



Silent Threats to Sacred Trees: Conserving Our Living Heritage

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Ancient trees and sacred groves around the world serve as guardians of ecological balance and cultural heritage. In many regions, these landscapes are protected not by formal environmental laws but by traditional beliefs, rituals, taboos, and customary practices maintained by local communities for generations. Sacred forests, trees, and water bodies are often associated with spiritual significance, which discourages exploitation and encourages respect for nature. Through these cultural traditions, communities have historically conserved biodiversity, protected natural resources, and maintained ecological stability. Sacred groves are therefore recognized as early examples of community-based conservation rooted in indigenous ecological knowledge. Recent studies also emphasize that sacred groves function as important refuges for native plant and animal species and preserve traditional ecological knowledge that supports sustainable ecosystem management (Singh *et al.*, 2019; Negi *et al.*, 2018; Marini Govigli *et al.*, 2022; Liljebblad & Verschuuren, 2019). These culturally protected landscapes demonstrate how indigenous belief systems and community stewardship can contribute significantly to biodiversity conservation and ecological resilience in contemporary environmental management. Sacred trees are also considered “living heritage” because they hold both ecological and cultural importance. They act as biodiversity reservoirs by conserving soil, water, and habitats for many species, while also representing community identity, spiritual traditions, and ancestral knowledge. However, modernization, urban expansion, and land-use changes are weakening traditional institutions and cultural values, making sacred landscapes increasingly vulnerable to environmental degradation (Xu *et al.*, 2005; Rim-Rukeh *et al.*, 2013; Barre *et al.*, 2009; Bui *et al.*, 2020; Bhagwat & Rutte, 2006; Dudley *et al.*, 2009).

Sacred Trees: Where Culture Meets Nature

Sacred forests and groves across Asia and Africa hold both ecological and cultural significance. In Africa, they act as biodiversity repositories, maintained through traditional beliefs and customs that restrict exploitation, often yielding higher biodiversity than surrounding lands (Tandfonline, 2024). Cultural forests and sacred groves in Ethiopia, India, Indonesia, Japan, and Morocco similarly conserve biodiversity through long-term traditional management (SpringerLink, 2025). In South Africa, sacred natural sites are recognized as OECMs, where Indigenous knowledge and spiritual values protect biodiversity (ScienceDirect, 2025). Meta-analyses and ethnobotanical studies confirm their role as biodiversity reservoirs, microclimate stabilizers, and sources of medicinal plants (Wiley Online Library, 2024; IJFMR, 2025), with communities in Assam sustaining both cultural and ecological integrity (OR/NIScPR, 2025).

Role of Beliefs, Rituals, and Taboos in Protection

Religious beliefs, rituals, and cultural taboos play a vital role in protecting sacred trees and forests in traditional societies. These rules often prohibit tree cutting, hunting, grazing, or resource collection except during sanctioned ceremonies, acting as informal regulations that limit exploitation and maintain ecological balance (Sinthumule & Mashau, 2020; Sinthumule, 2024). In South Africa, taboos restricting entry are widely observed due to spiritual fears, preserving dense vegetation and biodiversity (Sinthumule, 2024). Himalayan field surveys show faith and cultural norms sustain sacred groves (Durgapal *et al.*, 2025), while in India, beliefs tied to deities and ancestors reinforce respect for nature and biodiversity (Rana *et al.*, 2025).

