VIBRANT STREAKS OF GANGA

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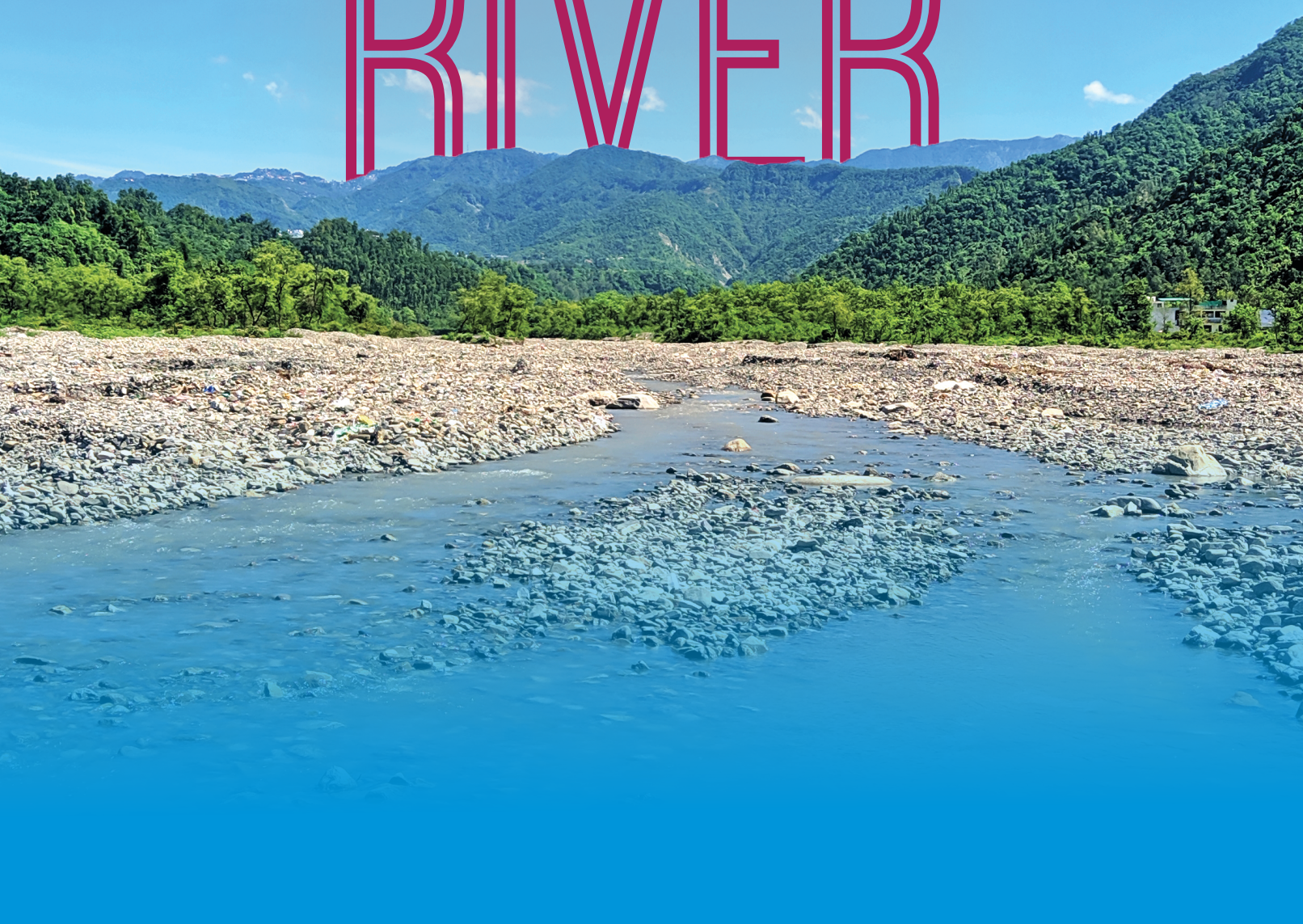
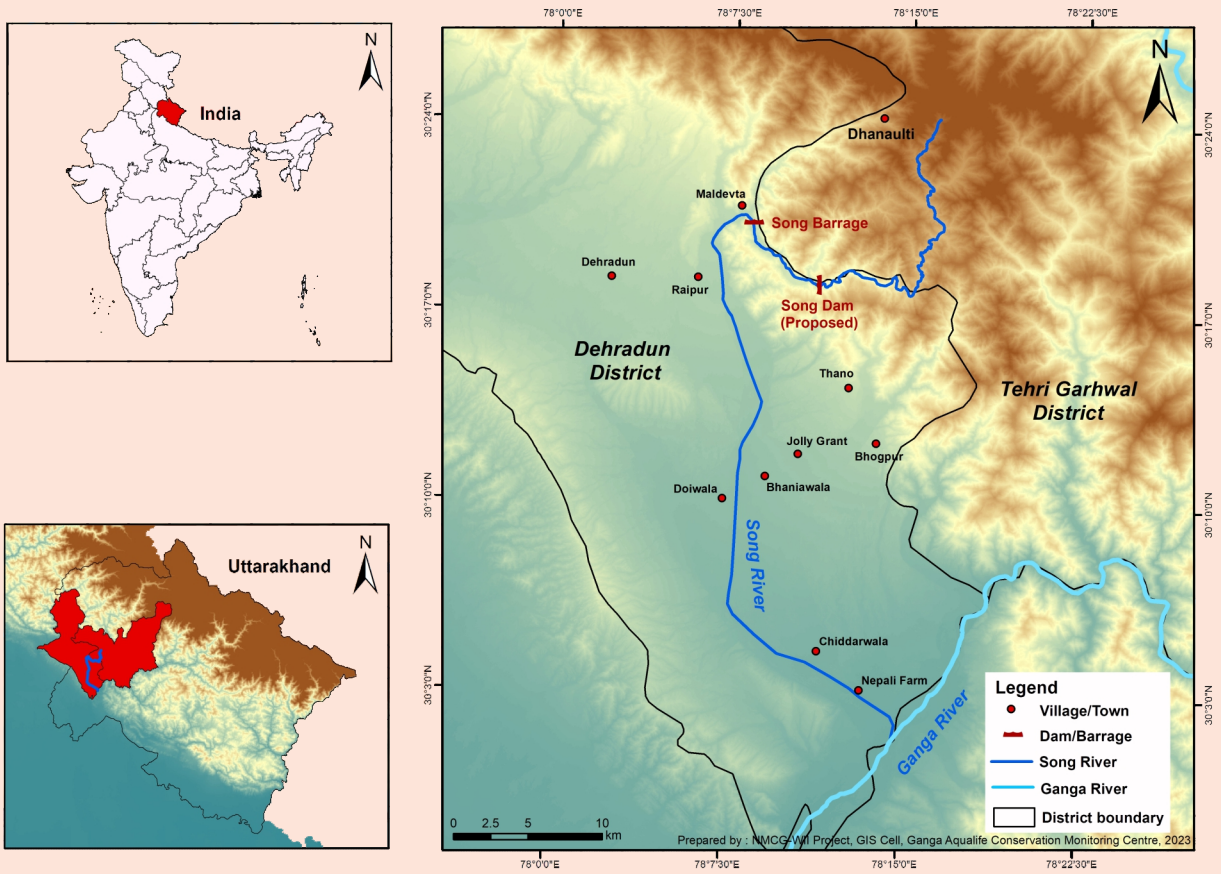
life in

