

VIBRANT GANGA



भारतीय वन्यजीव संस्थान
Wildlife Institute of India



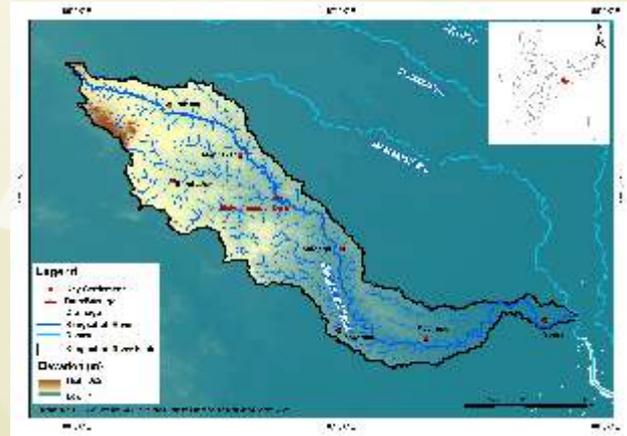
Kangsabati

GENERAL INFORMATION

- Kangsabati (Kasai) River, a tributary of Rupnarayan River, originates from Bhaski hill (Chhotanagpur Plateau) near Panra in Purulia district of West Bengal.
- It flows for 350 km towards east through the districts of Purulia, Bankura, Jhargram, Paschim Medinipur and Purba Medinipur in West Bengal.
- Kangsabati meets the Rupnarayan river at Sribara in Paschim Medinipur district (West Bengal).
- Kangsabati River basin spans an area of about 9658 km² (Figure 1).
- The basin falls in the Deccan Peninsula (Chhota Nagpur – 6B) and Gangetic Plain (Lower Gangetic Plains - 7B) biogeographic zones.
- The basin experiences semi-humid, southwest tropical monsoon climate, characterized by hot summers, mild winters, and high monsoon rainfall.
- Kangsabati River basin displays a predominantly dendritic to sub-dendritic drainage pattern, reflecting the tree-like stream branching characteristic of the mature, highly dissected terrains of the Chhotanagpur Plateau.
- Kumari is the major tributary of Kangsabati River.
- The population density along the river is 644.32 persons/km².

- Decadal LULC transitions in the Kangsabati basin (2008-09 to 2018-19) recorded increase in areas under kharif crop (12.89 %), accompanied by a moderate rise in scrub forest (1.23%), deciduous forest (0.05%), built-up area (0.4%), plantation (0.01%), while there is decrease in areas under current fallow (8.06 %), double/triple cropping (2.72%), wasteland (2.39%), littoral (1.23%), rabi crop (0.17%), and waterbodies remained effectively unchanged (Figures 2a and 2b).

Figure 1: Map of Kangsabati River basin



BIODIVERSITY VALUE

- Kangsabati basin is dominated by non-forest areas (86.68%), followed by open forest (7.4%), moderately dense forest (4.56%), very dense forest (1.23%) and scrub (0.13%) (Figure 3).
- Forest types in the basin shows ecological gradient from the Chhotanagpur Plateau to the alluvial plains. In the upper basin across Purulia, the landscape is dominated by Northern Dry Deciduous Forests, characterized by *Shorea robusta*, *Terminalia tomentosa*, *Anogeissus latifolia*, and *Pterocarpus marsupium*. Moving downstream through Bankura and Jhargram, the vegetation transitions into Moist Peninsular Sal Forests merging with Southern Moist Mixed Deciduous Forests, represented by *Lagerstroemia parviflora*, *Syzygium cumini*, *Terminalia bellirica*, and *Carissa spinarum*. In the lower basin across Paschim Medinipur and Purba Medinipur toward the confluence with the Rupnarayan River, the river corridor supports Riparian Fringing Forests, dominated by *Terminalia arjuna*, *Dalbergia sissoo*, *Ficus racemosa*, and *Barringtonia acutangula*, with shrubs such as *Vitex negundo* and *Ipomoea carnea* along the banks.
- 28 mammalian species have been reported from the catchment areas in Bankura and Purulia districts, including the Endangered Asian elephant (*Elephas maximus*), and Indian pangolin (*Manis crassicaudata*).
- Within the basin, 132 bird species have been recorded from Purba Medinipur, while 60 and 45 species have been recorded from Purulia and Bankura, including Endangered great knot (*Calidris tenuirostris*) and Indian skimmer (*Rynchops albicollis*).
- 89 fish species belonging to 13 orders, 32 families, and 62 genera were documented from the Kangsabati River, including Endangered *Clarias magur* and Vulnerable *Bagarius bagarius* and *Wallago attu*.

