

Growing Back Our Broadleaf Forests

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Forest fires have become a regular feature during summer in the western Himalaya. Over the years, the area affected has steadily increased, so that today it is so widespread that few cities in the world can match the pall of smoke that hangs over the State of Uttarakhand during the fire season.

This was not always so. My study on hawkmoths published in 1994 clarified that with global warming, the western Himalaya was experiencing warmer winters and overall, humidity had increased, enabling eastern Himalayan species to colonise the western Himalaya. The increase in greenery in the hills during winter was noticed by older residents, for the sixties and seventies were dry decades when hillsides would turn brown during winter. Ideally then, the incidents of fires should have reduced as the hills got greener and more humid. Unfortunately, this was not the case.

Grassy hillsides were traditionally set afire during the dry period immediately preceding the monsoon, so that a new flush of nutritious grass would be put out with the first rains; other fires were accidental and local people would quickly gather to stamp out the flames. Today, forests are being set on fire with the objective of drying up trees, to keep wood contractors in business, to stock up fuel wood for winter, to improve the flow of resin in chir pine (*Pinus roxburghii*) trees tapped for the turpentine industry and, in some cases, for sheer devilry.

Depletion of biodiversity

The reason for the sudden spurt in forest fires can very likely be traced to a 1981 governmental ban on the felling of green trees above 1,000m elevation. With permission impossible to obtain, the next best thing was to dry the trees up by foul means, especially for real estate developers, timber contractors, villagers and sundry others.

Today, when a fire is doused by village firefighters, it springs up again a little later, laying waste all the areas saved. This has led to a sense of hopelessness and apathy. It is not fires that have become wilier, but the fact that most forest fires in the years after 1981 were not accidental. The recent arrests of people from different parts of the State, caught while setting fire, has proved the point that these fires are cases of arson. The crack-down will doubtless reduce the number of forest fires in the coming season, for the arsonists have got into the habit of burning the forests twice, once in March-April, when humus from the previous winter was sufficiently dry to burn, and again in May, when the chir pine sheds its resin-rich needles and cones.

The regular burning of forests has wiped out communities of insects, birds, amphibians and reptiles, besides, of course, most mammals. Broadleaf trees tend to dry up in the wake of regular forest fires. These are rapidly replaced by the fire-resistant chir pine, which has very little to offer in the way of food for wildlife. As a result, the only mammals that still survive in any numbers in Uttarakhand are rhesus macaques and wild boar, which are highly adaptable omnivores. They now depend almost entirely on humans for their food, relying on raiding crops and even houses to fill their belly. Several villages have stopped cultivation and are being abandoned due to this menace. In a knee-jerk response, the State Forest

Department permitted the culling of wild boar, but this is clearly not a long-term solution. There is no solution for the macaque problem throughout the country.

The rapid depletion of broadleaf forest also led to the drying of springs. Note that all villages throughout the world have been settled near a source of perennial water. With an alarming number of perennial springs turning seasonal, villages will soon have to be abandoned during summer while the phenomenon of floods increases, for water that used to percolate into the soil and supply the hills throughout the year now flows off within hours of reaching the ground.

The phenomena of forest fires, deforestation, drying springs, increasing floods, increasing man-animal conflict, and rapidly depleting biodiversity are closely linked. To address this looming disaster effectively in the long term, a large-scale increase in the area under broadleaf forests throughout the western Himalaya is the only way forward.

Dreadlocks, not tresses

But first, what is a forest? The analogy of dreadlocks is very aptly made in Indian mythology, when Lord Shiva volunteered to spread his locks over the Himalaya to absorb Ganga's fury at being sent to earth without her consent. For millennia, her fury was dissipated when the heavy showers of the monsoon were met by the dense broadleaf canopy and the water descended in a fine spray or a drip, to be met by a carpet of humus and percolate into the soil. Even today, in dense broadleaf forests, there is very little run-off during the heaviest rainfall. The important point that the ancients made was that it was dreadlocks, not tresses that could do the job effectively. Dreadlocks cannot be created nor can their formation be speeded up, they have to form on their own and in their own time. Similarly, the sort of broadleaf forests required to stabilise underground water systems in the Himalaya have to grow on their own, they cannot be planted. The good news is that Himalayan forests have not been so badly damaged as to be incapable of growing back. In order to do so, they require protection – protection from fires, from cattle, from economic interests.

During the 1970s, the alarming reduction in forest cover throughout the country was noted and State Forest Departments began 're-forestation' drives by planting trees on a war footing. The truth is that a forest is a self-regenerating community of plants and creatures. If a stand of trees is planted, it is called a plantation, not a forest. A plantation cannot be expected to provide the ecosystem services that a forest provides. The funds that were earlier sanctioned for this purpose would be much better utilised in the national weal if village forest protection squads were to be hired, trained and equipped, and areas important for groundwater recharge fenced and protected by them, so that 'dreadlock' forests can grow back. A reduction of uneconomical cattle from the hills would help take the burden off forests for fodder. Old age homes for cattle in the plains could be easily supplied with fodder from the funds currently absorbed in 'forest plantation' efforts.

The steps outlined above are of relevance all over the country, for all our rivers are largely, if not entirely, rain-fed. All of them suffer from more or less the same challenges as the Ganga, with rapidly depleting broadleaf forests giving rise to a cycle of floods and dry spells. To stabilise flow in these rivers, the cheapest, most effective and long-term method would be to let forests grow back with the least interference

and with local participation. Only then would we ensure our nation's water security in the challenging years ahead.

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