



URBAN TIGER VOLUNTEER PROGRAM

SEPTEMBER 2023-MARCH 2024



Rainmatter
Foundation



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 - Mr. Dheeraj Singh Chauhan, SDO, Bhopal Forest Division (T)
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Contents

ACKNOWLEDGEMENT	3
LIST OF TABLES.....	5
LIST OF FIGURES.....	5
1. INTRODUCTION & BACKGROUND.....	7
1.1 OBJECTIVES.....	8
2. IDENTIFICATION OF VOLUNTEERS AND TRAINING.....	8
2.1 LIST OF PARTICIPANTS.....	11
3. RESULTS.....	19
3.1 Samardha Zone.....	19
3.2 Dronachal Area.....	23
3.3 Kaliasot-Kerwa-Kolar Area (Bhopal-Ratapani Connecting Forest).....	23
Khari-Anwala zone (14 sq. km).....	24
Jhiri Zone.....	26
Kerwa-Kaliasot Zone.....	30
RECOMMENDATIONS AND WAY FORWARD.....	35
OTHER ACTIVITIES.....	36

LIST OF TABLES

Table 1: List of Volunteers.....	11
Table 2: Camera trap Distribution in the landscape	16
Table 3: List of animals recorded on camera trap (Sept 2023-Feb 2024)	34

LIST OF FIGURES

Figure 1: Training volunteers for UTVP	11
Figure 2: Tracks and sign being monitored with volunteers and forest staff	13
Figure 3: Casting pugmarks using POP	13
Figure 4: Field Tracks and Camera trap installation by Volunteers and team	15
Figure 5: Cleaning of waterholes with field staff	15
Figure 6: Map of Camera trap locations and zones (Sept-Oct 2023)	17
Figure 7: Map of camera trap locations and zones (Oct 2023-Mar 2024)	18
Figure 8: BT 8 Male tiger	19
Figure 9: BT 10 Female	20
Figure 10: BT 11-81 Female	20
Figure 11: BT 11-82 Female	21
Figure 12: UnID Tigress 1	21
Figure 13: Unid Tigress 2	22
Figure 14: Injured Tigress recorded in September 2023	22
Figure 15: Injured Tigress BT 09.....	23
Figure 16: ST 21-322 Female recovered from injury	25
Figure 17: New floater male in Khari.....	25
Figure 18: BT 123-4 Male	26
Figure 19: Playful cubs of ST 21-322.....	26
Figure 20: Wild Dog in Jhiri.....	27
Figure 21: Indian Wolf in Jhiri	27
Figure 22: ST 21-423 with 4 cubs	28
Figure 23: RT 7 Male	28
Figure 24: RT 19 with 3 cubs	29
Figure 25: ST 21 With 3 cubs	30

Figure 26: Tigress T123 has been observed utilising all possible ways to enter city and Bull Mother Farm.....	31
Figure 27: Tigress BT 123 with 4 cubs.....	32
Figure 28: BT 123-4 Tiger with City Background	32
Figure 29: Wildlife And Waterhole monitoring by team.....	33
Figure 30: Different conservation planning with DFO Mr. Alok Pathak, SDO Mr Dheeraj Singh Chauhan, Range Officer Mr. Shivpal Pipardhe and Field staff	36
Figure 31: Planning of Nature-based Village Fair in Tiger Area with school students under guidance of Mr. BMS Rathore, Retired IFS	37
Figure 32: Installations of camera with volunteers in new locations in Bhanpur and Chichali Beats.....	38
Figure 33: Awareness Program with Jagran Lake City University.....	38
Figure 34: Distribution of Jackets to field staff by The Nature Volunteers NGO	39
Figure 35: Volunteer Meeting with field staff and DFO Mr. Alok Pathak	40
Figure 36: Field staff Trainings	40
Figure 37: Awareness activity and exposure visit to Tiger movement areas to School of Planning and Architecture, Bhopal	41

1. INTRODUCTION & BACKGROUND

As long-term monitoring Urban Tiger Conservation Project (www.urbantigers.org) monitor tigers and other carnivores in city to understand the potential of urban landscapes for the conservation of large carnivores. In 2021-22, we collated all available tiger photograph with forest department of Bhopal Division, Sehore Division and Obedullahganj Division and identified 83 individual tigers (including 13 young cubs). The recent All India Tiger Estimation 2022 report states presence of 96 tigers in Bhopal-Ratapni-Kheoni Landscape. The regular monitoring in the city and adjoining green spaces states presence of 6 Tigers (1 ♂, 1 ♀ and 4 cubs) using Municipal Limits of Bhopal city and more than 10 individual adult tigers and 3 cubs using the buffer of 5km of Bhopal City. The tiger movement in core built-up areas are rare but the area on the edge of the city is mosaics of land-use including farmlands, parks, forest, scrubland, waterbodies and low density residential area as compared to city. In these landscapes, people's land use and practices also lead to changes in the habitats of wildlife, meaning undomesticated and domesticated animal species. This increases human-wildlife interactions and peri-urban landscapes become arenas of these encounters. Achieving a good coexistence between humans and wildlife in these peri-urban landscapes is a new challenge for conservation managers and policymakers and communities living in these areas.

