WWF Action

THE MAGAZINE FOR WWF MEMBERS AUTUMN 2025

On top of the *world*

Protecting Nepal's snow leopards with technology and tradition

Feel-good *forests*

Find wildlife and wellbeing on our trails through England's beautiful wild spaces

Faith in the *future*

How spiritual beliefs and science are defending nature in Bhutan

River *stars*

There are 476 species of fish in the waters of the Estrella Fluvial Inírida in Colombia – 10 times more than in the whole of the UK. That gives you some idea of the richness of this unique ecosystem. The name Estrella Fluvial – or 'River Star' – reflects the coming together of multiple rivers: sediment-rich whitewater rivers from the Andes and blackwater rivers that get their colour from decaying plants.

I came here to learn how our Colombian colleagues are working alongside Indigenous communities to protect this extraordinary place. For the region's Indigenous peoples these lands and waters are an integral part of their sense of being – and they're committed to safeguarding them so they can continue to provide the resources the community needs.

But while the collective power of their history and pride in their roots shines through, local people are also embracing new economic opportunities: ecotourism homestays, catch-and-release sport fishing, or making highly prized honey from stingless forest bees. These emerging enterprises are encouraging young people who might have been lured to the towns to stay and build a life here.

I left humbled and inspired by what I saw during my short time with these communities. Their bond with their land is as strong and determined as ever. And the happy result is that wildlife and wild habitats are flourishing here.

Mark

Mark Wright
Special adviser, WWF-UK

Right: Traditional livelihoods now run alongside new businesses such as ecotourism

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On the cover

Regulars

WWF *in action*

Glorious *mud*

Britain's saltmarshes are powerful allies against climate change, says our new research.

A pioneering study on the Ribble estuary in Lancashire, led by WWF and Aviva, has demonstrated that local saltmarshes absorb and store more carbon than they release. This provides important evidence of the role these tidal wetlands can play in meeting climate goals.

The research, conducted in partnership with the UK Centre for Ecology & Hydrology and the RSPB, used a 'carbon flux tower' to track carbon capture and release at the site in real time.

As well as removing carbon from the atmosphere, saltmarshes are an important habitat for numerous species, including many wading birds, fish and uniquely adapted plants and invertebrates. They provide natural barriers against flooding and rising sea levels, and improve coastal water quality by acting as natural filters.

But over 85% of the UK's saltmarshes have been lost to development, pollution and climate change. We're calling for saltmarsh habitats to be included in the UK's Greenhouse Gas Inventory – the official record used to track progress toward emission targets. Recognising their carbon-storage potential could unlock support to protect and restore these vital ecosystems.

"Saltmarshes are powerful natural allies in the fight against climate change – storing carbon, protecting our coasts and supporting rich biodiversity," says WWF ocean conservation specialist Tom Brook. "As extreme weather and rising sea levels put more people and places at risk, the case for protecting and restoring these habitats has never been stronger."

© Joseph Gray / WWF-UK

Right: Saltmarshes are vital coastal carbon vaults and they shield shores from rising seas

News in *numbers*

£200,000

Art For Your Oceans, an exhibition of ocean-inspired works by 14 international artists, has raised more than **£200,000** to support marine conservation initiatives. Each artist used the world's first **sustainable ink** made from **regeneratively farmed** seaweed.

£9,701

WWF supporters have donated **£9,701** to our Myanmar emergency appeal. Thanks to you, we can support the community river guardians who are helping wildlife, including **Irrawaddy river dolphins**, recover after March's devastating earthquake.

100

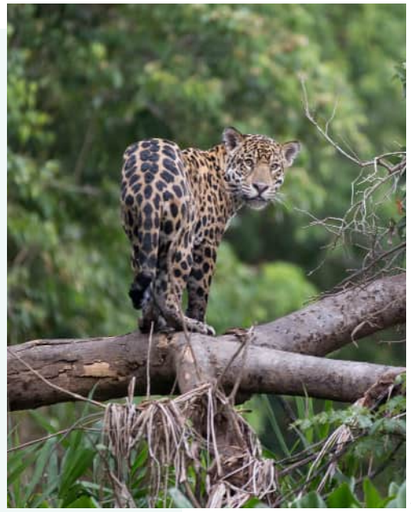
In July, four Yorkshire teenagers – Adam, Elliott, George and Jacob – hiked **100 miles in five days** to raise £600 for WWF, walking from Wakefield to Wales.

Hope for the *Amazon*

This summer, supporters who've chosen to remember WWF-UK in their wills got an exclusive insight into our work in the Amazon. Our Latin America conservation, advocacy and policy team spoke at events for our legacy supporters in Bath, Cambridge, Eastbourne, Glasgow and Sheffield.

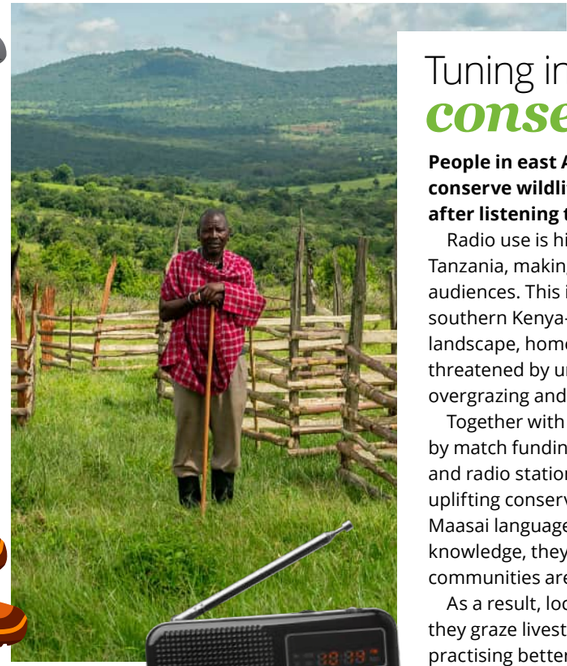
Each gathering explored how we're striving to protect and restore the Amazon, from working alongside Indigenous communities to safeguarding species like the jaguar. The events were a powerful demonstration of how legacy gifts drive our work. "Though the challenges are immense, it's reassuring to know WWF has such knowledgeable, passionate people to make the case for nature," said one supporter.

If you'd like to attend a future legacy supporter event, or learn more about leaving a gift in your will, you can contact our legacies team at **stewardship@wwf.org.uk**



© Getty

Above: We're protecting jaguars by preserving their rainforest home and supporting local communities to coexist with wildlife



Above: Our radio shows inspire communities to share sustainable farming practices

Tuning in to *conservation*

People in east Africa have been taking action to conserve wildlife and restore the environment – after listening to the radio.

Radio use is high across rural Kenya and Tanzania, making it a powerful way to reach large audiences. This is particularly true in the vast southern Kenya–northern Tanzania transboundary landscape, home to a diverse range of wildlife but threatened by unsustainable food production, overgrazing and climate change.

Together with BBC Media Action and supported by match funding, we worked with local journalists and radio stations to produce shows sharing uplifting conservation stories. Broadcast in the Maasai language and featuring Indigenous knowledge, they highlighted how Maasai communities are protecting natural resources.*

As a result, local people have changed how they graze livestock, planting grasses and practising better animal husbandry. They've also begun growing vegetables without chemicals, formed community groups to support each other's farming, and are sharing what they've learned.

