

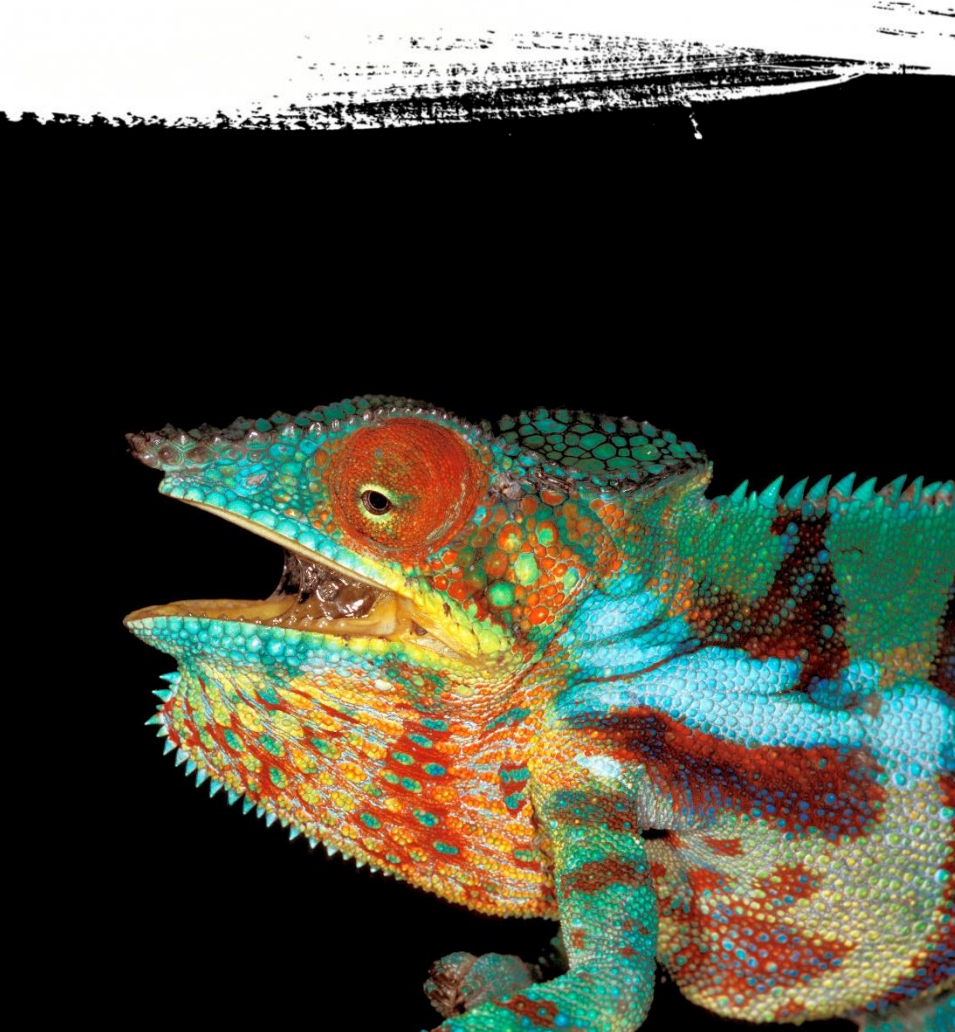


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# PROTECTING GLOBAL BIODIVERSITY

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BIODIVERSITY GUIDE



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## DID YOU KNOW?

- Forests are home to more than three-quarters of the world's life on land, and biodiversity is essential to a healthy forest. Forest dwellers pollinate flowers, disperse seeds, help create soil, and perform other crucial roles that affect natural regeneration and carbon storage.
- Scientists estimate more than 2 million species live in ocean waters and nine out of ten haven't been fully identified.
- Coral reefs cover roughly 255,000 km<sup>2</sup> of shallow tropical seas, representing less than 0.1% of the ocean surface, but accounting for one-quarter to one-third of marine biodiversity.
- Covering less than 1% of Earth's surface, rivers, lakes and inland wetlands host approximately one-third of vertebrate species and 10% of all species.
- Our global biodiversity is under threat. Since 1970, there has been an average **68%** decline in the global populations of mammals, fish, birds, amphibians, and reptiles. Download WWF's [2020 Living Planet Report](#) for more information.

## What is Biodiversity?

Think about the last time you walked through a forest. The animals, plants, fungi, and micro-organisms like bacteria found in the forest are all essential to its health. Remove even one of them and the health of the forest is threatened. Each of these species works together in the forest ecosystem, like an intricate web, to maintain balance and support life.

