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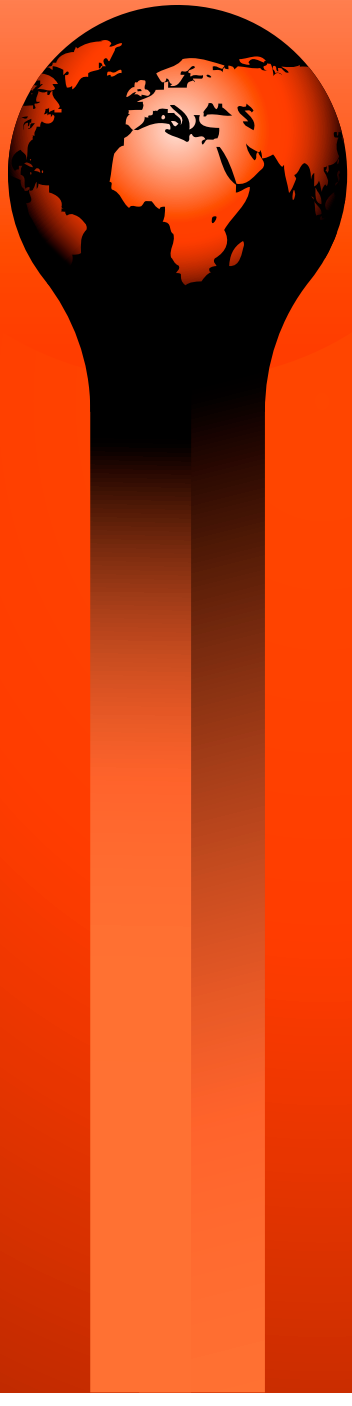

2024 LIVING PLANET REPORT

A System in Peril

WWF

WWF is an independent conservation organisation, with more than 38 million followers and a global network active through local leadership in over 100 countries. Our mission is to stop the degradation of the planet's natural environment and to build a future in which people live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

ZSL (Zoological Society of London) Institute of Zoology

Founded in 1826, ZSL is an international conservation charity, driven by science, working to restore wildlife in the UK and around the world; by protecting critical species, restoring ecosystems, helping people and wildlife live together and inspiring support for nature. Through our leading conservation zoos, London and Whipsnade, we bring people closer to nature and use our expertise to protect wildlife today, while inspiring a lifelong love of animals in the conservationists of tomorrow.

ZSL manages the Living Planet Index in a collaborative partnership with WWF.

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EXECUTIVE SUMMARY

When cumulative impacts reach a threshold, the change becomes self-perpetuating, resulting in substantial, often abrupt and potentially irreversible change – a tipping point.

Nature is being lost – with huge implications for us all

Biodiversity sustains human life and underpins our societies. Yet every indicator that tracks the state of nature on a global scale shows a decline.

Over the past 50 years (1970–2020), the average size of monitored wildlife populations has shrunk by 73%, as measured by the Living Planet Index (LPI). This is based on almost 35,000 population trends and 5,495 species of amphibians, birds, fish, mammals and reptiles. Freshwater populations have suffered the heaviest declines, falling by 85%, followed by terrestrial (69%) and marine populations (56%).

At a regional level, the fastest declines have been seen in Latin America and the Caribbean – a concerning 95% decline – followed by Africa (76%) and the Asia and the Pacific (60%). Declines have been less dramatic in Europe and Central Asia (35%) and North America (39%), but this reflects the fact that large-scale impacts on nature were already apparent before 1970 in these regions: some populations have stabilized or increased thanks to conservation efforts and species reintroductions. Habitat degradation and loss, driven primarily by our food system, is the most reported threat in each region, followed by overexploitation, invasive species and disease. Other threats include climate change (most cited in Latin America and the Caribbean) and pollution (particularly in North America and Asia and the Pacific).

