - (q) The Headquarter as well as deployment of the STPF platoons would be decided by the Field Director of the tiger reserve.
 - (r) Disbursement of the grants-in-aid by the NTCA would be done in phases as below:
 - (i) 25% as initial advance after the State Government has issued recruitment notification under intimation to Government of India.
 - (ii) 25% on completion of recruitment and submission of Utilization Certificate.
 - (iii) 25% on completion of training for recruits.
 - (iv) 25% on completion of all items relating to the raising, arming and deploying of the STPF.



ARTICLE II.

(Site-specific action)

- (a) Till the raising, arming and deploying of STPF personnel is completed, as a stop gap arrangement to address tiger poaching, the State may deploy local work force / ex-army / homeguards through outsourcing for protecting tigers in the tiger reserve, after due orientation and training.
- (b) In areas affected by extremist engineered disturbances, the State may decide the mandate of STPF as a “Strike Force” or as a “Foot Patrol”, considering the local conditions.
- (c) Any other action as suited to the special condition prevailing in the site/State.

IN WITNESS WHEREOF, the representatives of the Parties to this Memorandum of Understanding being duly authorized have signed this Memorandum of Understanding as of the day, month and year first above written.

Signed for and on behalf of
National Tiger Conservation
Authority

Signed for and on behalf of
Government of

Field Director _____
Tiger Reserve

Name & Designation
(With Stamp)
Dated:

Name & Designation
(With Stamp)
Dated:

Name & Designation
(With Stamp)
Dated:





Proposal to be Considered in NBWL only After Obtaining the Opinion of SBWL

(3rd meeting of NBWL dt. 25.08.2004)

Members were of the view that all cases concerning diversion/de-notification, destruction, exploitation, removal etc. as mentioned in section 29 of the Wild Life (Protection), 1972 should be placed before the standing Committee along with the opinion of the State Government and the State Board for Wildlife. Accordingly, it was decided that all such cases as referred to above would be considered by the Standing Committee only after obtaining the opinion of the State Govt. and the State Board for Wild Life.



Policy and Procedures for Wildlife Research

(6th meeting of NBWL dt. 20.01.2006)

Dr. K. Shankar of WII made a presentation on the policy and procedure for wildlife research. Through the presentation, he apprised the Members of the existing wildlife research policy and recently prepared framework for carrying out wildlife research in the country. Members appreciated the policy and suggested that there should be provision for providing interim findings by Researchers to the State Wildlife Department on regular intervals as publishing of final report takes long time. These findings may also be displayed on the web site of the Ministry. An urgent need for capacity building of veterinarians to cater the needs of wildlife was also emphasized by Shri Ravi Singh.





Guidelines for Scientific Research in the Wildlife Protected Areas

1. Introduction

Scientific Research in the Wildlife Protected Areas is vital for a better understanding of ecosystems, their functions, ecology and status of various species and their habitats. Information generated by scientific research in Protected Areas would be useful to the managers for taking appropriate conservation and management actions. Since Protected Areas (PA) also serve as 'control sites' for comparing a large number of environmental parameters and ecological processes with those of human influenced ecosystems, organizations and individuals from India as well as abroad would like to undertake basic as well as applied research within Protected Areas.

As per the guidelines of the National Wildlife Action Plan (2002-2016), research projects having the objectives of measuring biological diversity; monitoring the status of indicator / flagship / threatened species of flora and fauna, and their breeding biology, will be given priority in granting permission. In addition, applied research is also needed to help overcome specific management problems in PAs. Multi-disciplinary integrated research encompassing scientific and socio-economic aspects related to PA management also need to be encouraged.

Recognizing the significance of well conceived and problem oriented research in the PAs, adequate provisions for research work have been made in the Wildlife (Protection) Act, 1972. Section 28 (grant of permit) of the Act gives authority to the Chief Wildlife Warden (CWLW) to grant permission for research.

2. Wildlife Research

Wildlife Research is defined here as research conducted by qualified scientists, including social scientists, or by assistants/ students working under their supervision or Park Managers. Wildlife research may also be conducted by properly qualified wildlife enthusiasts and conservationists.

3. Duration of research

Based on the anticipated period of study specified in the proposals, wildlife research may be categorized as follows:

- i. Short-term research: Surveys or short studies involving field work up to one year in duration.
- ii. Medium term research: Studies requiring two to four years for completion.
- iii. Longer-term research: Studies exceeding four years for completion.

After taking into consideration the recommendation of the Committee constituted vide Ministry of Environment & Forests (MoEF) notification No. 6-3/2003 WL I dated 24.10.2005 and also the recommendations of the Tiger Task Force, the following guidelines are hereby formulated to facilitate processing and grant of permission for carrying out research in PAs.

4. Processing of Research Proposals and Grant of Permission

- 4.1 Under existing laws the Chief Wildlife Wardens are authorized to permit research in Protected Areas. In case of research that involves capture, handling and collection of biological samples from any species listed in Schedule-I of the Wildlife (Protection) Act, the award of permission would lie with the Director (Wildlife Preservation), Government of India (Additional Director General (Wildlife) and Director, Wildlife & Preservation, MoEF). In all cases the proposal should be submitted to the Chief Wildlife Warden of the State with a copy of the same to the Additional Director General



(Wildlife), MoEF, Govt. of India. In case of foreign nationals desirous of conducting research in Indian Protected Areas, permission from Ministry of External Affairs / Ministry of Home Affairs, and National Biodiversity Authority if required in Law should be obtained.

- 4.2 The proposal should contain synopsis, objectives, methodology, literature review, work plan, budget, source of funding, duration, expected outputs and terms of reference. The proposal will be evaluated by a 'Technical Committee' consisting of at least *three* members constituted under the chairmanship of the Chief Wildlife Warden of the State. Other members could be representative of the State Biodiversity Board (if constituted), experts in relevant disciplines of wildlife management, ecology, social science etc. If the state has not constituted the State Biodiversity Board, suitable nomination from university / research institute or any other such organization involved in ecological / wildlife research may be made. The Technical Committee should meet at least once in a quarter on fixed dates and consider proposals received at least 15 days prior to the date of meeting. The committee would also suggest the areas of research relevant to management decisions with respect to Protected Areas of the state. The technical committee may have additional 'Subject Specialists' as a 'Special Invitee'.

