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Could AI unlock finance for nature restoration?

While AI is often criticized for its negative environmental impacts, a new model could help unlock more finance for restoring degraded landscapes.

(Credit: Serrah Galos/WRI)

Restoring degraded land is a global challenge, and the biggest barrier is finance. The planet loses 18 soccer fields of primary tropical rainforest every minute, even as governments have pledged to restore 1 billion hectares of land by 2030.

To meet restoration commitments, funding for nature must *quadruple* to $269 billion annually by 2030. Without far more public and private investment, restoration will not scale fast enough.

AI could help close that gap by showing where trees are regrowing and directing finance toward projects most likely to deliver results.

Why doesn't restoration attract enough finance?

Restoration struggles to attract investment for three main reasons.

First, although healthy ecosystems generate enormous economic value and restoration can deliver strong returns, those benefits take time while markets favor short-term payoffs.

Second, monitoring, reporting and verification systems are often too costly and hard to scale, making it difficult to identify which projects truly perform well.

That uncertainty weakens trust and limits funding, especially when survival rates vary widely across projects.

Third, local organizations and farmers are often the most effective restoration leaders, yet they are the least likely to qualify for finance.

Carbon and biodiversity markets may help, but many certification systems remain too complex and expensive for smallholder-dominated landscapes.

In Ghana, Hen Mpoano is building community nurseries to restore mangroves (left). With DINOv3, we can see the coastal ecosystem come back to life (right)
(Credit: Sena Affadu & Justine Spore/WRI)

A new approach for restoration finance, powered by AI
Partnerships like TerraFund have already helped find, screen and fund locally led restoration projects across Africa, and similar work is underway in Brazil and India.

But philanthropy alone will not scale restoration finance. To unlock more capital, local projects need credible, low-cost verification – which is where DINOv3, an open-source AI foundation model developed by Meta with WRI's support, could help.

The DINOv3 tree count model detected 7,064 agroforestry trees planted in January, 2022, in Ashanti, Ghana, by Eco-Care Ghana. The blue boundary is the planting site, and each yellow dot represents one tree. Credit: WRI

What is DINOv3?
Developed by Meta AI with support from Land & Carbon Lab, DINOv3 is an AI vision model that can analyze images from satellites, drones and other sources to detect patterns linked to restoration progress.

Because it is a reusable foundation model, it can be adapted quickly across different datasets instead of being rebuilt for each monitoring task.

For restoration finance, that means faster, more consistent monitoring of tree growth and canopy change across projects, with less reliance on field-heavy verification.

WRI is using DINOv3-based tools to count trees and update canopy-height data, helping verify reported results without sending as many people into the field.

Calibrated with field data from TerraFund projects, the model can measure tree growth as soon as eight months after planting. **Preliminary results are 80% as accurate as traditional field methods at 3% of the cost.**

This kind of low-cost verification can improve transparency, reveal which projects perform best and help track impact over time.

It also creates a basis for new financing models: if tree survival can be verified, local organizations can be rewarded for results and buyers can pay for proven impact.

That could bring together philanthropic, public and private capital at much greater scale.

How would new restoration finance models work?

This new restoration model requires three key actors to work together:

- **Local organizations and enterprises who lead high-quality restoration projects**. These are community groups like Rwanda's Forest of Hope Association, which works with farmers to regrow a nearby forest, or businesses like Fanteakwa Cooperative Cocoa Farmers and Marketing Union, which helps Ghanaian farmers revitalize their underproductive fields by incorporating native shade trees.
- **An investor or grantor willing to cover upfront costs and take on early risk.** This role can be filled by return-seeking investors like banks, development finance institutions or funds; by grantors like philanthropies or governments; or streams of finance that blend both. Realize Impact, for example, is a non-profit investor that facilitates loans and grants for local enterprises, with the explicit goal of minimizing transaction costs.
- **An outcome buyer who may not be able to pay upfront but can bear the entire cost of restoration over time by paying for surviving trees for every year they can be verified.** These could include global commodity suppliers like a cocoa company, an international grocer that sources fruits, local water or energy companies, or any business with a direct economic incentive to invest in healthy landscapes.

The Global Tree Canopy Height data, which is based on DINOv3, could transform Earth observation. In some regions of the world, it estimates tree canopy height 50% to 80% better than the model's previous version. Credit: WRI.

Three financing structures could leverage AI data and bring these three actors together to finance verified trees:

1) Financing productive, tree-filled farms
Agroforestry often is not bankable for farmers because costs come early and returns come slowly.

One model is for a grantor to fund tree planting on cocoa farms, with cocoa companies repaying over time as AI verifies tree survival.

That lowers upfront risk for companies, allows donors to recycle capital and helps farmers bridge the years before agroforestry becomes more profitable.

2) Financing trees for climate and nature
Some businesses depend directly on healthy ecosystems, yet restoration projects remain hard to finance because many benefits are difficult to price.

AI-based tree and canopy data could support proxy measures for biodiversity, carbon or water outcomes and let outcome buyers pay for verified trees that remain standing in priority areas.

A bank could channel investor capital to community restoration, then be repaid by a company or public agency once AI verifies results.

That structure could help fund restoration that benefits climate, biodiversity and local economies without requiring buyers to cover all costs upfront.

3) Financing restorative agricultural value chains
Restorative agricultural businesses can be promising investments, but many face weak demand, tight margins and financing that is too expensive or too short-term.

For example, a buyer could agree to pay a premium for mango pulp if a company meets annual targets for verified trees, allowing an investor to offer financing the business can afford.

Creative structures like this can reduce effective borrowing costs and make local enterprises more attractive to commercial capital.

Money can grow on trees

We know that counting trees is an incomplete stand-in for the vast amount of ecosystem services and economic benefits that holistic land restoration projects provide. But it's what we can measure at scale, at low cost and with high accuracy thanks to advances in AI. Let's start there.

WRI's tree count and canopy height models applied to the Eco-Care Ghana site, can help unlock finance for restoration. Credit: WRI

We need philanthropies to finance local organizations and test this approach, as well as private and public investors who can create a market for verifiable solutions. We need policymakers to understand how to equitably share the benefits of verified trees, once sold. We need data ethicists and local communities to develop guardrails for protecting sensitive data.

We also need data scientists around the world to build on this model and verify the more important outcomes associated with the humble tree. For example, mapping the size and distribution of newly planted trees can tell us how much carbon they store, or the impact they're making on soil health or water security. This could radically simplify the data required to measure the important work communities are doing to repair the world's ecosystems – and then pay them for it.

Restoration goals remain unfulfilled. The climate crisis continues. Now is the time to explore how AI can reset the conversation and bring prosperity to people, nature and climate.

This article is a summary of the article 'Could AI Unlock Finance for Nature Restoration' published by the World Resources Institute at www.wri.org/insights. The summary was produced by Microsoft Copilot

Opinion Piece

Beyond the binary: Celebrating the success of exotic tree species in tropical smallholder forestry

Stephen Midgley, Neil Byron and Chris Harwood

In Thailand, 1.5 million farmers grow eucalypts in small plantings, selling pulpwood on contract to pulp mills employing 4-year rotations (Credit: C. Harwood)

The exotic foundation of modern life

To understand the future of global forestry, we must first look at our plates and our wardrobes. Almost everything contemporary societies eat and wear – from the wheat in our bread and the maize in our tortillas to the cotton and viscose in our shirts – is derived from exotic species. In agriculture, we do not demonize potato or cassava for being "non-native"; we celebrate their ability to feed billions. Trees are no different, but in the tropics the narrative has been increasingly clouded by a vocal cohort who prioritise

indigenous species over exotics, often framing the choice as a binary competition between 'good' and 'evil'. However, for the millions of smallholders across Asia, Africa and Latin America, this is not a philosophical debate – their choice of species to plant is a rational, evidence-based decision aimed at optimizing their scarce resources of land, labour, and time.

The "Wood Gap" to 2050: Where will the wood come from?
The global demand for wood is not just growing; it is poised to explode. Recent projections indicate that global wood consumption is expected to rise from **4.1 billion m³ in 2024** to **7.2 billion m³ by 2050 (Nasi, 2025)**. Darabant *et al.* **(2025)** estimate that demand for primary processed wood products in the Asia-Pacific region alone is projected to increase by 60% over the next 25 years. To meet this basic industrial roundwood demand would require the sustained timber yield from at least **33 million hectares** of additional, highly productive plantation forests.

Where will this wood come from? It will not come from untested, unproven mixed plantings of native species. It will come from the timber species with which we have the most management experience such as the eucalypts, tropical acacias, and rubber that already underpin regional economies.

Trees as smallholder's "hidden assets" and profitable partnerships with industry
Smallholders are the uncelebrated titans of global forestry. As highlighted in **"Hidden Assets" (Midgley *et al.* 2017)** and **"Profitable Partnerships" (Arnold *et al.* 2022)**, smallholder tree-farmers represent multi-billion-dollar regional businesses that are largely under-recognized in official statistics.

Modern wood processing industries can operate at small scale: Sawing small diameter acacia logs in Vietnam (Credit: C. Harwood)

- **Vietnam's Acacia Economy:** Vietnam's 2.3-million-hectare resource of plantation acacia – 70% of which is owned by smallholders – is the foundation for over half of the country's US$17 billion wood products export industry.
- **Thailand's Smallholder Engines – Eucalypt and Rubber:** Over 95% of Thailand's 800,000 ha eucalypt estate is privately owned, with approximately one million smallholders choosing to plant eucalypts to generate steady household livelihoods. Thailand's rubber estate of over 3.5 million hectares, 90% of which is grown by smallholders, provides, in addition to latex, rubberwood which has become Thailand's primary domestic source of timber for the nation's furniture and wood product industry, valued at over US$2 billion annually.

Addressing the "demonization" of exotics
Despite their popularity and demonstrated utility, eucalypts have become perhaps the most divisive exotic species in modern history, drawing the most criticism. However, reflecting the benefits and contributions to livelihoods accruing from their cultivation, the global eucalypt estate has continued to grow and now exceeds 30 million hectares, comparable to that of major food crops such as sunflower and cassava.

