

Putting nature at the heart of climate action



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Nature at risk from climate change

Human-caused climate change is one of the biggest threats our planet faces today. Caused by humanity's ever-rising use of fossil fuels, which release planet warming greenhouse gases (GHGs) into the atmosphere, and by the continued destruction of nature's precious biodiversity through commercial practices such as agriculture, logging, mining, fishing, construction, and industrial pollution, the average temperature of the Earth's atmosphere has risen by more than 1.15°C above pre-industrial levels and is projected to rise by almost 3°C by 2100. Similarly, oceans have also warmed to unprecedented levels, with the average global sea surface temperature reaching an all-time high of 20.96°C in early August 2023.

Temperature rises pose a serious and rapidly accelerating threat to the health of the planet and to the lives of animal and plant species around the world. Through the Paris Agreement, the nations of the world agreed that global

warming should not exceed 1.5°C if the worst impacts of climate change are to be avoided. However, given current GHG emissions pathways, atmospheric warming is likely to reach 1.5°C by 2027 and 2.8°C by 2100.^{1,2}

This level of temperature increase will have catastrophic impacts on many plants, animals, insects, and humans. From the reefs of the Caribbean and Australia, where corals are bleaching and dying due to ocean temperature rise, and the savannahs of Africa, where more and more animals die each year due to worsening droughts, to the Gulf of Maine, where rising sea temperatures are affecting the ability of North Atlantic right whales to reproduce, climate change threatens the extinction of up to one million species.³ We now live in a time of climate crisis.

Joining hands with nature to tackle the climate crisis

The International Fund for Animal Welfare (IFAW) recognises the urgent need to take climate action and does so by using a holistic approach that puts nature at the heart of climate action. 'Nature-based solutions' are actions to protect, conserve, restore, sustainably use, and manage natural or modified terrestrial, freshwater, coastal, and marine ecosystems which address social, economic, and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience, and biodiversity benefits.⁴

Through our wildlife conservation and animal welfare programmes, IFAW uses nature-based solutions to protect animals from the worst impacts of climate change, ensuring that the habitats and landscapes they live in are resilient to the long-term effects of climate change. We also use these solutions to mitigate climate change by protecting and restoring the carbon stocks that exist in forests, grasslands, and the seas. This work helps the people who live in and around biodiverse landscapes adapt and thrive alongside wild animals, despite the challenges they face from a changing climate, by building their resilience and strengthening their livelihoods. Finally, we work to address the losses and damages caused by climate shocks by rescuing and treating wild animals affected by disasters and by supporting communities and ecosystems to respond to and recover from disasters.

Biodiversity loss and climate change are two sides of the same coin. By joining hands with nature, IFAW tackles the climate crisis in ways that deliver co-benefits for nature, climate, and people.^{5,6,7} Protecting and restoring biodiverse ecosystems and the wild animal populations that inhabit them, such as whales, sharks, elephants, and antelopes, has the potential to capture and store enough carbon dioxide to deliver over 30% of the mitigation needed to keep global warming below 1.5°C.^{8,9} Such initiatives also protect and restore the biodiversity that is needed to maintain ecosystem services for people and nature in a sustainable manner for centuries to come.^{10,11,12,13}

1.5°C by 2027

3°C by 2100

Without immediate action, Earth's temperatures are expected to rise 1.5°C by 2027 and almost 3°C by 2100.

Climate change and biodiversity loss are also closely linked to poverty and inequality. Wild animals and threatened ecosystems are often located in some of the world's poorest regions, where poverty and food insecurity often give people no choice but to hunt, fish, or cut down trees to make a living. Equally, people living in poverty are disproportionately impacted by the effects of climate change and bear the brunt of a crisis they have done little to create.

Tackling climate change and biodiversity loss therefore demands that we address poverty and inequality in the landscapes where wild animals live by building climate-resilient landscapes where both animals and people can thrive together in the face of climate change. IFAW does this by ensuring that all our work supports local communities to secure prosperous, climate-resilient, and wildlife-friendly livelihoods, deliver food security, and support children's education and access to health care, as animals and their habitats only remain safe so long as the people living around them are able to thrive economically and cope with climate shocks.