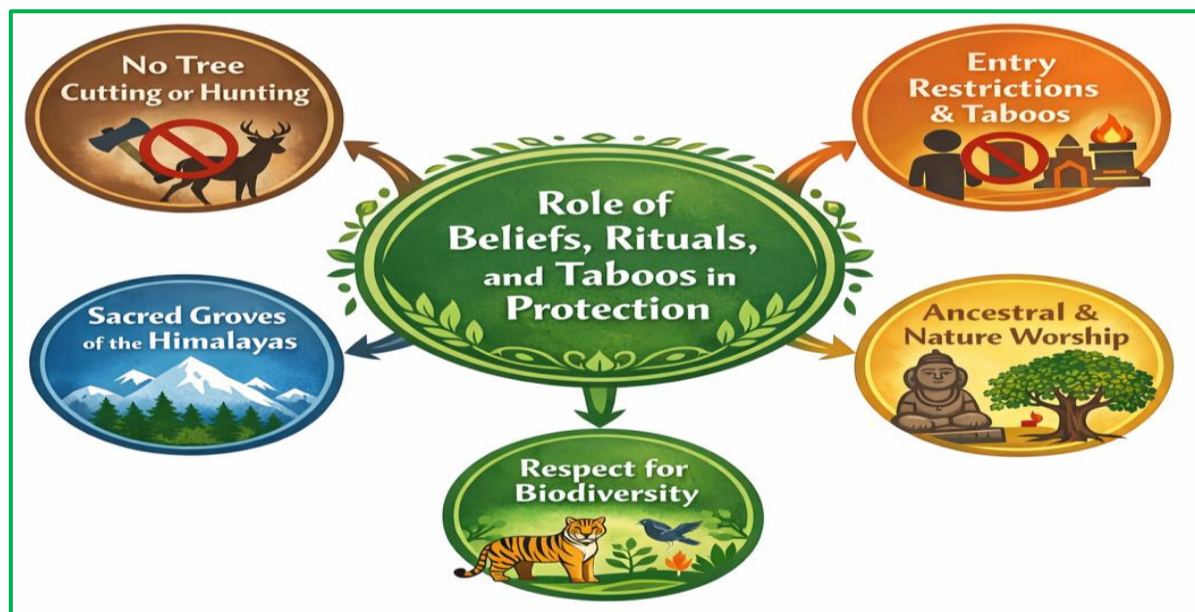


Fig 1. Role of Beliefs, Rituals, and Taboos in Protection

Sacred Landscapes as Biodiversity Refuges

Sacred groves serve as biodiversity refuges, remaining undisturbed through traditional protection. Community-managed sites conserve vegetation, stabilize soil, and protect water, supporting diverse species (Wiley Online Library, 2023). Research and reviews show they sustain biodiversity under land-use pressures and act as de facto conserved areas, preserving rare and medicinal plants (Frontiers in Forests and Global Change, 2026; IJRHS, 2026; ScienceDirect, 2025; IJFMR, 2025).

Traditional Ecological Knowledge: Nature's Ancient Conservation System

Traditional Ecological Knowledge (TEK) reflects centuries of indigenous interaction with ecosystems, guiding sustainable land use, biodiversity protection, and resource management (Scientific Reports, 2025). Cultural values, spiritual beliefs, and elder-led institutions promote forest, water, and wildlife conservation through sacred site protection, hunting restrictions, and community stewardship.

Ritual Management of Landscapes and Ecosystem Protection

Rituals and cultural taboos protect sacred landscapes by forbidding logging, hunting, and resource extraction, acting as informal conservation laws (Frontiers in Environmental Science, 2023; Sinthumule & Mashau, 2024). In India and Africa, spiritual norms preserve old-growth vegetation and rare species, demonstrating how social and spiritual values sustain biodiversity and ecosystem stability (IJRHS, 2026; sacred site protection reviews, 2025).

Traditional Belief Systems and Modern Conservation

Traditional belief systems show how cultural norms historically regulated resource use. Modern conservation increasingly integrates Traditional Ecological Knowledge (TEK) with scientific approaches, enhancing biodiversity, ecosystem resilience, and participatory governance. TEK bridges local practices with conservation planning, reinforcing community

stewardship and culturally appropriate, effective ecological management (Turn0search0, 2025; Turn0search24, 2025; Turn0search5, 2025).