However, a research project which has been approved by *Deptt. of Science and Technology, Ministry of Environment & Forests, Department of Biotechnology, and other scientific Deptt. of the State/Central Government would not be required to be reviewed by the committee. Chief Wildlife Warden/Director, Wildlife Preservation may pass necessary orders in such cases to grant access.*

- 4.3 The research questions and methodologies used shall be decided by the researchers according to their own priorities/reliable interests, in the case of independently funded wildlife research projects. In case of manipulative or interventional studies, the methods used must be in accordance with standard practice. Research questions in case of Wildlife Research projects sponsored by the State Department of Wildlife shall be arrived at in consultation with the respective Park Managers. Conclusions and recommendations should be discussed with the Park Managers to ensure the field applicability of the studies.

5. Time Frame for Grant of Permission

- 5.1 Proposal for short-term research (<6 months) shall be processed and the decision communicated by the Chief Wildlife Warden within a period of two months *if it involves one PA.*
- 5.2 If the short-term research involves several PAs and/or administrative forest divisions, the Chief Wildlife Warden *shall process and communicate decisions* within a period of three months.
- 5.3 Proposals for medium and long-term research (>6 months) shall be *processed and communicated* by the Chief Wildlife Warden within a period of three months. In case of proposals whose coverage is beyond a single Protected Area site, a maximum of four months may be taken to process and communicate the decision.
- 5.4 In case a research proposal is rejected or any modifications suggested, either by the Chief Wildlife Warden or the Director of Wildlife Preservation, Government of India and Additional Director General (WL) and Director, Wildlife Preservation, MoEF, the reasons for such rejection/suggestions must be clearly communicated to the researcher as per (5.1) – (5.3) above from the date of receipt of proposals.





6. General Provisions

- 6.1 It is well recognized that the product of any research in terms of its scientific results and publications must be authorized by the researcher/organization. None other than the individuals responsible for framing research proposals and actually conducting research should have the authorship of scientific papers from the findings. However, the final report and other scientific publications of the project (hard and soft copy) should be submitted within three months (for short-term research) or six months (for long-term projects) to the concerned Chief Wildlife Warden. For long-term projects, half yearly progress reports should be submitted to the park authorities by the researcher. The Chief Wildlife Warden shall take appropriate action on the researcher/organization for non-submission of final reports on time as per Terms and Conditions stipulated in the letter granting permission for the project.
- 6.2 Wildlife Institute of India would act as the national nodal agency on wildlife research. It would be obligatory on the part of researcher / research organization to provide a soft and hard copy of his data / report / findings / thesis etc. to Wildlife Institute of India who in turn would make it available on their website for easy access.
- 6.3 A researcher will not be required to pay entry fee in the park. If researcher needs to use a vehicle for his research activities inside the park no entry fee for the vehicle will be charged. Other facilities when availed will be charged at the rate applicable to Government officials on duty.
- 6.4 Movements of the researcher and or his assistants in the PA shall be recorded in a log book to be maintained by him which will be submitted to the park management every month.
- 6.5 Movement at night shall be allowed *only if it is part of the approved research project*. A schedule for such movements shall be developed in consultation with the local authorities and shall be permitted accordingly by park authorities. In case of any violation of the conditions of permission, Chief Wildlife Warden shall have the authority to revoke the permission.





Central Funding to be Restricted to Protected Areas Directly Under the Wildlife Wing and Managed by Trained Officers

(24th Meeting of NBWL Dated 13/12/2011)

Dr Ranjitsinh pointed out that there was a serious dearth of trained and specialized officer in the wildlife wing / department of the States. He mentioned that the then Prime Minister, late Smt. Indira Gandhi, had suggested and reiterated the need for trained wildlife personnel for managing wildlife areas, and that he had copy of the letter with him, wherein she had strongly recommended the need for trained and specialized officers specifically trained in wildlife techniques and issues. He also pointed out that the WII was set up as a special institute for imparting wildlife training to the officers from States and others. However, the institute was not having adequate funds for the purpose.

He informed about the nine-month training course for 20 trainees in WII and that the training imparted to the officials was free of cost. However, the State Governments were usually sending only 2 officials in contrast with 18 officials being deputed by the SAARC countries in this programme. This showed the apathy of the State Governments towards this important issue. He also suggested that Central funding should not be extended to the States who were not serious about the training of their officials in wildlife science. He suggested that it should be communicated to the State that if 50 percent of their wildlife Protect Areas (PAS) did not come to be manned by trained personnel within next 3 years, no funding support would be given to them after three years.

In response to this, the Member Secretary informed that the restrictions suggested by Dr Ranjitsinh could lead to surrender of funds by the MoEF as the States were not expected to improve their performance drastically with respect to positioning of wildlife trained staff in the PAs. He stated that the suggestion would prove to be counterproductive if it was implemented. He added that it was true that wildlife wings and protected areas were run by officials with non-wildlife background also, but if we stop funding because personnel with wildlife specialization were not posted, we may not be able to spend the amount sanctioned to the MoEF (Wildlife Division) by the Planing Commission. The Planning Commission may then downsize the funds allocated to the wildlife sector from the present Rs. 70 crores to say Rs. 40 crores, which would create more problems, and ultimately grossly underfunded Sanctuaries would suffer further.

Some members pointed out that already there was a proposal by the Planning Commission to merge the three centrally funded schemes, viz, Project Tiger, Project Elephant and Integrated Development of Wildlife Habitats, and that any withholding of funds at this stage, would not be advisable.

Speaking in this context, Ms. Prena Bindra informed that members of the NBWL had, sent a letter apposing such a move since it would be a very retrograde step and would adversely impact efforts to conserve wildlife and nature, and the national animal in particular. Secretary (E&F) informed that the proposal had since been shelved.

The Chief Wildlife Warden of Maharashtra, said that sanctuaries which were the last priority of the State would suffer, if the already meagre funding available to them from MoEF was further reduced.

Shri Kishore Rithe suggested that MoEF should prescribe a timeframe for the States to train the requisite staff in the wildlife management, failing which the funding support from the Ministry for wildlife management should be discontinued.





Dr Ranjitsing further suggested that we may strongly communicate to every State that at least 50% of their wildlife staff should be trained or have specialization in the wildlife background within the next 3 years.

Dr. A.J.T. Johnsingh mentioned that the funding to the WII had gone down drastically, and there was a need to enhance the funding to WII to cater to the need for training of officials on wildlife issues.

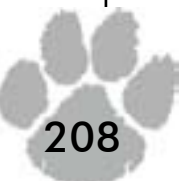
Shri Biswajit Mohanty suggested for amending the CSS itself by making training of wildlife staff as one of the conditions for the States being eligible to seek central funds for wildlife managements from MoEF.

The DGF&SS mentioned that gross generalizations should be avoided since there were several States that make serious efforts to train their wildlife staff but many times the problem actually was shortage of money. He also opined that we should look at the performance, inclination and interest of individuals rather than insist only on posting of wildlife trained personnel in wildlife areas. In many cases, non-trained personnel perform better than wildlife trained personnel. However, we could encourage that trained officers should be posted in wildlife areas.

