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# Action

THE MAGAZINE FOR WWF MEMBERS

AUTUMN 2017



BRING  
YOUR MAGAZINE  
TO LIFE!

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## MISSION TIGER

How you're helping to reveal Bhutan's wildlife secrets



### HIGH-TECH CONSERVATION

How innovative technology is helping us tackle the toughest conservation challenges

### EATING FOR TWO DEGREES

Six simple steps to eating better, both for our own health and that of our precious planet

### GREENER SCHOOLS


Meet the inspiring winners of our Green Ambassador Awards






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A pod of minke whales cuts through the ink-blue waters of Wilhelmina Bay in the ice-scattered Antarctic peninsula. On the back of one of the whales, a tiny multi-sensor suction cup tag is just visible



SCAN THIS SPREAD TO VIEW MORE AMAZING IMAGES FROM OUR POLAR PROGRAMME AND AN INCREDIBLE 'WHALE CAM' FILM

## ADVANCING FOR WILDLIFE

As our climate changes, we're racing against time to unlock the mysteries of great whales in the Southern Ocean. WWF teams in Australia have been working with whale ecologist Dr Ari Friedlaender to help us see beneath the ocean's surface by fixing non-invasive digital tags, which include sensors and a 'whale cam', to the backs of humpback and minke whales. Rod Downie, who leads our polar programme, explains: "This technology will help us to better understand the important feeding areas of whales along the Antarctic peninsula, and the impact of declining sea ice caused by warming temperatures. The data will contribute towards the development

of a network of marine protected areas, conserving critical habitat not only for future generations of Antarctica's ocean giants, but also for penguins, krill and thousands of other marine species." It's just one way we're using our ingenuity and imagination to find solutions to conservation problems and answers to critical questions about the world's rarest species. We hope you're inspired by the examples in this issue – from the camera traps capturing images of elusive wild tigers in Bhutan, to the new night-time technology in the Mara that's leaving poachers nowhere to hide. They're all ways you're helping our conservation efforts.

THANKS TO YOUR SUPPORT,  
TECHNOLOGICAL INNOVATIONS  
ARE REVOLUTIONISING OUR  
ABILITY TO OVERCOME  
CONSERVATION CHALLENGES  
FIND OUT MORE ON PAGE 10

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## MEET THIS ISSUE'S CONTRIBUTORS



**EMMANUEL RONDEAU** has been photographing big cats for the past five years finding lynx in France and Amur leopards in Russia. He says: "Camera-trapping tigers in Bhutan was a challenge, but worth it."



**HEATHER SOHL** our species expert, visited the Mara to see the new infra-red thermal imaging cameras in action. She says: "The poachers can't understand how they've been detected in the black of night."



**JONATHAN JONES** from our press office recently joined a team of scientists tagging bowhead whales in the Arctic. He says: "With crystal waters and mirror-like reflections, the Greenland sea is rich in life, from plankton to whales."

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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 INDONESIA**  
**YOU HELPED GIVE RHINOS A BOOST**

Thanks to you, hopes are high for the world's rarest rhino after years of decline. In 2015, the population of critically endangered Javan rhinos in Ujung Kulon National Park grew to 63. Now, new figures have revealed that, against all odds, the population has increased again, to 67 individuals. The latest survey, which identifies rhinos from video clips captured by motion-detecting cameras, counted several calves and many sub-adults – an encouraging sign. Thanks to your support, we've provided camera traps to monitor these secretive rhinos since 2013, capturing pictures and film that enable us to understand where they roam and how they interact. Over the next five years, we'll be working with the National Park Authority to remove arenga palm – an invasive species that overshadows native vegetation – from 2,500 hectares of Ujung Kulon. This will increase the park's ability to support more rhinos, so that the population has the space – and food – it needs to continue growing.



**2 KENYA**  
**YOU HELPED KEEP WILDLIFE SAFE**

In May, a two-week aerial census of elephants, giraffes and buffaloes was carried out in Kenya's Maasai Mara. Thanks to your support, the survey is conducted every three years to help conservation efforts in the area. It monitors the number and distribution of these key species and maps human activities, including the presence of livestock, inside and outside the protected areas. A total of 2,493 elephants, 2,607 giraffes and 9,466 buffaloes were counted, with the populations of all three species increasing since the last survey in 2014. However, the census also detected an increase in human activities, which could damage the habitat. Elephant poaching in the Mara has gone down year-on-year since 2012, so it's clear our efforts are paying off. But poaching still remains a major cause of African elephant deaths. With your help, we'll continue working tirelessly to protect them.



**3 MEXICO**  
**YOU HELPED GIVE THE VAQUITA A CHANCE**

Thanks to you and 200,000 other WWF supporters around the world, a new agreement was signed this summer that gives hope for the critically endangered vaquita. With fewer than 30 individuals known, the vaquita is the world's rarest marine mammal. Numbers have more than halved in the past year, due to the use of fishing nets in which these little-known porpoises become entangled and drown. The president of Mexico has committed to enforcing a permanent ban on gillnets in the Upper Gulf of California, a UNESCO World Heritage site, where the last few remaining vaquitas live. He's also promised to develop new fishing gear and techniques that will allow local communities to resume legal, sustainable fishing activities. Though the agreement is a key step, the vaquita is still at risk. We'll continue to put pressure on the president to take measures to stop this precious porpoise from becoming extinct.



“With your help, we’re supporting projects in Nepal and China to place communities at the heart of snow leopard conservation efforts”

BECCI MAY, WWF-UK'S ASIAN BIG CAT SPECIALIST



**50,000 SQ KM**

Covering more than 50,000 sq km, Tanzania's Selous Game Reserve is one of the largest and richest wilderness areas left in Africa

**4 TANZANIA**  
**YOU HELPED GIVE US CLEARER SIGHT**

Your support has helped us strengthen the Saving Our Shared Heritage campaign by introducing WWF-SIGHT. This new tool allows us to map potential threats to World Heritage sites, such as industrial development and oil, gas and mining concessions. We can then engage with these industries and flag problems with the people who finance them before it's too late to stop potential projects. The tool has already helped us to identify threats to Selous Game Reserve in Tanzania. We're now tackling these issues with the government, UNESCO and stakeholders – and we've already had success. In May, all future mining activity in the reserve was stopped, keeping its wildlife safe – for now!



**6 NEPAL**  
**YOU HELPED US COLLAR A SNOW LEOPARD**

Thanks to your support, a snow leopard was successfully collared in Kangchenjunga Conservation Area in May – the fourth individual to be collared in Nepal. The cat, a sub-adult female about two years old, was fitted with a satellite-GPS collar, which means her movements can be tracked. The local people named her Yalung, after the sacred mountain Yalung Khang which overlooks the region. Yalung will now be closely monitored by the government, WWF and local citizen scientists. With support from our snow leopard adopters, two males and one other female snow leopard have been fitted with collars in the Kangchenjunga Conservation Area since 2013. Data from their collars is helping conservationists to determine critical habitats and corridors used by snow leopards in this transboundary region between Nepal, India and China. This will inform landscape-scale conservation plans.



Data from Yalung's collar will help inform conservation actions for snow leopards in the area

**DID YOU KNOW?**  
One of our collared snow leopards was recorded at 5,858 metres – the highest ever documented

**5 COLOMBIA**  
**YOU HELPED PROTECT COLOMBIA'S WILD PLACES**

Thanks to you, even more of Colombia's wonderful wildlife habitat will now be protected. The Colombian government has committed to expanding the country's protected areas by 30,000 sq km (that's an area 1.5 times the size of Wales) over the next 18 months. Ten thousand square kilometres will be added to the spectacular Chiribiquete National Park in the Colombian Amazon, and there'll be two new protected areas in the Orinoco region, one in the spectacular 'Caribbean Andes' and two in the Pacific coastal region. With your support, we're involved in the design of the parks, detailing the way these ecosystems contribute to the wellbeing of us all, and outlining their potential for removing and storing carbon dioxide from the atmosphere. We're also working with communities in and around the new and expanded areas to ensure that local people benefit.





