



Action

THE MAGAZINE FOR WWF MEMBERS

AUTUMN 2019



LIFELINE FOR LIONS

Africa's lions are in trouble, but you're helping give them a safer future



MOUNTAIN GUARDIANS

Meet the amazing herders fighting to protect their mountain home and its snow leopards

MISSION JAGUAR

Join us on an Amazon adventure as we track down the shy and secretive jaguar in its jungle lair



“GIVEN THE SPEED OF NATURE LOSS AND INCREASE IN HUMAN PRESSURES, WE MUST ACT NOW”

SPACE FOR NATURE

Humans now use over 70% of the world's ice-free land surface. Unsurprisingly, populations of many species such as African elephants, jaguars and African lions have plummeted in recent decades, unable to cope with competition for land in an increasingly fragmented landscape – competition that can result in the loss of life for both people and animals.

It's a pattern playing out across our planet. Resources are being consumed faster than nature can restore them, driven by an increasing demand for land, energy and water. So we're recording the health of our planet, funding new methods to measure how species are faring, and testing technology to help us understand the complex threats to nature.

We believe it's possible to feed a growing global population, limit warming to 1.5°C, and reverse the loss of nature, but we all have an urgent role to play. Thanks to you, we're pushing to restore nature and influence the shape of global agreements and targets on biodiversity, climate and sustainable development – for a positive future for people and planet.

Camera traps help us monitor wildlife living in Kenya's Maasai Mara, and assess the impact of local human activities, as part of our Biome Health Project. We're also developing an ambitious plan to protect and connect vital wildlife corridors between southern Kenya and northern Tanzania to give wildlife the space it needs

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MEET THIS ISSUE'S CONTRIBUTORS



DR YUSSUF WATO is WWF's wildlife programme manager in Kenya. He says: "If we take decisive action now and ensure communities understand lions can help improve their livelihoods, I'm positive that lion populations can recover."



DR DAN INGRAM oversees WWF's Biome Health Project, investigating how wildlife in key habitats responds to different levels of human disturbance. He says: "Given the speed of biodiversity loss and rise in human pressures, we need to act now."



DR VALERIA BORON is a jaguar expert. She says: "Despite the importance of the Amazon for jaguars, we know very little about these elusive animals or the conservation value of different protected areas, especially in Brazil."

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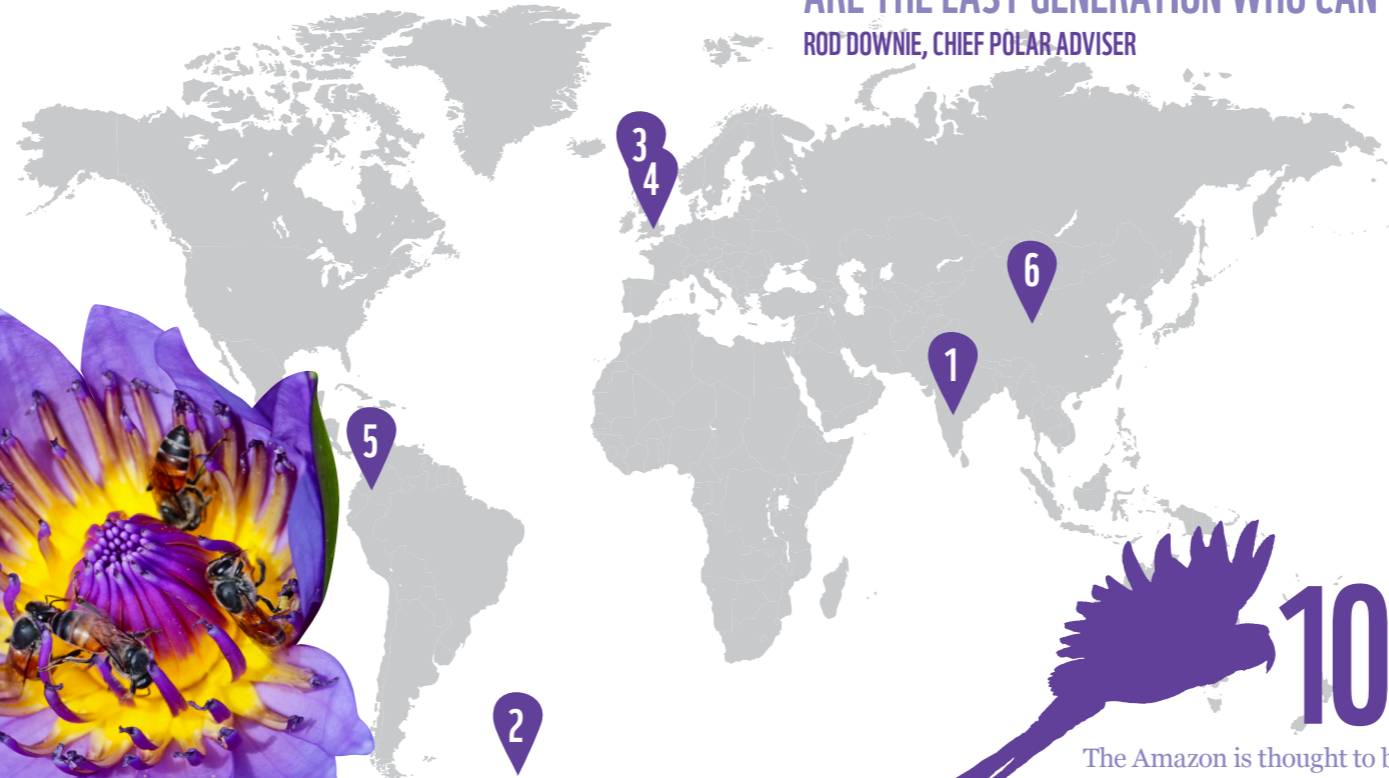
TOGETHER, WE DID IT!

Thanks to your membership, we can help protect wildlife and wild places. Here are some of the great things supporters like you have helped achieve

1 INDIA

YOU'RE HELPING TO SWEETEN LIVES

Thanks to you, we're helping India's traditional honey collectors to develop more sustainable practices. The vast forests of central India are home to incredible wildlife, including leopards and sloth bears, as well as indigenous people who live in the forests and harvest their resources. Collecting wild honey is a key source of income for the Baiga and Gond people in the Kanha-Achankmar corridor, but traditional techniques involve using smoke to subdue the bees and felling tree branches to extract the honey. This leads to tree damage, the death of entire bee colonies, and to honey collectors being stung. We're working with these communities to improve methods for collecting wild honey, with better storage and marketing to secure a fair price, so the lives of the wild bees and honey collectors are a bit sweeter.



"CLIMATE CHANGE IS A GLOBAL CRISIS, IMPACTING ON WILDLIFE, PEOPLE AND PLANET ALIKE. WE MUST PULL OUR WORLD BACK FROM THE BRINK - WE ARE THE LAST GENERATION WHO CAN"

ROD DOWNIE, CHIEF POLAR ADVISER



Camera traps give us a window into the snow leopard's world. They provide critical insights into the cats' movements and habitat use that help us protect them

6 CHINA

YOU'RE HELPING MONITOR SNOW LEOPARDS

Thanks to you, we've been increasing our efforts to monitor important snow leopard populations in China – and they're already paying off! China is thought to be home to around 60% of the world's snow leopard population, yet only a tiny percentage of the species' habitat here has been surveyed. So, for the first time, we set up camera traps covering an area of 2,975 sq km in three key mountain landscapes – Qilianshan, Tien Shan and Sanjiangyuan National Nature Reserve. The cameras, which our snow leopard adopters helped to fund, have already yielded over 60 images of these rare cats in Yanchiwan Nature Reserve, Qilianshan. The amazing camera trap and video images include females with cubs, and the first snow leopard photo ever taken in the Sanjiangyuan reserve. Thanks to you, we can monitor snow leopard populations, their range and habitat use, and identify changes over time. This will help us to build a better picture of their status and help protect these vulnerable cats.

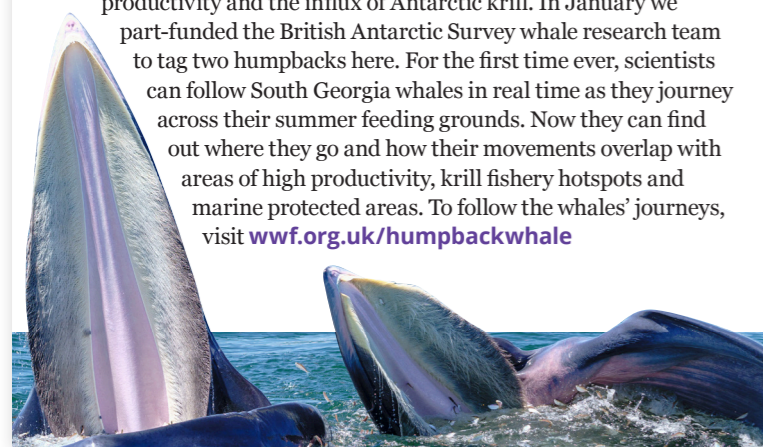


The Amazon is thought to be home to 10% of known species on Earth – and more are being found all the time!

