VIBRANT GANGA

नमामि गंगे

भारतीय वन्यजीव संस्थान
Wildlife Institute of India

Parbati

GENERAL INFORMATION

- Parbati River, a peninsular river and a tributary of the Chambal River, originates from Pithapura Lake, near Siddikganj village, in Sehore district, Madhya Pradesh.
- It flows for 445 km northwards to north-eastwards direction through the districts of Sehore, Shajapur, Rajgarh, Guna and Sheopur in Madhya Pradesh, and Baran and Kota in Rajasthan.
- It joins the Chambal River on the opposite bank of Pali village, Sawai Madhopur district, Rajasthan.
- Parbati River basin spans an area of about 15,350 km² (Figure 1).
- The basin lies in the Semi-Arid (Gujarat Rajputana – 4B) biogeographic zone.
- The basin experiences predominantly a subtropical monsoon climate.
- Parbati watershed primarily exhibits dendritic to sub-dendritic drainage pattern.
- Ajnal, Chopan, Bilas and Aheli are the major tributaries of Parbati.
- The population density along the river is 299.22 persons/km^2.
- Decadal LULC transitions in the Parbati basin (2008–09 to 2018–19) recorded an increase in area under kharif crop (7.49%), current fallow land (7.43%), rabi crop (2.33%), and wasteland (1.01%), along with a marginal rise in grassland . The basin simultaneously recorded a decrease in area under double/triple crop (-17.98%), built-up land (-0.08%), water bodies (-0.17%), deciduous forest (-0.01%), and deciduous/scrub forest (-0.02%), while evergreen forest remained unchanged (0%). These transitions reflect a shift toward expanded single-season agriculture and increased fallowing, accompanied by a decline in multi-cropping intensity (Figures 2a and 2b).

Figure 1: Map of Parbati River basin

BIODIVERSITY VALUE

- Parbati basin is dominated by open forest (81.89%), followed by very dense forest (11.26%) and moderately dense forest (2.03%), while scrub land (1.05%) and non-forest areas (3.77%) occupy only minor proportions of the landscape (Figure 3).
- The basin comprises Southern Tropical Dry Deciduous Forests and Northern Tropical Thorn Forests. The upper stretch hosts dry deciduous communities dominated by *Tectona grandis*, *Anogeissus latifolia*, *Boswellia serrata*, *Butea monosperma*, *Madhuca longifolia*, and *Lannea coromandelica*. Toward the Ranthambhore landscape, the vegetation transitions into *Anogeissus pendula* dominated forests, with ravine zones supporting thorn vegetation including *Prosopis–Acacia* shrublands, *Euphorbia* scrub, and riparian belts of *Tamarix dioica*, *Dalbergia sissoo*, *Ficus* spp., and *Saccharum* spp. The middle stretch features *Terminalia arjuna*, *Syzygium cumini*, and *Dalbergia sissoo*, while the lower stretch consists of open, grass-dominated floodplains with *Saccharum spontaneum*, *Chrysopogon fulvus*, and *Heteropogon contortus*.
- Chital (*Axis axis*), barking deer (*Muntiacus muntjack*), wild boar (*Sus scrofa*) have been recorded from Narsinghgarh Wildlife Sanctuary, including Vulnerable sambar (*Rusa unicolor*).
- 34 species of reptiles have been recorded from Narsinghgarh Wildlife Sanctuary, including one Indian flapshell turtle, 15 lizard species and 18 species of snake.
- 40 fish species belonging to 9 orders, 16 families, and 29 genera were documented from the Parbati River, including Endangered *Tor putitora* and *Clarias magur*.

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

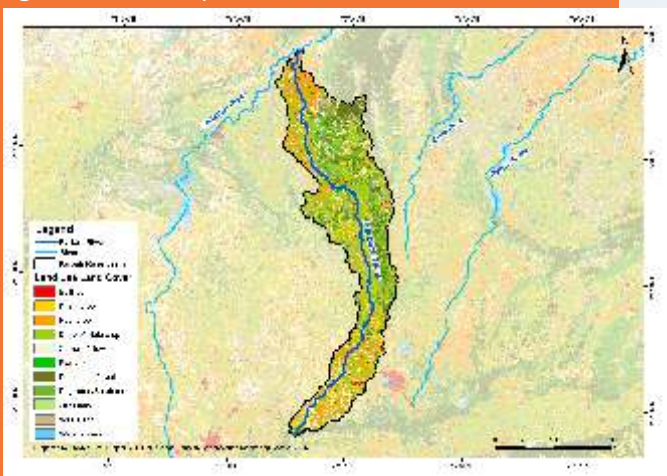

Figure 2b: LULC map of Parbati River basin (2018-19)