SONG RIVER



Macroinvertebrates **are animals that lack backbone, though large enough to see without the aid of a microscope. These include annelids (segmented worms), molluscs, arthropods, arachnids, odonates (dragonflies and damselflies), stoneflies, mayflies, caddisflies, and true flies.**

They are good indicators of environmental health, as different types of macroinvertebrates tolerate different stream conditions and levels of pollution. Their presence or absence is referred to as an indicator of clean or polluted water.



THE ROLE AND IMPORTANCE OF MACROINVERTEBRATES

Aquatic macroinvertebrates are found in lakes, streams, ponds, marshes, and puddles which assist in maintaining the health of the water ecosystem by feeding bacteria, and dead decaying plants and animals.

Various macro-organism prefer peculiar environmental conditions such as a specific range of dissolved oxygen (DO), total dissolved solute (TDS), pollutants, pH, etc. for their sustenance.

Some macroinvertebrates, such as stoneflies, mayflies, and water pennies require a high level of dissolved oxygen. Their presence in the water bodies indicates a healthy water ecosystem. While other macroinvertebrates, such as aquatic worms and leeches require low dissolved oxygen levels to survive and reproduce. Therefore, their presence is an indicator of the poor quality of water.

The life cycle of macroinvertebrates drives from egg to adult. Few of them show either incomplete or complete metamorphosis.

Macroinvertebrates are excellent water quality indicators for several reasons; as they are

- highly sensitive to any changes in the aquatic ecosystem.
- having long live-cycle.
- Easy to collect for laboratory analysis using inexpensive equipment.

In addition to their use as bioindicators, macroinvertebrates are also important components of the aquatic food web. They are further categorized based on their diet preferences: shredders, collectors, grazers (scrapers), and predators.

