

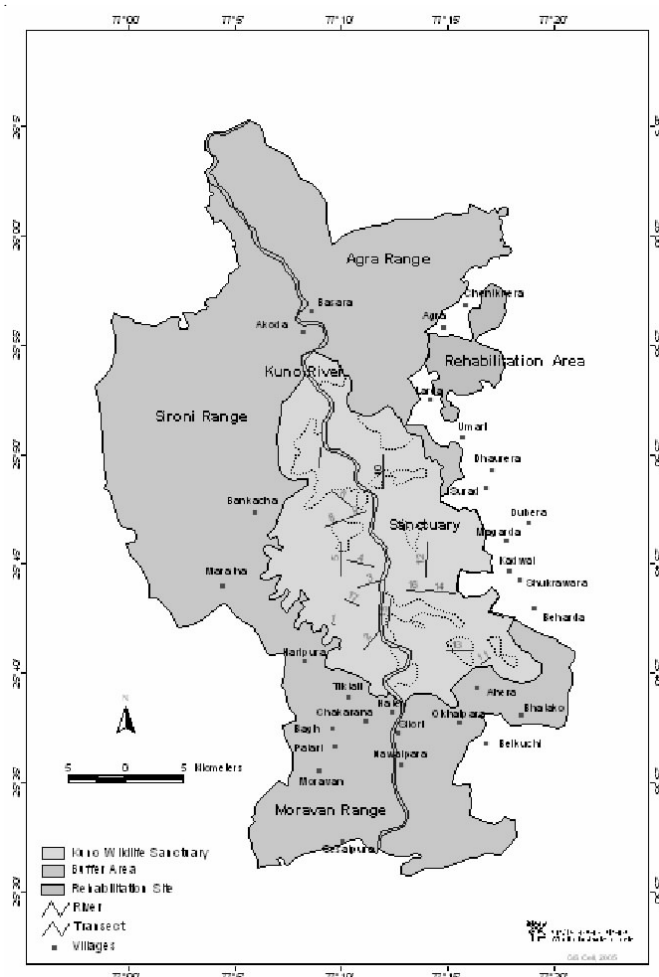
## Brief Profile of Kuno Wildlife Sanctuary, Sheopur (MP) - An outstanding Forest

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Asiatic Lions were once distributed throughout the scrubland of Northern India, all the way till Mesopotamia, Persia and Europe. Since Kuno Wildlife Sanctuary lies not too far from the Guna area where lions were hunted until the nineteenth century, one can predict that lions did coexist here with the tigers, who are still found in the region. Kuno Wildlife Sanctuary (KWS) is located in the North of Madhya Pradesh between the coordinates 25°30'-25°53'N and 77°07'-77°28'E. Encompassing an area of about 345 km<sup>2</sup>, KWS derives its name from a perennial river Kuno that meanders on its course through the park. The river is one of the major tributaries of the river Chambal and can easily be alias as the lifeline of Kuno.

KWS falls under the Vijaypur Tehsil of the Sheopurkala District in Madhya Pradesh. Its adjoining forests to the east and south-east fall under the Shivpuri Forest Division. Sesaipura is the nearest well connected village which is located on the Shivpuri-Sheopurkala State Highway, about 65km from Sheopurkala and 55km from Shivpuri. There are three railheads near KWS. Sawai Madhopur (Rajasthan) is about 102km from Sesaipura whereas Jhansi and Gwalior are 160 and 110km each. There is a narrow gauge rail line up to Sheopurkala as well, which is connected to Gwalior. The region is historically known to have been rich in wildlife. It represents the flora and fauna of the Central Indian Highlands. With rich Kardhai Anogeissus pendula forests and remarkable regeneration of Salai Boswellia serrata. The history of conservation in this region dates back to the regime of the erstwhile Rajput rulers who had demarcated certain areas as hunting free zones, and had implemented sanctions against indiscriminate hunting.

Recently, an unintentional protection was provided to these forests by the infamous dacoits of the Chambal region who ensured that human presence in the area was minimal, though with a completely different set of intentions. Kuno has a long history of conservation. It was the hunting sanctuary of local rulers until independence. Even after independence, first the kings of erstwhile rulers and then the dacoits ensured that the forest is not degraded beyond a certain level, though their intentions were completely different. The area was notified as a Wildlife Sanctuary in the year 1981 after incorporating an area of about 344.686km<sup>2</sup> and 24 villages within its boundaries. In the year 1995, following an assessment report by Wildlife Institute of India, the sanctuary was earmarked as a potential site



for reintroduction of Asiatic Lions *Panthera leo persica*. With a buffer of 924km<sup>2</sup>, a total area of 1269km<sup>2</sup> is being managed under one unit as part of the Lion Reintroduction Project.

Overall eleven ecological and environmental parameters were compared between three protected areas, i.e. Kuno Wildlife Sanctuary in Madhya Pradesh, and Sitamata Wildlife Sanctuary and Darrah Wildlife Sanctuary in Rajasthan.

