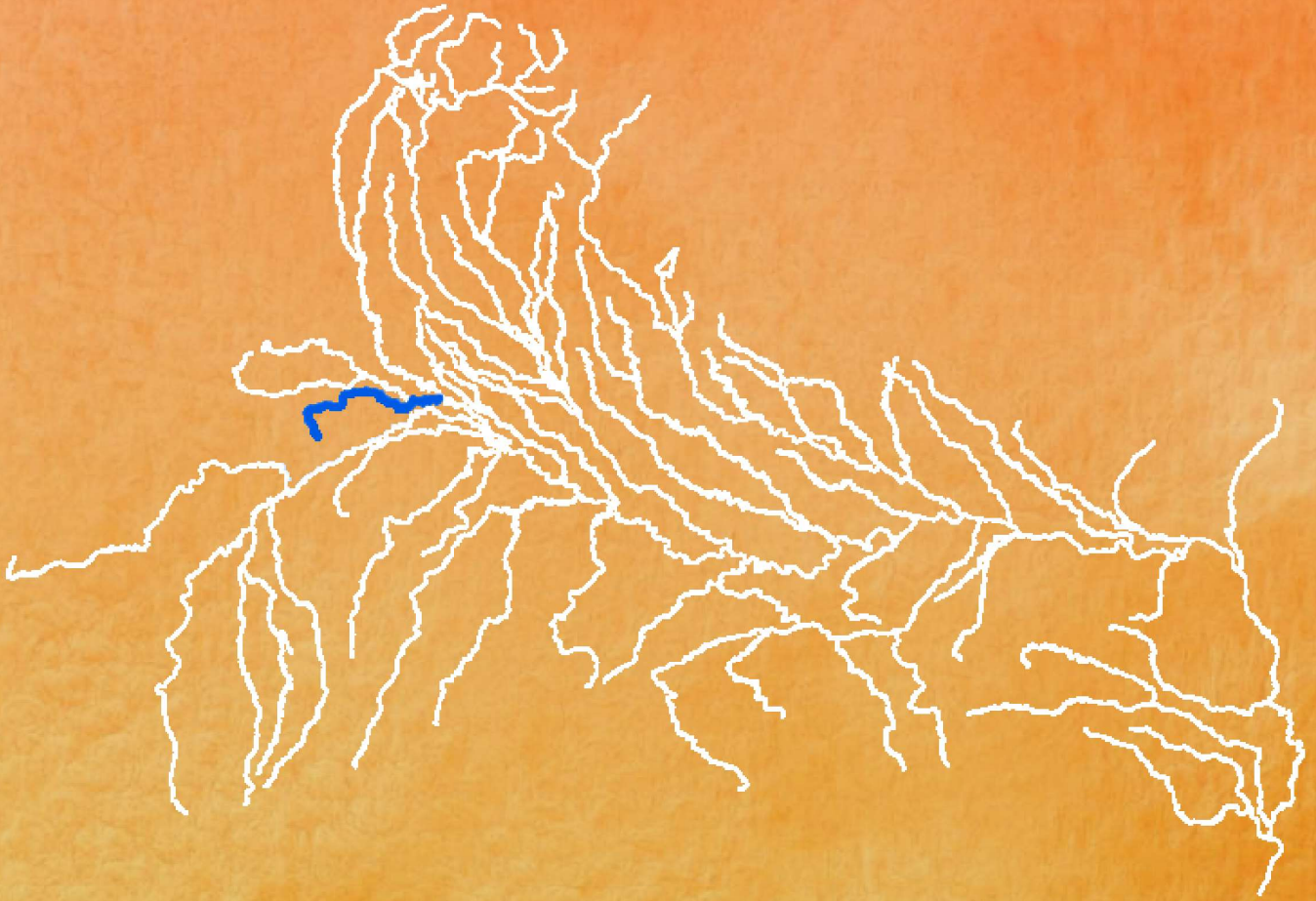


VIBRANT GANGA



भारतीय वन्यजीव संस्थान
Wildlife Institute of India



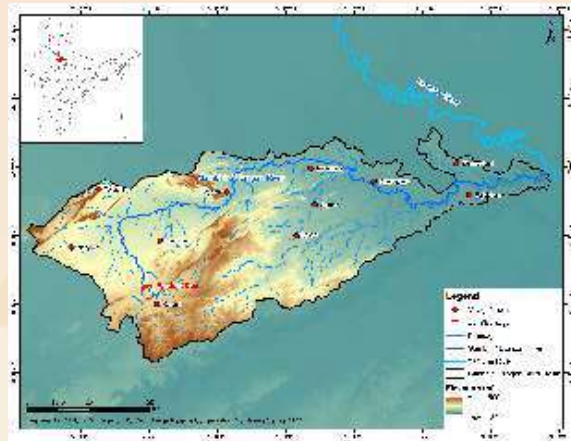
Gambhir

GENERAL INFORMATION

- Gambhir River, also known as the Utangan River, is a tributary of the Yamuna River, which originates in the Aravalli Hills near Karauli (Karauli district, Rajasthan) and flows for 288 km through the districts of Karauli, Dausa, Dholpur and Bharatpur in Rajasthan, and Agra in Uttar Pradesh.
- It joins the Yamuna River at Rihauli (Agra district).
- Gambhir River basin spans an area of 7750.28 km² (Figure 1).
- The basin falls under the Semi-Arid (Gujarat Rajputana-4B and Punjab Plains-4A) biogeographic zones.
- The basin experiences subtropical climate with hot summer, dry winter and distinct monsoon seasons.
- Gambhir River is a seasonal, ephemeral river, with a dendritic to sub-dendritic drainage pattern shaped by Delhi Supergroup rocks and Vindhyan sandstones.
- Major tributaries of the Gambhir are the Sesa, Kher, Parbati and Banganga rivers.
- Population density along the river is 494.88 persons/km².

- Decadal LULC transitions in the Gambhir basin (2008–09 to 2018–19) show an increase in double/triple crop by 11.5%, built-up area by 0.18%, and waterbodies by 0.17%, while plantation, scrub forest, and grassland remained unchanged. In contrast, deciduous forest declined by 0.02%, rabi crop by 0.75%, wasteland by 1.23%, kharif crop by 2.78%, and current fallow by 7.06%, reflecting notable shifts in land-use patterns (Figures 2a and 2b).

Figure 1: Map of Gambhir River basin



BIODIVERSITY VALUE

- Gambhir basin is dominated by non-forest areas (87.59%), followed by open forest (8.15%), scrubland (2.71%), and moderately dense forest (1.11%) (Figure 3).