2 SOUTH GEORGIA

YOU HELPED UNCOVER THE HUMPBACK'S SECRETS

Together, we're helping to discover the most important feeding grounds for humpback whales in the waters around South Georgia. The island was once an epicentre of whaling activity and its seas were home to thousands of whales, perhaps due to their immense seasonal productivity and the influx of Antarctic krill. In January we part-funded the British Antarctic Survey whale research team to tag two humpbacks here. For the first time ever, scientists can follow South Georgia whales in real time as they journey across their summer feeding grounds. Now they can find out where they go and how their movements overlap with areas of high productivity, krill fishery hotspots and marine protected areas. To follow the whales' journeys, visit wwf.org.uk/humpbackwhale



3 SCOTLAND

YOU HELPED SCOTLAND LEAD THE WAY IN TACKLING CLIMATE CHANGE

This April, Scotland declared a climate emergency. From student school strikers to thousands of WWF supporters who joined us in calling for urgency and ambition in Scotland's climate action, your voice was heard. As new climate change legislation makes its way through the Scottish Parliament, you've helped to secure a net zero target to end Scotland's contribution to climate change by 2045, and a commitment to help keep global warming below 1.5°C. MSPs have also agreed to review how the final law can emphasise the importance of 1.5°C, since even half a degree more of warming has real and dire consequences for people and nature. None of this could have happened without you. We're now working with politicians to make sure that, when the Bill is voted into law this autumn, these climate commitments are turned into ambitious actions.



4 UK

YOU'RE INSPIRING YOUNG CONSERVATIONISTS

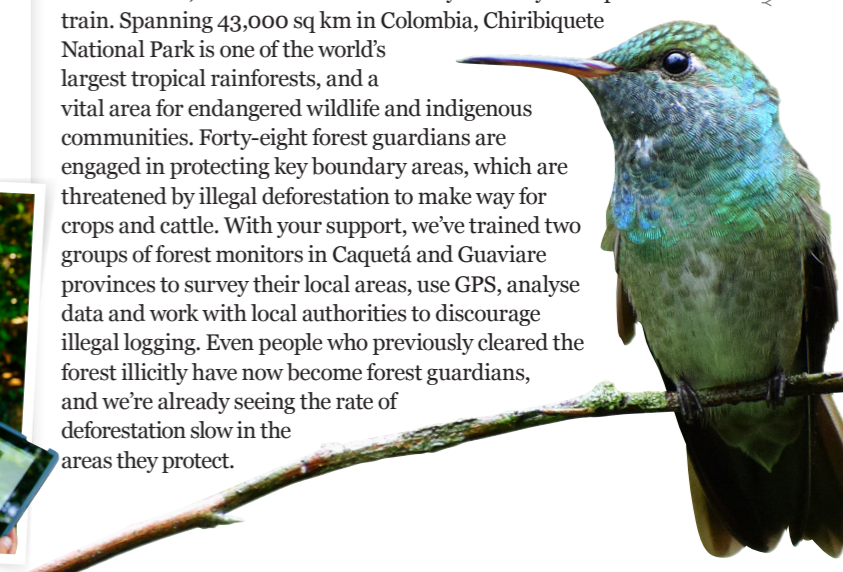
With your support, we're enabling young people who've been inspired by *Our Planet* to help protect the natural world. Our new version of the child-friendly app 'Seek by iNaturalist' – produced with the California Academy of Sciences and National Geographic Society – allows youngsters to instantly identify wildlife, thanks to image recognition technology. Point the Seek camera at an animal or plant and the app will reveal what it is. The goal is to help everyone discover and protect local wildlife, while contributing to scientific data on biodiversity. Share your discoveries on social media with #SeekOurPlanet and tag @SeekbyiNat



5 COLOMBIA

YOU'RE HELPING PROTECT THE AMAZON

Part of the Amazon rainforest is better protected against deforestation, thanks to local community leaders you helped train. Spanning 43,000 sq km in Colombia, Chiribiquete National Park is one of the world's largest tropical rainforests, and a vital area for endangered wildlife and indigenous communities. Forty-eight forest guardians are engaged in protecting key boundary areas, which are threatened by illegal deforestation to make way for crops and cattle. With your support, we've trained two groups of forest monitors in Caquetá and Guaviare provinces to survey their local areas, use GPS, analyse data and work with local authorities to discourage illegal logging. Even people who previously cleared the forest illicitly have now become forest guardians, and we're already seeing the rate of deforestation slow in the areas they protect.



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WWF IN ACTION

How we've been fighting for wildlife and our world

We turned an iconic red phone box wild with plants and birdsong, and travelled around the UK inviting people to record a message for their MPs about their climate concerns

THE TIME IS NOW

FOR URGENT ACTION TO TACKLE THE CLIMATE CRISIS AND RESTORE BRITISH NATURE.

STEP INSIDE AND DEMAND ACTION

GOING... GOING... GOING

#THETIMESNOW TO ACT FOR NATURE AND CLIMATE

Thanks to you, our collective voices were heard at the biggest mass lobby for nature and climate the UK has ever seen

When 12,000 people came to Westminster for the UK's largest ever environmental lobby, we were at the heart of the action. The mass gathering on 26 June was organised by two coalitions we are part of – The Climate Coalition and Greener UK. We were proud to see such an impressive number of WWF supporters there on the day, while more than 70 'pandas' were on hand to make sure things went smoothly.

People from all walks of life and all corners of the country met with more than 300 MPs to demand ambitious new laws to restore nature, cut plastic waste, improve air quality and urgently act on the climate crisis.

The lobby's theme was 'The Time Is Now' – a message being echoed by more and more

people following the Extinction Rebellion protests and the school climate strikes. There's no doubt we're in the midst of a climate and nature crisis. Global wildlife populations have plummeted by 60% since 1970, while climate change presents the greatest environmental crisis the world has ever faced. The question now is what we're going to do about it, and when we're going to take the bold actions that are so urgently needed in response.

Our chief executive, Tanya Steele, said: "Public concern for the environment is at an all-time high, and for good reason. We're destroying the planet and jeopardising the survival of people and wildlife. Our leaders must make bold decisions now, and commit to investing in technology and policies that accelerate emissions reductions and put nature on the path to recovery." At 2pm, the thousands present rang alarm clocks, phone

alarms and sirens, and cheered loudly to symbolise that 'the time is now' to take action.

Though the current crisis can seem desperate, the Time Is Now lobby was an inspiring reminder that people power can make a real difference. Former archbishop of Canterbury, Rowan Williams – who led a multi-faith 'Walk of Witness' along Whitehall during the event – drew parallels with ending the slave trade, another great popular cause that ultimately triumphed.

Despite the size of the undertaking, the UK helped lead the world in ending slavery. Now we face another urgent challenge. We have the solutions, but we're the last generation that can act before it's too late. The Time Is Now showed that there's strong public appetite for the UK to step up and lead the way again.

Be inspired by your support on the day at: wwf.org.uk/yourmasslobby

MAKING OUR VOICES HEARD

The Time is Now mass lobby was preceded by some huge successes you made possible



FIRST STEPS TO SOLUTIONS

In April, we launched a campaign calling on Parliament to take urgent action on the nature and climate crisis. On 1 May, MPs declared an environmental and climate emergency, making the UK the first country in the world to take this symbolic first step.



DEMANDING ACTION

Thanks to your incredible support, there were 750,000 names on the enormous joint petition we handed to Downing Street on 30 May. More than 100,000 belonged to WWF supporters, who joined members of organisations, including Greenpeace, in calling for urgent action on the climate crisis.

CO₂

COMMITTED TO STAYING COOL

On 12 June, the UK government committed to reaching net zero greenhouse gas emissions by 2050, and became the first country to pass a law to end our contribution to climate change. We're pushing the government to act now to invest in policies to achieve this target.



A CALL FOR NATURE

Filled with native plants and birdsong, our wild phone box was a hit at #TheTimeIsNow lobby. We welcomed more than 500 people from across the UK to record personal messages to politicians, demanding they take urgent action on climate and nature.

NEWS IN BRIEF

The beautiful Llyfnant Valley, in Powys, will be part of the Summit to Sea project



© BEN PORTER

RESTORING NATURE IN WALES

Wales is home to precious wildlife, but many species are in decline. So we're working with partners to restore and connect flourishing ecosystems through the 'Summit to Sea' project. Our aim is to restore nature across 100 sq km of land and 20 sq km of ocean, stretching from Pumlumon, the highest point in mid-Wales, down through wooded valleys to the Dyfi Estuary and into marine protected areas of Cardigan Bay. In the coming years, we'll help to restore this area's natural and cultural heritage, bring communities together and create sustainable enterprises.

NEWS IN NUMBERS

2,000



Old Mout Cider is protecting critical habitats, including 2,000 sq km of Amazon rainforest. The eco-conscious company helped to protect the kiwi, New Zealand's national bird. Now they're helping us to monitor jaguars and support local communities in developing sustainable forest livelihoods in Brazil's Chico Mendes Reserve.

100

You're helping to stop nature being drowned out in the Arctic Ocean. As climate change melts the sea ice and more industrial activity moves in, increasing underwater noise is making it hard for whales to communicate. So far, over 80,000 people from more than 100 countries have signed our petition calling on world leaders to reduce Arctic noise.