Biodiversity refers to the variety of life found in a particular ecosystem and it is essential for a healthy planet. Biodiversity supports everything in nature that we need to survive: food, clean water, medicine, and shelter. In order to cope with a changing world, we must protect the diversity of species.

There are millions of ecosystems on Earth, and each is home to thousands of species. But the diversity of life in these realms is under threat from deforestation, rising temperatures, and over-harvesting.

[Watch a stunning video](#)

illustrating biodiversity,  
narrated by natural historian  
**Sir David Attenborough.**





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## Biodiversity is essential for...

### Food and Water Security

Biodiversity is essential for the health of our food system and for fresh water. Ecosystems such as rivers, lakes, and wetlands provide habitat for more than 125,000 species while providing us with water to drink and grow food, so it is essential for them to remain free-flowing and healthy.

As conditions change on our planet, scientists need to be able to explore the different varieties of food crop species and find those that will allow us to continue to grow the food we need.

If we don't protect biodiversity, there will be fewer options for us to draw on when we need them most. For example, in 2007, frost wiped out the entire potato harvest in Peru's Huancavelica region, except for one variety: Yana manua. If the population had relied on a single variety that was less resilient to frost, there could have been a severe food shortage.

### Medicine and Raw Materials

Humans have relied on chemicals and materials discovered in the natural world for many important advances both in science and in medicine. The International Union for Conservation of Nature (IUCN) Medicinal Plants Specialist Group estimates that there are between 50,000 and 70,000 known plants used by humans for medicine or other purposes.

The observation and study of plants and animals has inspired many innovations and improvements to current technology, such as means of communication and sources of renewable energy. These types of innovations are called biomimicry.

If we are not careful, species that offer vital solutions to challenges we face in the future may be lost before we have the chance to discover them. The natural world is a resource that we cannot afford to lose.

### Healthy People

Biodiverse ecosystems benefit both people and nature. Biodiversity helps make the global economy more resilient. It functions as an integral part of our culture and identity, and research has shown it is even linked to our physical health. Healthy, natural systems, from rain forests to wetlands, are responsible for regulating air quality, climate, water, erosion, waste treatment, pollination, and disease.

A biodiverse environment can even absorb some of the effects of climate change and help reduce the damage caused by rising sea levels, extreme rainfall, and the higher incidence of droughts and storms. [Click here](#) to read more about how nature-based solutions could contribute up to 30% of the climate mitigation needed by 2050 in order to meet the Paris Agreement's objective of limiting global warming.





# Threats to Biodiversity

The greatest threat to biodiversity is human activity. We have overfished the oceans, cleared forests, polluted our water sources and caused climate crises. These actions are impacting biodiversity around the world, from the most remote locales to our own backyards. If the world carries on with “business as usual,” the biodiversity losses would, at best, take decades to reverse, and further irreversible biodiversity losses are likely, which would result in a planet unable to support current and future generations of people.

## Agriculture

Agriculture, the number one driver of habitat loss in forests and grasslands, has a dramatic impact on biodiversity. The growing human population and its demand for food increase pressure to convert forests and grasslands to farms and pastures. More than one-third of the world’s land surface is currently dedicated to agriculture. This shift to agriculture has affected the quality of soil in many parts of the world. Half of the topsoil on the planet has been lost in the past 150 years. This has a domino effect on all the species that rely on soil. It has led to the decline of bees and other insects that help pollinate 75% of the food crops we grow. Additionally, the use of pesticides and fertilizers on farms can poison air, soil, and water.

Tropical rain forests are home to more species—many of which are rare and endangered—than any other land habitat. Large areas of these forests have been cleared to grow palm oil, an ingredient used in packaged products all over the world. This conversion of the forests fragments the habitat and threatens the survival of many plant and animal species.

## Overharvesting

Today, more than one-third of assessed fish populations are harvested at unsustainable levels. Fish are a part of many marine food webs, so by depleting the ocean of its fish, we’re impacting all the species that depend on fish to survive. A key driver of overfishing is illegal, unreported, and unregulated (IUU) fishing, which threatens the overall health of our oceans. It is estimated that up to 33% of the seafood harvested around the globe is caught illegally, accounting for up to \$36.4 billion dollars in global financial losses. Overfishing and IUU are also closely connected to bycatch—the capture of sea life while fishing for a different species. Many of these species are endangered and protected, including the vaquita, Eastern Pacific leatherback turtle, and Maui dolphin which are on the brink of extinction. Bycatch is the leading threat to whales and dolphins, estimated to cause at least 300,000 deaths per year.

