

Forum: Environment Commission Conference of the Parties on Biodiversity 2

Issue: Cultural heritage as a tool for environmental conservation and sustainable practices

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Introduction

Cultural heritage is a complex concept which blends tangible elements such as historical monuments, archaeological sites, and cultural landscapes, with intangible aspects, including traditions, rituals, performing arts, and indigenous knowledge systems. Progressively, heritage and ecological stewardship are viewed as interconnected, as many cultural practices regulate resource use, protect ecosystems, and promote sustainable interaction with the natural environment. While cultural heritage is increasingly threatened by climate change, environmental degradation, and development pressures, its conservation and environmental sustainability are not competing priorities but mutually reinforcing goals.

As heritage shapes how communities interact with their surroundings, it has emerged as an important tool for advancing environmental protection, sustainable practices, and social development. This report investigates the ways cultural heritage contributes to environmental conservation, the challenges limiting its effectiveness, and the international frameworks guiding its integration into sustainability efforts.

Definition of Key Terms

Environmental Stewardship

The responsible management of and protection of the natural environment through conservation and sustainable practices. It emphasizes duties and responsibilities beyond simple rights, and includes practices such as conservation, restoration, sustainable use, and advocacy.

Tangible heritage

Physical manifestations of a culture that are visible and tactile, such as monuments, buildings, archaeological sites, cultural landscapes, artifacts, museums etc. They are valued for their historical, artistic, scientific, or social significance and are protected by conventions such as the 1972 World Heritage Convention.¹

Intangible heritage

The practices, expressions, and knowledge passed down through generations that are part of a community's cultural heritage. This includes oral traditions, performing arts, social practices, rituals, festive events, traditional craftsmanship, and local knowledge.

Traditional Ecological Knowledge (TEK)

A cumulative body of knowledge, practices, and beliefs, evolving by adaptive processes and handed down through generations by cultural transmission. TEK revolves around the relationships of living beings with one another and with their physical environment.

Background Information

Historical origins and Early Recognition:

The interdependence between cultural heritage and environmental conservation, practiced for millennia by Indigenous and local communities, was only formally recognized in international policy in the mid 20th century. Early international heritage initiatives treated cultural preservation and environmental protection as separate domains. For example, UNESCO's 1956 Recommendation on International Principles Applicable to Archaeological Excavations focused exclusively on cultural assets, while environmental governance developed along parallel but disconnected institutional tracks.²

A major shift occurred with the adoption of the Convention Concerning the Protection of the World Cultural and Natural Heritage in 1972. The World Heritage Convention formally unified cultural and natural heritage under a single legal framework, recognizing sites of "Outstanding Universal Value" where cultural and ecological significance are inseparable. The World Heritage List, established in 1978, has since expanded to 1,248 sites across 170 States Parties (as of July 2025), forming a global network of protected areas where nature and culture converge. Subsequent agreements, including the 1992 Convention on Biological Diversity (CBD), further recognized the role of traditional knowledge in conservation.

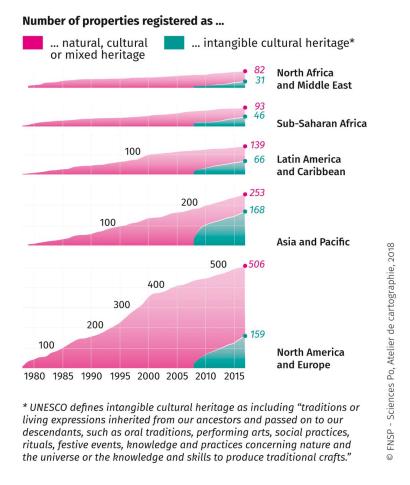


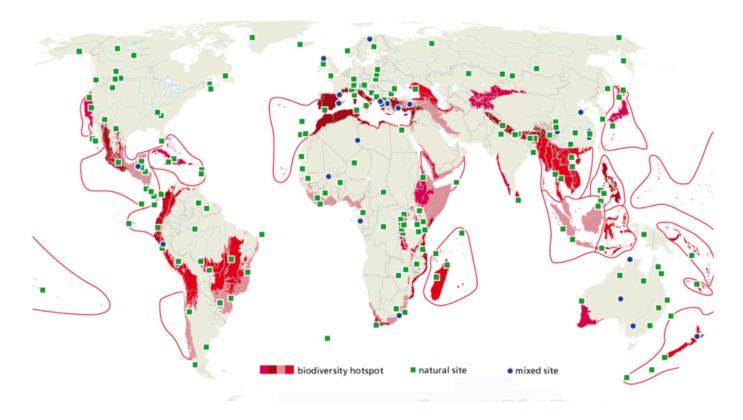
Figure 1. Growth of World Heritage inscriptions (1978–2017), illustrating the expansion of the integrated cultural–natural heritage framework following the adoption of the 1972 UNESCO Convention.

Source: Sciences Po – Atelier de cartographie, Espace mondial Atlas.

Conservation Impact:

Heritage-based management systems increasingly demonstrate measurable environmental benefits. Numerous studies consistently demonstrate that areas managed through traditional practices, heritage protection frameworks, or mixed cultural-natural management often outperform conventional conservation methods in biodiversity retention, habitat integrity, and long-term ecosystem stability.