NEWS IN BRIEF



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ROBOT CAMERAS REVEAL SHARK SECRETS

In a first for UK marine conservation, WWF, Sky Ocean Rescue and partners have deployed robot cameras to study basking sharks in the Inner Hebrides. The team located and tagged several sharks, so that an autonomous underwater SharkCam could then follow the animals, filming their behaviour for around six hours. It's hoped the almost 360-degree footage will reveal more about the species' social interactions and behaviour, and help build the case for the creation of a brand new marine protected area that will help to safeguard these amazing animals.



© KATH CARTER

PANDA BREAKS LONDON MARATHON RECORD!

It's not every day a panda sets a new world record – but by completing this year's London Marathon in 3 hours 48 minutes, that's exactly what Kate Carter did. Kate was there as part of WWF's Team Panda, and she actually dressed up as one! Kate's outfit – complete with what she called a "raging furnace" of a head – put her in the running to break the Guinness World Record for the fastest marathon in a full body costume by a woman. Amazingly, she smashed it by a huge 25 minutes. Congratulations to Kate and all of Team Panda, who raised over £34,000 to help our work around the world.

PLASTIC ON YOUR PLATE?

As our shocking new report reveals that, on average, we ingest a credit-card's worth of plastic each week, we're saying it's time to act

Plastic is polluting the air we breathe, the water we drink and the food we eat – and the world is waking up to the reality of the crisis. The findings of a new study we commissioned might just speed up the efforts to do something about it.

The analysis, No Plastic in Nature, looked at how plastic gets into human bodies. It found that, on average, people could be ingesting about 2,000 tiny pieces of plastic every week. That's approximately five grams of plastic – roughly the weight of a credit card!

Most of the plastic comes in the water we drink: it was detected in tap water and bottled water all over the world. Another major source is shellfish, which retain microplastics from polluted seas in their digestive systems. And if you sprinkle some salt on your meal and maybe enjoy a beer on the side, those are two more significant sources.

How much plastic you consume depends on where you live – water in the US and India contains twice as much as it does in Europe and Indonesia, for

example. But the bottom line is that this is a universal problem.

Alec Taylor, our head of marine policy, says it's time to act: "Plastic is polluting our planet in the deepest ocean trenches, but now we know that it's also polluting our own bodies. This report must serve as a wake-up call to the UK government – we don't want plastic in our ocean, and we don't want it on our plates."

We're rallying public support for a global petition calling for a legally binding treaty on marine plastic pollution, which would establish national targets and reporting mechanisms, and provide extra support for developing countries to manage waste better. Thanks to your incredible support, more than 500,000 people have already signed.

Since 2000, the world has produced as much plastic as in all the preceding years combined, and a third of it has leaked into nature. This is not something that can be fixed with small interventions: we need to see urgent global action along the whole plastic production chain.

The alternative – doing nothing about a crisis that is affecting every living creature and ecosystem on Earth – is surely too hard to swallow.

It took you approximately **ONE WEEK** to consume this credit card

© WWF-SINGAPORE



Once a den has been found, the patrol team make sure the polar bears are gone before they crawl inside. There's always a chance the family hasn't left, or another bear has sought refuge from the elements inside!

AT HOME WITH POLAR BEARS

Thanks to your support, this year's polar bear cub count in Russia was a great success

With the climate crisis regularly in the headlines, the plight of polar bears is one of the most powerful symbols of our changing world. It's vital that we monitor them closely to target conservation efforts where they are most needed.

Every year, in late March and early April, as polar bears and their cubs emerge from their dens, our team in Chukotka, Russia, conducts a community-led patrol covering almost 100km of the Arctic coast.

This year, they found 14 maternity dens and the tiny tracks of 23 cubs heading down to the sea ice with their mothers to feed. The patrol has noted an increase in both dens and cubs over the past five years, but this could simply be as a result of bears moving into the area. More research is needed so that we can draw more accurate conclusions.

That's something we'll be helping with. This year, the patrol used new technology to improve its efficiency, including drones. With your support, we'll continue to help them expand the patrol area to get a better understanding of what climate change really means for polar bears – and to use the knowledge to protect this iconic predator.

© WWF-RUSSIA

ENCOURAGING NEWS FOR INDIA'S WILD TIGERS

We're celebrating the news that India's population of wild tigers may be growing

In July, the government of India announced that there are estimated to be around 3,000 tigers living in the wild in the country. This new estimate suggests numerous populations within India may be stable or growing.

WWF's experts played a key role in the 2018 Indian tiger survey, which was unprecedented in its scale, covering over 380,000 sq km of forest and 20 states. It collected data including vegetation types, human disturbances and signs of carnivores.

Surveyors also looked for signs of carnivores on foot, which were then used to decide where to position camera traps in around 26,000 locations. The cameras took over 76,500 photographs of tigers and over 51,000 images of leopards.

Becci May, our Asian big cats expert, responded: "At a time when the future of wild tigers is under threat, every tiger counts. The updated India tiger population estimate indicates that, at a national level, tiger populations in India may be stable or even growing. This is very encouraging. Thanks to increased conservation efforts including enhanced



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tiger protection, habitat and prey management, participation of local communities in tiger conservation and political will, India continues to lead the way in wild tiger population recovery.

"The protection of tigers is more than just a numbers game and it's vital we ensure that tiger conservation remains a global priority. By protecting tigers, we also protect vast areas of forest, our greatest natural ally in the fight against climate change – something which will ultimately benefit wildlife and people. If we continue to work together, we can reverse the decline of tigers."

SPACE FOR LIONS

In Kenya, it can be challenging for communities to live alongside lions. Lions often kill valuable livestock, which can result in devastating retaliatory poisoning

Africa's lions face an uncertain future, due to conflict with people and the loss of their habitat and prey. But with your help, we're working to give them a safer future

Death stalks the Kenyan savannah. Under the fierce equatorial sun, animal activity is not easy to detect. An occasional breeze twitches the red oat grass and tickles acacia leaves; otherwise, all is still. But a smell betrays the spot where life has been extinguished. And as you get closer to the scene, there's an insistent buzz of flies. Nearby, a cluster of vultures surrounds the kill, and tawny fur comes into view: a lion, lying still in the grass. But today this great predator of the African plains is not killer but corpse, felled by poison. The vultures, too, are unmoving, victims of the same toxin.

Heartbreakingly, such a scene is a not-infrequent sight in Africa's lion range countries. But the aftermath of poisoning still moves the men and women striving to protect the continent's wildlife. "The site where a predator has been poisoned is a sad place to be," says Michael Kaelo of the Mara Predator Conservation Programme, our partners in Kenya. "Sometimes we come across a lion that is not yet dead, and it's terrible to see how much it suffers. There's diarrhoea and uncoordinated movements – you can see that the poor animal is in agony."

Tragically, the demise of that individual lion may not be the end of the dying. Michael explains: "If no one is around to save the lion or remove its body, it's inevitable that other animals will come to scavenge from the corpse. So the poison spreads and, instead of just one target individual dying, there's a mass of carcasses."

HUNTER HUNTED

It's impossible to imagine this magnificent hunter under threat – the lion is an apex predator. Yet Africa's most iconic carnivore is in serious trouble. Across the continent, wild lion numbers have declined by over 40% in the past three generations of these big cats.

