SUMMARY

The forests in Mirzapur district are under managerial jurisdiction of two separate forest divisions- Mirzapur Forest Division and Kaimur Wildlife Division. The present study is carried out in Mirzapur Forest division except the forests coming under jurisdiction of Kaimur Wildlife Division. The Mirzapur forest division consists of eight forest ranges namely Marihan, Sukrit, Chunar, Wyndham Fall, Patehara, Lalganj, Mirzapur and Dramadganj forest ranges. Patehara and Dramadganj are in vicinity of Kaimur WLS's Halia range, while Sukrit range is in vicinity of Chandraprabha WLS situated in neighbouring district Chandauli.
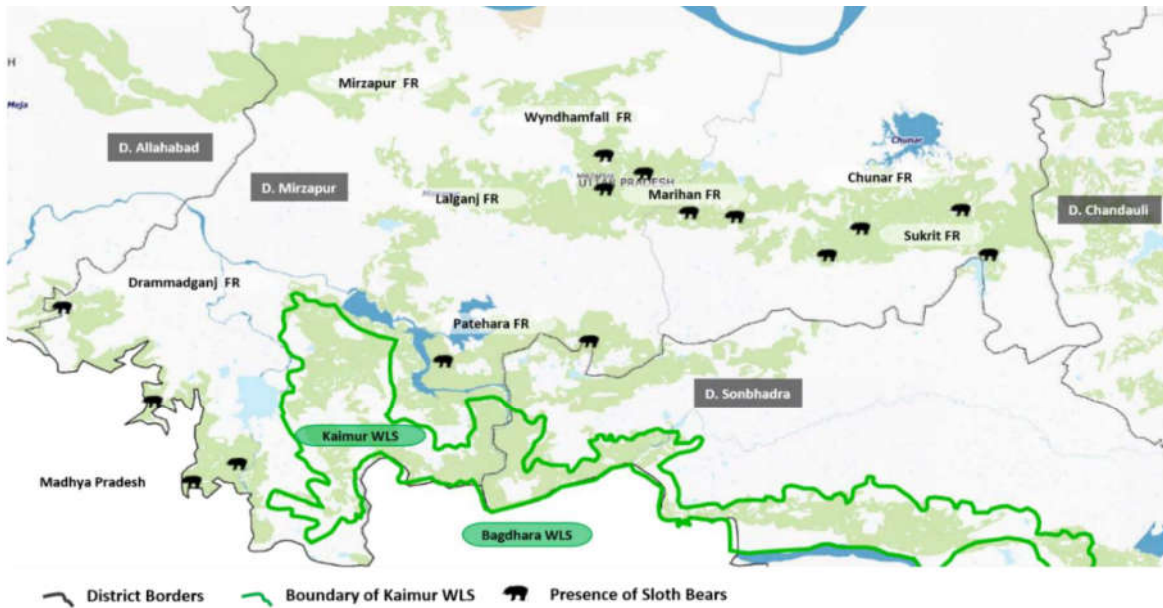
In the study, the Marihan-Sukrit-Chunar landscape (MSC) and Patehara-Halia-Dramadganj (PHD) landscape emerged as two important forest areas in Mirzapur district in terms of biodiversity richness. The forest in Lalganj, Mirzapur and Wyndhamfall ranges are also important but since these are severely degraded, efforts are required for conservation of these three forest ranges to ensure free movement and survival of animals from neighbouring forest ranges.