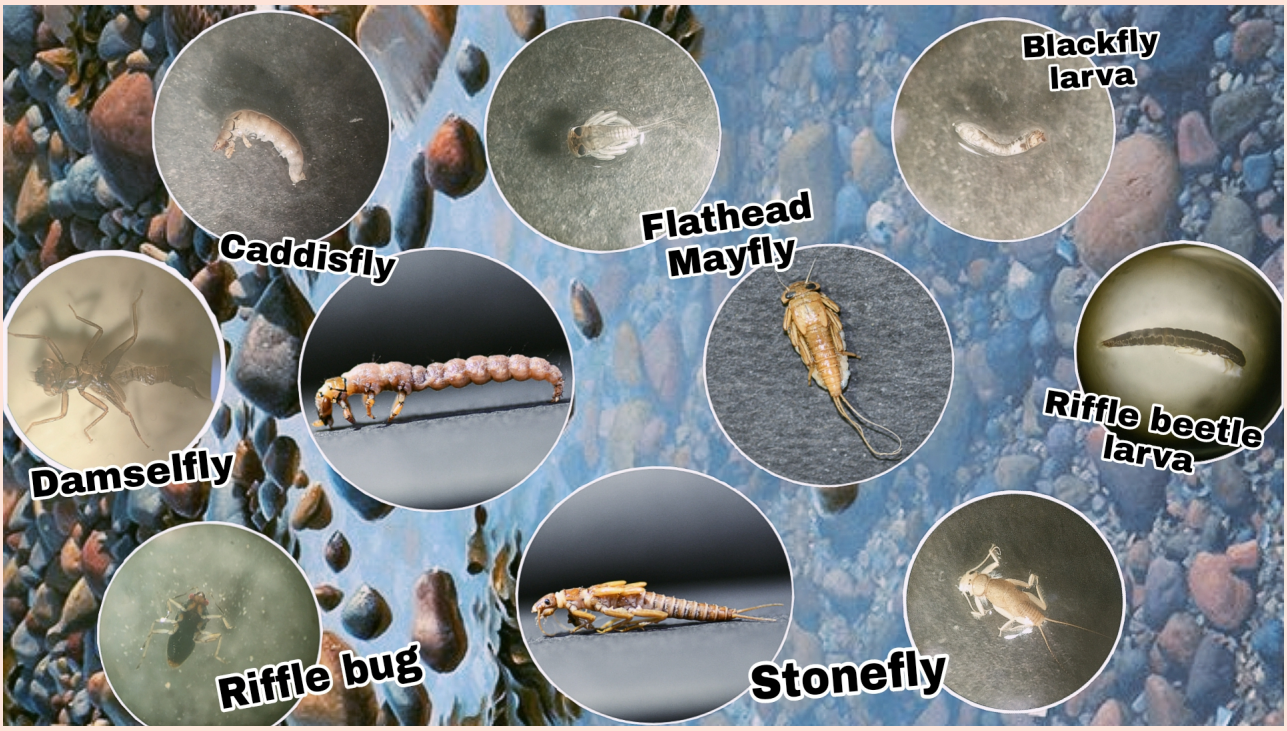
- Shredders are mostly stonedfies and caddisflies which feed on larger organic matter such as leaves and woody debris.
- Blackflies and clams are collectors that gatherers and filter small organic particulates in the water column.
- Grazers (or scrapers), such as mayflies, and some caddisflies, feed on detritus, algae, and aquatic plants.
- Predators feed only on animal tissue. Some voracious predators are hellgrammites and dragonfly nymphs.

GENERAL DESCRIPTION OF SONG RIVER

- Song river is a spring-fed perennial river that originates from the Radi-Top of Mussoorie ridge and flows throughout the Doon valley. It extends up to distance of approximately 46km.
- The river lies in the foothills of the Himalaya and is also regarded as an important source of water supply to the Dehradun district.
- It is a tributary of the Suswa river, which ultimately submerge into the river Ganga.
- During monsoons, the river carries a huge quantity of sediment with it, which consists of stones, gravel, and sand.
- The underground waters of the Dehradun region are recharged by the Song river and its tributaries. It flows along a southwest course in its upper reaches and slowly turns east to join the Ganga River.
- Boulders of various sizes have been deposited all along the bed of this river.
- Sal forests (Shorea robusta) are found along downstream of the Song river at Lachiwala. The dry river bed possesses *Senegalia catechu* (Khair), and *Dalbergia sissoo* (Shisham) forests.

THREATS TO SONG RIVER

- Hill cutting and encroachment on the riverbed.
- Numerous resorts and restaurants have encroached upon the riverbed.
- Large-scale mining continues in the name of riverbed material extraction which could aid in the alteration of the river course in the long run.
- High-scale anthropogenic pressure in the Song river; such as dumping of domestic and sewage waste.
- Further, the release of detergent water into the river is gradually polluting the river water. Also, untreated sewage waste carried by the Song river enters the Ganga which could threaten the larger ecosystem of the Ganga.



IMPORTANCE OF SONG RIVER

- Song River is well known for its several natural sulphur springs. These point source springs run through mountain crevices to join the mainstream river and increase the sulphur concentration of water. Tourist including local people visits such location to bath in the sulfur-rich water which is believed to beneficial against skin disease.
- It also provides adventure sports like an obstacle course, natural wall climbing, rappelling, ground sports, short hikes, swimming, body surfing, air rifle shooting, bird watching, and cycling.
- It has great significance in irrigating many agricultural fields of Dehradun during the dry months. A canal was constructed in the 18th century from the river at Kalinga, Maldevta to largely irrigate the agricultural area.
- The Lachiwala Nature Park aesthetic value is aided by the Song river water in Doiwala.

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