The frequent visit of tigers in the urban green spaces of Bhopal, provide an opportunity to ascertain the expanding outlines of the wildlife compass and prospect of promoting wildlife in green spaces of city. With the intensifying urban activities, the co-occurrence & co-existence of wildlife with human societies is becoming visible in Bhopal. The expanding development of urban areas upon tiger habitats, the natural space for tigers to roam and hunt reduces, increasing the likelihood of human-tiger interaction. The management of potential conflicts require a comprehensive approach, including community engagement to promote awareness about tiger behavior, monitoring and promote conservation. This can work towards mitigating any potential conflicts and fostering peaceful coexistence between humans and tigers.

Tiger presence in populated areas needs to be dealt with caution considering wildlife and communities residing. Bhopal is one of the examples where tigers live in harmony with people in and around urban spaces for the last many years. The same understanding shall be fortified

and backed by awareness, sensitization and research in the designated areas using local community.

1.1 OBJECTIVES

Urban Tiger Volunteer Program initiated with the same aim and following objective

- To develop a monitoring protocol for the large carnivores monitoring in human dominated landscape using local communities
- To develop a team of trained para-biologist for field tracking and camera trapping carnivores in forest as well as in human-dominated landscape
- To act as Primary Response Team (PRT) in case of any carnivore movement and potential risk of conflict

2. IDENTIFICATION OF VOLUNTEERS AND TRAINING

With increased tigers as per All India Tiger Estimation 2022, i.e., 96 individual adults in Bhopal-Ratapani-Kheoni landscape and Tiger roaming outside forest areas in Bhopal city as well as adjoining agrarian landscape. Bhopal Forest Division (T) has initiated the Urban Tigers Volunteer Program with Guidance of Mr Rajesh Khare, CCF Bhopal, Mr Alok Pathak, CF & Acting DFO, Bhopal, and Mr RS Badhouria, SDO, Bhopal and with support of DP Srivastava.

The program aims to establish a network of trained volunteers in the adjoining area of Bhopal City to monitor and create systematic Tiger movement data. This will also act as an early warning system for tiger movement in and around habitations.

The program was initiated today at Kerwa E-Surveillance Center with 10 volunteers (8 on field and 2 coordinator) with Mr. RS Badhouria and DP Srivastava distributing a basic kit which including Bag, data sheets, a set of camera traps with safety boxes, ruler, Pen, Marker, Card reader, waterbottle and Tshirt. The program is supported by Bhopal Forest Division, Wildlife Trust of India-RAP, Tinsa Foundation, and Rainmatter Foundation.

The volunteers will cover Prempura and Samardha area toward Raisen, Khari & Amla area toward Sehore and Jhiri toward Ratapani. With effective management along with field staff, e-surveillance, and camera trap the program aims to increase volunteer numbers as well involving them sensitization programs.

During the program Mr Gopal Tilwari, and Mr. Ingle, Deputy Ranger, and Mr Rajkamal Dama, Beat guard, Mendora, supported the monitoring and volunteers.





वन विभाग ने 10 स्वयं सेवकों को दी ट्रेनिंग, जंगल से सटे गांवों में नेटवर्क बढ़ाने की कवायद वालेटियर रखेंगे बाघों पर नजर, लोगों को जागरूक भी करेंगे

पीपुल्स संवाददाता • भोपाल

मो.नं. 9425018933

वन विभाग शहरी सीमा और आसपास बाघों की निगरानी के लिए शहरी प्रशिक्षित वालेटियर्स का सहारा लेने जा रहा है। ये लोग बाघों की निगरानी के साथ ग्रामीणों के बीच सूचना नेटवर्क तैयार करेंगे, ताकि जंगल से बाहर आने वाले बाघ की सूचना विभाग को तत्काल मिल सके। इससे बाघों का व्यवस्थित डाटा भी तैयार होगा।

हाल में जारी टाइगर सेंसस-2022 के मुताबिक, भोपाल-रातापानी-खेओनी लैंडस्केप में 96 बाघ हैं। इनमें से भोपाल के 20 किमी दायरे में 22 से अधिक बाघों का मूवमेंट है। भोपाल सीसीएफ राजेश खरे, डीएफओ



बाघों पर रिसर्च कर रहे डीपी श्रीवास्तव वालेटियर्स को ट्रेप कैमरे के बारे में जानकारी देते हुए।

आलोक पाठक, एसडीओ आरएस भदौरिया और बाघों पर रिसर्च कर रहे डीपी श्रीवास्तव के सहयोग से केरवा के ई-सर्विलांस सेंटर में 10 शहरी वालेटियर्स को प्रशिक्षण दिया गया।

वैलेटियर्स के प्रशिक्षण में वन विभाग भोपाल, वाइल्ड लाइफ ट्रस्ट ऑफ इंडिया-आरएपी, तिन्सा फाउंडेशन और रेनमैटर फाउंडेशन ने सहयोग किया है।