By monitoring changes in the size of species populations over time, the LPI is an early warning indicator for extinction risk and helps us understand the health of ecosystems. When a population falls below a certain level, that species may not be able to perform its usual role within the ecosystem – whether that's seed dispersal, pollination, grazing, nutrient cycling or the many other processes that keep ecosystems functioning. Stable populations over the long term provide resilience against disturbances like disease and extreme weather events; a decline in populations, as shown in the global LPI, decreases resilience and threatens the functioning of the ecosystem. This in turn undermines the benefits that ecosystems provide to people – from food, clean water and carbon storage for a stable climate to the broader contributions that nature makes to our cultural, social and spiritual well-being.

Dangerous tipping points are approaching

The LPI and similar indicators all show that nature is disappearing at an alarming rate. While some changes may be small and gradual, their cumulative impacts can trigger a larger, faster change. When cumulative impacts reach a threshold, the change becomes self-perpetuating, resulting in substantial, often abrupt and potentially irreversible change. This is called a tipping point.

In the natural world, a number of tipping points are highly likely if current trends are left to continue, with potentially catastrophic consequences. These include global tipping points that pose grave threats to humanity and most species, and would damage Earth's life-support systems and destabilize societies everywhere. Early warning signs indicate that several global tipping points are fast approaching:

- In the biosphere, the ***mass die-off of coral reefs*** would destroy fisheries and storm protection for hundreds of millions of people living on the coasts. The ***Amazon rainforest tipping point*** would release tonnes of carbon into the atmosphere and disrupt weather patterns around the globe.
- In ocean circulation, the ***collapse of the subpolar gyre***, a circular current south of Greenland, would dramatically change weather patterns in Europe and North America.
- In the cryosphere (the frozen parts of the planet), the ***melting of the Greenland and West Antarctic ice sheets*** would unleash many metres of sea level rise, while ***large-scale thawing of permafrost*** would trigger vast emissions of carbon dioxide and methane.

Global tipping points can be hard to comprehend – but we're already seeing tipping points approaching at local and regional levels, with severe ecological, social and economic consequences:

- In western North America, a combination of pine bark beetle infestation and more frequent and ferocious forest fires, both exacerbated by climate change, is pushing pine forests to a tipping point where they will be replaced by shrubland and grassland.
- In the Great Barrier Reef, rising sea temperatures coupled with ecosystem degradation have led to mass coral bleaching events in 1998, 2002, 2016, 2017, 2020, 2022 and 2024. Although the Great Barrier Reef has shown remarkable resilience to date, we will likely lose 70–90% of all coral reefs globally, including the Great Barrier Reef, even if we are able to limit climate warming to 1.5°C.
- In the Amazon, deforestation and climate change are leading to reduced rainfall, and a tipping point could be reached where the environmental conditions become unsuitable for tropical rainforest, with devastating consequences for people, biodiversity and the global climate. A tipping point could be on the horizon if just 20–25% of the Amazon rainforest were destroyed – and an estimated 14–17% has already been deforested.

In many cases, the balance is precarious – but tipping points can still be avoided. We have an opportunity to intervene now to increase ecosystem resilience and reduce the impacts of climate change and other stressors before these tipping points are reached.

We are falling short of our global goals

The nations of the world have set global goals for a thriving, sustainable future, including halting and reversing the loss of biodiversity (under the Convention on Biological Diversity, or CBD), capping global temperature rise to 1.5°C (under the Paris Agreement), and eradicating poverty and ensuring human well-being (under the Sustainable Development Goals, or SDGs). But despite these global ambitions, national commitments and actions on the ground fall far short of what's needed to meet our targets for 2030 and avoid the tipping points that would make achieving our goals impossible. As things stand:

- Over half the SDG targets for 2030 will be missed, with 30% of them stalled or getting worse from the 2015 baseline.
- National climate commitments would lead to an average global temperature increase of almost 3°C by the end of the century, inevitably triggering multiple catastrophic tipping points.
- National biodiversity strategies and action plans are inadequate and lack financial and institutional support.