Forests are also at risk from overharvesting, impacted by illegal and unsustainable logging. Removing timber this way causes the health of the forests to decline as vegetation is damaged, rivers are polluted, and the stability of the soil weakens. In 2019 alone, the tropics lost more than 29 million acres of tree cover. That’s close to 30 soccer fields’ worth of trees every single minute.



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## Water quality and ocean health

The ocean covers more than two-thirds of our living planet's surface and is home to a spectacular array of ecosystems and wildlife. Coral reefs, mangroves, and seagrass are interconnected ocean ecosystems that support an astounding array of biodiversity and have deep roots in local cultures. The coastal zone makes up only 10% of the ocean environment yet is home to over 90% of all marine species. Due to pressures brought on by development, pollution, and climate change, we've lost half of these ecosystems and stand to lose even more.

Each year, 11 million tons of plastic enters the ocean, and according to scientists, plastic particles can be found in 90% of the world's seabirds. Abandoned fishing gear, or ghost gear, is estimated to comprise up to 10% of plastic waste in our oceans, by volume, making ghost gear the most harmful form of plastic pollution to marine species.

Freshwater environments are under even more threat. We lose wetlands three times faster than natural forests and have lost up to 87% of global wetlands since 1700. Increasing human populations result in growing pressure on our freshwater for daily needs as well as business and agriculture. With more pressures impacting these water habitats, freshwater species are declining at the alarming rate of 84% since 1970, with 1 in 3 species threatened with extinction.

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## Climate change

Up to one fifth of wild species are at risk of extinction this century due to climate change, even with significant mitigation efforts, with some of the highest rates of loss anticipated in biodiversity "hotspots" such as the Amazon and the Galapagos. Changes in climate and extreme weather events are affecting biodiversity across the globe. Life cycles of certain species (such as flowering plants) are being altered, impacting the other members of the ecosystem that depend on them. Species' migrations and breeding seasons also fluctuate, as they are often climate dependent. The availability of food and water is shrinking, creating more competition. As winters get warmer and shorter, pests and diseases spread.

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## Wildlife trade

Poaching wildlife for illegal trade is an urgent threat facing hundreds of the world's most beloved species, such as elephants, rhinos, and tigers. These animals are illegally hunted for their fur, tusks, horns, bones, and other parts. Illegally obtained animal parts and products are trafficked by international criminal networks, much like illegal drugs and weapons.

# What You Can Do

The WWF Living Planet Report research shows the world could start to stabilize and reverse biodiversity loss by embracing bolder, more ambitious conservation efforts as well as making transformational changes. You can be a part of this global effort by taking these action below:

## EAT A [PLANET-BASED DIET](#)

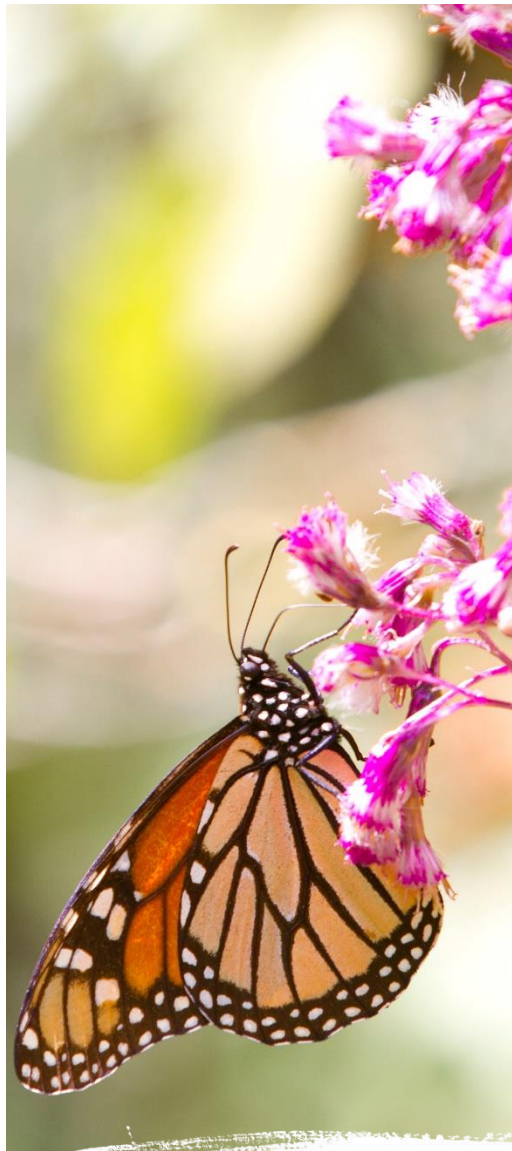
The ways in which we produce and consume food is pushing our planet to the brink. The global food system is a major driver of greenhouse gas emissions and biodiversity loss. A shift in our eating patterns can help us restore nature and improve our health. Choose more sustainable ingredients, diversify your diet, up your vegetables and balance your meat intake, eat nutritious and minimally processed foods, and reduce food waste. Use the **Planet-Based Diets Impact & Action Calculator** to see what changes you can make to help reduce the impacts on your country's environment. Then take a look at what your weekly shopping basket might contain, based on the diet you've picked.