Heritage Sites as Biodiversity Refuges



. Map of natural and mixed UNESCO World Heritage Sites overlapping global biodiversity hotspots.

Source: Peterson et al., Science of the Total Environment, 2011.

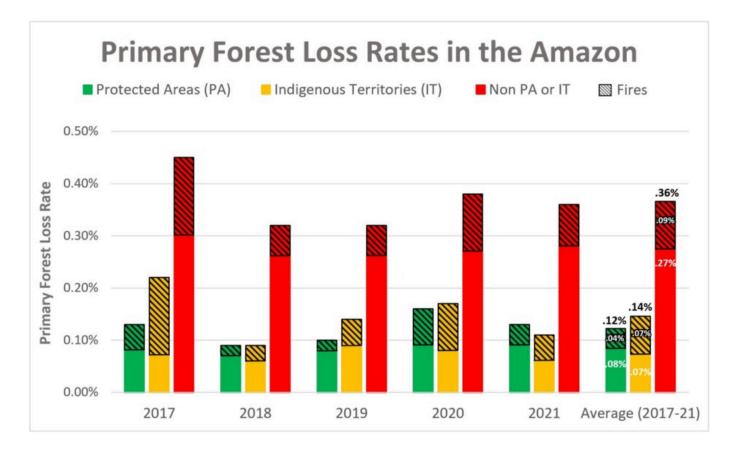
World Heritage sites are some of the world's most effective biodiversity reservoirs.

Despite covering only 1% of earth's surface, these sites contain over 20% of global mapped species richness, including critical habitats for mammals, birds, reptiles, amphibians, and plants.⁵

This concentration highlights the importance of culturally significant landscapes, many of which remain intact precisely because of longstanding cultural practices that regulate access, resource use, and land management.

Traditional Ecological Knowledge (TEK) as an Adaptive Conservation System

TEK-driven systems demonstrate equally strong conservation impacts. Indigenous-managed territories, which are home to less than 5% of the world's population, safeguard more than 25% of Earth's land surface, including some of the most carbon-rich and biodiverse ecosystems on the planet.⁶ Comparative studies from the Amazon, Southeast Asia, and Arctic regions consistently show that deforestation rates, species loss, and land degradation are significantly lower under indigenous governance compared to surrounding state-managed or privately managed lands.



Primary forest loss rates across the Amazon (2017–2021), comparing protected areas, indigenous territories, and non-protected lands.

Source: Finer & Mamani, MAAP, 2023.

Cultural Heritage as a Driver of Climate Mitigation and Adaptation:

Cultural heritage contributes to climate mitigation and adaptation through both tangible and intangible systems. High-carbon ecosystems such as Indigenous territories in the Amazon and Arctic peatlands remain intact largely due to cultural norms and customary land governance, allowing them to function as long-term carbon sinks.⁷

Cultural landscapes provide natural buffers against issues such as floods, landslides, erosion, and drought through terracing, vegetation management, and watershed stewardship. Traditional building techniques such as earthen architecture, passive cooling strategies, and climate-responsive urban layout offer low-carbon alternatives to modern construction while improving climate adaptability in vulnerable regions.⁸

Major Countries and Organizations Involved

United Nations Environment Programme (UNEP)

UNEP is the UN's leading authority on environmental policy and plays a central role in integrating

cultural and traditional knowledge into biodiversity governance. Through its support of the Convention on Biological Diversity (CBD), UNEP promotes ecosystem-based management approaches that recognize Indigenous stewardship, biocultural diversity, and community-led conservation.

• United Nations Declaration on the Rights of Indigenous Peoples, 13 September 2007, (A/RES/61/295)

Sets global standards for Indigenous rights, including cultural preservation, land tenure, and Free, Prior, and Informed Consent (FPIC), guiding state policy despite its non-binding status.⁹

United Nations Educational, Scientific and Cultural Organization — UNESCO

UNESCO is the principal UN specialized agency concerned with culture, heritage, and education. It houses the World Heritage Centre (WHC), the Intangible Cultural Heritage (ICH) Secretariat, and multiple programmes that link culture to sustainable development. UNESCO has formed multidimensional approaches to integrate cultural heritage into environmental sustainability. UNESCO sets international norms, reactively monitors sites of conservation, and provides technical assistance and capacity building.

• Convention for the Safeguarding of the Intangible Cultural Heritage, 17 October 2003

Recognizes living cultural practices, including traditional knowledge systems, as heritage requiring protection and intergenerational transmission.

• UNESCO Policy Document on Climate Action for World Heritage, 27 November 2023

Provides guidance for integrating climate mitigation, adaptation, and risk preparedness into World Heritage site management.¹⁰

International Council on Monuments and Sites — ICOMOS

ICOMOS is the main NGO advisor to UNESCO on cultural heritage conservation standards. It provides technical charters, guidelines, and toolkits used by states and heritage managers. ICOMOS also advises the World Heritage Committee on cultural values and management of historic urban landscapes, and recommendations on balancing tourism, conservation, and local community interests.