The Silent Threats

Emerging Pressures on Sacred Landscapes

Sacred trees and groves, once strongly protected by cultural traditions and spiritual beliefs, now face increasing social and economic pressures (Fig 2). Rapid modernization, population growth, and infrastructure development have heightened demand for land and resources, causing encroachment, plantation expansion, and fragmentation of sacred landscapes (Down to Earth, 2025). Integration of rural communities into urban economies weakens traditional land management and erodes customary institutions, making groves more vulnerable to degradation and biodiversity loss (The Uganda Blog, 2025). Loss of cultural belief systems and youth migration further reduce community stewardship, exposing sacred sites to disturbance, invasive species, and declining ecological resilience (Indian J Tradit Knowl, 2024; Dudley *et al.*, 2009).

Urban Expansion, Resource Extraction, and Environmental Change

Urbanization and land-use change also pose major threats to sacred landscapes. Expanding cities, agricultural intensification, logging, and fuelwood collection can gradually degrade sacred forests when traditional regulations weaken. Consequently, sacred groves that once served as undisturbed ecological refuges may decline in size and ecological quality, threatening biodiversity and ecosystem functions (Barre *et al.*, 2009; Xu *et al.*, 2005; Bhagwat & Rutte, 2006).

Declining Cultural Values and Loss of Indigenous Knowledge

The decline of traditional beliefs and indigenous ecological knowledge weakens protections for sacred landscapes. Globalization, formal education, and youth migration disrupt knowledge transfer, reducing elder guidance (EVS Institute, 2023; Pub Admin Institute, 2023). As traditions fade, sacred forests face degradation and biodiversity loss, highlighting the need to document and revitalize TEK (ScienceDirect, 2024; Frontiers in Conservation Science, 2025; Frontiers in Ocean Sustainability, 2025).

Why These Threats Are “Silent”

Threats to sacred landscapes are “silent,” gradually eroding community-based conservation through social and cultural changes. Modernization, urbanization, and land-use shifts weaken traditional beliefs and practices, while youth lose familiarity with ecological rituals (International Journal of Traditional Knowledge, 2024). This reduces protection, increasing encroachment, fragmentation, and biodiversity loss (Cultural dimensions of sacred forests, 2021; IJEHS review, 2024).

