

KERALA

Exotic trees eating up Western Ghat's grasslands

Lost cover

A look at the loss of high-altitude grasslands in the Western Ghats

The negatives

- As much as 60% of the landscape has been modified in the last 4 decades
- Large extents of 516 sq km (38%) of native grasslands have been lost

Some positives

- Most small mountain-tops are stable, with little or no change
- Munnar and the Anamalai ranges are relatively stable

The study

- Landsat images between 1973 and 2017 used
- Covered all shola habitats across Western Ghats
- Researchers visited 840 locations across this habitat



* in sq km

Landscape	Area under exotic trees in 2003*	Area under exotic trees in 2017*	Area of Invasion between 2003 and 2017*
Palani Hills	117	178	61
Nilgiris North and South Division	115	159	44
Mukurthi National Park	6	10	4
Eravikulam National Park	4	5	1
Total	242	352	110

Green meadow: This is how an undisturbed shola-grassland ecosystem should look like.

■ SPECIAL ARRANGEMENT

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But shola forests have remained “relatively unchanged”

The new year heralds bad news for the high-altitude grasslands of the Western Ghats. Over four decades, the country lost almost one-fourth of these grasslands and exotic invasive trees are primarily to blame, find scientists. Though grassland afforestation using pine, acacia and eucalyptus ceased in 1996, the exotics still invade these ecosystems, confirms a study published on January 2 in the international journal Biological Conservation.

When satellite images revealed to a team including scientists from the Indian Institute of Science Education and Research (IISER, Tirupati) grassland loss in Tamil Nadu's Palani hills in early 2018, they decided to study how shola-grasslands (characterised by patches of stunted evergreen shola trees in the valleys and grasslands on hill slopes) across the Ghats – from the Baba Budan Hills in Karnataka to Tamil Nadu's Ashambu Hills – changed in extent between 1972 and 2017. The satellite images they accessed reveal that 60% of the shola-grassland landscape has changed; almost 40% (516 km²) of native high-elevation grasslands have disappeared.

Most of this loss occurred on the mountain tops of the Nilgiri, Palani and Anamalai hill ranges, which comprise more than half of the Ghat's shola-grassland ecosystems, primarily due to the expansion of exotic trees (pine, acacia and eucalyptus). Even though no plantations were established between 2003 and 2017, invasion by existing trees increased areas under exotic plantations by 27% in the Palanis and 17% in the Nilgiris. Broadly, shola-grassland ecosystems in Tamil Nadu showed the highest rates of invasion. The researchers also visited 840 locations across the Ghats to confirm these changes. Despite this, there's some good news: shola forests have remained “relatively unchanged” over these years. The Anamalai-Munnar areas have also remained stable during this time.

‘Little research focus’

However, all possible efforts must be made to conserve the remaining grassland tracts, said scientist Dr. Robin V. Vijayan (IISER Tirupati), one of the authors who led the study. “There is very little research focus on grasslands and mechanisms to restore them are also few, unlike forests,” he added.

“The immediate reaction would be to remove all exotics including mature plantations from grasslands but that should not be done,” said Godwin Vasanth Bosco, who has restored some grassland patches in Udthagamandalam.

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