# WWF IN ACTION

Our recent challenges and triumphs for wildlife and the environment



Selous is famous for its pristine ecosystems and abundance of hippos, elephants, black rhinos, cheetahs and giraffes

## SAVING OUR SHARED HERITAGE

### A SHADOW OVER SELOUS

**We're warning the Tanzanian government that the plan to build a large-scale hydropower dam in Selous Game Reserve poses a huge risk to people's livelihoods and the environment**

Selous is a World Heritage site. But, as you may remember from previous issues of *Action*, since 2014 Selous has been on the list of World Heritage in Danger primarily because of elephant poaching. Today, however, there are also growing concerns about industrial pressures on the reserve, in particular a planned hydropower dam at Stiegler's Gorge.

We commissioned a rapid assessment that warned the dam will put two protected areas of global importance at risk – Selous and the Rufiji-Mafia-Kilwa Marine Ramsar site (RUMAKI) – and jeopardise the livelihoods of more than 200,000 people who depend on the environment.

Our report, which we released in July,

revealed that the fragile ecosystem in Selous will be damaged by the dam and reservoir it creates. Covering an estimated 1,200 sq km, this would be the largest reservoir in east Africa. The development will cut off wildlife migration routes, increase erosion, and it may cause lakes that are important to wildlife tourism to dry up.

Changes to the flow of the mighty Rufiji river, and the loss of the sediment it carries, will also shrink a wetland of international importance – the RUMAKI – 180km downstream from the dam. This could cause the offshore fishery, reputedly Tanzania's richest, to collapse, directly affecting the communities that depend on fishing for their livelihoods. In this area of severe poverty, people rely on fish for protein.

Though the International Union for Conservation of Nature called on the Tanzanian government to abandon the proposed dam permanently, government officials said they would proceed since

the project could double the national production of electricity. But they noted that other hydropower projects have been identified in the country and that therefore Stiegler's Gorge is more of a 'back-up plan' and not a priority.

We're now calling on those responsible to make informed choices about the hydropower dam to ensure people will not suffer. Before they make any decision, we want them to carry out a strategic environmental assessment on the wider Selous ecosystem to ensure they identify all potential impacts, follow existing legal processes, and examine alternative power-generating schemes.

We hope the Tanzanian government will make a wise choice about its power generation, for its people, its environment and its economy.

**Ask Tanzania's president to better protect Selous today at [wwwf.org.uk/selous](http://wwwf.org.uk/selous)**

## THE DAM-AGE IN NUMBERS

# 2035

Stiegler's Gorge dam is due to be built by 2035

# 2

Two important protected areas are at risk – Selous and the Rufiji-Mafia-Kilwa Marine Ramsar site

# 1,200

SQ KM

The size of the reservoir the dam will create

# 16.6

MILLION TONNES

The amount of sediment the reservoir would trap each year, depriving farmland downstream of essential nutrients

# 200,000

The number of people (such as farmers and fishermen) whose livelihoods will be affected by the project

© ISTOCK



England's unique chalk streams are a haven for iconic species such as the kingfisher, which is why we work to protect them

## CLIMATE CHANGE

### TAKING ACTION TO CLEAN UP BRITAIN'S RIVERS

**THIS SUMMER we invited you to help us protect Britain's precious rivers and all their rich wildlife – and you responded with a flood of support**

Britain's bountiful rivers are the arteries of our nation – they're vital to our economy and our wellbeing. What's more, they provide important habitat for cherished wildlife, such as otters, water voles, kingfishers and salmon.

Yet for all their beauty and value, our rivers are in decline. It's truly alarming that fewer than 25% of rivers in England and Wales are now classed as healthy. Worryingly, our latest research shows that 25% of rivers in England alone are at risk of drying out.

Too much water is being extracted for use in homes, businesses and farms, without leaving enough in rivers for wildlife. Climate change is leading to extreme weather and turning our rushing rivers into timid trickles. This affects not only our wildlife, but also the people who depend on them for their livelihoods or recreation.

That's why we're working with the government, as well as with water companies, farmers and others, to protect these sensitive freshwater ecosystems. But we can't do it alone, so we asked for your help – and you didn't let us down.

Thanks to you, we raised over £50,000 to create a brighter future for our life-giving rivers. Over 4,000 of you wrote to your MP to ask them to ensure UK environmental laws are upheld and strengthened as an urgent priority. And that, as we prepare to leave the EU, the UK government remains committed to safeguarding rivers and improving water quality for wildlife.

We also invited you to share your stories about your favourite river and what makes it so special. Your inspiring tales poured in – you can check them out on page 29. Some of these heartwarming memories were on display in the Palace of Westminster during our #NatureNeedsYou campaign in October. Together, we showed MPs just how important rivers are to all of us!

## NEWS IN NUMBERS

# 7

Seven areas in the Arctic Ocean have been identified as potential new natural World Heritage sites, in a report by the IUCN that we supported. They include the Last Ice Area – the last stronghold of summer sea ice as the Arctic warms and a vital area for wildlife.

# 559

The number of river dolphins counted in a 1,600km stretch of the Putumayo river, a crucial tributary of the Amazon river. The survey was expected to record more dolphins, and highlights how urgently we need to tackle threats to these animals and the river.





USE BLIPPAR TO  
DISCOVER HOW  
YOU CAN PROTECT  
ELEPHANTS



Events took place across the UK during the Week of Action, as people engaged their local MPs in tackling climate change

CLIMATE CHANGE

## YOU SPOKE OUT FOR CLIMATE SOLUTIONS

**Climate change is one of the greatest threats our planet currently faces, and this July, supporters of WWF, along with other organisations in the Climate Coalition, attended events across the country to lobby MPs on the need for action**

In more than 200 constituencies, special events took place, including woodland walks, coffee mornings and even school gigs. These occasions were an opportunity for local people to ask MPs to commit to three key areas that will ensure the UK meets its commitments under the Paris Agreement. These included publishing an ambitious and robust plan to reduce emissions, promoting local energy solutions and cutting

energy waste in homes.

Minister for Climate Change and Industry Claire Perry expressed her support, saying: "The Week of Action gives everyone the chance to make their voices heard and discuss the critical challenge of climate change with their MPs." She also reminded her colleagues in government that tackling climate change is an essential part of their mission.

With such a show of support, MPs cannot ignore the importance of protecting all we love – our beautiful countryside, rivers, wildlife and food supply – from climate change.

**Take action and keep up to date with our work on climate change by signing up at [wwf.org.uk/climate](http://wwf.org.uk/climate)**

## MASSIVE IVORY HAUL

In July, customs officials in Hong Kong confiscated about 7.2 tonnes of ivory – possibly the largest seizure in 30 years. The tusks were hidden beneath frozen fish in a refrigerated container arriving from Malaysia. Three people were arrested, but officials say the size of the seizure is a reminder that crime syndicates are behind the international trafficking of ivory. WWF's Heather Sohl says: "Hong Kong is the largest city market for ivory, so the government must act swiftly to stamp it out. On average around 55 elephants are poached every day in Africa – that's one every 25 minutes. This appalling slaughter continues due to the global demand for ivory, so it's also essential that Hong Kong increases the penalty for wildlife trafficking to 10 years in prison to act as a strong deterrent."



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### ACTION INTERVIEW

#### KATE MACRAE

This summer, wildlife educator 'Wildlife Kate' MacRae opened the nature garden she helped create at the Living Planet Centre. We asked her a few questions...

#### WHAT MAKES OUR NATURE GARDEN SO SPECIAL?

WWF's new wildlife garden demonstrates how you can turn a small space into somewhere people can enjoy nature. It has a wooded area with a bug hotel totem pole, and a pond for pond dipping. It shows how plants can be used to cook, heal and attract wildlife – and reveals to visitors how they can provide homes for wildlife.

#### WHY DO CHILDREN NEED TO CONNECT WITH NATURE?

The survival of our planet depends on the next generation – and their future depends on our planet. Children need to be part of nature to understand, love and want to protect it. And getting outdoors is good for their physical and mental wellbeing.

#### HOW CAN PARENTS HELP?

Take your children outdoors whenever possible! Most of us have access to a green space, even in a city. Give your child the freedom to play, explore and get dirty! Do simple projects together – from growing plants to putting up a bird feeder to discovering wildlife in the garden. Have fun, build mud pies, roll down a hill and splash in puddles!

#### CAN SMALL URBAN PLOTS SUPPORT BIODIVERSITY?

Yes! You can plant a window box with nectar-rich blooms, make a washing-up bowl into a pond, or stick bird feeders on a window pane. Just do whatever you can to support wildlife on your own patch.



Victoria Park Primary School, Bristol, was the winner of our green team award – congratulations!