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

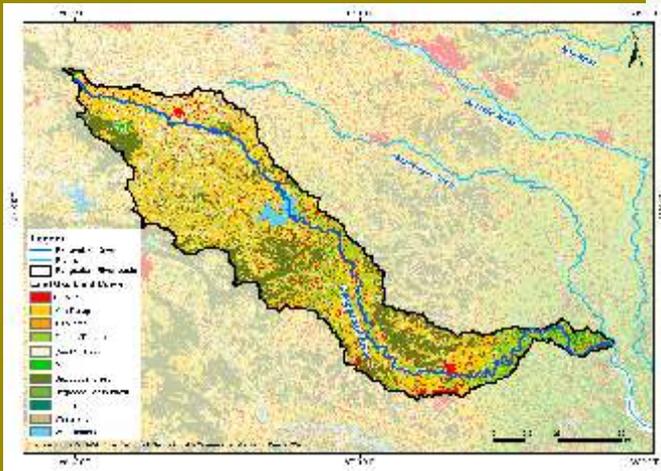


Figure 2b: LULC map of Kangsabati basin (2018-19)

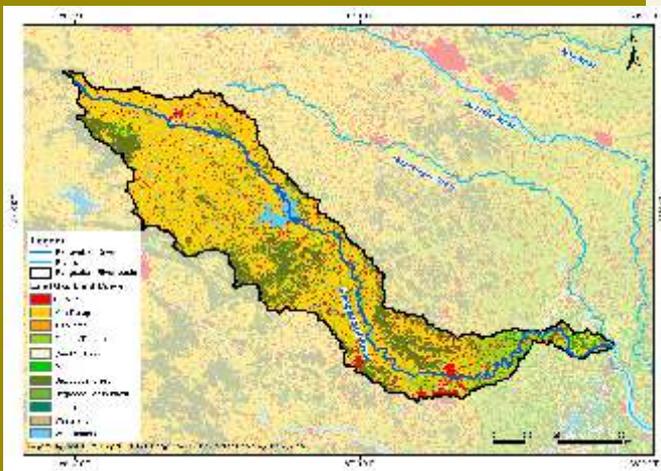
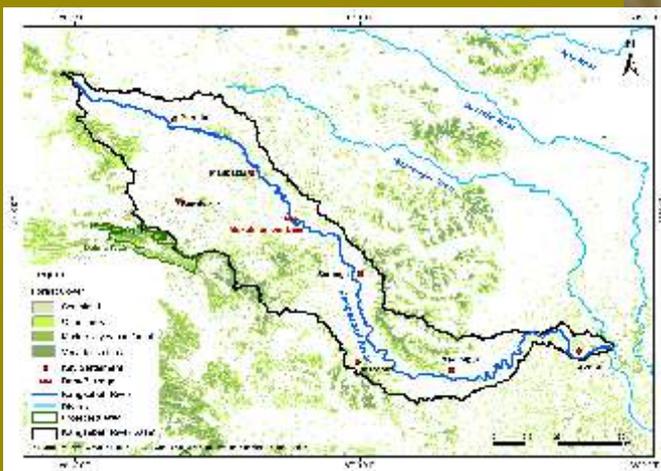


Figure 3: Forest cover of Kangsabati basin (2019)



CONSERVATION SIGNIFICANCE

ENDANGERED

Avifauna

Great knot *Calidris tenuirostris*
(Horsfield, 1821)

Indian skimmer *Rynchops albicollis*
(Swainson, 1838)

Fish

Wagur *Clarias magur* (Hamilton, 1822)

VULNERABLE

Avifauna

Common pochard *Aythya ferina*
(Linnaeus, 1758)

Broad-billed sandpiper *Calidris falcinellus*
(Pontoppidan, 1763)

Curlew sandpiper *Calidris ferruginea*
(Pontoppidan, 1763)

Fish

Goonch *Bagarius bagarius* (Hamilton, 1822)

Wallago attu (Bloch and Schneider, 1801)

Great Knot (*Calidris tenuirostris*) | ©Jay Patel



DRIVERS OF RIVERSCAPE CHANGE

- Regulation of the Kangsabati River by the Mukutmanipur Dam has substantially modified downstream hydrology, leading to reduced discharge, disrupted seasonal flow patterns, and consequent alteration of natural geomorphic processes. These changes have heightened the vulnerability of riparian communities, contributed to elevated faecal coliform levels in the Midnapore stretch, and accelerated channel adjustments and habitat degradation.
- In the Purulia stretch, the Kangsabati River receives substantial runoff from the upper catchment, leading to elevated sediment loads and organic matter inputs derived from agricultural waste, domestic pollutants, burning-ghat effluents, and unmanaged solid-waste dumping. Seasonal pulses during the monsoon and post-monsoon periods further intensify the inflow of untreated domestic sewage.
- Along the riverbanks in Purulia and Bankura, widespread sand mining, bank erosion, and progressive siltation have emerged as major environmental threats, collectively degrading channel morphology, destabilising riparian zones, and contributing to the decline of native fish communities.

INTERESTING FACTS

- Kangsabati is believed to be the river identified as Kapisha in the *Meghdootam*, an epic poem written by the legendary poet Kalidasa (c. 400 AD).
- Kangsabati River traverses the culturally distinct Rarh region of West Bengal—an area historically associated with the ancient Ladha (or Radha) country, noted in early texts as a non-Aryan cultural zone. The region preserves strong Jain heritage, evidenced by early Jain temples, sculptures, inscriptions, and deul-style structures, reflecting its deep pre-Vedic and indigenous traditions, including documented resistance to certain mainstream religious norms such as the nudity of Mahavira.
- Kangsabati River basin, particularly in the Purulia and Bankura districts, was a major, ancient center for Jainism between the 6th century BC and the 12th century AD. The region, historically part of the Manbhum area, features numerous archaeological remnants of Jain temples and idols, often in the rekha-deul style, which were built and supported by trading communities.
- Khirai Flower Garden, is a renowned horticultural landscape in Khirai village, Purba Medinipur district, West Bengal, India, nestled along the banks of the Kangsabati River.



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