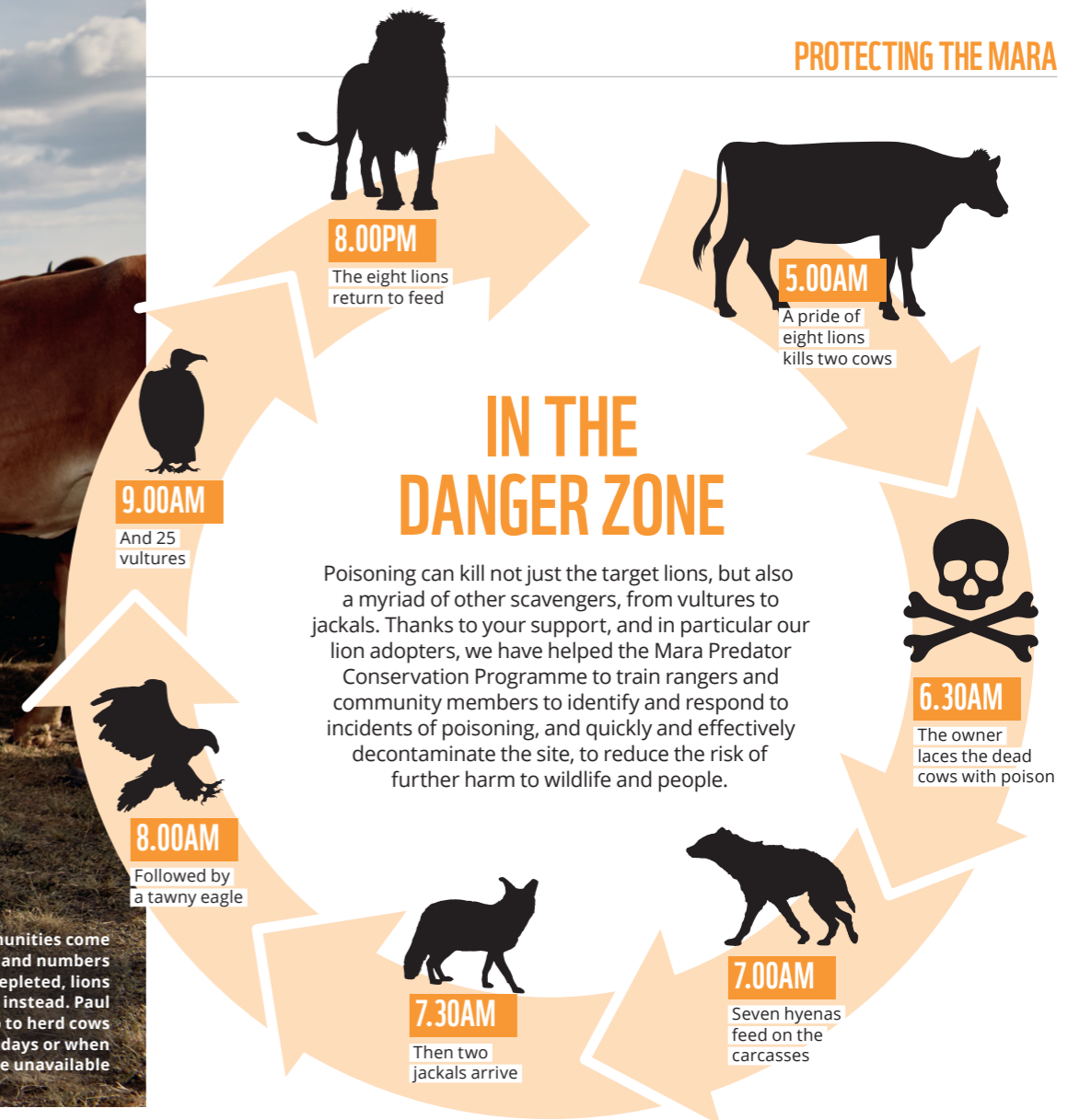
Historically, the species' range spanned most of Africa, plus parts of the Middle East, Asia and the Balkans. Today, apart from a small population of Asiatic lions in the Indian state of Gujarat (estimated at 523 after a 2015 census), the world's wild lions are confined to sub-Saharan Africa, with perhaps 80% of the population in the east and south of the continent. Lions are locally extinct in 26 African countries. Indeed, while the species as a whole is classified by the IUCN as vulnerable, the west African population is critically endangered. Lions now occupy just 8% of the territory they used to roam.

This highlights one of the greatest threats facing Africa's lions – their habitat is shrinking at an alarming rate. This is driven by the increasing pressure on land and resources arising from ever-increasing global consumption. This situation will only get worse as world populations expand. Africa's human population is projected to more than triple from 1.3 billion today to around 4.3 billion by the end of the century. The land required to provide homes for and feed those ▶



A Kenya Wildlife Service vet tries to save a young male lion from the Mara's famous Marsh pride. Sick from eating a poisoned cattle carcass, he was attacked by buffaloes. He was put to sleep to prevent further suffering

As lions and communities come into ever-closer contact and numbers of wild herbivores are depleted, lions often prey on livestock instead. Paul and Nkunini often help to herd cows during weekends, holidays or when adults are unavailable



IN THE DANGER ZONE

Poisoning can kill not just the target lions, but also a myriad of other scavengers, from vultures to jackals. Thanks to your support, and in particular our lion adopters, we have helped the Mara Predator Conservation Programme to train rangers and community members to identify and respond to incidents of poisoning, and quickly and effectively decontaminate the site, to reduce the risk of further harm to wildlife and people.

Worryingly, lions themselves are being targeted as a result of the growing illegal trade in their body parts. These are mostly destined for China and south-east Asia, where their teeth and claws are used in amulets, and their bones are sold for traditional medicines, often mislabelled as tiger products.

LIVING SIDE BY SIDE

As the lions' habitat shrinks, their prey declines and human activities expand, the cats increasingly come into direct conflict with people. Kenya is home to fewer than 2,000 lions, and many of these are found in community lands and conservancies, living in close proximity to people.

In some protected areas such as Tsavo, pastoral communities graze their livestock illegally, and often come into conflict with lions that might kill their livestock.

"Lion prides have variable home ranges

of up to 600 sq km, depending on the availability of prey," explains Dr Yussuf Wato, who manages our wildlife programme in Kenya. "But many protected areas are becoming increasingly isolated as suitable habitats connecting these protected areas are lost or fragmented." A recent issue is the growing number of fences being put up in community areas, due to the sub-division of land. These barriers create a huge problem for all wildlife, as they block traditional migration routes and reduce habitat connectivity.

"As the availability of wild herbivore prey declines, hungry lions predate the valuable livestock on which families depend for their livelihoods," Yussuf continues. "Communities may then kill the predators in retaliation."

In tribes such as the Maasai, killing a lion was historically part of initiation into manhood. "In the past, you could not become a warrior or be seen as brave until you killed a lion," explains John, a Maasai pastoralist from Narok County. "It gave you pride."

Today, it's essentially an economic matter. "Almost every week we lose several lambs and young goats to hyenas or jackals," John reports. Lions, though, target larger prey and – in the absence of wildebeest and

LIONS MAY KILL LIVESTOCK ON WHICH FAMILIES DEPEND FOR THEIR LIVELIHOODS

buffalo, which may be driven from lions' ranges by grazing pastoralists – that can mean cattle, the most valuable livestock. "One bull can be worth 50,000 Kenyan shillings [nearly £400]. That could help pay

my children's school fees." Unsurprisingly, then, when a lion kills a cow, villagers may respond by targeting lions. Knowing that the pride will often return to a carcass to feed for several days after making a kill, the cow's owner may lace the corpse with poison, usually pesticides.

Though many feline deaths go undiscovered or unreported, some high-profile poisonings have raised international awareness of the problem. In April 2018, worldwide media reported the poisoning of 11 lions in Queen Elizabeth National Park, Uganda. And in December 2015, three lions from the Marsh Pride in the Maasai Mara, made famous by the BBC's *Big Cat Diaries*, died after being poisoned while the series *Dynasties* was being filmed in the area.

Poisoning is a highly indiscriminate method of killing, so it's very dangerous. "It doesn't just kill the target predator, the lion," explains Michael Kaelo. "It also kills hyenas, jackals, vultures and any other

scavengers that come to feed. Even birds of prey may die."

Poison can have devastating effects on local people, too. Rain leaches the toxins from the carcass, washing it into waterholes and rivers from which communities fetch water. "Depending on the concentration of the poison in the water, drinking it may lead to sickness or even death," says Michael.

OVERCOMING COMPLEX CHALLENGES

In Kenya, we're supporting the work of local partners including the Mara Predator Conservation Programme (MPCP) to develop solutions to these problems. For example, the bomas (enclosures) in which livestock is kept overnight are usually constructed from branches, offering little protection from large predators.

So MPCP has supported local communities to build stronger bomas using sturdy recycled plastic poles. We're also working with partners to install solar-powered



Night falls over Kenya's Tsavo East National Park and it's time for Christine Mwende from Tsavo Trust and Stephen Nyaga from KWS to go to work. They search for lions at night as this is when lions are most active



As part of a national census you supported, Christine and Stephen take photos of every lion they see, and then use the cats' unique whisker spot patterns to identify individuals. The results will help inform Kenya's conservation strategy

WHAT THREATS AFFECT LIONS?

HABITAT FRAGMENTATION

As wild habitat is converted and fenced off for farming, grazing and habitation, lions – and their prey – are increasingly confined to islands of land, isolating populations and increasing their risk of local extinction



CONFLICT WITH PEOPLE

Predators can pose a threat to livestock and communities. People may retaliate, sometimes using poison



FEWER PREY

Numbers of herbivores on which lions depend are falling, affected by habitat loss and hunting for wild meat



ILLEGAL WILDLIFE TRADE

Lions are increasingly being poached for body parts – bones, teeth and claws – sold largely in Asia for traditional 'medicines'



CLIMATE CHANGE

Weather changes can lead to die-offs of herbivores and more pests and diseases. Altered rainfall or more droughts can also affect livestock grazing, indirectly increasing conflict with communities



DISEASE OUTBREAKS

Lions are prone to infection by diseases including canine distemper virus, feline parvovirus and even bovine tuberculosis



flashing LED lights that deter predators from livestock enclosures.

“In all homesteads in the Maasai Mara where ‘lion lights’ have been deployed by WWF, no livestock has been lost to lions,” Yussuf reports. And there’s an added bonus. “The lights protect our cattle, but the solar panel is also useful for other things,” says John. “Our children can do their homework after dark, using lights run on solar energy, and we can charge our phones.” The result: conflict with wildlife decreases, and the time available for study and recreation increases.

Thanks to you, we also support the MPCP’s community engagement projects, training local people to identify and tackle poisoning incidents, raising awareness of the dangers of poison to wildlife and humans, and running wildlife clubs for local schoolchildren.

When people benefit directly from lions and other wildlife, they are more likely to want to protect them. With your support, we’ve helped WWF-Kenya to establish the community-led Siana and Oloisukut conservancies in the buffer zone around the Maasai Mara. This will ensure that money from wildlife tourism reaches the people

who might otherwise target lions. Thanks to regular patrolling and improved livestock management in these conservancies, wildlife (including lions) has returned to these areas. It’s a virtuous circle, too: people who benefit from these initiatives spread the word to others who might otherwise try to kill lions.