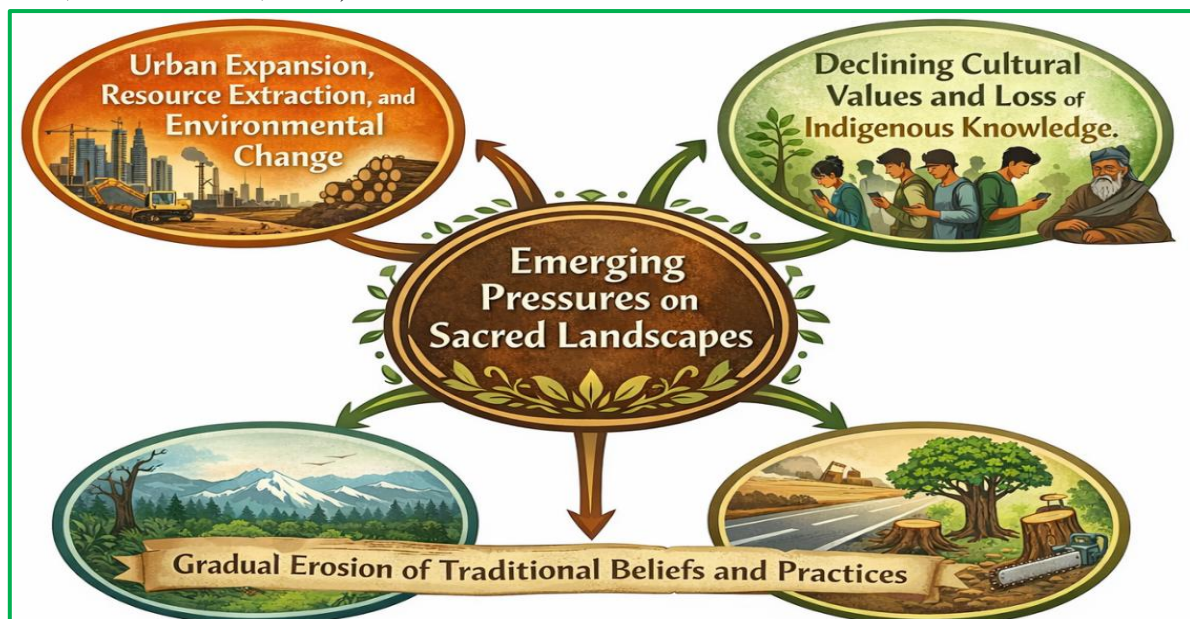


Fig 2 Emerging Pressures on Sacred Landscapes and Their Silent Threats

Why Sacred Trees Matter Today

Sacred trees and groves remain important in modern landscapes, often serving as biodiversity refuges where natural forests have been degraded. Protected by cultural and spiritual norms, they conserve native vegetation and provide habitats for rare or endangered species outside sacred boundaries (International Journal of Research in Humanities and Social Sciences, 2026; International Journal of Environmental Sciences, 2025). These groves maintain ecological stability by conserving soil, protecting water sources, and sustaining ecosystem processes amid agricultural or urbanized surroundings (Times of India report on Uttarakhand SNS, 2025). Beyond ecology, sacred trees symbolize community identity, heritage, and spiritual tradition, with rituals and customary practices reinforcing stewardship across generations (International Journal of Research in Humanities and Social Sciences, 2026).

Bridging Tradition and Modern Conservation

Integrating Traditional Ecological Knowledge with Scientific Conservation

Integrating Traditional Ecological Knowledge (TEK) with scientific approaches enhances biodiversity protection and ecosystem management. Indigenous, place-based knowledge complements scientific methods, fostering holistic, culturally relevant, and adaptive conservation strategies (Turn0search0, 2025; Turn0search1, 2025; Turn0search8, 2023). Participatory approaches in India show TEK integration improves ecosystem services and locally tailored sustainability (Turn0search6, 2025).

Community-Based Forest Management

Community participation is essential for protecting sacred forests, as elders, spiritual leaders, and traditional institutions enforce rules regulating resource use and preventing unsustainable practices. Studies show that community-managed forests often achieve higher biodiversity and better conservation outcomes than externally managed areas, with residents monitoring protections daily and upholding cultural norms tied to long-term stewardship (EVS Institute, 2023). In Africa, Indigenous governance and social norms provide culturally appropriate frameworks that enhance legitimacy, compliance, and ecosystem protection (MDPI Land, 2025). In India, van panchayats and sacred forests illustrate how faith-based rules and rituals limit logging and hunting, reinforcing environmental stewardship and social responsibility (Times of India, 2025).

Recognition of Sacred Landscapes in Environmental Policy

Recognizing sacred landscapes in environmental policy and law provides legal protection while respecting traditional governance and Indigenous land rights. National and international frameworks increasingly acknowledge that Indigenous peoples and local communities are key custodians of sacred sites, supporting biodiversity and cultural integrity (UNESCO World Heritage Symposium report, 2025). In India, the Supreme Court recognized sacred groves (Orans) as forests under legal protection, reinforcing community custodianship (Supreme Court order on Oran status, 2024). International guidelines from IUCN and CBD encourage including sacred sites and Indigenous governance in protected area planning, promoting equitable conservation through support for Indigenous land claims, culturally rooted practices, and shared decision-making (UNESCO World Heritage Symposium report, 2025; Kenya sacred natural sites policy recommendations, 2025).