### GREEN AMBASSADORS

## SUPPORTING GREENER SCHOOLS

**In July, we were proud to reveal the winners of the WWF Green Ambassador Awards and present them with their prize during a special assembly at each school**

The annual awards are part of our flagship Green Ambassadors scheme, supported by players of People's Postcode Lottery. They showcase the very best examples of schools putting environment and sustainability at the heart of what they do.

Earlier this year, WWF ambassador Ben Fogle helped us kick off our UK-wide search for an inspiring green team and teacher, and for school award winners from each country in the UK.

Our school award winners emerged triumphant thanks to some really clever green initiatives. We were dazzled by efforts to grow vegetable gardens and build bug hotels, and by clever recycling and transport schemes.

Ben Fogle congratulated this year's wonderful winners: "It's inspirational to see so many young people coming together to protect our planet."

**Find out more about this year's inspiring winners at [wwf.org.uk/gaawards17](http://wwf.org.uk/gaawards17)**



### MEET OUR WINNERS

**School award winners:**

**Scotland**  
Monymusk School,  
Inverurie, Aberdeenshire

**Northern Ireland**  
Carrowreagh Primary School,  
Ballymoney, Co. Antrim

**Wales** Ysgol Gynradd  
Abererch School, Pwllheli,  
Gwynedd

**England** Warren Road  
Primary, Orpington, Kent

**Green Team award winner:**  
Victoria Park Primary  
School, Bedminster,  
Bristol

**Teacher award  
winner:** Sylvia Milner,  
Middleton-on-the-  
Wolds Primary School,  
East Yorkshire

### PICTURE STORY

## NEPAL'S WILDLIFE STOCKPILE GOES UP IN FLAMES

For the first time in 20 years, Nepal has burned its stockpile of wildlife parts in a dramatic demonstration of the nation's commitment to zero tolerance of wildlife crime. More than 4,000 wildlife parts from 48 different species, including 67 tiger skins and 357 rhino horns, were burned in Chitwan National Park in May. The wildlife parts were either seized from the illegal trade or were from animals that died of natural causes. The sight of such a huge number of bones, skins and horns going up in flames may be distressing, but it sends a clear message to the world that Nepal will not tolerate wildlife poaching and trafficking. It also means there's no chance the wildlife parts will be stolen for the illegal market.



Tiger skins and rhino horns were among more than 4,000 wildlife parts burned by the Nepalese government in May

© WWF-NEPAL / AKASH SHRESTHA

### NEWS IN BRIEF



© KLEIN & HUBERT / WWF

#### SNOW LEOPARD SUPPORT

Thanks for adding your voice to our 200,000-strong petition, asking global leaders to take action to #SaveSnowLeopards. We delivered the petition ahead of a critical summit in Kyrgyzstan, calling on attending leaders from all 12 snow leopard range countries to protect 20 snow leopard landscapes by the year 2020. We also urged leaders to increase efforts to tackle poaching and reverse the decline in snow leopard populations.

#### SNOW DENS FOR RARE SEALS

One of the world's rarest seals, the Saimaa ringed seal, has found a safe place to give birth – in man-made snow banks. Around 360 of these seals survive in Lake Saimaa, Finland. But during low-snow winters they can't find suitable places to den. So we piled up snow on Lake Saimaa's ice to help them make their dens. In 2017, out of the 81 pups born, 90% were born in these man-made banks.



With the growing scale of the threats facing so many species, advances in technology are now a vital tool in the fight to protect them. Thanks to your support, these innovations are revolutionising our ability to help overcome conservation challenges – by transforming our understanding of threatened wildlife, helping us improve their protection, and boosting our ability to prevent conflict between animals and people. Conservation is going high-tech...

Rangers in the Maasai Mara National Reserve are safer thanks to the new FLIR (Forward Looking InfraRed) cameras, which mean they can much more easily apprehend poachers in the dark



# INNOVATION FOR CONSERVATION



“WE’RE GIVING  
THE RANGERS EYES  
IN THE DARKNESS”



As night falls, the new thermal imaging cameras can monitor wide areas as they are sensitive enough for long-range detection of people and animals



The thermal imaging FLIR camera is powered by solar panels. Below: The anti-poaching unit tests the mobile FLIR camera system in their vehicle



USE BLIPPAR TO  
SEE INFRARED  
FOOTAGE OF  
POACHERS CAUGHT  
IN THE ACT



POACHERS: NOWHERE TO HIDE  
TESTING THERMAL IMAGING CAMERAS IN THE MARA, KENYA

A small object moves left to right across a dark screen, glowing ghostly white against the monochrome backdrop. A similar object enters from the right, close behind. The first accelerates and doubles back with the second in hot pursuit. The two zigzag across the screen like targets in a computer game.

But this is no game. The dark backdrop is a sea of grass and this is Kenya’s Maasai Mara National Reserve. It’s the middle of the night and the glowing objects – standing out like photographic negatives – are human figures, visible in infrared from their body heat. The first is a poacher. The second, now closing fast, is a ranger.

Inside a truck more than one kilometre away, the ranger’s colleagues see the drama unfold, a blackout canvas secured over their vehicle’s cab to prevent detection of the lights inside. The action on their screen comes

courtesy of a large thermal imaging camera on the roof that has been scanning the surrounding savannah since darkness fell. It is this camera that first detected the poacher. Spotting his infrared image on screen, the team then radioed their rangers to intercept him. Now, they are watching the end game. They direct the rangers to help them ‘see’ in the darkness as a vehicle speeds into view and more figures emerge. Seconds later a cluster of lights shows the poacher has been apprehended. Another successful operation has been completed.

Poaching is one of the greatest threats to Kenya’s wildlife. Shockingly, around 20,000 African elephants are killed each year for their ivory. Tonight’s poacher is not after elephants but, like many locals, is hunting impala and other ‘bushmeat’ for food. Whatever the nature of the poaching, however, the Mara

rangers have a constant battle to stop it. Tracking armed men moving in total darkness through this wild terrain is no easy job.

Now, at last, this groundbreaking use of technology may be tipping the odds back in the rangers’ favour. Developed by WWF in partnership with thermal imaging company FLIR and with initial funding from Google, it launched as a pilot programme in the Mara last year. Since then, 70 poachers have already been caught and prosecuted. All have received six-month jail sentences.

**OUTSMARTING THE CRIMINALS**

“Wildlife rangers now have the help they’ve desperately needed,” says Colby Loucks, our wildlife crime technology leader. “This technology allows them to search for poachers 24 hours a day. It’s upping the game in our fight to stop wildlife crime.”

The system is simple. A ranger vehicle with a revolving, roof-mounted FLIR camera parks in a spot with a clear view of the area, from where it can scan its surroundings to a distance of 3km. The camera detects the

body heat of large mammals – even through long grass or dust – which appear as infrared images on a screen inside the cab. Training and experience allow the rangers to quickly distinguish wild animals from humans – the latter generally appearing more upright and moving more steadily. They also eliminate any rocks and trees that have absorbed the heat of the sun during the day and so also

emit an infrared signal.

Meanwhile, mobile units in the field carry handheld, short-range FLIR devices. Once the stationary camera has detected a poacher, the team in the vehicle radioes the field rangers who then use their smaller devices to home in on the target. There is no hiding place for the poachers; even crouching down in long grass cannot fool the cameras.

“Poachers are flabbergasted,” says WWF’s conservation engineer Eric Becker. “They don’t understand how they could be captured in pitch darkness.” He explains how, now that they at last have the element of surprise on their side, rangers can go about their work with more confidence.

Eric is still tweaking the technology. Current ideas include looking at means of tagging rangers, to distinguish them more quickly on screen

**NIGHT OPERATIONS**

“It was a surreal experience,” says our species expert Heather Sohl, recalling the two nights she recently spent with the ranger team in the Maasai Mara National Reserve testing out the new system. “We sat for hours in darkness, with the milky way above us and hyenas calling in the background.”

No poachers showed up on those nights – proof perhaps of a deterrent effect – but Heather saw enough to understand just what an impact this new technology can make. “We’re giving the rangers eyes in the darkness,” she explains. “They’re proud of their new gear – and confident that we can now beat the poachers.”