WE MUST MAKE SURE THE KING OF THE BEASTS CAN ROAM FREELY

“We came to realise that these animals generate a lot of income from tourism, and that partners such as WWF support our community development because of such animals,” says John. “So even if a lion kills my livestock, now I just scare them away.”

While we’re helping build these relationships, we’re also looking at the

bigger picture – specifically, working with Kenya Wildlife Service (KWS) to create a new national strategy for lion conservation. To make sure all our conservation efforts are based on good science, we need to determine just how many lions survive in Kenya.

So we’re working with KWS and many local partners on a nationwide lion census using the innovative Spatially Explicit Capture Recapture method, which includes identifying individual animals from their whisker patterns, each as unique as a human fingerprint. This huge project, which launched in 2018, will provide the first

accurate count of Kenya’s lions – and your support has been vital.

The future for lions in Africa can’t be secured by working in just one country. So we’re also working with government and conservation bodies and local communities on an ambitious transboundary conservation programme between southern Kenya and northern Tanzania. It aims to connect eight protected areas and 32 community conservation areas, forming wildlife corridors and dispersal areas. This will help predators such as lions, as well as the wide-ranging herbivores on which they prey. The project will also improve the livelihoods of communities living in the landscape, and ensure they benefit from conservation efforts.

“We have a huge responsibility to current and future generations to reverse the lion population decline in Kenya and the African continent,” concludes Yussuf. “We don’t want to be among those who will preside over the extinction of this iconic species. As top predators in the food chain, lions play a critical role in their ecosystem. We must make sure the king of the beasts can roam freely in the wilderness of Africa.”

A FUTURE FOR LIONS

Lions are under threat like never before. Wild populations are in decline and they desperately need our help. With your support, we’re already working with communities to help them live alongside these apex predators. You’re also helping us provide field staff with the tools and equipment they need to monitor this species and keep lions safe. If you’d like to do more, a gift today could help.

£15 could pay for camera equipment to photograph lions and assist with monitoring and identification

£50 could help pay for solar-powered ‘predator lights’ to keep livestock safe and prevent conflict with lions

£100 could help fund a workshop to enable field staff to prevent and deal with lion poisoning incidents

£1,800 could help provide predator-proof bomas for local herders

If you’d like to do even more, you can donate today at: www.org.uk/lionlifeline



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CRUISING THE CORRIDOR

Thanks to your support, wild tigers are able to roam between the forests of Nepal and India – and now we've caught one in the act!

Seeing a tiger in the wild can be hard, but photographing one is a huge challenge, as filmmaker Emmanuel Rondeau found out when we asked him to capture an image of one of these cats using the Khata biological corridor.

Khata is an important 13km-long stretch of forest between Bardia National Park in Nepal and Katarniaghat Wildlife Sanctuary in India. It enables wild tigers to move between the two protected areas to feed and find mates – and it's already making a huge difference.

Nepal's latest national tiger survey, which you supported, recorded four tigers living exclusively in the corridor, while another nine had territories that ranged between the corridor and Bardia. And there's more. The number of tigers estimated to be living in Bardia increased from just 18 in 2009 to 87 in 2018.

But that didn't make photographing one any easier. Emmanuel explains, "With the help of WWF's tiger experts, I found the perfect location to capture an image of a wild tiger roaming its territory at night. One of the trees was etched with tiger claw marks, so I was sure the cat would soon be back to mark its territory. I set up my camera traps, but several weeks later I hadn't got a single shot. Then, after it had been pouring with rain, I went to change the camera settings – and found this perfectly sharp image. I couldn't believe it!"

Thanks to you, we're helping to keep tiger habitats connected by working with local people to monitor, manage and protect these areas, and enabling communities to benefit from wildlife such as through ecotourism.

If you'd like to do more, please adopt a tiger today at wwf.org.uk/tigeradopt

MOUNTAIN GUARDIANS

High in the Indian Himalayas, we're working with some amazing local people to discover the secrets of the snow leopards of Sikkim

“The snow leopard is important to me,” says Gopal Limboo. “In my home, the high altitude regions of Sikkim, it's the only big cat and it has a key role to play in maintaining balance in the ecosystem. It makes me sad that it's endangered.” Laku Tshering Bhutia agrees: “We need snow leopards to keep our unique but fragile alpine habitat healthy. This place is everything to us; it's the source of medicinal plants and the headwaters of our rivers.”

Gopal and Laku understand the delicate ecological balance of the high Himalayas better than anyone. Born and raised in the mountains in Sikkim, north-east India, they used to work as herders, grazing their livestock in the forests and alpine meadows. Today, though, they are part of a group of conservation volunteers known as the Himal Rakshaks or 'mountain guardians'.

We're working with them to help secure the future of the beautiful but threatened snow leopard. “Up until now, WWF-UK's snow leopard conservation support has mainly focused on Nepal, which is home to between 300 and 500 snow leopards and therefore an important stronghold,” explains our big cat expert, Becci May. “But data from the individual cats we've collared with tracking devices has shown that they move into Sikkim in north-eastern India. It's an important area, connecting snow leopard habitats across India, Nepal, Tibet and Bhutan.

“But very little is known about snow leopards in Sikkim – we don't know how many there are or how the population is changing. Finding this out is vital if we're to protect them effectively.”

LOCAL KNOWLEDGE

Getting reliable information in this remote mountainous region presents huge challenges. “Areas can be cut off by heavy snowfall or by flooding,” says Rishi Kumar Sharma, who leads WWF's snow leopard work in India. “There are many places that you can't get to without a local guide.”

What we needed were local people who know and love the mountains, who have good relationships with neighbouring communities, and who are passionate about protecting their environment. And in Sikkim, we knew just the right people. “As erstwhile herders, the Himal Rakshaks are well versed in the mountain ecosystem,” explains Rishi. “They're an amazing repository of traditional knowledge about the local flora and fauna, and know the terrain like the backs of their hands.”

For more than a decade, the Himal Rakshaks have been the first line of defence against the threats facing their mountain home. With support from the state forest department and various environmental organisations, including us, they've taken the lead in removing snares and other animal traps and reporting poaching ▶

To learn more about the secretive snow leopards that roam the eastern Himalayas, we enlisted the help of people who know the land – and its wildlife – best: the Himal Rakshaks

FIVE SUPER SIKKIM SPECIES



SNOW LEOPARD

These graceful creatures are most at home in rugged mountain terrain above 3,000m. Their remote habitat and elusive habits make estimating their numbers difficult, but we're working with others to improve population estimates.



RED PANDA

Is it a panda? A bear? A cat? A raccoon? No. This solitary tree-dwelling mammal is a real one-off, and classified as its own unique family, the Ailuridae. It's found across the forests of the Himalayas.



ALPINE MUSK DEER

Native to the Himalayas, this small deer is classified as 'endangered' due to habitat loss and hunting. It's especially sought after for its aromatic musk gland, which is used in cosmetics and Asian medicine.



ASIATIC BLACK BEAR

Also known as the white-chested bear, the Asiatic black bear is found in the Himalayas but classified as 'vulnerable' due to habitat loss and hunting. They are great tree climbers too.



DHOLE

In prehistoric times, this wild dog was found across south and east Asia – but today fewer than 2,500 adults remain. Once persecuted as pests, they're now a protected species in India.



Laku Tshering Bhutia coordinates the Himal Rakshaks in the Khangchendzonga Biosphere Reserve. He joined in 2006 in order to ensure the growth of tourism in the area did not damage the wildlife



The Himal Rakshaks are from high-altitude villages, and help protect Sikkim's most important wildlife areas. They survey wildlife and report illegal activities

and illegal harvesting of medicinal plants and fungi – all of which, if left unchecked, threaten this fragile ecosystem.

RESTORING NATURE

Another vital role the Himal Rakshaks play is in mobilising their own communities to address issues such as waste disposal. This is an increasing problem as new infrastructure is built and tourism increases in the region, bringing a big influx of people. Not only does rubbish spoil the landscape that tourists come to visit, it also attracts free-ranging dogs, which kill wild prey for snow leopards, and livestock (which causes economic losses for communities).

The results of the Himal Rakshaks' work so far have been impressive. Forest cover and wildlife populations have started to bounce back, and waste is being managed better. This benefits local people, many of whom now make a living as tour guides or through offering homestay accommodation.

"A clean environment and clean mountains are very important," says NB Bhandari, another Himal Rakshak. "Since many amazing animals live in Sikkim's national parks and sanctuaries, the region has become famous. Tourists come to see the wildlife and

the flowers. There are also many beautiful lakes in the mountains, which are an important source of the rivers and springs on which we rely for fresh water."

Monitoring snow leopards will be a new challenge for the Himal Rakshaks. "In the past, we have worked with the Himal Rakshaks on tackling issues such as waste reduction, but serious scientific monitoring like this is a new challenge," says Rishi. "We will help to build their capacity and give them valuable professional skills. With the training and practical experience we'll provide, they'll be well placed to help with future species monitoring and conservation efforts – and this may increase their household income."