Exotic trees remain a rational choice for farmers: millions of landowners seek the best financial benefit for their families. They choose exotics not out of ignorance, but because these species, most of which have well-developed technical packages including improved germplasm such as hybrid varieties, well-known planting domains and standardised silvicultural methods, offer rapid growth on short rotations and supply timber to well-established wood markets.

Assessing second rotation acacia plantation in Vietnam (Credit: C. Harwood)

The pushback against exotic species and "monocultures" often ignores a critical historical context. Candidate indigenous species have been assessed for their plantation potential for over a century. While they offer vital biodiversity and ecosystem services in natural forests, most have proven unattractive for smallholder growers due to their slow growth or complex silvi-cultural requirements. Mixed-species plantings are impractical for most smallholder growers, because species' differing times to maturity require greater labour inputs and result in harvesting damage and reduced wood yields.

The "straw poll" conducted in a recent institutional webinar, which suggested a 90% preference for native species, reflects a partisan academic audience rather than the lived experience of tree farmers. Such survey results could be used to misdirect research investment and donor support away from the very species that are currently alleviating poverty.

The livelihood reality: making best use of scarce resource
Ashton *et al.* (2024) note that people who plant trees successfully today do so for **livelihoods and income**, not for

biodiversity or climate mitigation. For smallholders, tree planting must generate an acceptable return on investment to be viable. Exotic monocultures such as acacia and eucalypt offer management simplicity and quick economic returns in situations where commercial wood markets and the other keys to smallholder forestry are in place (Byron 2001).

Conclusion: A call for dual research paths

There is no single "right" or "wrong" in species choice; species should be chosen to deliver desired outcomes. If the aim is **biodiversity conservation or protection of critical watersheds**, permanently restoring multi-species forests of native species is likely to be the answer. Research requirements for forest restoration, ways of engaging local communities and supporting their livelihoods and metrics for success are vastly different from those for commercial plantation forestry. If the desired outcome is **smallholder livelihood improvement and meeting rapidly growing global wood demand**, then monocultures grown on short rotations, mostly of exotic species, have proved to be the primary engine of success. In the context of plantation wood production, as observed by Harwood (2026) "*there are no sustainable species; rather there are sustainable practices*". Growers need research support not just in species choice but in management practices that ensure wood yields can be sustained over successive rotations, with due environmental care (Nambiar 2019, Huong *et al.* 2020).

We call on donor agencies and national governments to:

1. **Celebrate the Role of Exotics:** Acknowledge that the geographic origin of a species is irrelevant to its ability to improve a family's life.
2. **Clarify the Research Focus:** Differentiate short-rotation wood production on household lands from forest restoration on communal and public landscapes, establishing distinct research agendas for each. While production research should prioritize household income using the most economically viable species, restoration research must address biodiversity and equitable returns for diverse stakeholders – including landless and marginalized groups. Both agendas must align with the specific land-use categories and institutional realities that dictate whether species selection is driven by market utility or ecological restoration.
3. **Support Both Paths:** The world needs research on both indigenous and exotic species to safeguard the biological legacy of our planet and provide economic prosperity for people.

The millions of smallholders who have dedicated their land and labour to acacias, eucalypts rubber and other exotic trees deserve to be supported, not judged.

References and additional reading

Arnold, R. J., Midgley, S. J., Stevens, P. R., Phimmavong, S., Kien, N. D., and Chen, S. X. (2022). Profitable partnerships: smallholders, industry, eucalypts and acacias in Asia. *Australian Forestry* **85**: 38–53. http://dx.doi.org/10.1080/00049158.2022.2051261

Ashton, M. S., Martin, M. P., and Vincent, J. R. (2024) People today who plant trees successfully do it for livelihoods and income not for biodiversity or climate mitigation. *Front. For. Glob. Change* 7. http://dx.doi.org/10.3389/ffgc.2024.1372409

Byron R. N. (2001). Keys to small-holder forestry. *Forests, Trees and Livelihoods* **11**: 279–294. http://dx.doi.org/10.1080/14728028.2001.9752396

Darabant, A., Pajel, P., Zoveda, F., Baral, H., and Wertz-Kanounnikoff, S. (2025). Agroforestry for wood production – Insights from multifunctional smallholder tree-farming systems in Asia and the Pacific. Bangkok, FAO and Nairobi, CIFOR-ICRAF.

Harwood, C. E. (2026). Commercial timber tree growing: the smallholder experience. Presentation to CIFOR-ICRAF Webinar. (2026, February). *Choosing indigenous or exotic species: Strategies for resilient landscapes* [Webinar https://www.forestsnews.org/155632/native-vs-introduced-tree-species

Huong, V. D., Nambiar, E. K. S., Hai, N. X., Ha, K. M., and Dang, N. V. (2020). Sustainable management of *Acacia auriculiformis* plantations for wood production over four successive rotations in South Vietnam. *Forests* **11**: 550. https://doi.org/10.3390/f11050550

Midgley, S. J., Stevens, P. R., and Arnold R. J. (2017). Hidden Assets: Asia's Smallholder Wood Resources, and their Contribution to Supply Chains of Commercial Wood. *Australian Forestry* **80**(1): 10–25. http://dx.doi.org/10.1080/00049158.2017.1280750

Nambiar, E. K. S. (2019). Re-imagining forestry and wood business: Pathways to rural development, poverty alleviation and climate change mitigation in the tropics. *Forest Ecology and Management* **448**: 160–173. https://doi.org/10.1016/j.foreco.2019.06.014

Nasi, R. (2025). Wood and the bioeconomy transition. Presentation to FAO workshop on Advancing Sustainable Wood Value Chains for Improved Livelihoods and Climate Resilience, Sustainable Wood for a Sustainable World (SW4SW) Chiang Mai, FAO. 26 March 2025 CIFOR-ICRAF Communications

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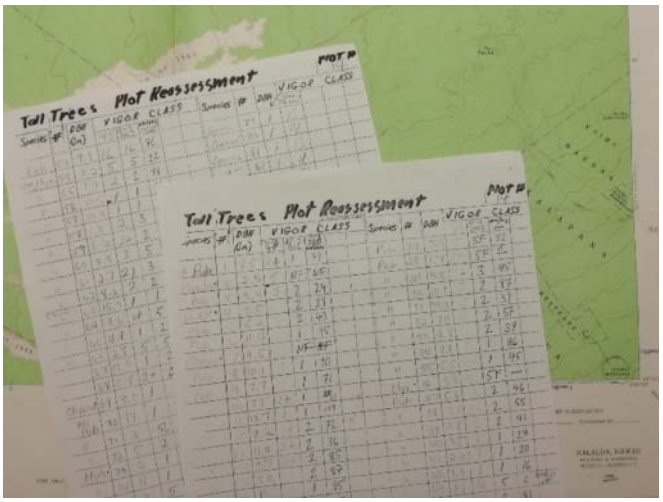
Task Force T57: Legacy Forest Data and Related Resources

About the Task Force

This Task Force has been created for the rescue of hidden, legacy (20th century and before) forest data and related resources, from boreal, temperate, subtropical, and tropical regions. Legacy data and resources are relevant to many efforts under IUFRO. We will focus on older numeric data like inventories, sample plots, etc. (Other "data" like old photographs are also important.) These archived biodiversity and forestry 'dark data' can provide critical insights into historical biodiversity and land management that are useful in ecosystem restoration, species adaptability, and numerous other uses (Astudillo-Clavijo 2024). But vast legacy data (and related non-peer-reviewed forestry reports and other grey literature) are still unavailable digitally, and much is highly endangered, being still on paper or in older digital formats and vulnerable to deterioration, disposal, or deletion (Griffith 2017,



Rose 2022). For example, we know of data lost to hurricanes, inadequate storage, and changes in personnel in charge of servers.

This Task Force is necessary, because researchers by themselves have limited capacity to deal with the quantity and diversity of legacy data. Under this Task Force, we will promote the curation and digitization of historical biodiversity and forestry archives in various forms, languages, and styles, with the assistance of Artificial Intelligence (AI). The most valuable legacy forest data are from the colonial period, and from older state-level inventory and academic studies. These data come from permanent sample plots, inventories, presence/absence studies, plantation and provenance trials, and other types of studies. We will promote the development of tools based on machine learning and AI to retrieve textual and numerical data from these datasets and resources. We will also help develop policy on intellectual property rights and return these data in useful form to the countries where the data were gathered.

This Task Force will build on previous efforts to catalog and rescue legacy forest data and related resources (ATROFI-UK, TROPIS, Digispecies, Environmental Data Initiative, Organization for Tropical Studies, Forest History Society, various library and other archives; Appendix 1). Key projects are Digispecies, which developed and uses AI tools for biodiversity data extraction and queries of documents, and the Environmental Data Initiative, with guidelines for developing metadata (methods of original data gathering). Persons from five IUFRO divisions, and several outside organizations, representing various interests in research and application, will form the Task Force. The Task Force will form a Consortium open to all people interested in legacy forest data and will serve as its steering committee. There is much work to be done to rescue legacy data; we need to mobilize as many people as possible.

Goals and Objectives

The objectives of the Task Force are to 1) expand the effort of IUFRO 4.02.01 to include data and resources for boreal, temperate, subtropical, and tropical regions and include languages other than English; and 2) with the help of AI, develop the pipeline from the discovery of legacy forest data resources to delivery to the user community. An IUFRO Task Force will heighten the profile of these important resources and help to draw funding for their rescue. The Task Force will not duplicate efforts already underway in IUFRO units, rather it will make data and resources available to complement many current IUFRO projects. Because many archives have already been established, the Task Force will not establish a new central repository for legacy data and resources. The Task Force will focus on developing policy guidelines for curation and sharing these resources.

Forest Scenes

Carbon credits are flawed, but they can still help save forests

Carbon credits bought by companies to offset their emissions really have reduced deforestation, but not by as much as credit developers claim, according to a rigorous analysis

In 1986, an energy CEO heard a briefing about climate change and felt guilty that his company was building a coal-fired power plant in Connecticut. The company eventually paid to plant trees for timber in Guatemala so farmers would stop cutting down intact forest, in theory compensating for the coal plant's carbon emissions.

The idea would develop into markets that allow companies to offset their emissions by buying "voluntary" carbon credits

A logging yard in the Amazon rainforest (Credit: Tarcisio Schnaider/Getty Images)

that help avoid deforestation, among other measures. Advocates say land users should be paid to leave a forest standing. Critics say maybe the land users weren't going to cut down the forest anyway.