Approaching climate, biodiversity and development goals in isolation raises the risk of conflicts between different objectives – for example, between using land for food production, biodiversity conservation or renewable energy. With a coordinated, inclusive approach, however, many conflicts can be avoided and trade-offs minimized and managed. Tackling the goals in a joined-up way opens up many potential opportunities to simultaneously conserve and restore nature, mitigate and adapt to climate change, and improve human well-being.

The scale of the challenge demands transformation

To maintain a living planet where people and nature thrive, we need action that meets the scale of the challenge. We need more, and more effective, conservation efforts, while also systematically addressing the major drivers of nature loss. That will require nothing less than a transformation of our food, energy and finance systems.

Transforming conservation

Despite the alarming overall decline in wildlife populations shown in the LPI, many populations have stabilized or increased as a result of conservation efforts. But isolated successes and merely slowing the decline of nature are not enough. Equally, conservation efforts that don't take account of the rights, needs and values of people are not likely to succeed in the long run.

Protected areas have been the cornerstone of traditional conservation efforts, and currently cover 16% of the planet's lands and 8% of its oceans – though their distribution is uneven and many are not effectively managed. Target 3 of the Kunming-Montreal Global Biodiversity Framework (GBF) calls for 30% of lands, waters and sea to be protected by 2030, while Target 2 aims to restore 30% of degraded areas by 2030. This is an unmissable opportunity to scale up effective conservation to unprecedented levels.

Countries need to extend, enhance, connect and properly fund their systems of protected areas, while respecting the rights and needs of the people affected. Formal protection is not always the best approach, however, which is why the GBF target also allows for other effective area-based conservation measures, or OECMs. Supporting the rights of Indigenous Peoples and local communities may be one of the most effective ways to conserve biodiversity at scale. A quarter of the global land area is traditionally owned, managed, used and/or occupied by Indigenous Peoples, which includes about 35% of the area formally in protected areas and 35% of the remaining intact terrestrial areas.

Working with nature to address specific societal issues – known as nature-based solutions – also holds great promise to advance on global goals on climate, nature and sustainable development. Nature-based solutions for climate mitigation have the potential to reduce annual greenhouse gas emissions by 10–19%, while also benefiting ecosystems and improving livelihoods.

Transforming the food system

The global food system is inherently illogical. It is destroying biodiversity, depleting the world's water resources and changing the climate, but isn't delivering the nutrition people need. Despite record production, some 735 million people go to bed hungry each night. Obesity rates are rising even as nearly a third of the world's population don't regularly get enough nutritious food. Food production is one of the main drivers of nature's decline: it uses 40% of all habitable land, is the leading cause of habitat loss, accounts for 70% of water use and is responsible for over a quarter of greenhouse gas emissions. The hidden costs of ill health and environmental degradation in the current food system amount to US$10–15 trillion annually, representing 12% of global GDP in 2020. Paradoxically, our food system is undermining our ability to feed humanity now and into the future.

Even though the food system is the number one driver of environmental degradation, it's not adequately addressed in major international environmental policy. We need coordinated action to:

1. Scale nature-positive production to provide enough food for everyone while also allowing nature to flourish – by optimizing crop yields, livestock productivity, wild fisheries harvest and aquaculture production in a sustainable way.

2. Ensure everyone in the world has a nutritious and healthy diet, produced without triggering tipping points – which will involve changing food choices, including eating a greater proportion of plant-based foods and fewer animal products in most developed countries while addressing undernutrition and food security.

3. Reduce food loss and waste – today, an estimated 30–40% of all food produced is never eaten, representing around a quarter of total global calories, one-fifth of agricultural land and water use, and 4.4% of global greenhouse gas emissions.

4. Increase financial support and foster good governance for sustainable, resilient, nature-positive food systems – including by redirecting environmentally harmful farming and fishing subsidies to support nature-positive production, reduce food loss and waste, improve consumption and keep food affordable for all.

Our food system is undermining our ability to feed humanity now and into the future.