# WITH THE DATA THESE SATELLITE TAGS CAN PROVIDE, MIKE HOPES TO GAIN NEW INSIGHTS INTO THE MYSTERIES OF MARINE TURTLES



Our team in Lamu seascape on the north Kenyan coast put a satellite tracking device on a female green turtle that had come to nest on Mkokoni beach. Five more devices will be deployed over the next few months



## MARINE TURTLES: SECRETS REVEALED TAGGING MARINE TURTLES IN LAMU SEASCAPE, KENYA

“Marine turtles are mysterious animals,” says Mike Olendo, marine programme coordinator for WWF’s coastal project in Kenya. “You really only get to see them when they come to nest and when the hatchlings leave.”

This element of mystery is one of the factors that make marine turtles hard to protect. We know that between hatching and nesting they travel the oceans, but we have little idea where they go or what they get up to out there. These ancient mariners face many threats, from damage to their breeding beaches, marine pollution and fishing bycatch, and increasingly from the impacts of climate change. Yet people trying to protect them still have many unanswered questions.

Now we may be about to unlock some of those mysteries, thanks to some exciting kit developed at St Andrew’s University in Scotland. In May, on a beach in Lamu seascape, our team in Kenya fitted a nesting green turtle with a satellite tag and released her. The tag comprised a small box called a platform terminal transmitter, which is about the size of a paperback. It was fixed to the turtle’s shell with a strong epoxy glue. It contains a battery-powered GPS and data sensors, and transmits signals to a satellite via a fixed aerial every time the turtle surfaces for air.

We’ve been using flipper tags in Kenya for some time. These small metal or plastic

tags fixed to a turtle’s flippers – like livestock ear tags used by farmers – are the most common way to mark them. They allow us to identify individuals when they return to Kenya from their sea voyages (or are encountered by researchers elsewhere). This helps us to understand some aspects of their ranging patterns, and use this information to plan conservation measures. But they cannot tell us about how turtles behave at sea.

### OCEAN MYSTERIES: SOLVED

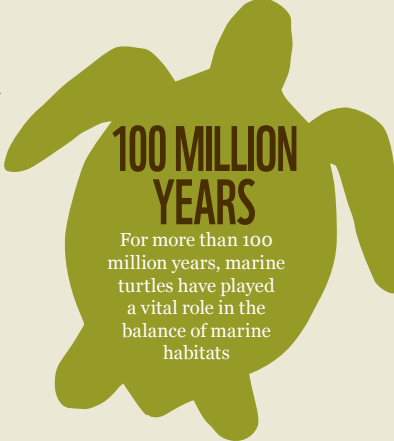
That’s why these satellite tags are so exciting. They don’t depend on the turtle returning to Kenya’s beaches, as they transmit information from the animal’s location far out at sea. The data they collect reveals not only the turtle’s whereabouts, but also the depth and speed at which it is swimming and many clues to its environment, such as the water temperature.

With the data these tags can provide, Mike and his team hope to gain new insights into these extraordinary reptiles, including their population dynamics, feeding sites and migration routes. It may also help them assess the hazards that marine turtles face at sea and identify priority areas for their protection.

The results of this project may extend far further than the east African waters. Mike explains that marine turtles know no boundaries and it is only by understanding them that we can protect them. “Research is the cornerstone of what we do,” he says. “Without research we don’t know whether we’re making a difference or not.”




The tracking devices are glued securely to the turtle’s shell so that they survive life in the ocean. Over time, the glue weathers and the shell grows and eventually the tags drop off



**100 MILLION YEARS**  
For more than 100 million years, marine turtles have played a vital role in the balance of marine habitats


**5**

Five species – including green, hawksbill, olive ridley, loggerhead and leatherback turtles – are known to breed or feed off coastal Kenya




**97%**

About 97% of nests monitored in Lamu seascape belong to green turtles. Nearly half of them nest on Rubu Island




**85%**

In the Western Indian Ocean, 85% of turtle deaths are due to human activities



**70%**

Along the Lamu coast, 70% of people rely on fishing for their livelihoods



GPS tags use a constellation of approximately 30 satellites to calculate their location

**30**

**2000-2012**

This is the longest period of time a turtle with a tag has been recorded

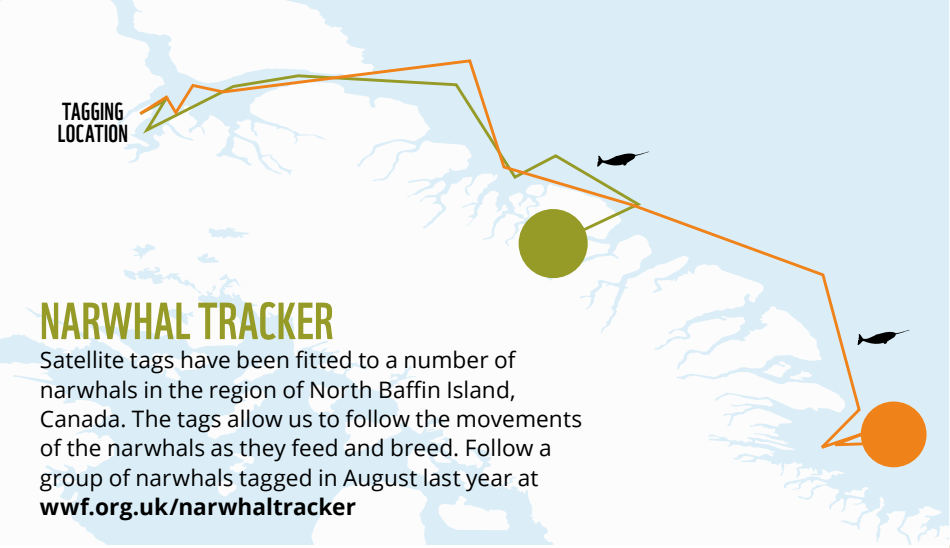




The team prepare to release a narwhal – now fitted with a new satellite radio transmitter – back into Tremblay Sound, Nunavut, Canada



A pod of male narwhals surface for air through seal holes and rotten ice in Nunavut, Canada



### NARWHAL TRACKER

Satellite tags have been fitted to a number of narwhals in the region of North Baffin Island, Canada. The tags allow us to follow the movements of the narwhals as they feed and breed. Follow a group of narwhals tagged in August last year at [wwwf.org.uk/narwhaltracker](http://wwwf.org.uk/narwhaltracker)



## NARWHALS: MYSTERY SOLVED

### DRONE SURVEILLANCE AND TAGGING NARWHALS IN THE ARCTIC

The feeding pod of narwhals is clearly visible from high above Tremblay Sound, their pale torpedo-shaped bodies circling just below the surface. Even from 100 metres up you can see – courtesy of WWF’s drone-mounted camera – the ivory gleam of their tusks against the dark Arctic waters.

But then, as the aerial camera zooms in, your eyes alight on something bizarre. The closest narwhal appears to be flicking its tusk sharply from side to side, disturbing the Arctic cod that dart away from its path. You pause and rewind, not sure whether to believe your eyes. But there’s no doubting it: the whale is deliberately striking the fish with its tusk, delivering short, sharp blows that knock them senseless. Then it sucks them in and swallows them.

Narwhals are among the most mysterious of whales. This spectacular tusk has long provoked curiosity. Centuries ago, narwhal

tusks washed ashore on beaches were thought to be from unicorns. In more recent times, scientists have suggested that the tusk may serve in everything from seabed feeding to territorial combat, electro-sensory perception and sexual selection.

Until this May, however, when this unique drone footage was captured, nobody had suggested that the tusk might serve to catch fish. “That idea was not on the list of possible functions, as far as I know,” says WWF’s Brandon Laforest. He explains how research in the past always focused on the whales finding food on the seabed. “Feeding at the surface was a revelation.”

For the past few summers, the WWF team has been part of a group studying the

narwhals of Tremblay Sound, in the frozen north of Canada’s Baffin Island. These remarkable whales are specially adapted for life in polar seas, with the lack of a dorsal fin allowing them to spend long periods under the ice. Today, however, like much Arctic marine life, narwhals are under threat. Climate change is breaking up the habitat they depend on, leaving them vulnerable to predation by killer whales and entrapment in unpredictable ice conditions. Meanwhile, increased potential for oil and gas exploitation means more pollution, more noise disturbance and more shipping.

Unlike some migratory whale species, narwhals spend their whole lives in the Arctic waters. Canada is home to around 150,000, about 90% of the world’s total population, most of which winter for up to five months under

sea ice in the Baffin Bay and Davis Strait area. Every summer, the WWF-supported team has captured a handful of narwhals and fitted them with satellite transmitters. This allows the researchers to follow their movements, identifying key migration routes and summer and winter habitats, and thus informing plans for their conservation.

