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## Species-rich Forests Offer Stable Carbon Capture

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### Why in News

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Surveys conducted inside **Anamalai Tiger Reserve** has shown that **carbon storage was highest in species-rich evergreen forest.**

- The study was conducted in the natural evergreen and deciduous forests and in teak and eucalyptus plantations.
- The results showed that the species-rich evergreen forests stored carbon at approximately 300 tons per hectare. The **storage in teak and eucalyptus plantations was 43% and 55% less, respectively.**
- The researchers also found that the rates of carbon capture remained nearly the same year after year in natural forests as compared with plantations.

### Significance

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- **Transforming reforestation policies:**
  - According to government data, currently, **five species or less** are used for compensatory afforestation plantations which are way lower than natural forests.
  - Protecting and regenerating natural forests comprising a diverse mix of native tree species is more reliable in the long term than raising monoculture or species-poor plantations as a strategy for mitigating climate change.
  - **Inadequacy of variety of species** is not good for biodiversity and for the stability of carbon capture.
- **Benefitting biodiversity:** Species-rich forests are beneficial for biodiversity as they also provide habitat to diverse flora and fauna. Previous studies have shown that species-rich forests are also resistant to diseases.
- **Securing resources:** Species-rich forests have better resistance to forest fire because different trees have varying degrees of fire resistance depending on the thickness of the bark.

## **Anamalai Tiger Reserve**

- It is **one of the four Tiger Reserves in Tamil Nadu**. Mudumalai, Kalakad-Mundanthurai Tiger Reserves and Sathyamangalam Wildlife Sanctuary are the other three.
- It falls **within the Western Ghats range of South West India**, a region designated as **one of the 25 Global Biodiversity Hotspots**.
- **Animals and birds found:** Elephant, gaur, tiger, panther, sloth bear, wild boar, wild dog, Nilgiri langur, lion-tailed macaque, sambar, four horned antelope, chital, the trogar, pied hornbill and several eagles.
- The Tiger Reserve **supports diverse habitat types** like Wet evergreen forests, semi evergreen forests, moist deciduous, dry deciduous, dry thorn and shola forests. Other unique habitats like montane grasslands, savannah and marshy grasslands are also present.

**Source: TH**