FIELD EXPERIENCE OF PILIBHIT TIGER RESERVE

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CENTRAL ACADEMY FOR STATE FOREST SERVICE
Coimbatore

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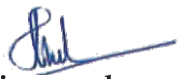
Foreword

It is with great pleasure that I introduce "Field Experiences in Pilibhit Tiger Reserve." Pilibhit Tiger Reserve, with its rich biodiversity and ecological significance, serves as an ideal classroom—a living laboratory where theory meets practice.

This book represents not only a compilation of firsthand encounters with the elusive tiger but also a testament to the transformative power of experiential learning. Author's field observations will inspire Officer Trainees to reconnect with environment and wildlife in the purest form. Within the pages of this book, readers will find a treasure trove of narratives. Each story, each observation, is a testament to the profound impact that immersive field experiences can have on a forester's understanding of the natural world.

The challenges faced by Pilibhit Tiger Reserve—be it habitat fragmentation, human-wildlife conflict, or climate change—serve as poignant reminders of the urgent need for environmental stewardship. Indeed, it is my hope that the experiences shared within these pages will ignite a passion for conservation—a flame that will burn bright in the hearts of future Forest Officers.

May your stories inspire others to embark on their own journeys of discovery, and may they serve as beacons of hope for the preservation of our planet's most precious treasures.



V. Thirunavukarasu, IFS
APCCF & Principal, CASFoS, Coimbatore

Preface

PilibhitTiger Reserve (PTR) is a narrow-forested tract dispersed in a horse-shoe like structure. In last one decade tiger population has grown nearly 300%. This is beyond the carrying capacity of the reserve and the sub adults are moving out of the forest and living in agriculture lands. Moreover, sugarcane which is a major crop on the forest boundaries exaggerates the problem.

PTR administration deals with this situation by giving safe passage to the animal, through public awareness and by rescuing the conflict animal and releasing it away. In the last one decade some humans have lost their life and many tigers have been rescued and send to either a zoo or released far away from human habitations.

PilibhitTiger Reserve has won the first ever International TX2 Award presented was by CA/TS, Global Tiger Forum, IUCN, UNDP, Lions share and WWF for its remarkable contributions for doubling the Tiger population and Conservation. The goal was achieved to increase of Tiger population from 25 to 65 numbers in just four years from 2014-18 period.

Recently, the Pilbhit Tiger Reserve won the TOF-Tiger Wildlife Tourism award 2023.

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I would like to express my grateful thanks to my fellow officer trainees of SFS Batch 2022-24(I) for their constant encouragement and for providing the cordial atmosphere to come up with this work.

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Contents

Sl. No.	Chapters	Page No.
1.	Introduction	1
2.	Methodology (Material and Methods)	5
3.	Human Tiger Conflict in Boundary Village in PTR	6
4.	Causes of Human-Animal conflict	7
5.	Impact of HWC on Wildlife Population	10
6.	Management of HWC	11
7.	Potential Solutions and their implications	19
8.	Conclusion	23

Chapter One

Introduction

For the purposes of this study, human-wildlife conflict is defined as any event in which animals injure, destroy or damage human life or property (including destruction of crops), and are killed, injured, captured or otherwise harmed as a result – i.e., both humans and animals suffer from the interaction with each other. The damage and destruction caused by a variety of animals to human property and sometimes human life–is a real and significant danger to many human communities.

Likewise, retaliatory killing is a major threat to the survival of many species around the world for which there is global community interest and commitment to their conservation (such as elephants, big cats, bears and wolves.) As human populations increase and encroach further into wildlife habitat, conflicts between humans and wildlife are set to increase in both frequency and geographic spread.

Successful sustainable development requires the harmonisation of both environmental and human development goals, and resolving human wildlife conflict is central to this aim, bringing together the two perspectives in order to create a sustainable future for both wildlife and rural communities.

This study on Human Wildlife Conflict (HWC) in terai arc land has been given by division office of forest with the help of CASFOS Coimbatore.

