

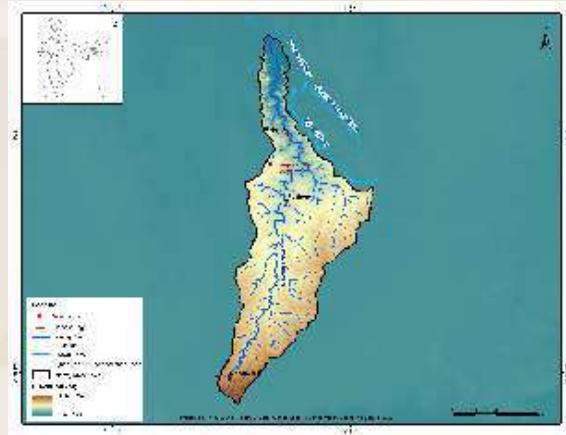
Newaj

GENERAL INFORMATION

- Newaj River, a tributary of the Parwan River, which is a tributary of the Kali Sindh River, originates downstream of Metwara village (Jawar Tehsil), near the western boundary of Sehore district, Madhya Pradesh, and flows for 220 km through the districts of Sehore, Shajapur and Rajgarh in Madhya Pradesh, and Jhalawar in Rajasthan.
- It joins the Parwan River at Chachorni village, Jhalawar district.
- Newaj River basin spans an area of about 4,372 km² (Figure 1).
- The basin lies in the Semi-Arid (Gujarat Rajputana – 4B) biogeographic zone.
- The basin experiences a tropical semi-arid climate.
- Newaj watershed primarily exhibits a dendritic drainage pattern.
- The Dudhi River is a major tributary of the Newaj.
- The population density along the river is 229.90 persons/km².
- Decadal LULC transitions in the Newaj basin (2008-09 to 2018-19) witnessed a significant

increase in area under double/triple crop (31.53%), and a marked decline in kharif crop (-17.3%), current fallow land (-13.53%) and wasteland (-2.06%), indicating a shift towards agricultural intensification. Waterbodies (1.18%), built-up areas (0.09%), scrub forest (0.05%), rabi crop (0.04%) and deciduous forest (nil) remained largely stable, exhibiting marginal to no changes (Figures 2a and 2b).

Figure 1: Map of Newaj River basin



BIODIVERSITY VALUE

- Newaj basin is dominated by non-forest areas (97.44%), followed by open forest (1.8%), scrubland (0.48%) and moderately dense forest (0.27%) (Figure 3).
- The basin supports Southern Tropical Dry Deciduous Forest type, represented by sagwan (*Tectona grandis*), bakli (*Anogeissus latifolia*), salai (*Boswellia serrata*), palash (*Butea monosperma*), mahua (*Madhuca longifolia*), and mohin (*Lannea coromandelica*). Valley floors and reservoir margins support riparian vegetation, where *Terminalia arjuna*, *Syzygium cumini*, and *Dalbergia sissoo* occur intermittently alongside drought-resilient grasses such as *Saccharum spontaneum*, *Chrysopogon fulvus*, and *Heteropogon contortus*.
- 34 reptilian species (2 orders, 12 families) have been documented from the Narsinghgarh Wildlife Sanctuary, including the Vulnerable Indian flapshell turtle (*Lissemys punctata*), and the Near Threatened and highly trafficked red sand boa (*Eryx johnii*). Additionally, nine amphibians (1 order, 4 families) have been recorded in the sanctuary.
- 199 birds species have been listed on eBird (a citizen science database) from the Narsinghgarh Wildlife Sanctuary, including the Critically Endangered Indian vulture (*Gyps indicus*), red-headed vulture (*Sarcogyps calvus*) and white-rumped vulture (*Gyps bengalensis*), Endangered Egyptian vulture (*Neophron percnopterus*), Vulnerable river tern (*Sterna aurantia*), and Near Threatened ferruginous duck (*Aythya nyroca*), Asian woollyneck (*Ciconia episcopus*), great thick-knee (*Esacus recurvirostris*) and Indian roller (*Coracias benghalensis*).
- 13 fish species (6 orders, 8 families) have been documented from the Newaj River, including the Near Threatened *Ompok pabda*.

