STANDARD OPERATING PROCEDURES/ GUIDELINES

(u/s 38 (O) of Wildlife (Protection) Act, 1972)

NOVEMBER, 2019

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE

GOVERNMENT OF INDIA

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राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
NATIONAL TIGER CONSERVATION AUTHORITY
(पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार के अन्तर्गत सांविधिक निकाय)
(Statutory Body under Ministry of Environment, Forest and Climate Change, Govt. of India)

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Standard Operating Procedures (SOPs)

In India, the Project Tiger coverage has increased to 50 tiger reserves, spread over 18 States, covering 72749.02 sq.km which amounts to around 2.21% of country's geographical area. The SOPs (7 in number) have been issued by NTCA from time to time to deal with various matters / processes involved in tiger management to facilitate consistency and uniformity across the country. These SOPs describes various processes to carry out the said task, fixes responsibility and reduces learning / adjustment time for new incumbents for management of tiger reserves and adjoining tiger bearing areas. Also, these ensure effective record maintenance for retrospective as well as prospective use and assistance in technical issues. Now, the SOPs have been revised as per the field inputs for facilitating the field formations in tiger management. The tiger safari guidelines also have been revised in tune with provision of Wildlife (Protection) Act, 1972 and is part of this booklet.

I sincerely believe that this Booklet compilation of SOPs would enable field functionaries to prudently make use of the statutory provisions involved in tiger management issues in Tiger Reserves and at the landscape level.

(Dr. Anup Kumar Nayak)

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STANDARD OPERATING PROCEDURE FOR DEALING WITH TIGER DEATH

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

STANDARD OPERATING PROCEDURE FOR DEALING WITH TIGER DEATH

Issued by National Tiger Conservation Authority vide its Letter No. 15-17/2011-NTCA, Dated 17th December, 2012

1. **Title:** Standard Operating Procedure for Dealing with Tiger Death
2. **Subject:** Tiger death/seizure of body parts
3. **Reference:** Advisories of NTCA/Project Tiger on the Subject
4. **Purpose:** To ensure that the causative factors for tiger death are ascertained and taken to logical conclusion in the interest of tiger conservation.
5. **Short Summary:** This Standard Operating Procedure (SOP) provides the basic, minimum steps which are required to be taken at the field level (tiger reserve or elsewhere) for dealing with incidents of tiger mortality where the carcass is available or the body parts have been seized.
6. **Scope:** The SOP applies to all forest field formations including tiger reserves besides other areas where the incident has occurred.
7. **Responsibilities:** The Field Director would be responsible in the case of a tiger reserve. For a protected area (National Park/Wildlife Sanctuary), the concerned protected area manager would be responsible. In the case of other areas (revenue land/conservation reserve/ community reserve/village/township) the Wildlife Warden, as per the Wildlife (Protection) Act, 1972, or Divisional Forest Officer/Deputy Conservator of

Forests (under whose jurisdiction the area falls), would be responsible. The overall responsibility at the State level would rest with the Chief Wildlife Warden of the concerned State.

8. Detailed instructions for the procedure to be followed in tiger death/seizure of body part/incident reported but no body part/carcass available but for corroborative field evidences.

   (i) **At Scene of crime (SoC)/incident (responsibility: Range Officer, Assistant Director/Assistant Conservator of Forests. Deputy Director/ Divisional Forest Officer)**

   - Reach the spot at the earliest, while informing the Field Director/Conservator/Chief Conservator of Forest having jurisdiction
   - Call for Investigation Team to the spot immediately. It should be mandatory for the Investigation Team to visit the SoC with Investigation Kit.
   - Cordon off the area with the help of rope/tape so that evidences are not disturbed
   - Take photographs of undisturbed site/video record from different angles for comparison with camera trap recording (if done in the area). Photographs and video should have both close ups and from distance shots. Tapes may be placed to show distances of various physical objects found at SoC. Circumstantial observation at SoC should be minutely recorded.
   - Do not manipulate evidences
   - Divide the whole area into grids/circles for investigation and collection of evidences

- Note down all finer details, date, time, GPS location, weather etc. Each step and action in the investigation process should be properly documented. It is highly recommended that Investigating Officers (IOs) should adopt the practice of writing daily case diaries as prescribed under Section 172 Cr PC and submit it to next supervisory officer on daily basis.
- Requisite seizure/arrest memo should be prepared on the spot.
- Wherever possible, two independent witnesses should be associated in search, seizures and arrests.
- Survey the entire area. In case of suspected infighting of animals, look for trails of other injured animals also.
- At least an area of about 500 meters encircling the Scene of Crime (SoC) may be searched thoroughly for evidence. In many cases it is seen that the animal moves some distance after it is hit by the bullet or it consumed poison. It is also common that the poachers remove the carcass to a nearby place for the sake of convenience in de-skinning the animal.
- Rivers, lakes or other water bodies near by the SoC may also be inspected for collection of evidence as the poachers wash their body or the tools/weapons used in de-skinning the animal in the nearby rivers or water bodies. In some cases it is also noticed that the poachers enter the Tiger Reserve walking along the river banks.

- Record foot prints of animals/human/tyre marks of vehicles if any by using plaster of paris.
- Search & collect all possible evidences carefully in original conditions, while preserving (if needed)
- Search for evidences at ground level, eye level and above eye level (e.g. hideout/machan/bullet marks on trees/freshly cut branches/traces of kindled fire on the floor/burnt matchsticks etc.) Sample to be collected from the spot may include: blood, body-fluids, tissues, hair/fur/teeth/bone pieces etc., gun powder, cloth fibre, paint chips, soil, cartridge case, bullets, foot prints, tyre marks, gutka wrapper, match sticks, food items, water sample from waterhole etc.
- Tools recovered from the spot should be appropriately secured for finger prints, stains etc.
- At times clothes worn by the accused are to be seized for analysis of blood stains, fluids etc. Nail cuttings may be taken if skinning is suspected.
- Use transparent polythene bags for collecting these samples. The different articles should not be put in one bag. Each article needs to be put in one bag, separately.
- Specimen seal to be sent to the expert, Court and the third copy to be put in official file for records.
- Properly label and seal the samples collected. Assign each sample with exhibit number and brief description. Search the leads/trails/routes of escape/exit. Use sniffer dogs for leads (if available)

- Record external evidence from carcass: wounds, bullet injury/marks, symptoms of poisoning etc., apart from body measurement (if possible). Injuries on the carcass should be properly measured and described/explained.
- Go for Post Mortem (PM) if team available or otherwise keeps the carcass in deep fridge. The PM has to be conducted during the day light.
- While doing PM – collect sample of visceral content and tissue. Send visceral sample for forensic analysis to a reputed laboratory; send the tissue sample to the Wildlife Institute of India (WII) or a recognized institute within the country having domain expertise for DNA profiling and histo-pathological tests.
- Finalize the PM report, and send the same to the Chief Wildlife Warden (CWLW) under intimation to the National Tiger Conservation Authority (NTCA). In case the PM report is under process, send a preliminary report to the Authority indicated immediately
- Dispose of the body as per rules in the presence of the competent authority In case of seizures of body parts, the same may be required as evidence for prosecution in the courts of law and hence in such situations do not dispose the same till the orders of the concerned court for disposal of the same are received.
- Issue a departmental preliminary offence report (POR)/FIR etc.

- Prepare a seizure memo and arrest memo with signature of accused (if present), witnesses etc. along with a site map, and a species identification certificate issued by a forest officer, not below the rank of an Assistant Conservator of Forests who would certify that he has identified the species on the basis of his training and experience in identifying the species in the field.

(ii) **If suspect(s) is arrested:**

- Collect name, address, biometric details, photographs, height, weight etc. of suspect(s) During the search/arrest/interrogation, special care should be taken to seize/get details of telephone nos. especially mobile phones, diaries including numbers scribbled on a piece of paper etc. These are crucial in tracing linkages. Persons arrested must be informed of the full particulars of the offence committed and the grounds for arrest. (Sec. 50 Cr. P.C. & Art 22(1) - Constitution of India)
- Prepare an arrest memo with ground/basis for arrest, citing reasons/basis for arrest
- Record statements of suspect(s) and/or witness(s) alongwith signatures under Section 50(8) of WPA. Ideally the statement should be recorded by ACF and above authorized by the State Govt. in this behalf (which is the requirement of WPA)
- The nominated person by the accused needs to be informed about the arrest and place where the accused has been lodged as per Section 50A of Cr. P.C. and Supreme Court's order in *Joginder Singh's* case intimate

- Get conducted medical examination of arrested suspect(s) and produce before the Magistrate having jurisdiction within 24 hrs. or where forward and backward linkages are to be discovered move an application for remand. Always contact your Public Prosecutor in the local Court before hand in case you are trying to move such application so that the staff succeeds in getting the remand.
- In the case of a female offender, the medical examination has to be conducted only by a female registered medical practitioner.
- Take proper care of health and safety of accused during which he is in your remand. If the accused falls ill in depts. custody, he must be given medical aid or treatment admitted for in a hospital.
- Based on interrogations and leads, thoroughly investigate the matter, establish backward and forward links, arrest other links involved based on statement given by the accused and information given by accused.
- The arrested person has a right to consult and be defended by a legal practitioner of his choice (Article 22(1) of the Constitution of India).
- If the arrested person is poor, he can get free Legal Assistance from the Legal Services Authority (Art 39 A Constitution of India).
- Arrest should not be made on mere suspicion (145 Cr. P.C.).
- The arrested person is entitled for compensation for groundless arrest/illegal detention.

- Though the statement given by the accused under Psycho-analysis test has little evidentiary value but in case of hardened criminals who don't cooperate in investigation, such tests may be recommended.
- Prepare a final report, Complaint as per Section 55 of WPA and file in the court of law.
- Submit a final report with conclusion regarding cause of death to the Chief Wildlife Warden under intimation to the National Tiger Conservation Authority through the Field Director/Wildlife Warden/Conservator/Chief Conservator of Forests having jurisdiction.
- A format of 'Arrest cum Personal Search Memo' is at **Annexure-1.**

(iii) **Actions required at the Office of Field Director/ Wildlife Warden/Conservator/Chief Conservator of Forests having jurisdiction/Control Room**

- Send a preliminary intimation to NTCA, Chief Wildlife Warden and Regional Deputy Director (RDD) of WCCB about the incident (SMS/e-mail/telephonic call/fax etc.) immediately.
- Constitute a Post Mortem team as under.
  (a) An authorized representative of the NTCA
  (b) A Veterinary Officer of the tiger reserve
  (c) A Veterinary Officer who has experience working in Wildlife
  (d) A non-governmental outside expert nominated by the Chief Wildlife Warden of the State

(e) Field Director of the tiger reserve/Officer of equivalent rank or in case of exigency an Authorised Officer not below the rank of Deputy Conservator of Forests under whose jurisdiction the area falls.

- Send an investigation team/issue office order appointing the Investigating Officers (IO).
- Analyze the past and present intelligence reports for possible leads, cell phone records of history sheeters/suspects, check with neighboring districts/divisions/States.
- Deploy vehicular checking on barriers, inform local Police and issue red alert for checking vehicles at all exit points.
- Check the photographs of carcass and compare with the National Repository of Camera Trap Photographs of Tigers (NRCTPT) in NTCA or the Phase-IV camera trap monitoring database or other research database to establish the identity/ source area.
- Issue on official version of the incident through the Chief Wildlife Warden.
- Send the biometric details of suspect(s) to the NTCA for alerting other Field Directors/ States/Wildlife Crime Control Bureau, and for establishing possible linkage with other crimes elsewhere.
- Closely monitor/supervise the investigation, liaise with Police Department, Tiger Cell of the State (if available), Wildlife Crime Control Bureau and other investigation agencies.

- Prepare a ***'Final Report'*** and submit to the Chief Wildlife Warden under intimation to the NTCA. Since all tiger deaths are treated as 'Poaching Cases' by the NTCA unless proven otherwise, justification for categorizing a tiger death as 'Natural' should be provided along with evidences.
- All cases of poaching/seizure should be dealt in the courts of law having jurisdiction.
- Monitor the case ongoing in the court of law till its final disposal by the Court.
- After the Court's order, analyze the case for corrective actions (if needed) for further appeal.
- If the decision of the Court is satisfactory, close the case and report to the Chief Wildlife Warden under intimation to the NTCA.

ANNEXURE-A

IMPORTANT POINTS FOR PREPARING A COMPLAINT

- Check the complaint/whether relevant sections of the Wildlife (Protection) Act, 1972 and other Acts have been invoked viz. Section 2,9,50 etc. of Wildlife (Protection) Act.
- Statements under Section 50 (8) of the Wildlife (Protection) Act, 1972 of witnesses and confession statement of suspect(s), (besides relevant sections of other laws).
- Site plan of the crime scene. The map of the compartment can also be useful in this regard.
- Status of site of the said offence – protected area/tiger reserve/forest division/other area, along with a copy of Governmentnotification(in case of tiger reserve/protected area/reserved forest/protected forest)
- Post Mortem report
- Expert identification report, from institutions like Wildlife Institute of India, Dehradun or Zoological Survey of India or reputed institution having domain expertise, regarding only portions/pieces/tissues, if seized
- Copy of the specimen seal affixed on the materials sealed
- CD of photographs/video recording done during investigation
- Copy of ownership papers of house/seized vehicle, identity proofs/cards etc.
- Copy of relevant section of the Wildlife (Protection) Act, 1972, and/or any other Act

- Annexure containing list of documents and witnesses
- Forensic report of visceral contents, ballistic report (if applicable)
- A format of Complaint is at **Annexure-2**
- A list of documents to be attached with the Complaint and guidelines for filing complaint u/s 55 of the Wildlife (Protection) Act 1972 are at **Annexure-3**

ANNEXURE-B

NOTE ON ACTION NEEDED FOR ANTIPOACHING/ TIGER PROTECTION

(1) In-depth thorough investigation on EACH CASE with a final report (should not be left un- resolved/open ended)

(2) Investigation must examine forward/backward linkages, trans border ramifications, cracking poacher-carrier-trader-consumer nexus/network.

(3) Close monitoring with the help of information technology/informer network on suspect/history sheeters.

(4) Examine Post Mortem (PM) and viscera reports

(5) Intensive patrolling besides other ant poaching operations should be done in sensitive areas

(6) Ensure multi-disciplinary approach and cooperation in case of investigation and intelligence sharing. Wildlife authorities should enter into MoU with IB/LIU for intelligence sharing, MoU with Paramilitary forces like BSF, CRPF, Assam Rifles, SSB etc. for joint patrolling in sensitive border areas, through the State Government and NTCA

(7) Review of each case of mortality regularly at the highest appropriate level

(8) Ensure review and coordination meeting with Judicial, Police and Revenue Officials on monthly basis

(9) Each Tiger Reserve must have a highly trained team of officers/Rangers for investigations of tiger related crime with all modern & scientific tools of forensic science. The State Forest Department, through the National

Tiger Conservation Authority should organize training of such selected elite 'Investigating Teams', if required

(10) After complete investigation, proper prosecution of cases in the appropriate courts of law should be ensured through regular monitoring of pending cases at the highest authority at the appropriate level

(11) Prepare State/Reserve level of database/history sheet/ dossier of each convicted criminals and suspects, while apprising the NTCA periodically. Personal Profiles (PPs) of all accused should be prepared. In case of habitual offenders History Sheets (HSs) may, be prepared for surveillance. Copies of PPs and HSs may be sent to NTCA/WCCB as well for circulation and surveillance. A format of Personal Profile is at Annexure-4

(12) A separate note on the modus – operandi adopted by the criminals in each tiger poaching case may be recorded and circulated to NTCA/WCCB etc., which could be used in crime prevention strategy and also in the sensitization/training courses for enforcement agencies.

(13) Ensure that each Tiger Reserve has a Security Plan in place as per the guidelines issued by the NTCA

(14) Ensure appropriate resources to deal with poaching threats and investigation

(15) Since tiger is a highly endangered species falling in Schedule-I of the Wildlife (Protection) Act, 1972, weekly monitoring of tiger offence cases ongoing in courts of law should be done for expediting the same by the Field Director/Wildlife Warden/Conservator/Chief Conservator of Forests having jurisdiction

(16) The Chief Wildlife Warden of the State should also review the progress of each tiger case ongoing in various courts

of law every fortnight. The Principal Chief Conservator of Forests (HOFF) of the State should also review the same on a monthly basis, while apprising the NTCA

ANNEXURE-1

ARREST CUM PERSONAL SEARCH MEMO

(U/S 50(3) of the Wild Life Protection Act, 1972)

1.	Name of Office	
2.	Case number, date and Section of law	
3.	Name, parentage and age of the accused arrested	
4.	Present and permanent address of the arrested accused	
5.	Identification marks of the arrested accused	
6.	Reasons for arrest and whether without warrant or with warrant	
7.	Place, date and time of arrest	
8.	Documents/articles which found on the person of the accused	
9.	Name and address of the independent witness who was present at the time of arrest	
10.	Name and designation of the officer who effected the arrest	
11.	Name of the relative/friend as declared by the arrestee who has been informed of his arrest	
12.	Name of the local Police Station where the arrested person is to be kept in custody or other venue of custody of the accused	

13.	Any other particulars including injuries on the person of the arrestee if any	
14.	Signature of the arrested accused	
15.	Signatures of independent witnesses.	
16.	Name, designation and signature of the officer who effected the arrest	

ANNEXURE-2

COMPLAINT IN A WILDLIFE OFFENCE

(U/s 55 of Wildlife (Protection) Act, 1972 r/w See 200 Cr.P.C.)

1.	Name of Office	
2.	Offence Report number and date	
3.	Place, date and time of offence	
4.	Sections of law	
5.	Details of property seized	
6.	Whose custody the seized properties are lying, if submitted in the court Property Index number	
7.	Live specimens if any seized and subsequently rehabilitated in its natural habitat as per the court order	
8.	Details of perishable or hazardous materials seized and subsequently destroyed as per the court order	
9.	Details of fire arms, if any, seized and handed over to the Police for investigation and the Police FIR number	
10.	Whether samples were sent for examination to Wildlife Institute of India, Zoological Survey of India, Botanical Survey of India or any other scientific experts for opinion? If so, details of the opinion received	

11.	Name, designation and office address of the officer who filed the Offence Report	
12.	Name, designation and office address of the officer filing the complaint	
13.	Name and address of the accused against whom the complaint is field	
(i)	Accused in custody	
(ii)	Accused in bail	
(iii)	Accused not arrested/absconding	
(iv)	Accused who are habitual/ repeated offenders, details of previous cases	
13.	Name and address of the witnesses and facts to be proved by the evidence of each witness	
14.	List of documents, if any, submitted along with the complaint	
15.	Nature of offences and facts of the case/allegation made against each accused	

Name & Designation of the Complainant
with Office Seal

To
The Chief Judicial Magistrate/JMFC
(Address)

ANNEXURE-3

DOCUMENTS TO BE ATTACHED WITH THE COMPLAINT

1. Forwarding/Covering letter addressed to the concerned magistrate praying for taking complaints u/s 55 of WL(P) Act,1972 r/w Section 200 of Indian Criminal Code 1973.
2. Sequential order of incidence preferably in chronological order along with the violation of relevant sections and section 51 under which sentence of the accused is preyed upon.
3. POR/FIR if any along with the information sent to the court
4. List of accused.
5. List of witness.
6. Site memo
7. Arrest memo
8. Medical report
9. Intimation to relatives
10. Seizure Memo
11. Statement of accused
12. Statement of Witness (u/s 50(8) of WLPA
13. Gazette Notification of R.F/NP/Sanctuary
14. PM Report/Expert Opinion
15. Wildlife Census Report (if any)
16. Appointment letter of I.O.
17. Posting order of staff.
18. Log book of vehicle (if used)

19. Any other relevant document having bearing on the incidence.

Guidelines for filing complaint u/s 55 of Wildlife (Protection) Act 1972:

The officer filing the complaint should ensure that he is authorized to file the complaint as envisaged under section 55 of Wildlife (Protection) Act 1972.

If the accused is in judicial custody, the complaint is to be filed within 60 days from the date of arrest of the accused. In case of more than one accused, the 60 days period starts from the date of arrest of the first accused.

The complaint should preferably be typed, or neatly written without any over writings, alterations etc.

Full details of all the accused and the role played by them individually, offences committed by each of them with relevant sections of the Act are to be narrated in the complaint. Present status of the accused like on bail, in judicial custody, absconding etc is also to be mentioned in the complaint. In the case of accused in judicial custody, name of the jail in which they are lodged is to be mentioned. In case of absconding accused, efforts taken by the Investigating Officer to apprehend them including action under Section 82 & 83 Cr. P.C., are also to be narrated in the complaint.

The complaint should be specific and without any ambiguity. Facts not supported by evidence should not be mentioned in the complaint. Similarly, accused against which sufficient evidence is not there should not be named in the complaint. Facts and circumstances connected to the case should be narrated in simple language, sequentially. List of witnesses, documents and material objects should be submitted along with the

complaint. The authorized officer who files the complaint should sign all the pages of the complaint and annexure if any.