3 major pillars of IFAW's climate work focus on

-  **Mitigating climate change**
-  **Adapting to climate change**
-  **Addressing loss and damage due to climate change**



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Nature-based solutions

What are nature-based solutions to climate change?

Nature-based solutions are actions to protect, conserve, restore, sustainably use, and manage natural or modified terrestrial, freshwater, coastal, and marine ecosystems which address social, economic, and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience, and biodiversity benefits.⁴

Nature-based solutions include wildlife conservation, marine conservation, ecosystem restoration, blue carbon projects, and more. These solutions are vital for mitigating climate change, ending biodiversity loss, supporting community climate adaptation, contributing to low-carbon, climate-resilient economic development (including ecotourism), and addressing loss and damage caused by climate change. Together, such initiatives can create climate-resilient landscapes in which wild animals and human communities can live and thrive together despite the risks they face from climate change.

Why are nature-based solutions important?

Nature-based solutions are some of the cheapest and most effective ways we can take action to mitigate climate change, adapt to its impacts, and address loss and damage.

The Intergovernmental Panel on Climate Change (IPCC), which collates all the scientific evidence on climate change globally, has shown that to keep global atmospheric temperatures below 1.5°C global, GHG emissions must be reduced by 45% by 2030, and 730 billion tonnes of carbon dioxide must also be removed from the atmosphere by 2100. Nature-based solutions provide one of most effective means of achieving these goals by 1) reducing the release of GHGs through negative land use change and 2) capturing and storing carbon dioxide in trees, plants, soils, animals, and other organisms. In fact, it has been estimated that nature-based solutions can provide over one-third of the cost-effective climate mitigation needed by 2030 to stabilise warming to below 2°C.

Nature-based solutions also deliver other benefits related to climate change, including addressing biodiversity loss and protecting threatened species from extinction, increasing the availability of ecosystem services, supporting adaptation and resilience, and addressing loss and damage in vulnerable communities. In particular, nature-based solutions help drive low-carbon, climate-resilient economic development by providing sustainable enterprise and job opportunities for millions of people in areas where other options are limited and by catalysing new economic opportunities such as ecotourism and biodiversity and carbon finance.

Protecting biodiversity

Protecting, restoring, and effectively managing biodiversity is at the heart of IFAW's work. Through our programmes on wildlife conservation, animal welfare, and habitat protection and management, our teams work every day to ensure that animals and the biodiverse ecosystems they call home are safe and resilient to the many threats they face, including climate change.

We do this by working with others to create climate-resilient landscapes in which animals and people can thrive together in the face of climate change, combining six key approaches: 1) climate-smart conservation, 2) integrated landscape management, 3) disaster response and animal rescue, 4) tackling wildlife crime, 5) marine conservation, and 6) policy.

1. Climate-smart conservation

Through climate-smart conservation, we acknowledge that climate change is already affecting animals and their habitats in the areas where we work, and that these impacts will only increase over time. As such, conservation agencies and their partners need to factor climate change into their plans and take action to ensure that wild animals and their habitats are resilient and able to adapt to a changing climate.

This begins with helping conservation agencies—whether government authorities or community conservancies—understand the risks that climate change poses to the animals and habitats they care for, then helping them use that understanding to develop effective conservation management plans that can manage climate change over the short, medium, and long term.

For example, in East and southern Africa, rainfall patterns are projected to become much more variable, with more frequent and more severe periods of drought and flooding in the future. This will have serious impacts on wildlife and their habitats if no action is taken to minimise the effects, making future biodiversity protection more challenging. IFAW is addressing these threats in various ways. For instance, in Hwange National Park in Zimbabwe, we are ensuring that elephants and other animals have access to water during drought periods, while in Kenya, we are working with community conservation groups around Tsavo National Park to understand how climate change is affecting their landscape and to adopt climate-smart conservation management measures to deal with the impacts, now and in the future.

2. Integrated landscape management

Integrated landscape management broadens the scope of climate-smart conservation beyond the boundaries of a particular conservation area and acknowledges that these critical areas of wildlife protection exist within wider interconnected landscapes and that what happens in those landscapes affects wild animals and their habitats.