Protecting Our Living Heritage

Documenting Traditional Knowledge

Documenting Traditional Ecological Knowledge (TEK) is vital for safeguarding sacred landscapes, preserving rituals, customary practices, species uses, and ecological observations amid cultural change. Ethnobotanical research in Kerala's sacred groves records plant species, myths, and conservation practices, supporting sustainable resource use and biodiversity protection (turn0search0). Global reviews emphasize that indigenous knowledge systems enhance environmental sustainability and inform conservation policy (turn0search2). Field studies in West Africa's mangroves show that documenting beliefs, taboos, and management practices sustains ecosystem resilience and biodiversity while highlighting

threats from cultural erosion (turn0search3). Systematic recording of oral histories and ecological practices preserves TEK, supports culturally grounded conservation, and fosters collaboration with scientific research (turn0search0; turn0search2; turn0search3).

Protecting Sacred Groves as Community Conserved Areas

Recognizing sacred groves as community conserved areas (CCAs) strengthens protection of these culturally significant ecosystems by leveraging local stewardship and customary rules that restrict tree cutting and resource extraction. Research shows that sacred groves are traditional forms of community-based conservation, where local norms and prohibitions preserve biodiversity over long periods (International Journal of the Commons, 2022). These groves serve as refuges for rare and endemic species outside formal protected areas and provide ecological functions such as habitat continuity and watershed protection (ScienceDirect, 2025; Times of India mapping of sacred sites, 2025). Legal recognition of CCAs supports ecological resilience as well as cultural and community continuity (International Journal of Research in Humanities and Social Sciences, 2026).

Environmental Education for Youth

Environmental education helps younger generations appreciate the cultural and ecological significance of sacred trees and groves, fostering respect for traditional knowledge and biodiversity conservation. Integrating indigenous ecological knowledge into school and community curricula enhances ecological literacy and stewardship values rooted in local culture (The Importance of Indigenous Knowledge in Environmental Education, 2024). Sacred groves serve as living classrooms, allowing students to learn about biodiversity, traditional practices, and ecosystem services through field visits and community-led activities (Sacred Groves and Social Ecology, 2025). Early inclusion of indigenous knowledge promotes holistic, culturally relevant learning, connecting youth with their environment and ancestral wisdom (Decolonising Environmental Education in Africa, 2025), and supports long-term conservation commitment.

Collaborative Conservation

Collaborative conservation unites scientists, policymakers, and local communities to enhance biodiversity protection by integrating Indigenous knowledge with scientific research and supportive policy frameworks. Participatory, rights-based approaches benefit from deep engagement with Indigenous and local communities, ensuring traditional ecological knowledge informs research, monitoring, and decision-making alongside scientific evidence (ScienceDirect, 2024). Combining Indigenous practices with science fosters adaptive co-management, equitable governance, and strengthened community stewardship (Varendra University study, 2025; Environmental Management research, 2026). Programs like UNESCO's Local and Indigenous Knowledge Systems (LINKS) facilitate dialogue between knowledge holders and policymakers, supporting culturally inclusive policies and sustainable forest management while improving conservation effectiveness (UNESCO, 2025).

Conclusion

Ancient sacred trees and groves exemplify the powerful intersection of culture and nature, serving as living repositories of biodiversity, ecosystem services, and community heritage. Protected for centuries through spiritual beliefs, rituals, and taboos, these landscapes have conserved rare species, stabilized soil and water systems, and maintained ecological balance, often outperforming formally managed areas. Traditional Ecological Knowledge (TEK) underpins these protections, guiding sustainable resource use and fostering long-term community stewardship. However, modernization, urban expansion, and weakening cultural values now threaten these living heritage sites, leading to biodiversity loss and ecological degradation. Integrating TEK with scientific conservation, recognizing sacred groves as community conserved areas, and promoting environmental education can safeguard these ecosystems. Collaborative approaches that respect indigenous governance while strengthening legal and policy frameworks ensure sacred landscapes continue to function as biodiversity refuges, cultural symbols, and models of sustainable, community-driven conservation for future generations.

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