Statement of all the witnesses, including the official witnesses, recorded u/s 50(8) of Wildlife (Protection) Act as per the list of witnesses, confessional statements of the accused and statements recorded by the Magistrate u/s 164 Cr. P.C. if any should be filed along with the complaint.

All documents in original or certified copy, as per the list of documents enclosed, should be submitted along with the complaint. A comprehensive list of documents which are to be compulsorily submitted along with the complaint is given below.

ANNEXURE-4

PERSONAL PROFILE

Name Aliases and Father's Name:

(1) Address:

(2) Personal Description:

Date of Birth/Age:	Hair:
Place of Birth:	Eyes:
Height:	Sex:
Weight:	Complexion:
Build:	Language:

Citizenship:

Scars/Identification Marks: _____

Remarks:_____

(3) Important Personal Information:

(a) Telephone/Mobile No.(s).:

(b) E–Mail Address:

(c) Passport No.:

(d) Bank Account No(s).:

(e) Aadhar Card No.:

(f) Voter Id Card No.:

(g) Ration Card No.:

(h) Finger Print Records:

(4) Current/previous occupation(s) and list of properties owned:

(5) Associates/relatives/family members and their occupation:

(6) Crime history and brief facts of the wildlife case(s) against him:
(7) Crime Modus Operand:
(8) Areas of his current activities/places of usual movements:
(9) Previous Acquittals/Convictions:
(10) If declared absconder, details:
(11) Any other remarks:

ANNEXURE-5

FINAL REPORT

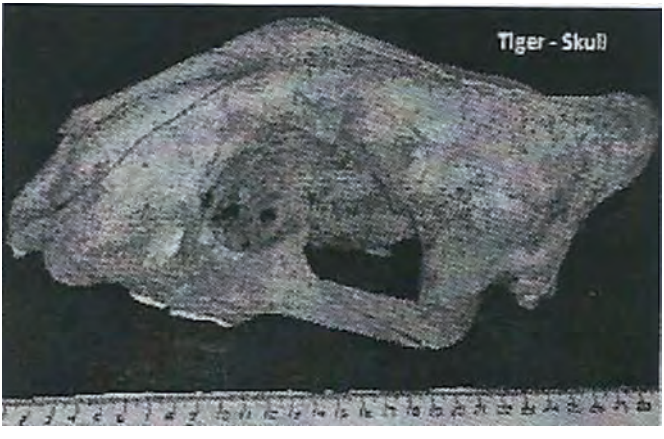
(To be submitted for each case of tiger mortality/seizure to CWLW and NTCA)

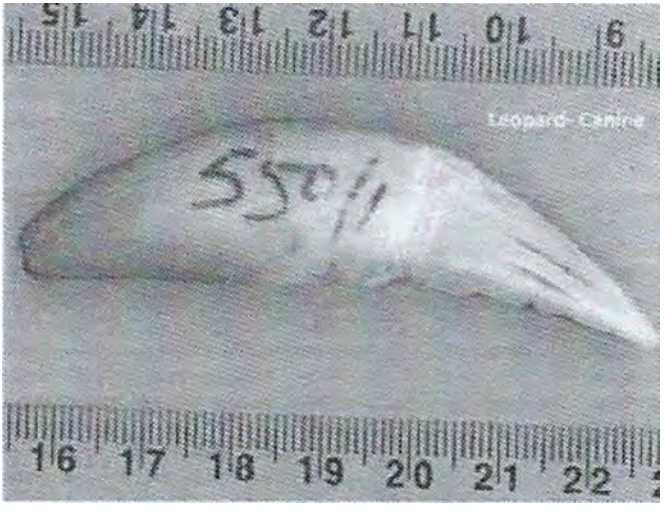
1.	Name of Office	
2.	Locational details of the mortality: description, GPS, Compartment/ Block/Range/Sub-Division/Forest Division/Tiger Reserve or place/time	
3.	Date of Mortality/carcass report	
4.	In case of seizure of body parts details indicating the status of carcass or seized material	
5.	Details of the person (Staff/Others) who reported the incident first: Name/address/contact details/ telephone numbers/e-mail	
6.	For carcass: Date, time and Place of Post Mortem (PM)	
7.	Details of PM Team (names/ designation/address/contract)	
8.	Details of the missing body parts, if any	
9.	Cause of death as ascertained after the PM (attach a copy of the PM)	
10.	Colour photographs of the carcass (close ups, indicating injury, if any)	

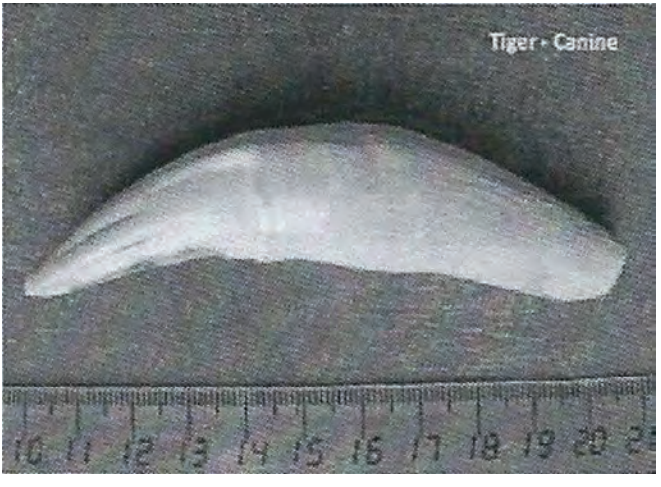
11.	(a) Date of collecting viscera sample and date of dispatch for the Forensic analysis (b)Name/address/contact details of the Forensic Lab (c) Result of Viscera analysis report (attach a copy)	
12.	Cause of death: Natural/Poaching	
13.	In case of poaching/seizure of body parts: i. Future action taken/proposed: ii. Attach colour photographs of the seized body part/s iii. Attach certification regarding species identity (for bone pieces/ meat/other body parts which are not physically identifiable) iv. Action taken with respect to offenders/suspects (if arrested) v. Status of Case/complaint: number, date of filing the complaint, Sections of law, name of Court where filed	
14.	Cause of death if natural: basis of this conclusion	
15.	Remarks if any	
16.	Signature of the Officer In-charge with name, designation, date and stamp	

(SOP prepared with inputs from WCCB, Mr. Saurabh Sharma, Legal Expert, Field Officers of Tiger Reserves)

Photographs of tiger/leopard skull and canines.
Credit Dr. SP GOYAL, WII, Dehradun.




Leopard Canine
16 17 18 19 20 21 22


Tiger - Canine
10 11 12 13 14 15 16 17 18 19 20

STANDARD OPERATING PROCEDURE FOR DISPOSING THE TIGER/LEOPARD CARCASS/BODY PARTS

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

No. 15-37/2012-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 March, 2013

To

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

Sub: Standard Operating Procedure (SOP) for disposing Tiger/leopard carcass/body parts–reg.

Sir,

Advisories have been issued by Project Tiger/ National Tiger Conservation Authority from time to time, on different issues relating to tiger mortality, post mortem, reporting etc. Based on the same and with inputs from field officers/experts, a Standard Operating Procedure (SOP) for disposing tiger/leopard carcass/ body parts has been developed to meet the present challenges.

A copy of the said Standard Operating Procedure (SOP) for disposing tiger/leopard carcass/body parts, duly approved by the competent authority, is forwarded herewith for information and necessary action.

The SOP my please be translated in vernacular and widely circulated amongst the field staff for guidance.

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. PPS to ADG (WL)
5. Additional Director, Wildlife Crime Control Bureau, New Delhi.
6. Inspector General of Forests, Regional Office, Guwahati.
7. Assistant Inspector General (NTCA), Nagpur and Bangalore.

STANDARD OPERATING PROCEDURE FOR DISPOSING THE TIGER/LEOPARD CARCASS/BODY PARTS

1. **Title:** Standard Operating Procedure for disposing the tiger/leopard carcass/body parts.
2. **Subject:** Tiger death/seizure of body parts
3. **Reference:** Advisories of the Ministry of Environment & Forests/Project Tiger/NTCA on the subject (Advisory No: 1-60/89-WL I dated 04-11-1994 from the Addl. IGF (wildlife) Ministry of Environment and Forests)
4. **Purpose:** To ensure that the carcass/body parts of tiger/leopard are disposed of in a transparent manner to prevent any pilferage for illegal market.
5. **Short Summary:** This Standard Operating Procedure (SOP) provides the basic, minimum steps which are required to be taken at the field level (tiger reserve or elsewhere) for disposing of tiger/leopard carcass/body parts where carcass is available or the body parts have been seized.
6. **Scope:** The SOP applies to all forest field formations including tiger reserves besides other areas where the incident has occurred.
7. **Responsibilities:** The Field Director would be responsible in the case of a tiger reserve. For a protected area (National Park/Wildlife Sanctuary), the concerned protected area manager would be responsible. In the case of other areas (revenue land/conservation reserve/community reserve/village/township) the Wildlife Warden, as per the Wildlife (Protection) Act, 1972, or Divisional Forest Officer/Deputy Conservator of Forests (under whose jurisdiction the area falls), would

be responsible. The overall responsibility at the State level would rest with the Chief Wildlife Warden of the concerned State.

8. Detailed instructions for the procedure to be followed for disposing of the tiger/leopard carcass/body part(s) where body part(s)/carcass is available

   (i) **At Scene of Crime (SoC)/Incident: When Carcass or Parts Available:**

   - Follow the SOP issued by the NTCA on dealing with the tiger mortality/seizure of body parts.
   - Dispose of the carcass by incineration in the presence of the Field Director or in case of exigency an Authorized Officer not below the rank of Deputy Conservator of Forests besides the Post Mortem (PM) Team having representation from the civil society institution
   - While incinerating the carcass, the sequence must be photographed and video recorded.
   - Before leaving the site, ensure that the whole carcass including bones are fully burnt.
   - After ensuring the complete incineration of the carcass, prepare a 'Panchnama (Memo) on disposal of the carcass, duly signed by the PM Team and officer incharge, and send a final report (Annexure-I) to the CWLW under intimation to the NTCA with supporting photographs/ documents.

   (ii) **In Case of Seizure of Body Parts (Skin — Dry or Fresh/Bones/Meat or Other Body Parts):**

   - Follow the SOP issued by the NTCA on dealing with the tiger mortality/seizure of body parts.

- In case of seizures of body parts, the same may be required as evidence for prosecution in the courts of law and hence in such situations do not dispose the same till the orders of the concerned court for such disposal are obtained.
- Once orders have been obtained by the competent authority, dispose of the body part(s) by incineration in the presence of the Field Director or in case of exigency an Authorized Officer not below the rank of Deputy Conservator of Forests besides the Team (same as prescribed for the Post Mortem) having representation from a civil society institution
- While incinerating the body parts, the sequence must be photographed and video recorded.
- Before leaving the site, ensure that the whole/all body parts are fully burnt.
- After ensuring the complete incineration of the body part(s), prepare a 'Panchnama' (Memo) on disposal of the body part(s), duly signed by the said Team and officer incharge, and send a final report (Annexure-I) to the CWLW under intimation to the NTCA with supporting photographs/documents.

(iii)**In Cases of Seized Stock of Wildlife Trophies Obtained During Seizure/Confiscation:**

- All seized stock of wildlife trophies, where no case is pending in a Court of law, should be destroyed through incineration in the presence of the Field Director or in case of exigency an Authorized Officer not below the rank of Deputy Conservator of Forests besides a team

(same as prescribed for the post mortem) having representation from a civil society institution.

- While incinerating the body parts, the sequence must be photographed and video recorded.
- Before leaving the site, ensure that the whole/all body parts are fully burnt.
- After ensuring the complete incineration of the body part(s), prepare a 'Panchnama' (Memo) on disposal of the body part(s), duly signed by the said Team and officer incharge, and send a final report (Annexure-I) to the CWLW under intimation to the NTCA with supporting photographs/documents.
- The provisions of the Wildlife (Protection) Act, 1972 must be followed before destroying such stock.

***

ANNEXURE-1

FINAL REPORT

To be submitted for disposal of each case of tiger/leopard carcass/body part(s)/trophy

1.	Name of Office	
2.	Locational details of the mortality: description, GPS, Compartment/Block/Range/ Sub-Division/Forest Division/ Tiger Reserve or place/time	
3.	Date of Mortality/carcass report	
4.	In case of seizure of body parts details indicating the status of carcass or seized material	
5.	Details of the person (staff/ Others) who reported the incident first: name/address/ contact details/telephone numbers/e-mail	
6.	For carcass: Date, time and Place of Post Mortem (PM)	
7.	Details of PM Team (names/ designation/address/contact)	
8.	Details of the missing body parts, if any	
9.	Cause of death as ascertained after the PM	
10.	Colour photographs of the carcass/body part(s)- (close ups, indicating injury, if any); details of comparison with camera trap photo data base	

11.	Cause of death: Natural/ Poaching	
12.	In case of poaching/seizure of body parts: further action taken/proposed: attach colour photographs of the seized body part/s attach certification regarding species identity (for bone pieces/meat/other body parts which are not physically identifiable) action taken with respect to offenders/suspects (if arrested) status of Case/ complaint: number, date of filing the complaint, Sections of law, name of Court where filed	
13.	Panchnama/memo of disposal of carcass/body part (s)	Enclosed/not-enclosed
14.	Remarks if any	
15.	Signature of the Officer In-charge with name, designation, date and stamp	

(SOP prepared with inputs from Field Officers of Tiger Reserves)

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STANDARD OPERATING PROCEDURE TO DEAL WITH EMERGENCY ARISING DUE TO STRAYING OF TIGERS IN HUMAN DOMINATED LANDSCAPES

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

No. 15-37/2012-NTCA
Government of India
Ministry of Environment and Forests

National Tiger Conservation Authority
***

Annexe No. 5, Bikaner House,
Shahjahan Road, New Delhi-110011.
Telefax: 2338 9883
E-mail: jdntca@gmail.com
Dated the 30th January, 2013

To,

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

Sir,

As you are aware, advisories have been issued by the Project Tiger/National Tiger Conservation Authority, time and again, for dealing with emergency arising due to straying of tigers in human dominated landscapes. Based on inputs from field officers, experts vis-à-vis the said advisories, a Standard Operating Procedure has been developed after fine tuning to meet the present challenges.

In this context, I am directed to forward herewith a copy of the said Standard Operating Procedure (SOP) for dealing with emergency arising due to straying of tigers in human dominated landscapes, duly approved by the competent authority, for implementation.

The SOP may please be translated in vernacular and widely circulated amongst the field staff for guidance.

Yours faithfully,

Encl: As above

(S.P. Yadav)
Deputy Inspector General (NTCA)

Copy for information to:

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

Copy for information to:

1. Additional Director, WCCB, New Delhi.
2. IGF, Guwahati.
3. AIGs, Nagpur and Bangalore.

STANDARD OPERATING PROCEDURE TO DEAL WITH EMERGENCY ARISING DUE TO STRAYING OF TIGERS IN HUMAN DOMINATED LANDSCAPES

1. **Title:** Standard Operating Procedure to deal with emergency arising due to straying of tigers in human dominated landscapes
2. **Subject:** Dealing with emergency arising due to straying of tigers in human dominated landscapes
3. **Reference:** Advisories of National Tiger Conservation Authority/Project Tiger on the subject
4. **Purpose:** To ensure that straying tigers are handled in the most appropriate manner to avoid casualty/injury to human beings, tiger, cattle and property.
5. **Short Summary**: This Standard Operating Procedure (SOP) provides the basic, minimum steps which are required to be taken at the field level (tiger reserve or elsewhere) for dealing with incidents of tiger straying in human dominated landscapes.
6. **Scope:** The SOP applies to all forest field formations including tiger reserves besides other areas where such incidents occur.
7. **Responsibilities:** The Field Director would be responsible in the case of a tiger reserve/fringe areas. For a protected area (National Park/Wildlife Sanctuary), the concerned protected area manager would be responsible. In the case of other areas (revenue land/conservation reserve/community reserve/village/township) the Wildlife Warden, as per the Wildlife (Protection) Act, 1972, or Divisional Forest Officer/Deputy Conservator of Forests (under whose jurisdiction the area falls), would be responsible. The overall responsibility at the

State level would rest with the Chief Wildlife Warden of the concerned State.

8. Suggested field actions to deal with strayed wild carnivores (tiger/leopard)
   (a) At the outset, constitute a Committee immediately for technical guidance and monitoring on day to day basis, as under:-
      i. A nominee of the Chief Wildlife Warden
      ii. A nominee of the National Tiger Conservation Authority
      iii. A veterinarian
      iv. Local NGO representative
      v. A representative of the local Panchayat
      vi. Field Director/Protected Area Manager/DFO I/C - Chairman
   (b) Since it may not be always possible for experts from the Wildlife Institute of India to provide assistance, it is advised that some outside experts may be involved in the ongoing monitoring.
   (c) Establish identity of the tiger by comparing camera trap photographs with National Repository of Camera Trap Photographs of Tigers (NRCTPT)/ Reserve level photo database and find out the source area of the animal.
   (d) Collect recent cattle/livestock depredation or human injury/fatal encounter data, if any, in the area. If it is an area historically prone to such incidences, detailed research work has to be carried out in order to assess the reasons for the frequent tiger emergencies in the area.

(e) In case of confirmed livestock depredation/human injury/fatal encounters or frequent straying of tiger near human settlements, set traps (automatic closure) with appropriate luring while avoiding disturbance, to trap the animal.

(f) Set up camera traps near kill site to confirm/establish the ID of the animal.

(g) Ensure unobtrusive guarding of the kill to allow feeding of the carcass (if not close to a human settlement) besides safeguarding from poisoning (for revenge killing).

(h) Create 'pressure impression pads (PIPs)' in the area to ascertain the daily movement of the animal, while plotting the same on a map (4" = 1 mile scale or 1 : 50,000 scale).

(i) Proactively involve District Collector/DM and SSP/SP of the area to maintain law and order in the area, besides avoiding crowding by local mobs. Acquaint them with human-tiger conflict issues and guidelines of the NTCA to deal with the situation.

(j) In all instances of wild carnivores like tiger/leopard straying into a human dominated landscape, the district authorities need to ensure law and order by imposing section 144 of the Cr.PC. This is essential to avoid agitation/excited local people surrounding the animal spot which hampers capture operation, leading to serious injuries on people and staff. It is also necessary that police and local administration be involved at an early stage. Effective coordination with them is critical to control mobs which as has been seen in several instances, worsen the situation and lead to avoidable fatalities/tragedies.

(k) Take help of the district level officials to alert the villages in the vicinity of the area having the spatial presence of the tiger.

(l) If successive trapping efforts fail, chemical immobilization of the wild carnivore should be done by an expert team having a veterinarian, as per the protocol at **Annexure-I.**

(m) In case, the tranquilised tiger is found to be healthy in prime or young age without any incapacitation (loss of canine, injury, broken paw etc.), as confirmed/ certified by the Committee as constituted at para (1), then it may be released after radio collaring in a suitable habitat with adequate prey base, away from the territory of a resident male tiger (if any) or human settlements, under intimation to the National Tiger Conservation Authority. (Under no circumstances an injured/incapacitated tiger should be released back, and the same needs to be sent to a recognized zoo).

(n) Under no circumstances, a tiger should be eliminated by invoking the Wildlife (Protection) Act, 1972, if it is not habituated for causing human death. The guidelines for dealing with animals which have become 'Dangerous to Human Life' are annexed for compliance/guidance in this regard **(Annexure-II)**.

(o) In case of a healthy tiger/encumbered tigress occupying a sugar cane field or similar habitat, attempt should be made first to attract it to nearby forest area, while avoiding disturbance. If such operations fail, the animal should be captured through immobilization for release in low density

area of a nearby tiger reserve/protected area after radio collaring.

(p) An authorized spokesperson of the Forest Department, should periodically update the media (if required) to prevent dissemination of distorted information relating to the operation/incidents. Sensalization or distorted information can lead to further damage.

(q) In case monitoring using camera traps (Phase-IV) is ongoing in the area, the minimum tiger numbers based on individual tiger captures, should not be given undue publicity without due cross checking with the National Tiger Conservation Authority.

(r) The 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.

(s) It is important to have properly designed suitable cages and transport mechanism which cause least stress to the captured carnivore.

9. **Preventive/Proactive Measures** to be followed in tiger straying incidents/areas prone are at **Annexure-III.**

10. Guidelines for prioritizing areas for tiger monitoring are at **Annexure-IV.**

*****

ANNEXURE-A

PROTOCOL ON IMMOBILIZATION AND RESTRAINT OF TIGERS

General Consideration

Behavior: Tigers in conflict or those strayed into human habitation differ considerably in behavior as compared to those in native/natural habitats. The animals may be stressed, shy, elusive, secretive and even unpredictable thereby posing challenge in capture. These animals may even pose safety threats for human involved in capture as well as to general public. ***Utmost care needs to be taken to ensure safety of humans when attempts for capture are made.***

Capture Options: Tigers can be captured employing physical and chemical restraint methods or combination of both. The physiological and emotional status of the animal; length of the procedure; the environmental conditions; terrain/escape cover; equipment availability; drug appropriateness and availability and most importantly the safety of the operator/ team needs to be considered prior to making a choice of procedure. Both the procedures have their benefits and limitations however the present guidelines would focus primarily on the chemical restraint procedures.