The Members Secretary accepted that fund shortage for WII was an issue, but also informed that MoEF had agreed to give an additional amount of Rs. 2 crores in the current year (2011-12) to WII.

Thereafter, the Chairperson while agreeing to the suggestions of the official and non-official members added that she would start by making serious communications to the State Chief Ministers to enhance the staff strength of wildlife wing/department, and to train them in wildlife management and conservation within next 3 years. She suggested that there can be a mechanism by which it could be monitored also. A time limit of 2 to 3 years could be given to the State Governments for compliance.

The Standing Committee unanimously agreed to the suggestion of the Chairperson.





Guidelines for Sanctioning Proposals on Laying of Underground Drinking water Pipelines and Optical Fire Cables Inside PA


(46th Meeting of NBWL dated 08/12/2017)

The IGF(WL) mentioned that in view of decision taken in the 45th meeting as mentioned above, there is a need to issue guidelines in this regard. The guidelines should be in consonance with the guidelines issued by the Ministry under Forest (Conservation) Act, 1980. Accordingly, following guidelines for sanctioning proposals on laying of underground drinking water pipelines and optical fiber cables inside Protected Areas are proposed:

- (1) The size of the trench will not exceed more than 2.0 m depth and 1.0 m width;
- (2) The user agency agrees to make good the land after use/ maintenance;
- (3) The user agency agrees to make good any loss to forest / environment;
- (4) The user agency seeks permission from the State Forest Department for carrying out any maintenance;
- (5) The diameter of drinking water pipeline will not exceed 4 inches in diameter. The operational length of trench (for laying optical fiber cables or drinking water pipeline) will not exceed 500 m at any time;
- (6) No civil structures will be built with the laying of optical fiber cables / drinking water pipeline;
- (7) The user agency will have to submit NOC from the agency which holds the right to use the Right of Way;
- (8) The State Government / Union Territories should ensure that the trench dug for underground laying of drinking water pipeline and optical fiber cables are duly filled up and compacted so that these do not become source of the constant soil erosion;
- (9) This approval shall be valid for five years till 31.12.2022;
- (10) The State Government / Union Territories will submit a monthly progress report on the extent of the forestland diverted for such purpose to the Ministry as well as the concerned Regional Offices.

After discussions the Standing Committee decided to accept the guidelines for delegating powers to the State Board for Wildlife for sanctioning proposals on laying of underground drinking water pipelines and optical fiber cables (OFC) along the roads inside National Parks,

Wildlife Sanctuaries and Tiger Reserves. Further, it requested the Ministry to issue an advisory on this.



47.3A4. Wildlife Passage Plan with Proposal of Linear Projects (Roads, Canal and Railways)

(47th meeting of NBWL dt 25.01.2018)

Dr. H S Singh, Member, NBWL while briefing the Standing Committee about this agenda mentioned that high speed and multiple lane roads, wide canals and railways lines not only cause deaths of animals however they also block wildlife movement completely thereby fragmenting the habitat. The nature of the linear projects is changing fast, leaving no scope of movement of wildlife from one side to other. In some cases, it is impossible for wild animals and reptiles to cross high speed multiple lane roads or wide canals. Practically, such linear projects fragment habitats totally, blocking genetic flow of the fauna in the nature. Over a period, such projects cause loss or extinction of the wildlife. Any linear proposal for approval by the Standing Committee of NBWL should invariably contain a master plan for passage of the wildlife. Although WII, Dehradun has prepared the guidelines on mitigation measures for linear infrastructure passing through Protected Areas and some of the proposals mention passage plan however these are not adequate or perfect. The project proponent always tries to avoid such components in the plan to minimize expenditure, although the cost of the passage plan is small fraction of the total cost of the project. The size of wildlife passage should be adequate so that wild animal cross the site without fear and hesitation. The society still does not accord importance to wildlife which is against the principle of sustainable development.

In the background of this fact, every such proposal should contain one page passage plan with location of wildlife passages on map, duly examined on the ground and approved by the State Chief Wildlife Warden. The Director, Wildlife Institute of India intimated that the guidelines named “*Eco-friendly Measures to Mitigate Impacts on Linear Infrastructures on Wildlife*” provides required modifications in the infrastructure designs to mitigate the impact of the infrastructure on the wildlife.

After discussions, the Standing Committee recommended that in future when user agencies involved in linear infrastructure development should take in to consideration the advisory made in the guidelines of the Wildlife Institute of India while designing the linear infrastructures inside the Protected Areas, notified ESZ area around PAs. Hence linear infrastructure proposals would be accompanied by an animal passage plan, if required, by the project proponent on the basis of these Wildlife Institute of India guidelines and in consultation with the State Chief Wildlife Warden.



भारत सरकार
Government of India
पर्यावरण एवं वन मंत्रालय
Ministry of Environment and Forests
वन्यजीव अपराधनियंत्रण ब्यूरो
Wildlife Crime Control Bureau

No. 10-27/WCCB/2012/3874

Dated: 9th August 2012

ADVISORY - 01 OF 2012

1. It has been observed that whenever wildlife or wildlife articles are seized, the enforcement agencies tend to assign monetary value to such articles. Trade in wildlife articles is prohibited and there is no basis for such monetary valuation.
2. India wildlife is under stress from illegal trade. Illegal trade in wildlife and wildlife articles is demand driven and primarily for profits. Some of the habitual wildlife criminals during their interrogations revealed that they switched over to illegal wildlife trade from other criminalities such as narcotics, due to lower risk and perceived profits. Some first time wildlife criminals had resorted to such offences after reading about high values of wildlife articles in the newspapers.
3. Quotation of international market prices for wildlife articles, in no way adds value to the enforcement efforts. On the contrary, the practice may actually promote poaching and illegal wildlife trade.
4. The matter may therefore be brought to the notice of the field formations and appropriate instructions may be issued to stop this practice. If there is a system of rewards, citations etc., based on value of seized contraband, the same may be amended for wildlife articles. Conspicuous contribution towards prevention/ apprehension/ investigation/ prosecution work related to wildlife crime; and busting of organized wildlife criminal networks could be the basis for such rewards. Press briefings on wildlife crime may highlight endangered status of the species involved, its role in ecology and adverse impact of its loss on environment.

