

Drainage System of Maharashtra (Part I)

What is a Drainage System?

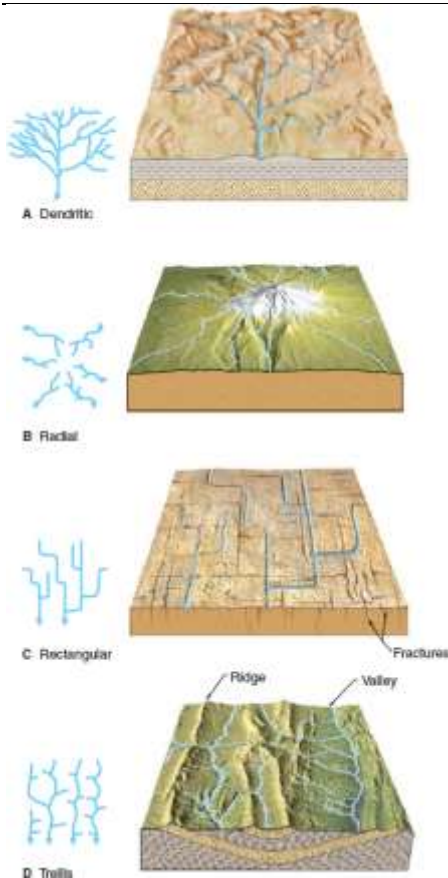
The network of well-defined water channels such as rivers, streams, lakes etc., is known as a 'drainage system'. And the factors responsible for defining a drainage system of an area are

- geological time scale
- nature and structure of rocks
- topography of the region
- the gradient of a region
- the volume of water flow
- periodicity of water flow

How is Drainage Pattern formed?

- The land surface consists of diverse features anywhere in the world, and Maharashtra is no exception. The land of Maharashtra is characterized by great diversity in relief and drainage. Mostly the drainage of Maharashtra has been shaped by its physiographical features.

Types of Drainage Patterns



There are various Drainage pattern exists in Maharashtra like,

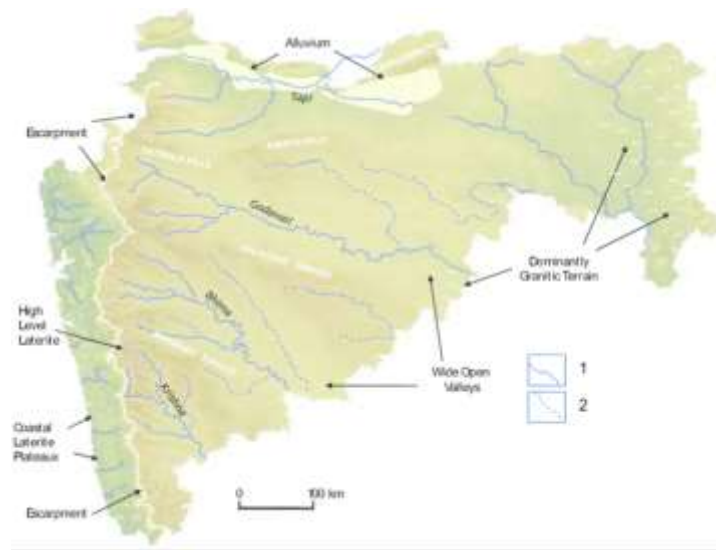
1. **Dendritic Drainage Pattern:** It is the most commonly observed form and looks like the branching pattern of tree roots. e.g. Godavari, Bhima, etc.
2. **Parallel Drainage Pattern:** Parallel drainage patterns form where there is a pronounced slope to the surface. e.g. Kokan rivers
3. **Centrifugal Drainage Pattern:** The stream is formed by the stream that diverges from the central higher point in all directions. e.g. Rivers originate at Mahabaleshwar.
4. **Irregular Drainage Pattern:** this type of drainage pattern is seen when there is a predominance of lakes and reservoirs, leading to the irregular pattern of water channels in a particular pattern. Such irregular or uncoordinated pattern of drainage is mostly found in Bhandara and Gondia District.

Major rivers forming the Drainage system of Maharashtra:

Considering The Sahyadri Mountain as the main Water divide, the drainage of Maharashtra can be classified into two categories:

1. East flowing rivers, e.g., Godavari, Krishna
2. West flowing rivers, e.g. Narmada, Tapi and Rivers in Kokan

Maharashtra River-Basin map



Major River basins of Maharashtra:

Due to the Sahyadri Mountains and various mountain ranges on plateaus, four river basins have been formed in Maharashtra:

- Godavari Basin
- Krishna and Bhima Basin
- Tapi-Purna Basin
- Kokan

I. Godavari River Basin

Godavari:

- The origin of Godavari is in the Western Ghats of the central Indian region at Trimbakeshwar near Nashik in Maharashtra and joins the Bay of Bengal in Andhra Pradesh after flowing for 1,465 km.
- It flows for 668 km in Maharashtra. In terms of length, catchment area and discharge, the Godavari is the largest river in peninsular India.