Chemical Restraint

Chemical immobilization has become an important tool in wildlife management over the last few decades. Advancement and development in this field has resulted in use of newer and safer drugs for immobilization, and efficient and reliable

systems of drug delivery. Chemical Immobilization involves use of drugs to restrict animal's movement by inducing a state of insensibility and preventing deliberate and coherent mobility. The technique is well suited for tigers in conflict as it allows capture of select individual, enables selection of time of capture and causes minimal stress to the animal. Chemical restraint drugs alter certain CNS functions without compromising the vital functions and produce a state of anaesthesia which immobilizes the animal to the extent that provides considerable safety both for human and animal.

Immobilization Equipment

Due to difficulty of directly approaching and handling wild animals, it is necessary to have safe and effective methods by which drugs can be administered. Projected darts have proved to be effective and safe option for delivering drugs to wild animals. The dart is projected through an equipment and discharges the medicaments intramuscularly upon impact. The darts are available in different sizes, however are specific to the type of equipment used to propel them. Different power projection systems have been used for projecting the darts however for tigers; the system that employs compressed gas/CO_2 to propel the dart should be selected. Light weight plastic darts of 3-5 ml. capacity should be used for remote injection using air powered/CO_2 tele-injection projector. Needle length is critical factor while darting tigers. The outside diameter of the needle should be 1.5-2.0 mm and length of 38-40 mm.

Immobilization Drugs

Though there are varieties of drugs that have been used for capturing tigers, a combination of alpha-2 adrenergic

agonists (sedatives) and dissociatives have proved to be effective for immobilizing tigers.

Alpha-2 adrenergic agonists/Sedatives: These drugs are CNS depressants with good sedative, muscle relaxant, and analgesic properties. These drugs need to be used with caution in animals as they produce initial hypertension followed by severe hypotension, bradycardia, hyperglycemia and glucosuria, disrupts thermoregulation and may lead to regurgitation/vomiting in carnivores. These drugs however have the advantage of being non-controlled, inexpensive and reversible. The drugs have been extensively used in felids in combination with dissociatives. A mixture of Xylazine and Ketamine in a proportion of 1.25 : 1 known as Hellabrunn mixture has been effectively used in tigers and other carnivores.

Another new Alpha-2 agonists Medetomidine in combination with ketamine has proved to be effective and specific sedative in large carnivores as it induces rapid drug induction and has specific antidote for reversal.

These Alpha-2 adrenergic agonists can be negated by antidote.

Examples: Xylazine, Detomidine, Medetomidine.

Antidotes include Yohimbine hydrochloride, Atipamezole hydrochloride, Tolazoline hydrochloride.

Dissociatives

These include the psychotomimetic drugs that are cyclohexamine derivatives. The drugs act by separating the conscious mind from sensory and motor or control mechanism in the brain (dissociative) producing, rapid analgesia and a trance-like state (psychosis) which may be as a result of over stimulation of the CNS. The animal appears unaware of human presence. They have the advantage of being rapidly absorbed following IM, IV administration, have good safety margin and cause little depression of the respiratory and circulatory system. Pronounced muscle rigidity, hyperthermia, hyper salivation, convulsion and rough recovery are common side effects. These effects can be considerably reduced by combining these drugs with a tranquilizer or sedatives. Their effect cannot be reversed and the animal has to be monitored for long till complete recovery takes place. These drugs lack specific antidote.

Examples: Phencyclidine, Ketamine hydrochloride, Tiletamine Hydrochloride

The choice of drug for immobilization may include the Hellabrunn mixture (HBM) (Xylazine–Ketamine mixture in ratio of 1.25 : 1) in appropriate doses. The dosage can be decided on the spot, taking into consideration the animal's health and condition, level of excitement, physiological status, sex, time of the day, and ambient temperature besides other habitat parameters. Medetomidine in combination with ketamine has proved to be effective for capturing tigers in conflict as it provides short and rapid induction thereby ensuring minimal movement of animal following darting.

Recommended Drug*/Dosages** for Immobilization of Adult Tiger

S. No.	*Drug(s) for immobilization*	*Male*	*Female*	*Reversal drugs (antidote)*
1.	Hellabrunn mixture (HBM) [Xylazine (XYL) and Ketamine (KET)] mixture in a ratio of 1.25:1	3.0 ml (375 mg XYL & 300mg KET) to 3.5 ml (437.5 mg XYL & 350 mg KET)	2.5 ml (312.5 mg XYL & 250 mg KET) to 3.0 ml (375 mg XYL & 300 mg KET)	Yohimbine hydrochloride (0.125 mgkg-1 body weight)
2.	Medetomidine (MED) and Ketamine (KET)	50-60 Dg kg-1 body weight MED and 1-2 mgkg-1 body weight KET		25-35 mg of Atipamezole hydrochloride

*/**:The list of drugs of choice provided is not exhaustive and concentrations mentioned are indicative only. The dosage to be administered should be left to the assessment of the veterinarian present.

Approach to the Target Animal

A four wheel field vehicle or trained captive elephants may be used to approach the animal taking due care of human safety and an overriding degree of patience. In a terrain where the vehicle cannot be used, possibility of darting the animal from a machan (raised platforms) may also be considered. Tigers in conflict provide limited opportunities for darting and therefore require adequate experience by personnel in effective darting as well as knowledge of anatomical peculiarities. Hindquarters should be preferred for tele-injection however depending on the opportunities; other suitable areas can also be explored.

Preferred darting site in a large carnivore

Induction Phase

The time interval between injection (darting) and the point when the animal is rendered immobile is induction period.

The total time for the completion of induction may vary from 10-15 minutes. A close observation should be kept by the team for any movement of the animal however the team should ensure minimal disturbance during induction.

Handling and Care of the Immobilized Animal

The animal should be approached quietly and following steps should be followed:

- Removal of dart
- Blindfolding to protect the cornea from direct sunlight, dust and injury.
- Ensuring proper animal positioning (sternal or lateral recumbancy) to maintain patent airways and ensure normal breathing and circulation.
- Assessing the status of animal, the degree of muscle relaxation and the rate and depth of respiration. Assessment of anesthesia should be done using following methods:
  - Monitor tissue perfusion: Anesthetic drugs frequently depress the contractile force of the heart and vasodilatation results in decreased tissue perfusion. Evaluation of tissue perfusion should be done by observation, auscultation, palpation and capillary refill time.
  - Monitor gas exchange: Respiratory rates are highly variable during anesthesia.
  - Quality of respiration should be evaluated by observing animal's chest movement.
  - Monitor level of CNS depression by assessing the muscle tone-jaw tone and eye reflexes.

- Monitor vital signs such as respiration, heart rate and body temperature.
- Examine animal for any wound or injuries (including status of canines and claws).
- Estimate animal body weight and if possible take bodily measurements.

Shifting of the Animal to Stretcher

The animal should be shifted to a stretcher and placed in lateral or sternal recumbancy. Animal should then be shifted to a transport container.

Reversal of Anesthesia

Specific Alfa-2 antagonists (Yohimbine HCl, Atipamezole HCl) should be used to reverse the anesthesia.

Supplemental Information

(a) **Preparedness:** All equipment for crating the animal, radio collars and accessories, emergency medicaments, biological sampling accessories, transport containers and any other essentials should be in place before the animal is darted.

(b) **Data Recording:** A complete immobilization record, particularly including each drug given, amount given, time of administration and physiological parameters should be maintained during the procedure. These details should be recorded in the data sheet in the format provided. It would be appropriate to ensure human safety considerations to meet any eventuality at all the time.

(c) **Assessing depth of anaesthesia:** Usually a time lapse of 10-15 minutes should be given prior to taking any further action on the darted animal as the induction time varies with physiological status of the animal, which should be left to the judgement of the veterinarian present in the team. Prior to approaching the animal, the depth of anaesthesia should be assessed by either tapping on the tail or ears with the help of long pole and if the animal does not react, it should be approached. The depth of anaesthesia should be optimum if the jaws can be opened and the tongue exteriorized with little or no resistance. Other indicators would include responses to stimulation of body, feet, cornea, ears and tongue. The physiological parameters should be assessed and should include assessment of temperature, respiration, pulse and color of mucous membrane including condition of pharynx, gingiva and teeth. In case of emergency (depressed respiration or cardiac arrhythmias or depression) the animal should be revived. Emergency drug including cardiac and respiratory stimulants should be kept handy at all times. The physiological parameters should be assessed and should include assessment of temperature, respiration, pulse and color of mucous membrane including condition of pharynx, gingiva and teeth.

(d) **Managing emergencies:** Emergency drugs and equipment would be available during the entire operation. Adequate supplies of emergency drugs should be ensured at all times.

(e) **Composition of team:** Capturing large fields poses a challenge and therefore requires a skilled team comprising wildlife managers, biologists (if available) and veterinarians proficient in animal anaesthesia.

ANNEXURE-1A

Data Sheet for Recording and Monitoring Immobilized Animal

Area Details

Date_____

Location _____ GPS Lat _____Long

Collar Frequency_____

Purpose of capture_____

Ambient temperature_____

Day (cloudy, bright)_____

Animal Details

Species _____

Physical condition _____

Emotional state before drugging _____

sex _____

Approximate age _____ Weight (kg)_____

Breeding status _____

Body Measurements

Nose tip to tip of tail_____ Noise tip to base of tail

Nose tip to base of skull (Occipital)Tail Length_____

Height (Shoulder blade of heel) _____ Hind limb length _____

Left fore limb or hind limb pay dimension Length _____ Width _____

Immobilization Details

Name of Immobilizing Drug(s)	*Time of Injection*	*Drug dose given*	*Route*	*Site*
1.				
2.				
3.				
4.				

Behaviour at the time of darting (running, walking, standing, excited)_____

Induction time when animal goes down/approached_____

_____

Animal Monitoring

Time	*Signs shown following immobilization*	*Respiration Shallow/deep/ irregular & rate*	*Temperature (°F)*	*Pulse(rate)*

Drug Reversal

Name of reversal Drug(s)	*Time of Injection*	*Drug dose & volume given*	*Route*	*Site*
1.				
2.				

Time when animal shows first sign of recovery_____

_____

Details about recovery even till animal regains consciousness/ shows signs of recovery_____

_____

Any other comments_____

Supplemental Drugs

Name of the supportive drug(s)/antibiotic(s) etc. given	*Trade name*	*Volume used*	*Route*	*Site*
1.				
2.				
3.				
4.				

Biological Sampling

Name of sample	*Preservative used*	*Examination required*	*Handed over to*	*Remarks*

ANNEXURE-II

GUIDELINES FOR DECLARATION OF BIG CATS AS 'DANGEROUS TO HUMAN LIFE'

(UNDER SEC 11 (1)(A))

***

- Both tiger as well as leopard are known to cause habituated loss of human life (animal dangerous to Human Life). Such confirmed animals which have become 'dangerous to Human Life' should be eliminated as per the statutory provisions provided in section 11 of the Wildlife (Protection) Act, 1972.
- Tiger as well as leopard are categorized under Schedule I of the Wildlife (Protection) Act, 1972, with highest statutory protection against hunting under section 9 (1) of the said Act. Hence, such species can be killed if they become dangerous to human life or are so disabled/ diseased beyond recovery.
- Under section 11 (1) (a) of the Wildlife (Protection) Act, 1972, the Chief Wildlife Warden of a State alone has the authority to permit hunting of such animals becoming dangerous to human life or disabled or diseased beyond recovery. However, as per the statutory requirement, the Chief Wildlife Warden of the State has to state in writing the reasons for permitting elimination before hunting.
- There are several reasons for a big wild cat like tiger or a leopard to get habituated as becoming 'dangerous to Human Life', viz. disability due to old age, incapacitation due to serious injury or loss/breakage of its canines etc. However, there may be several exceptions, and hence

specific reasons have to be ascertained on a case to case basis.

- The tiger bearing forests and areas nearby prone to livestock depredation, besides having human settlements along with their rights and concessions in such areas, are generally prone to becoming 'dangerous to Human Life'. Besides, loss of habitat connectivity in close proximity to a tiger source area owing to various land uses also foster straying of tiger near human settlements, eventually ending up as an animal which is 'dangerous to Human Life'.

Suggested Steps on Loss of Human Life Due to Tiger/ Leopard

- Constitute a team for technical guidance and monitoring on day to day basis, as below:
  - 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
  - Field Director/Protected Area Manager/DFO I/C-Chairman
- Set up camera traps near kill sites, besides creating pug impression pads to monitor the day to day spatial movement of the wild carnivore.
- Inform the district officials (Collector/DM/SP) for duly alerting the local people to refrain temporally from the area where human death(s) has/have been reported, besides ensuring tranquility in the area from mobs/ crowds of local people.
- Obtain/establish the ID of the aberrant animal causing loss of human life, through the committee constituted for the purpose, through camera trappings or direct sightings or pug impressions if camera trappings could not be done, besides collecting pieces of hair/scats of the carnivore (if available) for DNA profiling.
- A differentiation should be made between 'human kill' due to chance encounters and 'habituated animals which have become dangerous to Human Life'. As most of our forests outside protected areas are right burdened, the probability of chance encounters is very high. Further, tigers often use agriculture/sugar cane field and similar

cover along river courses while feeding on livestock or blue bull, which may also cause lethal encounters with human beings. Such animals should not be declared as 'Dangerous to Human Life'. However, confirmed habituated tiger/leopard which 'stalk' human beings and feed on the dead body are likely to be 'Dangerous to Human Life'.

- The declaration of an aberrant tiger/leopard as an animal which has become dangerous to Human Life requires considerable examination based on field evidences. At times, the human beings killed due to chance of encounters may also be eaten by the animal (especially an encumbered tigress in low prey base area). However, such happenings are not sufficient for classifying a tiger/leopard as a 'Dangerous to Human Life', which can best be established only after confirming the habituation of the aberrant animal for deliberate stalking of human beings, while avoiding its natural prey.
- Under no circumstances, mere an animal resorting to cattle depredation should be declared as 'dangerous to Human Life', despite the fact it may venture close to human settlements. To avoid untoward incidents in such situations, the efforts to trap the animal (chemical immobilization/use of traps) should alone be resorted to.
- Set up trap cages (automatic closure) in areas most frequented by the carnivore (with appropriate luring) for trapping.
- In case successive trapping operation fails set up an expert team for chemical immobilization of the aberrant animal as per the annexed protocol.

- The option of capturing the aberrant animal either through traps or chemical immobilization should be invariably resorted to as the first option. The wild carnivore thus captured, should be sent to a nearest recognized zoo and NOT released in the wild.
- Elimination of a tiger/leopard as a 'Dangerous to Human Life' should be the last option, after exhausting the option of capturing the animal live as detailed in the SOP.
- The Chief Wildlife Warden of the State after the above due diligence should record in writing the reasons for declaring the tiger/leopard as a 'dangerous to Human Life'.
- After 'declaring' the animal as 'dangerous to Human Life', its elimination should be done by a Departmental personnel having the desired proficiency, while providing the fire arm with the appropriate bore size. In case, such expertise is not available within the Department, an expert may be co-opted from the other competent Government Departments.
- No award/reward should be announced for destruction of animals which have become 'dangerous to Human Life'.

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ANNEXURE-III

DETAILED INSTRUCTIONS FOR THE PROCEDURE TO BE FOLLOWED IN TIGER STRAYING INCIDENTS/ AREAS PRONE FOR SUCH INCIDENTS: PREVENTIVE/ PROACTIVE MEASURES

(a) Identify the crisis spots/districts in the State.

(b) Conduct science based research and analysis to arrive at reasons for frequent straying of tigers in such areas.

(c) Prepare a Google map indicating forest patches, territory of the tigers, nearby habitation and corridors.

(d) Form monitoring teams consisting of locals with wireless communication on 24×7 basis besides rapid response team.

(e) Establish an early warning system.

(f) Issue alert to all nearby villages to take utmost caution.

(g) Monitor the cattle kill and immediately pay ex-gratia/ compensation in the case of eventuality.

(h) Use electronic surveillance to monitor the movement of the tigers during the night.

(i) Water holes, cattle kill, transmission lines should be regularly monitored.

(j) Put in place Rapid Response Team (RRT) for capturing the animal to avoid lethal encounter. The RRT to be equipped with the following:-

   i. A field van/mini-truck with built in rails for accommodating a trap cage, with space for equipments, attendants and staff.

ii. A tranquilization kit with drugs for chemical immobilization.
iii. Taser gun for instant immobilization of the animal.
iv. 2 mobile phones for continued communication with the authorities.
v. 4 wireless handsets.
vi. 2 GPS sets.
vii. 1 long ranging night vision for seeing objects in the dark.
viii. A digital camera.
ix. 4 trap cages (2 for tiger and 2 for leopard).
x. 1 mini-tractor for transporting the cage in rugged terrain.
xi. 2 search lights.
xii. 2 radio collars with receiver and antenna.
xiii. 2 portable tents.
xiv. Portable hides – which can be set up fast, to be used for persons with tranquilizers
xv. 2 folding chairs with table.
xvi. Hand held audio system.
xvii. Rope and net.
xviii. First aid kits

(k) The rapid rescue team is required to ensure unobtrusive close monitoring of the animal with least disturbance, for tracking its movement.

(l) In addition, at places which are not waterlogged, camera traps should be set up (fixed to a post or a tree) for establishing the identity of the animal.

(m) The rapid rescue team also requires due capacity building and 'hands on' field training involving the Wildlife Institute of India and other relevant outside experts, if needed.

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ANNEXURE-IV

PRIORITISING AREAS FOR TIGER MONITORING

The tiger source areas and its surrounding forests have the maximum tigers, besides some protected areas and forest patches. The districts/forest divisions having spatial occupancy of tiger as indicated in the maps need ongoing monitoring on a daily basis. In this context, the following actions are indicated:

(a) Monitoring the tiger source areas using camera traps to generate photo ID for creating a photo database (Phase-IV monitoring)

(b) Implementing Phase-IV monitoring in areas having tiger occupancy as indicated in the map

(c) Periodic comparison/review of camera trap tiger photos to fix ID of tigers reported in several areas near a source site

(d) Complementing the camera trap monitoring with simple foot patrolling in the peripheral areas, while maintaining day-to-day record as per Phase-IV monitoring protocol

(e) Monitoring livestock depredation by tiger and ready payment of compensation

(f) Keeping track of sudden change in land use in areas having tiger presence

(g) Avoiding blockage of traditional tiger/wildlife corridors in areas outside the tiger reserves falling in various forest divisions

(h) Monitoring sudden change in cover values in tiger areas (change in cropping pattern etc.)

(i) Monitoring tiger movement along river courses

(j) Keeping track of insecticides sale outlets and their use in tiger bearing areas (to avoid poisoning of water)

(k) Networking through local workforce for gathering information relating to wandering gangs traditionally involved in poaching of wild animals

(l) Keeping track of local market days

(m) Fostering creation/maintenance of wildlife monitoring register at the Gram Sabha level in areas outside tiger reserves, with incentives for informing tiger presence

(n) Creation/maintenance of 'wildlife/tiger offence register' at the Gram Sabha level with reward system for assisting in crime detection

(o) Deploying special monitoring teams around highways, open wells, railway tracks, electrical transmission lines, village ponds, natural water holes, irrigation canals

(p) Insulating high tension electrical transmission poles in tiger bearing areas, besides covering open wells and irrigation canals

(q) Keeping track of encumbered tigresses in tiger bearing areas for monitoring the dispersing young ones

(r) Periodic checking of samples from water points/ perennial water sources for lethal contamination

(s) Alerting local people in right burdened, tiger bearing areas to prevent lethal encounters

(t) Periodic disease monitoring of village cattle in the tiger bearing areas to avoid disease transmission to natural prey base for tiger

(u) Monitoring natural salt licks to prevent poisoning/ poaching in tiger bearing areas

(v) Keeping track of local ironsmiths engaged in preparation of 'gin traps', snares etc.

(w) Creation of wildlife crime dossier and exchange of such information with field units in tiger bearing areas under intimation to the NTCA

(x) Fortnightly monitoring of tiger mortality and progress of tiger offence cases ongoing in the courts of law by the Chief Wildlife Warden

(y) Monthly monitoring of tiger mortality and progress of tiger offence cases ongoing in the courts of law by the PCCF/HOFF

(z) Use sniffer dogs for detection of body parts, escape routes and other leads

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(The SOP has been prepared by the NTCA with inputs from Shri. P.K. Sen, Dr. Ullas Karanth, Ms. Prerna Singh Bindra, Dr. P.K. Malik, Dr. Parag Nigam and Field Officers)

STANDARD OPERATING PROCEDURE TO DEAL WITH TIGER DEPREDATION ON LIVESTOCK

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

STANDARD OPERATING PROCEDURE TO DEAL WITH TIGER DEPREDATION ON LIVESTOCK

1. Title: Standard Operating Procedure to deal with tiger depredation on livestock
2. Subject: Dealing with situations arising due to tiger depredation on livestock
3. Reference: SOP of National Tiger Conservation Authority/Project Tiger on emergencies arising out of straying tigers in human dominated landscapes
4. Purpose: To ensure appropriate action to deal with livestock carcasses being fed upon by tigers, to avoid undue interference with the natural process prevailing in the habitat, while avoiding their casualty/injury, besides safeguarding general public and field staff.
5. Short summary: This Standard Operating Procedure (SOP) provides the basic, action and precautions required at the field level (tiger reserve or elsewhere) for dealing with livestock carcasses being fed upon by tigers
6. Scope: The SOP applies to all tiger reserves and field formations with tiger presence.
7. Responsibilities: The Field Director would be responsible in the case of tiger reserves. For protected areas (National Park/Wildlife Sanctuary), the concerned protected area manager would be responsible. In the case of other areas (revenue land/conservation reserve/community reserve/village/township) the Wildlife Warden, as per the Wildlife (Protection) Act, 1972, or Divisional Forest Officer/Deputy Conservator of Forests (under whose jurisdiction the area falls), would be responsible. The overall responsibility at the State level would rest with the Chief Wildlife Warden of the concerned State.