Sd/-
(Shyam Bhagat Negi)
Additional Director/GP
Ph: 26182484

Copy forwarded for information and necessary action to:

1. Directors General of Police of all States.
2. Chief Wildlife Wardens of all States.
3. Director General, Assam Rifles/BSF/CISF/ITBP/SSB, Ministry of Home Affairs, New Delhi.
4. Director General, Railway Protection Force, Ministry of Railways, Government of India, New Delhi.
5. Chairman, Central Board of Customs & Excise, Ministry of Finance, New Delhi.
6. DG, Department of Revenue Intelligence (DRI), Ministry of Finance, New Delhi.
7. RDDs WCCB – NR, WR, CR, SR and ER.





F. No. 1-14/2011-NTCA (Part I)
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

B-1 Wing, 7th Floor,
Pt. Deendayal 'Antyodaya Bhawan',
CGO Complex, Lodhi Road,
New Delhi-110003
E-mail: aig3-ntca@nic.in
EPABX No. +91 11 2436 7837-42
Fax: +91 11 2436 7836

Dated the 7th September, 2015

To,
The Chief Wildlife Warden(s),
All Tiger Range States.

Sub: Calculation of tourism carrying capacity-clarification thereof.

Ref: 1. This Authority letter no. PS(DIR)-PT 2003 dated 09.04.2003

2. NTCA Technical document no. NTCA/01/07

3. The Gazette of India, Extraordinary, Part III, Section 4 dated 15th October 2012

Sir,


Reference is invited to the documents cited above. In this context, I am directed to say that the carrying capacity model circulated by the National Tiger Conservation Authority vide documents referred above is based on a six seater Maruti Gypsy.

However, it has come to the notice of this Authority, that carrying capacity calculated vide the above model is being applied to other vehicles of higher seating capacity also (e.g. Canter). It is but understood, that a larger vehicle with more seating shall cause greater impact on the core/CTH in terms of erosion, air and noise pollution, along with higher space requirements vis-à-vis distance between vehicles.

It is therefore, advised to restrict the number of vehicles based on their seating capacity vis-à-vis a Maruti Gypsy as per the following working example;

1. Vehicle X seating capacity=18. This shall be equivalent to 3 Gypsy's
2. Vehicle Y seating capacity=12. This shall be equivalent to 2 Gypsy's





For e.g., if the carrying capacity of a tiger reserve is calculated as 36 vehicles, then 36 Gypsy's 12 Vehicles X's and 18 Vehicles Y's are permitted.

You are requested to ensure compliance of the above to ensure minimal disturbance to the core/ CTH of tiger reserves within your jurisdiction.

Yours faithfully,

Sd/-

(Vaibhav C. Mathur)

Assistant Inspector General (NTCA)

Copy to:

1. The principal Chief Conservator of Forests and Head of Forest Force, All Tiger Range States
2. The Principal Secretary, Forests, All Tiger Range States
3. IGs (NTCA), Regional Office, Bengaluru, Guwahati and Nagpur.



F. No. 13-57/2013-PC
Government of India
Ministry of Environment, Forest & Climate Change
(Plan Coordination Division)

Vayu-604, Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi-110003

4th November, 2015

OFFICE MEMORANDUM

Subject: Funding Pattern of Centrally Sponsored Schemes-regarding

The undersigned is directed to forward a copy of D.O. Letter No. 32/PSO/FS/2015 dated 28th October, 2015 received from Finance Secretary, M/o Finance addressed to Secretary (EF&CC) on the above mentioned subject for information and necessary compliance.

Encl: As above

(Shoyab Ahmed Kalal)
Assistant Director
Email: s.kalal@nic.in
Tele-fax: 24695420

To:

1. All Divisional Heads (Plan Scheme)


Funding Pattern of Centrally Sponsored Scheme
(As per D.O. Letter No. 32/PSO/FS/2015 dated 28th October 2015 received from Finance Secretary, M/o Finance)

Para 2.

The funding of the following *core schemes*; which form part of the National Development Agenda, will be shared 60:40 between the Centre and the States (90:10 for the 8 North-Eastern and 3 Himalayan States):

(xiv) Forestry and Wildlife (including Green India Mission, Project Tiger and Integrated Development of Wildlife Habitats)





Further, Department of Expenditure Plan Finance-II Division, Ministry of Finance, Government of India vide its Office Memorandum No. 66(01)/PF-II/2015 (Pt.I) dated 3.12.2015 has further clarified the sharing pattern as below;

- (ii) For the flagship programme 'Project Tiger, the current funding pattern i.e. 50:50 will continue for recurring items and for non-recurring items where the sharing pattern is 100%, the revised funding pattern 60:40 will applicable.



No. 1501/11/2007-PT (Part)
Government of India
Ministry of Environment & Forests
National Tiger Conservation Authority

Annexe — V, Bikaner House,
Shahjahan Road, New Delhi — 110011
Tel. No. 23387691
Telefax: 23074272
E-mail: hsnegi@rediffmail.com

Dated the 15th February, 2012

To,
The Chief Wildlife Warden(s)
All Tiger Range States

Sub: Management of buffer zones under unified control — reg.

Ref: 1. Letter No. 1501/11/2007-PT (Part) dated 16/11/2007.
2. Letter No. 9-5/2006-NTCA dated 08/09/2008.

Sir,

Your kind attention is invited to the references cited above. As you are aware, Section 38V (1) and (4) (ii) of the Wildlife (Protection) Act, 1972 explains and provides for the notification and establishment of buffer / peripheral areas of Tiger Reserves. As per provisions contained in the above act buffer / peripheral area is where *a lesser degree of habitat protection is required to ensure the integrity of the critical tiger habitat with adequate dispersal for tiger species, and which aim at promoting co-existing between wildlife and human activity with due recognition of the livelihood, developmental, social and cultural rights of the local people.*

Since, the buffer / peripheral area of a Tiger Reserve has inclusive agenda of man and wildlife, therefore, the management of buffer/ peripheral area needs to complement the management inputs provided in the core area. This can only be achieved when the management of the buffer area is kept under the unified control of the Tiger Reserve Management. In this context, I am directed to request you for taking initiative to place the notified buffer areas under the unified control of the Field Director concerned. It is pertinent to point out here that unless the buffer/peripheral area is not brought under the unified control of the Field Director, funding support under the Centrally Sponsored Scheme of Project Tiger (CSS-PT) for management of the said area would not be possible from this end.

Once the notified buffer / peripheral areas are handed over to the Tiger Reserve Management, a composite Tiger Conservation Plan has to be prepared as per the guidelines and technical document





- NTCA/01/07 issued by the National Tiger Conservation Authority (NTCA). The funding support from Project Tiger for the eco-development of local people living in the buffer / peripheral areas would be possible, if the same is reflected in the APO on the basis of micro plans of village level institutions (eco-development committees). The TCPs should also ensure reciprocal commitment from such village level committees so that inputs provided in the buffer / peripheral villages would become helpful in achieving the objectives of managing these areas for the welfare of local people and tiger conservation.