The Himal Rakshaks will be trained in using camera traps, carrying out surveys of ungulates, such as musk deer, Himalayan tahr – a wild goat – blue sheep, Tibetan argali and Himalayan goral, and using GPS and navigation equipment. Their work will include setting up camera traps in the places where snow leopards are likely to be spotted, as well as helping to review the footage and trying to distinguish different snow leopards based on the unique patterns on their spotted coats. "People love doing that," says Rishi. "It's like a game!"

Singaman Limboo is one Himal Rakshak hoping to become a snow leopard monitor. "I love these mountains and it's a great opportunity for me to do something to protect our local biodiversity," he says. "The breathtaking variety of specialist plants and animals here amazes me. I feel a responsibility to protect the wildlife, especially endangered species. They are our natural treasures."

A NEW CHALLENGE

Nevertheless, monitoring snow leopards is hard and sometimes dangerous work. The high altitude areas, which snow leopards inhabit, are a long way from the local towns and villages – this certainly isn't your average 9 to 5 job.

"You have to be in expedition mode," explains Rishi. "You're sleeping in a tent, cooking and washing outdoors, often in severe weather." A lack of proper camping gear and other field equipment is a real challenge for the Himal Rakshaks, but with your support we're helping to provide them with more of the things they need to do their work safely and effectively.

"The information from these biodiversity surveys is really important," says Rishi.

"We need a more robust estimate of snow leopard numbers in Sikkim, as well as the populations of wild ungulates they prey on. At the same time, we need reliable information on livestock densities and the communities that depend on snow leopard habitat. This is so we can better understand this important dynamic and how interactions with local people affect snow leopards."

Conflict between people and snow leopards can be a problem, as snow leopards sometimes prey on livestock and are killed in retaliation. It's an issue we've been working to address in other places, for example by helping herders to build secure enclosures for their livestock, and setting up insurance and compensation schemes. Happily, it's not too big a problem in Sikkim at the moment. "Local people mostly have yaks, which are too big for snow leopards to prey on," explains Rishi. "Though the cats will occasionally kill yak calves and other smaller livestock."

By working closely with the Himal Rakshaks, we're aiming to prevent retaliatory killing of snow leopards and to help local people receive financial support if they do lose livestock to the predators. "The Himal Rakshaks act as conservation ambassadors within their region," says Rishi. "It makes

a big difference to local communities when their own people are engaged in, determining and taking forward such initiatives themselves, rather than someone from the outside coming in to tell them what to do."

Our crucial snow leopard work in Sikkim is made possible thanks to you, and our snow leopard adopters. Together with the Himal Rakshaks, we can help secure the future of this amazing landscape, for the people and wildlife it supports.

ADOPT A SNOW LEOPARD

Thanks to your membership, you're already helping us to improve the habitat for snow leopards and their prey through our work with partners and local communities. You're also supporting our efforts to reduce conflict between these cats and local people who depend on livestock for their livelihoods. But if you would like to do more to protect these icons of the Himalayas, you can adopt a snow leopard today at: www.org.uk/snowleopardadopt

© HIMAL RAKSHAKS/WWF-INDIA | © GETTY | © MINDEN PICTURES

SPOTTED!

Once believed by the ancient Maya to be a god of the underworld, today the jaguar faces all-too-human threats. The biggest cat in the Americas has already been pushed out of around half of its historic range, and its remaining rainforest home is under pressure. Though around 170,000 jaguars are thought to remain in the wild, we know surprisingly little about them. So improving our knowledge of their distribution and behaviour is critical to protecting them and their final strongholds, such as the Amazon rainforest. One way to do that is with camera traps, which captured this curious cat in Nouragues Nature Reserve, French Guiana

Creatures of shadows and secrecy, jaguars are rarely seen. In their remote rainforest home, they live undetected but under pressure. We sent film-maker Emmanuel Rondeau on an almost impossible mission: to photograph a wild jaguar deep in the Amazonian jungles of French Guiana



UNEXPLORED TERRITORY

To begin his quest, Emmanuel travelled deep into the heart of the rainforest. His starting point was a research station located eight hours by canoe, then four hours on foot from the nearest village. With their roots embedded in one of the oldest exposed rock surfaces in the world – the Guiana Shield – these Amazonian forests are remote and mysterious. They form part of one of the largest areas of protected rainforest in the world, covering a region the size of Scotland. Experts believe 80% of the wildlife living here is still unknown to science.



◀ CARBON CALCULATIONS

Perched on top of a 45m-high pylon at the rainforest research station, Emmanuel enjoyed spectacular views across the canopy, while a scientist from the French National Centre for Scientific Research checked on his cutting-edge climate monitoring equipment. The 'Nourflux' takes 10 readings every second to analyse how much carbon dioxide the forest absorbs from the atmosphere. Each hectare here absorbs 3kg of CO₂ per year, or about a fifth of the average Briton's carbon footprint. Therefore, protecting these tropical forests is not just crucial for jaguars and the other amazing creatures that live here, it's vital for combatting climate change as well.

▼ MISSION ACCOMPLISHED

Success at last! Despite challenges – from the intense humidity to camera vandalism by a clumsy tapir – Emmanuel finally captured the first high-definition image of a wild jaguar in this reserve. Discovering more about the jaguars' habits and movements will help us to protect and connect its most important habitats. And it comes at a perfect time: last year, governments in 14 countries that are home to jaguars made a public commitment to ramp up their conservation efforts. With your support, we'll continue working tirelessly to secure a bright future for these incredible cats.

TARNISHED GOLD ▶

Even in this remote region, gold mining is a serious threat to the jaguar and the rainforest. The toxic mercury used to flush out the gold is released into the rivers, poisoning the water, soil and air, and being absorbed by plants and animals – and even the local people who consume them. It leaves behind a desolate landscape. So patrols look for gold mining camps and destroy any equipment they find to prevent miners from resuming their illegal activities. Sadly, gold mining isn't the only danger the jaguar faces. Loss of its prey and habitat, retaliation for killing livestock, and increasing demand for their body parts all threaten the survival of this awe-inspiring species.



CAUGHT ON CAMERA!

Camera traps offer vital insights into elusive animals such as jaguars. Emmanuel set up eight cameras in the forest to capture video and photos whenever an animal crossed an infrared trigger. This might sound straightforward, but first he had to identify a trail used by jaguars and then make sure any passing cats would be in sharp focus. Here he is pretending to be a jaguar and crawling into view! Once everything was set up, Emmanuel left his cameras in the forest for two months – and crossed his fingers.



YOU'RE HELPING PROTECT JAGUARS

Thanks to your support, we're leading efforts to protect the wildlife and support indigenous people and other Amazonian communities to conserve their rainforest home. If you'd like to do more, you can help us to monitor and protect these beautiful cats in Brazil and Colombia by adopting a jaguar. Your support will enable us to improve conservation measures in critical areas. Visit wwwf.org.uk/jaguardopt

ALL IMAGES ©EMMANUEL RONDEAU / WWF FRANCE



Dr Dan Ingram explains how, with your support, the Biome Health Project is transforming our understanding of how wildlife responds to human pressures

Why is the Biome Health Project so urgent?

The project was devised in response to WWF's *Living Planet Report 2018*, which revealed that wildlife populations have declined by over half in less than 50 years. We want to understand how biodiversity responds to threats, and design conservation actions that will have impact. Given the speed of nature loss and increase in human pressures, we must act now.

How does the project work?

The project covers four different 'biomes' – large ecological areas that are home to a specially adapted community of plants and animals – in four countries. We've selected tropical forest, savannah grassland, subtropical dry forest and coral reef sites for their spectacular and distinctive species and the range of human threats experienced there. We're looking at the effects of livestock grazing in the Maasai Mara in Kenya, fishing in the Great Sea Reef in Fiji, deforestation in Borneo in Malaysia, and forest fragmentation in the Terai Arc Landscape in Nepal.

Tell us about the study sites

We selected several sites in each biome to allow us to compare the intensity of the threat experienced, ranging from relatively untouched to high-pressure areas. Some sites also host active conservation programmes. At each one, we'll monitor the health of the biome for several years and try to understand how the region and its characteristic wildlife respond to changing human influences over time. The results will help us to understand the limits that biodiversity can withstand, and develop conservation solutions that can be applied to other similar sites.

What technology are you using?

In Nepal and Kenya, we're using camera traps to detect ground-dwelling animals, and acoustic sensors to record sounds made by vocalising species, such as birds and insects, as well as the high-frequency calls of bats. In Borneo, the acoustic sensors are recording continuously, relaying the sounds to the UK over the

internet. In Fiji, we're even putting acoustic sensors underwater, and using cameras to video marine life and map the structure of the coral reefs in 3D.

What have you learned so far?

We've received two million camera trap photos from Kenya and 1.2 million from Nepal. To identify the animals in the photos, we're using an artificial intelligence algorithm that identifies common species and removes images taken through false triggers like grass moving in the wind. We're now teaching the algorithm to distinguish between large rocks and animals! In Kenya, the images suggest that servals use the protected site the most. This will inform the future management of the park, and could help other sites to re-establish serval populations.

How are our members helping this project?

