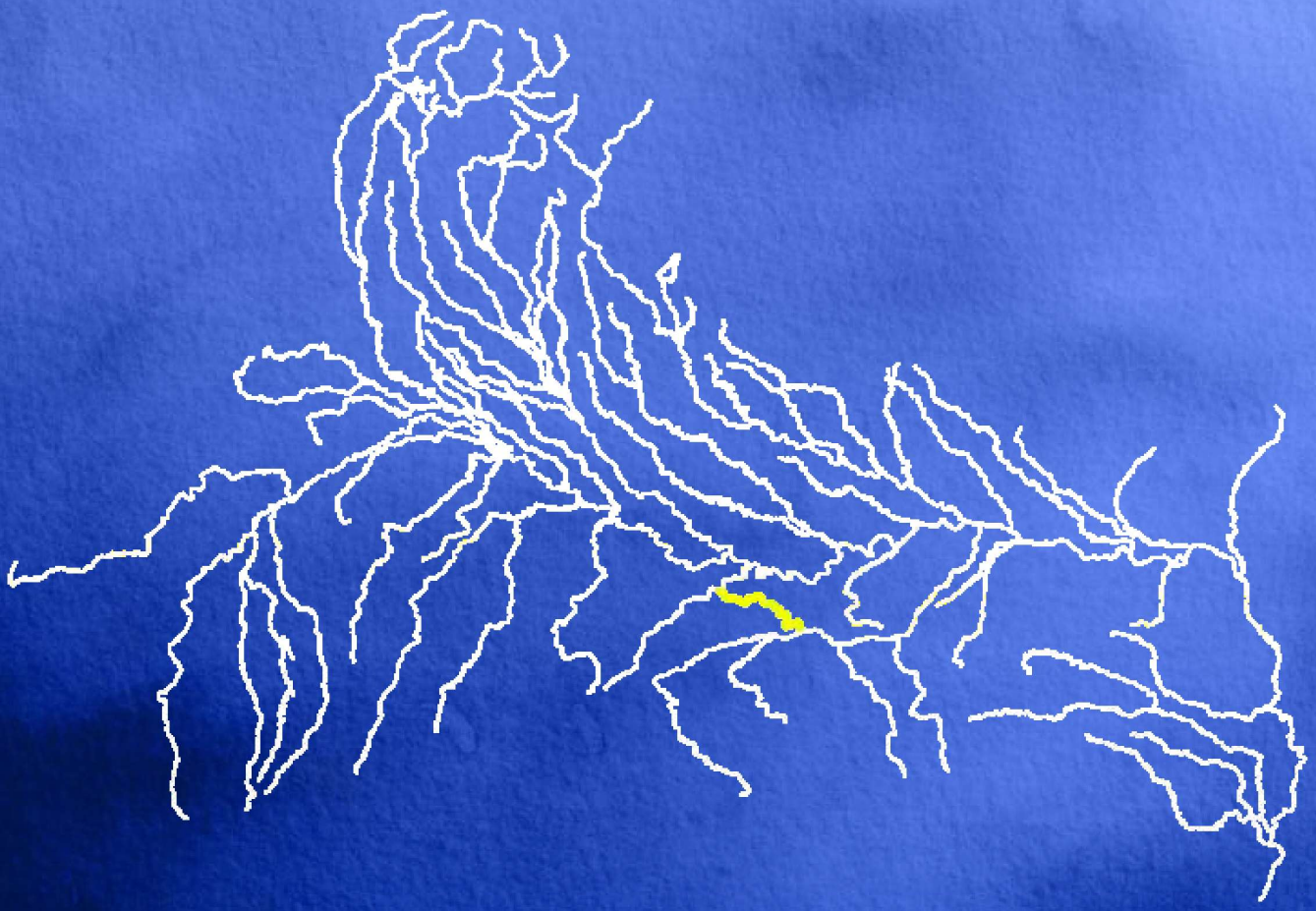
VIBRANT GANGA

नमामि गंगे

भारतीय वन्यजीव संस्थान
Wildlife Institute of India

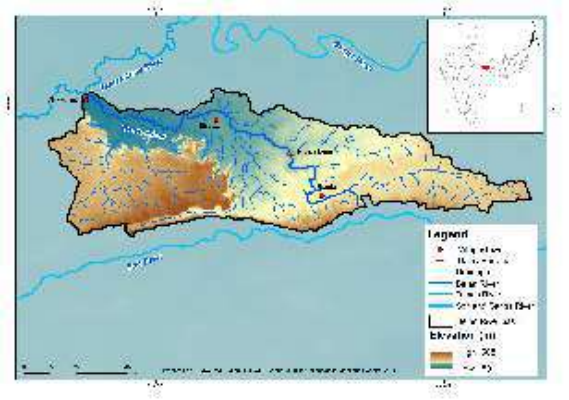


Belan

GENERAL INFORMATION

- Belan River, a tributary of the Tamas (Tons) River, originates in the western part of Sonbhadra district (Uttar Pradesh), near the border with Singrauli district (Madhya Pradesh).
- It flows for 156 km through the districts of Sonbhadra, Mirzapur and Prayagraj in Uttar Pradesh, and Singrauli and Rewa in Madhya Pradesh.
- It meets the Tamas (Tons) River at Tonki village (Rewa district), near its border with Prayagraj district.
- Belan River basin spans an area of about 5,570 km^2 (Figure 1).
- The basin falls under the Deccan Peninsula (Central Highlands – 6A) and Gangetic Plain (Upper Gangetic Plains – 7A) biogeographic zones.
- Climate of the basin ranges from subtropical to semi-arid with three distinct seasons, viz. winter, summer, and monsoon.
- Belan River flows through a low-relief valley cut into proterozoic quartzite of the Vindhyan Group, before transitioning downstream into the alluvial plains.
- Major tributaries of Belan are the Adva, Seoti, Lohanda, Nadoh, Tundiari, Gurma and Naina.
- The population density along the river is 481.47 persons/km^2.
- Decadal LULC transitions in the Belan basin (2008-09 to 2018-19) recorded an increase in area under kharif crop (7.92%) and double/triple crop (6.6%), and a decrease in current fallow (-7.3%), rabi crop (-5.61%) and wasteland (-2.31%), indicating a shift towards agricultural intensification. Marginal to no changes were noted in waterbodies (0.45%), built-up area (0.14%), scrub forest (0.13%), deciduous forest (-0.02%) and plantation (nil) (Figures 2a and 2b).

