Forests

Study offers clues on ecological gain of weeding out Lantana

Researchers look into effect of removing invasive bush in Madhya Pradesh's critical tiger conservation site

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📷 Lantanas arrived in India as a decorative shrub in the British colonial period but quickly took over several ecosystems as an invasive plant. Photo: iStock

Weeding out the invasive tropical American shrub, *Lantana camara*, appears to alter the composition of bird species in a forest, according to a new study conducted in Central India.

However, the research was carried out over only three years. Long-term assessments of how birds and insects respond to the removal of this invasive species are needed, the study published in journal *Restoration Ecology*, stressed.

Lantanas arrived in India as a decorative shrub in the British colonial period but quickly took over several ecosystems as an invasive plant. The shrub can spread on the forest ground, climb over trees an a creeper and entangle with other native plants with ease.

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The researchers focused on tropical dry forests, which don't often get enough attention. "Peatlands or humid forests get more emphasis for their ability to sequester carbon," Pooja Choksi, who has just completed her PhD at Columbia University and the lead author of the study, told *Down To Earth*.

Though dry forests sequester less carbon, people heavily depend on them, she added. Forest restoration by removing lantana was done for the convenience of people, Choksi highlighted. Local communities carried out the removal, the state forest department and a non-governmental organisation.

The team used sound recorders to assess how lantana removal in Madhya Pradesh's Bichhiya, a critical tiger conservation site, impacted animals that vocalise in frequencies between the range of 2-8 Kilohertz. Bioacoustics, which is the study of animal vocalisations, helps researchers monitor species.

They focused their research on three forest sites: Restored, unrestored, and those with little or no lantana. The team found no significant difference in species richness or the cumulative number of species across the sites.

But differences emerged when they looked at the composition of bird communities or differences in species present at a site.

"What is interesting is that restoration for people's livelihoods and convenience does not hurt biodiversity," Choksi highlighted.

They also found differences in acoustic space use (ASU), which quantifies the amount of time soundscapes (animal sounds) are active in 24 hours. A higher ASU can indicate more diversity or abundance of vocalising species.

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This change could be temporary, the expert speculated. When lantana is removed, it causes a shift in habitat. Some species will likely leave while others move in, she added.

"When such sudden changes happen, animal communities could be reorganising their community," she said, adding that long-term studies could provide more concrete answers.

Choksi and her team are currently analysing the data to get a better understanding of the effects a change in soundscapes and the vocalising species composition could mean.

"We have seen a change in composition, but does that mean we are seeing more pollinators or more insectivores — we are currently assessing that," she said.

Choksi plans to investigate the links between socio-ecological changes and restoration and how people perceive *Lantana camara* and forest restoration.

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