In view of the above, you are once again requested to pursue the matter with the concerned authorities in your State so that the notified buffer/peripheral areas are brought under the unified control of the concerned Field Director.

Yours faithfully,

(H.S. Negi)

Deputy Inspector General (NTCA)

Copy to:

1. The Principal Chief Conservator of Forests, all Tiger Range States for information and necessary action.
2. Additional Chief Secretary / Principal Secretary (Forests), all Tiger Range States for information and necessary action.





F. No.15-6/2014-PT Vol. III)
Government of India
Ministry of Environment, Forest and Climate Change
(Project Tiger Division)

B-1 Wing, 7th Floor,
Pt. Deendayal “Antyodaya” Bhavan,
CGO Complex, Lodhi Road,
New Delhi-110003,
Tel.(EPABX)+91 11 24367837-42
Fax No. +91 11 24367836
E-mail: dig2-ntca@nic.in

Dated the 26 December 2018

To,
The Chief Wildlife Warden (s)
(All Tiger Range States)

Sub: Check List for Annual Plan of Operations under Centrally Sponsored Scheme of Project Tiger.

Sir,

I am directed to forward herewith a copy of the Check List for Annual Plan of Operation under Centrally Sponsored Scheme of Project Tiger. It is requested that this Check List may please be circulated amongst all Tiger Reserves under your jurisdiction. Concerned Field Directors of the Tiger Reserves under your jurisdiction may please be advised to strictly adhere to the time schedule for each Activity mentioned in the Check List for submission of APOs and Revalidation cases to this Authority's office.

Instructions contained in the Check List for each activity may please scrupulously be followed by all Tiger Reserve of your jurisdiction. Requisite papers/documents/ information called for may please be sent alongwith submission of the APOs.

Data of tigers/cubs as per phase IV estimation and number of wildlife crime offences & the action taken in this regard is also needed to be forwarded along with APOs.

Yours Faithfully,

Sd/-

(Nishant Verma)

Deputy Inspector General (Project Tiger)





Enclosures: As above

Copy to:

1. Field Director(s) of all Tiger Reserves.
2. IG, RO, NTCA, Guwahati/AIG (s), RO, NTCA Bengaluru & Nagpur.
3. PS to ADG (PT) & MS (NTCA)



FORM GFR 12-C
(See Rule 239 of GFR-2017)
FORM OF UTILIZATION CERTIFICATES

S.No.	Letter No. and date	Amount (Rs.)	
			Certified that out of Rs. _____ of grants sanctioned during the year _____ in favour of _____ under this Ministry/Department Letter No. given in the margin and Rs. _____ on account of unspent balance of the previous year, a sum of Rs. _____ has been utilized for the purpose of _____ for which it was sanctioned and that the balance of Rs. _____ remaining unutilized at the end of the year of the year has been surrendered to Government (Vide No. _____ dated _____) will be adjusted towards the grants payable during the next year _____.

2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled/are being fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of Checks exercised

- 1.
- 2.
- 3.

Signature _____

Designation _____

Date _____



**FORMAT OF ANNUAL PLAN OF OPERATION
FOR SEEKING CENTRAL ASSISTANCE UNDER CENTRALLY SPONSORED SCHEME-PROJECT TIGER**

(Rs. in lakhs)

S.No.	Item	Para No. of CSS-PT Guidelines/Para of TCP	Previous Year Details			Current year Proposal			Justification/Remarks	
			Location/ GPS coordinates	Physical Target	Achievement	Financial Target	Location/ GPS coordinates	Physical Target		Financial Target
NON-RECURRING (NR)										
	TOTAL									
	TOTAL									
RECURRING (R)										
	TOTAL									
	G. TOTAL (NR + R)									

Certificate: It is certified that

- (i) No deviation has been done except as approved by the NTCA.
- (ii) Items proposed are as per the CSS-PT guidelines.

Counter Signed

Signature of the Field Director
Name of the Tiger Reserve
Chief Wildlife Warden





Check list for Annual Plan of Operation under Centrally Sponsored Scheme of Project Tiger

<i>S.No.</i>	<i>Activity</i>	<i>Remarks</i>
(1)	(2)	(3)
1.	Submission of APO in the prescribed format	Format enclosed. To be submitted in the on-line APO Application. The cut-off date for submission of APOs is 28th February.
2.	Non-Recurring (NR) & Recurring ® Items to be specified separately.	
3.	Non-Recurring (NR) Core Areas Items to be specified first with sub-total thereafter of Buffer Areas with sub-total and finally total of both Core & Buffer is to be give.	
4.	Recurring ® Activities, Core Areas first thereafter of Buffer Areas with sub-total of each and finally total of both Core & Buffer is to be given.	
5.	Figures of all activities should be in Lakhs of Rupees and in the last after decimal rounded upto only two digits.	
6.	Para No. of TCP is to be shown separately.	
7.	Para No. of CSS (PT) guidelines is also to be down separately.	
8.	Previous Year details need to be given as under: (i) Location/GPS Coordinates/KML/KMZ files (ii) Physical Target (iii) Physical Achievement (iv) Financial Target (v) Financial Achievement	
9.	Current Year Proposal details are to be given as under: (i) Location/GPS Coordinates/KML/KMZ files (ii) Physical Target (iii) Financial Target	
10.	Justification details for each activity.	
11.	For Project Allowance, information as under is needed to be sent: (i) Sanctioned Strength of eligible officials with admissible rates in each category. (ii) Officials in position (iii) No. of vacancies.	
12.	For RAtion Allowance, same information as required in Sl. No. 11 is needed to be furnished.	
13.	For requirement of vehicles, Condemnation certificate is to be enclosed.	
14.	Revalidation case of the previous financial year (if any) is to be submitted.	To be submitted by 15th April.
15.	The amount revalidated of the previous financial year should be utilized.	To be utilized by 31st of May.





16.	Utilization certificate along with physical/financial progress report and KML/KMZ files of the works done along with geo tagged photos during previous financial year (in separate files of ≤ 10 MB. Figures mentioned in the UC should tally with the figures mentioned in the sanctioned APO and figures of Physical/Financial Progress Reports should tally with the figures of UC. State and Central Share is to be shown separately in the physical & Financial Progress Reports.	UC & Physical/financial progress report proforma enclosed. UC should be signed by the concerned Filed Director and countersigned by the CWLW. These are to be submitted by 30th April, 2019.
17.	Compliance Status of Tripartite MoU.	Should be submitted along with APO as it is its integral part.





भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 7-8/2008-NTCA (Part-II)

New Delhi, the November 19, 2019

OFFICE MEMORANDUM

Sub: Constitution of a National Committee of High Altitude Tigers in India – reg.

1. With the approval of the competent authority, a National Committee of High Altitude Tigers in India hereby constituted as under:
 1. Additional Director General of Forests (Project Tiger)
& member Secretary (NTCA) - Chairman
 2. Inspector General of Forests (NTCA), New Delhi - Member
 3. Chief Wildlife Warden (s), Arunachal Pradesh, Sikkim,
Uttarakhand & West Bengal - Member
 4. Director, Wildlife Institute of India, Dehradun - Member
 5. Secretary General, Global Tiger Forum, New Delhi - Member
 6. Deputy Inspector General of Forests (NTCA), New Delhi - Member Convenor
2. The mandate / function of the National Committee would be:
 - a) Approval of the High Altitude Tiger Master Plan / Management Plan at the landscape level.
 - b) Approval of the Annual Plan of Operations for funding and providing technical support for High Altitude Tiger Range States.
 - c) Facilitation / supervision of the implementation of Master Plan / Management Plan, field surveys, monitoring etc. for strengthening tiger conservation in high altitudes.

This issues with the approval of the competent Authority.

Sd/-

(Nishant Verma)

Deputy Inspector General of Forests (NTCA)

Email: dig2-ntca@nic.in

Tel. (EPABX): + 91 11 24367837-39

FAX: +91 11 24367836





F. No. 7-8/2008-NTCA (Part-II)

Distribution:

1. PS to MEF&CC, Ministry of Environment, Forest and Climate Change
2. PS to Secretary, EF&CC
3. PS to DGF&SS, MoEF&CC
4. All members of the committee
5. All officers of NTCA.



F. No. 11-2/2013-NTCA
Government of India
Ministry of Environment, Forests & Climate Change
National Tiger Conservation Authority

Annexe No. 5, Bikaner House,
Shahjahan Road, New Delhi-110011.
Telefax: 011-2338 9883
E-mail: jdntca@gmail.com

Dated the 19th September, 2014

OFFICE MEMORANDUM

Sub: Implementation of Conservation Assured Tiger Standards (CA/TS).

CA/TS can be used as an over arching tool providing a standardized framework for assessing and measuring the overall impact of the work being carried out in the existing tiger range across different landscapes. It will also provide an opportunity for the landscapes/Protected Areas, by enabling them with a common mechanism, to evaluate their management effectiveness through a scientific comprehensive reference point and also fix minimum standards for tiger conservation that these areas will need to aspire in order to fulfill their national and international commitments.

The implementation of CA/TS may be considered in areas other than designated Tiger Reserves, as a voluntary process by the tiger range States.

A National Committee for CA/TS implementation is constituted as under:

- i. ADG (Project Tiger) & Member Secretary, NTCA: Chairman
- ii. Director, Wildlife Institute of India, Dehradun: Member
- iii. IGF (NTCA): Member
- iv. IGF (Wildlife): Member
- v. CEO WWF India: Member
- vi. Country Head, IUCN: Member
- vii. Chief Wildlife Warden of respective State: Member
- viii. DIG (NTCA): Member Convener

4. The terms & references of the Committee are proposed as under:

- i. To function as the 'Focal Agency' for engaging with any organization for implementation of CA/TS.
- ii. Ratification of all applications from areas that register with CA/TS.
- iii. Approval of the areas that have registered and meet the CA/TS requirements.





- iv. To provide technical input/ facilitate for assessment and accreditation
- v. Liaison with the CA/TS Executive Committee to ensure continuity of CA/TS globally and alignment with the IUCN Green List.
- vi. Liaison with the CA/TS technical support groups and tiger conservation area managers to ensure that the self assessment process is comprehensive and complete.
- vii. Award provisional approval (to be confirmed by the Executive Committee)
- viii. Organize independent review if the CA/TS process.
- ix. The quorum will be the presence of at least 4 members in a meeting.

Sd/-

(S.P. Yadav)

Deputy Inspector General (NTCA)

Copy to:

1. PS to MEF&CC
2. PPS to Secretary, E,F&CC
3. PPS to DGF&SS
4. All Members of the Committee
5. All CWLWs, Tiger Range States
6. NTCA Regional Office, Guwahati/Nagpur/Bengaluru
7. Mr. Mike Baltzer, WWF Asia, Malaysia







PART B:

IMPORTANT COURT ORDERS RELATED TO TIGER CONSERVATION



NATIONAL TIGER CONSERVATION AUTHORITY

Ministry of Environment, Forest and Climate, Change Government of India



IMPORTANT COURT ORDERS RELATED TO TIGER CONSERVATION

1. Guidelines issued by NTCA should be followed in its letter and spirit:

The learned Special Government Pleader has brought on record the standard operating procedure to deal with the emergency arising due to straying of Tigers in human dominated landscapes prepared by the Ministry of Environment and Forests, Government of India, National Tiger Conservation Authority. In paragraph 8 suggested field actions to deal with strayed wild carnivores (tiger/leopard) had been given. Paragraph 9 contains preventive measures to be followed. It is useful to refer to paragraph 8 where the suggested field actions have been given.

The National Tiger Conservation Authority which having issued details as quoted above, we are of the view that the Principal Chief Conservator of Forests has to ensure that its officials follow such guidelines in its letter and spirit

(Green Cross World Environment Protection Action Group Vs. Union of India and others, in Kerala High Court, WP (C) No. 29880 of 2012 (S) decided on 12.06.2015)

2. Various options which may become available in different contingencies are therefore only indicated in SOP:

In view of these arguments, it will be appropriate to consider the stipulations in SOP. At page no. 73 of PIL at Annexure-II, guidelines for declaring big cats as 'man eaters' are produced. Suggested steps on loss of human life due to tiger/leopard form part of this Annexure II. It requires constitution of team for technical guidance and monitoring on day to day basis. The team is to consist of a nominee of the Chief Wildlife Warden, a nominee of the National Tiger Conservation Authority, a veterinarian, local NGO representative, a representative of the local Panchayat and Field Director/Protected Area Manager/ DFO Incharge as Chairman.

The material looked into is not in dispute. Applicant/petitioners have made no effort to refute it. Proceedings of committee which has appreciated that material are also not questioned. Bonafides of the Chief Wildlife Warden are also not challenged. Only the contention is other steps/measures stipulated in SOP ought to have been considered.