8. Causes/reasons/circumstances leading to tigers feeding on livestock
    a. Humans let loose their cattle in forest areas for grazing
    b. People tend to encroach upon forest land exposing their livestock to predation
    c. Tigers disperse into human dominated landscapes when the carrying capacity of a source area is achieved, forcing them to prey on livestock
    d. Young, old and weak tigers are pushed to the periphery of optimum habitats by tigers which have greater vigour
    e. Tigers may become habituated to feeding on livestock due to the principles of optimal foraging
    f. In case corridor connectivity exists, tigers disperse out to other habitats to establish their territory in a meta population.
9. Suggested field actions to deal with tiger depredation on livestock
    (a) All livestock kills should be reported to the nearest forest management unit for which sensitization campaigns need to be carried out on a regular basis. The concerned forest unit should also develop an intelligence based informer network to detect such kills. Forest units adjoining tiger occupied areas also need to be sensitized to the issue of livestock kills and report these immediately. A mechanism for incentives to the villagers/informers, livestock graziers/charwahas for cattle kill may also be developed.

(b) A committee with the following members may be constituted to oversee the kill and its surrounds;
   a. A representative of the local Panchayat
   b. Local NGO representative, nominated by the FD/DCF under whose jurisdiction the area falls
   c. A veterinarian
   d. Deputy Director/Protected Area Manager/DFO I/C–Chairman Non-official members need to be incentivized for adequate co-operation, for which a mechanism needs to be devised in coordination with the District administration and/or nearest Tiger Reserve

(c) In case of livestock depredation by tiger/leopard, the carcass should not be removed from the site but should be allowed to be eaten in full by the carnivore to prevent recurrence of such depredation in the area.

(d) Prompt payment of compensation should be done to the affected people vis-à-vis the citizen's charter, for which a mechanism needs to be devised in coordination with the concerned District administration and/or nearest Tiger Reserve

(e) Ensure unobtrusive guarding/monitoring of the kill to allow feeding of the carcass (if not close to a human settlement) besides safeguarding from poisoning from villagers (for revenge killing). A special team may be formed for this purpose in consultation with the above committee, which too needs to be incentivized.

(f) The first 24 hours, after detection of the carcass, of observation are critical in context of the tiger

returning to the kill and finishing feeding. If however, this does not happen, the livestock remains/rejects need to be incinerated completely by burning to prevent spread of infectious diseases to humans and other animals. The area also needs to be sanitized with chemicals/flaming to destroy any disease causing spores.

(g) Set up camera traps near kill site to confirm/establish the ID of the animal.

(h) Establish identity of the tiger by comparing camera trap photographs with National Repository of Camera Trap Photographs of Tigers (NRCTPT)/ Reserve level photo database and find out the source area of the animal.

(i) Collect recent cattle/livestock depredation or human injury/fatal encounter data, if any, in the area. If it is an area historically prone to such incidences, detailed research work has to be carried out in order to assess the reasons for the frequent tiger emergencies in the area

(j) Create Pressure Impression Pads (PIPs) in the area to ascertain the daily movement of the animal, while plotting the same on a map (4" = 1 mile scale or 1 : 50,000 scale).

(k) If close to human habitation, proactively involve District Collector/DM and SSP/SP of the area to maintain law and order in the area, besides avoiding crowding by local mobs. Acquaint them with human-tiger conflict issues and guidelines of the NTCA to deal with the situation. If the situation demands, the district authorities need to ensure law and order by imposing section 144 of the Cr.PC.

This is essential to avoid agitation/excited local people surrounding the animal spot which hampers movement of the animal back to the wild as well as capture operation (if required), leading to serious injuries on people and staff.

(l) Take help of the district level officials to alert the villages in the vicinity of the area having the spatial presence of the tiger. Local account of tiger presence can also be disseminated by munadi or other prevalent local systems to avoid visiting in such areas.

(m) In case of tiger/leopard showing disability due to injury/old age or display in aberrant behaviour by resorting to livestock depredation in a recurring manner, such animals should be dealt with as per the following SOPs issued by this Authority:

a. SOP to deal with emergency arising due to straying of tigers in human dominated landscapes

b. SOP deal with orphaned/abandoned tiger cubs and old/injured tigers in the wild.

STANDARD OPERATING PROCEDURE TO DEAL WITH ORPHANED/ ABANDONED TIGER CUBS AND OLD/ INJURED TIGERS IN THE WILD

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

STANDARD OPERATING PROCEDURE TO DEAL WITH ORPHANED/ABANDONED TIGER CUBS AND OLD/ INJURED TIGERS IN THE WILD

1. **Title:** Standard Operating Procedure to deal with orphaned/abandoned tiger cubs and old/injured tigers in the wild.
2. **Subject:** Dealing with situations arising due to orphaned/ abandoned tiger cubs and old/injured tigers in the wild.
3. **Reference:** Advisories of National Tiger Conservation Authority/Project Tiger on the subject.
4. **Purpose:** To ensure appropriate selection/rearing of orphaned/abandoned tiger cubs and old/injured tigers in the wild, to avoid undue interference with the natural process prevailing in the habitat, while avoiding their casualty/injury, besides safeguards for the field staff involved in the operation.
5. **Short Summary:** This Standard Operating Procedure (SOP) provides the basic criteria, action and precautions required at the field level (tiger reserve or elsewhere) for dealing with orphaned/abandoned tiger cubs and old/ sick/injured tigers in the wild.
6. **Scope:** The SOP applies to all tiger reserves and field formations with tiger presence.
7. **Responsibilities:** The Field Director would be responsible in the case of tiger reserves. For protected areas (National Park/Wildlife Sanctuary), the concerned protected area manager would be responsible. In the case of other areas (revenue land/conservation reserve/ community reserve/village/township) the Wildlife Warden, as per the Wildlife (Protection) Act, 1972, or Divisional Forest Officer/Deputy Conservator of

Forests (under whose jurisdiction the area falls), would be responsible. The overall responsibility at the State level would rest with the Chief Wildlife Warden of the concerned State.

8. Causes/reasons/circumstances leading to orphaned/abandoned tiger cubs and old/injured tigers in the wild:
   A. ORPHANED/ABANDONED TIGER CUBS
      a. Orphaned/abandoned tiger cubs due to mortality of mother (poaching/internecine combat/other natural causes)
      b. Tiger cubs with in-born incapacitation
      c. Weak tiger cubs/runt
      d. Injured/sick tiger cubs
   B. OLD/INJURED/SICK TIGERS
      a. Ageing and general debility to predate in nature
      b. Incapacitation due to injury (natural/internecine or other causes)
      c. Incapacitation due to loss of canines
      d. Inability to feed owing to porcupine quill injury etc.
      e. Sickness due to disease
9. Suggested field actions to deal with orphaned/abandoned tiger cubs and old/injured tigers:
   (a) At the outset, constitute a Committee (herein after referred as the Committee) for technical guidance and monitoring on a day to day basis, as under:-
      i. A nominee of the Chief Wildlife Warden
      ii. A nominee of the National Tiger Conservation Authority
      iii. A veterinarian

iv. Local NGO representative
v. A representative of the local Panchayat
vi. Field Director/Protected Area Manager/DFO I/C-Chairman

(b) Since it may not be always possible for experts from the Wildlife Institute of India to provide assistance, it is advised that some local outside experts may be involved in the ongoing monitoring.

(c) Establish identity of the tigress/cub(s)/old/injured/sick tiger by comparing camera trap photographs with National Repository of Camera Trap Photographs of Tigers (NRCTPT)/Reserve level photo database and find out the source area of the animal.

(d) Collect recent cattle/livestock depredation or human injury/fatal encounter data, if any, in the area.

(e) Create 'Pressure Impression Pads" (PIPs) in the area to ascertain the daily movement of the animal, while plotting the same on a map (4" = 1 mile scale or 1 : 50,000 scale).

(f) Restrain the abandoned/orphaned cub(s)/old/injured/sick tiger by deploying a cage or chemical immobilization in case of tiger cubs which are more than 30 days old.

(g) Examine the said cub(s) by the Committee constituted as suggested above at para 9 (a) to make recommendations with respect to following objectives:

i. Rearing the tiger cubs in 'in-situ' enclosure for wilding/re-wilding towards subsequent release in the wild

ii. 'Hard' release of tiger cubs in the wild

iii. Treatment of tiger cubs for rearing in zoo

iv. Rehabilitation of the injured/old tiger in zoo

(h) An authorized spokesperson of the Forest Department, should periodically update the media (if required) to prevent dissemination of distorted information relating to the operation/incidents. Sensationalization or distorted information can lead to further damage.

(i) The Chief Wildlife Warden has to take the final decision on whether a cub has to be released back in the wild or transferred to a zoo.

(j) It is important to have design suitable cages and a transportation protocol to avoid stress to the animal. Details in this regard are at **Annexure-A.**

10. Considerations with respect to above objectives at para 9

i. Rearing the tiger cubs in 'in situ' enclosure for wilding/re-wilding towards subsequent release in the wild

(a) The tiger cubs should be healthy without any incapacitation (should be confirmed through veterinary examination).

(b) The design and related details of the in-situ enclosure are at **Annexure-B.**

(c) In case the tiger cubs are in infant stage, they should be hand reared in specially designed house-keeping facility within the in-situ enclosure as per protocol provided at **Annexure-C** till they are fit enough to stalk/ appropriate a natural prey. Once the cubs are in

a position to do so, they should be transferred to the larger portion of the in-situ enclosure.

(d) Orphaned/abandoned tiger cubs which are known to accompany their mother while feeding on kills, should be released in the larger portion of the in-situ enclosure containing natural prey.

(e) Two tiger cubs can be housed in the larger portion of the natural in-situ enclosure, initially for a period of two months, subsequent to which they should be housed in separate portions of the said enclosure having natural prey and cover.

(f) Under no circumstances, tiger cubs of opposite sex should be reared together.

(g) The house-keeping/daily watch & ward/ maintenance of kill register should be entrusted to a dedicated small team of field staff, who should be retained to perform the said task till the wilding is completed.

(h) The in-situ enclosure should be an 'off exhibit' area and under no circumstances it should be frequented by visitors (except for supervisory checks by senior officials of the reserve). This is important to avoid human imprint.

(i) Presence of natural cover, forage, water should be ensured within the in-situ enclosure.

(j) The provision for weed eradication should be ensured for the availability of natural forage/ browse species for wild ungulates within the in-situ enclosure.

(k) A portion of the in-situ enclosure should be exclusively maintained for in-situ rearing of

natural prey animals which are sympatric in the habitat without any inter- specific avoidance.

(l) Since natural wild prey increase in number in carnivore prone enclosures, an assessment of their number should be periodically done for releasing an appropriate number back in the wild to avoid stress conditions within the enclosure owing to competition for food and cover.

(m) To avoid 'Pavlovian' conditioning of tiger cubs in the in-situ enclosure, the release of natural prey animals within the tiger enclosure should be carried out with minimum sound (like avoiding opening of shutters/gates/call by housekeeper etc.).

(n) A day to day record of kills made by the tiger cub should be maintained through unobtrusive monitoring, with weekly supervisory checks.

(o) The tiger cubs should be reared in the in-situ enclosure for a minimum of two years, and each cub should have a successful kill record of at least 50 prey animals, since 'wilding' process requires time.

(p) Providing meat from external source should be avoided at all cost, except for infants where the protocol at **Annexure-C** should be followed.

(q) The tiger cubs which have a successful kill record may be released in the wild in consultation with the NTCA after radio collaring, to a suitable, productive habitat within the same landscape, while considering the land tenure dynamics of tiger/presence of human settlements in the new area

(r) The persons responsible or handling cubs must approach them by putting a tiger mask along with work day clothes of a tiger stripe pattern smeared with tiger urine and faeces to minimize imprinting to the extent possible

ii. 'Hard' release of tiger cubs in the wild

(i) The tiger cubs should be in prime health and in dispersing age (three/four years).

(ii) There should be no abnormality/incapacitation.

(iii) At the time of immobilization, blood and serum samples may be collected for further analysis

(iv) Radio collaring of the tiger cubs should be done prior to release at the new site.

(v) The NTCA should be consulted prior to such a release, while providing details of the habitat/ psrotected area where the release is proposed (prey base, land tenure dynamics of resident tigers, proximity to human settlements, protection status, etc.).

iii. Treatment of tiger cubs for rearing in zoo

(i) All incapacitated/injured tiger cubs.

(ii) Rehabilitation in a recognized zoo after initial treatment at site.

iv. Rehabilitation of the sick/injured/old tiger in zoo

(i) The tiger reserves/protected areas/forest habitats, having resident wild carnivores like tiger, need to be managed with minimum human intervention, with an overarching aim towards protection to foster welfare factors in a habitat, for the natural prey-predator balance and intra and interspecific interactions to operate. This

natural process is facilitated by the 'survival of fittest', through natural elimination of the aged/weaker individuals from a population. Therefore, it is not advisable to intervene in this natural process through artificial feeding of aged/incapacitated/injured wild tigers, which would amount to interference with their social land tenure dynamics and intra-specific interactions. Further, such practices may also lead to habituation of wild tigers which may lead to human-wildlife interface problems like livestock or human depredation.

(ii) Artificial feeding of old/incapacitated wild tigers to ensure their longevity goes against the basic tenets of 'in-situ' wildlife conservation and hence should not be done.

(iii) Only in extreme situations, where an old/injured tiger may create humantiger interface problems leading to livestock/human depredation, such tigers should be rehabilitated in a recognized zoo.

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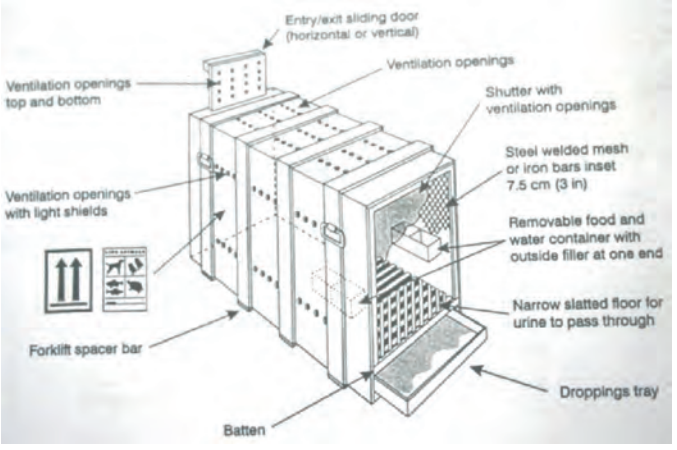
ANNEXURE-A

Design of Cages/Transportation Protocol

TRANSPORTATION CAGES FOR TIGERS

GENERAL CONSIDERATIONS:

- All tigers must be provided space to lie comfortably but not turn around
- There must be 10 cm clearance around the animal when standing in normal position
- The height of the container should allow animal to stand erect with its head extended and length must permit it to lie in the prone position
- Plywood/fibre glass or equivalent material should be mounted on a solid wood or metal bolted/screwed frame. Plywood would give a strong and smooth interior
- Floor should be slatted over a liquid proof tray (splash proof) to collect the excreta
- Roof must be solid with ventilation openings
- The door should be made of steel welded mesh or strong iron bars, with bars being spaced such that the animal cannot pass its leg in between them. The front should also be provided with a sliding wooden shutter with ventilation holes or should be slatted
- Ventilation holes should be placed as shown in the figure



Scheme as Outlined by IATA

A Cage on the Said Scheme

SPECIFIC CONSIDERATIONS

- Average dimensions of a tiger
  - o Length : 140 to 250 cm (Tail length 30 to 100 cm)
  - o Height : 60 cm
  - o Weight : 100 to 300 kg
- Inner dimensions of the transport cage
  - o Length : 195 cm
  - o Height : 105 cm
  - o Width : 75 cm
- Description of the cage
  - o Both the sides should be with sliding doors
  - o Frame- MS Angle 40 × 40 × 6 mm
  - o Sides- 12 mm thick plywood supported by MS flat 35 mm, 4 mm thick at a distance of 600 mm from the outside and covered inside with an iron sheet of 3 mm thickness
  - o Roof- 12 mm water proof plywood and covered inside with 3 mm iron sheet
  - o Doors- 12 mm diameter MS plain bar, 50 mm apart should be welded with the frame and covered with 5 mm thick plywood. Bolt and chain system for opening and closing the door
  - o Ventilation - Holes as depicted in the scheme above
  - o Floor- 19 mm thick plywood on MS flat 35 mm × 4 mm placed 350 mm apart. Floor also covered with 2 mm iron sheet. 20 mm dia holes cut out in the floor. Whole cage should rest on 50 × 50 mm iron pegs.
  - o Excreta Trays - Two 25 mm deep trays to be kept below the floor in between the iron pgs for removal of excreta and urine. They should be removable from

either end and preferably separated by a wooden partition

- o Food and water - Small door of the size 100 mm × 100 mm should be made on one side for putting in food and pouring water
- o Side Handles- Four steel rings of dia 150 mm of 12 mm dia MS bar (2 on each side) be fixed at all four vertical members slightly above the midpoint. They are dual purpose - for lifting by crane as well as for tying with another cage while shifting

PROTOCOL FOR TRANSPORTATION OF TIGERS

GENERAL CONSIDERATIONS

- The entire transportation process should be conducted under the supervision of a veterinarian well versed in tiger physiology and who is duly registered with the

state veterinary council or Veterinary Council of India. It is preferable if a veterinarian with prior experience of handling tigers is engaged for the purpose

- Tigers should be transported in closed crates/cages with adequate ventilation so as to disassociate them from the environment during travel. This helps to maintain a tranquil state
- The transport vehicle and the cage/crate should be sanitized before each travel
- Winter is the preferred season for transporting as temperatures are low and humidity is minimal. However, in case of sick and injured animals, transportation should be carried out as an d when required
- In case the tiger has to be tranquilized or sedated for travel, the same should be carried out under the direct supervision of a veterinarian well versed with tiger physiology and the effect the drug may have on the animal
- In case the tiger falls sick or acquires an injury during transportation, the same shall be attended to by a veterinarian immediately
- While tigers can tolerate fluctuations in temperature, differences in environmental and climatic factors between the origin and the destination should be kept in mind prior to embarking on the journey
- Physical contact with the tiger during the course of transportation should be strictly avoided
- The excreta of the tiger and foamiest such as utensils straw etc. should be handled carefully to avo id contamination and spread of disease

- Drinking water is more important than feeding the tiger during transportation. Water should be given at the start (2 hours before starting) as well as on arrival. Care should be taken not to over feed the animal
- Water should be provided every 12 hours to the animal after which a 30 minute break in journey should be taken so that the water gets absorbed
- Feed should be provided every 24 hours for adults and 12 hours for young tigers. It is advisable to reduce the feed of the tiger initially so that it can be fed before the start of the journey. Feed should be provided again within 4 hours of reaching the destination
- Specific instructions for feeding and watering should accompany the tiger when being transported
- The face of the tiger should be in the direction of movement to minimize stress
- Transportation should follow the most direct route and preferably during dark as this encourages the tiger to rest
- All paperwork, travel documents and permissions from the concerned authority should be in order prior to commencement of the journey

SPECIFIC CONSIDERATIONS

- Selection of animal:
    - o Tigers to be transported should be in good health
    - o Pregnant/nursing/tigresses in estrus and geriatric animals should be invariably avoided for transportation

  - Ideally, only adults and sub adults should be transported. Adults should be transported only after the breeding season is over
  - Young ones unable to fend for themselves should be transported accompanied by a handler
  - In case of sick and injured tigers, the decision should be based upon status of their health and requirements
- Marking:
  - Tigers to be transported should be suitably mark ed by photographic capture to document their natural markings
  - Micro chipping may also be carried out if resources are available
- Capture and health screening: The tiger captured by physical/chemical means should be screened for routine haematological and serological parameters and with respect to diseases which may be potentially exotic at the destination, communicable to resident populations at the destination and also zoonotic in nature
- Never cover the cage with tarpaulin/plastic sheet during transportation and ensure proper ventilation
- Cages/Crates should be constructed with adequate hand holds for lifting/handling during transportation so as to avoid undue tilting or bringing the handlers in close contact with the animal
- A means of access to the food and water trough should be provided for refilling and cleaning during the journey
- Loading and unloading of the tiger should be preferably done in daylight