Transforming the energy system

The way we produce and consume energy is the principal driver of climate change, with increasingly severe impacts on people and ecosystems. We know we must rapidly transition away from fossil fuels to renewable energy to cut greenhouse emissions in half by 2030 and keep 1.5°C within reach. The energy transition must be fast, green and fair, putting people and nature at its heart.

A faster transformation: In the last decade, global renewable energy capacity has roughly doubled and costs for wind, solar and batteries have fallen by up to 85%. But although energy trends are going in the right direction, the pace and scale are not yet near where they need to be. Over the next five years, we need to triple renewable energy, double energy efficiency, electrify 20–40% of light-duty vehicles, and modernize energy grids. This will require a tripling of investment, from an estimated US$1.5 trillion in 2022 to at least US$4.5 trillion annually by 2030.

A greener transformation: The energy transition must be consistent with the protection and restoration of nature. Without careful planning and environmental safeguards, hydropower development will increase river fragmentation, bioenergy development could drive significant land-use change, and transmission lines and mining for critical minerals could impact sensitive land, freshwater and ocean ecosystems. Careful planning is needed to select the right renewables in the right places, avoid negative impacts, and streamline energy development without diluting environmental safeguards.

A fairer transformation: Over 770 million people still lack access to electricity and nearly 3 billion people still burn kerosene, coal, wood or other biomass for cooking. A lack of access to modern renewable energy solutions significantly contributes to poverty, deforestation and indoor air pollution – a major cause of premature deaths that disproportionately impacts women and children. A just energy transition will need to ensure that people have access to modern and safe sources of energy, and that the benefits and burdens are equitably shared.

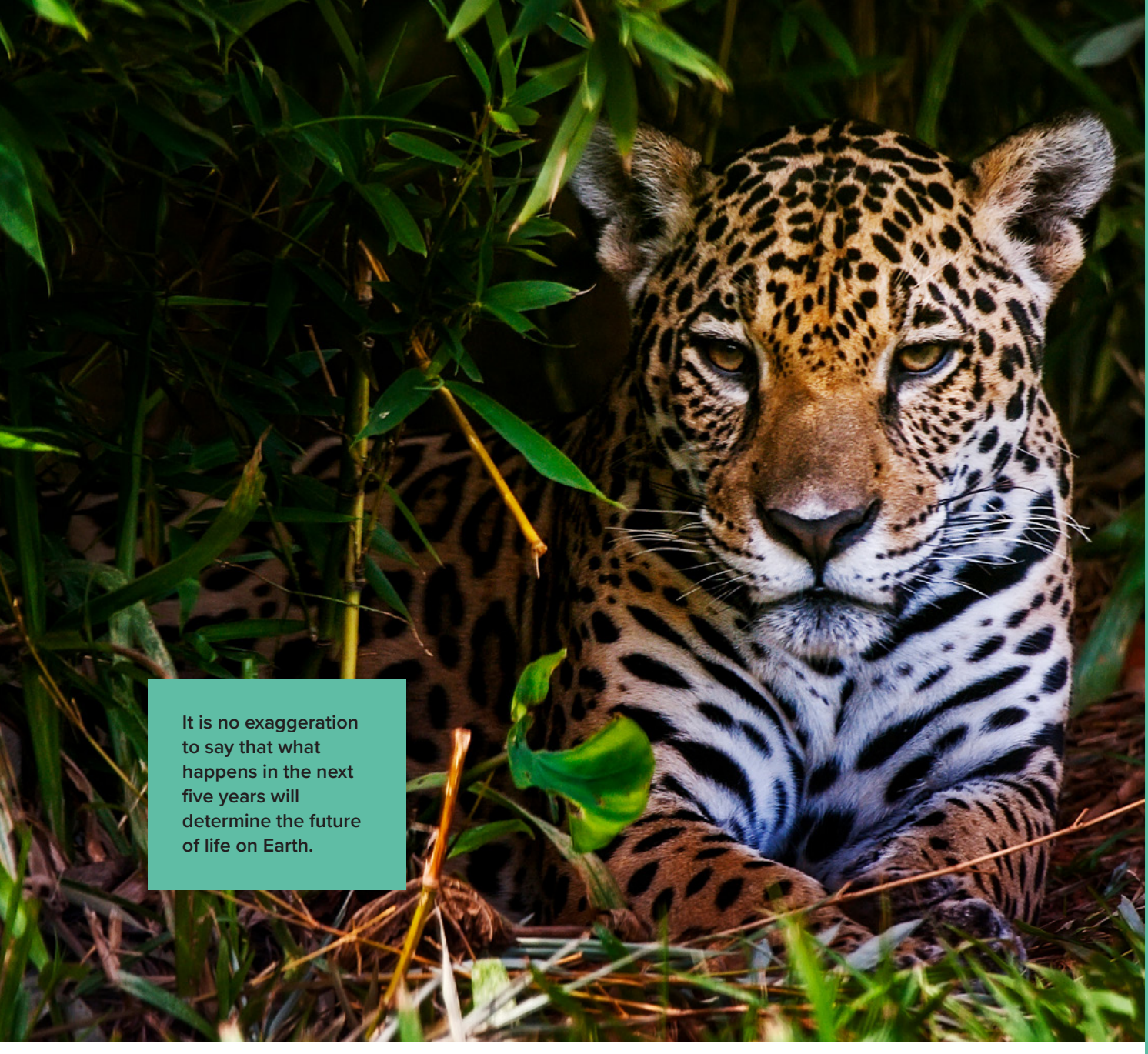
Globally, over half of GDP (55%) is moderately or highly dependent on nature and its services.