## SUPPORT LOCAL FARMS

Transforming food production and consumption is one the most important actions we can take to start living in a sustainable way. Our food systems have caused 70% of biodiversity loss on land and 50% in water. They're responsible for around 25% of all greenhouse gas emissions and have caused 80% of our global deforestation. Support your local farmers and farmers' markets, and learn as much as you can about how agriculture can serve as a tool for conservation and food security.

## BUILD WILDLIFE HABITAT IN YOUR BACKYARD

Looking for fun, sustainable ideas? From toad and bat houses to bug hotels and lizard lounges, you can create a variety of [wildlife habitats](#) to support biodiversity in your own backyard.



© Court Whelan/Natural Habitat Adventures

## GARDEN FOR POLLINATORS

At least 30% of crops and 90% of flowering plants rely on pollinators, such as bees and butterflies, to produce fruit. If you have access to even a small piece of outside space, you can plant an eco-friendly garden. Plant regionally native species that attract pollinators, landscape with water-efficient plants, and use eco-friendly fertilizers. Discover the native plants in your area with this [Native Plant Finder](#).

## CHOOSE REUSABLE

Skip unnecessary single-use plastics. Plastics such as non-reusable water bottles, plastic bags, and straws pollute our ocean and can destroy ecosystems and endanger marine life. Remember to reuse and recycle whenever possible.

## JOIN THE [1 MILLION FOR MONARCHS](#) MOVEMENT

When we think of wildlife losing their habitats, we usually envision tigers, elephants, and rhinos in faraway places. But monarch butterflies are losing their homes right here in the U.S.—and our food is playing a part. Join WWF's movement bringing 1 million supporters together to help save these important pollinators.



## FLEX YOUR LABEL IQ

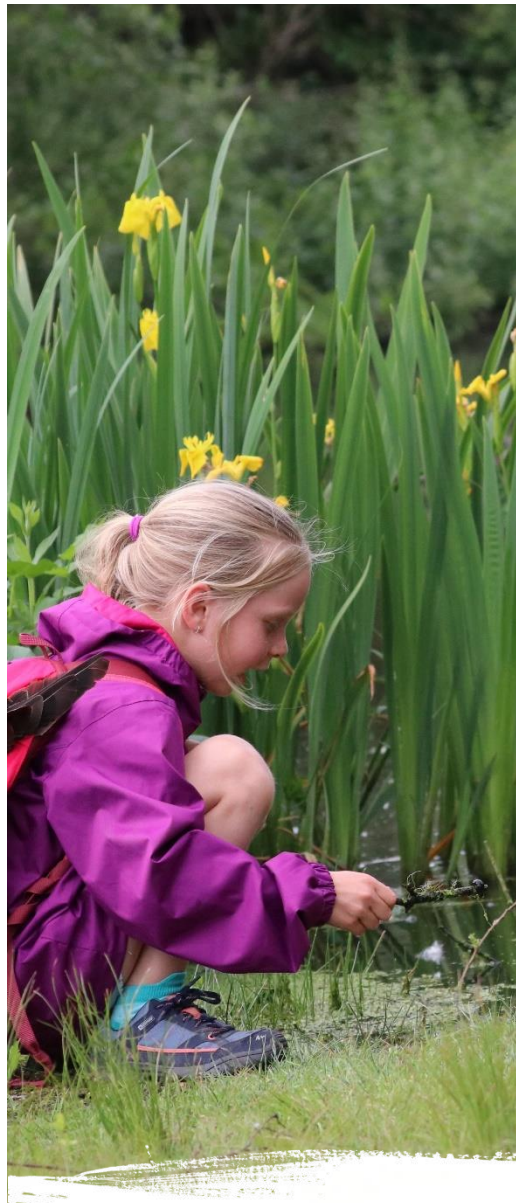
By being mindful of [what marine and freshwater species are at risk](#) when making dining choices, you can help protect the over 400 known endangered species linked to human consumption. Purchase seafood that comes from verifiable, responsible sources. The **Marine Stewardship Council (MSC)** label represents the world's most credible wild-caught fishery certification program, while the **Aquaculture Stewardship Council (ASC)** label can be used to identify responsible farmed fish choices.

