Time to Flower, Time to Change

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The remnants of the once grand and diverse wildlife assemblage of Karnataka, which could be found in contiguous stretches of forests along the spine of the Western Ghats, are today, confined to fragmented niches of Wildlife Reserves that have managed to survive the onslaught of development, human pressures, commercial Minor Forest Products (MFP) collection , timber and bamboo extraction.

The almost anonymous Bhadra Tiger Reserve, which surpasses its more famous cousins, Bandipur and Nagarahole National Parks in scenic beauty, is also, in the opinion of Wildlife biologist Dr Ullas Karanth, far superior to them as a wildlife habitat. Nestling in the foothills of the Western Ghats in Chikmagalur district, Bhadra contains some of the best bamboo forests in Karnataka. In 1974, the Bhadra Wildlife Sanctuary, was formed by merging the Jagara Valley Game Reserve with the adjoining Lakkavalli Reserve forests covering an area of 492 sq.km. Muthodi and Lakkavalli, the two component areas of the sanctuary, are ecologically quite distinct, and almost coterminous with the two forest ranges of the same name.

One of the most noteworthy feature of these forests, in terms of vegetation, is the vast, continuous under-canopy of bamboo. Both the Dendrocalamus strictus and Bamboosa arundinacea occur extensively while dense clumps of reeds of Oxytenathera and Ochlandra species dot the forestscape. Bambusa arundinacea, which grows to a height of 80-100ft, has a life span of 45 to 60 years, when it flowers and dies after seeding. The flowering, often gregarious where vast stretches of forest flowers at a time, or sporadic with flowering occurring in a particular locality and progressing to other parts of the forests.

Dr Karanth who conducted the first scientific study of the Bhadra ecosystem between 1978 and 1980, had estimated that the Gaur (Bos gaurus) population was around 1,000 and concluded that this was one of the best habitats for Gaur in the country. He had predicted the flowering of bamboo - Dendrocalamus strictus in 1980 would lead to a severe reduction in fodder availability for gaur and elephant apart from opening up the canopy. He had also opined that the death of bamboo would also accelerate the spread of the eupatorium weed, which in turn would further reduce fodder availability.

The proponents of the old revenue forestry school view bamboo, which dies after gregarious or sporadic flowering, as a major fire hazard. The standard management practice of the Forest Department therefore has been to remove or extract dead and fallen bamboo. Wildlife Biologists, conservationists and some Forest officers with

good field knowledge who have been observing a steady deterioration of bamboo forests all across the state have voiced their opposition to such extraction oriented management practices, particularly in Wildlife Reserves.

Apart from the damage caused by the removal of dead bamboo, the forests of Bhadra have been subjected to extensive pressures due to green bamboo extraction by the State-owned Mysore Paper Mills (MPM). In addition, the large-scale extractions that were allowed to meet the needs of Medar societies would invariably find its way to the open market. More than 5 lakh poles removed during the early nineties in the large scale extractions have caused great damage due to indiscriminate formation of roads leading to trampling of regeneration, large labour camps in the heart of the reserve leading to incidence of fire and poaching. The magnificent Bamboo forests of Bhadra were literally butchered by slashing the top of the culms to "generate dead bamboo" for the next season and hacking it at the bottom which left the entire clump hanging.

Thankfully, all this was gradually stopped around six years ago mainly due to the intervention of Conservation NGOs like Wildlife First, Nature Conservation Guild and Green Watchers backed by some committed forest officers like Mr Dipak Sarmah, Mr M.N.Narayanaswamy, Mr BM Parmeshwar and others who were in charge of the Bhadra Reserve and Chikmagalur district during that period.

The bamboo in the Bhadra Tiger reserve flowered again in 1999. This time around the situation was refreshingly different. The large-scale extractions by MPM and Medar societies had stopped. The Reserve was being managed by a dynamic Deputy Director Mr Yatish Kumar who initiated a very interesting and successful field management experiment collaborating with Mr D.V.Girish of Wildlife First! who is also the honorary wildlife warden for Chikmagalur. Mr. Yatish Kumar's focus was bamboo that had flowered in Thanigebyle area of Lakkavalli State Forest. The prevalent view hitherto has been that stands of dead bamboo constitute the single most important fire hazard, and vast quantities of dry bamboo could catch fire instantly and the conflagration would spread rapidly. As custodians of the reserve, the standard management practice of the Forest Department has therefore been to remove dead bamboo, citing risk of fire as the major threat. But Mr. Kumar applied good science and field knowledge with a fair dose of common sense and came up with a working model of immense management value which is relevant to almost all Wildlife Reserves in India.

Big bamboo, Mr. Kumar points out, occurs mainly along rivers, streams and valleys., and the clumps extend to a width of no more than 100-200 m. This suggests that bamboo loves moisture, intrinsically reducing susceptibility to fire, while the streams themselves act like fire breaks. Besides, bamboo occurs along with other vegetation with breaks varying with availability of moisture. If these are factored into the management strategy, the fire hazard can be effectively minimized with intensive fire protection measures.

After flowering, the seeds spread around the dead clumps begin to sprout, triggering the natural regeneration process. Dead bamboo itself, is the most efficient means of protection for the regenerating bamboo as it acts as an effective cage preventing wild ungulates and domestic cattle, if any, from grazing/trampling the regeneration. This is an efficient system that nature has devised to ensure regeneration, which we only need to understand. Besides, for birds like the Shama, several species of Babblers, Munias, and Jungle fowl… the bamboo thickets offer nesting and forage sites.

Based on this solid field knowledge, Mr Kumar first adopted a basic common sense approach of allocating sufficient funds to hire temporary firewatchers to guard the area. The Jeeps and wireless equipment donated under the Karnataka Tiger Conservation Project by Centre for Wildlife Studies was effectively deployed and utilised by the highly motivated field staff under Mr Yatish Kumar's leadership. Mr. Kumar, along with Mr Girish, and his Rangers then enlisted the support and involvement of local villagers. This was extremely crucial since almost all forest fires in deciduous forests are man-made. A community education program launched by Mr Girish and other local conservationists backed this effort.

The results were highly encouraging. Not one acre of the Bhadra Tiger reserve was affected by fire (this is a record of sorts!) and a thick carpet of regenerating bamboo covered the forest floor and on the side of stream beds. The old revenue generation forestry theory was, finally proven wrong.

With a paradigm shift towards conservation of wildlife, it is absurd to blindly continue with the old revenue forestry management practices, which causes great damage to the interests of wildlife. In fact, decades of such practices have proved beyond doubt that large scale extraction of bamboo, and related impacts like roads, human activity in forests cause serious negative impacts on the habitat.

Mr Yatish Kumar's interesting field case study carried out in the Tanigebyle range of Bhadra Reserve has proved that not only is it possible to protect dead bamboo from catching fire, such protection also ensures excellent regeneration as well. It is therefore imperative that we learn from these practical field experiments and adopt them for scientific management of our Wildlife Reserves.