So who's right? Both, according to a growing body of research. Last month, one of the most rigorous studies yet found that most early projects did successfully reduce deforestation. But they sold credits for almost 11 times more forest on average than they actually saved.

Historically, forests have absorbed about half of humanity's fossil fuel emissions, and tropical forests are particularly important, holding back global warming by about 1°C. But they are mainly in lower-income countries that are rapidly clearing trees to expand agriculture like cattle ranching and palm oil plantations.

"Forests are seriously under threat, and they do need financial mechanisms that can pay for them," says Tom Swinfield at the University of Cambridge, who led the study. "Carbon finance is one of the best of a bad set of options for protecting forests."

Although tropical forest loss slowed in 2025, more than 40,000 square kilometres of trees were still cut or burned. A gap of $216 billion per year of additional financing must be filled to achieve a global goal of halting deforestation by 2030.

Before the COP30 climate summit last November, Brazil launched the Tropical Forests Forever Facility, an investment fund that will pay its returns to countries for each hectare of forest they leave standing. But only $6.6 billion has been donated towards its $125 billion goal.

Carbon credits have been failing to live up to their promise as an answer to the shortfall in government funding. A 2023 investigation by *The Guardian*, *Die Zeit* and SourceMaterial found that 90 per cent of rainforest credits issued by the largest credit certifier were largely worthless. As a result of that and other research, the market value of voluntary credits collapsed by 60 per cent that year and, for the most part, never recovered.

In response, Swinfield and his colleagues analysed 44 projects started after United Nations guidelines for reducing emissions from deforestation and forest degradation (REDD+) were developed in the 2010s. Thirty-six of them resulted in at least slightly less deforestation than would have been expected if the project didn't exist, and only one resulted in significantly more deforestation.

At the same time, only about 1/11th of the credits were justified. But that average was inflated by the eight projects that didn't reduce deforestation, which also issued the largest number of credits. Excluding the nine top credit sellers, about one-quarter of credits were legitimate.

The over-crediting was largely caused by two main errors, which may have been unintentional, says Swinfield. To estimate how much forest in a project area would have been cut down if it hadn't been protected, credit developers looked at how much had already been chopped down in a similar, unprotected "reference area". They then modelled how much more deforestation might occur in the future on top of this.

But developers selected reference areas that were more exposed to deforestation because they were closer to a road or on gentler terrain. And they tended to pick the worst-case scenario for future deforestation, rather than a more likely middle-of-the-road one.

The study cited a project in the Amazon rainforest in Peru designed to create an alternative income source to slash-and-burn agriculture for 18 local communities. The French company that developed it selected a patch of rainforest around the project area as the reference area. But this reference area was on average lower, less steep, less heavily forested and about half as far from the nearest road, meaning it was likely to suffer greater deforestation than the project area in any case.

"Many of these projects may have been good, but the methods used to work out how much credit should have been generated were often bad," says Swinfield.

If developers, credit certifiers and ratings agencies hold projects to the more accurate methodology outlined in the research, it would cut down on over-crediting. But it would also increase the price of carbon credits, since there would be fewer credits, and development costs would be higher. So companies should also pay more for carbon credits if they want to claim to have net-zero emissions, says Swinfield's collaborator Julia Jones at Bangor University, UK.

"The era of companies being able to offset their carbon emissions by buying really cheap emissions [credits] that claim to slow deforestation in poor countries, I think that is over," she says. "You can't deliver equitable and effective forest conservation for a low price."

An avoided deforestation credit, which is supposed to represent 1 tonne of avoided CO2 emissions, can still be purchased for as little as a few dollars. From high-quality projects, it can cost tens of dollars.

Meanwhile, a different type of credit for actively removing carbon from the atmosphere, either through tree planting or novel techniques like direct air capture machines, costs hundreds of dollars at least.

"There needs to be a market for high-quality carbon credits that genuinely do what they say on the tin in terms of avoided deforestation," says Jones.

While avoided deforestation credits do prevent some emissions, as the study shows, they are incompatible with the Paris Agreement goal of reaching net-zero emissions, says Danny Cullenward at the University of Pennsylvania. That's because companies are buying them to offset rather than actually reduce their emissions.

If they truly wanted to help forests and the climate, they would buy high-quality credits and not "retire" them against their emissions budget, says Cullenward. Or they would simply donate funds to forest conservation. Either way, it is important to quantify deforestation risk more accurately.

"We need to protect tropical forests, and if we know how to measure impact, we can pay for and quantify those benefits without making an offsetting claim," he says. "We can do so with or without carbon credits."

Alec Luhn
newscientist.com

Lack of regular mild fire and increasing eucalypt and forest decline: new information from Australia

Introduction

Across Australia and many regions of the world, the lack of regular low-intensity fire receives inadequate recognition as an important driver of Eucalypt and forest decline. The author considers that exclusion of frequent low intensity mild fire as a primary cause of eucalypt decline in Australian native forests and woodlands has been inadequately recognised in a number of studies, research, papers, articles, reviews, management plans, legislation, policies and reports on land and fire management.

Altered soil physical and chemical conditions, root function, mycorrhizal communities

This lack of regular mild fire has resulted in fundamentally increased litter depth, altered soil physical and chemical conditions, root function, mycorrhizal communities, understorey structure, and ultimately affects crown health and consequent Eucalypt and forest decline in many forests. The result is a soil–root–crown decline pathway that precedes visible symptoms.

The author considers that there has often been a focus on symptoms and secondary contributors in relation to forest decline, and fire history and inadequate regular mild fire have in many cases not been assessed when observing, assessing, researching and managing forest decline.

In addition, much forest decline research and management does not consider soil and root factors and whole tree physiology. Important soil factors include soil type, chemistry and physical aspects. Important root factors include extent, distribution and mycorrhizae.

Research evidence of eucalypt decline and the importance of regular mild fire from well-designed decline studies

A number of high-quality studies provide strong evidence that long periods without mild fire fundamentally alter forest soils and tree physiology. There has been some great work on eucalypt decline by Australian researchers, including by Jurskis, Turner, Landsberg, Ellis and a number of other researchers.

These references are outlined in the detailed review linked to this article, refer to the link.

https://www.linkedin.com/feed/update/urn:li:activity:7454665013572829184/?lipi=urn%3Ali%3Apage%3Ad_flagship3_profile_view_base%3B6L3VXgIoSXOtFDA2PSuF5g%3D%3D

Further evidence is available in O'Donnell (2026 a), refer to the reference list in the attached document.

Research information in relation to Eucalypt decline

Other documents that have been completed in relation to Eucalypt decline and lack of regular mild fire include:

- O'Donnell (2026 b) A world review of mild fire and forest decline Forest Tech 2 February 2026 https://innovatek.co.nz/a-world-review-of-mild-fire-and-forest-decline/
- O'Donnell J (2023) Lack of low intensity mild fire – a major cause of eucalypt decline? Forest Tech News 30 July 2023 and full paper. ForestTECH Issue 71 – Latest news and resources https://innovatek.co.nz/lack-of-low-intensity-mild-fire-a-major-cause-of-eucalypt-decline/

These documents assist landholders, land managers and researchers in observing, assessing, researching and managing the eucalypt decline issue and having information at hand, it is accepted that there could be other aspects to forest decline across different vegetation associations.

Historical, indigenous and overseas knowledge and observations

Historical observers recognised the link between fire and forest health. In 1890, Howitt described Eucalypt decline following reductions in burning. Traditional Aboriginal fire practitioners, including Victor Steffensen, have long described "upside-down country, thin on top and thick underneath" and "sick trees with lazy roots on damp soils." These descriptions align closely with the soil and root dysfunction now documented in a number of scientific studies, some outlined in this review.

Observational evidence of Eucalypt decline and regular mild fire across Australia

Field observations across NSW, Victoria, Queensland, and Tasmania reinforce the scientific evidence. Fenceline contrasts are among the most striking examples.

Fence line contrast: grazed/burnt on left, 'protected' on right) thanks to Vic Jurskis, highlighting land management differences Jurskis (2008) highlights in NE NSW, Australia.

Grazed or mown areas often remain healthy, while adjacent ungrazed and unburnt areas decline rapidly. Thanks to Vic Jurskis.

Further observation evidence of Eucalypt decline is available in O'Donnell J (2026 c).

Synthesis of observation and research, it's in the roots

Eucalypt decline is fundamentally a rootd-riven syndrome caused by soil changes arising from long-term fire exclusion.

The sequence applies across Eucalypt ecosystems, but does vary:

1. Fire exclusion → mulch accumulation → cooler, wetter soils
2. Nitrogen accumulation → acidification → toxic ion release
3. Mycorrhizal decline → feeder root loss → impaired uptake
4. Tree physiological stress → soft foliage → pest outbreaks
5. Canopy thinning → chronic decline → mortality and in many cases dense understories

Why do research and management often miss/overlook the root cause/causes of Eucalypt decline in relation to lack of regular mild fire

Despite strong evidence, many studies and management programs continue to overlook the importance of regular mild fire in relation to eucalypt decline. Several factors contribute to this. Researchers often confuse chronic decline with episodic dieback, leading to misdiagnosis. Many studies lack adequate assessment of soil chemistry, soil physics, mycorrhizal communities, root function, and understorey structure. Fire history is frequently ignored, and control sites with regular burning are rarely included. Pot trials and short-term experiments cannot replicate the long-term soil–root–mycorrhizal dynamics that drive decline.

Detailed reasons why do research and management often miss/overlook the root cause/causes of Eucalypt decline in relation to lack of regular mild fire are outlined in O'Donnell (2026 d).

Soil physical, chemical and mycorrhizal variables to assess

A lot of useful information for managers and researchers to utilise in relation to forest decline studies is outlined in O'Donnell J (2026 a) and O'Donnell J (2026 d).

Conclusions

The evidence assembled in a number of Eucalypt decline reviews and studies included here demonstrates that chronic Eucalypt decline is fundamentally a soil–root–crown problem driven by long periods without regular low intensity fire. The lack of regular mild fire has resulted in fundamentally altered soil physical and chemical conditions, root function, mycorrhizal communities, understorey structure, and ultimately crown health.