The study aims to assist forest department Pilibhit and in better understanding HWC issues so that it can generate political will and funding for HWC prevention and mitigation measures. It also aims to provide useful background information to assist the district forest department and other relevant stakeholders in their current efforts to develop updated man power and strategy.

The study examines the dynamics of HWC, examines the root causes of the conflict and identifies opportunities and positive models for preventing and/or mitigating HWC. Attention is given mainly to conflicts between predators (Felids) and people.

Pilibhit Tiger Reserve is located in Pilibhit District of Uttar Pradesh. It forms a part of Terai ArcLandscape (TAL) along Indo Nepal border which is very productive ecosystem and an important conservation area. The tiger reserve lies between latitudes: 280 18' and 280 50' North and longitudes: 79053'02"and 810 18' 03"East.

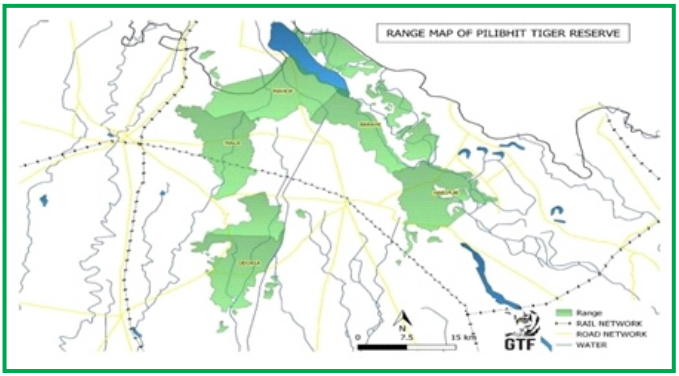
Pilibhit Tiger Reserve was notified on 9th of June 2014 vide Notification no. 1783/14-4-2014-872/2007TCI by the Government of Uttar Pradesh. The total area of Pilibhit Tiger Reserve is 73024.98 ha out ofwhich 60279.80 hectare is core and rest 12745.18 is buffer.

Pilibhit Tiger Reserve comprises of 5 ranges viz Mala, Mahof, Barahi, Haripur and Deoria. Buffer of PTR incorporates parts of the Khutar Range of Shahjahanpur Forest Division.

- Northern Boundary-Indo-Nepal international boundary from pillar number 17 to Pillarnumber 28.

Name of Range	Core (ha)	Buffer (ha)	Total (ha)
Mala	16332.89	140.06	16472.95
Mahof	14387.63	324.76	14712.39
Barahi	10645.45	7694.49	18339.94
Haripur	9162.80	2833.18	11995.98
Deoria	9751.03	15.79	9766.82
Khutar (hahjahanpur Division)	0	1736.90	1736.90
Total	**60279.80**	**12745.18**	**73024.98**

- Eastern Boundary- From pillar no. 28 of the reserved forest to the boundary of Dhakka forest Block of Haripur Range through Barahi & Navadiya Forest Block of Barahi Range and also Navdiya forest block of Haripur Range.



- Southern Boundary- It lies from the boundary of reserve forest Haripur range to boundary of reserve forest Deoria range through the boundary of Barahi Range, Mah of Range & Mala Range.

- Western Boundary- It lies from the boundary of Pasgawan compartment no. 6 and Ramnagar compartment no 1 of Reserve Forest of Deoria Range to the Dhamela compartment no 119 of Mala Range passing through the boundaries of Banganj compartmentno. 5 & Garah compartment no. 130.

Pilibhit Tiger Reserve is also an important tiger habitat because it has an active connectivity with various neighboring protected areas like Shuklaphanta National Park of Nepal. It is also connected to the core area of Dudhwa Tiger Reserve through the Kishanpur wildlife sanctuary. Pilibhit Tiger Reserve is also linked with Nandhaur wildlife sanctuary of Uttarakhand through which it is connected with Corbett Tiger Reserve.