For instance, in many protected areas where IFAW works, such as Amboseli in Kenya, Hwange in Zimbabwe, and Mengyang in China, elephants move regularly beyond conservation areas in search of food, water, and other resources, and their range of movement may expand as the climate changes. Equally, water resources, such as rivers, on which wildlife depend in protected areas may flow from watersheds that extend far beyond the borders of a national park. In the future, these may be badly affected by climate change or the exploitation of water by other users higher up the watershed, with potentially serious implications for wild animals.

By acknowledging the importance of the broader landscape for the protection and effective management of biodiversity in protected areas, IFAW and our partners work with others to develop integrated landscape management plans that ensure the needs of both animals and people are met in a manner that is climate resilient and delivers sustainable economic development.

One key example of how IFAW is using integrated landscape management to support climate-resilient biodiversity conservation is our Room to Roam initiative, which aims to increase the long-term resilience of elephant populations from Zimbabwe to Kenya by connecting core elephant habitats and creating safe passageways for elephants to travel without disturbing human populations. By protecting elephant habitats and increasing ecosystem connectivity, IFAW is working with others to protect, restore, and effectively manage biodiversity over a huge area of the African continent, ensuring elephants can access the food, water, and habitat they need in times of climate stress or can move into safe areas as the climate changes over time.

3. Disaster response and animal rescue

Disaster response and animal rescue are key to IFAW's unique wildlife conservation approach. Because we believe that every animal counts, we don't just work to create environmental conditions in which wild animals can flourish as a species; we also actively seek to rescue animals affected by disasters and to help animal populations remain stable in difficult circumstances. For instance, when climate change-related bushfires impact koalas in Australia, IFAW responds by rescuing affected animals, supporting their recovery, restoring their habitat, and ultimately returning them to the wild. Similarly, IFAW is a world leader in the rescue and rehabilitation of marine mammals, such as dolphins, seals,

and whales. Given the critical role that these animals play in maintaining the health of the ecosystems in which they live and in mitigating climate change, by increasing the survival rate of animals in distress, IFAW is both protecting biodiversity and supporting nature's own ability to address the climate crisis.

4. Tackling wildlife crime

Wildlife crime is one of the most significant threats to our planet's biodiversity. Poaching, whether for bushmeat or for animal parts to sell on the international wildlife market, results in the deaths of millions of wild and protected animals every year. The loss of each animal increases the threat to global biodiversity. It also destroys the lives of their offspring, negatively impacting species populations, and indirectly impacts whole ecosystems and the health of the planet. By tackling wildlife crime, IFAW minimises the negative effects of poaching on wildlife populations, protecting biodiversity and ensuring that wild animals such as whales, sharks, and elephants can play their critical roles in mitigating climate change via the carbon cycle.

5. Marine conservation

Marine conservation is another imperative piece of the puzzle, and IFAW is actively engaged in protecting some of the most important marine species to our planet. We are working to protect the last remaining North Atlantic right whales, which are some of the world's biggest animals—and are key to carbon sequestration and ecosystem maintenance. Through campaigning for decreased vessel speeds, lowered underwater noise pollution, and ending commercial whaling, we work to protect whale species across the globe.

6. Policy

IFAW is also committed to working at a policy level. Rooted in our work to ban seal products in Canada, we lobby and advocate to key players on the global stage to protect wildlife and their habitats and to tackle climate change. Recently, we have worked to shut down ivory markets in the United States, United Kingdom, and China to protect elephant populations, and we are currently lobbying the US Congress to pass a bill that replaces hazardous fishing gear with ropeless alternatives. On the climate stage, we are advocating for more financial investment into nature-based solutions to the climate crisis, and for wildlife conservation to be acknowledged as an important means for delivering climate change mitigation and adaptation and for addressing loss and damage. We will be taking our message to policymakers at the Africa Climate Summit and COP28 in Dubai.