- Young tigers should not be transported alone and should be kept in proximity with another of the same species
- Route familiarization: The team undertaking the transportation should familiarize themselves with the route and plan in advance all the stops that shall be undertaken during the journey
- Record keeping: All records pertaining to the tiger should be compiled and maintained in multiple copies with various authorities
- All emergency veterinary drugs and equipment should be carried by the accompanying veterinarian to meet any exigency
- Financial requirements and implications should be kept in mind well in advance before undertaking the transportation
- Liaisoning with concerned authorities should be carried out as per procedure

REFERENCES

1. 2012. Protocols for Transportation of Wild Animals. Central Zoo Authority, India
2. 1998. International Air Transport Association, Live Animal Regulations , 25th Edn
3. A Manual of Transport Cages and Nest Boxes. Singh, D.N., Malhotra, A.K., National Zoological Park, New Delhi

ANNEXURE-B

Design and Related Details of the *In-Situ* Enclosure

1. **LOCATION:** The location of the in situ enclosure should be chosen keeping in mind the following considerations
    a. It should be well away from any anthropogenic activity/disturbance and especially away from the tourism zone of the tiger reserve. Tourism routes shall in no circumstance pass near the perimeter of the selected enclosure
    b. The enclosure shall preferably be near a water source so that artificial water sources within it can be cleaned and refilled periodically as well as for maintenance of sanitation and hygiene of the retiring cubicle
    c. The site should have features identical to the landscape in which it is present such as terrain, topography and habitat types. Habitat should be especially conducive for prey species to thrive
    d. The site though to be created in isolation, should be accessible by motor vehicle in case of exigencies
    e. The perimeter of the enclosure should be chosen such that tall trees which can act as vantage points for monitoring the enclosure can fall on it to the extent possible. This shall obviate the need to construct watch towers which shall save costs, labour as well as provide a more natural environment for the tiger to adapt and acclimatize. Even if a watch tower needs to be erected, it should preferably be done using naturally available material like tree poles/bamboo etc. to blend with the environs

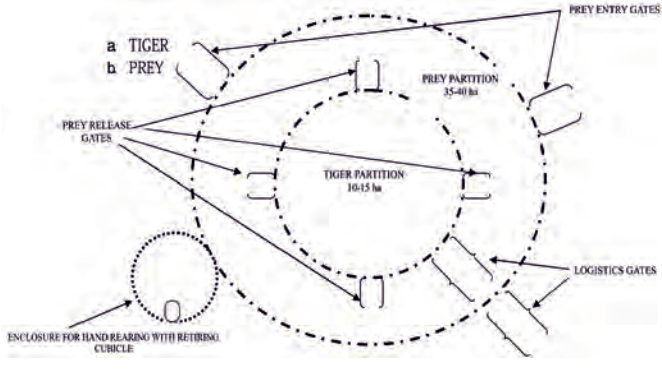
2. **SIZE:** The size of the in-situ enclosure should be able to accommodate at least two tigers as orphaned cubs more often than not may be part of a litter. Practical experience has shown that once the site has been selected on the above criteria, size of 50 hectares as described below is suitable for 2 sub -adults, approaching adulthood.
3. **DESIGN:** The enclosure should be erected in a circular manner to the extent possible or as the topography may permit. Unnatural sharp edges are avoided at best.
    a. Two concentric circular plots with the inner circle being 10-15 hectares and the outer being 35-40 hectares. The inner plot will house the tiger while the outer shall house the prey species
    b. The inner plot has to be made carnivore proof to prevent free ranging carnivores from entering. The inside of this enclosure shall be "curtained" all around the perimeter up to a height of 6 feet with locally available tall grass/foliage to prevent visibility from inside as well as outside
    c. For the inner plot, angle iron, 15 feet above the ground, shall be placed 10 feet apart with the angle protruding towards the inside to prevent the tigers from moving out. For the outer plot however, the angle shall protrude out to prevent free ranging carnivores from preying upon the herbivores
    d. Chain link mesh shall be used to se cure the perimeter with the angle posts as described above. The angle portion of the posts shall be secured with 4 strand barbed wire
    e. Four gates 15 feet wide placed diametrically opposite each other shall be provided for the tiger/inner plot

to release pre y as per decided protocol. These gates will be in the form of a wire meshed tunnel with sliding doors on both ends and shall be suitable camouflaged using locally available vegetation. Their mechanism is explained subsequently.

f. One gate large enough to let an elephant/truck pass through shall be provided in both the outer and inner plot for logistics

g. Two gates shall be provided in the outer plot to regulate prey. Once sufficient prey has been lured in, the gates shall be closed

4. **PARTITIONING:** This has been explained with the help of the enclosed scheme (not to scale)



5. **RELEASE OF PREY:** The release of prey shall be done in an irregular manner based on the last kill by the tiger so as to approximate natural conditions to the extent possible.

a. Prey population in the enclosure should be monitored for their health status and should be

periodically released back in the wild vis-à-vis the habitat status to avoid stress/starvation

b. Further, their release to the carnivore portion of the enclosure should be suitably adjusted by facilitating their passage from the larger, non -carnivore section

c. The entire process has to be done erratically, following no fixed schedule and with minimum extraneous noise to prevent the development of a Pavlovian reflex in the tigers. Provision may be made to douse the sounds created with recorded sounds of the forest environment. However, here too care has to be taken to avoid conditioned reflexes developing in the tiger by playing these sounds even when food is not being introduced

6. **HOUSEKEEPING**

a. The aim of housekeeping shall be to minimize the human imprint on the tiger

b. The staff shall ensure that there is never a break in the integrity of the two partitions created by regular monitoring of the perimeters

c. No extraneous material should make its way into either of the enclosures

d. Housekeeping should be kept to a minimum in the enclosures so as to ensure an environment as close to a natural one

e. The sliding mechanism of the tunnel gates described afore hand shall be regularly maintained to minimize sound during operation and reduce chances of the Pavlovian reflex from developing

7. **HABITAT MAINTENANCE**
   a. Removal of excessive leaf litter and other potential fire fuels shall be removed before the fire season from both the outer and the inner enclosures
   b. For the herbivore partition, grassland management in the form of harrowing followed by planting of indigenous grass slips shall be carried out
   c. The exotic weeds such as Lantana, Eupatorium, Mikania etc. shall be removed periodically
   d. The water sources, especially artificial ones shall be cleaned and refilled during the lean season
   e. Rotational grazing in the outside plot can be practiced to prevent the entire area from being grazed at a time
8. **PROTECTION/WATCH & WARD**
   a. As described during site selection, machans may be created at vantage points on tree tops for observing the behavior of animals (Tiger and prey) as well as monitor the habitat conditions over time
   b. The observers should be well versed in normal behavior of the animals to notice any deviance. This is especially with respect to appearance, gait and feeding of the animals
   c. The staff shall ensure that no domestic livestock including stray dogs are present in the vicinity
   d. The staff shall record observations in well defined formats with respect to behavioural parameters
   e. The staff shall be equipped with wireless sets to communicate any exigency/change from routine

f. Special care is to be taken in fire prone/flood prone areas as one such event can result in a catastrophe as the animals are enclosed

g. No straying tourist/tourist vehicle shall be allowed to venture close to the enclosure

h. CCTVs can be set up at vantage points for monitoring

9. **DAY TO DAY MONITORING**

a. Well defined formats shall be created with respect to general appearance (will include body condition, gait etc.) and feeding of animals

b. Any undue disturbance in the habitat shall be recorded

c. Time of releasing prey animals, habitat intervention, and time of conducting any chore shall all be maintained in a daily chart.

10. **HEALTH CARE**

a. Body Condition Score/Health cards with respect to the local prey species shall be devised in consultation with an experienced veterinarian/Wildlife Institute of India which shall at a glance reflect the health condition of the animals in the enclosures

b. A special watch of animal excreta with respect to its consistency needs to be noted on a daily basis as any deviation may act as a potential source of infection. In case diarrhea is noted, the excreta shall be removed on detection and the area covered with bleaching powder over which soil shall be spread to prevent animals from accidental ingestion of the chemical

c. Periodic fecal examinations shall be done for both tigers as well as prey animals to determine parasitic load in the enclosure
d. The natural orifices of animals should be observed daily to detect respiratory and gastrointestinal disturbances
e. Compromised animals should be identified and attempts are to be made for their removal from the enclosure to prevent localized epidemics

11. **RECORD KEEPING:** Following records shall be maintained which shall be monitored by the Range Officer in their entirety. Test check of records shall be carried out by the ACF, Deputy Director and Field Director every month on field visits/surprise checks
    a. General Appearance
    b. Health record including interventions
    c. Habitat Interventions
    d. Schedule of activities for the day
    e. Feeding pattern/Release of prey
    f. Maintenance activities
    g. Reporting/Wireless register

ANNEXURE-C

Housekeeping Details for Rearing Abandoned/ Orphaned New Born Tiger Cubs

1. **HOUSING LOCATION**
    a. The housing location should be as close as possible to the final in situ enclosure and release site of the tiger so as to help it adapt to its environment
    b. It should preferably be a part of the in situ enclosure in the form of a retiring cubicle which has adequate safety provisions such as sliding/guillotine doors for handler safety as the cub grows older. The retiring cubicle should have an entry into the smallest partition of the in situ enclosure which can be removed when the cubs are ready to be released in to the larger part of the enclosure
    c. The size of the retiring cubicle should be twice as per CZA specifications as the cubs shall be hand reared for nearly 4 months: 5.5 × 3.6 × 3 m (lbh). The retiring cubicle should have provision of a squeeze chamber for administering drugs to the cubs once they are no longer amenable to handling
    d. Prefabricated material may be thought of which can be removed easily once the cub is permanently released into the in situ enclosure for re-wilding
    e. The location should have sufficient ground water or be close to a water source as a substantial amount shall be needed to maintain the premise

2. **FEEDING**

a. Body weight of the cub needs to be noted prior to commencement of feeding. One tenth of the body weight is the quantity of milk which needs to be given in total. This amount should be divided into five equal portions and fed at five equal intervals in a day

b. Fresh cow's milk and milk powders should be generally avoided. Milk powders lead to dermal problems and diarrhea. Goat milk or bitch milk if available have been found to be suitable

c. Avoid sugary solutions as cats cannot digest high loads of glucose

d. For bottle feeding, have the cub stand on all fours and its head angled up so that no fluid enters the lung. A disinfected baby bottle with nipple can be used for the purpose. Make sure that the nipple rests above the tongue while feeding

e. Milk replacers should closely simulate cat milk and should be prepared in the following manner

   i. 20 gm skim milk powder

   ii. Dissolve in 90 ml of warm water

   iii. Add 30 gms egg yolk to the above

f. Feeding regimen for the above milk replacer/goat milk is as follows; Septran antibiotic syrup may be added to pre vent infection. Excess of this antibiotic should however, be avoided as it may kill beneficial microbes which aid digestion. Multi vitamin syrup along with gripe water can be added to the milk to aid digestion.

Time Period	*Feed to be given*
Up to 45 days	Goat milk with above mentioned supplements
45 days to 60 days	Replace goat milk with chicken soup twice a day. If this protocol fails, mixing chicken soup with goat milk may be tried
Up to 60 days	Gradually replace milk with entire chicken soup
61st day onwards	Fully boiled chicken pieces should be introduced in the diet
Up to 75th day	Gradually replace chicken soup with fully boiled chicken pieces with bone
75 to 90 days	Provide fully boiled chicken with bone
90 to 105 days	Gradually replace fully boiled chicken with half boiled chicken
105-120 days	Introduce raw chicken and gradually replace half boiled chicken with raw
120-150 days	Introduce boiled beef soup along with raw chicken. This should be gradually replaced to fully boiled beef pieces to half boiled beef pieces to raw beef
From 6th month onwards	Raw beef and raw chicken should be sustained in the diet

g. Baits may be placed gradually in the partitioned area of the enclosure to encourage the cub to start stalking and hunting

3. **HEALTH CARE:**

a. Cubs should be stimulated to urinate and defecate after feeding by massaging the ano-genital area with cotton moistened in water. This practice should be continued till 12 -14 weeks till cubs start defecating on their own

b. If diarrhea occurs, milk/milk replacer should be diluted with an ORS and total volume decreased by 30% for 8 to 12 hours. Stool culture may be obtained for pathogenic bacteria if suspected
c. If diarrhea is severe and persistent, all oral intakes should be stopped for 12 to 18 hours and cub should be maintained on subcutaneous fluids. Gradually the cub should be started on oral electrolytes followed by dilute formula and returned to normal feeding over the next 12-24 hours
d. Vaccinations are to be carried out in the following manner
    i. 75 days/10 weeks/2 months: Canine Parvovirus, Canine Distemper, Hepatitis, booster after 3 months
    ii. 3 months: Rabies
    iii. 5 months: Felivax (Feline panleukopenia and feline infectious rhinotracheitis)
e. A watch for sudden acute symptoms such as fever accompanied by dullness and swelling of limbs is an indication of Trypanosomiasis and should be immediately treated. A prophylactic namely Trivax may be administered at one year of age but care should be taken to use the subcutaneous route only as it may cause abscesses at site of injection if given intramuscularly
f. Deworming of the tiger cub should be carried out every 3 months
g. Parameters such as heart rate, respiration, condition of the oral and nasal mucosa, moistness

of the muzzle, urination and defecation should be observed daily

h. Disposition of the animal especially appearance, gait and recumbency pattern should be closely monitored

4. **TIMING OF TRANSFER TO NATURAL PORTION OF THE ENCLOSURE**

a. In ordinary circumstances, a tiger cub can spend up to 2-2 and half years with the mother acquiring skills for surviving in the wild.

b. However, in case of an orphaned cub which has been hand raised and which has been weaned of bottle feeds by 12 to 16 week s of age, may be released into the limited partition mentioned above by 24 to 36 weeks depending upon its response

c. The cub may finally be released into the entire natural portion by 2 to 2 and a half years of age so that it starts conditioning to the wild

5. **PROTECTION/WATCH AND WARD**

a. The Animal keeper should be trained in essential tiger behavior so as to observe deviant signs. Feeding regimens should be adequately explained to the keepers along with preparation method

b. Based on the areas sensitivity 2 animal keepers on rotation with suitable number of forest staff should be placed in the chowkidar enclosure

c. They should watch out for essential health signs mentioned above

d. They should keep the entire premises clean and observe the animal at periodic intervals in the day

e. They should strictly maintain a nutrition chart, health chart and general observation chart in a chronological manner
f. They should keep a watch on the integrity of the building so that poisonous reptiles do not take a toll on the tiger cub
g. While the in-situ enclosure will be erected deep inside the forest away from anthropogenic activity, the personnel shall keep a strict watch for stray livestock and stray dogs
h. CCTVs can be set up at vantage points for monitoring

6. **SANITATION AND GENERAL HOUSEKEEPING**

a. Area should be cleaned with a 50% bleaching powder solution prior to arrival of the cubs
b. The area should be cleaned daily with a 50% bleach solution subsequent to which the area should be treated with water to avoid any dermal reactions to the bleach
c. A footbath should be placed at the entrance with bleach or potassium permanganate solution
d. Disinfectant spray should be used on the gates and latches on a regular basis
e. There should be a single handler who should thoroughly wash and sanitize his hands before handling the cub
f. Any fecal matter in the enclosure should be removed to avoid coliform infections as well as prevent fly/vector borne diseases
g. All utensils/equipment/fomites like straw, bedding etc. which have come in touch with the tiger cub as

well as the handler should be washed and cleaned daily and periodically dipped in a disinfectant solution subsequent to which it should be washed with plain water again to remove traces of the chemical

h. Multiple units of dedicated clothing for inside enclosure activity (with a tiger stripe pattern and colour) should be provided which has to be disinfected using preferably an autoclave. On no account should clothes worn by handlers outside be permitted inside while handling the cub

APPENDIX-D

SAFEGUARDS FOR FIELD STAFF

Two principles serve as the basis for selecting appropriate safeguards:

1. Protection of personnel from such hazards as allergens, infectious/zoonotic disease, and physical hazards (e.g., bites, noise, burns, chemical hazards, etc.) and
2. Protection of animals from the introduction of disease

Following are the measures which need to be adopted to achieve the essence enshrined in the above principles

- Use of Personal Protective Equipment (PPE): This includes the use of the following:
    - o Moisture impermeable gloves. Hand washing is an important adjunct to wearing gloves for which medicated soap along with copious amount of free flowing water should be used
    - o Disinfected gum boots which should not be moved out of the workplace. In fact, even when within the enclosure, they should always be dipped in the footbath when approaching the animal chamber. Alternatively, if shoes from outside environment are being used, they should be covered with a disinfected plastic cover
    - o Plastic transparent Goggles if available should be used while attempting medication or a surgical procedure to avoid infection through the eye
    - o Plastic or paper head gear should be used while preparing food for the animal

- A dedicated facility uniform (preferably a Dangri designed in tigers tripes pattern and colour) in 2-3 sets should be provided to the animal keeper which should not move out of the facility and should be periodically sterilized using an autoclave
- Bite resistant gloves can be used when dealing with cubs

- Personal hygiene
  - All staffs engaged in rearing of tigers should wash their hands thoroughly with soap and water after their daily ablutions
  - No staffs should be allowed to defecate in the open near the tiger enclosure. If facility of a toilet are not available then a pit should be dug which shall be covered after use and bleaching powder spread on it
  - Nails of the animal handlers should always be trimmed
  - Animal Handlers should de -worm themselves once in 6 months irrespective of signs and symptoms
- All waste emanating from the enclosure should be incinerated properly or buried and covered with bleaching powder
- Prophylaxis
  - The staff should get themselves checked for the following zoonoses every 6 months
    - Tuberculosis
    - Anthrax
    - Brucellosis
    - Toxoplasmosis
    - Leptospirosis
    - Fungal infections especially dermal

  - A health card in the name of each personnel engaged in the management of the enclosure should be made wherein routine hematological and serological parameters are recorded along with the aforesaid screenings
- The staff shall keep in check all guillotine doors and barriers to prevent the tiger cubs from escaping out
- The staff should keep a checklist of various activities involved in different protocols and follow them diligently for their own safety and for the safety of the tiger cubs

APPENDIX-E

Guidance Notes

1. **Habituation**

   Habituation is a learning process where animals 'learn' not to respond to certain stimuli which have proved 'harmless' or of 'no consequence'. It is a common phenomenon and plays an important role in selection of habitats and inter -specific relationships between wild animals. Thus, a wild animal, it placed new surroundings, may initially exhibit fear but would subsequently loose the fear owing to habituation. Further, congenial habituation may also result in positive response in such animals. Thus, during in-situ rearing of tiger cubs repeated familiarization with human beings or objects may result in strong habitation making 'wilding' difficult.

2. **Conditioning**

   It is a behavioural response which is acquired by an organism through experience, usually through the association of a stimulus with a reward. If the said stimulus is associated with a rewarding experience, it results in a 'positive reinforcement'. On the other hand, 'negative reinforcement' takes place if the stimulus results in a 'painful' experience to the animal. Thus, in the process of in-situ rearing association of sounds (opening of enclosure gates, sound of vehicle movement etc.) with the availability of food would result in conditioning to such stimuli which would hamper wilding.

3. **Critical distance (wilding/rewilding)**

   'Critical distance' may be understood as the minimum distance to an unfamiliar/strange object tolerated by

a wild animal. Violation of this distance would elicit a response which may result in fleeing of the wild animal from the site or attack by the wild animal on the object. Such a critical distance in the context of human -beings is non-existing in domesticated animals. In the wilding process of tiger cubs reared under in-situ conditions, it is extremely important to restore the behaviour relating to critical distance (wilding) by ensuring complete seclusion from human -beings and their associates (unobtrusive monitoring).

4. **Imprinting**

   This is a process of learning wherein an animal recognizes and becomes attached to a particular object in its early life (critical time). The critical time of imprinting may vary from few hours to several days, soon after birth depending on the species. In the wilding process of tiger cubs, this social attachment requires to be carefully avoided.

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STANDARD OPERATING PROCEDURE FOR ACTIVE MANAGEMENT TOWARDS REHABILITATION OF TIGERS FROM SOURCE AREAS AT THE LANDSCAPE LEVEL

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

STANDARD OPERATING PROCEDURE FOR ACTIVE MANAGEMENT TOWARDS REHABILITATION OF TIGERS FROM SOURCE AREAS AT THE LANDSCAPE LEVEL

1. **Title**: Standard Operating Procedure for active management towards rehabilitation of tigers from source areas at the landscape level.
2. **Subject**: Active management towards rehabilitation of tigers from source areas at the landscape level.
3. **Reference**: SOP of National Tiger Conservation Authority/Project Tiger to deal with straying tigers in human dominated landscapes and related advisories on the subject.
4. **Purpose**: With the increase in tiger numbers in India, there will be several areas where dispersing tigers will move through human dominated landscapes and at times result in human-tiger conflict. Conservation in such areas will now be dependent on quick, timely and appropriate mitigation of these conflict situations. Often tigers involved in conflict or tigers that come into human dominated landscapes may need to be captured. If such tigers are not Dangerous to Human Life then there is a possibility to release them back into the wild. However, capturing tigers and releasing them to the source of their origin would not always resolve the problem. Often, the main reason for the dispersal of tigers is the high density of the source population. It is important to relocate such tigers to areas of low tiger density (or no tigers but have recorded tiger presence in the historical range), which have good habitat and prey populations. However, care needs to be taken to ensure that such relocations are done within population clusters that share a recent common gene pool. Based on the current genetic knowledge and

existing corridor connectivity, we herein identify such population clusters within each landscape and suggest areas that are suitable to relocate surplus tigers.

