

EcoGuardians: Here's How JungleScapes is Restoring Ecosystems and Protecting Forests from Invasive Species

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Junglescapes team with community members

Forests are one of the most important ecosystems of the planet, which cover approximately 31% of the total global land area of the Earth. These green shades offer a range of services to the planet—from carbon sequestering and soil conservation, to water cycle regulation. In addition, these ecosystems support enumerable animals that nestle in the rich diversity of forests across the world. Degradation of these natural habitats may severely threaten the existence of wildlife, thus pushing them to extinction.

Over the past few years, forests have been exposed to burgeoning anthropogenic threats as well as ecological threats like invasive alien species. This has led to the collapse or shrinkage of the myriad unique ecosystems that otherwise play an important role in ecological balance. With this rapid degradation of forest land, there is an urgent need to take necessary steps towards ecological restoration.

One such organisation that is taking substantial measures towards the ecological restoration of the forest areas and its associated biodiversity is Junglescapes. The organisation started to function in 2008 and has since been working towards the restoration of degraded forests in South India.

Junglescapes follows a community-participative model and is the first Asian organisation to win the prestigious SER Full Circle Award in 2017 at the Global Restoration conference held in Brazil. The

award is given for efforts that integrate indigenous communities and their knowledge in restoration projects.

On the occasion of International Day of Biodiversity, Mr Ramesh Venkataraman, Managing Trustee and one of the founders of this NGO, describes the need for conservation of biodiversity, restoration work, invasive species and more.

The UN has declared this decade (2021-2030) as the UN Decade on Ecosystem Restoration. What is ecosystem restoration and why is it important?

Ecosystem restoration or ecological restoration is about assisting degraded or damaged ecosystems. The restoration target is to help a degraded ecosystem recover back to the pre-disturbance state or as close to its original state as possible. Mostly, the degradation is a direct or indirect result of human activities. However, in some rare cases, the restoration of critical sites is taken up after natural disasters like major floods or fires.

What are some of the major threats that our forests face even today?



Invasive species and increasing human pressures continue to be the major threats. For instance, in the Nilgiris Biosphere, these exotic and invasive species have started to occupy large areas of land. This is threatening native vegetation of many areas of south India like Wayanad and Coorg.

Another threat is rapid industrialisation. The rate of exploitation and degradation of natural ecosystems has been much faster than the ability to recover on their own. Ecological degradation talks about impact happening predominantly due to human activities like pollution, sand mining, timber logging and other human activities.

When the rate of degradation is higher than the natural revival, there is a net deficit in terms of the natural ecosystem. This is when the ecological restoration is required.

What are the threats imposed by invasive species?

There is a fairly high degree of degradation due to invasive species in our forests. As a result, although our forests are legally protected, ecologically they are not fully protected! Several forests in India are suffering from a major problem of invasive species. Once these species start to grow, they occupy large areas, which should actually be featuring native plant species.

Invasive species impacts in two ways, first threatening biodiversity and second, reducing the ecosystem services. Invasive species like *Lantana camara* have started to occur in areas of the Bandipur forest. They host several native plants, which consists of a large variety of grasses, shrubs and a diversity of trees. However, the invasive species gradually push out the native ones and occupy the land.



Land impacted by invasive species.

This eventually impacts the native species of the region, which thrive on these native vegetation. Therefore, there is a big impact on biodiversity, when such species take over. When you lose plant diversity, you risk losing animal biodiversity gradually. *Lantana camara* is also a major reason for forest fires, when it's summer the plant dries up and leads to fires.

If you look at Shola grasslands in Nilgiris, there are invasive species like Wattle that are degrading these ecosystems. The Shola grasslands of the Western Ghats offer the important ecosystem service of rainwater harvesting. They act as sponges and help in harvesting and retaining rainwater and releasing this into the rivers throughout the year. Therefore, these ecosystems are very important for water security.

The Shola grasslands are a big restoration priority as they provide water security. Getting biodiversity back on degraded forests is another major priority. Healthy forests help in many ways from water security to prevention of disasters like flooding, and also maintains the overall health of our natural heritage.

Should ecosystem restoration be a state-led endeavour or a community-led initiative?

I would say it has to be a combination of both! When you are talking about the restoration of a lake, it's good to have the involvement of a community, because then they take ownership of the whole thing and also try to prevent further degradation.

But, looking at the scale of requirement at an all-India level, it's very huge. Therefore, that kind of scale can only be handled by the State with high resources on the ground. So the primary stakeholder should be the state and the ancillary stakeholder should be the community.

Please tell us about your organisation, Junglescape. How are you working towards the restoration of forest and biodiversity in India?



Restoration work being carried out by the Junglescapes team.

We are a grassroots wildlife conservation NGO focused on the ecological restoration of degraded forest habitats since 2008. Since this year, we have been working on restoration in and around the forests of the Bandipur tiger reserve in Karnataka.

As I mentioned earlier, the degradation of the buffer areas due to human pressure has been increasing over the years. It occurs mostly through activities like livestock grazing and fuelwood collection, which in return leaves forest areas severely denuded.

Therefore, when we started working there was very low plant diversity. With less plant diversity, when there is heavy rainfall, a lot of top soil gets eroded, so there is a cascading effect of degradation in these buffer areas.

We have been working with a bottom-up approach focused on aspects like soil and hydrology of the region in order to improve the abiotic health of the forest. And as a result, nature has responded beautifully, there are a lot of plants back due to higher moisture and improved soil health.

The second area of focus is areas impacted by *Lantana camara*, which we remove and restore from the areas. We include the community members and they play an active role in restoration. The major advantage of this is that the communities bring in their traditional ecological knowledge

gained from long years of living inside the forest. They have excellent knowledge of all the plants, animals as well as terrain.

Through all these endeavours, we have restored about 1,200 hectares till now, of which 50% has recovered to a very healthy level. Restoration is a long duration activity and even restoration of 100 acres of land takes many years.

Can you elaborate on some restoration projects by your organisation that you are particularly proud of?



Restored elephant corridor.

The reserve where we work is the Lakkere Reserve forest, which connects two parts—the east and west sides—of the Bandipur tiger reserve. This is an important elephant corridor, so when we started our work in 2008, this area was badly degraded and not many elephants were present there.

But now, after 12 years of work, the grasses and other plants have recovered very well. Now, there are numerous grass, tree species and shrub species that elephants browse upon. This led to the improvement of the elephant corridor within the forest areas. As a result, a lot of villagers now tell us that the restoration has reduced human-elephant conflict, the root cause of which was degraded forests. This makes us very proud!

What can common people do to conserve and protect biodiversity?

The United Nations has declared 2021 to 2030 as the decade of restoration. We are in the first year of this decade, therefore each person can contribute in their own small way to restore a bit of native biodiversity.



Restored land

It starts with taking small steps like making a garden in your home or locality and planting native plants. This will eventually attract small animals like butterflies or insects, and thus help them thrive. Or if there is a lake in your locality, which is highly degraded, just get people together and restore it. People can also reach out to local NGOs, who are doing work towards conservation and volunteer with them.

A few years back, there was a major cyclone in Chennai, thousands of trees were uprooted and we did a study and found that all these trees were mostly non-native or exotic. But, most of the native trees were unaffected. So, bringing back native plants is very important.

Source: <https://weather.com/en-IN/india/environment/news/2021-05-22-how-junglescapes-is-working-towards-ecosystem-restoration>