This project wouldn't be happening without your support. Your membership enables us to conduct this groundbreaking scientific research, and to apply our discoveries to active conservation projects. You're also supporting our work to train park rangers and local conservationists in scientific methods such as camera trapping, to provide workshops and to support local communities with monitoring their wildlife.

Are there any dramatic tales from the field?

In Bardia National Park in Nepal, we were driving to a meeting with the local community when we were stopped in our tracks by the sight of three rhinos crossing a river, casually followed by three swimming tigers. What a privilege!

BE PART OF THE PROJECT

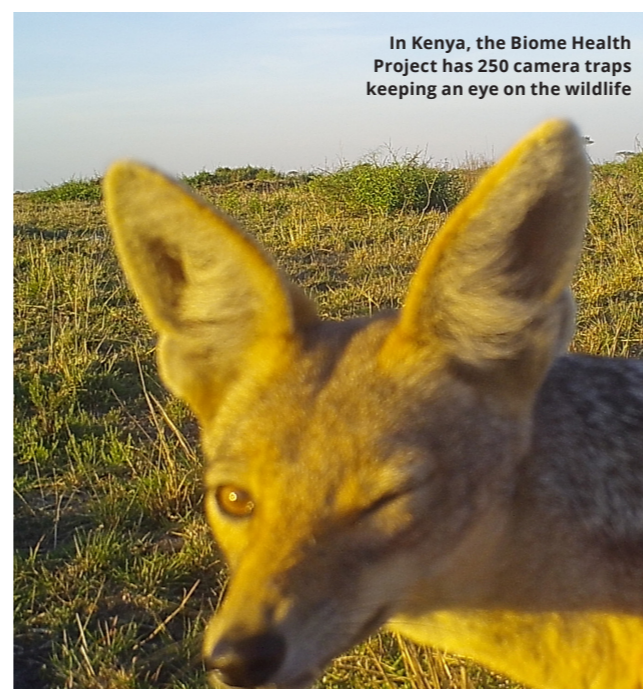
This is just the beginning for the Biome Health Project, and we can't wait to bring you more exciting news. If you'd like to stay in touch, visit wwf.org.uk/biomehealth, listen to the acoustics from Borneo on wwf.org.uk/borneomusic and follow [@Biome_Health](https://twitter.com/Biome_Health) for news on Twitter.



SPY IN THE WILD



In Kenya, the Biome Health Project has 250 camera traps keeping an eye on the wildlife



PREPARE YOUR GARDEN FOR WINTER

Your garden may be quiet now, but it's full of wildlife preparing for the challenges of winter. Wildlife gardener **Kate Bradbury** reveals how to provide a lifeline for everything from frogs to finches when they need the most help...

Winter is coming and it can be a tricky time for garden wildlife. Species that hibernate, such as hedgehogs, amphibians, reptiles and insects, need to find a safe place to shelter for many months without being disturbed. They also have to survive without food.

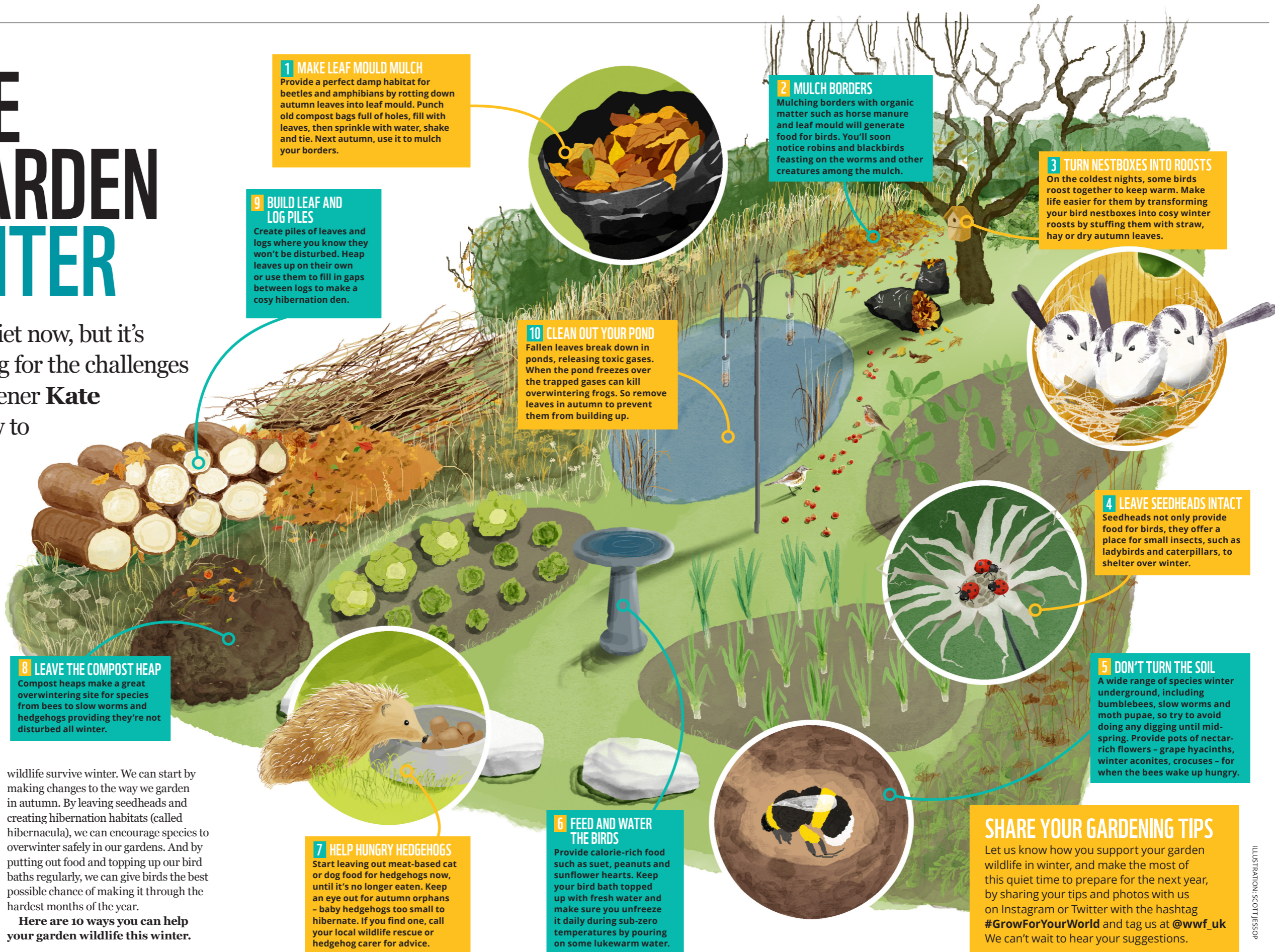
It's a different story for garden birds – rather than hibernating, they battle through the worst conditions. They have to spend every moment of winter's short days looking for enough food to give them the calories they need to survive each bitter night.

It sounds far worse than it is. After all, our wildlife has been coping with winter for thousands of years. But the effects of habitat loss and the climate crisis mean that the availability of natural food is no longer guaranteed. Changes in temperature can also interfere with the natural cycles of some species' hibernation patterns. What's more, gardens tend to be tidier than the wider countryside, and so some garden wildlife, such as hedgehogs, may find it difficult to locate the perfect hibernation spot.

Luckily, there's plenty we can do to help

wildlife survive winter. We can start by making changes to the way we garden in autumn. By leaving seedheads and creating hibernation habitats (called hibernacula), we can encourage species to overwinter safely in our gardens. And by putting out food and topping up our bird baths regularly, we can give birds the best possible chance of making it through the hardest months of the year.

Here are 10 ways you can help your garden wildlife this winter.



1 MAKE LEAF MOULD MULCH
Provide a perfect damp habitat for beetles and amphibians by rotting down autumn leaves into leaf mould. Punch old compost bags full of holes, fill with leaves, then sprinkle with water, shake and tie. Next autumn, use it to mulch your borders.

2 MULCH BORDERS
Mulching borders with organic matter such as horse manure and leaf mould will generate food for birds. You'll soon notice robins and blackbirds feasting on the worms and other creatures among the mulch.

3 TURN NESTBOXES INTO ROOSTS
On the coldest nights, some birds roost together to keep warm. Make life easier for them by transforming your bird nestboxes into cosy winter roosts by stuffing them with straw, hay or dry autumn leaves.

9 BUILD LEAF AND LOG PILES
Create piles of leaves and logs where you know they won't be disturbed. Heap leaves up on their own or use them to fill in gaps between logs to make a cosy hibernation den.

10 CLEAN OUT YOUR POND
Fallen leaves break down in ponds, releasing toxic gases. When the pond freezes over the trapped gases can kill overwintering frogs. So remove leaves in autumn to prevent them from building up.

4 LEAVE SEEDHEADS INTACT
Seedheads not only provide food for birds, they offer a place for small insects, such as ladybirds and caterpillars, to shelter over winter.

5 DON'T TURN THE SOIL
A wide range of species winter underground, including bumblebees, slow worms and moth pupae, so try to avoid doing any digging until mid-spring. Provide pots of nectar-rich flowers – grape hyacinths, winter aconites, crocuses – for when the bees wake up hungry.

