

policy-makers have initiated. They are actually creating confusion in the minds of the students. At least the bioinformatics national certification examination conducted by DBT is a model as of now, having provision for any graduate, even those having no formal training in bioinformatics, to take part in the examination. This is the need of the hour. The most capable student should be allowed

to work in an area of his interest, even if his basic degree is not in that area. Creating barriers in highly competitive examinations will be a hurdle for our development in science and give rise to wrong signals in the academic field. A national policy for unification of all science branches should be evolved, so that we can build a broad-minded scientific community for the future.

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Ecotourism in wetlands causes loss of biodiversity

India has a unique geographical diversity with great avenues for ecotourism. Besides giving people the chance to see the flora and fauna in their natural environment, ecotourism is a source of income to the local people as well. The various State tourism ministries are trying to find new areas that attract tourists, both native and foreign. However, ecotourism may not prove to be good for all areas, especially the wetlands that support a diversity of wildlife. Wetlands and water birds are inseparable elements and it is obvious that the presence of bird diversity in a wetland indicates the quality of the area. Water birds extensively use the sand flats, mudflats, and swamps for feeding, resting and breeding, and these marshy areas might be adversely affected by ecotourism. Several studies have proved the ill-effects caused to the wetland ecosystems, especially to water birds due to recreational activities. For instance, a study in the intertidal region of The Netherlands showed that the number of breeding pairs of wading birds has steadily decreased due to the ever-increasing recreational use¹.

Tourist activity such as sun-bathing, collection of molluscan species, and scuba diving can disturb the ecosystem in a variety of ways, including repeated trampling on the soil substratum^{2,3}. Leisure mud walks on wetland habitats, which is becoming popular nowadays⁴, might cause stress to the benthic animals in these areas. Human trampling might modify the abundance and population dynamics of the clams and cockles. It has been reported that there is a negative

impact on adults of both groups because human trampling directly kills or buries the animals, and might provoke asphyxia⁴. Human footsteps can also destroy other burrowing benthic worms and the deep burrowing animals. Moreover, these kinds of actions might also alter the strength of the biological interactions and have a negative consequence on other benthic organisms of the wetlands. Further, exchange of nutrients and oxygen between the sediments might also get modified due to compaction of soil⁵⁻⁷. As a result, water birds that depend on the benthic forms for their survival, will also get severely affected.

Sometimes, tourists are also taken for a motor-boat ride to see the wetland and mangrove areas, which causes disturbance to the water birds. This will interrupt the birds' activity patterns or make them to move away or even force them to leave these habitats permanently^{8,9}.

Human disturbance also reduces the time that is available for feeding and may force the birds to select alternate feeding areas¹⁰. In general, birds are unable to compensate the lost feeding time, which indeed affects their energy reserves as well¹¹. According to Burton *et al.*⁸, the high level of disturbance affects the numbers of bird species using a site on subsequent days. So careful considerations are required before establishment of ecotourism programmes in and around the wetlands of India in order to conserve these habitats of migratory birds as well as to protect biodiversity of other forms such as benthos.

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