

## Importance of Biodiversity Why should we care?



**Rajendra Shende**  
Chairman, TERRE

Many have questioned me: if the evolution is the fundamental characteristic of the nature-where weak species vanish and strong survive, where stronger feeds on weaker, where faster grabs and nourishes over the slower, where one with sturdy muscles and sharper teeth feasts on softer muscles-why at all we care for conservation of biodiversity? It is for the reason that human beings are intervening in this very process of interdependent 'natural evolution' in the ecosystems-called as 'background rate of extinction' of species. The life thrives on the natural evolution of the biodiversity, which links with each other and forms the sustainable life-chain. When the rate of extinction of the species of flora and fauna is greater than the natural process, the life on the earth gates threatened. Such imbalance in natural process is taking place due to human influence and it is in our hands to prevent it. In the history of the Earth, five known mega-extinctions have taken place when the majority of the species

vanished. All the five extinctions were due to natural calamities like eruption of volcanoes or large asteroids hitting the earth. It is said that now sixth extinction is on the way, this time due to massive human intervention that is causing degradation of the ecosystems. Biodiversity has been defined as the variation and variety of life at a given site or ecosystem. The link of the species with diverse characters and their ability to adapt to the natural changes is so strong that the term biodiversity is regarded as synonymous with ecosystem health. More the diversity of the ecosystems, the scientists have observed "increased stability, increased productivity, and resistance to invasion and other disturbances."

### Biodiversity Hotspots

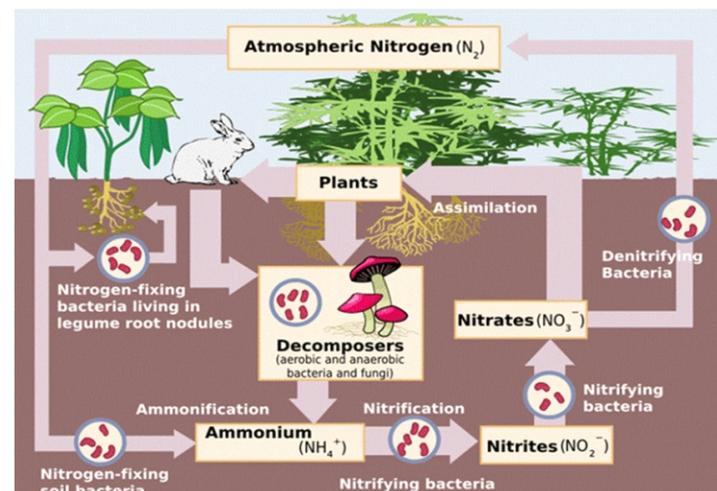
A specific location that has enormous species diversity but is also under threat from human activities is known as a biodiversity hot spot. According to Norman Myers, the man who coined the term "hotspot," two key criteria must be met for an area to be considered a biodiversity hotspot: "it must contain at least 0.5% or 1,500 species of plants known to only exist in that

### Chairman's Desk

region called endemic species, and it has to have lost at least 70% of its primary vegetation." At least 25 areas around the world meet these unfortunate qualifications, and they "support nearly 60% of the world's plant, bird, mammal, reptile, and amphibian species, with a very high share of endemic species." This gives us a sense of how many unique species are under threat from human impacts around the world. Western Ghats of India is one of those Hotspots in the world. There are two major reasons for turning the natural sites to 'biodiversity hotspots'. First is the human activity (or the greed to grab and degrade the ecosystems!) and other is climate change.

TERRE Policy center is working with community in Kaas Plateau –one of the World Natural Heritage sites of the Western Ghats- for the conservation of the biodiversity through development of the communities in sustainable way.