5. **Short Summary**: This Standard Operating Procedure (SOP) provides the basic criteria for Active management towards rehabilitation of tigers from source areas at the landscape level.
6. **Scope**: The SOP applies to all tiger landscapes/tiger reserves and tiger bearing forests.
7. **Responsibilities**: The Field Director would be responsible in the case of tiger reserves. For protected areas (National Park/Wildlife Sanctuary), the concerned protected area manager would be responsible. In the case of other areas (revenue land/conservation reserve/community reserve/village/township) the Wildlife Warden, as per the Wildlife (Protection) Act, 1972, or Divisional Forest Officer/Deputy Conservator of Forests (under whose jurisdiction the area falls), would be responsible. The overall responsibility at the State level would rest with the Chief Wildlife Warden of the concerned State.

Suggested Field Actions to Deal with Active Management Towards Rehabilitation of Tigers from Source Areas at the Landscape Level:

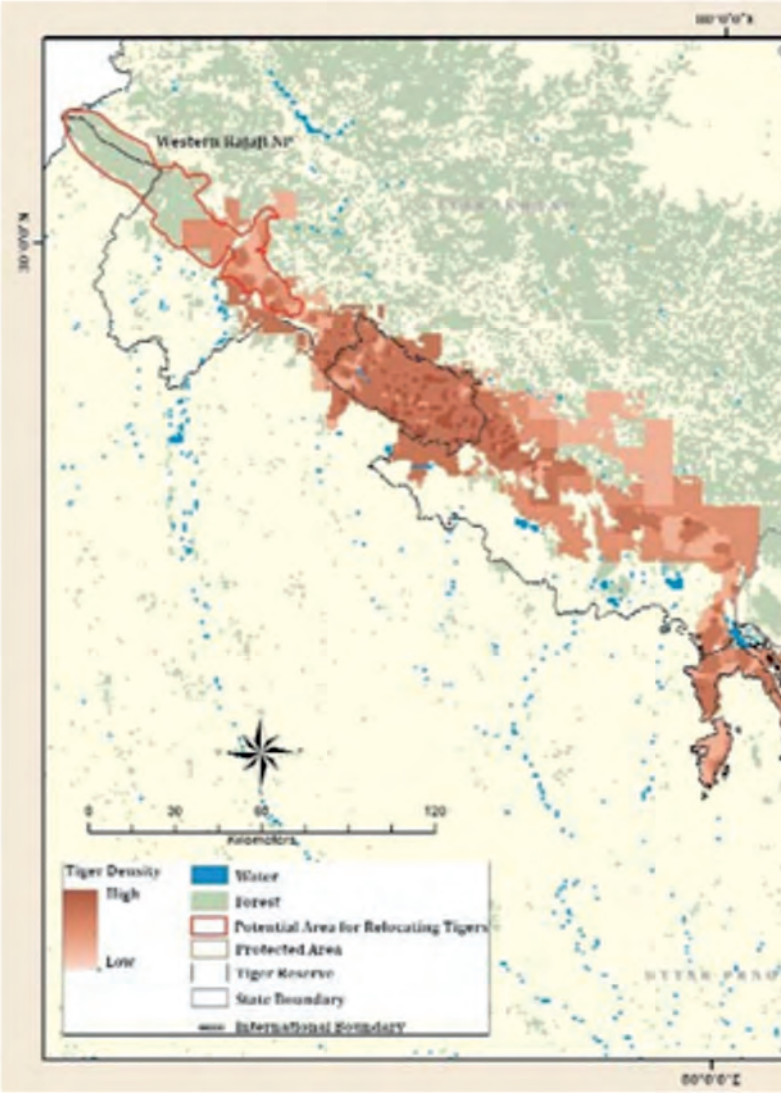
1. **Shivalik Hills and Gangetic Plains Landscape**

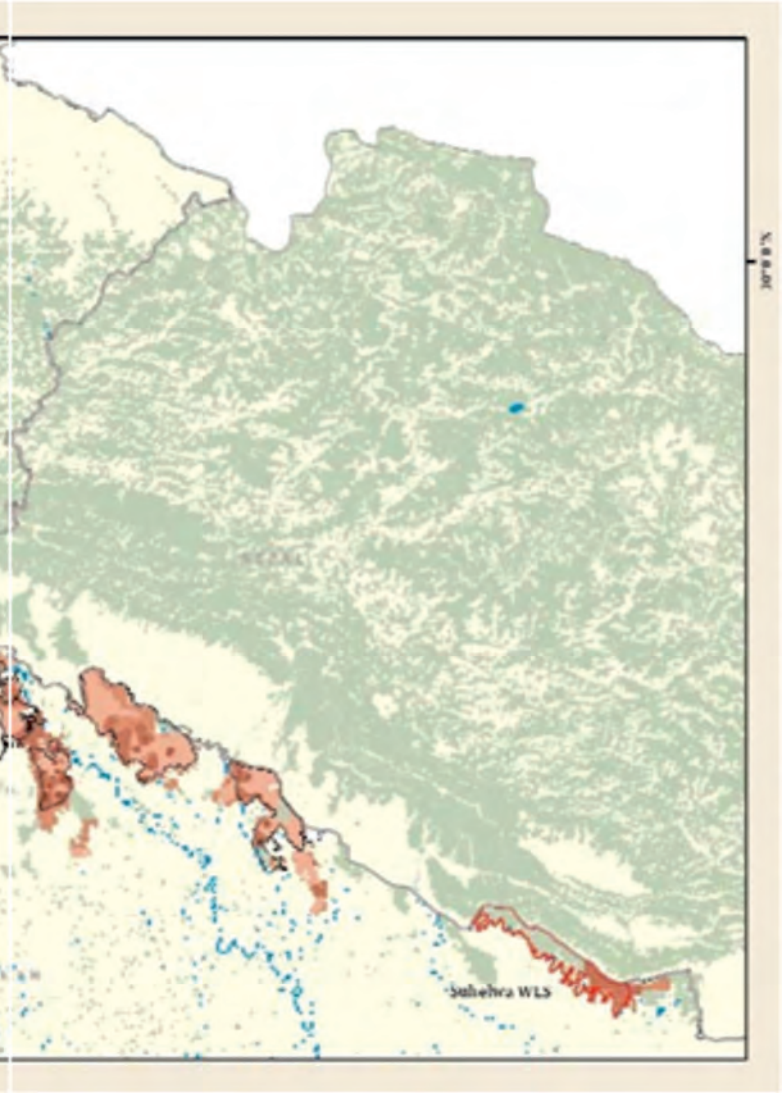
   This landscape has high density source tiger populations like Corbett TR and other sources like Dudhwa NP, Kishenpur WLS, Katerniaghat WLS and Pilibhit TR. Tiger presence is now almost continuous from the Ganges eastwards into Nepal.

The only low-density tiger habitat with appropriate prey density to support additional tigers is the western part of Rajaji NP, which includes the ranges of Dholkhand (East & West), Kansrao, Haridwar, Motichur, Ramgarh, and Chillawali. If tigers are relocated here, they are likely to breed and eventually spread into the Shivalik Forest division of Uttar Pradesh, and into Kalesar National Park of Haryana. The second option are the forests of Suhelwa WLS, which currently require restorative inputs, so as to boost prey populations, and protection measures to ensure that introduced tigers are not poached.

Valmiki TR maintains good connectivity with the Chitwan NP in Nepal. Tigers dispersing from Valmiki TR should be put back into Valmiki as they have a large landscape to disperse into on the Nepal side. Parts of Chitwan NP and Parsa wildlife reserve have low tiger density and can potentially accommodate dispersers from Valmiki TR. Valmiki tigers could also be translocated to Sohagibarwa WLS (after ensuring adequate protection measures).

Turn over for Map representing tiger bearing areas and their tiger densities in the Shivalik hills and Gangetic plains landscape (2013-14). The highlighted areas (in red) represent potential areas for relocating tigers within this landscape


Western Rajaji NP
0
30
60
120
Kilometers
Tiger Density
High
Low
Water
Forest
Potential Area for Relocating Tigers
Protected Area
Tiger Reserve
State Boundary
International Boundary

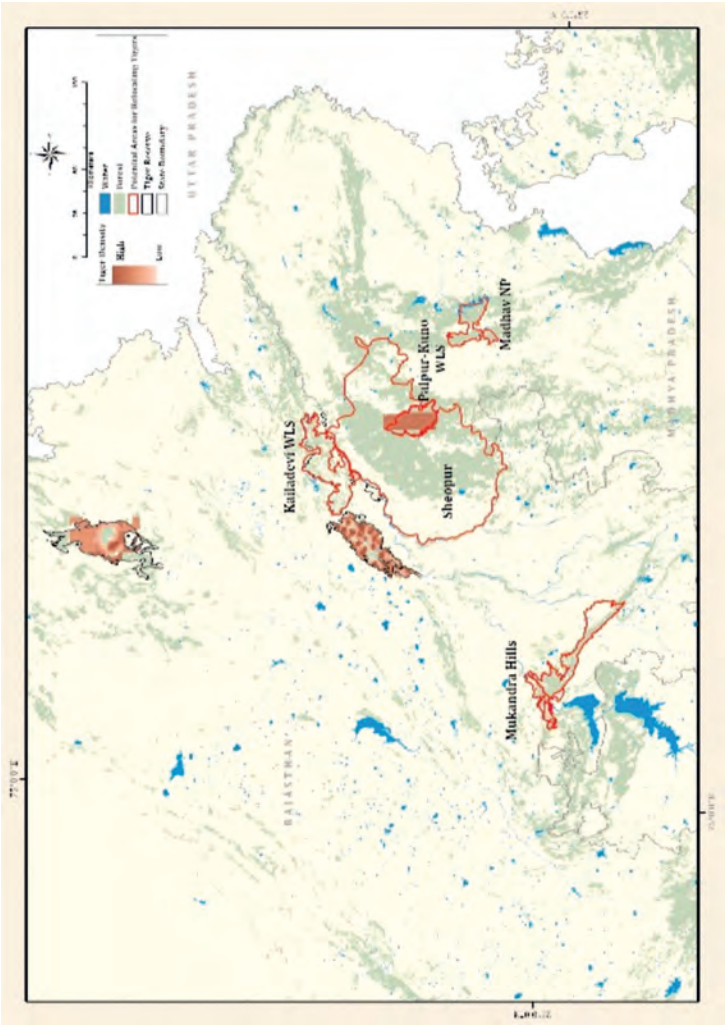

Sukhetwa WLS

2. **Central Indian landscape**

2.1 CI-Cluster I: Sariska TR, Ranthambore NP, Kailadevi WLS, Mukundara hills TR, Palpur-Kuno WLS, Madhav NP

For the northwestern cluster of the central Indian landscape, Ranthambore NP is the only high-density source population. It is well connected to low tiger density areas like Kailadevi WLS, Palpur-Kuno WLS and Mukundara hills TR, which are potential sites for moving dispersing tigers from Ranthambore NP. If tigers are relocated here, then this will facilitate the persistence of a healthy metapopulation in the landscape.

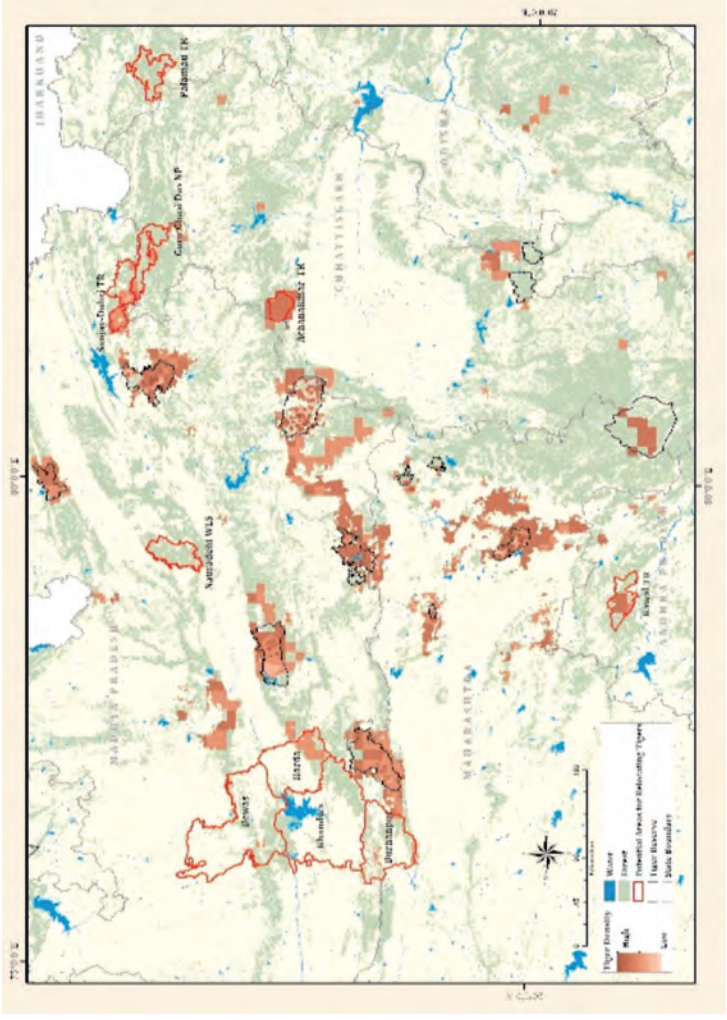
Map representing tiger bearing areas and their tiger densities in CG-Cluster I (2013-14). The highlighted areas (in red) represent potential areas for relocating tigers within this landscape


Kailadevi WLS
Palpur-Kuno WLS
Madhav NP
Sheopur
Mukandra Hills
RAJASTHAN
MADHYA PRADESH
UTTAR PRADESH

2.2 CI-Cluster II: Bandhavgarh TR, Sanjay Dubri TR, Guru Ghasidas NP, Achanakmar TR, Kanha TR, Pench TR, Melghat TR, Satpura TR, Tadoba-Andhari TR, Nawegaon-Nagzira TR, Bor TR, Kawal TR, Indravati TR, Udanti-Sitanadi TR, Palamau TR, Nauradehi WLS, Panna TR (map on page 13)

This cluster has several high-density source populations like Kanha TR, Pench TR, Tadoba-Andhari TR and Bandhavgarh TR. However, the connectivity in the interceding areas is very poor. The dispersing tigers from these populations could be moved into low tiger density areas of Sanjay Dubri TR, Guru Ghasidas NP, Achanakmar TR, Udanti-Sitanadi TR, Kawal TR, Indravati TR, Palamau TR and Nauradehi WLS. However, appropriate protection measures and prey base restoration needs to be addressed at these sites. Other additional sites where tigers from this central Indian cluster could be moved, are to the forests of Khandwa, Dewas, Harda, Betul and Burhanpur.

Map representing tiger bearing areas and their tiger densities in CG-Cluster II (2013-14). The highlighted areas (in red) represent potential areas for relocating tigers within this landscape


JHARKHAND
CHHATTISGARH
ODISHA
MADHYA PRADESH
MAHARASHTRA
Palamau TR
Guru Ghasi Das NP
Achanakmar TR
Sanjay-Dubri TR
Satpuda NP
Bhadra
Tadoba
Pranhita
Indravati TR
Kawal TR
Tiger Density
Low
High
Water
Forest
Potential Source for Dispersing Tigers
Tiger Reserve
State Boundary

2.3 CG-Cluster III: Similipal TR and Satkosia TR

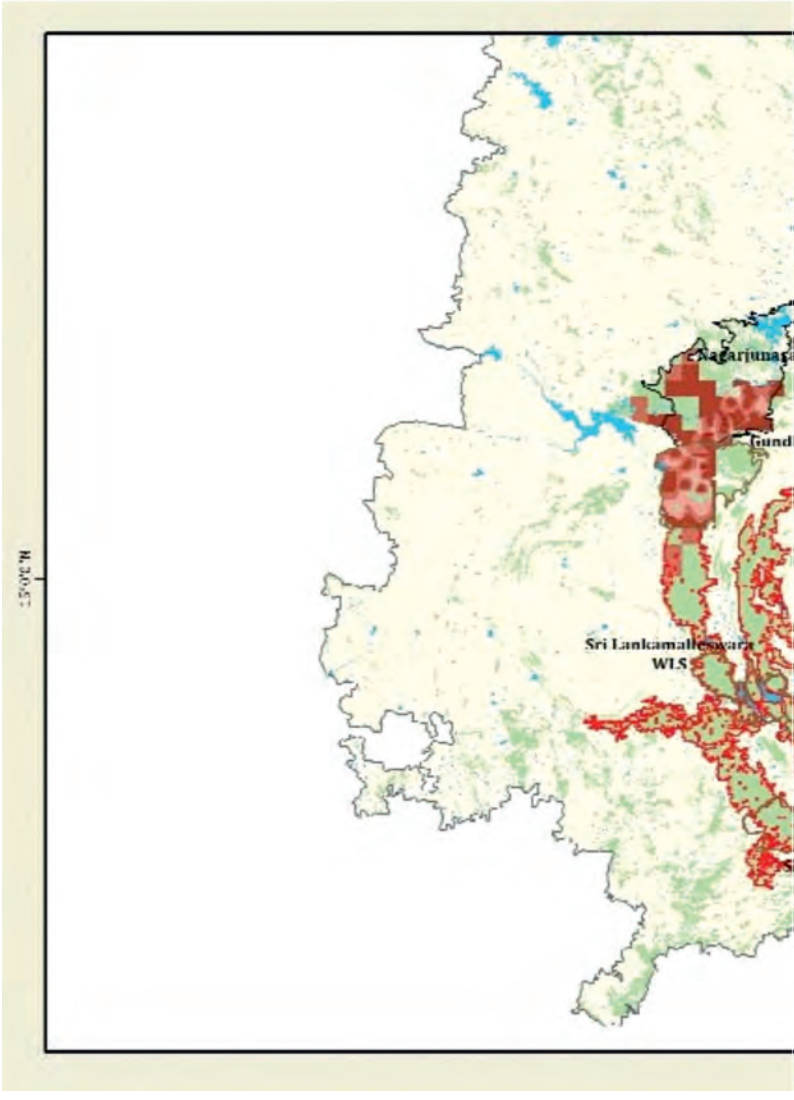
Similipal and Satkosia TRs represent a lineage that produces melanistic tigers and are likely to be of a unique gene pool in this landscape. We therefore, need to maintain the genetic integrity of this landscape by refraining from relocating tigers from other areas of central India into this cluster. There is a vast area of suitable habitat in these areas, which currently harbours very low density of tigers. Any dispersing tiger out of these areas needs to be put back into Similipal and Satkosia TRs. However, the prey base, habitat and protection measures need to be improved and the reasons for the movement of the tigers need to be inspected. It may be relevant to commence a conservation breeding program for tigers from this cluster since their numbers are rapidly declining and this unique phenotype may become extinct in the future.

