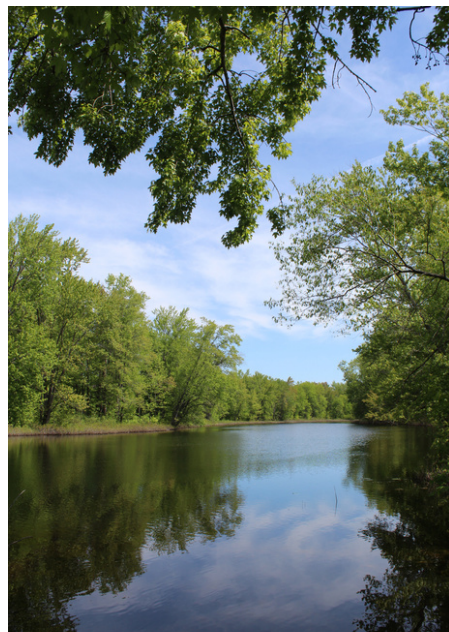


Model Forests and Biodiversity



The diversity of life on Earth, or biodiversity, defines the world as we know it. However, as our planet battles issues like habitat loss, climate change, and natural resource exploitation, biodiversity is rapidly declining. Going forward, we need to identify sustainable and lasting solutions to protect Earth's most valuable asset, life itself. Model Forests present unique strategies and spaces to protect, conserve, and restore biodiversity for the continued survival and diversity of life on our planet.

What is the Issue?

Biodiversity is the variability among living organisms and the ecological complexes of which they are part, encompassing diversity within and between, and of ecosystems. In other words, biodiversity is the diversity of life on Earth.

Biodiversity loss is a result of various multifaceted drivers, most notably land and sea use change, invasive species, climate change, pollution, and overexploitation of natural resources. While these drivers have been propelling biodiversity loss for centuries, recent decades have seen unprecedented extinction rates as a result of human activity, leading many experts to argue we are in the midst of a sixth mass extinction. The IPBES estimates that as many as one million species are currently threatened with extinction (United Nations, 2019). The IUCN Red List reinforces these findings; of the more than 172,600 species assessed, 28% are threatened with extinction. Actual extinction risk across taxa may be even higher when data gaps and unassessed species are accounted for (Borglet et al., 2022).

Forests are highly at risk. Forest-dwelling animals, fungus found in the soil, and the foundational plants that make up these important ecosystems are facing unprecedented challenges. The Global Tree Assessment estimates that 38% of the world's trees are at risk of extinction. The world's 60,000 known tree species act as invaluable resources and habitat for innumerable other species, collectively supporting 80% of the planet's amphibian species, 75% of bird species, and 68% of mammal species—the latter of which includes over 1.6 billion forest-dependent humans (UNEP, 2020).

Once extinct, a species is gone forever. Those species whose declines are halted or reversed through dedicated conservation efforts will still face long-term challenges due to vanished genetic diversity. As species disappear and the world surpasses major ecological, biological, and geological tipping points, society also loses ecosystem services that protect humanity from natural disasters, disease, and pollution, amounting to trillions of dollars' worth of economic loss annually (Costanza et al., 2014).

Why is this Important?

Biodiversity plays a crucial role in maintaining forest ecosystems—ensuring that these unique environments continue to provide valuable ecosystem services and crucial resources. Thus, the disappearance of biodiversity globally is intrinsically problematic, causing cascading effects:

1. Biodiversity loss due to forest degradation threatens the natural processes and ecosystem services that mitigate climate change. As ecosystems lose integrity and complexity, through range reduction or extinction of keystone species, forests sequester less carbon, experience microclimate alterations, and lose the ability to buffer natural disasters.
2. Ecosystem integrity and functioning are interlinked with biodiversity. Forest species filter air, water, and soil, regulate water cycles, and provide food, shelter, and medicine for humans and wildlife. As forest biodiversity declines, equilibrium in these ecosystems is disrupted, affecting these services.
3. Humans are socioeconomically reliant on natural capital provided by forest organisms. This includes food, fuel, building materials, and medicine, which are foundational to livelihoods and supply chains. In fact, 55% of global GDP is dependent on nature (IUCN, 2001), with the Amazon rainforest alone generating at least US \$317 billion in value annually (Hanusch and Strand, 2023).
4. Intact, high-integrity forests are better at preventing zoonotic and vector-borne disease transmission, safeguarding human health and well-being (Burkett-Cadena and Vittor, 2021).
5. Biodiversity possesses profound cultural, spiritual, and religious value, especially for Indigenous peoples. Forests and their inhabitants, in particular, hold intangible significance across many diverse cultures (UNESCO, 2021). Their loss is therefore not only socioeconomically and ecologically detrimental but, culturally and spiritually damaging as well.

