Nature's Obituary: We Financed An Extinction

Written in retrospect, 2050. By Ava Worthington

Nature, the complex web of ecosystems that sustained life on Earth for millennia, stabilised during the Holocene epoch, a period of approximately 11,700 years that enabled the development of agriculture, biodiversity richness, and the material conditions of modern economic systems. By the early twenty-first century, this equilibrium had begun to unravel, entering what is now recognised as the sixth mass extinction: species loss at rates tens to hundreds of times higher than natural background levels, driven primarily by land-use change, overexploitation, pollution, invasive species, and climate change.

The trajectory of decline was neither abrupt nor uncertain. The monarch butterfly, whose eastern North American population fell by approximately 80% between 1996 and 2019, ceased to function as a meaningful pollinator across its historic range before mid-century. The northern white rhino, of which only two females survived by the late 2010s, became the first megafauna to enter functional extinction in the modern financial era. By the 2020s, global wildlife populations had declined by an average of 73% since 1970, a measure of abundance, not species count, which understates the structural damage already in progress. Up to one million species were identified as being at risk of extinction. Coral reef systems, which support approximately 25% of marine biodiversity, faced functional collapse under continued warming. The removal of sea otter populations along the North American Pacific coast drove unchecked sea urchin proliferation, which destroyed kelp forest ecosystems that had provided coastal protection and supported fisheries for centuries, each loss reducing the resilience of systems on which others depended.

> *"We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide."*

> Sir Robert Watson, Chair, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 2019

In the early 2020s, more than half of global GDP, approximately $44 trillion, was estimated to be highly dependent on nature and its services, meaning biodiversity decline functioned as a compounding multiplier of systemic economic risk. Yet financial systems continued to operate without recognising nature as a form of capital subject to depletion. This was a structural exclusion, maintained deliberately and profitably, embedded in the foundational frameworks through which capital was governed: national accounts measured GDP while omitting the depreciation of natural capital; corporate balance sheets carried biodiversity as a zero; prudential frameworks made no provision for nature-related exposures. The institutions that structured these frameworks, and the industries that lobbied to preserve them, were the primary beneficiaries of nature remaining unpriced.

Policy responses acknowledged the scale of the challenge but failed to address its structural origins. The Kunming-Montreal Global Biodiversity Framework established targets to mobilise $200 billion annually for biodiversity by 2030, and the Taskforce on Nature-related Financial Disclosures sought to improve assessment of nature-related risk. Both remained voluntary, layered onto financial systems that lacked any mandatory obligation to account for nature. The accounting standards, capital adequacy rules, and credit frameworks that rendered nature immaterial were never reformed at the statutory level. Ambition was expressed. The architecture that concentrated the profits of nature's destruction among the few who designed it was preserved.

The subsidy regimes, accounting exemptions, and regulatory carve-outs that sustained nature-negative industries were not oversights; they were defended, budget cycle by budget cycle, by governments whose electoral financing depended on the industries they were failing to regulate. What was required was political courage and no government with the institutional authority to do so was willing to accept the electoral cost.

What makes this loss historically inexcusable is that working models existed at scale, with documented outcomes, and were not replicated. Costa Rica's national Payments for Ecosystem Services programme, established in 1997, proved that pricing nature into public finance could reverse long-run ecological decline: forest cover recovered from 21% of national territory in 1987 to over 52% by 2019, through direct transfers to landowners for the hydrological, biodiversity, and carbon services their forests provided. In 2023, Ecuador restructured $1.6 billion of sovereign debt into a debt-for-nature swap, generating $323 million in ring-fenced conservation funding for the Galápagos Marine Reserve, the largest such transaction to that point, and one replicable across dozens of biodiversity-rich, debt-burdened economies. At the accounting level, the United Nations System of Environmental-Economic Accounting, adopted by the UN Statistical Commission in 2021, provided a fully developed methodology for integrating natural capital depreciation into national accounts alongside GDP. The tools were not missing. The obligation to use them was.

Against this record of proven, scalable, undeployed instruments, the solutions adopted at scale shared a common feature: they preserved the core logic of the existing system rather than restructuring it.

Biodiversity offset markets, institutionalised in frameworks such as the United Kingdom's Environment Act 2021, traded the destruction of established habitat against speculative restoration on degraded land, converting an ecological absolute into an accounting entry. Voluntary carbon markets offered an earlier and starker warning: that the large majority of rainforest credits certified by leading standards bodies had no credible basis in verified emissions reductions. They conserved the appearance of action, which served the interests of those who needed to demonstrate change without enacting it. The knowledge gap that remained was precise: what was absent was a legally enforceable methodology for translating ecological dependency into financial materiality, robust enough to survive contact with the accounting standards and capital adequacy rules that actually governed investment. That methodology was never made mandatory. The institutions with the authority to require it chose not to.

Nature was never external to the economy. It was simply never permitted entry into the systems that governed it, by those who profited from its exclusion.