Transforming the finance system

Redirecting finance away from harmful activities and toward business models and activities that contribute to the global goals on nature, climate and sustainable development is essential for ensuring a habitable and thriving planet.

Globally, over half of GDP (55%) – or an estimated US$58 trillion – is moderately or highly dependent on nature and its services. Yet our current economic system values nature at close to zero, driving unsustainable natural resource exploitation, environmental degradation and climate change. Money continues to pour into activities that fuel the nature and climate crises: direct payments, tax incentives and subsidies that exacerbate climate change, biodiversity loss and ecosystem degradation are estimated at almost US$7 trillion per year. The positive financial flows for nature-based solutions, in comparison, are a paltry US$200 billion. By redirecting just 7.7% of the negative finance flows, we could meet the funding gap for nature-based solutions and deliver nature, climate and human well-being benefits. While global climate finance for the energy sector approached US$1.3 trillion in 2021/22, the need is a staggering US$9 trillion annually for both mitigation and adaptation through 2030. Similarly, the transition to a sustainable food system needs a huge increase in spending to US$390–455 billion annually from public and private sources – still less than governments spend each year on environmentally harmful agricultural subsidies.

Filling these gaps demands a seismic shift at global, national and local levels to get finance flowing in the right direction, away from harming the planet and toward healing it. We can do this in two mutually reinforcing ways. *Financing green* involves mobilizing finance for conservation and climate impact at scale, which will require new green finance solutions involving the public and private sector – from conservation-focused funds, bonds, loans and insurance products to long-term investment in nature-positive businesses and enterprises. *Greening finance* involves aligning financial systems to deliver nature, climate and sustainable development goals, including by accounting for the value of nature and systematically addressing nature- and climate-related risks.



It is no exaggeration to say that what happens in the next five years will determine the future of life on Earth.

Making it happen

With every issue of the *WWF Living Planet Report*, we see a further decline in the state of nature and a destabilization of the climate. This cannot continue.

It is no exaggeration to say that what happens in the next five years will determine the future of life on Earth. We have five years to place the world on a sustainable trajectory before negative feedbacks of combined nature degradation and climate change place us on the downhill slope of runaway tipping points. The risk of failure is real – and the consequences almost unthinkable.

As a global community, we have agreed on a way forward. The global goals show where we want to be and the path we need to take. All of us – governments, companies, organizations, individuals – need to walk the walk, and be ready to hold to account those who fail to do so.

Together, we must be successful. We have just one living planet, and one opportunity to get it right.

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