Decline studies often aren't based on observation and focus on symptoms, miss key contributing factors and causes and don't assess soils and roots that well or at all. This document aims to assist researchers and land managers through highlighting well designed Eucalypt decline studies; highlighting observation and research evidence to guide new research and land management into Eucalypt decline and finally by assisting researchers and land managers to avoid overlooking the root cause/causes of Eucalypt decline.

Restoring resilience in Australian forests requires a return to regular, mild, frequent fire, applied at a landscape scale.

John O'Donnell

Canada: Clayoquot Sound's only tree farm licence subdivided into three lots to assert First Nations' land visions

Ancient Forest Alliance photographer TJ Watt looks up at an ancient Western red cedar tree located in Ahousaht territory and the new TFL 67 (Photo courtesy of TJ Watt/Ancient Forest Alliance)

The logging tenure for a landscape made famous by the "War in the Woods" protests on the west coast of Vancouver Island has been divided up into three new Tree Farm Licenses (TFL) to assert First Nations' unique land-use visions.

TFL 54 in Clayoquot Sound was transferred from MaMook Natural Resources, which is owned by a partnership of five central region First Nations (Ahousaht, Tla-o-qui-aht, Hesquiaht, Toquaht and Yuułuʔiłʔatḥ), and reconfigured into TFL 66, TFL 67 and TFL 68.

According to the Ministry of Forests, Tla-o-qui-aht is now the holder of TFL 66 comprising over 13,000 hectares within their territory, TFL 67 is held by Ahousaht and comprises over 29,000 hectares in Ahousaht territory and Hesquiaht is now the holder of TFL 68 with an area size of over 9,165 hectares in their territory.

MaMook will continue to exist for the next few years with the legal obligation to clean up old logging infrastructure, including deactivating old logging roads, dryland sorts and log booming areas, but the company will dissolve once that work wraps, according to Toquaht appointed board member Ken Matthews.

The company will also have to ensure all areas previously logged areas are reforested adequately. They anticipate this will take up to three years to complete.

"All First Nation owners of MaMook see this a positive move forward to allow the individual Nations to manage the forests and lands in their traditional territories," said Matthews.

TFL 54 was transferred from MaMook to the three Nations with compensation provided by Canadian charity Nature United after unanimous MaMook board approval.

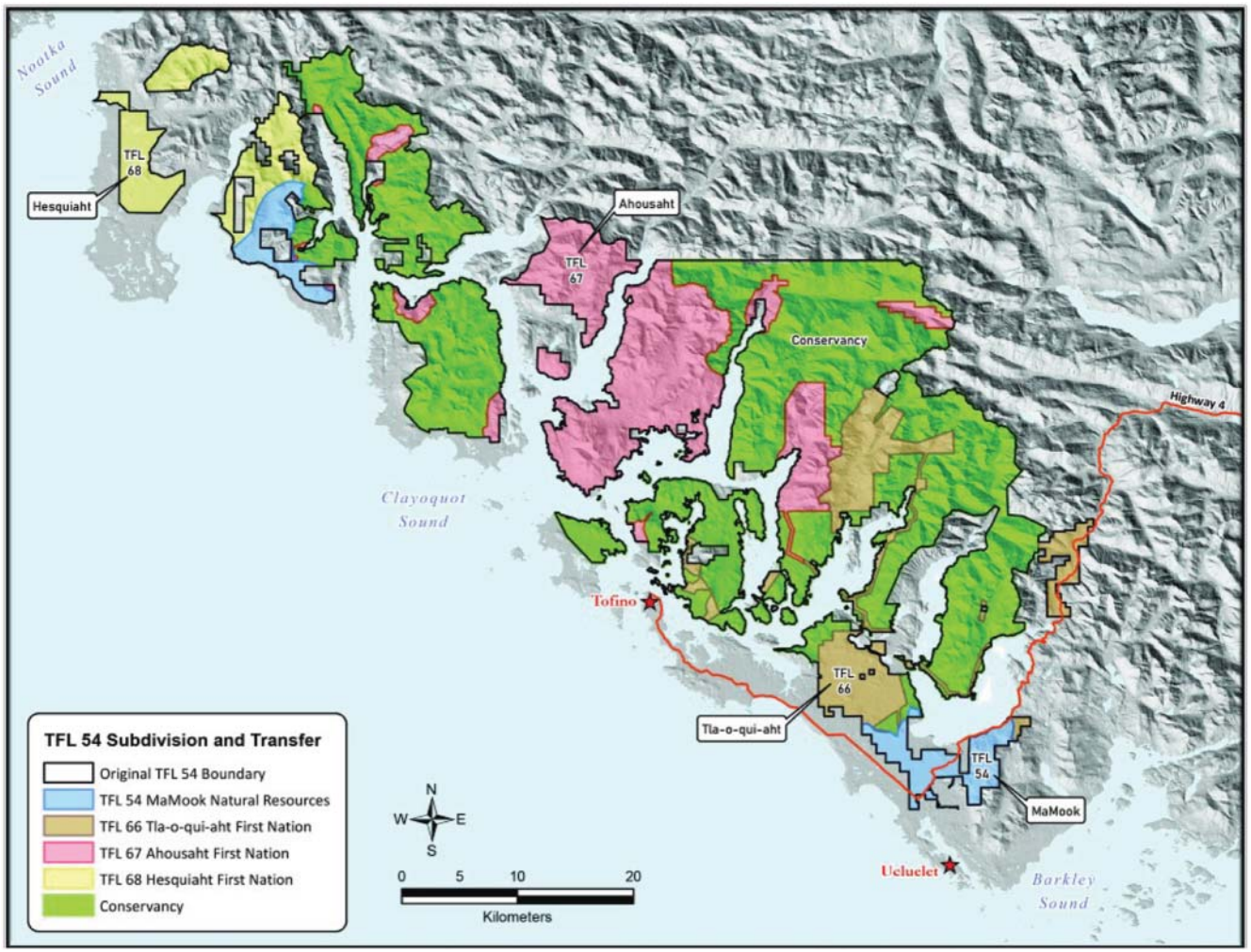
"Nature United paid MaMook fair market value for the TFLs, on behalf of the three First Nations," said Matthews.

"MaMook as a corporation has to pay for all of that deactivation legal clean we have to do and then ultimately whatever is leftover will be split amongst the five (Nations)," he continued.

This milestone for TFL 54 follows a June 2024 landmark agreement with the Province of B.C. and MaMook to remove roughly 77,000 hectares of land from the designated TFL area to be then designated as conservancies under B.C. legislation. These protected areas were primarily in Tla-o-qui-aht and Ahousaht territory.

"Nature United supported this (conservancies) agreement by contributing a one-time allotment of money to Ma-Mook for these areas from the TFL," said Matthews.

"The BC government agreed to contribute $8 million dollars under a grant to MaMook to be used to partially offset costs of deactivating roads and other logging disturbance in the new conservancies and in TFL 54. This money had to be used for only those purposes," he added.



About 52,000 hectares from Tree Farm Licence (TFL) 54 have been removed from the licence area and divided into three new TFLs: TFL 66, TFL 67, and TFL 68 (Map provided by MaMook Natural Resources)

Michael Reid is Nature United's B.C. program director. He lives in Tofino.

"Nature United has raised and contributed more than $40 million to support the creation of new conservation and new forest management areas in the region as well as supporting new stewardship endowments," said Reid.

About 20 non-profits, organizations and individuals contributed financial gifts to Nature United, or Nature United's global affiliate The Nature Conservancy, to help reshape Clayoquot Sound's forest management future, including billionaire Amazon founder Jeff Bezo's, Bezos Earth Fund and Swiss billionaire Hansjörg Wyss' the Wyss Foundation.

Lines on a map

Matthews said it took Ahousaht, Hesquiaht and Tla-o-qui-aht leaders four years to agree on the lines on the map that would make up the new TFL designations.

He said some of the decisions went "very easily", but in other discussions, drawing lines on the map was "very difficult".

Two small portions of TFL 54 still exist because of "historical disagreements". Stewardson Inlet out by Hot Springs remain unresolved because of overlap between Hesquiaht and Ahousaht territory and an area south of Kennedy Lake that overlaps between Ahousaht and Tla-o-qui-aht is still in limbo.

"It's possible that these last pieces will just go into conservancies," said Matthews.

Hesquiaht, Ahousaht and Tla-o-qui-aht leadership have all indicated a desire to create long-term, sustainable forest management plans for their territories that will ensure the prosperity of future generations.

"Throughout history governments and business have done everything in their power to limit our authority and jurisdiction over what is rightfully ours. Taking management back over a portion of our territory that we've managed for thousands of years is a step in the right direction," said Hesquiaht First Nations Chief Councillor Mariah Charleson in a media release issued by Nature United.

All three Nations have shown an interest in pursuing carbon finance or carbon offsets, according to Reid. Carbon offsetting is when companies, governments or individuals compensate for emissions by taking part in activities that reduce the equivalent amount of carbon dioxide in the atmosphere.

"There are challenges within the existing tenure regime, but I am optimistic they will be able to work through with the province," said Reid.

"(Carbon offsetting) was part of the conversation 10 years ago. It remains central to the broader conservation economy. Beyond carbon, it's how can you do more with less and how can you realize the value that these forests provide beyond just the timber values," he continued.

MaMook Natural Resources Ltd. was an amalgamation of Iisaak Forest Resources Ltd., previously TFL 57 obtained by Iisaak from MacMillan Bloedel/Weyerhaeuser in 1999 and TFL 54 obtained by MaMook Natural Resources Ltd in a sale from Interfor in 2007.

According to the Ministry of Forests, TFL 66, 67 and 68 began on Jan. 12, 2026 and expire on May 31, 2047.

Nora O'Malley
hashilthsa.com

Can a legendary tree keep Louisiana's coastal lands from slipping away?

By planting thousands of hardy bald cypress trees, Bayou State residents are revitalizing a landscape the Mississippi River built long ago.