In this study, the sloth bear areas were first analysed based on the secondary information available with Mirzapur forest department and information collected from villages located around the forests. An off-site habitat analysis using remote sensing was then done to identify potential sloth bear habitats and movement areas based on parameters such as terrain, nearness to water sources, continuity of forests, distances from human habitation, etc. The survey sites were then selected based on our discussion with forest staff, with primary concern being security and accessibility by motor vehicle while ensuring that a representative area of every possible sloth bear dominated forests could be surveyed. The ground-truthing survey was done for different forest beats within five forest ranges (Marihan, Sukrit, Chunar, Patehara and Dramadganj) in the month of February, 2016. The presence of sloth bears was mainly assessed using their scat, scratch mark and typical bear dug out. Man-bear conflict is quite commonly reported in most of the areas surveyed. In majority of the cases, the confrontation with the animal occurred inside forests during collection of fuelwood and fruits such as Mahua by villagers. Bear attacks are also reported near village water sources during morning defecation. Some of the key man-bear conflict prone areas are Rajapur and Sarso Semri (Marihan range), Bhavanipur (Sukrit range), Sarsawa (Patehara range) and Banjari Kala (Dramadganj range). The problem of man-bear conflict is quite complicated and becoming serious conservation issue. The main driver seems to be the increasing competition for habitats and resources between men and bears. A possible region wise explanation for the man-bear conflict is discussed in details with help of recent satellite images in Chapter 6 of the report.
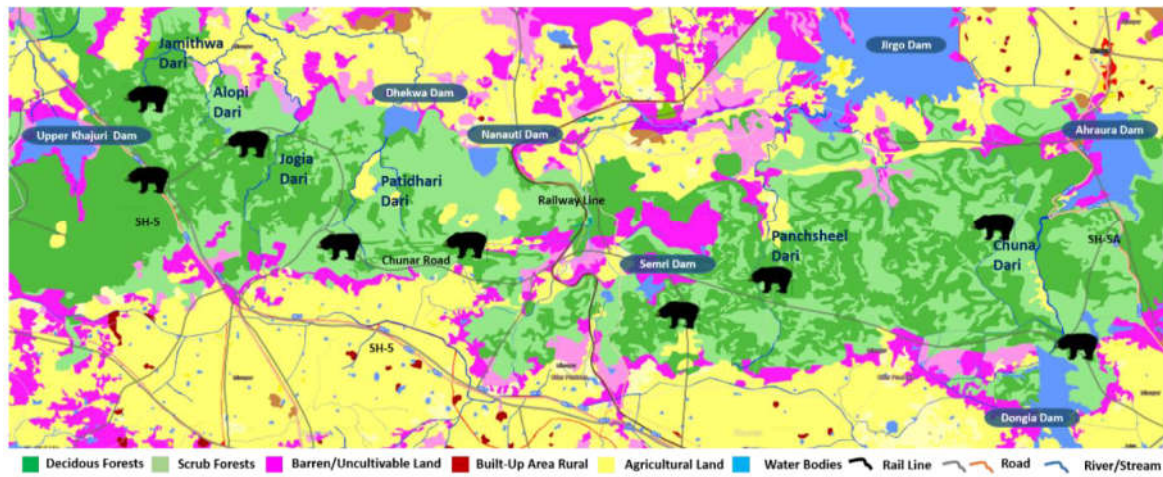
Table 1 Summary of Survey Findings

