

Do you know climate change can be controlled by protecting old trees: Study

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Washington: According to a study, ancient trees, which are hundreds or thousands of years old, play an important role in biodiversity and ecosystem preservation by providing stability, strength, and protection to vulnerable environments. A team of ecologists highlighted the importance of preserving these monumental organisms in a review article published on October 19 in Trends in Ecology & Evolution and presented a project initiative to ensure their protection and longevity.

"Ancient trees are unique habitats for the conservation of threatened species because they can resist and buffer climate warming," write the authors, including Gianluca Piovesan and Charles H. Cannon. Some of these trees, such as bristlecone pines in the White Mountains, USA, can live up to 5,000 years and act as massive carbon sinks.

Ancient trees are hotspots for mycorrhizal connectivity—the symbiotic relationship with underground fungi that supplies plants with many of the nutrients they need to survive. This symbiosis with fungi also helps reduce drought in dry environments. Ancient trees play a disproportionately large role in conservation planning and yet are being lost globally at an alarming rate.

The researchers propose a two-pronged approach to protect ancient trees: first, the conservation of these trees through the propagation and preservation of their germplasm and meristematic tissue of these ancient trees; and second, a planned integration of complete protection and forest rewilding.

"Mapping and monitoring old-growth forests and ancient trees can directly assess the effectiveness and sustainability of protected areas and their ecological integrity," they write. "To carry out this ambitious project, a global monitoring platform, based on advanced technologies, is required, along with public contributions through community science projects." Currently, protecting ancient trees in forests, woodlands, historic gardens, and urban and agricultural areas remains limited by national policy levels. "The current review of the Convention of Biological Diversity and Sustainable Development Goal 15 'Life on Land' of Agenda 2030 should include old-growth and ancient tree mapping and monitoring as key indicators of the effectiveness of protected areas in maintaining and restoring forest integrity for a sustainable future," write the authors.

"We call for international efforts to preserve these hubs of diversity and resilience." A global coalition utilising advanced technologies and community scientists to discover, protect, and propagate ancient trees is needed before they disappear. "

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