© Diana Njeru | © Getty

* This project is made possible by the Reversing Environmental Degradation in Africa and Asia (REDAA) programme, which is funded by UK International Development from the Foreign, Commonwealth and Development Office and managed by the International Institute of Environment and Development.

Norfolk farm *victory*

Two proposed industrial megafarms in Norfolk have been blocked after we worked with local community groups to object to them.

These huge farms would have been among the largest in the UK, housing millions of chickens and tens of thousands of pigs. Farms that size can be devastating for the environment. Every year they could generate at least 13,000 tonnes of CO_2 emissions and 48,000 tonnes of manure.

We submitted legal and scientific evidence highlighting how these farms would harm nature, the climate and the local community. We also asked our supporters in Norfolk to take action, which they did in overwhelming numbers. "The support and guidance from WWF was invaluable," says a member of the Cranswick Objection Group.

The UK already produces all the protein it needs. We don't need megafarms. Instead, we want to see farmers working with nature, not against it. That's why we're calling for a new law – the Living Planet Act – that will ensure the UK government takes joined-up action to stop climate collapse, protect nature and help farmers produce healthy, affordable food without damaging the planet.

Top and above: Our legal teams successfully argued that megafarms in Norfolk would harm nature and local communities. The manure produced could have contributed to local river pollution and climate change

Below: Helen O'Keefe is a crofter and a champion for nature and community

Sign our Living Planet Act petition at **wwf.org.uk/act/living-planet-act**

Healthy *farms*, happier *farmers*

Regenerative agriculture is about farming in a way that improves the health of soil and habitats. And, as recent WWF research makes clear, it's good for the wellbeing of farmers too, supporting both mental health and long-term resilience. Many farmers face increasing pressures, from environmental challenges to changing market and policy demands. By supporting healther practices we can care for the land as well as livelihoods.

Helen O'Keefe is a regenerative farmer who produces and sells meat, wool, eggs, fruit and vegetables from her croft in the Scottish Highlands. In 2020 she won the Scottish Crofting Federation's Young Crofter of the Year award. She also runs a tearoom and has launched a local food hub called The Green Bowl, where small-scale growers can sell their produce directly.

She says crofting allows her to connect with nature, which boosts her wellbeing. "A lot of my work is just walking through the fields, watching wildlife," she explains. "You see the seasonal changes, and there's a real sense of being part of it. It brings you back to a place of simplicity."

The Herds' gorilla, giraffe and kudu were among puppets bringing the urgency of the climate emergency to the heart of UK cities

Have you *herd?*

Elephants, giraffes, gorillas and other wild animals stampeded through London and Manchester this summer. These were just two of the stops on their epic 20,000km journey from the Congo Basin to the Arctic Circle.

The life-sized puppets, made from recycled materials, were part of a public art project called The Herds. Through its creative representation of animals fleeing the deadly impacts of climate change, it aims to inspire action to tackle the climate and nature crisis.

"I had the privilege of witnessing this stunning and thought-provoking project that communicates urgent messages about our world while also bringing great joy," says our chief executive, Tanya Steele. "The Herds is a powerful symbol of the climate chaos to come if our leaders don't step up."

We're proud to be a part of this unique project, which was developed by UK-based not-for-profit company The Walk Productions and an international artistic team.

Above: Guy and his partner explored cycle routes around the UK, covering more than 1,000 miles in all weathers

1,000-mile cycling *challenge*

When Guy Busher's wife, Elly, died 10 years ago, it devastated their family. But a decade on, Guy has commemorated Elly by fundraising for a cause she would have supported. Guy set himself the challenge of cycling more than 1,000 miles in a year, and raised over £2,100 for WWF.

"It gave me the discipline to get out and about regularly on my bike, which, in itself, is a great way to explore the world around us," Guy says. "The current challenges facing our environment are pressing and I'd like to try and leave a world that's better for our children and grandchildren."

Scientists today calculate that if global warming continues at present rates, snow leopards could lose up to 30% of their habitat by 2070

MEMBERSHIP IN ACTION

READ TIME 12 MINS

Himalayan *guardians*

Climate change threatens Nepal's mountain communities and its iconic wildlife. But by combining new technologies with ancient traditions, we can create a brighter future for people and snow leopards

A noise wakes you in the dead of night: a terrified bleating, the drumbeat of hooves. You scramble outside into the cold mountain air, grabbing a stick as you rush to the sheep pen. But you're too late. Inside, it's carnage. The killer is gone, but there's no mistaking those paw prints: snow leopard.

Here in the UK, we can hardly imagine the challenges faced by a Nepalese farmer high in the Himalayas, his family dependent on their livestock. But it's easy to grasp that losing half your flock in a single night is a catastrophe. "We must put ourselves in their shoes," says Sheren Shrestha, manager of our mountains programme in Nepal. "This is their livelihood. Naturally, we'd be angry."

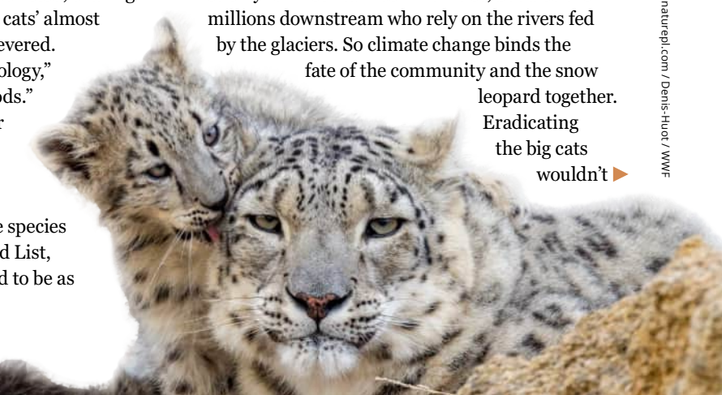
Snow leopards are the ultimate mountain predators, perfectly adapted for survival at altitudes upwards of 3,000m. For generations, these elusive big cats have lived alongside herders. While occasionally taking livestock, they've also helped maintain the mountains' ecological health, controlling the wild herbivores that would otherwise overgraze the terrain. Over centuries, people and predator have coexisted, sharing the landscape's resources. Indeed, the cats' almost supernatural powers have long been revered. "Snow leopards are part of local mythology," says Sheren. "They're considered as gods."

Sadly, this relationship is now under strain. New pressure – including habitat loss, a decline in natural prey and expanding infrastructure – are taking their toll on snow leopards. The species is listed as vulnerable on the IUCN Red List, with a worldwide population estimated to be as few as 4,000. As their landscape shrinks, they're being forced closer to people, triggering more conflict – which sometimes prompts fatal retaliation from herders.

Compounding these pressures is climate change. Nepal is one of the world's most climate-vulnerable countries. Scientists calculate that if global warming continues at present rates, snow leopards could lose up to 30% of their habitat by 2070. Rising temperatures are changing entire landscapes, enabling lower-altitude plant and animal species to spread up mountainsides. This is compromising the habitat that's essential to the big cats and their prey. A warmer climate also means people can farm higher up, encroaching deeper into snow leopard territory and risking further conflict.