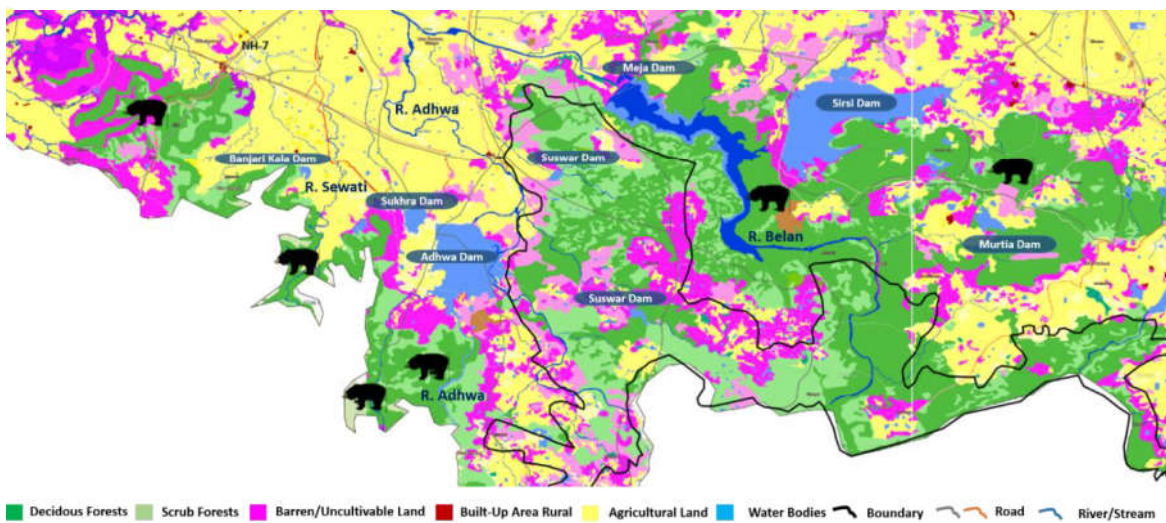| Range	Presence of Sloth Bear Signs		Other Important Schedule I or/and Endangered Animals (source: Forest Dept. records and villagers survey)
	Total sighting/total distance	Frequency (per km)	
Marihan	55/11 Km	5	Leopard, Blackbuck, Chinkara, Mugger Crocodile, Egyptian Vulture, Bengal Monitor, Sambhar etc.
Sukrit & Chunar-Sakteshgarh	142/12 Km	11.8	Leopard, Sambhar, Chinkara, Chital, Bengal Monitor etc.
Patehara	26/4.25 Km	6.1	Leopard, Swamp Deer, Chinkara, Chital, Mugger Crocodile, Bengal Monitor etc. Tiger*- occasional (sighting frequency: once in a year or two)
Dramadganj	16/4.9 Km	3.3	Leopard, Chital, Blackbuck, Blackbuck, Mugger Crocodile, Bengal Monitor etc. Tiger*- occasional (sighting frequency: once in few months)
*reported based on sightings by villagers living in and around the forests who were able to tell the difference between leopard and tiger.			

Following are maps showing Sloth Bear habitats, forests ranges and Bhuvan Land Use Land Cover maps of 2011-12 showing different land uses, important drinking water sources, streams etc for Marihan-Sukrit-Chunar and Patehara-(Halia)-Dramadganj region.

Map 1 Sloth Bear habitats and forest ranges of Mirzapur (base map: Bhuvan, GoI)

Map 2 Important drinking water sources, streams and other land uses in Marihan-Chunar-Sukrit landscape.

Map 3 Important drinking water sources, streams and other land uses in Dramadganj-Patehara landscape.

The following table shows the major drinking water source in each forest range (also shown in the LULC maps above).

Table 2 Major Drinking Water Sources in each Forest Ranges

Range	Drinking Water Sources	
	Seasonal Streams	**Perennial Sources**
Marihan	Jogiadari, Alopi Dari, Jamithwa Dari, Patidhari Dari. (*Dari: River in local language*)	Dhekwa dam, Nanauti dam, Semri dam, Dongia dam, Upper Khajuri dam. Small check dams created by forest department.
Sukrit & Chunar-Sakteshgarh	Chuna Dari, Panchsheel Dari	Pools formed below the waterfalls at Chuna Dari and Panchsheel Dari, Dongia Reservoir, Semri Reservoir Small check dams created by villagers.
Patehara	River Bakahar, River Belan	Sirsi Reservoir and Meja Reservoir Small pools on rivers.
Dramadganj	River Adhwa, River Sewati	Adhwa reservoir, Sukhra Reservoir, Banjari Kala Reservoir, ancient baoli and artificial ponds created by local people.