- The drainage basin of Godavari extends over 3,12,812 sq. Km, in which 49% (1,53,779 sq.km) lies in Maharashtra. Besides Maharashtra, it is shared by Madhya Pradesh, Karnataka, Odisha and Andhra Pradesh.
- The Godavari is subjected to heavy floods in its lower reaches, where it forms picturesque gorge.
- The river after Rajamundri splits into several branches, forming large delta. The river is considered to be the Holy River and is taken to be place of pilgrimage.
- The Godavari is also referred to as 'Vridha Ganga or Dakshina Ganga' because of its large size and extent.
- Its main tributaries from right bank are Pravara, Sindphana, Darana, Mula, Bor, Bindusara, Kundalika and from left bank are Kadava, Shivana, Purna, Pranhita, Indravati. It flows through Nashik, Ahmednagar, Aurangabad, Jalana, Beed, Parbhani and Nanded districts of Maharashtra.

Principal tributaries of Godavarai:

- **Manjari:** It originates in the Balaghat range near Pagoda in Beed. It flows for 724 km and joins the Godavari at Kundalwadi.
- **Purna:** It originates in the Ajintha range, and it flows for 274 km and joins the Godavari near Kantheshwar in Parbhani.
- **Wardha:** It originates on southern slope of the Satpuda range. Generally, it flows in north-south direction for 455 km.
- **Wainganga:** It originates in Maikal range near Darkesa hill in the Shivani district of Madhya Pradesh. It flows in a north-south direction for 300 km.

II. Krishna-Bhima Basin

- It rises from a spring near Mahabaleshwar. Its total length is 1,400 km which is shared by Maharashtra, Karnataka and Andhra Pradesh with a catchment area of 2,58,948 sq. km, and it outfalls into the Bay of Bengal.
- The Krishna River is the fourth-biggest river in terms of water inflows and river basin area after the Ganga, Godavari, Brahmaputra.
- It is also called Krishnaveni. In Maharashtra, it flows for 282 km with a catchment area of 28,700 sq. km.
- It flows through Kolhapur, Sangli and Satara districts. The main Tributaries of Krishna are Koyana, Warana, Panchganga (Lifeline of Kolhapur), Dudhganga, etc.

Bhima River

- Bhima river originates in Bhimashankar hills near Karjat. It flows 861 km through Maharashtra and Karnataka. Bhima is the main tributary of Krishna.
- It flows 451 km through Maharashtra. Its basin area is 70,614 sq. km. The total area of the Bhima Basin is 46,184 sq km in Maharashtra.
- It flows through Pune, Ahmednagar and Solapur districts. Pandharpur is a well-known pilgrimage town on the bank of Bhima in the Solapur district.
- It is referred to as Chandrabhaga at Pandharpur because it resembles the shape of the Moon.
- Major left-bank tributaries of Bhima are Vel, Pushpavati, Ghod, Sina, Mina, Kukadi, Bori, Bhogawati.
- On the right bank, Bhima receives tributaries named Bhama, Indrayani, Pawana, Mula-Mutha, Nira, Maan.

III. Tapi-Purna Basin

- It rises near Multai on the Satpura range in Betul district of Madhya Pradesh. The total length of the river from origin to outfall into the Arabian Sea is 724 km. It flows 208 km in Maharashtra.
- The Basin area of Tapi is 65,150 sq. km, of which 31,660 sq. km is in Maharashtra.
- It is the second largest of the west-flowing river of the peninsula. Left bank tributaries of Tapi are Purna, Veghar, Girna, Bari, Panjhara and right bank tributaries are Betul, Arunavati, Gomati.
- It flows through Amaravati, Jalgaon, Dhule, Nandurbar district of Maharashtra.

Purna River

- Purna is a western flowing river. It is one of the chief tributaries of the Tapi river. It rises in Gawilgad mountain (Madhya Pradesh). The total length of the river is 334 km.
- The river flows through Akola, Buldhana, and Jalgaon districts. Purna meets Tapi at Changdev village in the Muktainagar taluka of Jalgaon district in North Maharashtra.
- Its tributaries are Gomati, Pendhi, Katepurna, Morna, Nalaganga, Nand, Vaan, etc.

Kokan Basin

- The region is traversed by seasonal rivers that drain the heavy monsoonal rainfall from the crest of the Sahyadri Hills.
- With the presence of Sahyadri on the East and the Arabian Sea on the West, and the steep slope on the western side of Sahyadri, the rivers are short in length.
- All rivers of Kokan form estuaries and meet the Arabian sea.

Major Rivers of Kokan basin:

Rivers	Source	Length (km)	Remarks
Vaitarana	Trambakeshwar	154 km	Tributaries :Surya, Tansa
Ulhas	Rajmachi Hills	122 km	Tributaries : Kalu, Bhatsa
Amba	Rajmachi Hills	74 km	Pali (Ashtavinayaka) on the river bank
Kundalika	Sudhagadh	65 km	Forms the boundary between north and south Kokan.

To know about the "Drainage system of Maharashtra (Part II), stay tuned.