8 LEAVE THE COMPOST HEAP
Compost heaps make a great overwintering site for species from bees to slow worms and hedgehogs providing they're not disturbed all winter.

7 HELP HUNGRY HEDGEHOGS
Start leaving out meat-based cat or dog food for hedgehogs now, until it's no longer eaten. Keep an eye out for autumn orphans – baby hedgehogs too small to hibernate. If you find one, call your local wildlife rescue or hedgehog carer for advice.

6 FEED AND WATER THE BIRDS
Provide calorie-rich food such as suet, peanuts and sunflower hearts. Keep your bird bath topped up with fresh water and make sure you unfreeze it daily during sub-zero temperatures by pouring on some lukewarm water.

SHARE YOUR GARDENING TIPS
Let us know how you support your garden wildlife in winter, and make the most of this quiet time to prepare for the next year, by sharing your tips and photos with us on Instagram or Twitter with the hashtag **#GrowForYourWorld** and tag us at **@wwf_uk**. We can't wait to hear your suggestions.

ILLUSTRATION: SCOTT JESSOP



LUXURIOUS SCARVES

We're giving two readers the chance to win one of four fantastic nature-inspired silk and linen scarves by Erin Donohue

We've teamed up with one of our most passionate designers, Erin Donohue, and ethical jewellery and accessories brand, Just Trade, to offer these beautiful, planet-friendly scarves in time for Christmas.

The scarves come in four stylish designs, including botanical florals and three iconic species – elephant, polar bear and jaguar print. Stylish, cosy and long-lasting, these super-soft scarves are made from 100% natural fibres – silk and linen – and have been hand-printed using AZO-free dyes.

The range has been ethically produced by a Fairtrade factory in Vietnam, which provides marginalised people and artisans in provincial villages with employment and new skills.

These wearable works of art make the perfect gift for the eco-conscious consumer and are worth £18.

To be in with a chance of winning one, simply follow the instructions below and mark your entry 'Erin Donohue Competition'.

© WWF-UK



WIN!
A BEAUTIFUL SCARF
INSPIRED BY
NATURE

SHOP FOR YOUR WORLD

Everything we source, create and sell through the WWF shop has to exceed strict environmental and ethical standards. We select designers and suppliers who share our values, so you can shop safe in the knowledge that any products you purchase are kind to the planet and the people who make them.

For more sustainable and inspiring gift ideas, take a look at our full range at wwf.org.uk/shop

BORN TO ICE BOOK

We're giving away two copies of Paul Nicklen's latest masterpiece

"To witness the Arctic and Antarctica through Paul Nicklen's lens is to experience hope in action," writes Leonardo DiCaprio in the foreword of *Born to Ice*. Crammed within the pages of this photography book are portraits of the polar regions' most awe-inspiring landscapes and iconic species, described by National Geographic photographer Nicklen as "the most moving images of the millions I have taken over the decades". They will make you gasp, tremble, laugh and cry – and hopefully remind everyone who sees them that these are lives worth protecting as the ice dwindles.

We have two copies of *Born to Ice*, worth £80 each, to give away courtesy of teNeues (teneues.com). To enter, follow the instructions on the right and mark your entry 'Born to Ice Competition'.

HOW TO ENTER ACTION GIVEAWAYS

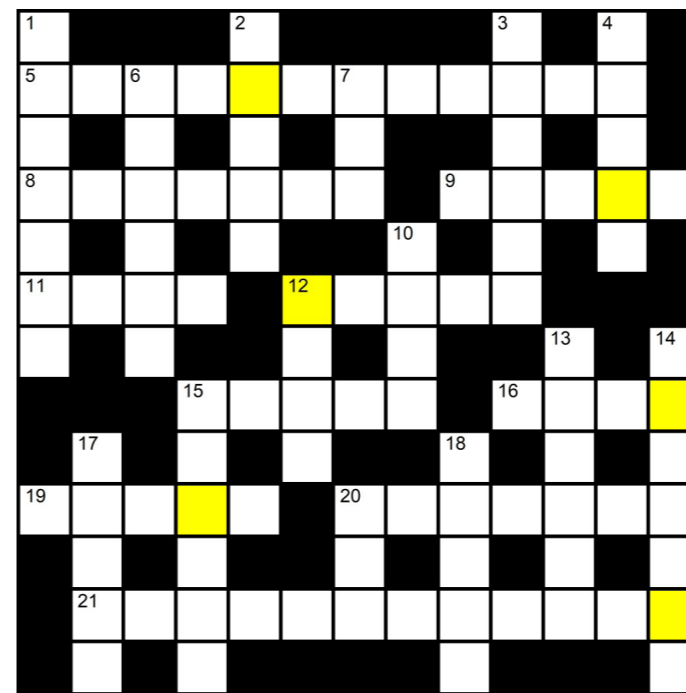
Send an email with your name, address and phone number, along with Erin Donohue Competition or *Born to Ice* Competition in the subject line, to competition@wwf.org.uk

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

Only one competition per entry please. Closing date: Friday 15 November 2019. For terms and conditions, visit: wwf.org.uk/compterm

CROSSWORD

Solve our crossword and you could win a copy of *The Deep: The hidden wonders of our ocean and how we can protect them*, published by Wildfire, worth £20



WWF Action crossword 43: autumn 2019 issue. Compiled by Aleric Linden

After solving the crossword, take each letter from the shaded squares (going from left to right and top to bottom) to spell out the prize word. To be in with a chance to win, just send a postcard with the prize word to the address on page 30, or email it to competition@wwf.org.uk. The closing date is Friday 15 November

Clues across

- 5 One of the greenhouse gases in the Earth's atmosphere (7,5)
- 8 Whaling weapon (7)
- 9 _ rhino, second-largest living land mammal after the elephant (5)
- 11 The unmistakable cry of a lion (4)
- 12 Snow leopards have long ones (5)
- 15 Non-polluting, like green energy (5)
- 16 Hair on a lion's neck (4)
- 19 King _, the world's longest venomous snake (5)
- 20 An energy product derived from plants (7)
- 21 The Himalayas are among the habitats of these big cats (4,8)

- 6 It puts an animal's survival at risk – e.g. poaching or habitat loss (6)
- 7 The source of solar power (3)
- 10 African big cat, the population of which is in steep decline (4)
- 12 _ kangaroos, marsupials impacted by deforestation (4)
- 13 The largest cat in the Americas (6)
- 14 The IUCN's conservation database (3,4)
- 15 A word connecting emissions, footprint and offsets (6)
- 17 Where land meets sea (5)
- 18 These unethical shark fin recipes are decimating shark numbers (5)
- 20 Pollinating insect (3)

Summer 2019 answers

Prize word: SEALS
Across 1. Fossil fuel 7. Leakage 8. North 9. Cubs 10. Paths 14. Arctic 15. Bleach 18. Pitch 19. Hare 21. Flora 22. Dead Sea 23. Antarctica
Down 1. Flatback 2. Swan 3. Ice cap 4. Fin whale 5. Litre 6. Glacial 11. Titicaca 12. Malaysia 13. Cheetah 16. Acidic 17. Volga 20. Wadi



Valeria fits a camera trap to a tree in the Chico Mendes reserve to help protect jaguars living here

ON THE TRAIL OF THE JAGUAR

The Amazon is one of the jaguar's last strongholds. It's estimated that over 70% of the wild population lives here. No wonder the region is a top priority for WWF. But we know surprisingly little about these elusive cats or how important protected areas are to their conservation. So I've been helping to find some answers by setting up cameras to monitor jaguars living in the Chico Mendes reserve in the heart of the Brazilian Amazon.

A dense jungle covering one million hectares, the reserve is full of wildlife, including hundreds of species of birds, monkeys, ocelots and a rare, spotty rodent called a pacarana. It's also home to about 10,000 people, who live off the forest, harvesting brazil nuts, rubber and timber, as well as rearing livestock and growing crops. Outside the reserve, the trees have almost all been cleared for pasture, a sign of the increasing pressures on the Amazon.

Our trek into the Chico Mendes reserve was quite an adventure. It had been raining hard, and we trudged around three kilometres with thick mud clinging to our boots, weighing us down. But when we reached the forest, I forgot my aching legs. Fringed with impenetrable thickets of bamboo, we had to open up our own trail using a machete. But we didn't mind because we knew that, some day soon, a jaguar would follow our path. Always pragmatic, these big cats prefer to walk on trails and roads, just like humans – and this is part of our plan to monitor them.

THE TREES HAVE EYES

As the jungle opened up into magnificent tall trees, we reached the location chosen for our first camera trap. I helped to attach one camera to a tree at knee-height, facing the trail we had made, and a second on the opposite side. This enables us to capture photos of both sides of the jaguar as it walks past. Every cat has a unique pattern of rosette markings on its coat, like a fingerprint, that helps us identify individuals.

For up to three months, our cameras will capture images of every animal that passes by. Then we will analyse the thousands of photos they capture. The images will help us to understand how jaguars, their prey and other wildlife in the forest is coping with threats, such as habitat loss and poaching. And to assess how effective different protected areas are in conservation efforts.

We plan to set up camera traps in another 35 sites, so there's lots of work still to do. We can't wait to share the results!

Valeria

Dr Valeria Boron, WWF's jaguar expert

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