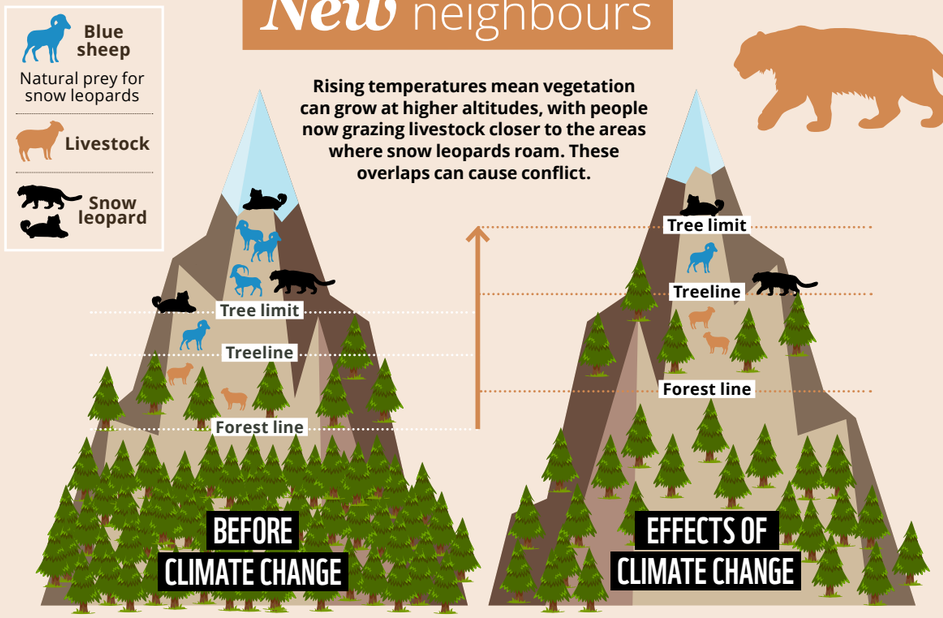
A FRAGILE BALANCE

The mountain community also faces other threats. Invasive plants and new diseases are arriving, including livestock diseases previously unknown at these altitudes and, potentially, new pathogens released from melting glaciers. Meanwhile, those melting glaciers, plus uncertain rainfall patterns, threaten water security – not only for mountain communities, but also the millions downstream who rely on the rivers fed by the glaciers. So climate change binds the fate of the community and the snow leopard together. Eradicating the big cats wouldn't ▶

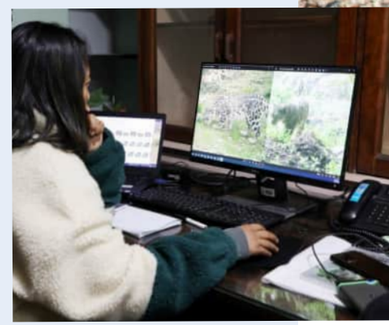


Words: Mike Unwin. Images: © Sascha Fonseca | © naturepl.com / Denis-Huot / WWF

New neighbours



Above: High in the Himalayas, Penjokla Sherpa, the first female citizen scientist from a local village, secures a camera trap to help us survey snow leopards in Kangchenjunga Conservation Area



Above: Snow leopard researchers sift through thousands of photos from camera-trap surveys to count and identify individual snow leopards, and monitor populations of their prey

Above: Camera traps give a unique and intimate view of wildlife. Researchers get to see rare behaviour and even snow leopard families with cubs

solve the herders' problems. "Even if snow leopards aren't there, entire human populations that rely on this ecosystem will be affected," explains Sheren. "That's why we're looking at climate change as a unifier: it's a reason for anyone who cares about wildlife, the environment and people to come together."

WINNING HEARTS

Nepal has the fourth-largest snow leopard population of the 12 countries where the cats are found. Our WWF colleagues in Nepal are working with communities to address the threats from climate change and find ways for predators and people to continue to coexist. "When somebody says, 'I don't want snow leopards,' we hear them out," says Sheren. "We tell them that we're here to find solutions – and not just for snow leopards. Snow leopards will be fine if we have solutions for people." The first challenge is to establish snow leopard numbers and their whereabouts. Here, communities are making a vital contribution.

In 2024, we supported the Nepalese government with a nationwide assessment of snow leopard populations, bringing together experts and data from various organisations and researchers. We coordinated work in three remote sites through a citizen-science initiative, training villagers to use technology such as camera traps and GPS. "Without local people, research is practically impossible," explains Sheren. "The communities know these landscapes best, so we need their help. They are equal partners."

The assessment revealed a population of 397 snow leopards across Nepal, including around 90 in Shey-Phoksundo National Park and an estimated 30 in the eastern Dolpa region. The latter figure is particularly significant as it's not a protected area. Indeed, 42% of Nepal's snow leopard habitat lies outside protected areas, so these places may actually need the most protection, both as territories in their own right and as corridors between protected areas.

> "WITHOUT LOCAL PEOPLE, RESEARCH IS ALMOST IMPOSSIBLE. THE COMMUNITIES KNOW THESE LANDSCAPES BEST"

Above: Nepal's Snow Leopard Conservation Action Plan (2024-2030) outlines ways to protect the species through community engagement, habitat preservation and conflict prevention. The plan's been designed to adapt to the effects of climate change, too

Below: Ensuring the long-term survival of snow leopards requires a deep understanding of how they use their habitat

SAFE AS HOUSES

The communities' involvement has been as important as the data it generates. "When we work together, we see their perspective and embed this in our conservation actions," says Sheren. "Likewise, they learn that they live alongside a rare and magnificent animal." He explains that many of the citizen scientists are herders who have lost livestock, but they're now proud of their work to protect snow leopards. With communities onside, practical solutions become easier. The worst conflicts arise when a snow leopard enters a corral and kills many animals, rather than just the one it needs. This 'surplus killing' can destroy a family's livelihood overnight. A simple solution lies in predator-proofing corrals using a special wire mesh roof. The weight and bulk of this mesh makes it too expensive to transport from Kathmandu, but we help villagers source wire rolls, transportable by mule, and train them to weave the mesh. Secured properly, these roofs are highly effective. One herder told us snow leopards had tried to get into a roofed corral more than 30 times, without success.

Where losses do occur, the government provides some financial relief, but this can be hard to access. We've helped establish community-based insurance schemes, into which all members pay a premium, generating interest, and those affected receive a modest payout. "This helps villagers feel they're not alone," says Sheren. In the Kangchenjunga region, it's helped end retaliatory killings. ▶

High tech in the *mountains*

Cutting-edge technology is transforming snow leopard conservation in Pakistan. High in the remote mountains of Gilgit-Baltistan, our WWF colleagues are trialling a new AI-based camera system that detects snow leopards and sends early warnings to local communities.

Developed with the Lahore University of Management Sciences, the system uses solar-powered cameras mounted in strategic locations. Each unit employs AI software to distinguish between humans, snow leopards and other animals. When a leopard is detected, it sends an automatic text alert – giving herders time to move their livestock to safety.

Still in its pilot phase, the system's success depends on community trust. Cultural sensitivities around privacy must be respected, and safeguards are needed to ensure data doesn't fall into the wrong hands, which could aid poachers.