**NARWHAL FEEDING REVELATIONS**

But this drone footage has also revealed something even more surprising to the team than a new feeding technique. It has proved that whales feed both at the surface and during the summer months. Previously most scientists thought that the whales fed predominantly during winter, when they moved to the south of Baffin Island, and only at great depths – the whales diving as deep as 1,500 metres below the sea ice in search of Greenland halibut.

These revelations have already prompted the team to revisit photographic surveys from previous years in search of clues about population dynamics and feeding behaviour that may have been overlooked. It may

help them work out where and when the population divides between the males and the females with calves – and, by assessing body condition, to determine how well they’re feeding.

“There’s potential for this information to be a game changer for narwhal conservation,” says Brandon. “It will help us pinpoint calving and calf-rearing habitat for protection.” He stresses how drones are non-invasive and are thus the ideal tool for studying an animal that is particularly skittish. “We’ll definitely have more drones when we return next year,” says Brandon.

Last year, a WWF-supported drone project identified 82 bowhead whales – a much larger, plankton-eating species. This year, the team is hoping to re-identify the same individuals and build a population database. Brandon hopes they’ll soon be able to produce something similar with narwhals. “We see this as a real call to action for future studies,” he says. “This time round we only observed for a few hours, yet we found something amazing. Just imagine what we might find if we keep looking.”



USE BLIPPAR TO REVEAL DRONE FOOTAGE OF NEW NARWHAL BEHAVIOUR

## HOW TO TAG NARWHALS



### SET-UP AND OBSERVE

A long net is stretched across a narrow inlet in a sound where narwhals regularly pass. The net is supported by buoys at the surface and attached to the shore at one end. Sentries watch the nets 24/7.



### RAPID RESPONSE

When a narwhal becomes entangled in the net, it drags down the surface buoys. The tagging team race to the net, quickly bring the whale to the surface, and gently pull it to shallower water.



### TAG AND RELEASE

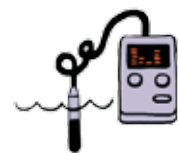
Wading waist-deep in the shallows, the team carefully attach a GPS tag to the narwhal’s dorsal ridge, then the animal is released. The process – capture, tagging, release – takes no more than 45 minutes.





BLIPP THIS PAGE  
TO HEAR SOME  
DOLPHIN CALLS,  
ECHOLOCATION AND  
WHISTLES THOMAS  
RECORDED

Supporters like you  
are helping to fund  
research with Thomas  
– a cutting-edge  
marine robot designed  
to monitor the health  
of our UK seas



## MARINE LIFE: RESEARCH AND PROTECTION

### THOMAS THE MARINE ROBOT STUDYING UK WATERS

A stream of clicks and whistles ebbs and pulses through speakers at the National Oceanography Centre (NOC) in Southampton. They are clearly the echolocation calls of dolphins, but are they Risso's or bottlenose dolphins? What's more, who made this amazing recording?

The first question may require more analysis from the research team but the second is easily answered. The intrepid researcher who braved the wild seas off the Cornish coast is none other than Thomas, a marine robot. In an age where artificial intelligence points a new way forward for science, this autonomous machine looks set to revolutionise marine research.

#### SPY IN THE OCEAN

Thomas – created in 2013 by ASV Global and named after the grandfather of one of the research team – may not look like a robot in the traditional C-3PO style, but you underestimate him at your peril. Bright yellow, four metres long and designed to float on water, he carries five cameras that record images both above and below the surface and sends them back in real time via satellite.

He also has three passive acoustic monitoring devices that can detect and

record underwater sounds, and a range of sensors that monitor conditions in the marine environment, including temperature, salinity and chlorophyll levels – the last of these helps researchers gauge the amount of plankton in the water.

Working beside Thomas is Drake. This companion machine, known as a submarine glider, travels up and down in the water column below Thomas. Together, they build a three-dimensional picture of the submarine environment. They may be out at sea for weeks at a time, in all kinds of conditions. And as the data continues to flow in, the technical team and scientists back at NOC mission control can respond in real time, making continuous adjustments to where they go.

"They're a pretty impressive pair," confirms Lyndsey Dodds, our head of marine policy. She explains how robots are both cheaper and more versatile than larger ships, and can explore marine environments – such as under cliff overhangs – that were previously inaccessible. "Together they

give us a degree of flexibility that just isn't possible with traditional research."

Lyndsey was at Newlyn harbour in Cornwall in May 2016 when Thomas headed out to join Drake off the Isles of Scilly on his mission, coordinated by the NOC and funded by supporters like you. Thanks to you, each mission since has brought back more valuable data about our marine environment. Already, Drake has revealed deep-lying seams of plankton that no satellite imagery would detect, while Thomas has recorded dolphins around our coasts.

"The real forward-looking thing now will be to join up all this data," says Lyndsey. She explains that only by finding out about our oceans can we learn how to protect them and manage the activities that affect them. It's an exciting prospect. "This technology will improve our understanding of the world's oceans in a cheaper and more flexible way than ever before."

One of Thomas' many tasks is to detect marine life and record the echolocation clicks and whistles of bottlenose dolphins



## OTHER TECHNOLOGY CHANGING THE WAY WE WORK

### HOW WE'RE DEVELOPING NEW TOOLS TO TACKLE CONSERVATION CHALLENGES



#### TINY TAG TECHNOLOGY

The collars used to track polar bears have limitations. They can only be used on adult females, as the males' necks are bigger than their heads, so collars would easily slip off. And they frequently malfunction. So we got together with tech start-up IDEO to develop new GPS ear tags for polar bears – a reliable and more bear-friendly alternative to collars.



#### EYES IN THE SKIES

Using remote sensors and video capabilities, unmanned aerial vehicles (drones) can detect poachers and GPS-tagged animals, relaying data to rangers and mobile law enforcement units. This will help them to determine if action is needed. They also give us access to previously unreachable areas and a safe view of illegal activities on the ground.



#### TECH FOR TIGERS

Innovative software is helping rangers in Nepal to protect tigers. Real-time SMART (Spatial Monitoring and Reporting Tool) improves law enforcement in protected areas. It allows rangers to record tiger sightings and signs, and illegal activities, in real time on their mobile phones. This is then analysed to plan patrols and respond more quickly to poaching incidents.



#### SEISMIC SHIFTS

We're trialling a small, affordable seismic detection device to alert people, especially farmers, to the sound of approaching elephants before they reach their field or community. This will help to prevent conflict and protect both elephants and people in places such as India.



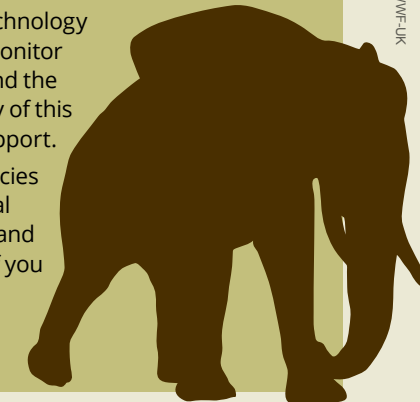
#### LION LIGHTS

We're helping pastoralists in Kenya to install solar-powered flashing lights to deter lions and other predators from attacking their domestic animals at night. By attaching light emitting diodes (LEDs) to posts around livestock enclosures in villages, we're helping to support the livelihoods of local people and prevent retaliatory killings.

#### HELP US TO PROTECT WILDLIFE THROUGH TECHNOLOGY

We've shown you how technology is already helping us to monitor and protect wildlife around the world. We couldn't do any of this without your amazing support.

