



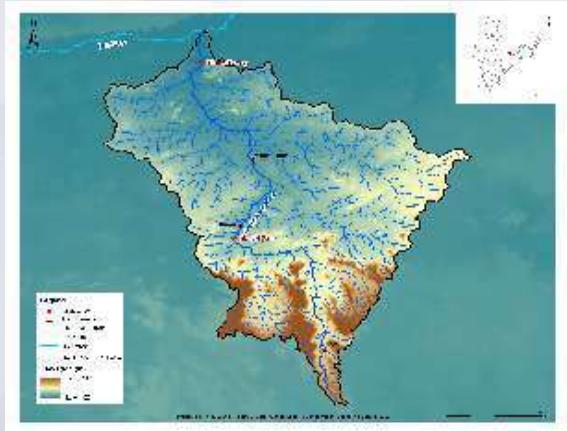
North Koel

GENERAL INFORMATION

- North Koel River, a tributary of the Son River, originates in the Ranchi plateau, near Kuttuwan village (Gumla district, Jharkhand), and traverses 260 km through Gumla, Latehar, Palamu and Garhwa districts in Jharkhand.
- It meets the Son in Palamu district, northwest of Haidarnagar.
- North Koel River basin covers an area of approx. 11,418 km² (Figure 1).
- The basin lies in the Deccan Peninsula (Chotanagpur – 6B) biogeographic zone.
- The basin experiences a tropical monsoon climate.
- North Koel basin exhibits trellis and sub-parallel drainage in structurally controlled areas, transitioning to dendritic drainage pattern elsewhere.
- Major tributaries of the North Koel are the Auranga and Amanat rivers.
- The population density along the river is 276.50 persons/km².
- Decadal LULC transitions in the North Koel basin (2008-09 to 2018-19) show a significant increase

in area under kharif crops (18.4%) and rabi crops (3.75%), along with a marked decline in current fallow land (-21.8%), indicating a shift towards agricultural intensification. Built-up area (0.41%), scrub forest (0.23%), double/triple crop (0.11%), deciduous forest (0.05%), wasteland (-1.04%) and waterbodies (-0.12%) remained largely stable, exhibiting only marginal changes (Figures 2a and 2b).

Figure 1: Map of North Koel River basin



BIODIVERSITY VALUE

- North Koel basin is dominated by non-forest areas (50.5%), followed by moderately dense forest (26.32%), open forest (13.93%), very dense forest (8.25%), and scrubland (1%) (Figure 3).
- The basin is dominated by Northern Tropical Dry Deciduous Forest, locally transitioning into Northern Tropical Moist Mixed Deciduous Forest along river courses and valleys. Representative species include sal (*Shorea robusta*), asan (*Terminalia alata*), arjun (*Terminalia arjuna*), sheesham (*Dalbergia sissoo*), semal (*Bombax ceiba*), mahua (*Madhuca longifolia*), and palash (*Butea monosperma*).
- The river flows through the Palamu Tiger Reserve, comprising Betla National Park, and Palamu Wildlife Sanctuary.
- Palamu Tiger Reserve harbours 39 mammals including the Endangered tiger (*Panthera tigris*), Asian elephant (*Elephas maximus*), dhole (*Cuon alpinus*) and Indian pangolin (*Manis crassicaudata*), Vulnerable leopard (*Panthera pardus*), gaur (*Bos gaurus*), sloth bear (*Melursus ursinus*), four-horned antelope (*Tetracerus quadricornis*) and sambar (*Rusa unicolor*), Near Threatened striped hyaena (*Hyaena hyaena*), and Indian grey wolf (*Canis lupus pallipes*) and honey badger (*Mellivora capensis*).
- 169 bird species have been recorded from the Palamu Tiger Reserve, including the Critically Endangered red-headed vulture (*Sarcogyps calvus*) and white-rumped vulture (*Gyps bengalensis*), Vulnerable river tern (*Sterna aurantia*), and Near Threatened Asian woollyneck (*Ciconia episcopus*) and Eurasian curlew (*Numenius arquata*).
- Eight reptilian species have been documented from the Palamu Tiger Reserve, including the Vulnerable king cobra (*Ophiophagus hannah*), and Near Threatened red sand boa (*Eryx johnii*), common krait (*Bungarus caeruleus*) and Indian rock python (*Python molurus*). The red sand boa is among the most trafficked species in India.
- 20 fish species have been recorded from the basin, including the three commercially important Indian major carps, viz. mrigal (*Cirrhinus mrigala*), catla (*Labeo catla*), and rohu (*Labeo rohita*).