Bald cypress trees have loomed over Louisiana's landscape for thousands of years, their feathery leaves offering shade from on high. In a state that contains 40 percent of the wetlands in the Lower 48, the cypress has always been a natural companion for residents. It thrives in soggy bottoms that would smother most trees, lives for hundreds of years under the right circumstances, and brings comfort to Louisianans "like warm bread at home," as Blaise Pezold, an ecosystem restorationist, puts it. As the state tree, the cypress is "as legendary [in Louisiana] as the chestnut tree in Appalachia," Pezold says.

Now, it's also helping to bring back the wetlands. Across southern Louisiana, the bald cypress is at the center of efforts to reverse the crisis of coastal land loss that has cost Louisiana 2,000 square miles of coastal land over the last century. Over the next 50 years, that figure could swell to 5,000 square miles without intervention.

That's where Pezold and others like him come in. A partnership of local environmental organizations is nearing the end of a four-year state- and federally-funded initiative to plant 30,000 trees in Louisiana's Central Wetlands, an area where the crisis is acutely felt. Spanning Orleans and St. Bernard parishes, the Central Wetlands were depleted by logging and the opening of the Mississippi River Gulf Outlet, a 1960s-era canal that allowed saltwater into the freshwater ecosystem. During Hurricane Katrina, in 2005, the canal carried a deadly storm surge into St. Bernard Parish and the Lower Ninth Ward. As a result, it was permanently closed in 2009. The wetlands' salinity soon fell back toward historic levels, setting the stage for restoration.

Since 2019, the Central Wetlands Reforestation Collective – a partnership that includes the Meraux Foundation, where Pezold leads the coastal and environmental program; the Coalition to Restore Coastal Louisiana (CRCL); Common Ground Relief; CSED of the Lower 9th Ward; and Pontchartrain Conservancy – has seized the opportunity to put cypress trees back where they belong and help reverse the region's rapid land loss.

For thousands of years, the Mississippi River snaked through Louisiana, carrying sediment gathered along its winding journey south that it deposited along its banks with each bend. As sand, silt and clay accumulated into soil, plants took root, giving

Staff and volunteers from the Coalition to Restore Coastal Louisiana revisit bald cypress trees planted by the organization eight to 10 years ago along Bayou Segnette in Jean Lafitte National Historical Park and Preserve (Credit: Coalition to Restore Coastal Louisiana)

structure to what was once loose debris. Slowly, the delta formed, thousands of square miles of land without any bedrock beneath it. In those swampy wetlands, forests of bald cypress and tupelo grew.

After colonization, though, the once-wild river was tamed by a strict system of levees, preventing the introduction of new sediment to supplement the old. Cypress forests were logged to frame out homes. Canals and shipping channels cut through wetlands, carving a path for saltwater to rush in and choke vegetation. Invasive nutria and wild boar chewed up much of what remained. Sea levels rose and forests faded. So did the land.

In the face of all that ecological devastation, planting a tree may seem trivial. Planting them by the thousands, however, can help restore wetlands across southern Louisiana, stabilizing soil in places where it's most vulnerable to being washed away.

"Planting a tree is like an act of defiance here as we're slowly being sucked away into the ocean," says James Karst of CRCL, which has put more than a million native plants in the ground since 2000.

To date, CRCL has planted two-thirds of the 15,000 trees that comprise its contribution to the Central Wetlands project. Many of those trees have been planted by volunteers, who are ferried into the swamps by airboat. Rather than sourcing its seedlings from regional nurseries, the organization formed its own nursery – and its seeds come directly from community members, plucked from the branches of coniferous cypress trees in New Orleans and beyond. It's a communal effort, organized around a tree whose roots run deep in this region.

CRCL staff and volunteers collect bald cypress seeds (Credit: CRCL)

"Our wetland ecosystems, which are the backbone of our economy and our culture and our livelihoods, are reliant on the bald cypress tree more than any other plant," says Andrew Ferris, who runs CRCL's native plants program.

Through its seed-gathering campaign, CRCL is bringing thousands of locals along for the ride. To grow its nursery, the organization asked residents to send in cypress seeds from their yard – or anywhere they can be found – with a label to identify their origins. The seeds – spherical pods about the size of a large grape that grow green on the tree and turn brown when they fall – are then kept in cold water for a month by Ferris and his colleagues to simulate the tree's natural process, before they

germinate and begin to grow in spring. By collecting from community members, CRCL is guaranteed genetic diversity and trees well suited to local conditions, Ferris says. And in the process, more people are gaining a personal connection to the issue of land loss and the promise of reforestation.

Members of the Tulane University Black Student Union collect bald cypress seeds in November 2025 (Credit: Sibria Adams)

Last November, Aicha Keita and nine of her classmates in Tulane University's Black Student Union were looking for a way to make a positive environmental impact, so they set out to gather cypress seeds. With bins and gloves in tow on a sun-soaked afternoon, they walked toward Tulane's Uptown football stadium and found a selection of land-locked trees marked off by a CRCL staffer for collection. The students pulled branches close to reach their seeds, the first step toward catalyzing long-term change. It felt like they were nurturing the building blocks of restoration, Keita says.

"Any way that you can restore hope through actionable steps and making change, it feels great," she says.

In the Central Wetlands, where reforestation is carrying on apace, those seeds might someday take root on the same ground as generations of cypress before them. Already, the project has exceeded Pezold's wildest dreams. "We're seeing our success in real time," he says, walking back centuries of degradation to re-establish what the river built long ago. As the collective works to complete the Central Wetlands reforestation, its partners are looking for other sites where they can continue their cooperative approach to restoration.

The trees in the Central Wetlands are still young, sheltered in white plastic tubes to protect them as they grow. But when Ferris visits sites where CRCL planted trees a decade ago, he can see glimpses of what the future holds – for these wetlands and others throughout Louisiana.

"These trees are massive," he says. "The land that they are holding in place is solid as a rock." Those moments inspire him to keep planting, so that someday he can bring his grandchildren to see a cypress-and-tupelo forest in all its glory. "'This area was a degraded marsh when I was in my twenties, and now we can sit in the shade of these trees,'" he'll tell them. "I'm eager to have that experience."

Ben Seal
reasonstobecheerful.world

I climbed the tallest tropical tree in the world

Jamiluddin Jami

I was born in Tawau, a Malaysian city on the island of Borneo, and grew up around logging camps – my dad worked in the industry. In the early 90s, a lot of the forest here started being cleared for commercial use. At the time, I just thought that was the way things were.

That changed when I began working in conservation as a teenager at the South East Asia Rainforest Research Partnership in the nearby Danum Valley. My job was to plant seedlings in places where the forest had been cut down. I began to learn about the importance of keeping the forest safe.

When I was about 19, I saw colleagues up the trees in the valley's forest. Tree-climbers help with scientific research by measuring the height of trees and setting up cameras to monitor wildlife.

I instantly thought: I want to do that. I was afraid of heights, so it wouldn't be easy, but I wanted to challenge myself. There are a lot of people doing conservation research on the ground, but not so many people doing the same high up in the canopy.

I have since spent my life climbing trees. In 2018, researchers from the University of Nottingham spotted a yellow meranti tree in a Borneo rainforest. It was estimated to be 100 metres tall, which would make it the tallest tropical tree in the world. Our team was tasked with finding out.

We were given a GPS location for the tree – finding it took three to four hours of wading through the thick forest. Once we made it, I remember looking up and thinking: damn! It wasn't until three months later, in January, that I finally went to climb it. I was nervous and kept putting it off.

I took a team of 10 on the expedition. We had about 400 metres of rope with us, and used a fishing line to shoot at the tree and anchor the ropes. Two of us would climb, while the others kept watch on the ground.

The other climber and I both had climbing harnesses and used a rope-walking system to get up there: you kind of walk up along the rope, moving from branch to branch. I had a tape measure in my harness and one of the guys on the ground was holding the other end.

Jami can just be seen, halfway up the tree (Credit: Jamiluddin Jami)

It was a slow ascent: I needed to check the tree carefully as I went, to see whether the branches were strong enough, or if there were any snakes, scorpions, wasps or other insects. One time while climbing, I happened across some bees and got attacked. A few got stuck in my helmet. I got about 100 stings on my body, and when I got down I passed out for 20 minutes. Now I never wear bright colours when I'm climbing.

This time, though, the way ahead seemed clear. My colleague and I continued the ascent. He's a good climber, but on that day he was afraid. The tree was about 50 metres taller than the surrounding trees, so we felt very isolated.

I asked all my guys on the ground to wear orange helmets so we could see them from the top. At 70 metres we glanced down and they looked like tiny ants. Soon, I couldn't even see the forest floor.

Once I reached 70 metres, I began to make out the wider landscape, and the fear went away.

Jamiluddin at the top of the tree (Credit: Jamiluddin Jami)

I climbed to about 95 metres – after that, the branches were so thin that I wasn't able to climb them any more. I held a pole to the top of the tree to measure the final height – it came in at 100.8 metres.

When I looked below me, everything was clear. I could see the many layers of the rainforest's canopy. It was like the sea; each tree like a tiny ripple. There were clouds peering over the forest. The patterns were unlike anything I had seen before. The air was still and I could see miles of luscious green. I thought: wow! I wanted to stay there overnight just to enjoy the view. The descent was quick, but I couldn't wait to come back another time and climb it again.

It took me more than two hours to climb to the top that first time. I've since done it again in about 40 minutes, while I installed cameras for research. Every minute was worth it.

I do this work because I want to show the world how important it is that we save our beautiful forests. For me, every tree tells a different story about our history. Besides, it's so calm up there; there's nothing else like it.

theguardian.com

A unique clearing in Central Africa draws elephants from the dense forests

Throughout most of Central Africa, it's difficult to spot herds of forest elephants all at once. They move through dense rainforest, remaining elusive, their lives obscured by thick vegetation and distance. For tourists and even researchers, direct encounters are largely a matter of chance.

But Dzanga Bai is different. Often called the "village of elephants," this mineral-rich clearing in Dzanga-Sangha National Park in southwestern Central African Republic draws large numbers of forest elephants (*Loxodonta cyclotis*) out of the dense forest. Here, in the Congo Basin, they gather in the open, dozens at a time, sometimes hundreds, feeding, interacting and returning again and again to a place where elephants can be seen in the open.

"The Dzanga Bai is the only known clearing where you get hundreds of forest elephants," said Ivonne Kienast, a behavioral biologist with the Elephant Listening Project at Cornell University, U.S., who has been working in Dzanga-Sangha since 2021.