यह रहेगा काम

फॉरेस्ट अधिकारियों के अनुसार, ये वालेटियर्स रायसेन, प्रेमपुरा, समरघा, सीहोर के खारी, आमला क्षेत्र, रातापानी की ओर झिरी को कवर करेंगे। ये वालेटियर्स वन क्षेत्रों से जुड़े स्कूल, कॉलेज, रहवासी कॉलोनियों और संस्थानों के लोगों को बाघों के बारे में जानकारी देकर उन्हें जागरूक करने का काम करेंगे।

बाघों की सुरक्षा के लिए लोगों की सहभागिता जरूरी है। आज बाघों की संख्या बढ़ रही है। इसलिए वन क्षेत्र से जुड़े लोगों को जागरूक करने, बाघों की आवाजाही पर निगरानी करने और नेटवर्क तैयार करने के लिए शहरी वालेटियर्स को प्रशिक्षण देने का कार्यक्रम शुरू किया है।
- आलोक पाठक, डीएफओ, भोपाल

Figure 1: Training volunteers for UTVP

2.1 LIST OF PARTICIPANTS

Currently, 14 volunteers have joined the program in different capacity and different site monitoring. Prerna and Nishant work as Co-ordinator collecting data from different volunteers and submitting to DP Srivastava.

Table 1: List of Volunteers

S. No.	Participants	Profession	Area
1.	Prerna Sharma	Biologist (Coordinator)	Kerwa & Khari
2.	Ayush Bisen	Data Analyst	Kaliasot
3.	Ravi Kushwaha	Daily-wagers with Forest Department	Kerwa
4.	Prakash	Daily-wagers with Forest Department	Nursery & Dam area

5.	Kamlesh Gaur	Daily-wagers with FD (sub-coordinator)	Khari
6.	Govind	Villager	Khari
7.	Arjun	Villager	Khari-Anwala
8.	Nishant Singh	Biologist (Coordinator)	Samardha
9.	Mangal	Daily-wagers with Forest Department	Samardha
10.	Naresh	Daily-wagers with Forest Department	Prempura
11.	Om Prakash	Nature Guide (sub-coordinator)	Jhiri
12.	Ravi	Nature Guide	Baheda
13.	Sarvan	Daily-wagers with Forest Department	Anwala
14.	Happy	Anthropologist	Kerwa-Kaliasot

As volunteers they do following activity

- 1) **Field Tracks and sign monitoring:** Tracking tigers & other carnivores in the field, it's essential to be observant and look for various signs such as Pugmarks, Scratch marks, Drag Marks, Scats, Cattle Kills etc.
- 2) **Camera trapping:** Potential camera trapping stations are identified and marked, based on the reconnaissance survey as well as field surveys. Motion-based remotely triggered camera traps are installed in different part of green spaces and checked every 2nd day for the tiger movements. Spatio-temporal space-use by wild and domestic animals are documented.
- 3) **Water hole monitoring:** Waterholes play important role in wildlife conservation hence, health of waterhole is important.



Figure 2: Tracks and sign being monitored with volunteers and forest staff



Figure 3: Casting pugmarks using POP





Figure 4: Field Tracks and Camera trap installation by Volunteers and team



Figure 5: Cleaning of waterholes with field staff

Currently, Total 30 camera traps has been installed in landscape (WTI: 10 Camera trap Units, Personal 10 Camera Trap Units and Department's 10 Camera Trap units).

Table 2: Camera trap Distribution in the landscape

S. No.	Zone	Number of Camera Traps	Remarks
1.	Kerwa-Kaliasot	08	
2.	Samardha-Prempura	08	1 damaged by people (cannot be repaired)
3.	Anwala-Khari	08	
4.	Jhiri	04	1 stolen and 1 damaged by tiger
5.	Dronachal	02	Removed
TOTAL		30	

