

Habitat renewal and recolonisation of birds in the Rishi Valley Campus

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Abstract

The Rishi Valley Campus is located at the foot of the Horsley Hills, which forms part of the Eastern Ghats complex, in the Chittoor District of Andhra Pradesh. Over the past three decades, afforestation, water-harvesting and soil management activities by the school have caused regeneration of vegetation in the 350-acre campus and this in turn has resulted in the recolonisation of birds from the forest areas in the Horsley Hills Reserve Forest. The habitat diversity in the campus has correspondingly been reflected in the diversity in the avian forms. The list of birds recorded in the campus stands at 195 species as of date. This represents about 40% of the birds in Andhra Pradesh. The list includes the endemic and rare Yellowthroated bulbul (*Pycnonotus xantholaemus*), the Bluebearded bee-eater (*Nyctiornis athertoni*), the Emerald Dove (*Chalcophaps indica*), the Shaheen Falcon (*Falco peregrinus*) - all uncommon birds in the region besides migrants such as the Common rosefinch (*Carpodacus erythrinus*), the Forest Wagtail (*Motacilla indica*), Blueheaded rock thrush (*Monticola cinclorhynchus*) and the Brownbreasted Flycatcher (*Muscicapa muttui*), not found in the neighbouring habitats.

While we are greatly concerned about the destruction of forest habitats, the example of Rishi Valley proves that through care and judicious management of resources it is possible to regenerate forest regions and restore the bird life as well as all forms of biodiversity in other parts of Eastern Ghats.

The well-known philosopher Sri J. Krishnamurti founded the Rishi Valley Education Centre in 1932. Located in the south-western edge of Chittoor District in Andhra Pradesh, close to the Karnataka border, Rishi Valley lies at the foot of the Horsley Hills, a part of the Eastern Ghats complex. For many years now the hills surrounding the school are bald. Documents show that this region classified as "Reserve Forest", once had an abundant forest cover. Elderly villagers mention that even as recent as half a century ago larger species of mammals were seen in the forests of the surrounding hills. According to local people, the abundant forest cover was lost when railroads were being laid - numerous trees were felled to support their tracks and feed their steam engines. After many decades of overgrazing, fuel-wood gathering, pressures from farming and other such human activities, the soil cover has become degraded and has exposed underlying layers of granite throughout the valley and surrounding hills. The remnants of these forests can still be seen on hills, located on the western end of the valley, some three kilometers away. Similar such forest patches occur now scattered on isolated hills in this region, though badly degraded. Ever since the school was started, tree planting has been going on in the campus, which is some 200 acres in extent. But it was in the early 1980's, that the habitat regeneration programme was more intensively undertaken. The school took over a completely bald and degraded hillock on lease for reforestation from the state revenue department. This land comprising an area of 150 acres is adjacent to the school campus. Over the next few years, several thousands of tree saplings were planted. Several small earthen bunds and check-dams were constructed to arrest the flow of water and soil and conserve these precious resources. A percolation tank, about 20 acres in extent was constructed to impound water that drains out of the valley through a seasonal stream. Several smaller structures were constructed at strategic locations on the hillsides to prevent water runoff and to enable the water to recharge the underground aquifers. For all these activities there was an active involvement of students who helped in raising nurseries, planting saplings, scattering seeds on the hillsides, watering plants during the initial stages, assisting in the construction of bunds and trenches. These activities resulted in the greening of the Rishi Valley School campus in less than a decade. The bald, barren hillock now supports luxuriant growth of scrub vegetation. The main school campus has large trees of various species including fruiting trees such as Banyan, peepul as well flowering trees such as coral and the flame of the forest. The percolation tank and other minor ponds store water during the monsoon and

retain it through the dry months, providing wetland habitats. There are also agricultural lands in the campus beside the stark, barren open country just outside the campus that add to the diversity in the habitats.