- The basin supports Tropical Dry Deciduous Forest represented by *Anogeissus pendula*, *Butea monosperma*, *Acacia nilotica*, *Boswellia serrata*, *Lannea coromandelica*, *Terminalia elliptica*, and *Ziziphus mauritiana*. In drier and more degraded sections of the basin, Tropical Thorn Forests are prominent, characterized by *Prosopis juliflora* and *Capparis decidua*, along with shrubs like *Calotropis procera*, *Lantana camara*, *Grewia flavescens*, and *Maytenus emarginata*. The narrow riverine strips support species such as *Dalbergia sissoo*, *Syzygium cumini*, *Tamarix dioica*, and *Terminalia arjuna*.
- Kailadevi Wildlife Sanctuary harbours the Endangered tiger (*Panthera tigris*), Vulnerable sloth bear (*Melursus ursinus*), leopard (*Panthera pardus*) and sambar (*Rusa unicolor*), Near Threatened rusty spotted cat (*Prionailurus rubiginosus*), and Indian grey wolf (*Canis lupus pallipes*).
- 68 waterbird species have been recorded from Bandh Baretha reservoir including the Endangered Indian skimmer (*Rynchops albigollis*), and Vulnerable sarus crane (*Grus antigone*).
- Gambhir River system supports 60 fish species (9 orders, 19 families), including the Vulnerable *Wallago attu*, and Near Threatened *Ailia coila*, *Chitala chitala*, *Labeo pangusia* and *Ompok bimaculatus*.
- Gambhir River is an important source of freshwater for the Keoladeo National Park, located in Bharatpur, Rajasthan, which supports 375 species of plants, 350 species of birds, 27 species of mammals, 13 species of reptiles, 7 species of amphibians, and 43 species of fish.

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

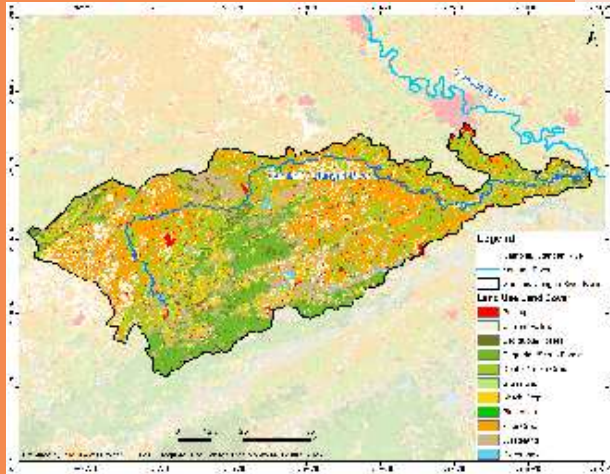


Figure 2b: LULC map of Gambhir River basin (2018-19)