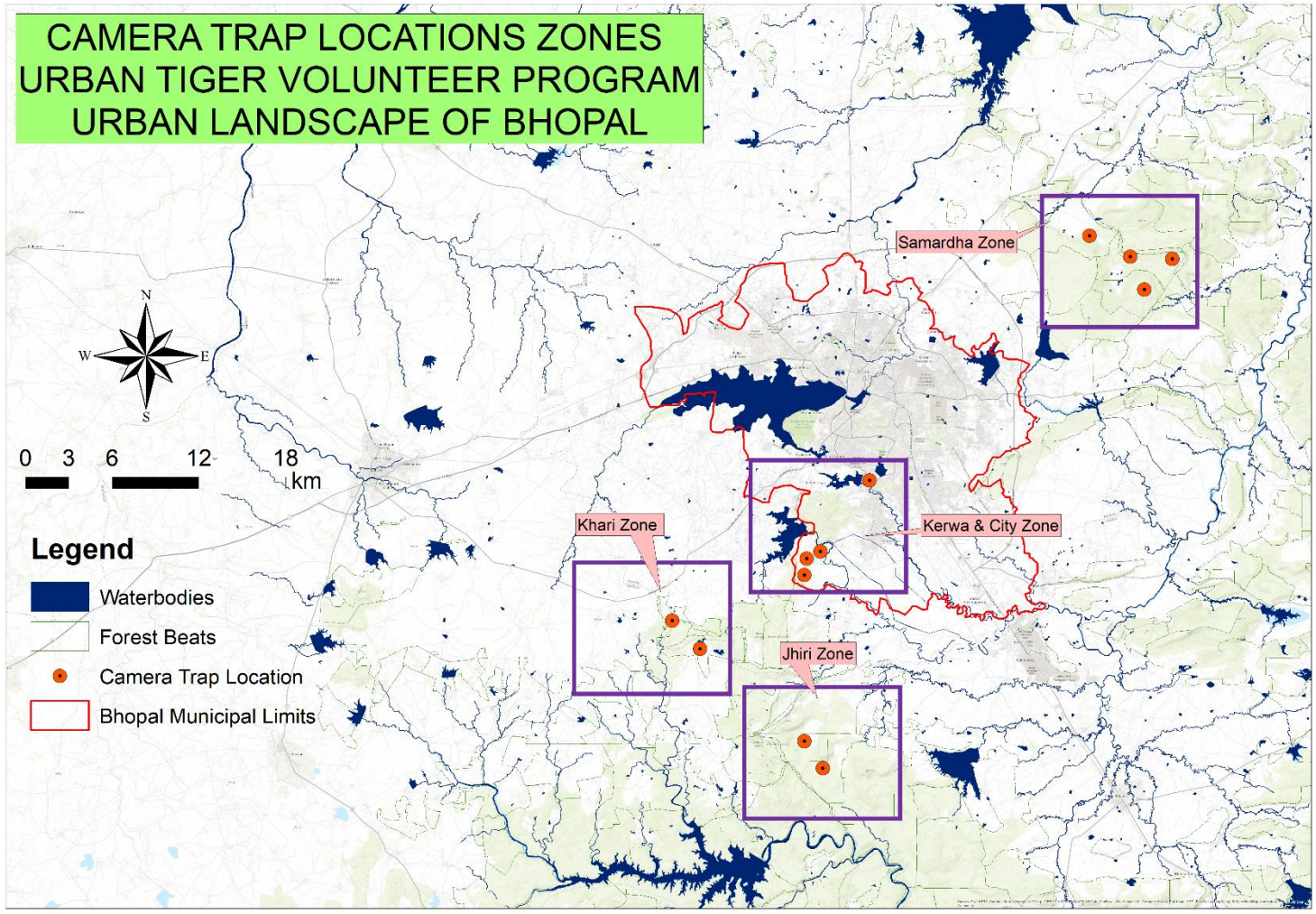


Figure 6: Map of Camera trap locations and zones (Sept-Oct 2023)