"For mothers and young elephants, Dzanga Bai becomes something of a playground and a very safe place," says Ivonne Kienast, project manager and head researcher of the Dzanga Forest Elephant Project (Image by Rhett A. Butler/Mongabay)

"You have other clearings where, if you're lucky, the maximum number of elephants you can see will be 40 or 50. But here, the minimum is 40 or 50."

At peak instances, the numbers climb higher still. "Two hundred and eleven was the count last year in December," Kienast said. "And that's just at one [instance]." The forest elephants emerge from the forest edge, stepping cautiously into the open. Some wade knee-deep into pools, drawing up trunkfuls of mud. Others linger at the margins, watchful. Calves stay close to their mothers. Bulls move slowly, asserting presence without confrontation.

In addition to forest elephants, the clearing supports bongos (*Tragelaphus eurycerus*), red forest buffalo (*Syncerus caffer nanus*) and giant forest hogs (*Hylochoerus meinertzhageni*). The sitatungas (*Tragelaphus spekii*) used to show up as well but have not done so for a while, according to park officials.

For Kienast, whose research work revolves primarily around the site, the clearing is more than a spectacle. It is a window into a species that is otherwise difficult to study. "This is one of the very few places in the world where you can observe forest elephants in such numbers and with such consistency," she said. "For most of their lives, these elephants are invisible to us, hidden by the forest. But here, they come out into the open."

This also gives researchers a chance to study the pachyderms in real time, with little filter. "When I started, I thought we knew everything about forest elephants from the literature," she said. "The more time I spend here, the more I realize we don't."

Researchers identify individuals by ear patterns, tusk shapes and other features, tracking them over time to build long-term datasets. But beyond the data, the clearing reveals the species' social complexity. "They have a greeting ceremony; they say hi, get super excited, spend time together, and then go back into the forest and split up again," Kienast explained. "There is a huge social component, but the primary factor is the minerals."

The attraction is below the surface. The soil and water at Dzanga Bai contain essential minerals, salt, magnesium and zinc, which are scarce in the surrounding forest. Elephants dig, drink and return, sometimes over decades.

For mothers and calves, the *bai* (a marshy forest clearing in the Sango language) offers something else as well. "For the mothers and the small ones, it becomes a sort of playground and a very safe place," Kienast said. "The water is shallow." In a landscape where visibility is limited and risks are harder to detect, the clearing provides both nourishment and a measure of security for the elephants.

A growing attraction

For those working in and around the park, Dzanga Bai is also the reason visitors come. "They love nature here in Dzanga Bai," said Léonce Madomi, a guide who has worked in the park for more than 16 years. "They have never seen elephants gathered like this, in groups, as families." He paused, then added, "In other countries, they are more scattered. You might see 10, 15, maybe 20. But here, if it's the right time, you can see 140, even 150 elephants in one day."

That reliability is unusual in dense forest ecosystems and may be why there's been a growth in tourism, suggests Gervais Pamongui, deputy director of the Dzanga-Sangha Protected Areas (DSPA). But the relative sense of stability in this part of the Central African Republic could also be a factor, he told Mongabay.

"For tourism to develop, a country needs stability so that visitors feel safe," he said. In 2025, the park recorded about 800 tourists, according to officials, still modest by global standards, but a noticeable increase. Researchers and guides say many more pass through from neighboring Cameroon and the Republic of Congo, drawn specifically by the bai.

Yet the growth is constrained by realities beyond the clearing itself. Reaching Bayanga can take days by road from the

Researchers observing forest elephants in this clearing say the primary attraction is mineral-rich soil (Image by Rhett A. Butler/Mongabay)

Red forest buffaloes also visit Dzanga Bai (Image by Rhett A. Butler/Mongabay)

Dzanga Bai gives researchers a chance to study the pachyderms in real time, with little filter
(Image by Rhett A. Butler/Mongabay)

capital city of Bangui, depending on conditions. Infrastructure is limited.

"It's not a lot, but consider how difficult it is to get here," Kienast said. "You can't bring 50 people at once." Visitor numbers are intentionally capped, and the model remains "low impact" by design to support conservation.

Perception matters as well. "The problem is that the CAR is often classified as a 'Do Not Travel' country," said Luis Arranz, who has spent more than 47 years working in parks in the Congo Basin. "People are told they'll get killed if they come here. There is a lot of misinformation." That perception persists even as those on the ground describe a more nuanced reality.

"People used to hear about the Central African Republic – killings and insecurity," Madomi said. "But those who came didn't see those problems." Local participation and the protection of Indigenous peoples' rights in conservation efforts remain a work in progress in Central Africa, as in many parts of the world. Mongabay observed that WWF, which co-manages the park with the Central African Republic's Ministry of Forest, supports a grievance mechanism through the Bayanga Human Rights Center, where local Indigenous groups, including the Ba'aka, can raise complaints related to park management. However, it was less clear how Indigenous knowledge is being integrated into forest elephant monitoring.

Asked how traditional science informs her work, Kienast acknowledged that while it was challenging in forest elephant monitoring, it was more prevalent in forest-related research, given the deep knowledge of plant species and the landscape by local people. For her, particularly as a European-Argentinian working in the region, an important part of the effort is sharing scientific knowledge and building local capacity to support long-term, locally led conservation.

What is at stake, she said, goes beyond tourism or conservation outcomes. "It is also about knowledge – and who produces it."

"One of the main focuses of our project is to create a hub for capacity building and training Central African researchers," she added. "I've made it my mission to share what I know so that local experts can take ownership of a place that belongs to their country and culture." Around the bai, that shift is taking shape in the work of local trackers, in young researchers learning to observe and document the rhythms of the clearing, and in the gradual growth of expertise rooted in the landscape itself.

As the day fades, the light over Dzanga Bai softens. Some of the elephants begin to retreat into the dense forest, while others stay on. In a region where forest elephant populations have declined significantly, Dzanga Bai stands as a stronghold. But its future, like that of the forest around it, is not guaranteed.

"It is a privilege," Kienast said. "The more time I spend here, I realize what we don't know." For now, the elephants continue to gather, interact, feed and disperse, as they always have.

David Akana
(Additional reporting by Rhett Butler)
news.mongabay.com

A tribute to Professor Mohammadreza Marvie Mohadjer (1944–2019): architect of close-to-nature silviculture in Iran

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Professor Mohammadreza Marvie Mohadjer was not merely a forest scientist; he was a reformer of thought. In the modern history of Iranian forestry, few individuals reshaped not only the techniques of management but the deeper conscience of the discipline. For nearly four decades at the University of Tehran, he guided generations of foresters toward a different understanding of structure, sustainability, and responsibility. His influence was never theatrical, never loud. It was patient, reasoned, and enduring.

Born in Mashhad on 6 May 1944, he entered the University of Tehran at a time when forestry education in Iran was shaped largely by production logic. Forests were described in terms of cubic meters, rotation ages, and extraction efficiency. A well-managed stand was one that appeared orderly, clean, and uniform. Yield stability was treated as the ultimate measure of success. Yet even as a young student, he sensed that forests could not be reduced to volume tables. Something essential lay beyond the arithmetic of harvest.

His academic path led him to ETH Zurich, where he completed his doctoral studies in forest science. There, within the long intellectual lineage of Central European silviculture, he encountered a different orientation toward forests – one grounded in continuity, structural complexity, and respect for natural processes. Uneven-aged systems, retention of deadwood, and long temporal horizons were not seen as inefficiencies but as safeguards of resilience. He absorbed these ideas deeply, not as doctrines to replicate blindly, but as principles to be interpreted through the ecological realities of Iran's ancient temperate forests.

International institutions recognized his intellectual strength and invited him to remain. A career abroad, stable and prestigious, was entirely within reach. Yet history was unfolding differently at home. The country had endured war; institutions required rebuilding; forests were entering a period of intensified pressure. He chose to return. That choice was not sentimental nationalism – it was responsibility. He believed that knowledge, once acquired, carries obligation. He returned because he understood that the forests of the Hyrcanian region needed voices grounded in science and guided by conscience.

At the University of Tehran, he taught silviculture not as a technical manual, but as a way of seeing. Students remember that he began not with prescriptions, but with observation. He would ask them to look upward into layered canopies, to examine regeneration beneath shade, to notice the silent work of decay in sustaining renewal. A fallen log was not waste; it was continuity. A mixed-age stand was not disorder; it was stability unfolding through time. Under his guidance, forests were no longer simplified stands awaiting harvest, but living systems shaped by disturbance, succession, and interdependence.

He supervised or co-supervised more than sixty graduate theses at the M.Sc. and Ph.D. levels. His students investigated regeneration dynamics of oriental beech, structural transitions under selection systems, oak decline in the Zagros forests, silvicultural marking principles, and forest composition along ecological gradients. Many of those students now hold positions across universities, research institutes, and forest administrations. Through them, his thought became institutional memory, embedded in practice as much as in theory. Students remember that he did not begin with formulas. He began with attention. He would stand beneath a canopy and ask them to look – not quickly, but carefully. To see vertical layers, to trace regeneration beneath shade, to observe the quiet labor of fungi in a fallen trunk. He trained eyes before he trained hands. In his classroom, forests were not timber inventories. They were living architectures shaped by disturbance, succession, mortality, and renewal. He insisted that foresters think in decades, even in centuries. "We manage forests," he would say in various forms, "but forests manage time."

His scholarly contributions were extensive and multilingual. Publishing in Persian, German, and English, he moved between intellectual traditions with ease. He did not simply produce research; he translated ideas across cultures. He introduced European structural thinking into Iranian forestry while articulating the ecological distinctiveness of the Hyrcanian forests to international audiences. In doing so, he strengthened both scientific dialogue and national intellectual confidence.

When he began his academic career, dominant forest management in Iran relied heavily on even-aged systems such as clear-cutting and shelterwood methods. These approaches, suitable in some flat and homogeneous contexts, were widely applied across the steep, topographically complex Hyrcanian landscape. Clean stands and maximum yield were celebrated as efficiency. Deadwood and so-called "unhealthy" trees were removed in the name of order. Professor Marvie Mohadjer saw in this approach a misunderstanding of forest stability. He argued that mountainous temperate forests depend upon structural continuity – vertical layering, horizontal heterogeneity, mixed age classes, and the retention of deadwood as ecological capital. He advocated closer-to-nature approaches, including Femelschlag (German for "patch cutting), group selection, and single-tree selection systems, not as fashionable alternatives but as ecologically grounded necessities. Sustainability, he insisted, could not be reduced to allowable cut calculations; it required stewardship across generations.