See: <http://www.terrepolicycentre.org/pdf/Report-Card-June-2013.pdf>







# Indian tigers face extinction due to lost genetic diversity

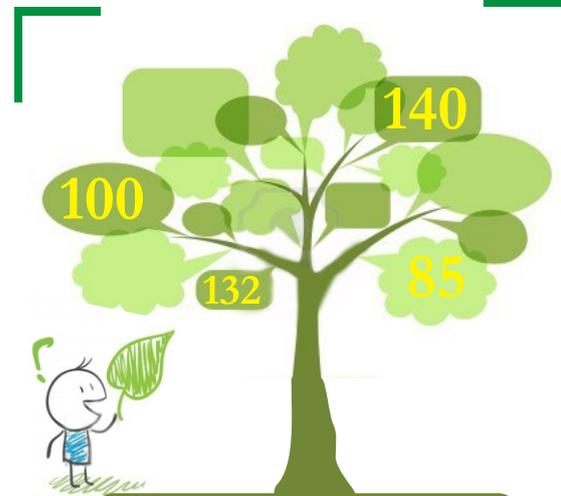
- Kalyan Ray, DHNS



Over the last two centuries, Indian tigers have become more vulnerable for extinction due to isolation of big cat population triggered by loss of habitat, population biologists in Bangalore have claimed. Notwithstanding a rise in their absolute numbers in the last seven years, physical isolation of big cats in Terai population in the jungles of the east and semi-arid zones of the west such as Ranthambhore and Sariska, have made them vulnerable because the animals lost their genetic diversity. They are now two genetically isolated groups, which do not have enough resilience and can easily come under threats from nature. Though wildlife scientists are aware of such threats, the new study provided a scientific pedestal to plan out conservation strategies. Increasing linkage, they say, between forest landscapes is the only to secure the future of the striped cats. In the past there were two broad naturally occurring groups of tigers that had genetically distinct characteristics. One group was categorised as peninsular India group while the other was called Terai-Semi Arid region group as there

were genetic connections between the animals from these two areas. Now, there is a separation. "The disconnect is a conservation red-flag. It means increasing the number of tigers in Ranthambore will not help. Such disconnect signatures were shown by other large animals in the past before extinction," Uma Ramakrishnan, a biologist at National Centre for Biological Sciences who studied the genetic variability of Indian tigers told Deccan Herald. The warning has come at a time when India's tiger count is on an upswing. The 2010 tiger count is 1,706 an increase of 295 tigers from the 2006 tiger estimate of 1,411. According to an assessment made by scientists at Wildlife Institute of India, Ranthambore, Corbett, Dudhwa, Bandipur and Madhumalai are filled up to the brim but there is scope for tiger population to increase in Srisailem, Simlipal, Palamou and Satkosia. Even though the subcontinent hosts 50-60 per cent of global tiger population, the zone lost vast stretches of forest areas for development works, resulting in not only elimination of

tigers from Afghanistan but also segregation of gene pools. "Loss of habitat leads to reduced gene flow and population isolation. Globally 93 per cent of tiger ranges are lost. Because of habitat destruction by humans and hunting, tigers now persist in small and isolated populations (20-120 individuals) in India," Ramakrishnan said. The findings have been published in the May 16 issue of the Proceedings of the Royal Society B. The NCBS researchers along with their collaborators at the University of Cardiff studied genetic material from tiger species kept in the Natural History Museum in London and National Museum of Scotland in Edinburgh. The historical samples were subsequently compared with modern tigers. They found modern tigers are genetically more disconnected than historical population.



## Quick Question

Number of plants and animals species critically endangered in India is:

If you know the answer, send in your entry to us at : [terrepolicycentre@gmail.com](mailto:terrepolicycentre@gmail.com)

### TERRE Policy Centre

7, Hemdatta Apartments, 38 Mrutyunjay Colony Kothrud, Pune - 411029 | Pandit Aijaokar Scheme, Khandobacha Mal, Bhugaon, Pune - 411042

For feedback, suggestions and contributions contact us at

[Terrepolicycentre@gmail.com](mailto:Terrepolicycentre@gmail.com)

[www.terrepolicycentre.org](http://www.terrepolicycentre.org)

Editorial Team: Mrunmayi Apte, Dhaval Joshi, Kusha Pant

Vinitaa Apte  
(President, TERRE)