**CAMERA TRAP LOCATION ZONES
URBAN TIGER VOLUNTEER PROGRAM
URBAN LANDSCAPE OF BHOPAL**

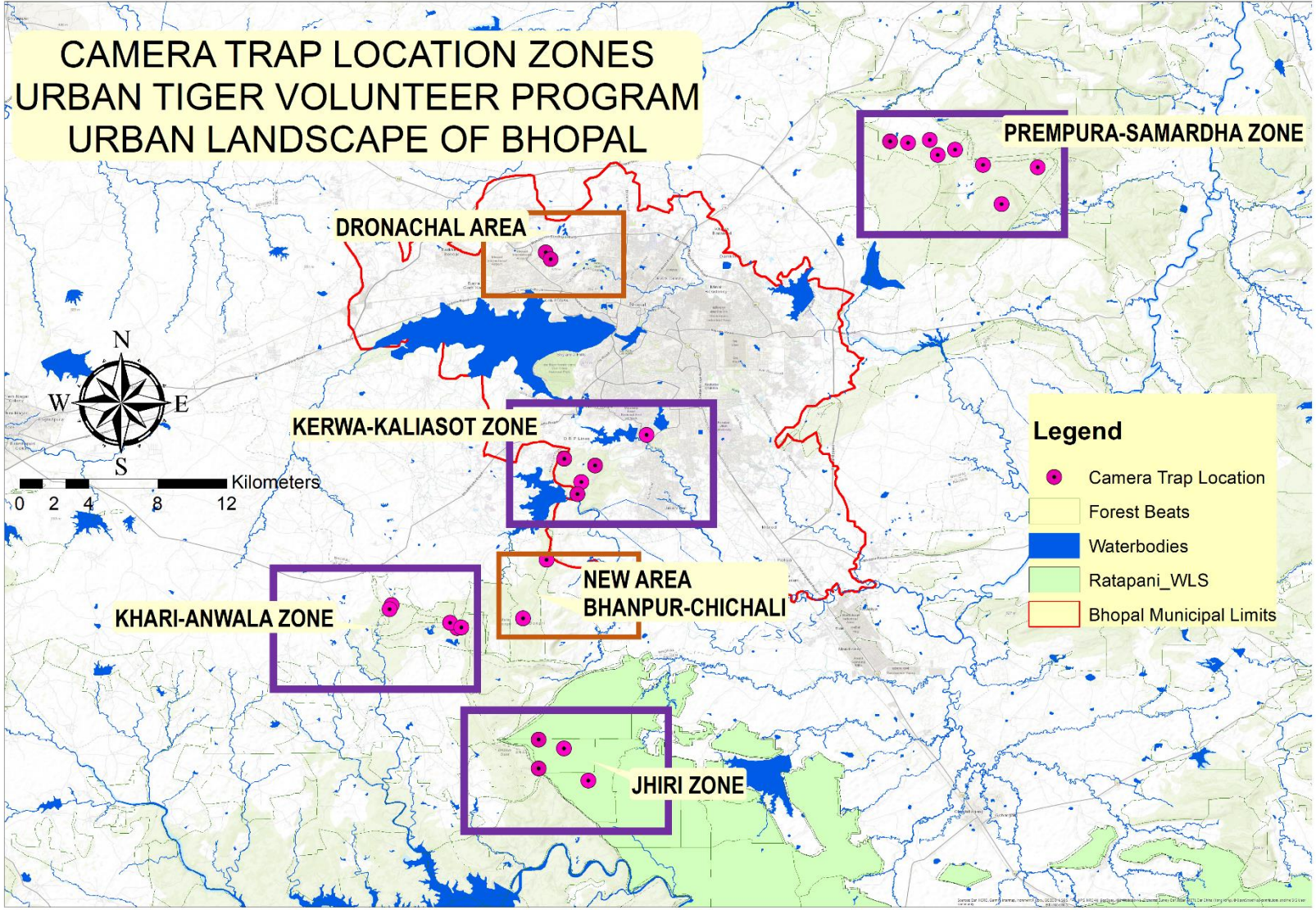


Figure 7: Map of camera trap locations and zones (Oct 2023-Mar 2024)

3. RESULTS

3.1 Samardha Zone

- **Area:** 50 sq. km (beat North Samardha, South Samardha and Prempura)
- Initially 4 camera trap location in Samardha-Prempura and now extended to 8 camera trap location
- Recently 1 camera trap was damaged by people which is beyond repair
- 4 individual tigers + 2 new tigers identified from the area
 - BT 9 Female (Injured): Out of Track now
 - BT 8 Male (Dominant)
 - BT 10 Female
 - BT 11-81 Female
 - BT 11-82 Female
 - Unidentified New Tiger 1
 - Unidentified new Tiger 2



Figure 8: BT 8 Male tiger



Figure 9: BT 10 Female



Figure 10: BT 11-81 Female



Figure 11: BT 11-82 Female



Figure 12: UnID Tigress 1



Figure 13: Unid Tigress 2

- 1 Tigress BT 9 has been also observed injured in B&W image and monitored



Figure 14: Injured Tigress recorded in September 2023

- Color Photograph states the recovering of the wound and tigress is regularly monitored by field staff and volunteers
- The tigress went missing after September 2023, in spite of monitoring in all adjoining forest patches



Figure 15: Injured Tigress BT 09

3.2 Dronachal Area

- Area: 1 sq. km
- The area is under control of Security forces and have large tracts of green spaces which has frequent movement of leopards
- It was not captured after camera trap installation

3.3 Kaliasot-Kerwa-Kolar Area (Bhopal-Ratapani Connecting Forest)

- Total Area of connected patch: 150 sq. km (Focused camera trap area in Kerwa-city patch 12 sq. km, Khari-Anwala patch 14 sq. km and Jhiri Patch 11 sq km)
- Ranges: Samardha (Bhopal Division), Sehore (Sehore Division) and Dahod (Obedullahganj Division)
- Beat: Mendora, Anwala, Khari, and Jhiri
- Walmi and city area
- **Major Observations 150 sq. Km**
 - 2 dominant male (BT123-4 and RT 18)
 - New Floater male
 - 5 females (ST21, ST21-322, ST21-423, RT19 and BT 123)

- 17 cubs (ST-21: 3 cubs Jhiri-Kathotiya), (ST21-322: 3 cubs in Khari), (ST21-423: 4 cubs in Jhiri), (RT-19: 3 cubs in Jhiri Veerpura) and (BT123: 4 cubs in Kerwa-City area)

Khari-Anwala zone (14 sq. km)

- Currently 8 camera traps were provided to the team
- Camera traps are monitoring trails and edge of a private property
- 2 adult tigers (BT322 Female & BT 123-4 Male) and 3 cubs (BT 322-1, 322-2, & 322-3) and 1 floater male have been recorded using the area
- Earlier Kamlesh and his team has observed Female tigress with an injury and recent monitoring photograph is stating its wellbeing and better raising of cubs
- Recently, it have again injured herself might be during the hunt but being monitored closely