But if we want to give species a better chance of survival we must keep on testing and investing in technology. If you would like to do more to help, please donate at [www.wwf.org.uk/tech](http://www.wwf.org.uk/tech)





PROTECTING RARE SPECIES

A wild tiger triggers one of our camera traps in Bhutan. The majestic male was photographed in a wildlife corridor connecting Jigme Singye Wangchuck, Jigme Dorji and Wangchuck Centennial National Parks

Bhutan is home to a vital population of wild tigers, but the cats are rarely seen. So we challenged conservation photographer Emmanuel Rondeau to capture images of a wild tiger and shed light on the importance of Bhutan's wildlife corridors

# TRAIL OF THE TIGER



USE BLIPPAR TO  
TRIGGER CAMERA  
TRAP FOOTAGE OF  
THIS WILD TIGER



“WWF HAS INVITED ME ON AN EXCITING MISSION: TO CAPTURE IMAGES OF ONE OF THE PLANET’S MOST CHARISMATIC ANIMALS – THE TIGER”



Emmanuel's quest for tigers was not easy, but it was inspirational



Emmanuel and the team climbed 600 metres every day to check the camera traps

DAY 1 THE MISSION BEGINS

I'm at the airport. I've checked in 100kg of photography equipment and now I've got two days of travelling ahead of me. I'm off to the Himalayas, to perhaps the most fascinating country in the world: the Kingdom of Bhutan. I've been photographing big cats for the past five years. Now WWF has invited me on an exciting mission: to capture images of one of the planet's most charismatic animals – the tiger. Since the early 20th century, wild tiger numbers have declined by over 95% due to habitat loss, hunting, poaching for the illegal wildlife trade and conflict with humans. In 2010, as few as 3,200 wild tigers were left. So WWF helped launch the TX2 initiative to double the number of wild tigers by 2022. And it's already working. For the first time in conservation history, the number of tigers is increasing – it's now around 3,900. That's amazing – but it doesn't mean my task will be easy.

DAY 5 SPY IN THE FOREST

Bhutan is about the size of Switzerland – and even more mountainous. A recent survey revealed there were estimated to be 103 tigers in the whole country. So the only way I'm likely to get a photo of one is by setting up a number of hidden cameras with an infrared trigger – called camera traps. With the help of local forestry rangers Dorji, Leki and Karma, who work for Bhutan's national parks and forest service, I hide eight camera traps deep in tiger territory. The team identify likely tiger trails, and take turns crawling past to test the focus and the trigger mechanism. Now we'll leave the cameras out there for the next few weeks and hope a tiger will come along.

DAY 9 INSPIRING A NEW GENERATION

Today we visit a school. Though it's right in the heart of tiger territory, none of the kids have ever seen a tiger, except on TV. But they're enthusiastic about increasing the number of tigers in Bhutan. “We want to keep tiger



populations growing,” the teacher encourages them. “100, 101, 102 until...” “A thousand!” roar the children. “A thousand!” I hope the tigers can hear that from the forest.

DAY 14 CORRIDORS OF HOPE

Part of my mission is to shed light on Bhutan's wildlife corridors. In Bhutan, there are 10 protected areas – national parks and wildlife sanctuaries, and connecting habitat corridors – that together cover 51% of the country. It's important these areas are linked by protected areas, so that wildlife can move around. Then a tiger from one national park can meet and mate with a tigress in another park.

Unfortunately, corridors don't always receive the protection they need – they aren't monitored or patrolled like national parks. We set up our camera traps in corridor eight (out of nine), which links three large national parks. I hope the images we capture will help increase our understanding of these corridors and the importance of managing and securing them



Emmanuel set up his cameras to capture an iconic image of a wild tiger in the Bhutan forest



Emmanuel's camera traps were triggered by falling leaves, high winds and other mammals such as this wild boar. Turn over to see another incredible image of Bhutan's spectacular but secret wildlife

properly. That's one of the objectives of Bhutan for Life, an ambitious programme to protect the country's nature launched by WWF and the government of Bhutan. There's already evidence that tigers use the corridors. One individual was spotted in Royal Manas National Park in the very south of Bhutan, and then was seen a year later in Jigme Dorji National Park in the north of the country. Making sure tigers are able to move across whole landscapes like this is a key part of WWF's strategy for doubling tiger numbers.

DAY 24 A SURPRISE VISIT

Dawa Tshering is a yak herder right on the edge of the corridor where I've set up my cameras, deep in tiger country. In Bhutan, around 70% of the people are small-scale farmers. Many of them raise animals such as yaks, and tigers can be a threat. “The last time a tiger came, it killed three yaks,” says Dawa. “And at night I can hear it roaming around my hut.” Some people kill tigers to prevent them from attacking livestock, he explains, and sometimes he comes across traps and snares in the forest. “They don't understand that the tiger is the

most precious animal in Bhutan,” he says. There are plans to roll-out a livestock compensation scheme to compensate owners if livestock such as a yak is killed by a tiger, so that people like Dawa won't lose out from living alongside tigers. Then they hopefully won't feel so inclined to resort to killing them to protect their livestock.

DAY 28 SUCCESS!

It's been almost a month and the camera traps have captured nothing – just a few images of deer. I'm feeling a bit stressed. But I'm not surprised. No one knew how the wild tigers would react to camera traps. Unlike the small camera traps used in scientific research, these are big and bulky, with infrared beams and flashes in the trees. Tigers don't like anything new in their forest. I guess they've been staying away. Then a week later, we check the camera again... Wow! An amazing close-up of a huge male tiger – the first high-resolution photograph of a wild tiger ever taken in Bhutan. And what's more, experts studying the pattern of its stripes say they don't think this tiger has ever been recorded here before. That's one more precious tiger spotted in



Emmanuel and the team couldn't believe it when, a couple of months later, they captured our cover image of this beautiful wild tiger



USE BLIPPAR TO UNLOCK FILMS OF EMMANUEL'S EPIC JOURNEY

Bhutan. I really hope I'll see the day when they reach 1,000!

DAY 88 THE RETURN

I've returned to Bhutan to collect my camera traps and see if they've captured any more tigers. There's nothing on camera one, but on camera two... result! It's the same wild tiger, back again. I can't believe it. I feel like I've been looking for a legend – and I've found it, here in this incredible country. This mission shows that tigers are out there, in the forests of many countries, and this gives me hope that we can double the number of tigers by 2022. Together, I know we can do it.

**PROUD TO SAY #IPROTECTTIGERS**

With your help, by 2022 we want to live in a world where wild tiger numbers have doubled. By becoming a tiger protector, you'll be writing what could be the biggest conservation success story of our time. Visit [www.wwf.org.uk/tigersupport](http://www.wwf.org.uk/tigersupport)





USE BLIPPAR TO  
UNLOCK YOUR  
EXCLUSIVE CAMERA  
TRAP FILM

## BHUTAN'S SECRET WILDLIFE: REVEALED!

**When we challenged film-maker Emmanuel Rondeau to capture footage of a wild tiger in Bhutan's mountain forest corridors, we had no idea what else he would discover...**

Emmanuel's mission was not for the faint-hearted. He and his ranger guides had to trek for days, at altitudes of over 3,350 metres, to place eight camera traps in one of Bhutan's vital wildlife corridors. The team then revisited the camera traps every week for three months, to replace batteries and check for images.

Emmanuel was pushed to his limit by torrential downpours, deep snow, high altitudes and the extreme terrain. But it was all worth it. The camera traps captured photographs of a Himalayan black bear, red panda, barking deer, blood pheasant, Himalayan serow and marbled cat all using the forest corridors. But best of all was this extraordinary takin.

With horns like a wildebeest, a nose like a moose, a tail like a bear, and a body like a bison, the takin sounds like a mythical beast. Said to be the inspiration for the legend of the 'golden fleece', it's hardly ever seen in the wild. Though the takin is sometimes called a goat-antelope, it's most closely related to the goat-like Barbary sheep of north Africa. The moose-like snout has large sinus cavities that warm up inhaled air before it gets to the takin's lungs, and thus help it survive in the extreme cold of the mountains.

Bhutan's forest corridors are lifelines for isolated populations of tigers and other wildlife, allowing them to meet, mate and mingle their genes. It is hoped that these images will help to improve the protection and management of these areas.

Relive every step of Emmanuel's incredible adventure at: [www.org.uk/missiontiger](http://www.org.uk/missiontiger)

© EMMANUEL RONDEAU / WWF-UK



# LET’S TALK ABOUT FOOD

What we eat affects not only our own health but also that of our precious planet. Food is at the heart of many environmental problems, but it’s easy to eat more sustainably. Just follow our six Livewell principles...

**WHAT’S THE PROBLEM?** Food production is a major cause of environmental issues

IT DRAINS WATER RESOURCES

IT CAUSES DEFORESTATION

IT CONTRIBUTES SUBSTANTIALLY TO CLIMATE CHANGE

IT DRIVES THE LOSS OF 60% OF OUR GLOBAL BIODIVERSITY

**WHAT’S THE SOLUTION?** By adopting a sustainable diet we can all help keep global temperature rise well below 2°C, as stipulated in the Paris Agreement. So try these simple changes...