The Pilibhit Tiger Reserve is home to a number of rivers, canal, and permanent water sources that sustain wild in habitants. The PTR's northern border is mostly encircled by the Sarda River. The Sarda River, which is connected to several streams like the Hardoi Branch Canal, the Kheri Branch Canal, and the Subsidiary Canal to Sarda Sagar Dam, provide to reserve its life blood and flourish. Mala, Katana, Khannaut and their contributories are among the Pilibhit Tiger Reserve' so the main rivers in addition to Sarda.

Many wetlands provide a haven for migratory birds and other aquatic species and to Barasingha also. There are also a number of perennial lakes, termed as taalshere that continue to hold rain water after monsoon season.

Chapter Two

Methodology (Material and Methods)

There has been a considerable amount of research into HWC issues in western part of terai arc land of UTTAR PRADESH and UTTARAKHAND and a considerable amount of experimentation with prevention and mitigation methods. This report therefore draws on existing material and data in the form of a desk study.

A number of interviews were carried out with key informants like people village heads of fringe villages, primary and junior schools, district hospitals, think centre, block development office, district disaster management office and field trips were undertaken to develop a case study on local level problems and solutions.

Chapter Three

Human Tiger conflict in boundary villages of PTR

Year	Loss to Human		
	Human Death	Human Injury	Livestock Death
2014-15	0	0	10
2015-16	0	0	17
2016-17	7	2	21
2017-18	5	5	19
2018-19	0	5	18
2019-20	3	3	21
2020-21	3	5	5
2021-22	2	1	2
2022-23	1	1	8
2023-24	7	2	1

Chapter Four

Causes of Human-Animal conflict

1. FODDER

Fodder is the main concern of the peoples for which they travel to forest.Peoples of the fringe villages are mostly cattle herders and they collect it from forest.People mostly have buffalos,cow,ox,goat,sheep and ponies.Farming of this region is not up to date and peoples depend on ox for soil work in agriculture.

Buffalo milk having more fat content is more preferred by peoples as well as dairy industry and buffalo consumes more fodder in comparison of cow.On the other hand, government is promoting dairy and animal husbandry in the region to meet the livelihood and economic need of peoples and accordingly they collect fodder from forest and disturb the habitat. Due to this disturbance animal also got disturbed and comes outside of the forest.

2. FUELWOOD

Fuelwood is also a major concern and people from the fringe villages as well as 4-5 km from the TR (Tiger Reserve) is totally depend upon on the forest.They collect fuelwood by cycle,carts and on foot causing much more disturbance in forest. School students, teenagers, women after school time women and go to fuelwood collection and they are attacked by Tiger.

Although PRADHANMANTRI UJJWALA YOJNA is running to get rid of the problems of fuelwood but economic status of the people does not support to buying,regular using and refilling of the LPG cylinders.

3. GRAZING

Dung and manure are also produced by animals that is used for enhancing the crop production and yield regulation. Peoples of all the community have a considerable amount of the cattle to meet the economic supports and employment generation.

In off seasons when green fodder is not available in the fields, the cattles are released into the forest with unproductive members of family i.e.,small boys and teanagers and womens.In these conditions three things happen-firstly teanagers and womens are attacked by felids,secondly their cattles are attacked by felids, thirdly the felids like leopard follow the cattle during returning and comes to human settlements and attacks upon kids, peoples.

4. HUMAN SETTLEMENTS

Periphery of the Pilibhit Tiger Reserve is almost occupied by human settlements.

5. GRASSLAND AND PREY BASE

Chital is basically a grazer species and hence more grassland is needed.

6. POACHIING

Poaching is also an issue to increase wildlife conflict

incidents.Nepali poachers enter in the forest and disturbs whole the habitat as well as wildlife. But fortunately, from last 1-2 years it is less and hardly one are two incidents are reported.