Figure 1: Map of Belan River basin



BIODIVERSITY VALUE

- Belan basin is dominated by non-forest areas (83.79%), followed by open forest (9.12%), moderately dense forest (6.07%), scrubland (0.66%) and very dense forest (0.36%) (Figure 3).
- The basin supports Northern Tropical Dry Deciduous Forest and Northern Tropical Thorn Forest types dominated by *Shorea robusta*, *Anogeissus latifolia*, *Terminalia tomentosa*, *Boswellia serrata*, *Butea monosperma*, *Madhuca longifolia*, and *Acacia catechu*. Aquatic and semi-aquatic plants like *Typha* spp., *Cyperus* spp., and *Nymphaea* spp. occur in slow-flowing stretches. Critically Endangered *Chlorophytum borivilianum*, and Near Threatened *Pterocarpus marsupium* are found in the basin. *Boswellia serrata* and *Sterculia urens* have regionally declined due to over exploitation.
- Belan River flows through the Kaimur Hills, near the Kaimur Wildlife Sanctuary (Kaimoor Wildlife Sanctuary).
- Kaimur Wildlife Sanctuary supports rich biodiversity including the Endangered Indian pangolin (*Manis crassicaudata*), Vulnerable four-horned antelope or chousingha (*Tetracerus quadricornis*), sambar (*Rusa unicolor*) and sloth bear (*Melursus ursinus*), and Near Threatened striped hyaena (*Hyaena hyaena*).
- Rewa, Sidhi and Singrauli districts (Madhya Pradesh), in the basin, harbour the Critically Endangered white-rumped vulture (*Gyps bengalensis*), red-headed vulture (*Sarcogyps calvus*) and Indian vulture (*Gyps indicus*), Endangered Egyptian vulture (*Neophron percnopterus*), and Near Threatened cinereous vulture (*Aegypius monachus*).
- 16 fish species (5 orders and 8 families) have been documented from the river, including the Endangered wagur (*Clarias magur*).