In 1994, as post-war economic pressures intensified logging in the Hyrcanian forests – among the last temperate old-growth forests in the world – he publicly defended the selection system as a viable and scientifically grounded alternative to widespread clear-cutting. It was a moment of intellectual courage. He was criticized, at times labeled "anti-development," and his European training was invoked as suspicion rather than strength. Yet he did not retreat. He relied on evidence, on ecological reasoning, and on patience. Over time, as younger foresters trained under him entered the profession, his ideas gained legitimacy and influence.

In January 2015, he wrote a widely read article titled *"Do the Forests of Northern Iran Need Rest?"* His answer was unequivocal: yes. But "rest," he clarified, did not mean abandonment. It meant a deliberate pause in commercial harvesting, strict protection, continuous monitoring, and honest evaluation of past management performance. It was an opportunity to recalibrate forestry in alignment with ecological realities. In public discussions and in a session of the Supreme Forest Council in March 2016, he warned that continued adherence to unsustainable harvesting trajectories could lead to irreversible degradation. His concern was not rhetorical; it was rooted in decades of observation and study. Later that year, Iran enacted a nationwide moratorium on commercial timber harvesting in the Hyrcanian forests. Many forces shaped that decision, but few would deny that his long and steady advocacy prepared the intellectual ground upon which reform could stand.

His integrity extended beyond forest policy. In 2012, when a national directive threatened to restrict female students from entering graduate programs in forestry, he, together with Professor Baris Majnounian, publicly opposed the measure. They held several formal meetings with officials from the Ministry of Science, Research and Technology, advocating for its revocation. Their efforts were ultimately successful, and the order was withdrawn. It is particularly significant that today more than half of graduate students in forest science in Iran are women – a reality that reflects the long-term importance of that intervention. Professor Marvie Mohadjer argued that a discipline entrusted with safeguarding future generations of forests could not afford to exclude capable and committed minds on the basis of gender. Through principled academic engagement and collective effort, the policy was reversed. For him, the continuity of forests and the continuity of equitable education were not separate concerns; they were expressions of the same ethical responsibility toward the future.

Promoted to full professor in 2005, he formally retired in March 2015. Yet in his retirement letter he wrote that retirement did not signify withdrawal. As long as health permitted, he would remain engaged. And he did. Even in his final years, despite serious illness, he continued to follow forestry debates closely. Those near him recall that his principal concern was not personal hardship but the future of the forests he had devoted his life to understanding.

He passed away on 4 October 2019. Memorial gatherings were held; trees were planted in his honor. Yet his truest memorial stands elsewhere – in forests managed with greater structural wisdom, in professionals trained to think beyond short-term yield, and in a national discourse that increasingly recognizes that sustainability demands humility before nature.

Trees were planted. Ceremonies were held. Words were spoken in lecture halls and beneath forest canopies. Yet such gestures, however sincere, cannot measure a life devoted to the quiet defense of forests. His truest memorial does not stand in stone, nor hang upon a wall. It rises in layered canopies that remain unbroken because someone insisted that continuity matters. It stands in the snags left upright against convention, because someone argued that decay is not disorder but renewal. It endures in the judgment of foresters who now weigh resilience alongside yield, and time alongside volume.

Saadi wrote, "Do good and cast it into the river." The current carries it beyond sight, yet its return is certain. Professor Mohammadreza Marvie Mohadjer cast his work into the current of time. He did not labor for applause, nor for passing recognition. He labored for forests whose full gratitude he would never live to see. He preserved something quieter than territory and more enduring than title: the intellectual independence of Iranian forestry and the structural dignity of its ancient forests. He worked not for the season, nor for the decade, but for the century. In forests, true greatness is not proclaimed. It is what remains standing when we are gone.

Around the World

USA: What is Trump doing with the US Forest Service?

The US government recently announced plans to relocate the headquarters for the national forest service from Washington DC to the state of Utah

This has stirred up worries that it intends to greatly shrink – or even shut down – the agency that manages the nation's forests, fights wildfires and conducts biological research.

The US Department of Agriculture (USDA), which oversees the service, has said the move is part of a sweeping restructuring that will make the agency more effective and tie it closer to the millions of acres it oversees. US President Donald Trump's administration also plans to shut down regional offices and move to a state-focused model.

But as the administration bills the move as a "common-sense approach", opponents have said it threatens to limit people's access to national forests and weaken protections for public lands, potentially opening them to private businesses and extractive industries.

Here's what we know about the impending changes to the US Forest Service (USFS).

What is the US Forest Service?

Employees focus on sustainable management, conservation, and use and stewardship of natural and cultural resources.

The USFS also handles fire management and other safety initiatives. Famously, its wildfire-prevention programme is fronted by mascot Smokey the Bear.

No timeline for the move to Utah has been announced yet. The BBC has contacted the USDA.

Why is Trump moving the headquarters to Utah?

On 31 March, the Trump administration announced it would move the USFS headquarters away from the east coast to Salt Lake City, Utah, in part because public lands "are overwhelmingly concentrated in the west".

The USDA has said the move will save money and boost employee recruitment, pointing to Salt Lake City's lower cost of living, proximity to an international airport and "family-focused way of life".

"This is about building a Forest Service that is nimble, efficient, effective and closer to the forests and communities it serves," said Forest Service chief Tom Schultz.

"Effective stewardship and active management are achieved on the ground, where forests and communities are found – not just behind a desk in the capital."

The plans also include moving away from regional offices to a state-based model "to shift authority closer to the field", the USDA said.

Fifteen state directors will be distributed throughout the US to oversee operations within at least one state. Many functions of the regional offices will also move to a network of centres in New Mexico, Georgia, Colorado, Wisconsin, Montana and California – places that already have an existing USDA presence, the agency said.

Utah Governor Spencer Cox, a Republican, and Colorado Governor Jared Polis, a Democrat, both back the plan and its state-focused approach.

The Trump administration has already **made steep cuts to staff** at national parks and other places that have triggered a backlash, with critics saying they have limited access to public lands.

Why is there opposition?

The National Federation of Federal Employees (NFFE-IAM), the labour union that represents tens of thousands of USFS workers, has condemned the changes, calling them "a reckless disruption to the dedicated workforce that manages the nation's forests, fights wildfires and serves the public".

"Uprooting their careers and blowing up the structure they work within is not a reform. It is chaos, and the American public and our public lands will pay the price," said NFFE-IAM national president Randy Erwin.

The restructuring will reportedly shut down 57 of 77 research facilities and nine regional offices across 31 states, in addition to the headquarters move.

Many within and outside of the union have also expressed worries that the changes will take place during the country's wildfire season, which stretches from May through to November.

What broader impact could the move have?

While the Trump administration has said that frontline operations, including wildfire response, will continue uninterrupted, businesses and groups tied to the outdoors have expressed scepticism about the changes.

A coalition of 70 companies oppose Trump's plans, saying their business relies on well-managed, accessible public lands.

The companies – including REI Co-op, the North Face, Columbia Sportswear Company, Elkhorn Coffee Co, Flickr and others – have raised concerns about the agency's ability to properly manage the vast wildlands and continue its decades of research under the plan.

They estimate recreation on USFS land annually drives $23.3bn (£17.3bn) in economic output. Local communities, visitors, businesses and others stand to suffer if the agency does not receive the funding and resources it needs through the transition, they said.

In a separate statement, retailer Patagonia said: "By shutting down its research stations, culling its staff, and moving the headquarters to Salt Lake City, it will be surprising if USFS can effectively manage anything at all.

"The only beneficiaries of the move and other rollbacks to public land policy from this past year are billionaires and extractive industries."

bbc.co.uk

Congo's forests under strain from overlapping land use

Despite renewed global attention on ecosystem protection during Earth Day, the Congo Basin's forests – among the world's most vital carbon sinks – are facing mounting threats.

In Congo-Brazzaville, overlapping land uses, from mining to logging and artisanal gold extraction, are accelerating deforestation and biodiversity loss in some of the country's most fragile forest massifs.

Across the country, the superimposition of mining, logging and artisanal activities on the same land is putting unprecedented pressure on ecosystems.

The phenomenon is particularly visible in the Mayombe massif in Kouilou and the Chaillu massif in Lékoumou. In Mayombe, villages such as Louvoulou are surrounded by competing projects.

Mining ventures like Ntombo and Zibati overlap with the Ntombo Forest Management Unit (UFE), more than half of which – 58,292 hectares – is now affected.

In the Dimonika biosphere reserve, a UNESCO-recognised protected area, past gold-mining operations by City SARL have left deep ecological scars despite an official halt to activities in 2024.

Large forest areas have been cleared, and hills reaching 700 metres in altitude have been blasted apart in search of gold, granite, cassiterite and gravel. More than 3,000 artisanal miners are estimated to operate in the zone, contributing to the destruction of nearly 30% of the reserve.

Mining and logging overlap in the Chaillu massif

In the Chaillu region, the Mpoukou-Ogooué UFE, managed by TAMAN Industries, overlaps with the Zanaga iron-ore permit held by MPD, as well as other gold-mining concessions such as Ngonaka and Bikelélé.

The total impacted area reaches 91,784 hectares – about 24% of the zone.

The result is widespread forest loss, decapitated mountains and the release of large quantities of carbon stored in trees and soils.

Biodiversity at risk as ecosystems degrade

The environmental consequences extend far beyond vegetation. In Dimonika, chemical pollution – including mercury used in gold extraction – has devastated aquatic biodiversity.

Some species have vanished entirely, such as the brightly colored *Killi Cap Lopez* (*Aphyosemion australe*), once unique to the area.

Government pledges action, but implementation lags

Congo-Brazzaville has pledged to promote sustainable land use, notably through a 2009 decree establishing an interministerial committee to address overlapping land uses.

But the committee has barely functioned, with only one session held in March 2024. Requests for clarification from relevant ministries have gone unanswered for months.