Acknowledging the irreplaceable value of forest biodiversity, as well as these interconnections between species loss, climate change, land degradation, and resulting socioeconomic and health impacts on humans, can allow us to better reverse nature loss at scale. Through the Convention on Biological Diversity's Kunming-Montreal Global Biodiversity Framework (GBF), and complementary frameworks such as the Sustainable Development Goals, the United Nations Decade on Ecosystem Restoration, and the Paris Agreements, the international community has adopted ambitious targets to begin taking action towards halting and reversing biodiversity loss by 2030.

What Can Be Done?

IUCN and the International Model Forest Network (IMFN) are working together to accelerate biodiversity conservation in line with global goals—while concurrently combating climate change, providing socioeconomic benefits to local communities, and advancing gender equality.



The IMFN is a voluntary global community of practice whose members and supporters work toward the sustainable management of forest-based landscapes through the Model Forest approach. A Model Forest is a fully working landscape that combines the social, environmental, and economic means of local communities with long-term sustainability to conserve forest landscapes. Most Model Forests are biologically diverse. Through the Model Forest framework, these community-managed landscapes can reduce forest fragmentation, protect and restore critical wildlife habitat, and enable collaboration between national and sub-national actors to advance National Biodiversity Strategies and Action Plans (NBSAPs) and achieve GBF targets.

Model Forests have successfully advanced biodiversity conservation in the following ways:

- Increasing public awareness and community participation regarding the importance of biodiversity and the ecosystem services afforded by high biological diversity and ecological integrity.
- Instituting conservation and restoration strategies alongside stakeholders to stop deforestation, reverse land degradation, and restore ecosystem integrity across the more than 30 million hectares (IMFN, 2004).
- Restoring lost connectivity through biodiversity corridors, enabling migration, and enhancing genetic diversity.
- Establishing Protected Areas (PAs) and Other Effective Area-Based Conservation Measures (OECMs) whose participatory designs include input from local forest-dependent communities and rights-holders.
- Creating frameworks that promote local ownership of biodiversity conservation and encourage cooperation between local communities, Indigenous peoples, civil society, academia, governments, and the private sector.
- Testing human-wildlife conflict mitigation measures, including the promotion of biodiversity-friendly value chains.
- Enabling Nature-Positive, multifunctional mosaic landscapes which balance biodiversity protection, preservation of cultural and religious sites, and wise use of natural resources.

As countries, communities, civil society, and the private sector work to overcome the biodiversity crisis and avoid a catastrophic mass extinction, it is essential to carry forward these lessons from Model Forests, translating them across contexts and scales. The international community can still reach global biodiversity goals, but we must act urgently and raise ambition.

Case Study: Cameroon's Dja et Mpomo Model Forest

Cameroon is renowned for its rich biodiversity and extensive forest cover. Dja et Mpomo Model Forest is one of two Model Forests in Cameroon, alongside Campo Ma'an Model Forest. Dja et Mpomo covers 700,000 hectares, falls within the Congo Basin, and is comprised of 73 villages. It's overlap with Dja Faunal Reserve, a Natural World Heritage Site, further points to its immense biodiversity content, with forest elephants, western lowland gorillas, African leopards, and African grey parrots representing some of the threatened species present in the area. The Model Forest is also home to Indigenous peoples like the Baka, whose traditional livelihoods are intertwined with the forest's biodiversity.

Dja et Mpomo Model Forest has advanced biodiversity conservation in multiple innovative ways. For example, alternative farming practices and cultivation of non-timber forest products (NTFPs) have reduced poaching pressures on local wildlife, decreased bushmeat reliance, and fostered alternative, sustainable livelihood opportunities. These practices are underpinned by farm schools which provide essential peer-to-peer education where local producers can collaborate to access microfinance, make sustainable value chains more robust, and increase market access for biodiversity-friendly products. community-based organisations reinforce these efforts through targeted Forest Landscape Restoration (FLR), which benefits wildlife while strengthening ecosystem services that prop up green enterprises.



Resources

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To learn more about IUCN and Model Forests,
[International Model Forest Network](#)
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[IUCN Red List](#)
[IUCN Model Forests Around the World: Cameroon](#)
[IUCN Post-2020 Global Biodiversity Issues Brief \(2022\)](#)
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