Over the next two years, we'll help refine the system and test deterrents – lights, sounds or scents – to safely steer leopards away from livestock. If successful, it could be expanded to other snow leopard habitats. Communities will be involved throughout, with nominated guardians overseeing local use. We're also exploring links to ecotourism, so residents benefit economically.

Currently, the system isn't viable in Nepal due to poor connectivity in remote regions. But in time, it could offer a valuable model there – and inform conservation efforts worldwide.

"TECHNOLOGY IS PROVIDING NEW OPPORTUNITIES TO FIND SOLUTIONS FOR NATURE AND PEOPLE"

Many of the ways to protect the landscape involve communities reviving traditional practices. "We used to live with nature, that's why we still have snow leopards," says Sheren. "We're trying to help people get back to their roots." But of course these communities also want development, such as roads and power lines. This must be approached carefully. "Nature must be taken into account in snow leopard landscapes," says Sheren. "New roads can damage and fragment habitat, introduce feral dogs and disease, and damage water sources – which can affect local people and their livelihoods."

Intact snow leopard landscapes, meanwhile, have a high capacity for storing carbon, so protecting them could help mitigate climate change.

We're supporting the government's efforts to ensure green, resilient and inclusive infrastructure development. "We're not saying all infrastructure is bad," says Sheren. "We're just saying: think it through." New roads should protect water sources and not restrict wildlife movements. Communities are evaluating the potential negatives of better access, including the impacts on their rangelands and threats such as disease. Sheren explains that most villages rely on income from visitors coming to see what they have in abundance: nature.

Above left: We're testing 10 cameras powered by artificial intelligence in Pakistan. Run on solar panels, the cameras detect a snow leopard's presence and warn villagers via text messages

Above: Rising temperatures are pushing villagers to relocate their crops and animals to higher altitudes – areas that overlap with snow leopard habitat. As a result, livestock become more vulnerable to snow leopard attacks

Above right: Snow leopards prefer wild prey like ibex and blue sheep, but when these herbivores are scarce, they may turn to livestock, increasing the risk of conflict with mountain communities

ALTITUDE INTELLIGENCE

Meanwhile, technology continues to play a vital role in our work. In the past, GPS collars revealed much about snow leopards' movements and behaviour – one cat in the Kangchenjunga Conservation Area was tracked to 5,848m, the highest elevation ever recorded. But collars are costly, risky, labour-intensive and only allow for a small sample size. Camera trapping is now a more effective tool, with our citizen-science programme enabling us to roll it out more intensively.

Tech-wise, the new kid on the block is, of course, artificial intelligence. A recent scheme trialled in Pakistan, which connected remote cameras to AI, enabled researchers to identify and track snow leopards so villagers could be alerted and take precautions (see 'High tech in the mountains', left). Sheren explains that remote sites in Nepal don't yet have good enough phone connectivity to support this scheme, but it has exciting potential. "Technology is providing new opportunities to find solutions for nature and people," he says.

With your ongoing support, we'll continue to embrace new tech alongside our other work to support people and protect wildlife in Nepal's snow leopard landscapes. Ultimately, it's not a choice between predators and people.

"We must look at it holistically," says Sheren. "If the community understands that their future and snow leopards are intricately linked, they'll take it into their own hands. Then I think our work is done." ■

A gift for *snow leopards*

Your support can help secure a brighter future for snow leopards and the communities who live alongside the big cats.

£10 could go towards buying a powerful spotting scope for monitoring snow leopards' wild prey

£20 could help provide lights that harmlessly deter snow leopards from livestock pens

£50 could help fund the materials to make livestock pens predator-proof, reducing conflict with people

£100 could support the development of AI-based cameras to detect big cats

You can donate using the enclosed freepost envelope or by scanning this QR code

Donate today at **wwf.org.uk/cat-coexistence**

READ TIME 5 MINS

Intelligent *conservation*

As the nature crisis intensifies, AI could become a vital ally. Find out how artificial intelligence is helping conservationists monitor and protect habitats – and the wildlife that lives there

Artificial intelligence is everywhere. It's in smartphones, search engines and social media accounts. It writes emails, creates images and even 'talks' to you when you contact companies online. It also has exciting potential to help us find solutions to some of the biggest problems facing the natural world. This is why we're exploring how it can be used most effectively to protect habitats and wildlife.

AI can be trained to automatically identify and count animals from remote data sources – satellite images, camera-trap footage, acoustic sensors – and to recognise patterns and movements. It can monitor remote video feeds, thermal imaging and other resources to provide surveillance at scale, helping tackle poaching and predict illegal deforestation.

And it can forecast potential outcomes of environmental changes to help us determine how to best protect and restore nature, identifying the most effective actions and directing limited resources in, for example, protected areas.

In short, AI can 'learn' to rapidly and accurately perform complex tasks that would take up many hours of human focus, enabling us to concentrate efforts where they're most needed. Here are some WWF projects where it's already making a difference. ■

> "AI CAN HELP US FIND SOLUTIONS TO SOME OF THE BIGGEST PROBLEMS FACING NATURE"

Every night, in the forest canopy, orangutans weave sturdy nests from branches and leaves – for rest, shelter and safety

Aerial AI spots *orangutan nests*

Counting and mapping populations of critically endangered Bornean orangutans in Sabah, Malaysia, supports efforts to halt their decline. Tracking these agile tree-dwellers is tricky: surveys typically involve counting their nests by hiking through rainforest or analysing photos taken from helicopters. This is both time-consuming and expensive. Thanks to our collaboration with Universiti Malaysia Sabah, computer science PhD student Amanda Amran is developing a deep-learning AI model to automatically identify orangutan nests in aerial photos taken by drones, with over 90% accuracy. This will make surveys faster and cheaper. The model can also analyse the features of each nest to help improve our understanding of how they're made, how long they last and the differences between populations.

Some 17% of the Amazon rainforest – an area the size of France – has already been destroyed

Preventing *deforestation*

The Amazon faces mounting threats – from cattle ranching and agriculture to illegal logging, mining and land-grabbing. With our partners, we're using AI to spot early signs of these activities, helping prevent deforestation before it begins. Forest Foresight, a machine-learning tool trained on historical satellite imagery and population data, identifies patterns that often precede forest loss, like new roads. It then analyses fresh data to predict deforestation up to six months in advance, alerting authorities so they can investigate. With 80% accuracy, it's already enabled 33 interventions in Gabon and Indonesian Borneo. Launched in the Amazon in 2024, it now monitors 3.3 million hectares of protected areas. By 2027, we aim to expand to 12 high-risk countries, cutting illegal deforestation by up to 30% by 2030.

As sea ice melts, hungry bears get closer to communities, drawn inland by the scent of food, putting bears and people at risk

Forecasting floes *for polar bears*

Shrinking sea ice threatens Arctic wildlife, particularly polar bears, which rely on it to hunt, breed, travel and rest. To help prepare for the impacts of its loss, we worked with the Alan Turing Institute and British Antarctic Survey to develop IceNet. This AI model forecasts daily sea-ice concentrations across the Arctic up to three months ahead, which helps researchers predict wildlife movements and conflict hotspots. In 2024, IceNet supported a polar bear survey in Canada's Foxe Basin, improving its safety and accuracy and reducing the risk of missing any bears.