TRACKING INJURED TIGRESS T21-322



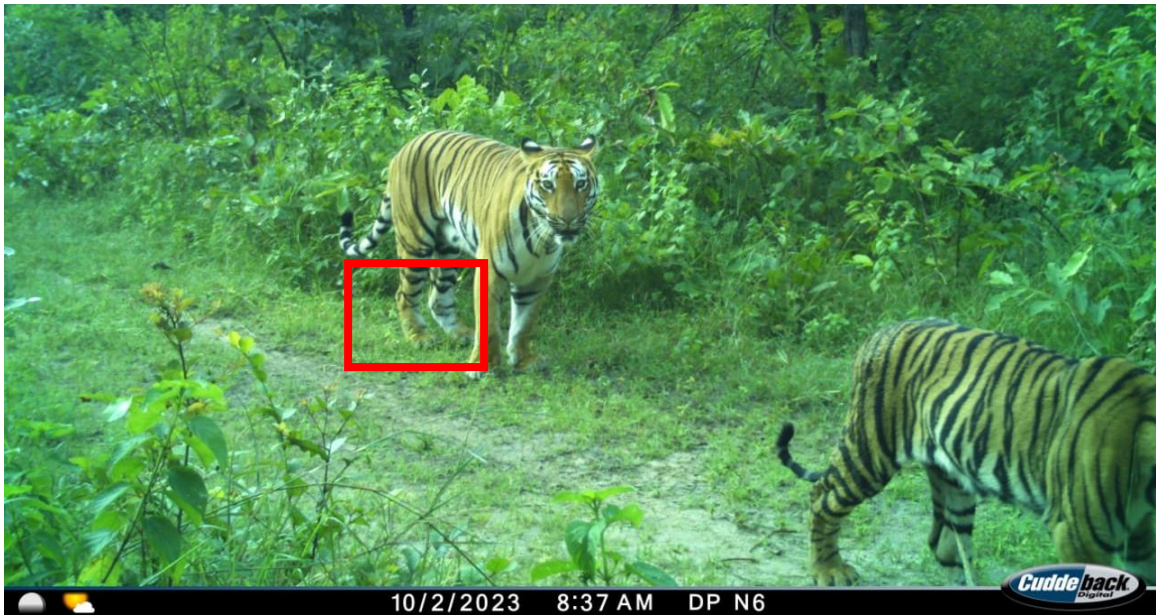


Figure 16: ST 21-322 Female recovered from injury



Figure 17: New floater male in Khari



Figure 18: BT 123-4 Male



Figure 19: Playful cubs of ST 21-322

Jhiri Zone

- 4 camera trap locations has been established and regularly monitored
- 4 tigers are using the area (ST 7 Male, ST 5/RT 19 Female, ST21 Female, ST 21-423)
- 10 cubs were recorded with ST 5/RT 19 Female, ST21 Female, ST 21-423 female

- Wolf and Wild Dogs were recorded for first time in the area but also observed with Mange Issue



Figure 20: Wild Dog in Jhiri



Figure 21: Indian Wolf in Jhiri



Figure 22: ST 21-423 with 4 cubs



Figure 23: RT 7 Male



Figure 24: RT 19 with 3 cubs



Figure 25: ST 21 With 3 cubs

Kerwa-Kaliasot Zone

- 8 camera traps are established on the edges from where tigers enter into city and vica-versa.
- 6 tigers are using the area (BT123 female, BT-1234, BT 1235, 1236, 1237 & 1238)
- Tigers were also observed entering in Bull mother farm 2-3 times and recorded in CCTV
- Young cubs are playful and now venture out alone at times
- BT1234 moves in WALMI occasionally



Figure 26: Tigress T123 has been observed utilising all possible ways to enter city and Bull Mother Farm

- BT1234 moves in WALMI occasionally



Figure 27: Tigress BT 123 with 4 cubs



Figure 28: BT 123-4 Tiger with City Background



Figure 29: Wildlife And Waterhole monitoring by team

Table 3: List of animals recorded on camera trap (Sept 2023-Feb 2024)

S. No.	Species	Kerwa-Kaliasot	Khari-Anwala	Jhiri	Samardha-Premura
1	Tiger	Yes	Yes	Yes	Yes
2	Leopard	Yes	Yes	Yes	Yes
3	Sloth Bear		Yes	Yes	Yes
4	Wolf			Yes	
5	Hyena	Yes	Yes	Yes	Yes
6	Wild Dog			Yes	
7	Jackal		Yes	Yes	Yes
8	Fox		Yes	Yes	Yes
9	Small Indian Civet		Yes	Yes	Yes
10	Palm Civet		Yes	Yes	Yes
11	Jungle Cat	Yes	Yes	Yes	Yes
12	Nilgai	Yes	Yes	Yes	Yes
13	Four-horned Antelope	Yes	Yes	Yes	Yes
14	Blackbuck		Yes		
15	Sambhar				Yes
16	Cheetal	Yes	Yes	Yes	Yes
17	Porcupine	Yes	Yes	Yes	Yes
18	Langur	Yes	Yes	Yes	Yes
19	Rhesus Macaque	Yes	Yes	Yes	Yes
20	Ratel	Yes	Yes	Yes	
21	Hare	Yes	Yes	Yes	Yes
22	Wild Pig	Yes	Yes	Yes	Yes