Figure 2a: LULC map of Belan River basin (2008-09)

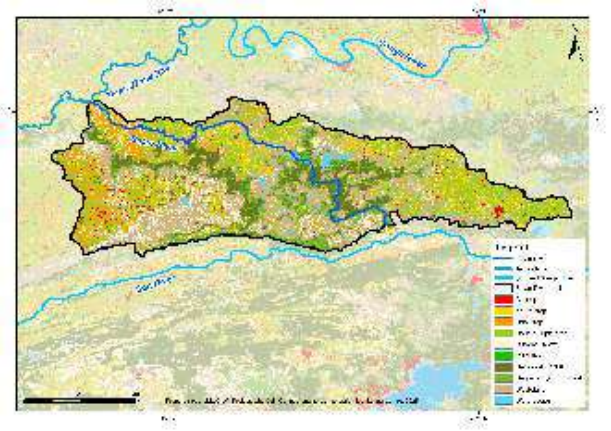


Figure 2b: LULC map of Belan River basin (2018-19)

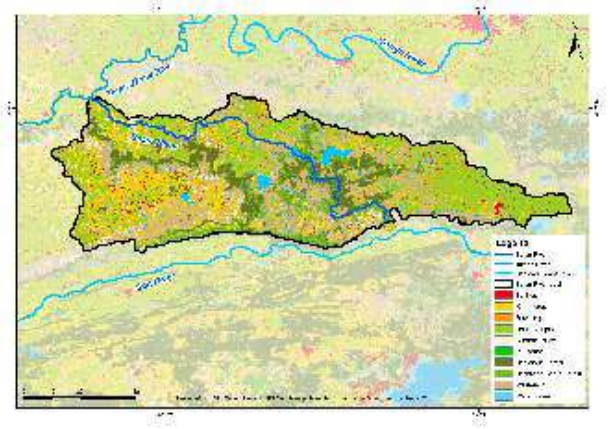
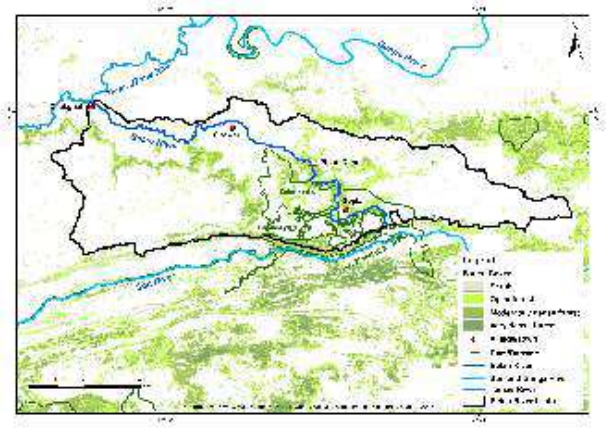


Figure 3: Forest cover of Belan River basin (2019)



CONSERVATION SIGNIFICANCE

ENDANGERED

Avifauna

Egyptian vulture *Neophron percnopterus* (Linnaeus, 1758)

Fish

Wagur *Clarias magur* (Hamilton, 1822)

KEY PROTECTED AREAS

Kaimur Wildlife Sanctuary

Bagdara Wildlife Sanctuary

Sambar (*Rusa unicolor*) | ©*Vivek Sarkar*

DRIVERS OF RIVERSCAPE CHANGE

- The Pipari (Meja) Dam and the Belan-Bakhar irrigation project have significantly reduced the river's discharge, lowering peak flows and thereby diminishing the river's capacity to effectively flush out sediments and pollutants.
- Anthropogenic pressures, particularly agricultural runoff, drive seasonal deterioration in water quality in the Belan River, altering ecological conditions and degrading fish habitats.

Indian roller (*Coracias benghalensis*) | ©*Ridha Narain*

INTERESTING FACTS

- The Belan Valley is recognised as one of the earliest centres of rice cultivation in the Indian subcontinent. Archaeological evidence, including Neolithic pottery and associated remains, indicates that early inhabitants practiced agriculture and cultivated domesticated rice (*Oryza sativa*), reflecting an early transition to settled agrarian systems.
- The recovery of an anthropomorphic (human-shaped) or harpoon-point bone artefact from the “cemented gravel Layer III” at Lohanda Nala in the Belan Valley provides clear evidence of advanced bone-working techniques in prehistoric India.
- Vindhyan rock art, especially in the Kaimur Hills, illustrates the transition of human settlements along river corridors from the Mesolithic to the Chalcolithic periods. In Sonbhadra district, the Panchmukhi group of Painted Rock Shelters feature complex compositions of animal-headed human figures and ritual scenes, reflecting evolving cultural and symbolic traditions.

नमामि गंगे

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