AI-enabled thermal cameras are protecting endangered black rhinos across key sanctuaries. They send rangers real-time alerts to detect intruders and stop poachers before they strike

Smart cameras *guard rhinos*

After decades of poaching, numbers of critically endangered black rhinos in Kenya have rebounded to over 1,000. But they're still threatened by poachers, who often hunt at night, making law enforcement hard and dangerous. In 2016, we partnered with Lake Nakuru National Park to install forward-looking infrared (FLIR) thermal cameras on fences. These units have built-in AI technology that detects movement, identifies poachers and alerts rangers. It provides round-the-clock virtual monitoring, helping eliminate rhino poaching. With your support, last year we upgraded Lake Nakuru's ageing FLIR solar-power system to ensure rhinos and all wildlife stay safe.

Words: Paul Bloomfield. Images: © Getty | © Alamy © Jenny E Ross / WWF | © Obi Owino / WWF-Kenya

Rhino *relocation*

This is the moment a black rhino is captured and sedated at Ol Pejeta Conservancy in Kenya, ready to be transported to its new home in Loisaba Conservancy. It's one of 21 adult rhinos that were moved to the newly created sanctuary to establish a population in an area where rhinos were last seen more than 50 years ago. This is part of an ambitious project by Kenya Wildlife Service, The Nature Conservancy, San Diego Zoo Wildlife Alliance and The Elewana Collection.

Once on the brink of extinction, Kenya's black rhino population now numbers more than 1,000. But with some rhino sanctuaries becoming overcrowded, it's vital we create new areas of protected habitat. Thanks to you, we're helping train new rhino rangers and are providing state-of-the-art equipment to protect the rhinos as they settle in. At least one calf has now been born at Loisaba Conservancy, bringing hope for the species.

Conservation leaders

In a country where three quarters of the population are Buddhist, faith leaders and monastic institutions are key advocates for wildlife protection. Buddhist spiritual beliefs teach people to honour nature, celebrating the sacredness of rivers, mountains, lakes and forests. The tiger in particular is a symbol of immense cultural and religious significance, so has benefited greatly from this belief.

READ TIME 8 MINS

Bhutan *for life*

Bhutan is rich in wildlife and a global leader in conservation. We're proud to be part of its sustainable future

Bhutan is one of the world's smallest countries, but it has a remarkable record of wild custodianship, protected by law and promoted by religions. What does this look like? Forests still cover nearly three-quarters of the country. Its wild places are home to some of the world's rarest plants and animals, including red pandas and snow leopards. And a network of protected areas has enabled the safe passage of iconic species such as elephants and tigers.

But the country stands at a high crossroads. It faces the challenge of modernising without compromising its environmental integrity, as well as managing the effects of climate change. As the first international conservation organisation to be accepted into Bhutan, we're playing a key role in helping the country adapt.

"WWF has been part of Bhutan's conservation journey right from the start [in 1977], working with and training our people, bringing in new technology and supporting new initiatives," says Karma Tenzin, director of forestry and park services for the Royal Government of Bhutan.

Seven years ago, we became a key government partner in setting up Bhutan for Life, a long-term project to ensure sustainable conservation and economic development. Today, our technology, training and financial contributions are bringing dividends.

TECHNOLOGY AND TRADITION

Much of the country's conservation work combines modern tech with traditional wisdom. Efforts to control wildlife crime are strengthened with smart monitoring tools, while solar-powered fencing helps protect crops from elephants. Hydro-geological surveys are paired with harvesting techniques to make the best use of water, as climate change dries up mountain lakes and springs. Communities around protected areas can generate income from opportunities such as ecotourism and selling traditional crafts.

And Bhutan's spiritual beliefs continue to underpin its conservation ethos. Through our partnership with Bhutan's national Buddhist organisation, a 10-year Buddhist environmental action plan was launched last year. ▶

Go paddle!

Rafting and birding tours are key attractions promoted by the Department of Tourism and ecotourism operators. This mural captures the white-knuckle excitement of whitewater rafting on the river running through Royal Manas National Park. The Park itself boasts the highest density of tigers in Bhutan, as well as elephants, golden langurs, clouded leopards and gaur – the planet's biggest wild cows. And that's not to mention 365 species of birds and more than 900 different plants.

Under threat

Animal bones and a stuffed tiger at the Ugyen Wangchuck Institute for Forestry Research and Training are a stark reminder that Bhutan's tigers remain vulnerable to poaching and the illegal wildlife trade. The Bhutan for Life project is tackling this with technology: the Spatial Monitoring and Reporting Tool (SMART) gives rangers real-time data on poachers, patrols and wildlife. It's helping protect wild tigers – Bhutan's 2022 survey estimated there are 131 individuals, a 27% rise since 2015.

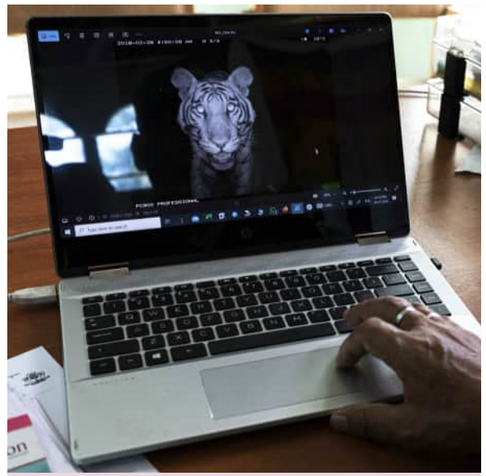
Words: Derek Niemann | Images: © WWF-US / Aaron Gekoski

Liquid assets

Entrepreneur Sonam Zangmo demonstrates how science and traditional knowledge combine to provide access to safe, clean water on a mountainside at 2,500 metres. Water collects in a wooden chest placed over a spring that bubbles up from the dark soil of a marsh. Hollow bamboo stems filled with pebbles and charcoal act as natural filters to purify the water.

Caught on camera

Rangers in Bhutan's protected areas install camera traps to monitor wildlife – but these gadgets serve another role, too. Infrared cameras, fitted with heat and motion sensors, are mounted on trees and bushes along tiger trails. They record tigers, but may also capture images of people walking past. So they could act as a deterrent to wildlife poaching and assist with law enforcement.



Eyes for a tiger

This is as close as most people get to seeing a tiger in Royal Manas National Park. Despite the healthy population (29 at the last count), tigers here are almost impossibly elusive, to such an extent that even park rangers can go several years without spotting one. Monitoring tiger numbers both here and at other sites relies on camera traps, and nothing beats the sensational moment when a tiger appears on screen!

Working together

Tshering is one of 33 women in a cooperative weaving group based at Dorjibi Community Weaving Centre in the buffer zone of Wangchuk National Park. We've been supporting the women in setting up and running this venture. It aims to provide extra income and self-sufficiency in an area of Bhutan where crops are sparse and vulnerable to damage from wildlife.

Herd instincts

A lot of work centres around guiding Asian elephants to where they're welcome and away from where they're not. Forest officials ensure wildlife corridors remain open to allow the herds to move between protected areas. Meanwhile, solar-powered fencing and community rapid-response teams along the border with India steer them away from crops.