RECOMMENDATIONS AND WAY FORWARD

- The Community based conservation model initiated in Bhopal Division (T) should be replicated in all divisions of Bhopal Forest Circle. DFO, Raisen Division (T) Mr. Vijay Kumar have taken lead in monitoring and recently observed a new tiger in area and upon identification it was recorded in Indore in 2023 and traveled to Raisen city in Feb 2024.
- The Bhopal Circle landscape is over 3000 sq. km and home to more than 80 tigers and growing. We are just covering less than 150 sq.km. The area poses more potentials for community based conservation.
- WWF-India have come forward to financially support the volunteer program for 2024-25 and initiate a Human-tiger Interaction specialized Awareness Programs in the same area.
- CSIR funds should be promoted to establish more volunteers (Kits, trainings & Stipend) in all beats apart from forest staff in parts of Bhopal Forest Circle
- The trained volunteers can be used as Primary Response Team along with dedicated forest staff to monitor and recuse conflicting animals in human-dominated landscapes
- The volunteers can also be utilized for village awareness and sensitization program with small trainings.
- The scats need to be collected and analyzed to see prey-base composition in diet
- With current monitoring we have observed **5 females and 17 cubs in less than 150 sq. km of area connecting Bhopal and Ratapani WLS**. With such population in small area indicates high density of tigers and good dynamic of Tiger Population in Bhopal Forest Circle, hence **a specialized and Centralized cell “Tiger Cell”** needed to monitor tigers and Human-Tiger Interactions in the Landscape is needed.



महू भास्कर 09-03-2024

महू में लंबे समय से ओझल बाघ रायसेन पहुंचा

भास्कर संवाददाता | महू



रायसेन शहर में घूम रहा बाघ महू से आया है। एस्एफआरआई टीम ने इसको पुष्टि की है। महू से भटकते हुए आए इस बाघ की पुरानी और रायसेन में घूम रहे बाघ की नई तस्वीर का मिलान कर लिया गया है। इसमें दोनों ही तस्वीरों में बाघ के शरीर पर घाव का निशान है और दोनों की स्ट्रीप भी एक जैसी है।

महू में पिछले साल महू में बाघ का मुकामेंत शुरू हुआ था। जिसके बाद बाघ लगातार महू, मानपुर रेंज में दिखाई दे रहा था। लेकिन बीते दो माह से अधिक समय से बाघ का मुकामेंत महू में नजर नहीं आ रहा था। इसी बीच फरवरी के आखिरी सप्ताह में रायसेन में बाघ का मुकामेंत दिखा। जिसके बाद वन विभाग ने जब महू और रायसेन के

बाघ की तस्वीर मिलान की तो उसमें महू से ही बाघ के रायसेन तक पहुंचने की पुष्टि हुई है। 28 फरवरी को बाघ रायसेन की शहरी सीमा में आ गया था।

रायसेन डीपफूओ विजय कुमार ने बताया कि दो माह पहले यह बाघ इंदौर के महू में भी देखा गया था। वन विभाग के दल ने रायसेन के बाघ और महू वाले बाघ के डाटा का मिलान किया है, जिसमें महू जिले और रायसेन में देखा जा रहा बाघ का डाटा मैच हो रहा है। रायसेन में दिख रहा यह बाघ महू से होकर ही रायसेन आया है।

OTHER ACTIVIES



Figure 30: Different conservation planning with DFO Mr. Alok Pathak, SDO Mr Dheeraj Singh Chauhan, Range Officer Mr. Shivpal Pipardhe and Field staff



Figure 31: Planning of Nature-based Village Fair in Tiger Area with school students under guidance of Mr. BMS Rathore, Retired IFS



Figure 32: Installations of camera with volunteers in new locations in Bhanpur and Chichali Beats



Figure 33: Awareness Program with Jagran Lake City University



Figure 34: Distribution of Jackets to field staff by The Nature Volunteers NGO



Figure 35: Volunteer Meeting with field staff and DFO Mr. Alok Pathak



Figure 36: Field staff Trainings



Figure 37: Awareness activity and exposure visit to Tiger movement areas to School of Planning and Architecture, Bhopal

TRACKS & SIGNS OF WILD MAMMALS OF CENTRAL INDIA

Tiger (बाघ)

 F c. 100-130 mm
 Schedule I (WPA, 1972)
 IUCN Category-Endangered

Leopard (तेंदुआ)

 F c. 70-90 mm
 H c. 60-80 mm
 Schedule I (WPA, 1972)
 IUCN Category-Vulnerable

FELINE (CAT FAMILY)
 - No Nail mark in pugmark
 - Bigger Pad size



Jungle Cat (जंगली बिल्ली)

 F c. 30-35 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

Asiatic Desert Cat

 F c. 35-45 mm
 H c. 30-35 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

Rusty-spotted Cat (छपके वाली बिल्ली)

 F c. 18-22 mm
 H c. 18-22 mm
 Schedule I (WPA, 1972)
 IUCN Category-Near Threatened

Hyena (लकड़बग्घा)

 F c. 80-90 mm
 H c. 63 mm
 Schedule I (WPA, 1972)
 IUCN Category-Near-threatened

Wolf (भेड़िया)

 F c. 70 mm
 H c. 60-64 mm
 Schedule I (WPA, 1972)
 IUCN Category-Near-threatened

Wild Dog (जंगली कुत्ता)