- Cropping pattern – Contiguous Sugarcane field (grassland) along the borders of TR.
- High human density (UP – 828/km^2).
- High tiger population (density – 3.44/100km^2 Bayesian spatially explicit capture-recapture analysis).
- State Highways, Irrigation Canals.
- Livelihood dependence- Fuel wood, Grass cutting, Fishing, Mushroom collection.
- Tourism related disturbance.

Chapter Five

Impact of HWC on wildlife population

In many other countries, particularly in Asia, retaliatory killing and removal of problem causing animals as a result of HWC is a major threat to the species concerned.

In India and particularly in UP HWC does not appear to have a negative impact on the main species involved, largely due to the commitment to conservation of forest department including local communities (much religious believers of human population and correlating wildlife with Gods and Goddesses).

Chapter Six

Management of Human Wildlife conflict

Presently human wildlife conflict is declared state disaster by notification no.393/1-11-2018-4(g)/2016 dated October 17,2018 and every killing and attack by wildlife is treated as state disaster by UP government.

Accordingly, Rs 5 lacs is directly disbursed to relative of victims. In these 5 lacs, collector directly provides 4 lacks on the report of forest department and rest 1 lac is provided by forest department itself with little formalities.

Above notification involves following species as wildlife.

- Tiger
- Lion
- Leopard
- Indian wolf
- Hyena
- Crocodile
- Elephant
- Rhinoceros
- Wild boar

It is notable that herbivores are not considered as wildlife in this notification.Before this notification total compensatory amount was provided by forest department as it was directed by letter no.668/14-42010-836/92 dated march 23,2010 as following-

Amounts disbursed on wildlife attack on human being

- On the death of adult- Rs. 1,00,000
- On the death of miners- Rs. 50,000
- Being totally disabled- Rs. 1,00,000
- Being partly disabled- Rs. 20,000
- Seriously injured- Rs. 10,000

Amounts disbursed on killing of cattle by wildlife

- Cow, horse,camel or pony- Rs. 1500
- Ox aged more than three years- Rs. 2900
- Buffalo aged more than three years-Rs. 3000

Sub adults of cow and buffalo

- Below 3 years- Rs. 750
- Below 2 years- Rs. 375
- Below 1 years- Rs. 190
- Dunky- Rs. 625
- Goat/sheep (below one year is not considered)-Rs. 190

Agriculture damages (per acre)

- Sugarcane- Rs. 3000
- Paddy, wheat,oilseed- Rs. 2500
- Others- Rs. 1250

House damage

- Kaccha house totally damage 3750
- Kaccha house partly damage 750
- Huts made by reeds/ grasses 500

NEW REWISED COMPENSATION RATES

These rates were revised **by letter no.1335/14-4-2014-836/1992 dated October 1,2014.** As following:

Sl. No.	Animal	Amount (Rs.)
1	Cow	15000
2	Horse	40000
3	Pony	40000
4	Camel	10000
5	Ox (more than three year)	15000
6	Buffalo (more than three year)	15000
7	Donkey	5000
8	Sheep /goat	3000

Agricultural crop damage (per acre)

Sl. No.	Crop damage	Steps
1	Sugarcane	MSP by cane department
2	Wheat, paddy, oilseed	MSP by agriculture department
3	Others	MSP by agriculture department

House damage

1	House damage Kaccha house totally damage	25000
2	Kaccha house partly damage	20000
3	Huts made by reeds/grasses	5000

Human death caused by wildlives

1	Death of adult	500000
2	Death of sub adult	500000
3	Total disability	400000
4	Partial disability	100000
5	Seriously injured	100000

Conflict Response Team PTR

PRT
(Primary Response Team)

- Village Level
- Gram pradhan,Bagh Mitra
- Information flow & Crowd Control

QRT
(Quick Response Team)

- Range Level(FRO in charge)
- Quick response(30m-1hr) with required equipments

RRT
(Rapid Response Team)

- SDO/ACF in charge
- Vet with tranquilization and trapping equipments
- Police and District administration