Tigers and traditions

Find out more about the link between faith and nature, and watch our short film about Bhutan's sacred tigers:

faithnaturehub.org/sacred-tigers

READ TIME 5 MINS

Calling for a *sea change*

Ocean With David Attenborough is a breathtaking documentary that highlights the threats to our oceans – but also brings hope. Director **Colin Butfield** discusses the film's impact

What makes* Ocean *different from previous marine documentaries?

It's a cinematic film that weaves together a century of oceanic discoveries, environmental damage and inspiring recoveries. I don't think anybody's ever shown how the ocean works, what we've done to it, and how it can recover in this way before. The film mirrors David's lifetime, charting a journey from humanity's near-ignorance about the ocean to a deeper understanding today and a hopeful future.

Why was David drawn to telling this story?

He's spent his career exploring the ocean, but this film felt different. Only now have we got all the pieces of the puzzle. Everyone was talking about *Ocean* at the UN Ocean Conference in June, especially the bottom-trawling sequence. The way it shocked policymakers and scientists alike underscores the film's power.

Why is the ocean so vital to our survival?

Beyond its beauty, the ocean provides stability for the planet, regulating heat and weather, and absorbing carbon dioxide. Without it, Earth would be super-heated beyond habitability. It also provides food and livelihoods for up to three billion people. It's an incredible relationship – when the ocean thrives, we all benefit.

What's the biggest challenge facing the ocean?

The most destructive threat is industrial fishing, especially bottom trawling and dredging. When you destroy the seabed to catch one or two food species, you devastate everything – not just other species and the ecosystem, but the livelihoods of fishing communities. We're not anti-fishing. The film makes it clear that sustainable fishing is possible, but urgent action is needed to stop the worst practices.

What was the most shocking thing you discovered while making the film?

That these fishing practices are legal! In many cases, they're subsidised. This can be stopped by governments, and it's our responsibility as citizens to call for change. Proper marine protection requires political will. Right now, many marine protected areas (MPAs) still allow harmful practices like bottom trawling. But if we have true 'no-take' MPAs covering roughly 30% of the ocean, the recovery will be incredible.

Dive in!

You can watch ***Ocean with David Attenborough*** now on Disney+, Hulu and National Geographic.

Above: Co-produced by Open Planet Studios and Silverback Films, *Ocean with David Attenborough* reveals incredible examples of ocean recovery

Top (inset): The film provides an incredible insight into life under the waves, such as these sweetlips on a coral reef in Indonesia

Left: Director Colin Butfield and Sir David Attenborough have witnessed damage and recovery in the ocean

How does your new book differ from the film?

Ocean: Earth's Last Wilderness was developed separately. David and I both knew of lots of incredible stories of ocean discovery and new science that wouldn't work in a film, but we thought they'd be fascinating to share in a book. The book allows for deeper exploration as well as personal anecdotes from David's career.

What was one of the most remarkable moments in the film?

It felt important to show examples of ocean recovery in different places. My favourite was Papahānaumokuākea Marine National Monument, a vast protected marine area off Hawaii. It's so full of life: it's home to the largest albatross colony in the world, and it's got nesting turtles, thousands of tuna, and migrating sharks, whales and rays. It's proof that large-scale marine protection really works.

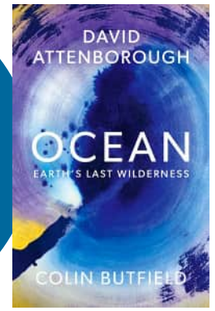
What's your take-home message?

The ocean is critical to life on Earth, and its recovery is possible. *Ocean* shows it can recover faster than we think, but only if we protect it properly. With decisive government action, we could restore the ocean within a decade. Most people will see the benefits in their lifetime. The ocean's future is in our hands. ■

WIN!

A signed copy of ***Ocean: Earth's Last Wilderness***

We're giving away one copy of *Ocean*, signed by Sir David Attenborough and Colin Butfield. For your chance to win, see the 'How to enter' box on page 30.



LIVE GREEN TOP TIPS EXPERT INFO

How to...

Amazing ideas for bringing our world back to life

Find wellbeing *in forests*

Forests are incredible places – rich in wildlife, vital for our planet's health and great for our own wellbeing, too. That's why we've teamed up with Forestry England to create Feel Good Forest Trails. These family-friendly walks will help you get your daily dose of nature while discovering more about the great outdoors.

Winding through forests across England, each trail features fun, hands-on activities that explore the importance of trees, both on our doorstep and in the Amazon. Along the way, you can keep an eye (and ear) out for wildlife too – including some of the woodland residents shown here. Taking time to look for more elusive species is a fantastic way to focus, be present and fully take in the sights and sounds around you.

The trails – and the wildlife you might spot – will change throughout the year, so there's always something new to discover. To find your nearest trail, visit **wwf.org.uk/act/trails**

Purple emperor butterfly Salcey Forest, Northamptonshire

When June rolls around, look up to see these magnificent butterflies fluttering around the treetops in oak woodlands. Watch for males descending to ground level to sip nutrients from puddles and animal droppings, and look for them resting on gates and signs in the Horsebox Car Park area. Males have iridescent violet-sheened wings, while females are brown.

Great spotted woodpecker Cannock Chase, Staffordshire

Cannock Chase's mature trees and deadwood provide plenty of insects for these striking birds. One of the best places here is Fairoak Valley where woodpeckers can often be heard drumming, particularly in spring when males establish their territories.

Fallow deer High Vinnalls (Mortimer Forest), Shropshire

This is one of the best places to spot fallow deer, particularly the long-haired variety that's unique to the area. They're easiest to spot at dawn or dusk, browsing in wooded glades and moving quietly along trails. Autumn is the time of the rut – listen out for clashing antlers!

Firecrest Wendover Woods, Buckinghamshire

You'll need to get your eye in to spot the tiny, energetic firecrest. The UK's second-smallest bird thrives in Wendover's coniferous and mixed woodlands. Look for their olive-green plumage and vibrant crown stripe – the male's is a fiery orange, while the female's is yellow.

Enjoy exploring

Find more ideas for getting your daily dose of nature at **wwf.org.uk/prescription-for-nature**

Grass snake Alice Holt Forest, Hampshire

You'll need to be very quiet to spot one of these shy serpents. Harmless to humans, grass snakes are most often seen along woodland paths or hunting near the edges of water. Look for them in early spring and summer when they're most active – they can sometimes be seen warming up in sunny spots.

Sand lizard Wareham Forest, Dorset

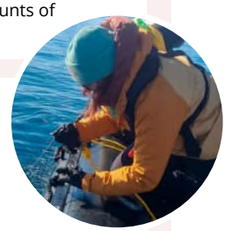
Wareham Forest is one of the few places where you might spot a sand lizard. Open, sandy heaths provide the perfect habitat for this rare species to bask and burrow. While they're active until October, spring is a good time to look out for them, when males develop vibrant green flanks to attract mates.

Illustrations: Esther Curtis | © Getty

Study krill *from space*

Scientist Dr Cait McCarry explains how – and why – our Krill from Space project is using satellites to study the Antarctic's tiniest climate heroes

1 Tiny krill are a key part of the food chain, sustaining life in the Southern Ocean. They also help lock away vast amounts of carbon, so protecting them is vital.



2 To study krill from space, first we needed to collect samples. We followed whales and penguins to locate krill swarms, then collected specimens and took them to our research ship.