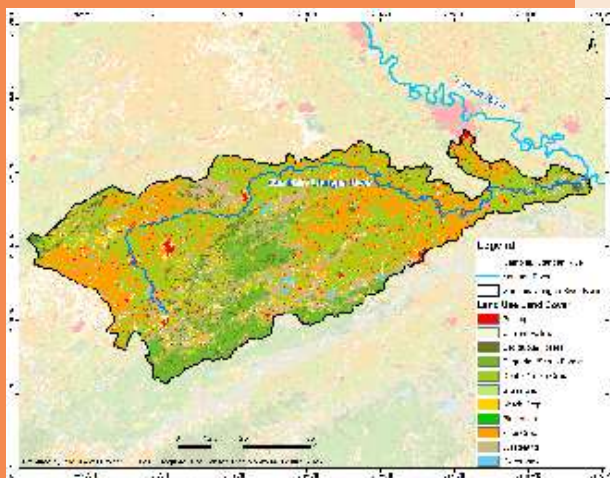
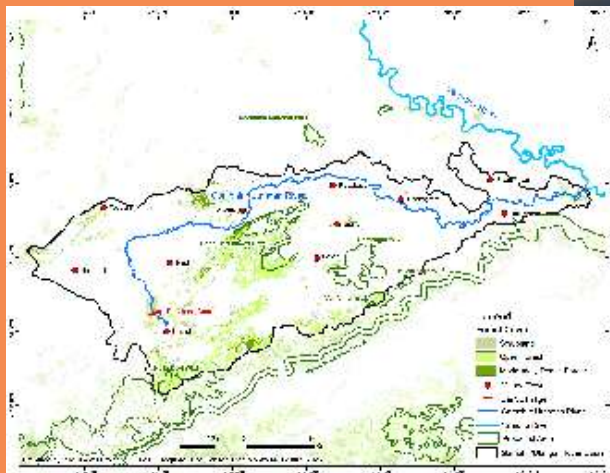


Figure 3: Forest cover of Gambhir River basin (2019)



CONSERVATION SIGNIFICANCE

ENDANGERED

Avifauna

Indian skimmer *Rynchops albicollis* (Swainson, 1838)

VULNERABLE

Avifauna

Sarus crane *Grus antigone* (Linnaeus, 1758)

Common pochard *Aythya ferina* (Linnaeus, 1758)

River tern *Sterna aurantia* (Gray, 1831)

Reptile

Indian flapshell turtle *Lissemys punctata* (Lacépède, 1788)

Fish

Wallago attu (Bloch and Schneider, 1801)

KEY PROTECTED AREAS

Kailadevi Wildlife Sanctuary

Band Baretha Wildlife Sanctuary

Kesarbagh Wildlife Sanctuary

Van Vihar Wildlife Sanctuary

Indian skimmer (*Rynchops albicollis*) | ©Dakshan Ashra



DRIVERS OF RIVERSCAPE CHANGE

- There are seven dams in the Gambhir River basin, with Panchana Dam on the mainstem; these structures have altered natural flow regimes, sediment transport, and downstream river dynamics.
- Industrial and municipal pollution, encroachment of river channels and tanks, and unregulated sand mining degrade riverine habitats in the basin.
- The human population of the basin has significantly increased by 17.6% since 2001, stressing the river's resources.

Rusty spotted cat (*Prionailurus rubiginosus*) | ©Avijit Ganguly



INTERESTING FACTS

- Bandh Baretha, a man-made freshwater reservoir in Rajasthan was constructed in the 19th century on the Kakund River to supply drinking water and irrigation to Bharatpur and adjoining areas. The reservoir and its adjacent area was historically a royal hunting reserve, and was declared a wildlife sanctuary in 1985.
- Timangarh Fort, near Karauli, is an ancient stronghold founded by Raja Timan Pal that later served as a strategic military post for the Delhi Sultanate and Mughals; noted for its Hindu-Mughal architecture, intricate carvings, and enduring legends of hidden idols.
- Keoladeo National Park lies near the Ruparel-Banganga confluence in Bharatpur district, Rajasthan, and is a UNESCO World Heritage Site. It is an internationally recognized wetland for waterfowl, designated as a Ramsar site in 1981. The wetlands of the park receive water via a canal from the Ajan Bandh reservoir, which gets the water supply from the Gambhir and Banganga rivers. This park was a hunting ground for the Maharajas of Bharatpur, and duck hunting was organized every year in the honour of British Viceroys. It was declared a National Park in 1981.
- Gambhir River joins the Yamuna at Agra, a city internationally known for its Mughal-era monuments, including Taj Mahal, Agra Fort, and Fatehpur Sikri—all UNESCO World Heritage Sites, along with the tombs of the Mughal Emperor Akbar and his principal consort, Mariam-uz-Zamani (popularly known as Jodha Bai). The city also includes Marty's Chapel, built in 1611 during Emperor Jahangir's reign, one of the oldest Christian structures in North India, located within Agra's Roman Catholic Cemetery.



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