• International Charter for Cultural Heritage Tourism, October 1999

Establishes principles for managing tourism in heritage sites to ensure conservation, community benefit, and long-term sustainability.¹¹

International Union for Conservation of Nature — IUCN

The IUCN advises UNESCO's World Heritage Committee on natural sites and has developed biocultural approaches bridging cultural heritage and biodiversity. Through initiatives such as the "Connecting Practice" project with ICOMOS, IUCN integrates Indigenous traditional knowledge into conservation, recognizing customary practices as key to ecosystem services and site management.¹²

Timeline of Events

Date	Description of event
November 16, 1972	UNESCO adopts the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention)
September 15, 1978	The first entries are inscribed on the UNESCO World Heritage List
June 5, 1992	The Convention on Biological Diversity is adopted at the Rio Earth Summit
October 17, 2003	UNESCO adopts the Convention for the Safeguarding of the Intangible Cultural Heritage
September 13, 2007	The United Nations General Assembly adopts the Declaration on the Rights of Indigenous Peoples (UNDRIP)
November 27, 2023	UNESCO releases the Policy Document on Climate Action for World Heritage
July 2025	The World Heritage List expands to 1,248 sites across 170 States Parties

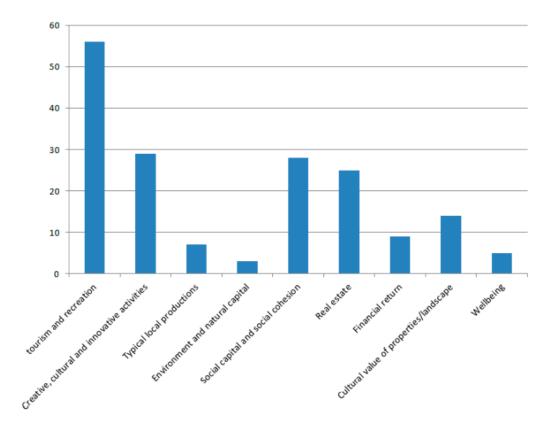
Previous Attempts to solve the Issue

Heritage Monitoring and Indicator Frameworks

International heritage and sustainability frameworks have attempted to assess the environmental contributions of cultural heritage through monitoring systems focused on site condition, restoration progress, tourism revenue, and visitor numbers. These indicators were intended to support accountability and funding allocation.

However, these frameworks have largely failed to capture ecological outcomes such as

species richness, habitat connectivity, ecosystem health, or the transmission of Traditional Ecological Knowledge (TEK). This measurement bias has limited policymakers' ability to quantify heritage's environmental value, weakening cooperation between cultural and environmental institutions and skewing priorities toward tourism-oriented interventions.



Frequency analysis of indicators from 40 case studies, illustrating the measurement focus of cultural heritage projects

Source: Nocca, F. The role of cultural heritage in sustainable development: multidimensional indicators as

decision-making tool. Sustainability 9, 1882 (2017)

Legal Recognition and Tenure-Based Conservation

International agreements such as the Convention on Biological Diversity, particularly Article 8(j), attempted to protect Indigenous knowledge systems by encouraging respect for customary land governance and stewardship practices.

In practice, implementation has been inconsistent. Legal recognition of Indigenous and community land rights remains limited in many biodiverse regions, exposing heritage landscapes to land grabs, extractive industries, and mass tourism. Without enforceable tenure security, these policy efforts have struggled to translate recognition into long-term conservation outcomes.

Climate Policy and Heritage Protection

Climate change poses accelerating risks to both tangible and intangible heritage.

Sea-level rise, glacier melt, wildfires, acidification, and extreme weather increasingly threaten cultural landscapes and historic settlements. UNESCO climate impact assessments indicate that

a significant proportion of coastal World Heritage sites may face very high risk from sea-level rise by 2100, often compounded by multiple climate hazards. While these assessments have improved global awareness, they remain largely diagnostic rather than operational, with limited mechanisms for funding, adaptation, or implementation at the community level.¹³

World Heritage Sites Facing Severe Water Risks



Source: WRI Aqueduct / UNESCO analysis of 1172 terrestrial UNESCO sites as of March 20th 2025

Possible Solutions

Integrated Biocultural Monitoring Frameworks

A substantial barrier to progress and solve this issue is the absence of unified indicators which track ecological and cultural outcomes together. Member states could support the development of integrated biocultural monitoring frameworks.

Secure Tenure and Co-Management Rights

To address the issue of tenure insecurity and legal recognition, member states can strengthen conservation outcomes by legally reinforcing tenure systems and developing co-management agreements for heritage sites. Additionally, member states may want to propose mechanisms to adopt national legislation that align with conventions, such as Article 8(j) of the CBD.

Financial Sustainability and Benefit-Sharing Mechanisms

Heritage linked conservation often fails due to the lack of economic benefits for communities protecting them. By introducing equitable benefit sharing frameworks such as community-managed ecotourism enterprises and revenue-sharing models from heritage tourism to align incentives and relieve pressure on ecosystems. Moreover, member states may propose that UNESCO establish grant windows for community enterprises in heritage landscapes.

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