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

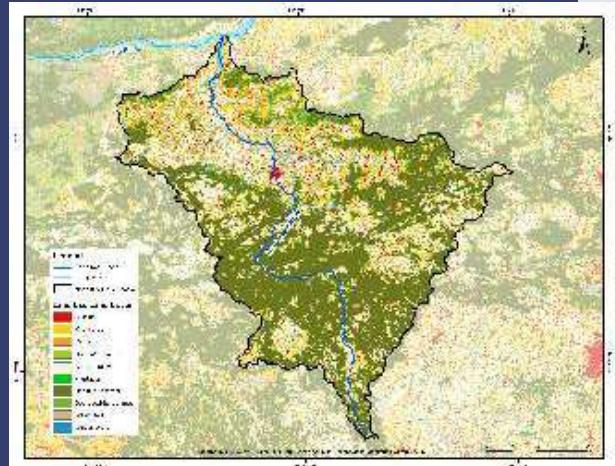


Figure 2b: LULC map of North Koel River basin (2018-19)

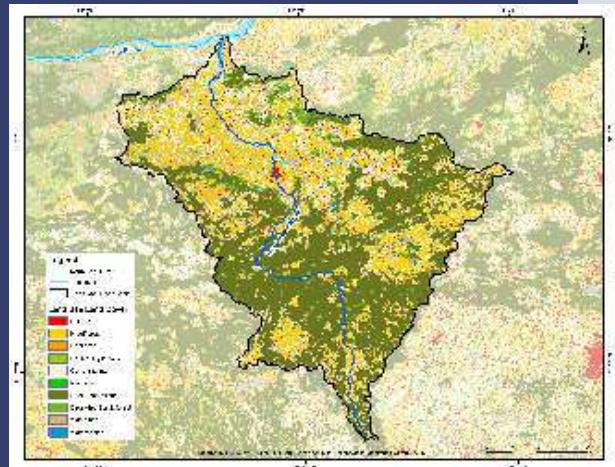


Figure 3: Forest cover of North Koel River basin (2019)



CONSERVATION SIGNIFICANCE

ENDANGERED

Avifauna

Egyptian vulture *Neophron percnopterus* (Linnaeus, 1758)

VULNERABLE

Avifauna

River tern *Sterna aurantia* (Gray, 1831)

KEY PROTECTED AREAS

Betla National Park

Palamau Wildlife Sanctuary

Mahuadanr Wolf Sanctuary

Lawalong Wildlife Sanctuary

Indian grey wolf (*Canis lupus pallipes*) | ©Vijay Ranjan



DRIVERS OF RIVERSCAPE CHANGE

- Mohammadganj (Bhim) Barrage (Palamu district) and Kutku Mandal Dam (Latehar and Garhwa districts), components of the North Koel Reservoir Project on the North Koel mainstem, and Amanat Barrage (on Amanat River) have altered the natural flow regime by reducing downstream discharge, thereby affecting sediment dynamics and degrading aquatic habitats and biodiversity.
- Expansion of agriculture, and sand and coal mining in the North Koel basin has driven deforestation, accelerated soil erosion, and increased water pollution, collectively altering runoff regimes, sediment loads, and the river's ecological integrity.
- Medininagar (Palamu district), the only major urban centre along the mainstem, and the nearby Daltonganj coalfields, contribute untreated municipal sewage and effluents, respectively, leading to deterioration of water quality and adverse impacts on riverine ecology.

INTERESTING FACTS

- Palamu Forts, situated within Betla National Park and overlooking the Auranga River, are closely associated with the Chero dynasty, a lineage of tribal rulers who governed the Palamu region and adjoining areas during the 17th century. The older fort in the plains, originally built by the Raksel Rajput rulers, was transformed into a major defensive stronghold under the Chero king Medini Ray (1662–1674), while the newer hilltop fort was constructed by him in 1673. The complex reflects a synthesis of indigenous building traditions with Islamic and Nagpuri influences, and its strategic location facilitated sustained resistance to Mughals, before the forts were ultimately captured by the British in 1772, marking the decline of Chero rule in the region.
- *Bhim ka Chulha*, located on the banks of the North Koel River near Mohammadganj Barrage, is a culturally significant site associated with the *Mahabharata* and serves as a symbolic marker of the Pandavas' stay in the region during their exile. According to local lore, the boulder arrangement at the site represents the stove made by Bhima during this period.
- Anjan Cave, located in Anjan village (Gumla district) near the origin of the North Koel River, is traditionally believed to be the birthplace of Lord Hanuman, the divine devotee of Lord Rama in the *Ramayana*. According to local belief, an idol of Anjani (Lord Hanuman's mother) with the infant Hanuman in her lap was discovered in this cave and later installed in a temple within the village.
- Palamau Tiger Reserve was among the first nine tiger reserves declared in 1973, at the launch of the Project Tiger.
- Mahuaduanr Wolf Sanctuary is the only protected area in India dedicated to the conservation of the Indian grey wolf.



National Mission for Clean Ganga,
Ministry of Jal Shakti,
Department of Water Resources,
River Development and Ganga Rejuvenation,
Major Dhyan Chand Stadium, New Delhi - 110001

GACMC/NCRR

Ganga Aqualife Conservation
Monitoring Centre/
National Centre for River Research
Wildlife Institute of India, Dehradun
nmcg@wii.gov.in

 भारतीय वन्यजीव संस्थान
Wildlife Institute of India
P.O. Box #18, Chandrabani
Dehradun - 248002, Uttarakhand
wii@wii.gov.in