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Bee-flower interactions and biodiversity

Bees visit flowers for sustenance. They use pollen as a protein source and nectar as an energy source. Adult females collect pollen primarily to feed their larvae. The pollen, they inevitably lose in going from flower to flower is important to plants for pollination. Different bees have different pollinating abilities depending on the floral density and characteristics such as size, shape, colour, scent, and access to floral rewards, quality of pollen and nectar, etc. Bees require food throughout the year. Perennial, annual and ephemeral plants play a vital role in sustaining bees. These plants flower at different times and thus provide food to bees throughout the year. Among different plants, perennials, especially trees are very important to sustain bee diversity. In return, plants receive the benefit of pollination, be it self or cross. Different bees occur in our areas. They include honey bees, stingless bees, digger bees, carpenter bees, leaf-cutting bees and green bees, etc. Each category of bees has a unique role in the sexual reproduction of plants, in the absence of which there would be no fruit setting. Therefore, the bee diversity is directly related to plant diversity and the relationships that exist between bees and plants are mostly mutualistic for the benefit of both partners. It is essential to provide nesting, resting, mating habitats and food sources for bees in order to provide free ecological services to plants which in turn benefit mankind and finally to sustain diversity of life on this planet.

Biography

A J Solomon Raju has expertise in plant reproductive biology and its role in sustaining biodiversity, seed predation, mangrove ecology, biodiesel plants and Cycas ecology. He contributed valuable information on endemic, endangered, threatened, vulnerable and data-deficient plant species in the Eastern Ghats Forests in India. Further, he has done excellent work on ecological aspects of honey bees, stingless bees, carpenter bees, digger bees, leaf-cutter bees, wasps, flies, beetles, butterflies, hawk moths and forest birds. Further, he did valuable work on the importance of herbaceous flora in eco-restoration, soil fertility, and soil and moist conservation. He has also evaluated the impacts of climate change on C3 and C4 herbaceous plants for their potential to sequester and clean up the atmosphere from high levels of carbon dioxide.

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