EAT A VARIETY OF COLOURFUL FOODS

MODERATE RED AND WHITE MEAT CONSUMPTION – TRY OTHER SOURCES OF PROTEIN SUCH AS PEAS, BEANS, NUTS AND SOY

WASTE LESS FOOD

CHOOSE MSC, FREE-RANGE AND FAIR TRADE FOOD

EAT MORE PLANTS, ESPECIALLY VEGETABLES, BEANS AND WHOLEGRAINS

EAT FEWER FOODS THAT ARE HIGH IN FAT, SALT AND SUGAR – JUST HAVE THEM AS A TREAT

Every change on our plates makes a positive difference to our planet. Find out more at [wwf.org.uk/eatingfor2degrees](http://wwf.org.uk/eatingfor2degrees) and let us know how you get on!



## MEXICAN BEAN STEW

*A simple vegetarian bean stew makes a quick, filling and planet-friendly dinner*



### INGREDIENTS

- Cooking oil
- 1 onion, thinly sliced
- 2 garlic cloves, crushed
- 1 red pepper, chopped
- ½ tsp hot chilli powder
- 1 tsp ground cumin
- 1 tsp ground coriander
- 400g tin chopped tomatoes
- 2 tbsp tomato purée
- 400g tin white beans, drained
- 250g mushrooms
- 100g/300ml fat-free Greek yoghurt, to serve
- 1 lime, cut into wedges, to serve
- 1 chopped spring onion
- Salt and freshly ground black pepper

### METHOD

Layer a large frying pan with oil and place over a medium heat. Add onion and garlic and cook for three minutes, stirring regularly. Add pepper and cook for two minutes.

Stir in the spices and add the tomatoes, tomato purée, mushrooms and white beans. Pour over 300ml of cold water and bring to a simmer. Season with salt and black pepper and cook for 30 minutes, stirring occasionally until thick.

Cut up the spring onions and sprinkle for garnish.

Serve with yoghurt and lime wedges.

### COULD YOU EAT BETTER?

What we eat not only affects our own health, but also the environment.

By following the Livewell principles – eating more whole grains and plant-based foods, considering MSC, free-range and fair trade, and buying less processed food and more locally grown food – you can make a difference.

Look out for another tasty recipe that’s good for you and the planet in future issues of *Action* – and send us your own sustainable cooking tips.

Find out more about the Livewell plate at [wwf.org.uk/livewell](http://wwf.org.uk/livewell)

SERVES 2  
45 MINUTES  
EASY



# OVER TO YOU!

We know you've done some really great stuff for us since the last issue of *Action*, so why not tell us about it? These are *your* pages – let's celebrate you!



© MARATHONPHOTO

## RECORD-BREAKING GIRAFFE

I'm a keen runner and passionate about protecting our wildlife, so I ran the 2017 London marathon dressed as a giraffe for WWF. Raising money for the charity by running a marathon in an animal costume was a great way of combining my two passions. Breaking the Guinness World Record for the fastest marathon in a full-body animal costume was a bonus!

I live close to the London marathon start line, so I often train around Greenwich Park and Blackheath. Running in my costume turned a lot of heads – people called out, stopped to take pictures and honked their car horns at me!

The atmosphere on the day of the marathon was fantastic. Running the London marathon and experiencing the support from the watching crowds is something I'd recommend to anyone. Especially if you're running in an animal costume for WWF!

**Laurence Morgan, London**

## SPECTACULAR SHARK SWIM

In April, I swam all the way from Robben Island to mainland Cape Town, South Africa, to raise money for WWF, a charity that's very important to me. Robben Island is famous for being the place where the late Nelson Mandela was held for 18 years. I was given a one-way ferry ticket and had to swim 7.5km back to the mainland.

The race was one of the hardest things I've ever done. With the water a chilly 9°C, a relentless current and ever-changing swells, not to mention creatures of the deep to contend with, it was no mean feat! As other swimmers were pulled from the water suffering from hypothermia and exhaustion,

I began to have doubts. But I was determined and I finished the race in just under four hours.

Ever since I can remember, I've been fascinated with animals. They are the most wonderful gift to the world and it's a shame this isn't recognised more. I chose to swim for WWF because the charity needs people's support to protect the world's most threatened species. It's up to each one of us to make a difference.

**Casey Jones, Head of Sport, Wetherby School, London**

**Karen Gates, who heads our community fundraising and events team, says:** "We can't thank Casey enough for his Herculean efforts for our amazing planet. He raised over £12,000! We're grateful to all our fundraisers for their endless energy and support for wildlife."



© CASEY JONES



## YOUR RIVER STORIES

This summer, we asked you to help protect our precious rivers and share your stories of time spent messing around on your favourite river. Here are just a few of them...

*"After a really stressful day at work, a walk on the River Stour puts everything in perspective and makes living worthwhile. It probably saved my life!"*

*"Lucky child that I was, long summer days were spent happily splashing in our local river, the Itchen. Years later, miraculously, it was still unspoilt, still as beautiful, and ready to recreate the whole idyllic experience for my own young boys."*

*"The stretch of the Brathay, near Slaters Bridge, where I swam as a child is so beautiful. I used to follow fish underwater and let minnows nibble my legs."*

*"The Wye, as it passes through the town of Bakewell, is magical. To stand on one of the bridges watching the fish and birdlife only a few feet below is one of life's joys."*

*"So many happy memories of the days when I was dog walking on the Adur. Especially the afternoon when there was a flash of blue and I saw a kingfisher. I had my halcyon day and will always remember it with happiness."*

© GETTY IMAGES



## JOIN THE ACTION GANG AND TELL US ABOUT YOUR ROAR-SOME AUTUMN

Autumn is a great time to organise a party with a purpose – and we love to hear about all the fun you've had fundraising. So please email your letters and photos to [editor@wwf.org.uk](mailto:editor@wwf.org.uk). Though we read every one, we cannot acknowledge them and must reserve the right to edit them.

## MAKING A LASTING DIFFERENCE

When our Arctic expert, Rod Downie, gave a lecture on polar bear conservation in June, WWF member Judith Wright accepted our invitation to attend. She told us why she got involved.

"I support WWF because I'm passionate about the future of our planet. The talk was fascinating and I'm keen to attend

more WWF lectures in the future. I've been a tiger adopter since 2005 and became a member in 2012. I'm interested in all of WWF's work to protect our planet, but tiger conservation is my passion. I made the decision to include a gift to WWF in my will because I want to help protect the planet for generations to come."



A gift in your will can help us protect vulnerable species, such as tigers, and tackle threats to our beautiful planet

THEIR FUTURE, OUR PLANET, YOUR LEGACY

## IN MEMORY OF ERIC

When loyal WWF supporter Eric Turgis sadly passed away earlier this year, his family were determined to find a way to keep his memory alive.

Eric was a beloved husband, father, father-in-law and grandfather; a very special person who will be sorely missed by all who knew him. Because Eric had been a WWF member for so many years, his family asked relatives and friends to support WWF in his memory. They decided to set up an in-memory tribute

page on Just Giving and set a target of £200 to see if collectively family and friends could reach this target in honour of all the many good things Eric did to help others and charities in his lifetime.

Eric's family were overwhelmed with the wonderful response from all who knew Eric and together they raised an incredible £600 for WWF. This is a wonderful tribute to Eric and we are honoured to be chosen by his family as the charity to remember him.

**Gifts in wills support 20% of all our vital work each year. If you'd like to find out more, or discuss supporting WWF in memory of a loved one, email Maria Dyson on [maria@wwf.org.uk](mailto:maria@wwf.org.uk), call us on 01483 412 459, or visit [wwf.org.uk/gifts](http://wwf.org.uk/gifts)**





Sue Timney (with Kirstie Allsopp, right) models her wonderfully wild range

## GIFTS THAT GIVE BACK

We're celebrating the relaunch of our online shop by giving away two sets of cushions created for us by designer Sue Timney

Are you looking for something exclusive, stylish and super-sustainable for that special Christmas gift? You'll want to treat yourself too, when you check out the exciting new products in our relaunched online shop.

For starters, we're sure you'll love the exclusive homeware range created especially for us by iconic British designer Sue Timney. Her beautiful new collection includes must-haves for everyone, including cushions, mugs, aprons, tea towels and tote bags. They're all available in four stunning designs inspired by some of the fabulous habitats and amazing animals we strive to protect.