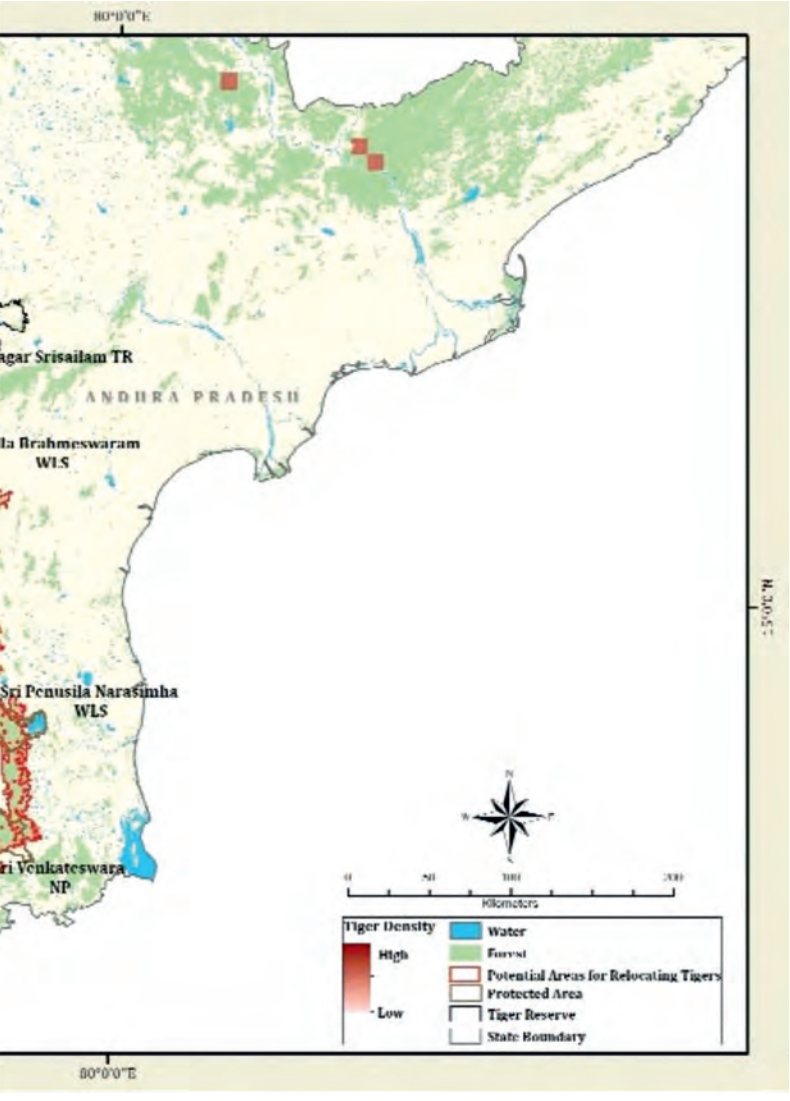
2.4 **EG-Cluster I: Nagarjunsagar-Srisailam TR, Gundla Bramheshwaram WLS**

The only source population in this cluster is the Nagarjunsagar-Srisailam TR, while there are several protected areas with suitable prey base and habitat such as Sri Lankamalleswara WLS, Sri Penusila Narasimha WLS and Sri Venkateswara NP in the Eastern Ghats, which currently do not have any tiger population. Forest corridors connect Srisailam forests with those of Siddavatam and Sri Venkateswara NP, and by relocating tigers into Sri Venkateswara NP, it will help expand tiger occupied areas and create new source populations. Tigers from the above forests are likely to disperse and occupy

Siddavatam, Kurnool, Prakasham and Cuddappah forests as well. One major concern that needs to be addressed/studied in these areas is the presence of appropriate prey base and relevant protection.

Map representing tiger bearing areas and their tiger densities in EG-Cluster I (2013- 14). The highlighted areas (in red) represent potential areas for relocating tigers within this landscape


Nagarjuna
Gund
Sri Lankamalleswara
WLS


80°0'0"E
agar Srisailam TR
ANDHRA PRADESH
la Brahmeswaram
WLS
Sri Penusila Narasimha
WLS
ri Venkateswara
NP
15°0'0"N
80°0'0"E
N
W
E
0
50
100
200
Kilometers
Tiger Density
High
Low
Water
Forest
Potential Areas for Relocating Tigers
Protected Area
Tiger Reserve
State Boundary

3. **Western Ghats Landscape Complex**

3.1 WG-Cluster I: Sahyadri TR, Protected areas of Goa (Mhadei WLS, Bhagawan Mahavir (Mollem) NP, Netravali WLS, Cotigaon WLS), Dandeli-Anshi TR, Bhadra TR, Bandipur TR, Nagarhole TR, Biligiri Ranganatha Temple TR (BRT), Sathyamangalam TR and Mudumalai TR

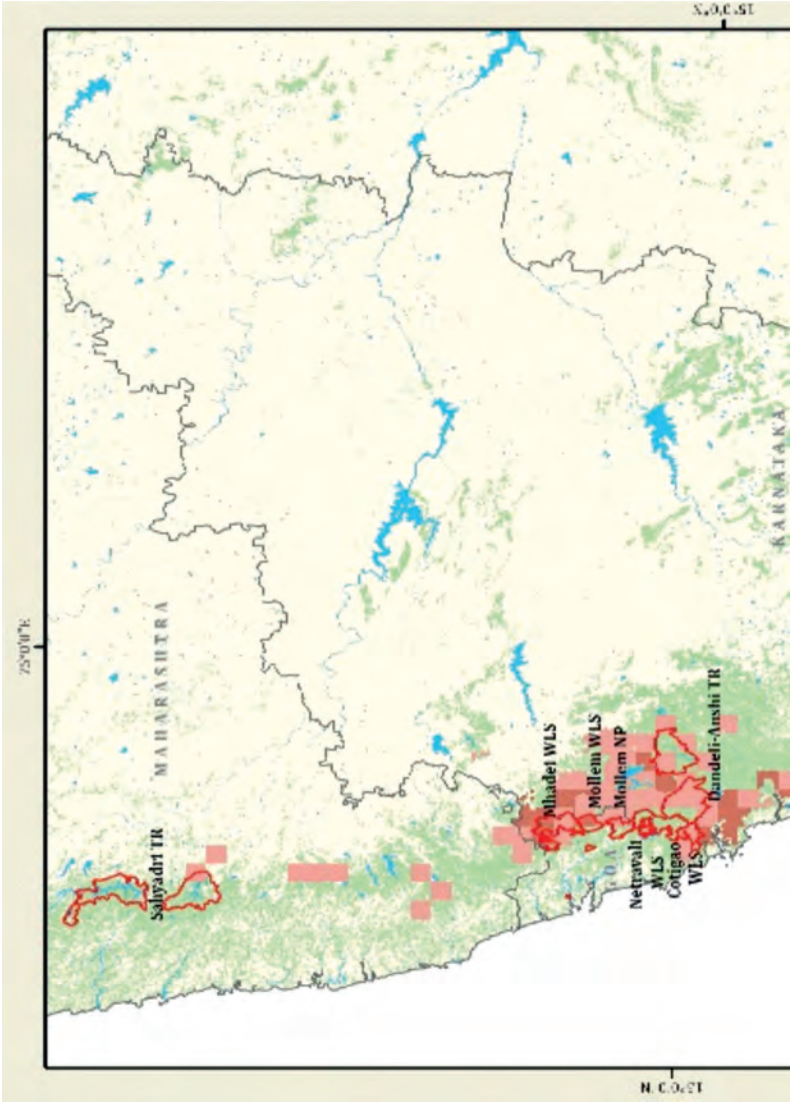
The Western Ghats landscape has several high-density source populations like Bandipur TR, Nagarhole TR and BRT TR and the populations here are likely to disperse out in the near future.

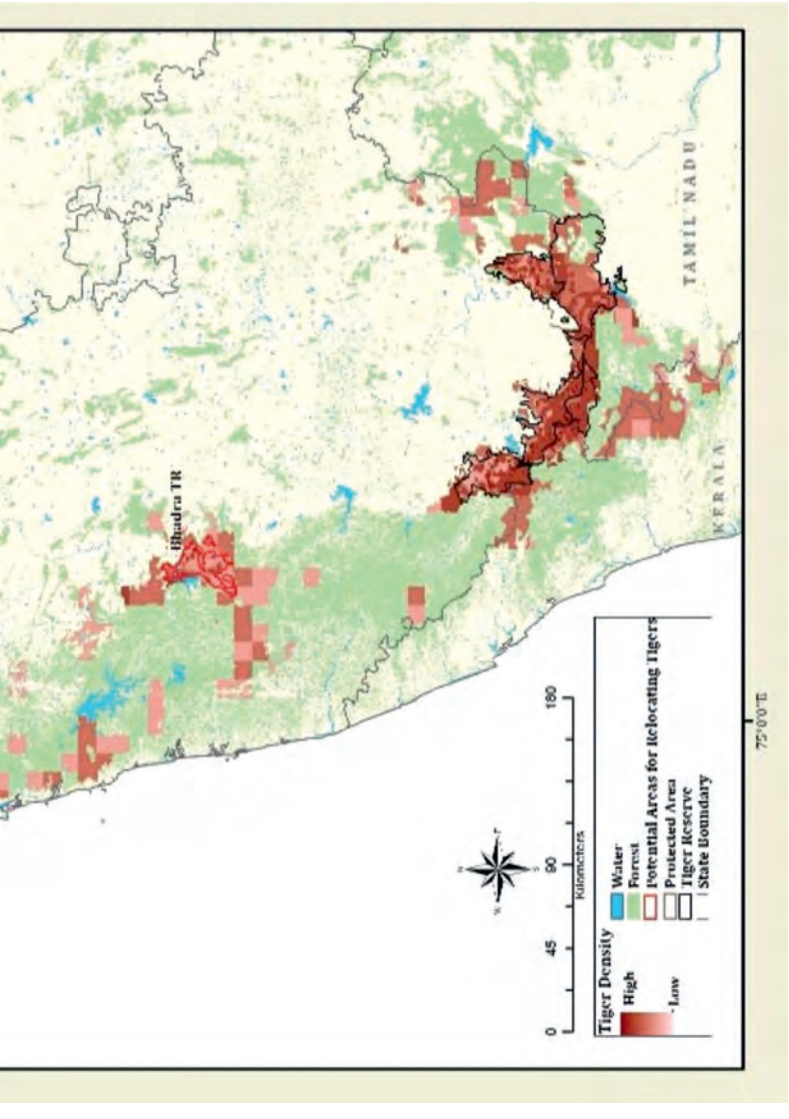
Repopulating these dispersing tigers to intervening low tiger density areas like Bhadra TR and Dandeli-Anshi TR will connect these populations to other low- density areas like Sahyadri and Goa where ample tiger habitat exists but tigers are at low density. This will also create a contiguous tiger population with ample connectivity, which is important for long- term survival of these populations. Followed by Bhadra TR and Dandeli-Anshi TR, the protected areas of Goa and Sahyadri TR form a viable option in this cluster to move dispersing tigers.

3.2 WG-Cluster II: Parambikulam TR, Anamalai TR, Periyar TR, Kalakad- Mundanthurai TR (KMTR)

The second cluster of the Western Ghats landscape complex currently has low density of tigers, and any dispersing tigers in this cluster can be put back into their respective tiger reserves and the reason for their movement into human dominated landscapes needs to be examined.

Map representing tiger bearing areas and their tiger densities in WG-Cluster I (2013-14). The highlighted areas (in red) represent potential areas for relocating tigers within this landscape


MAHARASHTRA
KARNATAKA
Sahyadri TR
Radhanagari WLS
Mollem WLS
Mollem NP
Netravali WLS
Cotigao WLS
Dandeli-Anshi TR


Bhadra TR
TAMIL NADU
KERALA
Tiger Density
High
Low
Water
Forest
Potential Areas for Relocating Tigers
Protected Area
Tiger Reserve
State Boundary
0
45
90
180
Kilometers
75°0'0"E

4. **Northeast hills and Brahmaputra flood plains**

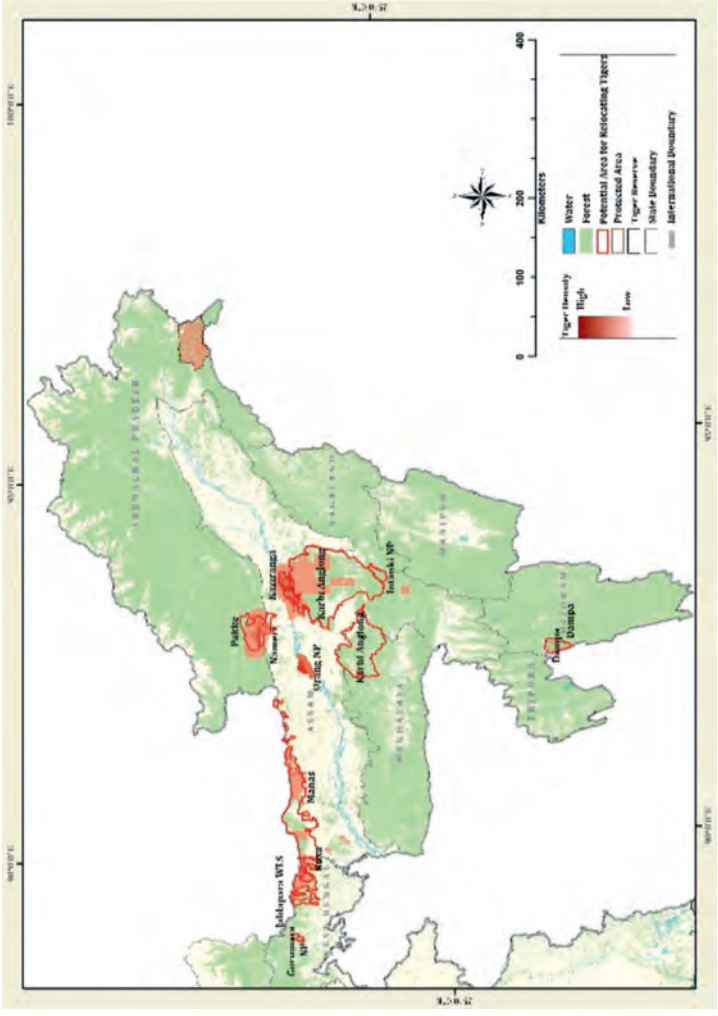
4.1 NE-Cluster I: Kaziranga TR, Manas TR, Orang NP, Buxa TR, Nameri TR, Pakke TR, Dampa TR, Karbi Anglong hills, Gorumara NP and Jaldapara WLS, Intaki NP.

The source populations that currently produce dispersing tigers within this cluster are Kaziranga and Orang TRs. Surplus wild tigers could be relocated into Manas TR, Buxa TR, Gorumara NP, Jaldapara WLS, Dampa TR, and the Karbi Anglong Hills. However, these areas need to ensure protection for the introduced tigers.

4.2 NE-Cluster II: Namdapha TR and Dibang WLS

Tiger populations from this extremely eastern population cluster are likely to have their genetic affinity with tigers from Myanmar. Tigers from this cluster should be moved within this region only. Since this is a low tiger density area, conflicts with conspecifics are unlikely to occur.

Map representing tiger bearing areas and their tiger densities in NE-Cluster I (2013-14). The highlighted areas (in red) repre- sent potential areas for relocating tigers within this landscape


Kilometers
0
100
200
400
Water
Forest
Potential Area for Relocating Tigers
Protected Area
Tiger Reserve
State Boundary
International Boundary
Tiger Density
High
Low
Pakke
Kaziranga
Nameri
Orang
Dibru Saikhowa WLS
Dehing Patkai
Intanki NP
Dampa

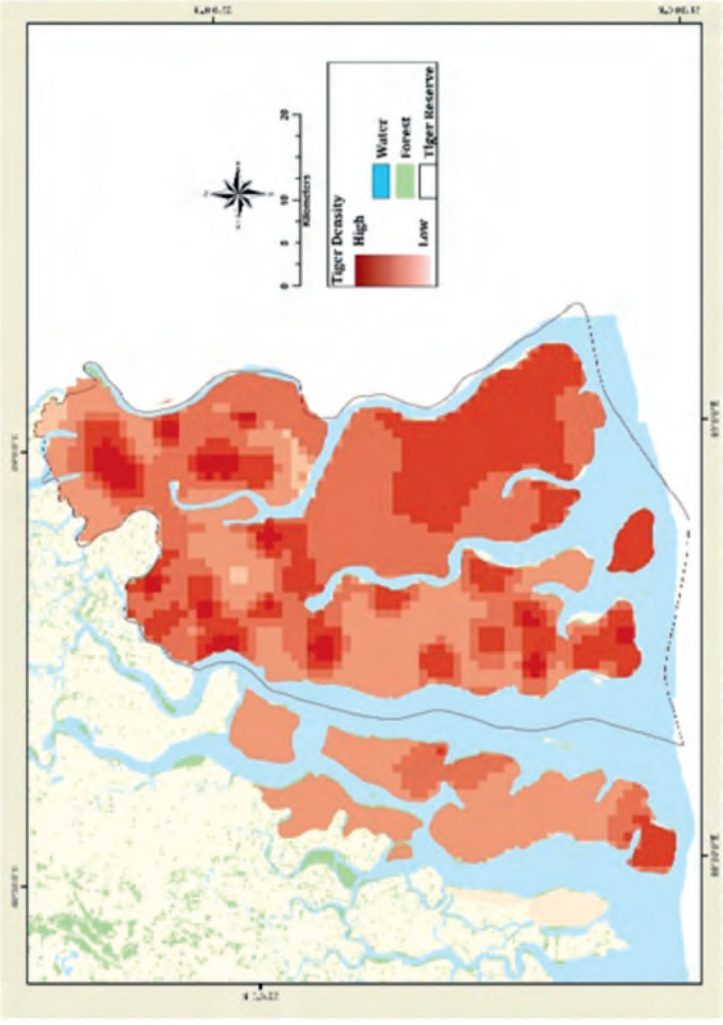
5. Sundarbans Landscape:

   The tiger population of the Sundarbans is phenotypically unique and specifically adapted to life in the mangrove forests.

   Tigers dispersing out of this habitat need to be restored either in the Sundarbans or in zoos. No tigers from any other cluster should be introduced into Sundarbans nor should tigers from Sundarbans be introduced elsewhere. The recent tiger estimation (2014) has shown areas of low density within the Sundarban Biosphere Reserve. These maps can be used to guide field managers in releasing captured Sundarban tigers back into the wild.

   Tigers that kill humans accidentally need to be treated differently from those that have become Dangerous to Human Life. Dangerous to Human Life need to be removed immediately and should not be reintroduced into free ranging conditions. While tigers that have come into conflict situations accidentally can be captured and reintroduced into vacant/low-density habitats. Preferably, tigers that are released after relocation should be equipped with satellite telemetry collars so that they can be tracked remotely. Incase such tigers continue to be problem animals they should be recaptured and put in captivity or eliminated. Release into new area should preferably be done by soft release protocol. Hard release should only be considered when logistic constraints do not permit soft release. The release site should have good habitat, prey density and protection measures. Human density at the release site should be low and composed of communities that have experience of living with large carnivores.

Turn over for Map representing tiger bearing areas and their tiger densities in Sundarbans (2013-14). The highlighted areas (in red) repre- sent potential areas for relocating tigers within this landscape


Tiger Density
High
Low
Water
forest
Tiger Reserve
Kilometers

NB:

1. The identification of dispersing tiger and the procedure for translocation/drug dosage/transportation would be in accordance with guidelines/SOP issued earlier from NTCA/Project Tiger.
2. Adequacy of field protection/prey base should be ascertained at the new site prior to translocation.
3. 'Soft' release of the tiger should be preferred as a precautionary measure, which would necessitate the creation of an in-situ enclosure with natural prey at the release site.
4. The translocated tiger should invariably radio collared to facilitate close monitoring after release.

STANDARD OPERATING PROCEDURE ON INTERSTATE COORDINATION FOR INTER STATE TIGER RESERVES

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

STANDARD OPERATING PROCEDURE ON INTERSTATE COORDINATION FOR INTER STATE TIGER RESERVES

1. Title: Standard Operating Procedure for Interstate Coordination to strengthen Tiger Conservation.
2. Subject: Interstate coordination for strengthening tiger conservation across States which share interstate boundary within tiger reserve.
3. Short summary: This SOP provides the framework for dealing with interstate coordination issues related to tiger conservation.
4. Scope: This SOP is applicable to interstate bordering tiger reserves/PA/forest areas with significant tiger population, within the country.
5. Responsibilities: The Field Director's concerned shall be responsible in the case of a tiger reserve/fringe areas. For a protected area (National Park/Wildlife Sanctuary), the concerned protected area manager shall be responsible. In the case of forest areas, Divisional Forest Officer/Deputy Conservator of Forests (under whose jurisdiction the area falls), shall be responsible. The overall responsibility at the State level shall rest with the Chief Wildlife Wardens of the States concerned.
6. Suggested activities for strengthening protection and enforcement:
   (a) There shall be periodic joint patrolling among Tiger Reserves/PAs/forests having common boundary and having significant tiger population in the border areas.
   (b) Field staff during the course of patrolling/field trips shall meet the field staff of the adjoining state once a week and share enforcement related information

and report the same to their controlling officers (see Annexure for list of activities).

(c) Range Officers of borders areas of Tiger Reserves/ PAs and other forest areas shall meet at least once a month and discuss Inter Range and Interstate issues and report the same to the Deputy Director (Project Tiger)/Wildlife Warden/DFO concerned.

(d) The DFOs of Tiger Reserves, PAs and other forest areas having significant tiger population in the border areas shall meet together at least once in three months and discuss enforcement related issues and report the same to the concerned Conservator of Forests/Chief Conservator of Forests/Field Director (Project Tiger).

(e) The Field Directors (Project Tiger)/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border areas shall meet together at least once in six months and report the same to the Chief Wildlife Warden of the state.

(f) The Chief Wildlife Wardens of States having significant tiger population along the border areas shall meet together at least once in a year and discuss issues of mutual interest and concern related to wildlife management and tiger conservation. Such meetings shall be facilitated by Regional Offices of the National Tiger Conservation Authority with inputs from the Wildlife Crime Control Bureau.

(g) The sensitive areas/check posts situated in the border areas shall be further strengthened by deploying

monitoring mechanisms like CCTV, E-surveillance etc.

(h) In order to facilitate joint patrolling and investigation of cross border wildlife crime cases, the State concerned shall issue appropriate order/ directives for movement of forest officials of bordering tiger reserves. In case of arresting fleeing offenders, full co-operation shall be extended to authorities concerned, when an interstate boundary is breached.

7. Suggested activities for gathering and exchange of intelligence:

(a) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border shall prepare a dossier of poachers/potential poachers in the region and share the information among the staff of adjoining Tiger Reserve/PA/Division across the border.