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

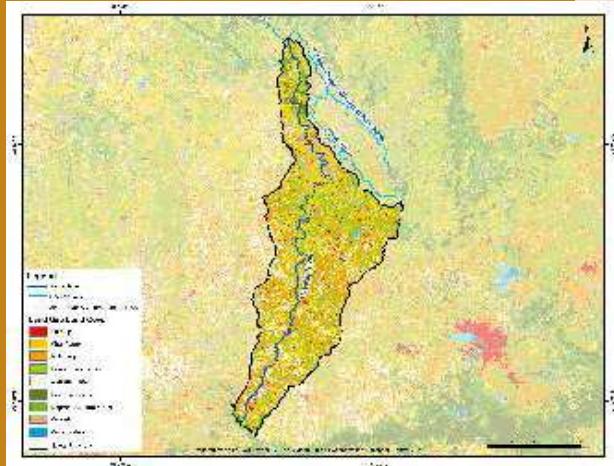


Figure 2b: LULC map of Newaj River basin (2018-19)

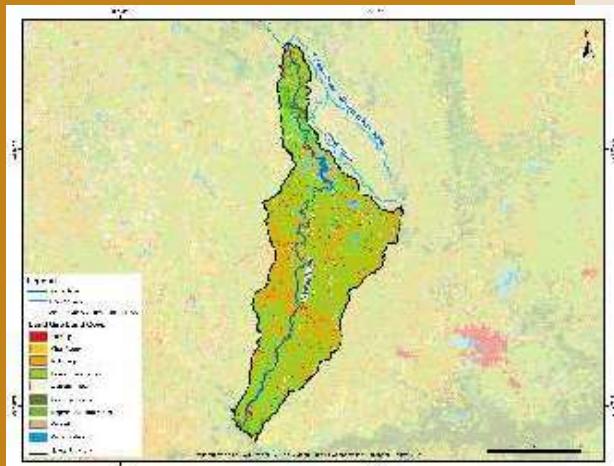
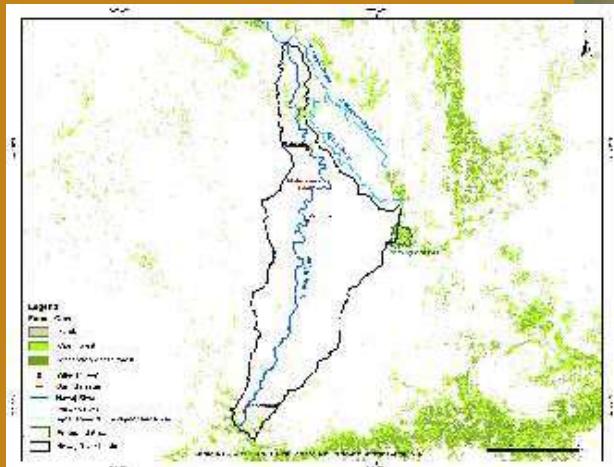


Figure 3: Forest cover of Newaj River basin (2019)



CONSERVATION SIGNIFICANCE

ENDANGERED

Avifauna

Egyptian vulture *Neophron percnopterus* (Linnaeus, 1758)

VULNERABLE

Avifauna

River tern *Sterna aurantia* (Gray, 1831)

Reptile

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

KEY PROTECTED AREAS

Narsinghgarh Wildlife Sanctuary

Asian woollyneck (*Ciconia episcopus*) | ©Harjot Singh Bamrah



DRIVERS OF RIVERSCAPE CHANGE

- Newaj River is characterised by low base flows, with high discharge confined to the monsoon and winter seasons, and is consequently vulnerable to pollution, water impoundment and diversion, and riverbed encroachment.
- Urban centres along the river, namely Rajgarh and Pachore, along with Shujalpur, discharge untreated sewage into the river, intensifying pollution loads in an already water-stressed system.
- Mohanpura Dam (Rajgarh district) and Bavan Ghat Barrage (Shajapur district) on the Newaj mainstem have substantially modified the natural flow regime, reduced downstream discharges, and altered sediment transport and channel processes. In addition, numerous small check dams constructed on its tributaries further impact the river's flow and disrupt flow continuity across the basin.

INTERESTING FACTS

- The Mohanpura Irrigation Project, constructed on the Newaj River in Rajgarh district, is India's first large-scale pressurised irrigation system, featuring the country's longest underground pressure pipeline and designed to irrigate approximately 135,000 ha.
- Rajgarh derives its name from the fortified palace complex established in 1745 by Dewan Ajab Singh after the defeat of the Bhil rulers (1645) and division of the Umatwara kingdom into two Rajput principalities, viz. Rajgarh and Narsinghgarh. The fort has five main gates and three temples, namely Raj Rajeshwar Temple, Chaturbhujnath Temple, and Narsingh Temple.
- Shrinathji Temple (Rajgarh district) is a prominent Vaishnavite shrine on the banks of the Newaj River, initiated in 1887 by King Balbahadur Singh of the Umat Rajput clan (a branch of the Paramara lineage) and completed in 1911 under King Bainsinghji, who placed the idol of Lord Shrinathji (an infant form of Lord Krishna) in the temple.
- Jalpamata Temple (Rajgarh district), a hilltop shrine located approx. 4 km from Rajgarh, was established by the Bhil tribal rulers over five centuries ago and is locally revered as a *Siddhapeeth*, where marriages are traditionally performed in the absence of a *muhurta* (translation: auspicious time).



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