You'll also find plenty of other new gift ideas, and our latest irresistible Christmas card selection.

And we've introduced a collection that's sure to be seriously sought-after – a range of products featuring and inspired by our much-loved panda logo. We're sure you'll love them!

We go to great lengths to make sure all our products are sourced and manufactured to the most exacting sustainability standards.

To find the perfect present, please visit [wwf.org.uk/shop](http://wwf.org.uk/shop)

© JANE AIREY / WWF



We're thrilled that we're able to give away **two sets** of our covetable **Sue Timney-designed cushions**. Each set of four cushion covers is **worth over £100**. To be in with a chance of winning this super prize, just follow the instructions (*below*) and mark your entry 'Sue Timney Comp'.

**WIN!**  
**SUE TIMNEY**  
**DESIGNED CUSHION**  
**COVERS**

## UNFORGETTABLE BEHAVIOUR

We have five copies of this stunning Wildlife Photographer of the Year photo book to give away



Animal-lovers and photographers will adore this beautiful collection of the most memorable images of animal behaviour from the prestigious Wildlife Photographer of the Year competition.

Each image has been specially selected from thousands entered into the contest over the past 50 years. They reveal extraordinary, surprising and often deeply moving acts of animal behaviour. Each photograph is accompanied by a short story describing how the picture came to be taken and its importance, both photographically and as a record of an unforgettable moment.

To be in with a chance of winning one of these books – courtesy of the Natural History Museum,

London, and worth £20 each – just follow the instructions (*right*), and mark your entry 'Unforgettable Comp'.

## HOW TO ENTER ACTION GIVEAWAYS

Send an email with your name, address and phone number, and the competition – e.g. Sue Timney Comp or Unforgettable Comp – in the subject line, to [competition@wwf.org.uk](mailto:competition@wwf.org.uk)

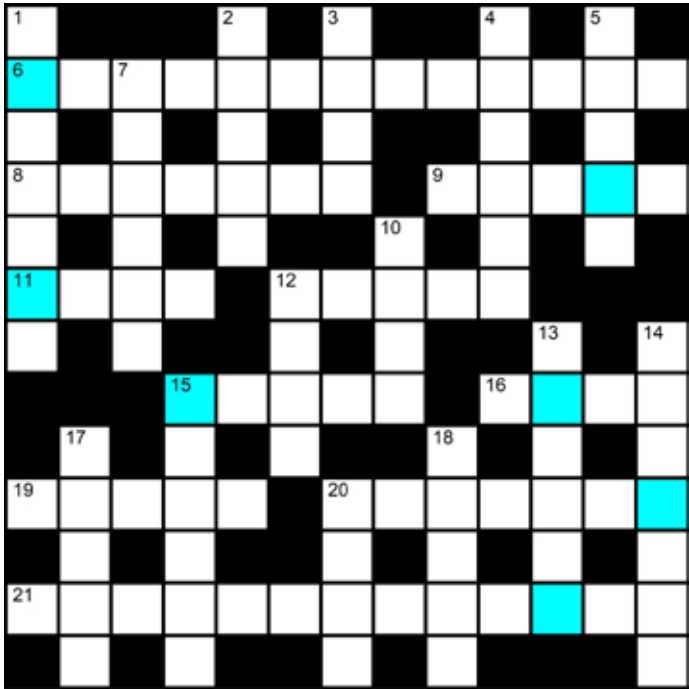
Alternatively, post your entry to **Action Mag, WWF-UK, Living Planet Centre, Rufford House, Brewery Road, Woking, Surrey GU21 4LL.**

Only one competition per entry please.

The closing date for the competitions is 25 November 2017. For terms and conditions, visit [wwf.org.uk/compterm](http://wwf.org.uk/compterm)s

## CROSSWORD

Test your knowledge and be in with a chance to win a copy of *ReWild*, the latest book by naturalist and wildlife presenter Nick Baker



WWF Action crossword 37: Autumn 2017 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](mailto:competition@wwf.org.uk). The closing date is 25 November 2017.

### Clues across

- 6 A form of renewable energy generated by water power (13)
- 8 Anti-poaching personnel (7)
- 9 Blazing causes of forest destruction (5)
- 11 \_ of God, natural disasters such as floods, earthquakes, etc (4)
- 12 Unmanned innovation used in conservation monitoring as an 'eye in the sky' (5)
- 15 A word we might associate with floodplain, energy and wave (5)
- 16 Aswan \_ Dam, notable flood management structure in Egypt (4)
- 19 Coniferous region also known as boreal forest (5)
- 20 See 2 down
- 21 Carbon dioxide is an example of one (10,3)
- 4 One of the defining markings of tigers (6)
- 5 A big cat such as the critically endangered Sumatran (5)
- 7 Give financial support to organisations like WWF (6)
- 10 A major fossil fuel (4)
- 12 Long-extinct, flightless species once of Mauritius (4)
- 13 \_ Planet Report, WWF global assessment published every two years (6)
- 14 \_ pangolin, critically endangered species (7)
- 15 Fitted animals for GPS tracking and monitoring (6)
- 17 \_ nosed otter, endangered species of Asia (5)
- 18 Wetland area (5)
- 20 Urban haze – evidence of bad air quality (4)

### Clues down

- 1 \_ imaging cameras, technology helping capture poachers in the act (7)
- 2 & 20 across Electricity generating plant (5,7)
- 3 Mont Blanc is the highest peak of this mountain range (4)

SUMMER 2017 ANSWERS:  
Prize word: ATOLLS.

**Across** 1. Animals 7. Algae 8. Threat 9. Public 10. Power 11. Kill 12. Taps 13. Site 14. Amur 16. Bears 17. Pampas 19. Refill 20. Skins 21. English  
**Down** 2. National parks 3. Markets 4. Lead 5. Globe 6. Marine turtles 9. Polar 11. Kemp's 13. Special 15. Spiny 18. Fern

## IN SEARCH OF ICE WHALES



© JONATHAN JONES

From a satellite, the Arctic appears to be one vast, inhospitable ice sheet. But from a helicopter, it's transformed into a frozen patchwork of dark blue water sliced by symmetrical slabs of ice, teeming with wildlife from blue whales to polar bears. Welcome to the ice edge.

I'm now on the research vessel *Lance* with a team of scientists whose goal is to satellite tag 15 bowhead whales, in partnership with the Norwegian Polar Institute and others, in order to learn more about this elusive ice whale.

Following years of severe over-exploitation, the Spitsbergen population of bowheads is estimated at just 300 individuals – so finding them in this vast ocean is going to be tough. But the scientists have identified an area in the Greenland Sea where large numbers have congregated in previous summers, so that's where we're heading.

After five days and 400 nautical miles, a bowhead whale is spotted. We're blessed with a window of completely still weather, perfect for tracking the whales, so the research team quickly get to work. Over the next five days 16 bowhead whales are tagged with GPS transmitters to help improve our understanding of the whales' seasonal movements and habitat use. Then the good weather passes and the fog closes in.

## PROTECTING THE ARCTIC

Our research expedition comes at a critical time for this bowhead whale population. The bowhead is the only baleen whale to spend its entire life in the Arctic. The whales depend on the sea ice for their plankton prey and for protection from predators. But as the Arctic warms rapidly due to climate change, the sea ice cover is shrinking. Receding and thinner ice is expected to affect the distribution, quality and quantity of the whales' food, the whales' movement patterns and the presence of predators such as orcas. It may also allow increasing industrial development in the Arctic.

Understanding the effects of climate change on bowhead whale populations in the Norwegian and Northern Barents Seas will only be possible if we know how many whales there are, where they are and what food sources they depend on. If this expedition is successful, we'll be one step closer to protecting the future of this ice whale.

*Jonathan*  
Jonathan Jones, press office



# TOGETHER WE CAN CHANGE THE WORLD

**THANK YOU FOR  
HELPING TO PROTECT  
OUR AMAZING PLANET**

**Please encourage your friends  
and family to join us too**

**[wwf.org.uk/joinus](http://wwf.org.uk/joinus)**



**USE BLIPPAR AND  
SEE HOW YOUR  
SUPPORT HELPS US**

© GREG ARMFIELD / WWF-UK

**IN YOUR NEXT ISSUE**  
**FIGHTING THE ILLEGAL WILDLIFE TRADE + CLIMATE CHANGE**



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