(b) Such information shall include information on illegal entry points at Beat, Section, Range, Division and Circle level; photographs, addresses and biometrics of regular offenders across the border.

(c) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border shall also share information on the progress of investigation in wildlife related crimes having interstate ramification; liaise with and share information/inputs with Wildlife Crime Control Bureau; share information on licensed gun holders in the vicinity of Tiger

Reserves, PAs and other important tiger-bearing forests etc.

(d) In addition, Field Directors/Conservator of Forests/ Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border shall also facilitate the conduct of joint annual inspection of boundaries; joint combing operations, monsoon patrolling; share information on good practices and staff welfare; conduct synchronized cattle vaccination, fire line clearance etc.

(e) A checklist of activities which is not exhaustive, and can be developed upon based on local level exigencies is provided in Annexure 1.

8. Suggested activities Management of Invasive Alien Species:

(a) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border areas shall facilitate preparation of a joint operational strategy for dealing with Invasive Alien Species (IAS).

(b) Preparation of such a strategy shall also be based on scientific inputs received from Research institutions in IAS management across the landscape and shall not be in contravention to prescriptions of TCPs of the Tiger Reserves concerned.

(c) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border shall also share good practices on IAS management across the landscape

and conduct of common capacity building programmes for staff.

(d) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border shall have regular review of IAS management once in at least six months.

9. Suggested activities for Monitoring and capacity building:

(a) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border areas shall share information related to inter-state migration of major species with main focus on tiger.

(b) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border areas shall organize synchronized estimation of tiger, elephants, vulture and other species sharing share common borders and management concerns. Phase IV assessment as outlined by the NTCA, shall be harmonized before finalizing to avoid double counting.

(c) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border areas shall facilitate regular interactive visits for the staff and stakeholders of Tiger Reserves, PAs and other tiger bearing forests across the landscape.

10. Human wildlife conflict management (HWC):
    (a) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border areas shall strive to ensure utmost coordination among themselves and staff so that important issues/operations of HWC occurring across the border are informed to their counterparts in bordering states.
    (b) Special emphasis should be laid on sharing data on payment of compensation which shall help assess conflict hot spots as non payment shall invariably result in an antagonistic mindset which may lead to retaliatory killing of tigers. Further, the rates of compensation need to be harmonized between bordering states as victims of conflict may question rationale of differential rates. If it is difficult to get Government sanction for the highest prevailing rate in the area, then the balance may be met through the Tiger Conservation Foundation after due approval of the Governing Body.
    (c) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger population along the border areas shall facilitate sharing of information on the locations of capture/ translocation and release of problematic animals which can prevent spreading of sensational propaganda.
    (d) Field Directors/Conservator of Forests/Chief Conservator of Forests in charge of Tiger Reserves, PAs and other forests having significant tiger

population along the border areas shall facilitate sharing of expertise and resources available for dealing with HWC on request when the need arises. Common resources of the States' concerned shall be pooled in and utilized for the purpose.

11. Dealing with animal diseases
    (a) As the human-wildlife-livestock interface is ever increasing, it is important to prevent diseases spreading across theses hosts. In this context, Field Directors concerned should identify such interface areas in their respective states
    (b) In coordination with State Veterinary officials, identify major pathogens affecting livestock and pet animals in the area and prioritise them with respect to their prevalence and pathogenicity
    (c) Keeping in mind principles of herd immunity, in consultation with veterinary officials, carry out vaccination of 60 to 70% of animals prior to onset of the disease. The time shall vary from disease to disease. Vaccinating animals in this manner shall create immunization buffers which shall act as a "firewall" between livestock and wildlife and reduce the likelihood of transmission of disease to wild animals
    (d) Joint veterinary camps need to be though out well in advance based on the identified diseases' dynamics in the ecosystem.

ANNEXURE

List of activities which need to be jointly monitored. Please not that the list is not exhaustive and should be developed upon by field managers based on local conditions.

1. Data on tigers dispersing in human dominated landscapes, besides conflict prone areas
2. Data on tigers which have been fitted with transmitters
3. Information on movement of suspects and repeat offenders including presence/absence of these people in the area
4. Data on poaching events
5. Data on encroachment and illicit fellings
6. Data on payment of compensation
7. Data on biometrics of arrested offenders
8. Data on incidents of floods/fire
9. Information in respect of water availability and status of water holes in bordering areas to get an idea of wildlife distribution
10. Information on invasive alien species spread
11. Information pertaining to progress of wildlife offences which are sub judice especially to monitor people on bail.
12. Data of registered arms in bordering areas
13. List of diseases prevalent in the area
14. Information in context of mortality of livestock in fringes as well as wildlife inside forests, besides population details of livestock
15. Phase IV data

GUIDELINES TO ESTABLISH TIGER SAFARI IN BUFFER AND FRINGE AREAS OF TIGER RESERVES

NATIONAL TIGER CONSERVATION AUTHORITY

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

NOVEMBER, 2019

GUIDELINES TO ESTABLISH TIGER SAFARI IN BUFFER AND FRINGE AREAS OF TIGER RESERVES

1. **Title:** Guidelines to establish Tiger Safari in buffer and fringe areas of Tiger Reserves.
2. **Subject:** Dealing with establishment, management and administration of Tiger Safari in the buffer (not falling in notified National Parks and/or Wildlife Sanctuary) and fringe areas of Tiger Reserves.
3. **Reference:** Revised Guidelines for the ongoing Centrally Sponsored Scheme of Project Tiger notified by the gazette notification No. 15-31/2012-NTCA dated 15th December 2012.
4. **Purpose:** Tiger Safari may be considered for establishment in the buffer and fringe areas of tiger reserves to reduce pressure of tourism from core/critical tiger habitats and to foster awareness for eliciting public support.
5. **Short Summary:** These guidelines provide the basic criteria, and procedure required in the buffer and fringe areas of tiger reserve for dealing with establishment, management and administration of Tiger Safaris' following due procedure prescribed under the law and guidelines issued by the NTCA vide gazette notification no.,15-31/2012-NTCA dated 15.10.12 and the CZA guidelines for establishment of new zoos under section 38 H (1A) of the Wildlife (Protection) Act, 1972, in this context.
6. **Scope:** These guidelines apply to those tiger reserves which experience 100% utilization of their carrying capacity in the core/critical habitat.

7. **Responsibilities:** The Field Director shall be overall responsible for establishment, management and administration of the tiger safari with inputs from the Local Advisory Committee (LAC). The overall responsibility of the Tiger Safari at the State level would rest with the Chief Wildlife Warden of the concerned State along with oversight of the National Tiger Conservation Authority and the Central Zoo Authority, New Delhi.
8. **Assessment of Tourism Pressure:** The tourism activities in the tiger reserves are regulated by the normative guidelines on tourism issued by the National Tiger Conservation Authority as well as by the prescriptions on eco-tourism as contained in the tiger conservation plans of the tiger reserves. The last three years average visitation shall be taken into consideration while determining the need for a tiger safari. If the carrying capacity is 100% utilized, then proposal for establishing a tiger safari can be placed to the NTCA
9. **Selection of Animal:** The selection of the animal shall be done in conformity of section 38 I of Wildlife (Protection) Act, 1972 after due approval of the Central Zoo Authority (CZA).
10. Criteria and procedure for establishment of a Tiger Safari: The location of tiger safari shall be identified preferably in the buffer (not falling in notified National Parks and/or Wildlife Sanctuary)/peripheral area of the tiger reserve on the basis of recommendations of a committee comprising members from the NTCA, CZA, Forest Department of State concerned, an experienced tiger biologist/scientist/conservationist and a representative, nominated by the Chief wildlife

Warden of the concerned State. The following points shall be kept in mind:

a. Tiger dispersal routes shall be avoided in all circumstances
b. Area: The area of a Safari Park may be as large as possible, however, minimum area of a safari for tigers should be 40 hectares, extendable as per requirements. It must be ensured that the biological requirements of the animals kept therein are fully met. Clearances under the Forest (Conservation) Act, 1980, shall be taken wherever applicable.
c. Topography: The topography for the safari should be undulating and well drained, without steep slopes
d. Flora: The vegetation maintained in the Safari Park should be of an indigenous nature. The density should be regulated according to needs, and to provide naturalistic effect. It should provide shelters and withdrawal areas to animals. It must be ensured that adequate tree cover is always maintained in the safari.
e. Fence/Moat: The entire safari area should be surrounded by a suitable peripheral chain link fence. The chain link fence should be of a minimum height of 5 meter in case of large carnivores like tigers with a suitable both way -overhang at the top or as prescribed by the CZA from time to time. A buffer zone (strip) of about 5 meter width be provided around the fenced area. Double gates of suitable dimensions be provided at the point of entry. Safety gates may also be provided at a point nearby for service and emergency exists. Gates should be easily operable by one person at a time. Ticket booths

and rest facilities for tourists may be provided at a short distance from the entrance in the buffer zone. A store room near the entrance, be provided for storage of equipment etc. required for management of the park as well as to meet emergencies, shall be appropriately camouflaged.

f. Watch and Ward: For keeping an effective watch on the animals, visitors, as well as intruders, at least one watch tower of about 5 meter height be provided preferably near the entrance which should be manned as long as there are animals inside the Safari Park. Near the entrance a kiosk for the gate operator may be provided. At least one manned watch tower of 5 meter height be set up at the remotest corner of the safari on the outside. A control room with CCTV/e-surveillance and wireless monitoring paraphernalia shall be established at the entrance gate.

g. Visitors: Sensitization of visitors shall be carried out at "Visitor Centres" which have been appropriately designed through suitable media, prior to entry into the safari. Entry fee shall be recycled through the Tiger Conservation Foundation of the concerned Tiger Reserve. Visitors shall enter into the park in eco-friendly vehicles which run on solar and/or battery power only, and operationalized through a specially promoted EDC. No visitor should be allowed inside Safari Park on foot under any circumstance. Visitors should not be allowed to get out of the vehicle even in case of failure of the vehicle, till they are asked to do so by authorized staff. Visitors should be informed of safety measures

to be adopted in case of any emergency. Visitors should be prohibited from extending any part of their body outside the windows. They should also be asked to maintain silence so as not to provoke animals when they are in vicinity of the vehicle. The door of the vehicle should not be opened by visitors. A kiosk/app based visitor feedback mechanism, with few but pertinent questions, at completion of the safari shall be made mandatory. A record of all visitors especially in context from where they are coming, age group, urban/rural background etc. shall be maintained, for periodic evaluation.

h. Gate Receipts: Earnings of the tiger safari shall be re-ploughed through the concerned tiger conservation foundation. It is suggested that 70% of these earnings are re-ploughed to the tiger reserve concerned and 30% is utilized for the tiger safari.

i. Layout of roads: A main road be laid out to cover most of the highlights of the park, but leaving out certain withdrawal areas for animals. It should be wide enough to allow two vehicles to cross each other at certain places. The road should not have steep gradients or sharp curves. Bituminous tar roads shall not be permitted. It should be kept in good conditions at all times. While crossings and bay areas shall be appropriately designed, vehicles shall however, be allowed in a one way direction only to avoid traffic snarls.

j. Vehicles: All tourist vehicles should be mechanized ones, which run on solar and/or battery power only. They should be maintained in good condition at all times, and vehicles older than ten years should

not be permitted to run. The windows and doors of the vehicle should be suitably barred to provide security to visitors. The operator shall ensure that the door of the vehicle carrying the visitors is always kept securely locked so that no visitors can manipulate the locking system. The vehicle should have provision for attachment to another vehicle for pulling it out in case of failure without anybody getting out of the vehicle. It should have auxiliary gears for being used in unmade terrain, if required. The vehicle must also have first aid equipment in it along with a fixed radio set. Each vehicle shall be fitted with a public address system for informing visitors. A trained staff/guide must accompany each vehicle while entering the safari. A four wheel drive vehicle of tiger reserve management shall be on standby in event of any emergency.

k. Equipment: The Safari Park should have appropriate and adequate equipment for restraint of animals including capture guns along with accessories, drugs etc. for use in emergencies and routine operations. It should have the usual equipment for feed of animals etc. It should also have firearms with ammunition to meet rare emergent and inevitable situations. However, these should not be used except as a last resort in emergencies. Safari Park should also have routine equipment like spades, axes, saws, . ropes and hooks etc. for maintenance as well as use in emergencies. Wireless equipment should be provided to all watchmen and vehicles. Equipment do deal with any emergency/disasters prevalent in the area should be kept in readiness.

l. Veterinary Care: The animals should be subject to routine veterinary care on a day to day basis and in accordance with the 'Recognition of Zoo Rules' of the CZA. For this purpose the Safari Park should have a treatment room and cages on or near the premises. Prophylactic and sanitary measures should be carried out on a periodic basis as per a written schedule. A treatment/holding cage/facility, squeeze cage and basic veterinary facility should be available.

m. Education: Appropriate signboards should be setup near the entrance and other vantage points. These should give information regarding the biological as well as ecological facts about the tiger. Besides this it would be useful if such information is presented in an appropriate manner during the drive inside the Safari Park to the visitors. Small pamphlets or handouts can be given to the visitors, highlighting Safari Park, tigers and their status and ecology in the wild including conservation issues.

n. Operation: The frequency of vehicle entering into the Safari Park be regulated so that the animals are not unduly stressed. The vehicles should not be taken near the animals and a distance of 10 meters should always be maintained from the animal. Vehicle should move in a one way direction in a preset programme. The double gates may be operated by one person, so that there is no misunderstanding or mistake. The vehicle driver, watchmen and gate keepers should have wireless connection with the Safari Park control room at all times.

o. Waste disposal: The solid waste material generated in the tiger safari should be scientifically collected and treated/recycled/disposed in an environment friendly manner

p. Monitoring and supervision: Periodic monitoring shall be done by the Field Director, Chief Wildlife Warden, CZA and the NTCA, or persons authorized by them. The safari shall be evaluated as per the. CZAs Recognition of Zoo Rules to get Recognition

11. Other enabling requirements

a. Tiger Safari should endeavour to maintain the basic naturalistic features of the Tiger Safari site such as water bodies, natural ridges and vegetation, merging with habitat of the tiger reserve. Habitat management shall be done wherever required as per the Tiger Conservation Plan.

b. Tiger Safari should not permit in its premises activities like, conferences, exhibitions, and social functions which are inconsistent with its objectives.

c. The perimeter barrier and the entry gate of each Tiger Safari should be so designed, constructed and maintained in a way that stray dogs, domestic livestock and feral animals cannot get access into the Tiger Safari.

d. Provision for posting adequate number of security guards on a 24 × 7 basis should also be made. All breaches in the perimeter barrier, whether accidental or man made should be repaired promptly. Further monitoring is advised by e surveillance/CCTVs

e. Every Tiger Safari should have a detailed chart indicating duties and responsibilities of all levels

of staff also indicating the chain of command for reporting and promptly dealing with the matters pertaining to maintenance and operation of the Tiger Safari and the emergencies that may arise during such operations.

f. The tiger safari management shall strive to employ people from the buffer/fringe areas of the tiger reserve for activities envisaged, wherever possible through an EDC created for the purpose, so as to provide gainful livelihood options, as well as alleviate the need to use regular forest personnel for the purpose. A specially earmarked unit headed by an officer, not less in rank than a Range Forest Officer, should be made in charge of the tiger safari and coordinate all activities.

g. Capacity building of officers/staff engaged in tiger safari, should be organized in all aspects of safari management on a regular basis. Emphasis shall be laid upon exposure to best practices in other safaris.

12. Supporting Services

The following two supporting posts as mandated by the CZA for facilitating effective and scientific management of zoos in India shall be strictly adhered to. These include:

(i) Curator/Officer in charge: He/She shall be responsible for services, upkeep and maintenance of animal collection and animal housing, including timely cleaning and disinfection of animals' enclosure, timely feeding of animals in the prescribed manner, keeping a close watch on the general health conditions of the animals and taking steps for getting sick animals treated on priority

basis including crating, shifting and transportation of animals within the Tiger Safaris. He/She shall have two keepers, two assistant keepers and one supervisor for day to day maintenance of the tiger safari as support.

(ii) Veterinarian: Frequent visits to tiger safari areas and assessing general health condition of animals, assessment of the adequacy of the feed being supplied to the animals, having a regular check on the quality of feed and water being supplied to the animals and timely screening of animals for parasitic loads. Preparation of disinfection schedules, prophylactic treatment schedules and ensuring the implementation of the same. Taking steps for timely restraining and treatment of sick animals, maintenance of record of the treatment provided to animals in prescribed formats, conducting post-mortem of animals that die in the Tiger Safari for arriving at logical conclusions regarding the reasons of death and device strategies for keeping the mortality of Tiger Safari animals at minimum level. He should also be responsible for supervising the crating, shifting and transportation of Tiger Safari animals.

13. Visitor circulation plan

It is desirable that the Tiger Safari should have only one main approach road to take the visitors to the Tiger Safari animal display areas. The main road should be connected to all animal exhibits with loop roads and sub loop roads of lesser width and specifications on the basis of hierarchy (importance) assigned to each road. The loop roads and sub loop roads should intersect the main

road at prominent junction points, where appropriate signage indicating the directions of prominent animal exhibits and visitor facilities should be available. Due safeguards should be taken so that visitor road does not pass through the area adjoining the animal feeding cells, feeding kraals, animal service areas, service road and off the exhibit areas.

14. Master Plan for Tiger Safari

    Over the long term, the tiger safari shall be managed based on prescriptions of a Master Plan which shall be formulated as per guidelines of the CZA and duly approved by the said Authority. However, care should be taken to harmonize the Master Plan with prescriptions of the Tiger Conservation Plan of the area concerned.

15. Do's and Dont's: Due precaution shall be taken to ensure distribution of animals across the safari area by providing habitat and drinking water sources in a most naturalistic manner, however, care shall be taken that such water sources be away from visitation routes. The visitors under no circumstance be allowed to carry any undesirable items inside the safari, for which they shall be frisked before entering;

    i. Plastic ware/glassware bottles/wrappers of consumables
    ii. Eatables/drinkables except water
    iii. Inflammable material like matchsticks, crackers, lighters etc.
    iv. Firearms/arms of any kind including replicas
    v. Knives/Scissors
    vi. Electronic equipment to play music including public address systems, whistle etc

vii. Any item which can be potentially fed to safari animals

viii. Cigarettes and Alcohol

Any violation in respect of the law shall be dealt as per provisions of the Wildlife (Protection) Act, 1972.

16. The provisions of establishing a tiger safari shall be factored in the Tiger Conservation Plan concerned, wherein, the details of construction, manpower deployment, prey to be given etc shall be elaborated upon.

ANNEXURE

The Central Government has the following guidelines for grant of approval by the Central Zoo Authority for establishment of new zoos:-

1. Central Zoo Authority shall not entertain any proposal for establishment of a new zoo unless it is accompanied by a "Detailed Project Report" giving detailed appraisal of the proposed zoo site , 'mission- vision-theme' of the zoo and detailed strategy for housing, upkeep and healthcare of the animals and their display for developing amongst visitors an empathy for wild animals and motivation for supporting the national conservation efforts.
2. Central Zoo Authority shall not grant approval for a new zoo unless it is satisfied that the establishment of the zoo shall be instrumental in:-
    i. Providing highest standards of housing, upkeep and healthcare to significant number of animals, presently housed in sub-standard and inappropriately managed zoos.
    ii. Carrying out of path breaking research for developing innovative strategy for enhancing the reproductive potential, neonatal care and genetic and behavioural management of endangered species of wildlife.
    iii. Setting up of state of art facility on use of innovative methods of display of zoo animals that is congenial to the welfare of the animals and motivates the visitors for conservation.
3. Central Zoo Authority before granting approval for establishment of a new zoo shall satisfy itself:-

i. That zoo site has adequate land of appropriate quality (free of all encumbrances, water logging, sewage and storm water drains) is available for construction of the zoo and for raising tree belts of adequate width to act as buffer against noise pollution and air pollution.

ii. Project proponents have requisite availability of water, energy and finances on-sustained basis for construction and operation of the zoo, including payment of salary/emoluments of technical personnel, to be required as per the provision of Recognition of Zoo Rules.

iii. There is likelihood of part of operation cost of the zoo being met through revenue earned by the zoo.

iv. Requisite numbers of qualified and experienced persons are available for preparing the detailed plan of the zoo and its effective execution.

v. No animals from wild are proposed to be acquired for display purposes.

4. Central Zoo Authority while examining any proposal of the State Government/Union territories for establishment of a new zoo and recommending such cases to the Hon'ble Supreme Court shall satisfy its elf on following additional points:-

i. State Government/Union Territory has made adequate provisions in its budget to meet the operational costs of all the existing zoos being operated by it, including the salary of zoo personnel as per standards and norms prescribed under "Recognition of Zoo Rules" and all the posts sanctioned in the budget have been duly filled.

ii. All the conditions stipulated by the Central Zoo Authority at the time of grant of recognition to the zoos being operated by the State Government/ Union Territories have been fully complied with.

iii. All the zoos operated by the State Government/ Union Territories, that have been refused recognition have stopped their operations and the animals housed therein have been rehabilitated appropriately.

iv. No resources and professional experts from existing zoos are being re-appropriated for establishment of the new zoo.

NOTES

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