Fantastic Facts

THE SAHYADRI (WESTERN GHATS)

The Western Ghats, known as Sahyadri in the local language, stretches for 1,490km from Tapi Valley in Gujarat to Kanyakumari in the south, covering six states (Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat) in India. The freshwater rivers and streams in the Western Ghats fall under five main broad categories or ecoregions, namely, Narmada-Tapi, the northern Deccan Plateau (Godavari River system), the southern Deccan Plateau (Krishna River system), the southern Eastern Ghats (Cauvery River system), and the Western Ghats (west-flowing rivers).

The Western Ghats is home to some of the world's most unique fauna, flora, and fungi. The freshwater ecosystem biodiversity within the region is highly diverse, unique, and of immense importance to livelihood and economies. These ecosystems, however, are also among the most heavily used, depended upon, and exploited by humans for sustainability and well-being. The Western Ghats has lost nearly 50% of forest cover since the early 1900s and the trend is continuing with increased fragmentation and encroachments. Additional threats include hunting in many parts, which extirpated local populations of several species and groups of terrestrial and freshwater fauna.

Western Ghats freshwater biodiversity in numbers

Four major species groups, namely, dragonflies and damselflies, molluscs, fish, and aquatic plants, have been chosen as representatives to understand the status of freshwater species of the region. The Western Ghats houses 2% of the world's freshwater

fishes, 3% of the odonates and amphibians, and just over 4% of freshwater-dependent mammals. The plants have the highest representation within the region with over 25%.

The highest levels of species richness (between 260–312 species per sub-basin) and endemism (103–129 species) of freshwater species are almost all within the southern part of the Western Ghats Hotspot. These high richness catchments include the west-flowing rivers Pamba, Meenachil, Muvattupuzha, Periyar, Karuvannur, Bharatapuzha, Chaliyar, Kuttyadi, and Valappattanam (Kerala), Netravati, upper Kabini, and Cauvery (Karnataka), and upper Vaipar, Amaravati, Bhavani, and Moyar (Tamil Nadu). Catchments that qualify as potential Key Biodiversity Areas (KBAs) also lie in this region. KBAs triggered by the highest numbers of fish, odonate, and mollusc species include the Pamba, Manimala, Periyar, Bharatapuzha, and Chaliyar rivers in the southern Western Ghats.

Although many protected areas are located within or near areas of the richest freshwater diversity, the southern Western Ghats region also experiences the highest level of threat to freshwater species. The highest numbers of threatened species (40 and 48 species within a sub-basin) are found almost entirely within the southern tip of the Western Ghats Hotspot in Kerala and Tamil Nadu.

Overall species richness and numbers of threatened species decrease along a northerly gradient through the Western Ghats Hotspot and eastwards towards Andhra Pradesh. The northern Western Ghats region within Maharashtra has a lower documented freshwater diversity than the southern region.

Aquatic plants and fishes are the most heavily utilized freshwater groups in the Western Ghats. Twenty-eight per cent of aquatic plants is harvested for medicinal purposes, and 14% and 13% as food for people and animals, respectively. More than half (56%) of fish

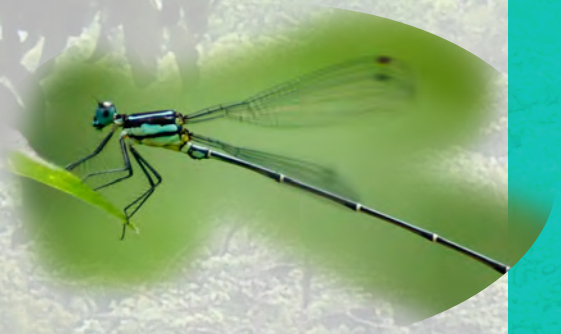
species are harvested for human consumption, and a growing percentage (37%) of species are captured for the aquarium trade. Eighteen per cent of mollusc species is used as food for humans.

Western Ghats freshwater biodiversity threats

Close to 16% of the 1,146 freshwater taxa assessed is threatened with extinction, with a further 1.9% assessed as Near Threatened. Approximately one-tenth of species were assessed as Data Deficient (10.5%), with the two invertebrate groups contributing more to data deficiency (25.8% on average). The main threats impacting freshwater biodiversity in the Western Ghats include:

- pollution, with approximately 50% of fish, 20% of molluscs, and 21% of odonates threatened, and with urban and domestic pollution ranking as the worst threats followed by agricultural and industrial sources of pollution.
- biological resource use with 38% of fishes, 17% of molluscs, and 7% of odonates threatened by commercial fisheries and the aquarium trade.
- residential and commercial development with 14% of fishes, 11% odonates and aquatic plants, and 8% of molluscs threatened.
- dams and other natural system modifications, with 13% of fishes, 8% of molluscs, 4% of odonates, and 3% of plants impacted.
- alien invasive species which, as understood currently, impact 22% of fishes.
- agriculture and aquaculture which impact 7% of odonates and 4% of plants

- energy production and mining which impacts 6% of fishes, 5% of molluscs, and 4% of plants overall.



Recommendations

- Studies on freshwater plants and animals of the Western Ghats to understand their life history, ecology, and populations should be promoted
- Endemic species, which are under the threat of extinction, are narrowly distributed. Hence, their habitat should be protected.
- Pollution, a key threat to freshwater biodiversity, should be controlled.
- Environment impact assessment of development activities such as construction of dams and roads should be conducted.
- Education and awareness programmes to instil the urgent need to sustainably use, conserve, and manage wetlands and rivers must be conducted.

Quick facts

- Only 0.03% of the world's water is available as liquid freshwater on the Earth's surface.
- Habitat loss and degradation is the primary cause of extinction of freshwater species. Of the 29,000 known fish, about 30% are freshwater species.
- Agriculture accounts for about 70% of all water taken from rivers and is the main cause of wetland loss worldwide, due

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to cleaning, transformation, drainage, and water abstraction.

- ~80% of the world's population currently lives in areas lacking water security. By 2025, two-thirds of the world population could live under water stress conditions and a similar proportion could be without adequate sanitation.
- Wetlands, such as mangroves and river floodplains, protect human communities from natural catastrophes such as tsunamis and floods.
- Nearly half of the world's large cities obtain some, if not most, of their drinking water supplies from protected or managed forested areas.

Information taken from: Molur, S., Smith, K.G., Daniel, B.A. and Darwall, W.R.T. (Compilers). 2011. The Status and Distribution of Freshwater Biodiversity in the Western Ghats, India. Cambridge, UK and Gland, Switzerland: IUCN, and Coimbatore, India: Zoo Outreach Organisation.