Carbon sequestration

Plants absorb and store carbon dioxide through the process of photosynthesis, and by eating and digesting plants, animals store and cycle carbon in their bodies and through the landscape. As such, biodiversity protection and conservation are highly effective means of mitigating climate change through carbon sequestration—the capture and storage of carbon in plants, soils, and animals. IFAW’s work contributes to carbon sequestration in two main ways:

1. Avoiding carbon dioxide emissions

By protecting biodiverse landscapes, especially forests, savannah woodlands, mangroves, seagrass beds, and coral reefs, from deforestation or degradation by humans and climate change, we are ensuring that carbon that is currently locked in the landscape is not emitted into the atmosphere, thereby reducing the potential for atmospheric warming. Similarly, by helping households and communities switch to low-carbon or renewable fuel alternatives, such as solar electricity, biogas, or the use of energy efficient stoves, we reduce the amount of carbon dioxide released into the atmosphere from fuel wood cutting, charcoal burning, and fossil fuel use.

2. Capturing and storing carbon dioxide from the atmosphere

By actively restoring degraded landscapes, either through reforestation or rewilding, the use of agroforestry techniques, holistic rangeland management, and other regenerative agricultural practices, IFAW is working to capture carbon from the atmosphere and lock it into the landscape, thereby slowing atmospheric warming over time. In most instances, these two approaches can be combined, such as in China, where IFAW helped a community living in close proximity to a critical Asian elephant habitat shift their main livelihood from rubber production, which destroyed elephant habitat via cutting trees to make space for rubber plantations, to agroforestry production of high value food crops, such as mango and macadamia, and to adopt solar power to reduce the use of forest-sourced fuel wood.

The role of animals in carbon sequestration

Individual animals play a significant role in carbon sequestration. Whales and elephants are prime examples:



Whales

Whales play an important role in carbon capture and storage in the oceans through a process called the whale pump. All whales dive deep underwater to feed on carbon rich organisms such as krill and then return to the surface to breathe. In doing so, they cycle carbon vertically through the water column. At the surface, they release nutrient rich faecal waste that feeds ocean phytoplankton, which capture about 37 billion metric tons of carbon dioxide per year, or around 40% of all carbon dioxide produced. Many whales migrate long distances, cycling carbon and other nutrients from feeding to breeding grounds. Throughout their lives, each whale stores huge quantities of carbon in its body, and that carbon is returned to the seafloor at the end of its life. It has been estimated that each great whale sequesters on average 33 tons of carbon in its lifetime, which is equivalent to the amount of carbon captured by around 1,400 trees in a year.



Elephants

Elephants help maintain carbon storage capacities in their ecosystems and promote plant growth by breaking down trees, trampling and scuffing soils, and by cycling carbon through the landscape as they digest and deposit plant matter. This also opens browsing and grazing areas for other animals, which supports biodiversity. Like whales, elephants also capture huge quantities of carbon in their bodies during their lifetime and return that carbon to the landscape when they die and decompose. It has been estimated that the protection of elephants from extinction will prevent the loss of 93 megatonnes of carbon and that supporting the growth of elephant populations could generate a carbon sink of 109 megatonnes of carbon across tropical Africa in the next 30 years.



Landscape restoration and regenerative land use

Many biodiverse landscapes have been severely degraded by human land use over the past century or at risk of degradation from agriculture, logging, or infrastructure development and urbanisation. Therefore, a key part of IFAW's approach to integrated landscape management and climate-smart conservation is focused on restoring degraded landscapes using regenerative land use practices.

Landscape restoration is an important nature-based solution that aims to restore the ecological characteristics of a landscape using naturally regenerative techniques. This might involve approaches such as rewilding, where areas of land are protected

from human intervention and left undisturbed, allowing natural processes to restore damage landscapes. But it may also involve assisted regeneration in which techniques such as ecologically appropriate reforestation, farmer managed natural regeneration, rainwater harvesting and aquifer recharge, agroforestry, holistic rangeland management, permaculture, and regenerative farming are used to bring landscapes back to life.