Degradation of forests ecosystems and fragmentation of habitats at landscape level are the main threats the wildlife of Mirzapur is facing today. There has been considerable land use/land cover change in this region which can be attributed to the unregulated developmental activities, uncontrolled agricultural expansion and unplanned mining activities in and around the forest areas, thus creating unprecedented pressure on the wildlife habitats and their movement pathways. Roads, railway corridor and canals are some of the major linear disturbances responsible for fragmentation of habitats and greatly reducing the accessibility to resources necessary for survival of the wild animals. Invasion by exotic species of plants such as *Hyptis suaveolens* and *Lantana camara* in the forest areas are also indicator of the deteriorating health of the forests and the ecology of the area.
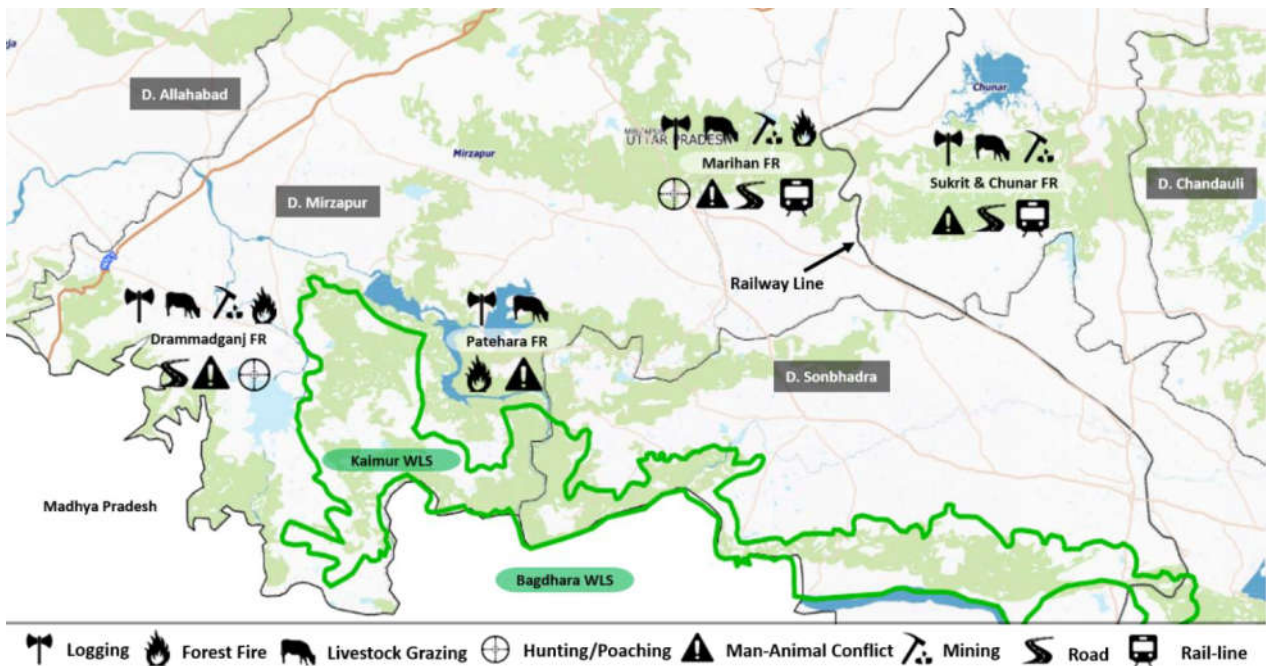
Human interference in the forests is also found to be very high in the district. Logging activities and livestock grazing were found to be unregulated in most of the forest ranges with an

exception of Marihan range where grazing activities seems to be controlled to some extent. Forest fires are very common in the forests. Hunting of animals including Scheduled animals are reported from some forest ranges. Reports of wild animals being injured or killed out of rage by villagers are not uncommon in the region. Monitoring of the forests and wildlife was found to be negligible in all the forest ranges, primarily due to lack of staff in the forest range offices. A summary of different threats observed for each forest ranges is presented below:

