



Tropical forests increasingly impacted by infra development in India: Research study

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BENGALURU: Scientists from Foundation for Ecological Research, Advocacy and Learning (India), Centre for Wildlife Studies (India), University of Goettingen (Germany) and Columbia University (USA) have suggested an environment- friendly approach towards future infrastructure development in India. Tropical forests are one of the most diverse ecosystems in the world, and they are also among the most threatened ecosystems undergoing rapid land use change and fragmentation, according to them.

"Infrastructure, especially linear structures such as roads, railway lines, power-transmission lines, canals, and pipelines create linear gaps which split a contiguous forested area into smaller patches.

Forest fragmentation leads to habitat and biodiversity loss as well as disruption of critical ecosystem processes, they said.

In a research study, Rajat Nayak, Dr Krithi K Karanth, Dr Trishna Dutta, Dr Ruth Defries, Dr K Ullas Karanth and Srinivas Vaidyanathan highlighted how infrastructure development projects in India have fragmented forests, and adversely affected wildlife in these areas.

This is the first research study to quantify effects of linear-infrastructure development on forest structural- connectivity in India, according to a Centre for Wildlife Studies statement.

"In a biodiversity-rich country like India, there is an urgent need to integrate conservation concerns into development projects. Fragmentation due to linear infrastructure developments can be minimised in future if these structures are re-routed to avoid fragmentation of such large forest patches or effective mitigation measures can be built," said Rajat Nayak who led the study in the Western Ghats and Central India.

India is one of the fastest-growing economies in the world. Its infrastructure-network is undergoing great expansion and up-gradation. In the process, tropical forests of India are increasingly impacted by infrastructure development. Fragmentation of habitat isolates animals, reduces their mobility, and adversely impacts the entire ecosystem. It can also reduce gene flow between patches, the study said.

The presence of infrastructure creates a ripple effect in the forest.

The authors said they found that 70 per cent of the protected areas in India that were investigated in the study had linear infrastructure passing through them.

Among other linear infrastructures in the forest, power transmission lines and roads were found to be the most common.

The study pointed towards a 71.5 per cent reduction in the number of large forest patches, the statement said.

Comparing two ecologically valuable regions -- Central India and Western Ghats, they found that Central India has more number of large patches than the Western Ghats.

However, patches in Central India are more isolated than patches in the Western Ghats.

This study provides crucial information to decide 'where' and 'how' future infrastructure development activities should be undertaken, with the optimal balancing of development and biodiversity-conservation, the statement said.

The scientists believe that the approach presented here could assist other developing countries, witnessing a rapid infrastructure expansion comparable to that in India, to smartly align development with conservation objectives.

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