3 Krill are mostly transparent but contain a red pigment that changes how much light seawater absorbs. We measured light absorption using a special meter, starting with just seawater, then adding one krill at a time to record how absorption changes with more krill in the water.

4 We're using these measurements to build a model that predicts how satellites 'see' different-sized krill swarms in the ocean.

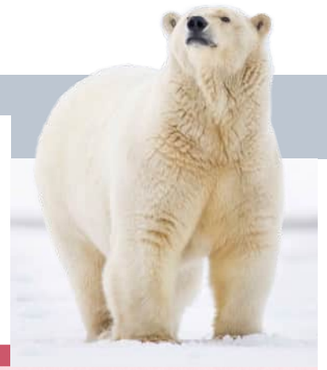
5 By applying our model to current and past satellite imagery, we're hoping to understand how krill populations are changing over time, and see how they're responding to threats like climate change and fishing. These insights will help us push for better protection of Antarctic krill.

© University of Strathclyde | © naturepl.com / David Tipling / WWF

Weigh a *polar bear*

Studying polar bears isn't easy. Not only do they live in remote, inhospitable areas, but they're wanderers – one bear covered almost 4,800km in four months. Tracking collars provide data that can be studied remotely.

But to really understand the bears' health and population dynamics, and their response to habitat changes, we have to get up close. Sedating, weighing and measuring a polar bear is a risky process requiring great expertise.



Six steps to the bear facts

1. Once we spot a polar bear from our helicopter, we sedate it with a tranquilliser dart fired from the air. We waste no time in getting to work as soon as it's safe to approach.

2. With a vet checking the bear at all times, we collect some samples for analysis. A small amount of blood, hair and fat tell us about the bear's health and exposure to pollutants.

3. If we can, we'll lift the bear in a sling to weigh it and measure how long it is. A female might weigh up to 300kg in spring, while a male could reach a massive 600kg. If a bear's too heavy to lift, we estimate its weight based on body measurements.

4. Any new bears we encounter get a microchip, ear tag and a harmless tattoo inside their upper lip so we can identify them if we meet again.

5. If the bear is a fully grown female, we fit her with a satellite collar so we can track her movements. We only collar adult females – a male's neck is thicker than his head so a collar would just slip off, while youngsters grow too quickly for collars.

6. Once we have all the data we need, we retreat to watch the bear until it's safely woken up. Then we're off to find the next one!

© Jon Aars / Norwegian Polar Institute | © Andrew Derocher

Avoid festive *food waste*

Throwing away food is bad for your budget and the planet. Of course, if you're hosting a crowd it can be hard to know how much to buy. Try our tips for making the most of five of the UK's most commonly wasted foods...

Bread (24 million slices wasted every day)

Put a loaf in the freezer before its 'use by' date then take out slices as you need them. If bread is stale (dried out rather than mouldy), bake it into croutons or blitz into crumbs and freeze.

Potatoes (8.2 million wasted every day)

Potatoes can still be eaten even if they're sprouting – just cut out and discard the sprouts. Hang on to peelings, too – drizzle skins with oil, sprinkle with seasoning and bake into crisps.

Carrots (3.5 million wasted every day)

Carrots gone limp? Not a problem! They're still fine to eat: try roasting them with spices, adding to mash or making a fragrant soup. Or go sweet and bake them into a cake.

Milk (2.3 million glasses wasted every day)

You can freeze milk, even if it's reached its 'use by' date. Or you can quickly transform spare pints into pancakes with savoury toppings for an easy dinner.

Onions (820,000 wasted every day)

If an onion's got a mouldy or soft spot, just cut it out – the rest is fine. If you're overrun with onions, whip up French onion soup or onion gravy, both of which can be frozen.

© Getty | Food waste figures from WRAP, www.wrap.ngo

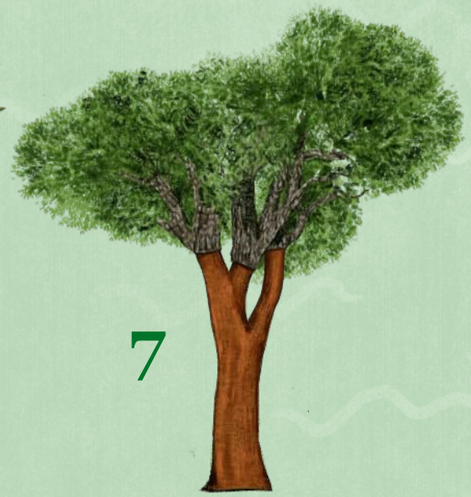
Left: Rugs are an easy way to insulate rooms with wooden or laminate floors, and can be rolled away in summer. Thick or thermal curtains also keep heat in – or out!

Insulate your home

Warmer in winter, cooler in summer – an insulated home is more comfortable and more eco-friendly

Start small: check for draughts around doors and windows. Self-adhesive foam strips block gaps while flexible brush strips can be added to the bottom of doors. Get thick curtains to keep heat in, and close internal doors to unheated rooms. If your home has a fireplace, use a chimney draught excluder (or get it capped if it's no longer used). Properly fitted loft insulation can be effective. If you have laminate floors or bare floorboards, invest in rugs, particularly in ground-floor rooms. Replacing single-glazed doors and windows with double- or triple-glazed units is expensive but will pay off. Consider cavity wall insulation – it's likely you'll recoup the costs within a few years. And always think about ventilation: don't block underfloor airbricks or 'trickle vents' in windows.

© Getty



8 great things we make with plants

In his new book, Jonathan Drori reveals how the incredible world of plants is entwined with our own

Plants are truly remarkable, shaping the world in ways both seen and unseen. I remember visiting a vibrant botanic garden as a child, marvelling at the towering trees, tiny mosses and flowers in every shade imaginable. Some felt like velvet, others had sharp thorns, and a few were so toxic I couldn't touch them. Later, I learned that plants are essential to life. The miracle of photosynthesis uses sunlight to convert carbon dioxide, water and little else into complex materials. Plants provide food, clothing, medicine and even components of spacecraft, while their history intertwines with human ingenuity. Here are just a few of those special plants – the stuff that stuff is made of.

1 COTTON

Cotton's fluffy white fibres have just the right amount of twist to cling together so they can easily be spun into a continuous, slightly springy thread. Inca warriors wore armour woven from thick cotton canvas, and today cotton clothing is everywhere. The 'paper' of US banknotes is three-quarters cotton.

2 MANDRAKE

A stemless, straggly little plant from the Mediterranean, mandrake is famously cultivated for its magical powers at Hogwarts, the school for wizards in the Harry Potter books. In real life, it's a powerful painkiller. Before the artificial anaesthetics of the mid-19th century, all painkilling drugs came from plants.

3 TEA

The emerald-green leaves of the tea plant, originally from south-east Asia, make one of the world's most popular drinks. Its natural caffeine discourages insect pests and even other plants, but is a fine pick-me-up for us. At Chinese weddings, the couple serve tea to their families.

4 CACAO

The cacao tree, originally from South America and mostly grown now in west Africa, produces pods containing the seeds or 'beans' used to make chocolate. The cacao tree's main pollinators are midges, but our warming climate is threatening these tiny insects.