Landscape restoration using regenerative approaches can deliver multiple benefits for nature, people, and the climate as it:

- ▶ supports the restoration of biodiversity
- ▶ helps sequester carbon in plants, soils, and animals
- ▶ reduces GHG emissions and other forms of pollution
- ▶ increases soil water and organic content
- ▶ increases water availability
- ▶ makes ecosystems more resilient
- ▶ support the development of sustainable livelihoods

Building community resilience and supporting adaptation

Poverty and vulnerability are key drivers of risk for wild animals and the habitats in which they live. Food and income insecurity and a lack of options drive poor people to engage in activities such as poaching, overfishing, and deforestation, and these practices often become worse when people have been affected by climate-related disasters. Thus, any effort to protect, restore, and manage biodiversity should also help local community members become more resilient to the challenges they face and adapt their livelihoods to the changing climate to overcome poverty and vulnerability according to their own needs and aspirations.

This begins with ensuring that conservation programmes actively involve local community members in the design and implementation of activities and that local communities also have a stake in the protection and effective management of wildlife populations and healthy ecosystems. Community leaders and representatives of key interest groups such as women, youth, and Indigenous People are therefore included in decision making on IFAW projects and are enabled to participate in projects as full partners—especially in our work on community-owned conservation areas.

IFAW also ensures local ownership and accountability by working primarily with local partners, helping communities and authorities gain the knowledge, skills, and resources they need to enact their own conservation and community development plans.

Because climate change is already affecting communities in the areas where we work, IFAW also aims to help communities understand and actively plan for climate change, both in the



work we do to maintain and manage conservation areas and in our community development work. This involves teaching community members how to access, analyse, and use climate change information to make local adaptation plans according to their needs.

We also work with communities to link those plans to local government authorities, so that communities can access the resources they need to implement their adaptation plans using an integrated landscape management and local development approach that operationalises the principles for Locally Led Adaptation. We also lobby international finance providers and work with national governments to support these communities and bring their climate resilience and adaptation plans to fruition. And we ensure these communities receive the training and technical support they need to continue working on climate solutions in the long term.

IFAW also provides material support to communities to develop their capacities for climate resilience and adaptation, especially in terms of household livelihoods and capacities for disaster risk management, such as:

Household resilience:

training and support for climate-smart and regenerative agriculture to increase household food security and income generation; training and support for improved livestock production and rangeland management; water resources development to provide water for farm and household use; vocational training and enterprise development to support climate-resilient employment and livelihoods diversification for both women and men; facilitation of employment as wildlife rangers, conservation managers, and ecotourism workers; financial inclusion to support household savings and asset building; wildlife proofing of farms and houses to reduce human-wildlife conflict; and use of the One Health approach to provide families with access to basic health services and reduce disease risk.

For instance, through our Jenga Mama project (named after the Kiswahili words for ‘empower a woman’), IFAW and the German foundation Margarete-Breuer Stiftung helped 60 women in Kenya’s Amboseli community learn trade professions and set up microenterprises that will generate sustainable incomes for their families and communities.

Community resilience:

training in disaster risk analysis and community-based disaster risk management, and the establishment and support of community disaster management committees.





Working together for bold climate action

With over 50 years of global conservation experience and impacts in over 40 countries, IFAW recognises that the problems around climate change and biodiversity are complex and require innovative thinking and bold action. From rescue and rewilding to advocating for policy change, we are combatting climate change with nature on our side.

IFAW operates as a science-driven organisation, working with scientists and the best data available to inform our plans and decisions. We also understand that financing for nature-based solutions to climate change needs to be significantly increased, and increased regulations are needed at regional and national levels to decrease the risk of investing in nature-based solutions. There is also a need to provide local communities and organisations with more access to the information and skills required to implement these solutions.

Bringing together our programming, policy work, and on-the-ground rescue and rehabilitation experience, IFAW is working with our partners around the world to inform international policy and conserve ecosystems critical to mitigating climate change through nature-based solutions.

Our approach as an organisation is to implement solutions that benefit and connect animals, people, and the planet. By engaging with our partners across the globe—from the largest conservation organisations and national governments to local communities, villages, and households—we pioneer new and innovative ways to help all species flourish.

Nature plays its part in combatting climate change only if we do, too. Through engaging governments, organisations, and communities in nature-based solutions, IFAW is committed to fighting the interconnected issues of climate change, biodiversity loss, and poverty and inequality, which must all be solved to ensure the survival of our planet—and the animals and people that call it home—for generations to come.

Endnotes

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