

damage nature and are capable of removing pollutants even from sewage. It is possible to use this species to restore bio-solid and sewage sludge-contaminated sites. The study warns usage of leafy vegetables grown in polluted beds for human consumption<sup>2</sup>. Since the leafy vegetables suck up pollution, people eating them may ingest the metals which can be harmful. In India, expansion of this weed in the marshy habitats of different parts, including the Andaman Islands,

poses threat to indigenous flora<sup>3</sup>. The Government should immediately ban consumption of alligator weed and plan for its control in natural, aquatic habitats.

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## Rich biodiversity of Northeast India needs conservation

Northeast India, a mega-biodiversity centre and a hotspot<sup>1</sup>, comprises eight states, viz. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. It occupies 7.7% of India's total geographical area supporting 50% of the flora (ca. 8000 species)<sup>2</sup>, of which 31.58% (ca. 2526 species) is endemic<sup>3</sup>. It is a transitional zone between the Indian, Indo-Burman–Malaysian and Indo-Chinese regions. It is also a part of the Vavilovian centre of biodiversity and origin of many important cultivated plant species and some domesticated animals<sup>4</sup>. The region supports a rich biodiversity spanning from tropical rainforests to alpine scrubs. Takhtajan<sup>5</sup> describes the region as the 'cradle of flowering plants' because of its diversified angiosperms. This rich biodiversity has a significant role in the maintenance of the ecosystem. Besides, the biodiversity of the region is used ethnologically by locals for various socio-economic and developmental purposes. The region is rich in orchids, ferns, oaks (*Quercus* spp.), bamboos, rhododendrons (*Rhododendron* spp.), magnolias (*Magnolia* spp.), etc.

With the shrinkage of green cover everywhere, the region is also experiencing an impact on its ecological system. The major threats to the rich biodiversity of the region are expansion of agricultural activities, over-exploitation of forests for firewood, shifting cultivation, extensive timbering, grazing, urbanization, man-made forest fires, introduction of exotic

plants, ill-managed road construction, mining, etc. which lead to habitat loss and habitat fragmentation that ultimately results in biodiversity loss. Natural calamities such as landslides, floods and forest fires also result in biodiversity loss to some extent. The region is known for its age old institutional mechanisms on cultural and social values for biodiversity conservation, namely sacred groves or forests in Meghalaya, Manipur and Nagaland; sacred landscapes in Sikkim and sacred hilltops in Arunachal Pradesh. Conserved as the abode of local dieties, these ecosystems represent remnants of ancient forests. But these practices are rapidly vanishing due to modern education and conversion of religion, which have led to the giving up of traditional and ethnic beliefs.

India has strengthened its hold on biodiversity conservation by implementing the Indian Forest Act, 1927; the Wildlife (Protection) Act, 1972; the Forest (Conservation) Act, 1980; the Environment (Protection) Act, 1986; the Biodiversity Act, 2002; the Biodiversity Rule, 2004, etc. India became a party to Convention on International Trade in Endangered Species (CITES) since 1976. India is also a signatory of the Convention on Biological Diversity (CBD) since 1992. A network of protected areas – biosphere reserves, sanctuaries, national parks, arboreta, botanical gardens, etc. have been established throughout the country, of which this region had its share. The re-

gion has four biosphere reserves, 48 sanctuaries, 14 national parks, and two world heritage sites. But lack of awareness at the grassroots level hampers the process of biodiversity conservation. Awareness programmes such as seminars and workshops should be held in schools, and colleges and even for the local folks. Public displays in the form of billboards and handing out pamphlets with about the importance of biodiversity and the need of its conservation are needed. It is time for concerned authorities to take up the necessary actions to conserve this rich biodiversity, before it is too late.

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