Officials acknowledge the need for better planning. "*We must prioritise land allocations and define clear criteria,*" said Étienne Paka, adviser to the Prime Minister, during the committee's March session.

A regional challenge requiring coordinated solutions

Congo-Brazzaville is not alone. Nearly all Congo Basin countries face similar land-use conflicts.

In Gabon, the national land-allocation commission reaffirmed its commitment in February to preventing such conflicts by ensuring compatibility between economic projects.

The survival of the Congo Basin – the world's second-largest tropical forest – depends on careful planning. Congo-Brazzaville's 2024–2028 Sustainable Land Use Program aims to lay the groundwork for a national land-use plan, but success will require consistent implementation and political will.

africanews.com

Global: Arctic fires are releasing carbon stored for thousands of years

A study of soils around the Arctic and boreal forests has found that some wildfires are releasing carbon stored over millennia, meaning higher CO2 emissions than assumed

The wildfires that have been raging in many places around the Arctic in recent years could be contributing much more to global warming than currently thought. It has been assumed that what's burning is mostly recent plant growth, but a study of soil cores from around the Arctic and boreal regions has shown that these fires are igniting stored carbon that is up to 5000 years old.

"Soil combustion could unlock long-stored carbon from soils that have been considered previously as carbon sinks," said Meri Ruppel at the Finnish Meteorological Institute in Helsinki. Currently, climate models don't take the release of this ancient carbon into account.

Plants grow slowly in the cold conditions of the Arctic, but their remains can accumulate in soil in forms such as peat, building up over centuries and millennia. This means soils in the Arctic and in the boreal forests nearby have been acting as a carbon sink – that is, helping to remove carbon dioxide from the atmosphere.

But with fires becoming larger and more frequent in the Arctic region, this may be changing. To investigate, Ruppel's team collected soil cores from a number of areas where there have been recent fires.

The cores show that, in many places, the rapid burning of the surface vegetation is triggering much slower smouldering of

old organic materials in the soil, releasing lots of soot, or black carbon, as well as CO2.

Black carbon absorbs heat from the sun, so it warms the atmosphere directly. What's more, in cold regions, it can be deposited on ice or snow, darkening the surface and causing melting that wouldn't have happened otherwise.

"Not surprisingly, we found that the age of combusted carbon is different in different environments since the organic soil depth and the depth of burn vary," Ruppel told a meeting of the European Geosciences Union in Vienna last week.

The risk of ancient carbon release tends to increase towards the Arctic, she said, as Arctic soils are shallower and organic matter builds up closer to the surface. For instance, in the Northwest Territories in Canada, fires are burning several centimetres down into the soil and releasing carbon stored up to 400 years ago.

In Greenland, fires are burning 10 centimetres down into the soil, on average, releasing carbon that is up to 560 years old. In places, fires have burned 15 cm down, releasing carbon dating back 1000 years.

In the boreal forest in Quebec, Canada, the team found places where fires have released carbon from 5000 years ago. "But this was not at all widespread," said Ruppel at the meeting.

The big question is just how much ancient carbon is now being released by fires. Ruppel said this work is just the start and much more needs to be done to get an idea of the quantities involved.

"I think her work makes an important point that people need to hear about," says Sandy Harrison at the University of Reading in the UK, who was at Ruppel's talk. "It is clear that there is a lot of old carbon in high-latitude soils and peats. As we move into new fire regimes that are destroying the top-soil layers and also burning in peatlands, there will be a release of old carbon."

newscientist.com

Why are mountain forests in Mexico and Central America hotspots for oak trees? New study led by The Morton Arboretum shows most definitive answer yet

The mountains of Mexico and Central America harbor some of the greatest biodiversity of oak trees worldwide, and a landmark study conducted by The Morton Arboretum with U.S. and Mexican collaborators provides the most definitive answer to date as to why.

The team of researchers led by University of Chicago Ph.D. candidate Kieran Althaus, an affiliate of the Arboretum's Science and Conservation Department, uncovered the conditions that enabled oaks to rapidly diversify in the Americas. The findings have advanced scientific understanding of the origins of one of the world's biodiversity hotspots, forming a unique case study for evolution at a global scale.

The paper, "**Timing and origins of Mexican and Central American oak diversity**," published May 4 in the *Proceedings of the National Academy of Sciences (PNAS)* and set to be the cover article of its May 12 digital issue, revealed that oak lineages were able to very quickly adapt – in terms of tree time – when they encountered high-elevation terrain.

"The fastest expansion of oak diversity anywhere in the world has taken place in Mexico and Central America, revealing the importance of this region for these keystone species," Althaus said. "Mountain ecosystems prove key to generating oak diversity."

According to the authors, oaks' movement into rugged and complex habitats, combined with their high level of adaptability to new climates, facilitated the formation of a vast oak diversity hotspot. Using data from 322 of the world's approximately 450 oak species, the researchers carefully reconstructed oak evolutionary history.

Two major groups of oaks – red and white oaks – independently migrated into the mountains of Mexico about 25 million years ago. The study discovered that upon their arrival, the two groups of oaks diversified along a parallel path, rapidly evolving into a remarkable array of species. Now, Mexico and Central America are home to at least 160 different oaks, representing roughly 40% of global oak diversity.

Even still, more than 30% of the world's oak species are at risk of extinction. Oaks are foundational in many ecosystems, having deep cultural value for indigenous people in the region and supporting biodiversity, including fungi, insects, birds and mammals. Each oak species hosts a unique community of life, making their conservation vital to maintaining healthy ecosystems.

"The ability to predict how these plant communities may respond to environmental change is an important, valuable tool that should be considered in future forest management," said study co-author Socorro González-Elizondo, Ph.D., researcher at Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional (CIIDIR), Instituto Politecnico Nacional in Mexico.

The results of this publication represent a milestone in more than 15 years of fieldwork, botanical expeditions and data sharing between researchers in the United States and Mexico, highlighting the power of international partnerships and positive outcomes of scientific mentorship.

The study's senior author is the Arboretum's Director of the Herbarium and Lead Scientist in Plant Systematics Andrew Hipp, Ph.D. Co-authors include the Arboretum's Director of the Global Tree Conservation Program Silvia Alvarez-Clare, Ph.D. and Plant Systematics Research Program Manager Marlene Hahn as well as researchers from Harvard University, Duke University and institutions in Mexico. These international collaborators include La Universidad Nacional Autónoma de México (UNAM), Morelia; UNAM, México; Herbarium and Botanic Garden, Benemérita Universidad Autónoma de Puebla (BUAP); and CIIDIR, Instituto Politecnico Nacional.

"This work reflects years of shared effort and deep, sustained collaboration across borders," Hipp said. "It also constitutes the first chapter of Kieran's Ph.D. dissertation, underscoring the significance of such projects in granting exposure to the next generation of conservation leaders."

prnewswire.com

Kenya: Green Belt Movement rejects plan to open forests to development in proposed law changes

The proposal seeks to give KFS authority to grant easements for public roads, utilities and other installations within public forests.

The Green Belt Movement has strongly opposed proposed amendments to the Forest Conservation and Management Act, 2016, warning that the changes could open Kenya's public forests to unchecked infrastructure projects, commercial encroachment, and eventual destruction.

In a statement released amid growing environmental concerns, the movement claimed the government was attempting to create what it termed a "dangerous legal pathway" that would allow roads, utilities, and public installations to be introduced inside protected forests under the guise of development.

The proposed amendment to Section 56(2) of the Forest Conservation and Management Act seeks to give the Kenya Forest Service (KFS) authority to grant easements for public roads, utilities, and other installations within public forests.

But the Green Belt Movement said the language being used to justify the changes should not deceive Kenyans.

"Kenyans must not be deceived by the language of 'public utility' and 'public installations.' This amendment is not innocent," the organisation said in the statement.

"It is a dangerous legal pathway being created to open up our public forests to roads, infrastructure, utilities, commercial interests and eventual destruction through administrative processes disguised as development."

The movement argued that forests are not idle public land available for allocation but critical ecosystems that sustain the country's water security, biodiversity, climate resilience, and livelihoods.

"Our forests are not empty land waiting to be allocated. They are our water towers, our climate shield, our biodiversity, our heritage and the lifeline of future generations," the statement said.

The organisation pointed to recent battles over forest land as evidence of what it described as a growing pattern of gradual encroachment through administrative approvals and infrastructure projects

Among the cases cited was the controversial attempt in 2024 to excise 51.64 hectares of Karura Forest for the expansion of Kiambu Road. The proposal triggered public outrage, court action, and sustained opposition from environmental groups before the courts halted the planned allocation.

"It took public outrage, legal action and the intervention of the courts to stop the destruction," the Green Belt Movement said. The organisation further claimed that Karura Forest continues to face pressure from attempts to introduce security installations and barracks within the protected area.

The statement also highlighted ongoing opposition to a proposed 25-kilometre road through the Aberdare Forest ecosystem, which environmentalists argue threatens one of Kenya's most critical water catchment areas.

"The Aberdare Forest is not just a forest. It is the source of rivers, livelihoods, agriculture and water security for millions of Kenyans. Yet infrastructure interests continue to threaten its survival," the movement said.

The group also raised alarm over what it described as increasing commercial encroachment at Ngong Road Forest, citing the construction of a luxury hotel and plans to allocate 10 hectares of forest land for a road linking the Bomas of Kenya to Talanta Stadium.

According to the movement, such developments follow a predictable pattern that gradually erodes protected forests.

"This is not a coincidence; it is a pattern where first comes a road, then utilities, then 'temporary access' then commercial developments. Slowly, public forests disappear piece by piece until nothing remains," the statement said.

The organisation warned that the proposed amendment risks weakening constitutional protections governing public forests and could create room for abuse, corruption, and environmentally harmful projects.

"The Constitution of Kenya is clear. Public forests are public land held in trust for the people of Kenya. They cannot become corridors for unchecked infrastructure expansion under vague claims of public interest," the statement added.

It has now called on Kenyans, civil society organisations, faith groups, students, professionals, and environmental activists to mobilise against the proposed legal changes.

"This is not just about trees," the statement said. "If we remain silent today, tomorrow there may be no Karura, no Aberdares, no Ngong Road Forest and no public forests left to defend."

the-star.co.ke