Palm oil is the world's most produced, consumed, and traded vegetable oil. But its irresponsible production has been a major driver of biodiversity loss. Many vast monocrop oil palm plantations have displaced tropical forests across Asia, Latin America, and West Africa. Around 90% of the world's oil palm trees are grown on a few islands in Indonesia and Malaysia —islands with some of the most biodiverse tropical forests found on Earth and home to endangered species such as orangutans, rhinos, elephants and tigers. In these places, there is a direct relationship between the growth of oil palm estates and deforestation. When shopping, look for the **Roundtable on Sustainable Palm Oil (RSPO)** label. This label gives you the confidence that the palm oil was produced in a socially and environmentally responsible way.

**Curious to know what products contain palm oil?** You might be surprised, and product labels can be misleading. [Click here to see examples](#) of food, household, hygiene, and beauty products that often contain palm oil.

## INSPIRE AND EDUCATE OUR FUTURE CONSERVATION LEADERS

Speak out about the importance of biodiversity to friends and family. Check out our Wild Classroom [Biodiversity Toolkit](#) for family fun and learning opportunities. [Find Your Inner Animal](#), expand your wildlife knowledge with [Animal Trivia Games](#), and download the [WWF Together](#) app for interactive experiences with natural habitats and endangered species.



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## PLEDGE FOR OUR PLANET

Our planet is facing major conservation challenges from threats like climate change, deforestation, overfishing, and illegal wildlife trade. But protecting our planet and keeping planetary warming below 1.5°C is not impossible and none of us need to do it alone. Our impact on the planet primarily comes from what we eat, what we buy, how we power our homes, and how we travel from place to place. Together, we can take action to create lasting solutions and protect the future of nature.

## SIGN THE [FSC PLEDGE](#)

One of the best ways to protect forests like the Amazon is to buy products that have the **Forest Stewardship Council® (FSC®) logo**. This logo shows that your product comes from a responsibly managed forest—one where trees are harvested legally, highly hazardous pesticides are avoided, lakes and streams are protected from erosion, the rights and resources of people who live in the forest are respected, and species' habitats are protected. Nearly three-quarters of the world's land-based species and almost 750 million people, including 60 million Indigenous peoples, call the forest home. Pledge to buy forest-friendly products when available and commit to preserving nature's beauty for future generations.

## EXPLORE

You don't have to travel far to find interesting plants, trees, flowers, fungi and animals. Your garden, local park or nearby nature reserve are rich ecosystems filled with species that live alongside us. Use the [Seek](#) app to learn about and identify native species in your area.





# PROTECTING GLOBAL BIODIVERSITY

One of the most beautiful things about biodiversity is its resilience. Ease up on the pressure, manage resources well, give it time, and the ecosystem will adapt. Nature and biodiversity will recover. That's exactly what WWF is working to do in biodiversity hotspots. We've identified the threats and are addressing them: engaging both local communities and international governments to set aside protected lands and end illegal deforestation; working with companies to ensure the paper, lumber, and food products you use every day are sourced responsibly; and leading global efforts to stop wildlife crime.

We're combatting biodiversity loss all over the world by analyzing the unique threats and finding innovative solutions. WWF is using artificial intelligence and other technologies to combat illegal fishing, assess impacted regions of forest, help animals adapt to climate change-related threats to biodiversity and identify and stop poaching activity and illegal sales of wildlife products. To protect the iconic wildlife we all love, we must rebuild the web of biodiversity that supports it. We do this by rethinking how we're using natural resources, easing the pressure and allowing ecosystems to recover. In the process all life benefits: plants, insects, fish, birds, mammals and people.

[Click Here to Support WWF's Work](#)

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