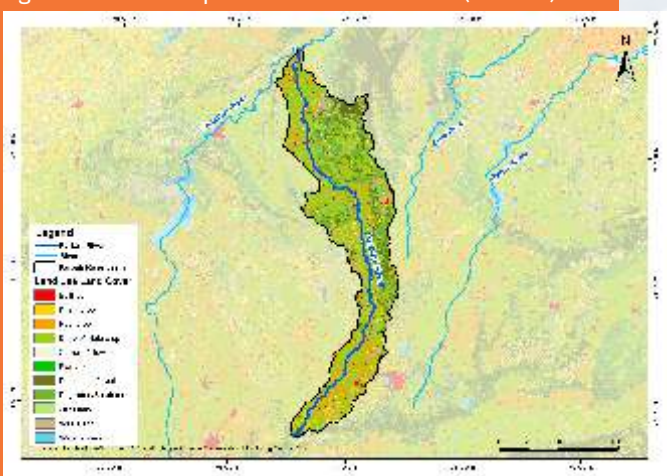

Figure 3: Forest cover of Parbati River basin (2019)

CONSERVATION SIGNIFICANCE

ENDANGERED

Fish

Putitor mahseer *Tor putitora* (Hamilton, 1822)

Wagur *Clarias magur* (Hamilton, 1822)

VULNERABLE

Mammal

Sambar *Rusa unicolor* (Kerr, 1792)

Fish

Wallago attu (Bloch and Schneider, 1801)

Goonch *Bagarius bagarius* (Hamilton, 1822)

KEY PROTECTED AREAS

Narsinghgarh Wildlife Sanctuary

Chital (*Axis axis*) | ©*Subhashish Mondal*

DRIVERS OF RIVERSCAPE CHANGE

- Fluvial erosion driven by monsoon-fed flows plays a dominant role in shaping the Parbati riverscape, resulting in gradual channel incision in plateau sections and sediment deposition toward downstream alluvial stretches near the Chambal confluence.
- Large development projects such as the Parbati-Kalisindh-Chambal (PKC) and Eastern Rajasthan Canal Project (ERCP), now termed Ramjal Setu, are designed to redistribute monsoon flows across basins. These projects will alter natural water availability and routing, with potential impacts on channel form, sediment budgets, and seasonal flow regime.
- High-water-consuming Red-category industries in the Parbati basin, such as Hind Syntex Ltd., Bhopal Glues & Chemicals Pvt. Ltd., Hindustan Coca-Cola Beverages Pvt. Ltd., and Oswal Woollen Mills Ltd., despite operating ZLD systems, pose a continual risk of effluent leakage, sludge mismanagement, and accidental discharge, which can degrade water quality, alter channel substrates, and contribute to riverscape modification through altered biogeochemical processes.
- Localized sand and sediment mining alters river bed elevation, channel depth, and habitat structure, while the removal of sediment destabilizes riverbanks and disrupts natural bar-formation processes, collectively contributing to channel instability.

INTERESTING FACTS

- Parbati River derives its name from Goddess Parvati, the consort of Lord Shiva, and is regarded in local tradition as a sacred river of the Malwa region.
- Parbati River holds deep cultural significance for the Bhil and Sahariya tribes in Guna and Sheopur. Bhil traditions such as the Gavari festival—performed near water bodies to honor Parvati and Shiva, and Sahariya agrarian rituals and folklore tied to monsoon flows and harvest cycles.
- Parbati River corridor hosts culturally significant heritage sites, including the 16th–17th century Shyamji Sanka Temple in Sanka village (Rajgarh district), constructed by Rani Bhagyawati. The temple features detailed carvings of deities and mythological narratives.
- Narsinghgarh, established in 1681 by Paras Ram after the division of the Rajgarh and Narsinghgarh estates, features the prominent hilltop Narsinghgarh Fort. The town is also characterized by a high density of temples, many of which were constructed at the request of queens of the former ruling family and historical records from the 19th century note the presence of Saharia tribes renowned for basket-making.
- In districts such as Rajgarh (Madhya Pradesh) and Kota (Rajasthan), villages and parganas were frequently recorded in official documents as lying “east of the Parbati,” “west of the Parbati,” or “along the Parbati valley.” This descriptive practice reflects the British administrative reliance on natural, easily recognisable features—particularly rivers—to delineate boundaries in regions where surveyed lines were difficult to enforce across open plateau landscapes.

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