Kuno River is one of the important tributaries to the Chambal River. The forests adjoining it Patches with perennial water bodies creating moist habitats within Kuno Wildlife Sanctuary form a rich catchment and serve as lifelines for the wild as well as human populations settled on either side of the river.

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Most of the Kuno Wildlife Sanctuary falls under the Vindhyan Hill Ranges. Bhandar Sandstone and limestone are the main geological formations of the area. Widely used as a building material, the Bhandar Sandstone rock has a magenta tinge and contains traces of mica. The Vindhyan sandy soil is found almost throughout the sanctuary. The sanctuary can be classified into four main soil types i.e. Loamy 1, Loamy 2, Fine Loamy and Loamy 3. Loamy 2 and fine loamy soil are found in most of the area under the sanctuary, thereby indicating a suitability of soil for vegetation growth.

The entire area of the Kuno Wildlife Sanctuary can be categorized in the following geomorphological types:

- a) Alluvial plains: Constituting of gravel, sand, silt and clay of varying lithology and formed by extensive deposition of alluvium by major river system. It is flat and usually gently undulating.
- b) Infilled valley: Formed by a broad depression between up-lands filled with weathered rock materials of uniform lithology.
- c) Denudational slope: Moderate slope adjacent to the denuded hills.
- d) Denudational upland: Formed mainly by sandstone and shale, it forms an extremely rugged terrain. This type is found near the Kuno River.
- e) Buried Pediplain-Shallow: It is the extensive, smooth surface with a shallow cover of weathered mantle that is developed over sandstone.
- f) Ravenous and Gullied Land: Constitutes of fine grained semi consolidated alluvium and is mostly found in narrow depressions, usually carved by running water.
- g) Residual hill: These are formed due to extensive differential erosion with evident sandstone lithology.
- h) Mesa: Mostly formed over horizontally levered rocks, flattened and isolated structures with a gentle slope at the base and a steep one at the top.
- i) Insel Burges
- j) Denudational Hill: These are formed due to differential erosion and weathering.
- k) River: Kuno and Kuwari are the two main rivers meandering through the Kuno Wildlife Sanctuary.

### Climate

Kuno has a moderate climatic regime which is slightly arid in nature. The average annual precipitation is 760mm, most of which precipitates between the end of June till September. Winter can be classified between October and mid of March where temperatures usually approach zero degrees centigrade. Frost is not uncommon in the winters whereas in December and January, the minimum recorded temperature is about 6.3 degree centigrade. Summers in this area take the temperatures to another extreme. May being the

hottest month, temperatures can soar up to 45 degree centigrade and above.

### Forest Types

According to the Champion and Seth classification, Kuno lies under the Northern Tropical Dry Deciduous forest with qualities IV A and IV B.

The forests under this sub-group can further be classified into the following types:

1. V 6/c-2 Northern tropical dry mixed deciduous forest 2
2. V b/e-1 *Anogeissus pendula* forest
3. V b/e-2 *Boswellia* forest

These forests are dominated by *Khair*, *Kardhai*, *Dhawa*, *Salai* and *Gunja*. While the mixed forests constitutes about 37% of the area under the sanctuary, *Khair* forests dominate in about 21% of the area. Apart from these, the recently relocated villages of Kuno WLS are developing slowly as grasslands.

### Fauna

Kuno is rich in its faunal diversity as well. Among the large cats, presence of tiger and leopard is reported repeatedly. In ungulates, Nilgai, Chinkara, Chital, Wild Pig, Sambar and Four-horned antelope can be seen in a decreasing order of frequency of sighting. Signs of Sloth Bear are scarce, but their presence is certainly evident from their faeces and foraging pits seen in certain parts of the sanctuary. Among the other carnivores, Dholes, and Grey wolves are found in the area, and so are the Striped Hyenas. The Caracal is reported from nearby areas (Khudsar, 2004), though Jungle Cat and Desert cats are reported regularly (Choudhary, 1998). More than 150 species of birds are reported from the region (Khudsar, unpublished data) and among the reptiles, presence of Mugger *Crocodylus palustris* is among the most obvious along the Kuno River.

Connectivity with nearby Protected Areas Kuno Wildlife Sanctuary is only about 344.686km<sup>2</sup> in area, but is situated in a much larger patch of contiguous forest. To the west of this forest, across the river Chambal, is the world famous tiger reserve, Ranthambore. Only a lean patch with high anthropogenic pressure separates the two areas, which, with proper conservation measures, has the potential to serve as one of the main corridors connecting two distinct wildlife populations of the country. Similarly, towards the east, Kuno is connected with Shivpuri's Madhav National Park. This area is further connected all the way to Panna Tiger Reserve via Orchha, Tikamgarh, Sagar and Chhatarpur, though the connectivity is poor and highly degraded. This forest tract is apparently the largest contiguous patch of forest in the Central India, and has a great potential for developing wildlife corridors in the future.