Recent Rescue Operation By RRT PTR

Sl. No.	Rescue Operation	Details
1	Bareilly Rubber factory Tigress Rescue Operation	Date March 2020 Ist sighting Date 19-6-2021 Tranquilized Released in Dudhwa Tiger Reserve
2	Harchuia, Tigress Rescue Operation	Date 13-03-2021 Ist sighting Date 13-03-2021 Tranquilized Released in Deoria Range PTR
3	4 Tiger cubs rescue Operation	Date 24-03-2021 Rescue Released in Lucknow Zoo
4	Puranpur Range Village Jamunia Tiger rescue Operation	Date 16-10-2023 Rescue Released in Mahof Range PTR

Jamunia Tiger Rescue Operation








Monitoring

- 3 Day monitoring Protocol
- ❖ Pugmark Analysis
- ❖ Camera Trap
- ❖ Drone Monitoring
- ❖ Cattle Kill

Bagh Mitra (Community volunteer)

- Bagh Mitra engaged in very sensitive villages with the help of WWF
- Quality Information through Training
- Community Support

Public relation & awareness

- Command center opened at Division level
- Awareness meetings
- Do's &Don't, flexi boards, pamphlets

Possible solutions and requirements

- Cropping Pattern change: Alternate crop (lemon grass, Turmeric, Mentha oil, Medicinal Plant)
- Fencing
- Road speed control and regulation on night traffic.
- Alternate Livelihood development to reduce dependence on-Fuel wood, Grass cutting, fishing, Mushroom collection. (SHG formed)
- Rescue center.
- Re-wilding Centre.
- Permanent Veterinarian in Pilibhit Tiger Reserve.
- Ensure Full staff strength with lower average age and restructuring of staff strength.
- Carrying capacity

Human animal Conflict Reduction

Chain link fencing in sensitive border areas of Pilibhit Tiger Reserve.

- To reduce straying of wild animal inhuman dominated area.
- Mala range (7+3.05) 10.05 Km
- Mahof range 3 Km

Sanctioned budget	Length (in Kms)	Rate (in Lac)	Amount
223.00	13.05 (10)	17.08 (22. 3)	223.00

Chapter Seven

Potential solutions and Their implications

The following sub-sections provide a variety of potential solutions for addressing HWC. Not all are applicable in all circumstances, or to all species. However, it is important that they are not applied in isolation. It is particularly important to ensure that prevention measures on the ground are linked to appropriate local level functionaries, which in turn are nested within broader national policy and implementation frameworks.

1. PREVENTION MEASURES

Prevention is better than curing of any problem. So, prevention measures must be applied from all the aspects. It may involve;

Awareness of peoples towards wild animals and their importance. This awareness can be developed by the forest department with the help of

- Panchayat-village heads and community heads
- Schools and colleges
- Eco development committees
- Self-help groups
- Non-governmental organisations

- Pamphlets,flexy boards, loudspeakers must be applied for advertisement
- Advertisement of traditional ways of tribes to escape from wildlife attacks.

2. LOCAL HWC MANAGEMENT PLAN

Mapping of wildlife conflict in the Pilibhit Tiger Reserve is very important and with its help HWC hot spot can be identified. Improved monitoring of carnivores and elephants in the division is more beneficial.

- Training of Pilibhit Tiger Reserve personnel in carnivore, herbivore and elephant monitoring.
- Conduct regular joint patrols of boundary fences and upgrade the fences.
- Expand the existing insurance scheme to include damage to gardens, commercial crops and other crops.
- Water points accessible to herbivores, carnivores, elephants to be protected efficiently and new waterholes should be introduced in division.
- Grassland and prey base should be improved. Exotic weeds, reeds must be cleared and palatable species of grasses should be introduced.

3. NATURAL BARRIERS

Natural barriers like bamboo, cactus, carissa, Parkinsonia, ziziphus etc should be applied in preparation of natural barriers.