SOP to which our attention has been invited only suggests field actions and measures to be adopted. Counsel for respondents have rightly pointed out to us that in suggested steps to be adopted after loss of human life, various possibilities have been only enumerated and the words "besides" and "or" have been used. Various options which may become available in different contingencies are therefore only indicated in SOP. It is an "inclusive" nature of code and cannot be seen as "exhaustive" one. These measures, therefore, show how in the presence of a problem tiger at the sight can be ascertained.

We are satisfied that all such material or evidence may not always be available at a single spot. It is, therefore, the honest and *bona fide* application of mind and subjective satisfaction of the Chief Wildlife Warden which needs to be appreciated.

(Dr. Jerryl Avinash Banait Vs. State of Maharashtra through its Principal Secretary, Department of Forest and ors. Civil Application (CAO) No. 1624 of 2018 in Public Interest Litigation No. 69 of 2017 in High Court Judicature at Bombay, Nagpur Bench, decided on 6.09.2018)

3. All kind of mining and related activities along the aforesaid Kaziranga National Park area 7 and in the entire catchment area of rivers/streams and rivulets originating in Karbi Anglong Hill ranges and flowing into Kaziranga National Park, including Tiger Reserve are restrained;

Considered the Report No.6/2019 with respect to illegal mining in Kaziranga National Park, Assam (for short 'KNP'). We have asked for the response of the State of Assam. Learned counsel appearing for the State of Assam has prayed for three weeks' time to respond to the Report. Response be filed on or before 03.05.2019.

In the meanwhile, as certain matters are urgent as apparent from the Report, following aspects are mentioned in the Report No.6/2019:-

“iv. ban forthwith all types of mining and related activities along the southern boundary of the KNP and in the entire catchment area of the rivers/streams and rivulets originating in Karbi Anglong Hill ranges and flowing into Kaziranga National Park;

vi. not permit any new construction including on private lands which form part of the 9 identified animal corridors;

B. Director General of Police, Assam may be directed to

(a) ensure that no mining activity takes place in the Catchment area of the stream/rivers originating in Karbi Anglong Hill ranges and flowing to Kaziranga National Park;

(b) make the Superintendent of Police of Karbi Anglong Hills District, Nagaon District and Golaghat District responsible to ensure that no transportation of illegally mined material from Karbi Anglong Hills takes place;”

In view of the aforesaid, we order that all kind of mining and related activities along the aforesaid Kaziranga National Park area and in the entire catchment area of rivers/streams and rivulets originating in Karbi Anglong Hill ranges and flowing into Kaziranga National Park, including Tiger Reserve are restrained. No new construction shall be permitted on private lands which form part of the nine identified animal corridors. The Director General of Police, Assam and the concerned Superintendent of Police shall also ensure that no illegal mining takes place in the aforesaid area and no transportation of illegally mined material take place from Karbi Anglong Hills. Issue notice to Karbi Anglong Autonomous Council, Department of Environment & Forests, KAAC: Secretariat, Diphu-782460, Through its Chief Executive Officer.

Necessary steps be taken by the Registry within three days.

(T.N. GODAVARMAN THIRUMULPAD Vs. UNION OF INDIA AND ORS. & ORS., INTERLOCUTORY APPLICATION NO. 42944/2019 In Writ Petition(s)(Civil) No(s). 202/1995)

4. Tourism activities will be strictly in accordance with the Guidelines for Tourism in and around Tiger Reserves notified in Part B of the aforesaid Notification dated 15th October 2012:

Heard learned Counsel for the parties. On 24th July 2012, this Court passed an order that till the final directions are issued by this Court with reference to the Guidelines submitted by the National Tiger Conservation Authority of India, core zone or the core areas in the Tiger Reserved Areas will not be used for tourism.



The National Tiger Conservation Authority [for short 'the Authority'] has by Notification dated 15th October, 2012 notified the Comprehensive Guidelines for Tiger Conservation and Tourism. Part B of these Guidelines are titled: "**Guidelines for Tourism in and around Tiger Reserves**". The Guidelines for Tourism in and around the Tiger Reserves have been framed by virtue of the powers of the Authority under Section 38(O)(1)(c) of the Wild Life Protection Act, 1972 [for short 'the Act'] which empowers the Authority to lay down normative standards for tourism activities in buffer and core area of Tiger Reserves.

Now that the Guidelines for Tourism in and around the Tiger Reserves have been notified by the Authority, we modify the aforesaid interim order dated 24th July, 2012 and direct that henceforth tourism activities will be strictly in accordance with the Guidelines for Tourism in and around Tiger Reserves notified in Part B of the aforesaid Notification dated 15th October, 2012. All the concerned authorities will ensure that the requirements in the aforesaid Guidelines for Tourism in and around the Tiger Reserves are complied with before tourism activities recommence.

We make it clear that we have not declared the notification dated 15th October 2012 either intra vires or ultra vires and if any party is aggrieved by the Notification dated 15th October 2012 of the Authority it will be open to the aggrieved party to challenge the same before appropriate forum.

It has been brought to our notice by the learned Additional Solicitor General that under sub section (3) of 38(V) of the Act, the State government is required to prepare a Tiger Conservation Plan. We direct that the respective State Governments will prepare within six month from today and submit the same to the National Tiger Authority for approval in accordance with section 38(O)(1)(a) of the Act.

While passing this order modifying the earlier interim order, we have taken note of the submission of the learned Additional Solicitor General that tourism activities may recommence strictly in accordance with Guidelines for the Tourism in Part B as indicated above. All the applications for vacating the modification of interim order dated 24th July, 2012 stand disposed of.

(Ajay Dubey Vs. National Tiger Conservation Auth. And Ors, SLP (Civil) No(s). 21339/2011, LAWS(SC)-2012-10-104, Decided on October 16,2012.)

5. No road development activities without statutory approvals under section 38 of the Wildlife (Protection) Act, 1972;

The State of Uttarakhand is directed to withdraw the orders dated 07.12.2018 and 28.12.2018 forthwith and the orders shall not be acted upon. Similarly, it is also ordered that the State Government shall obtain the statutory approvals, required under Section 38 of the Wild Life (Protection) Act, 1972 before undertaking road development activities within Rajaji Tiger Reserves. No road activity shall be undertaken without obtaining statutory approvals under Section 38 of the Wild Life (Protection) Act, 1972. It is open to the State of Uttarakhand to approach the Ministry of Environment and Forest in accordance with law. I.A. No.90182/2019 in W.P.(C) No.202/1995 is, accordingly, disposed of. Thus, no further orders are required in Report Nos.16/2019 and 21/2019, which are also disposed of.