5 SUGAR CANE

Sugar cane, a giant grass, stores energy as sugar, which we use as a sweetener. Many plants produce sweet juicy fruits that attract animals to eat them and spread their seeds. Humans also evolved associating sweetness with nourishment, which is why it's so hard to resist.

6 RUBBER

Rubber trees defend themselves with latex, a sticky mix of rubber and water that oozes from bark. Natural rubber is cultivated on plantations to make products from tyres to balloons. It's associated with deforestation, but wild rubber tappers in the Amazon help keep the forest standing.

7 CORK OAK

The thick, fireproof bark of the cork oak of south-west Europe can be harvested without killing the trees. Cork is ideal for flooring, wine stoppers and spacecraft heat-shields, while cork forests provide livelihoods for people and a home for rare wildlife such as the Iberian lynx.

8 GIANT KELP

Giant kelp, the world's largest seaweed, is not a true plant but a type of algae. It forms rich underwater forests, creating habitats teeming with marine life, and contains substances called alginates that are used to make smooth sauces and ice cream.

Win the book!

Filled with fascinating facts and stories, ***The Stuff That Stuff Is Made Of*** (£16.99, Magic Cat Publishing) is the perfect gift for any nature-curious child. We have five copies to give away. For your chance to win, see the 'How to enter' box on page 30.

Illustrations: Raxenne Maniquiz & Jiatong Liu

Get *creative!*

Bring some colour to black-and-white bears with our panda colouring book. **£4.99**

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Key *species*

Show your love for nature with our bag charms, made from 100% recycled materials. **£8**

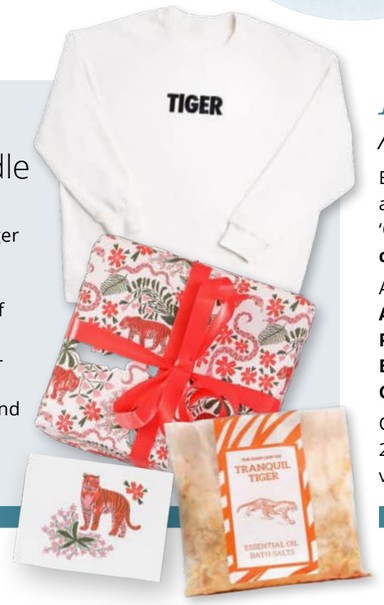
Picture *puzzle*

This jigsaw, illustrated by Yuval Zommer, is a great way for kids to explore marine life. **£17**

WIN! *Tiger treats*

Enjoy our festive big-cat bundle

Treat yourself or another cat lover with our exclusive prize collection. Our cosy, oversized tiger sweatshirt is available in two colours (charcoal or oat), with embroidered motifs on the front, back and sleeve. We're also giving away a pack of Tranquil Tiger bath salts for a rejuvenating soak. The package is complete with our exclusive tiger-themed gift wrap (two A3 sheets and four gift tags). We've got one prize bundle to give away, and the winner can choose their sweatshirt colour. See the 'How to enter' box (right) for details.



How to enter

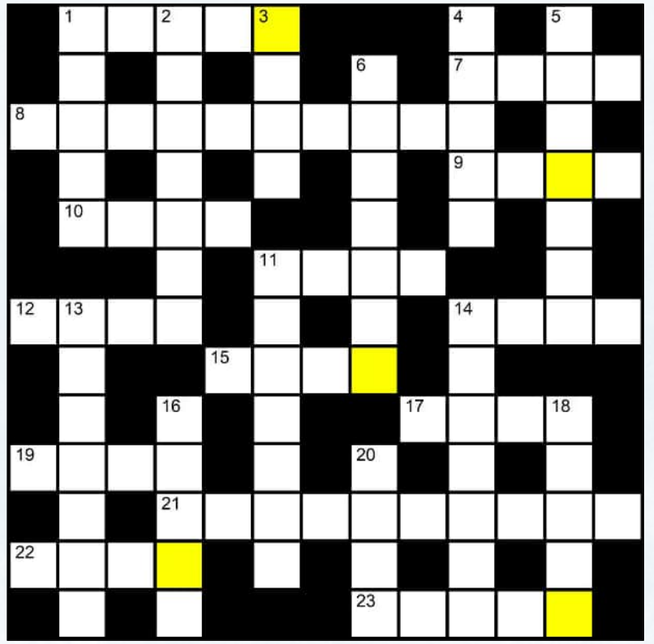
Action giveaways

Email us with your name, address and phone number, with 'Tiger', 'Ocean' or 'Stuff' as the subject: **competition@wwf.org.uk**

Alternatively, post your entry to **Action Magazine, WWF-UK, Living Planet Centre, Rufford House, Brewery Road, Woking, Surrey GU21 4LL.**

Closing date: Friday 21 November 2025. For full terms and conditions, visit: **wwf.org.uk/compterms**

Crossword



WWF ACTION CROSSWORD 61: Autumn 2025 issue. Compiled by Aleric Linden

Solve our crossword and you could win a copy of Animal Behaviour by Charlotte Uhlenbroek *(DK, RRP £30)*

Clues across

1 _ based, like biofuel or a vegan diet (5)
7 An estimated 397 of these 'leopards' live in Nepal (4)
8 Tech-savvy 'intelligence' that's reshaping how we protect ecosystems and species (10)
9 African elephants have larger, fan-shaped ones than their Asian cousins (4)
10 A precious commodity for big-cat poachers in the illegal wildlife trade (4)
11 A male hare or rabbit (4)
12 _ parrot, endangered African bird (4)
14 Peat-accumulating wetlands (4)
15 _ whale, the world's largest animal (4)
17 Acronym for the AI-driven 'Protection Assistant for Wildlife Security' (4)
19 Snow leopards live in this continent (4)
21 Critically endangered horned mammal native to parts of Africa, including Kenya (5,5)
22 Lough Neagh is the largest one in the British Isles (4)
23 Small creatures that can be problematic for crop farmers (5)

Clues down

1 Langtang and Shey Phoksundo are national ones where Nepal's snow leopards live (5)
2 Too much of this in our oceans is bad news for coral reefs (7)
3 Rear appendage absent from gorillas (4)
4 Western _ , another name for the Outer Hebrides (5)
5 How lions and tigers are sounding off in fearsome fashion (7)
6 Two-wheeled alternative to a car – no fuel required! (7)
11 Vocal whales also known as sea canaries (7)
13 _ Far East, home to Siberian tigers (7)
14 Sandy places where sea turtles lay their eggs (7)
16 A symbol of FSC-certified wood products (5)
18 They're an often golden feature of dunes and deserts (5)
20 Large open container found at recycling centres (4)

After solving the crossword, take each letter from the shaded squares (from left to right and top to bottom) to spell the **prize word**. To be in with a chance to win, email **competition@wwf.org.uk** or send a postcard with the prize word to the address on page 30. **The closing date is Friday 21 November 2025**.

Summer 2025 answers

Prize word: ANIMALS
Across 1. Markets 6. China 8. Mouflon 10. Nets 11. Red panda 13. Geckos 14. Arctic 16. Mangrove 19. Semi 21. Gorilla 22. Swamp 23. English

Down 2. Aquatic 3. Kelp 4. Tonne 5. Bison 7. Antarctica 8. Monogamous 9. Sperm 12. Lorry 15. The Alps 17. Nepal 18. Vegan 20. Ural

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