4. ARTIFICIAL BARRIER

- Fences
- Social fencing
- Protection of water points
- Alternative water points for elephant, herbivores and carnivores.
- Guarding fields
- Improved livestock husbandry

5. REACTIVE MEASURE

- Lethal Removal.
- Reaction unit must be updated and quick responding.

6. MITIGATION MEASURES

- Entry of peoples in TR for fuelwood, fodder, ethano medicine, grazing and NTFP collection should be avoided and regulated accordingly.
- Technological instruments like camera traps (normal, night vision, thermal imaging, SIM based, GPS based), photography and videography camera should be used to trace and locate the presence and movement of animals.
- Surveillance instruments like drones, GPS, differentials, binocular and collars(VHF/GPS) should be used to mitigate the HWC.

7. COMPENSATION/INSURANCE

- Compensatory amount should be promptly disbursed to victims' family in case of death because it works as safety valve against mob anger.
- Compensation of cattle killing and agricultural damage takes much more time. It should be reduced with less formality works.
- With the help of rural/commercial banks both normal as well as commercial crops should be insured near and around the periphery of the reserve forest.
- Both cattles as well as human beings including children should be promoted for term life insurance with the help of banks, insurance companies, various social assistance programmes.

Chapter Eight

Conclusion

Pilibhit tiger reserve is a narrow track of forest with width varying from 3-15 km. A good amount of forest is fragmented and there are also many mutilated belts which increases the chance of animals straying out in the countryside.

In the rural areas human population is high and most of them indulge in agriculture. Sugarcane is the most prevalent crop in this area of Tarai which becomes tall and dense by the monsoon and the big cats found a very suitable habitat.

Wild pigs, hog deer, blue bull and other sort of prey is easily available here. Of recent, tiger population has grown sparkly in this reserve and the dispersing sub adults who fear the adults inside the forest usually wander in the countryside till they grow bigger enough to compete for territory.

Chances of encounter with human beings are high while labour is engaged in harvesting crops as well as doing allied agricultural works. In the last one decade some humans have lost their life. In the same time around many tigers have also been rescued from the district.

Majority of the time the attacks are accidental when the animals deter close encounter with humans. This has created a very negative perception for conservation among

public, this has been the greatest challenge to the reserve's management.

To deal with the situation WWF India and PTR has developed a unique contingent of some 150 volunteers called BaghMitra. This unit of trained persons provides accurate and timely information to the department, spread awareness among public and also assist during rescue operations.

In the sensitive areas of the reserve the tiger reserve administration has also put solar fences as well as chain-link fences. Improvement of the habitat inside the reserve is another initiative undertaken to curtail human-wildlife conflict.

Grassland management has been started on scientific lines, pools have been created to make available drinking water available throughout the year, weed removal is done continuously to increase the quality of forage among various other initiatives. Encroachments are being removed from important areas where tigers are known to disperse in other territories.

Garha-Lalpur corridor, which is used by the tigers and other animals to move from the main belt of the forest to the Lalpur-Deoriya tract, is under process of rectification. There is a narrow chunk of agriculture land between these corridors which if once developed to facilitate the movement of animals an additional area of 150 sqkm would be made available to the dispersing tigers.

Moreover, a rescue centre is under construction and development at Puranpur where rescued wild animals

including tigers and leopards would be sheltered permanently as well as treatment to wounded animals would be given. This will enable the tiger reserve to deal with this situation locally and in a better way.



Om Prakash Ram was an Assistant Professor before joining the Forest Service in Dept. of Botany, DAV PG College Kanpur, Uttar Pradesh for nearly five years.

He has done M.Sc., in Botany from BHU, Varanasi. and M. Phil, from School of Environmental Science, JNU, New Delhi. He is NET and GATE qualified.

Compilation of the present work was done during his OJT training asan Officer Traineeof SFS 2022-24 batch- I CASFOS, Coimbatore.