Table 3 Summary of Threats observed in each forest ranges

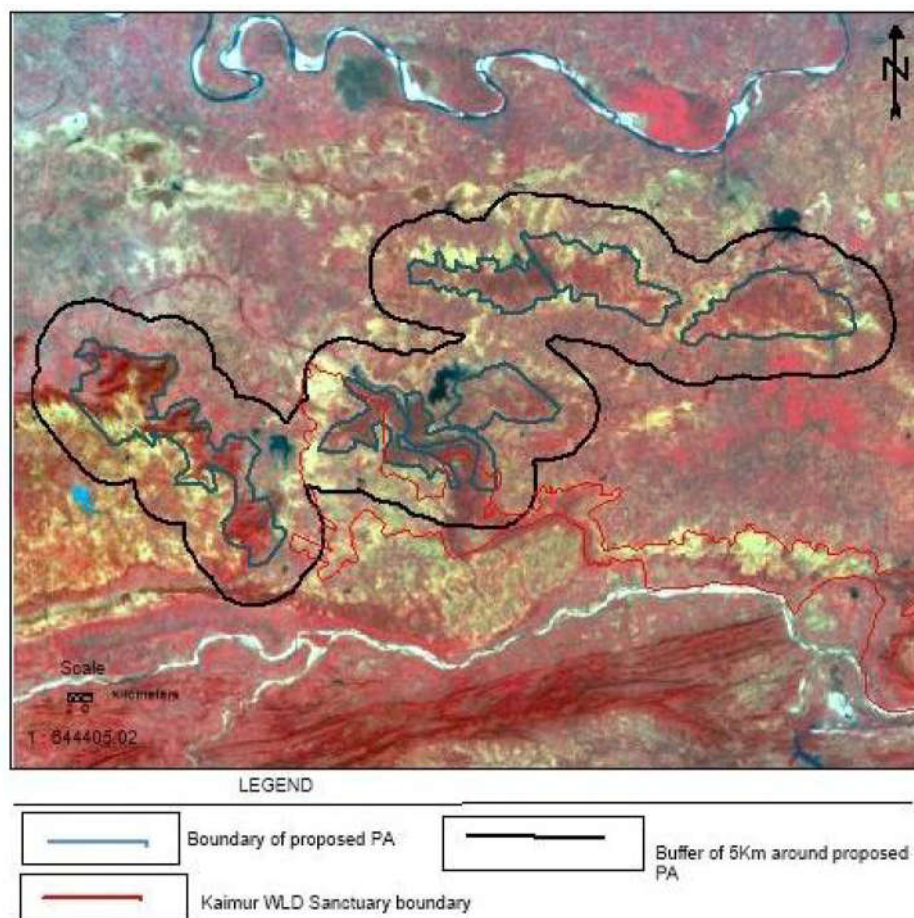| S.No.	Threats	Marihan	Sukrit	Chunar	Patehara	Dramadganj
1	Land Use/Land Cover Change	Y*	Y*	Y*	Y*	Y
2	Logging	Y	Y*	Y*	Y*	Y
3	Livestock Grazing	Y	Y	Y	Y	Y
4	Mining	Y	Y*	Y*	N	Y
5	Linear Disturbances	Y*	Y*	Y*	N	Y
6	Forest Fires	Y*	Y	Y	Y	Y*
7	Hunting	Y	-	-	-	Y
8	Wildlife Conflict	Y*	Y	Y	Y	Y*
9	Invasion by Exotic Species	Y*	Y*	Y	-	-

Y: Yes, N: No, *very serious problem, - : not reported during the survey

Map 4 Major threats faced by different forest ranges in Mirzapur

Given the present condition, the forests of Mirzapur are getting fragmented at a very fast pace. The current rate of decline in wildlife populations available with forest department records clearly indicates that in coming years, we may see a local extinction of not only

sloth bears but several other protected species if immediate steps are not taken for its protection. Defragmentation of the forests, improving the forests connectivity and protection of the watershed areas are must to conserve the remaining wildlife. This should be complemented by strict monitoring measures as well as legal protection to the wildlife areas. A network of protected areas with at least 5 km buffer area is also proposed in the report in detail. This calls for great administrative reforms and ensuring alternative livelihood to local residents as well. There is a huge scarcity of manpower with the forest ranges, resulting into poor monitoring. Thus more forest staff is required to be recruited with respectable salaries. We hope this report will be helpful to the government in taking effective steps for conservation of the great Vindhyan landscape of Mirzapur which was once known for its rich forests and great diversity but is facing huge anthropogenic pressure today.

LEGEND

────	Boundary of proposed PA	────	Buffer of 5Km around proposed PA
────	Kaimur WLD Sanctuary boundary		

Map 5 A proposed protected area map based on critical sloth bear habitats with 5 km buffer proposed Protected Area with reference to Critical Sloth Bear Habitats in Mirzapur Forest Division and Kaimur Wildlife Sanctuary in Mirzapur. (Top: Marihan-Sukrit-Chuna