 F c. 70-75 mm
 Schedule I (WPA, 1972)
 IUCN Category-Endangered

CANID (DOG FAMILY)
 - Nail mark in pugmark
 - Smaller Pad size



Jackal (सियार)

 F c. 45 mm
 H c. 38 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

Indian Fox (लोमड़ी)

 F c. 30 mm
 H c. 28-32 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

Sloth Bear (भालू)

 80-110mm
 160-190mm
 Schedule I (WPA, 1972)
 IUCN Category-Vulnerable

Honey Badger/Ratel (रेटेल)

 F c. 55-60 mm
 H c. 41-49 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

Indian Palm Civet (बिज्ज)

 F 30-38 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

Small Indian Civet (बिज्ज)

 F 20 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

SMALL MAMMALS

Smooth-coated Otter (उद बिलव)

 F c. 80mm
 H c. 65mm
 Schedule II (WPA, 1972)
 IUCN Category-Vulnerable

Mongoose (नेवला)

 F c. 25-28 mm
 H c. 25-28 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least Concern

Wild Boar (जंगली सूअर)

 Schedule II (WPA, 1972)
 IUCN Category-Least concern

Indian Porcupine (शाही)

 Schedule I (WPA, 1972)
 IUCN Category-Least concern

Indian Hare (खरगोश)

 Schedule II (WPA, 1972)
 IUCN Category-Least concern

Indian Gray Langur (हनुमान लंगूर)

 H c. 120 mm
 Schedule II Part I (WPA, 1972)
 IUCN Category-Least concern

Rhesus Macaque (लाल मुंह का बंदर)

 F c. 65-80 mm
 Schedule IIA (WPA, 1972)
 IUCN Category-Least concern

Sambar (सांबर)

 F c. 85-100 mm
 1.5-2.0 cm & 0.8-1.4cm
 Schedule I (WPA, 1972)
 IUCN Category-Vulnerable

Spotted Deer (चीतल)

 F c. 50-66 mm
 12-18 cm
 Schedule II (WPA, 1972)
 IUCN Category-Least concern

DEER FAMILY
 - Antlers: Branched horns on heads
 - grown & cast annually

Barking Deer (भेड़की)

 F c. 35-49 mm
 0.5cm
 Schedule I (WPA, 1972)
 IUCN Category-Least concerned

Bluebull (नीलगाय)

 F c. 87-100 mm
 1.5-2cm
 Schedule II (WPA, 1972)
 IUCN Category-Least concern

Four-horned Antelope (चौसिंगा)

 F c. 40-45 mm
 0.6-1.2cm
 Schedule I (WPA, 1972)
 IUCN Category-Vulnerable

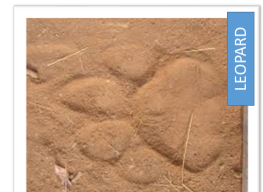
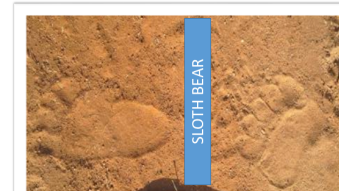
Indian Gazelle (चिकारा)

 F c. 45-50 mm
 0.5cm
 Schedule I (WPA, 1972)
 IUCN Category-Least concern

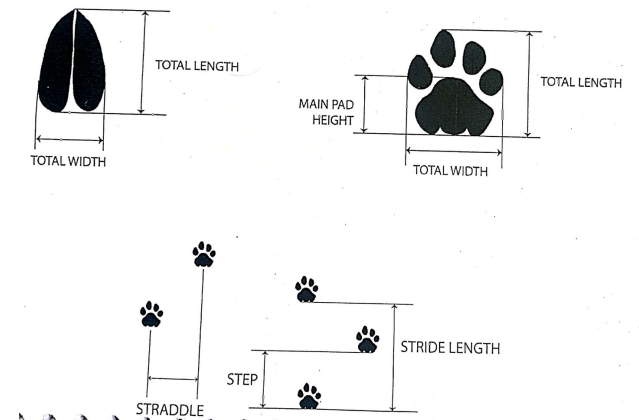
Blackbuck (कृष्णा मृग)

 40-62 mm
 7-9 mm
 Schedule I (WPA, 1972)
 IUCN Category-Least Concern

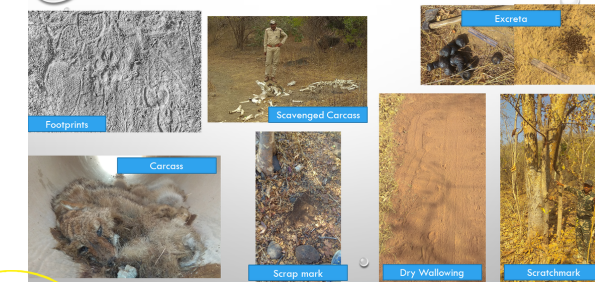
ANTELOPE FAMILY
 - Hollow Horns
 - grows permanently



GAIT PATTERN



TYPES OF SIGNS & TRACKS



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