The restoration of greenery and creation of waterbodies and other habitats together with the protection afforded resulted in the return and recolonisation of a variety of creatures, of which the birds are the most conspicuous. The floristic diversity of the campus is quite rich; enumeration records have shown over 350 species of higher plants. Over a hundred and twenty of these species are known to have important medicinal uses; many others have economic value. No less than 50 varieties of butterflies have been enumerated in the campus. A survey of the insect diversity of the campus is in progress where both teachers and students take an active part. Our students have also undertaken a survey of reptilian population. Well over 25 species of snakes have been identified within the campus including the Cobra, Russell's Viper, Saw-scaled viper, Indian Rock Python. Several lizard species such as the Monitor Lizard and the Rock Agama and occasional tortoises have also been listed from the campus. Frogs are also common in the campus especially in the monsoon time though not much work has yet been done on them. Mammalian species of the campus includes civet, Jungle and the rare leopard cats, ruddy mongoose, macaques, porcupines, lorises, fruit bats and several small rodents.

Although the documentation of birds in the campus began in the mid-1970's, the species recorded in the days before the habitat regeneration (in 1980's) has been some 80-odd species. Many of these were common with the birds of the surrounding areas, namely open dry areas. However with the changes in habitat features and availability of additional habitat types, the species richness in the campus now has peaked to an all-time high of 195 species, which is approximately 40% of the bird species recorded in the state of Andhra Pradesh. This includes several long-distance migrants from the Himalayas and beyond.

Some of the typical forest birds are now seen in the campus. This includes the Besra Sparrow-hawk, Emerald Dove, the Bluebearded Bee-eater, Brown Wood Owl, Chestnut-headed Bee-eater, Black-headed Oriole, Haircrested Drongo, Goldmantled Chloropsis, Bluethroated Flycatcher, Verditer Flycatcher, Brownbreasted Flycatcher, Tickell's Leaf Warbler, Blue-headed Rock Thrush, Grey Tit, Indian Tree Pipit, Forest Wagtail and Thickbilled Flowerpecker. A few of the above-mentioned species are long-distance winter visitors and others are resident or are birds with local movements. The birds of the more open scrub include typical species found in the region and includes the rare and endemic Yellow throated Bulbul, a bird restricted in its distribution to southern India. This bird is little known in terms of its distribution, behaviour and ecology and is regarded as an endangered bird by the BirdLife International and other international conservation organizations. Among other interesting or uncommon birds recorded in the campus are the Shaheen Falcon, Common Rosefinch (seen in large numbers exceeding 2000 individuals), Small Cuckoo, Emerald Cuckoo (a rare visitor to Southern India) and Syke's Crested Lark (another endemic bird of southern India). A number of water birds have also been seen in the percolation tank and the paddy fields since the creation of these habitats. This includes the Little Grebe (which breeds in the percolation tank), several Whitebreasted Waterhens, Grey and Night Herons, Spotbilled Duck, waders of several species, Painted Snipe, Cormorants and three species of kingfishers.

With the increasing population of birds in the campus as a direct result of conservation action, it was decided to declare the campus a Bird Preserve in 1991 to create more awareness among the students, residents and visitors. We shared our experiences in habitat regeneration and recolonisation of bird species in the book 'Birds of Rishi Valley and the renewal of their habitats' written by S. Rangaswami and S. Sridhar, published in 1994 and other publications including articles and booklets. Subsequently, a Department of Bird Studies was established to conduct a correspondence course in ornithology and we now have upgraded it to the Institute of Bird Studies and Natural History. We have been able to reach out to

over 500 students across the entire length and breadth of the country, covering all states through our correspondence course that gives a thorough introduction to ecology and conservation with birds as the focus.

Green cover on the campus is now abundant; and nearly all the trees in sight have descended from saplings that were planted by hand. The hillside scrubland now provides local villagers with grass and dried wood throughout the year. This gives several hundred families a natural storehouse to help meet their fodder and fuel needs even in dry seasons when monsoon fails. It also has brought back to the campus a wide diversity of life forms, which is mutually interdependent on the plants.

A sustainable ecosystem such as the Rishi Valley Campus could be the answer to the ecological as well as economic problems faced by us in other parts of the Eastern Ghats. All it requires is care and judicious management of resources. It is possible that even small, modest initiatives from institutions such as ours could make a difference in the conservation of our natural environment. Such efforts could supplement major governmental projects and help in achieving self-reliance and regeneration of resources vital for life. Another advantage of such efforts by educational institutions is that the message of conservation of our natural heritage and the means by which it could be achieved is conveyed effectively and in practical terms to the future generations.