(In I.A. No.90182/2019 in W.P.(C) No.202/1995 decided by Hon'ble Supreme Court on 29.07.2019)





6. Tiger Conservation Plans to be prepared by respective state governments:

It has been brought to our notice by the learned Additional Solicitor General that under sub section (3) of 38(V) of the Act, the State government is required to prepare a Tiger Conservation Plan. We direct that the respective State Governments will prepare within six month from today and submit the same to the National Tiger Authority for approval in accordance with section 38(O)(1)(a) of the Act.

(Ajay Dubey Vs. National Tiger Conservation Auth. And Ors, SLP (Civil) No(s). 21339/2011, LAWS(SC)-2012-10-104, Decided on October 16,2012)

7. Guidelines for Control and Maintenance of Forest Rest Houses (FRH) / Inspection Bungalows (IB) located inside the Forests:

An application was filed in Hon'ble Supreme Court to effect that the Forest Rest Houses/ Inspection Bungalows located inside the Forests are being misused for a variety of activities. After due consultation between the Union of India, Central Empowered Committee (CEC) and the applicant, guidelines have been framed by the CEC for control and maintenance of Forest Rest Houses / Inspection Bungalows located inside the Forests. These guidelines are acceptable to all concerned including the Union of India. The guidelines are as follows;

- (A) Forest officers are required to camp inside the forests where no alternate accommodation is available. Forest Rest Houses / Inspection Bungalows are facilities created for camping of forest officers primarily for discharge of their duties connected with conservation, protection and management of forests and wildlife. These Rest Houses have very limited number of rooms. Therefore the control of Forest Rest Houses, including their reservation, shall under all circumstances remain with the Forest Department.
- (B) The District Administration may, in special circumstances and for a limited period be granted priority reservation of rooms in the FRH/ IB's for specific purposes. At no circumstance the control of the FRH/IB's located inside the forests be taken over by the District Administration / Government.
- (C) Forest Rest Houses / Inspection Bungalows located within the forest area including the Protected Areas shall not be transferred to private and commercial entities in the name of public-private partnership or by whatever name such an arrangement is called, for promotion of any form of tourism including Ecotourism.
- (D) The Forest Department should make every effort to retain the basic plan and elevation of old FRHs/IB's many of which are heritage buildings, while making improvement / addition to these buildings.

We expect these guidelines to prevent the misuse of Forest Rest Houses / Inspection Bungalows, particularly since they have the approval of the Union of India as well. Accordingly, we accept the guidelines and make them an order of this Court. The Ministry of Environment, Forests and Climate Change is directed to circulate a copy of this order to the Principal Chief Conservator of Forests of all the States and ensure that they abide by these guidelines. The applications stand disposed of in view of the above.

(I.A. No. 2354-2355 in W.P. (Civil) No. 202/1995 T.N. Godavarman Thirumulpad Vs. Union of India and Ors. decided on 05- 07-2018)




8. Any disturbance in this connectivity shall isolate wildlife and tiger populations thereby resulting in inbreeding which shall manifest in unfavourable survival characters in these populations;

1. This application has been filed primarily against the rejection of the application for grant of Environmental Clearance (EC) for a Laterite Iron Ore Mine at village Manoli, Taluka Shahuwadi, District Maharashtra on the ground that the mining block falls in the Tiger Corridor linking Shayadri Tiger Reserve (Chandoli National Park).
2. By order dated 17.11.2017, direction was issued upon the Ministry of Environment, Forest and Climate Change (MoEF&CC) to place on record its contention including the explanation as regards the records placed before us and the impact on Tiger Corridor in the context of sustainable development. Further, a final map of the Tiger Corridor of the sanctuary, particularly, the portion passing through village Manoli depicting clearly the forest land, protected forest, un-class forest, areas under Maharashtra Private Forest Act, 1975 (Decided and undecided), private land and revenue land along with the location of the mine therein to be placed before us.
3. In terms of the aforesaid direction, MoEF&CC has filed an affidavit which is taken on record. The affidavit reveals that the Applicant in the Original Application had been heard and by a detailed order had rejected his application. The relevant portion of the affidavit reads as follows:
 “Keeping in view the landscape approach to conservation India, the NTCA has delineated such tiger meta-populations across the country which inter-alia includes the Sahyadri Tiger Reserve and its connectivity to the Radhanagari Wildlife Sanctuary. Any disturbance in this connectivity shall isolate wildlife and tiger populations thereby resulting in inbreeding which shall manifest in unfavourable survival characters in these populations.”
4. The requisite map depicting the facts and circumstance set out in the order has been prepared and filed with the affidavit.
5. Upon consideration of the facts and circumstance stated above, we find no merit in the application and is accordingly dismissed.
6. No order as to cost.

(Vasant Vatkar Vs. Union of India & Ors, Original Application No. 20/2015 (WZ) before The National Green Tribunal, Principal Bench, New Delhi decided on 18.07.2019)

9. Permission to change in the legal status of the forest land approved under the F.C. Act for relocation of villages:

CEC has filed a report regarding the permission for change in the legal status of the forest land approved under the F.C. Act by the MoEF for the rehabilitation of villagers of the three villages Kosla, Botezari and Palasgaon (Single) in Andhari Wildlife Sanctuary in District Chandrapur, Maharashtra. It was also slaleo therein that the relocation of these villages is required because the boundary of the national park is to be extended and therefore, modification in the order passed by this court on 13.11.2000 in Writ Petition (C) No. 337/1995 is sought for. We make it clear that despite the order passed by this court on 13.11.2000, the MoEF is permitted to change in the legal status of the forest land approved



under the F.C. Act for relocation of these villages for the purpose of extending the boundary and for rehabilitation of the tribal people residing there.

Application is disposed of accordingly.

(I.A. No. 1685 in WP(Civil) 202/1995T.N. Godavarman Thirumulpad Vs. Union of India and Ors decided by Hon'ble Supreme Court dated 21.11.2008)

10. Changing status of forestland to revenue land in case of voluntary relocation of villages;

Hon'ble Supreme Court, based on recommendation made in the CEC report dated 28.09.2018, in which it has extended the scope of its order dt. 21.11.2008 to all such cases of relocation/rehabilitation of the villages from the core/critical Tiger Reserves and core of the Protected Areas (National Park and WL Sanctuaries) to the periphery of Reserved forests/Sanctuaries/ National Park.

I.A. No. 3924 Report No. 50 of 2018 of the CEC dated 26.12.2018 is accepted since, it is not objected by the National Tiger Conservation Authority (NTCA). The application is disposed of.

(I.A. No.3924/2015 in WP(Civil) 202/1995T.N. Godavarman Thirumulpad Vs. Union of India and Ors decided by Hon'ble Supreme Court dated 28.01.2019)

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