



Action

THE MAGAZINE FOR WWF MEMBERS

SUMMER 2020



GHOST CAT

Solving the mystery
of Nepal's elusive
snow leopards

ARCTIC SOUND SANCTUARY

How you're helping protect sensitive Arctic marine life from increasing underwater noise

GIANTS OF THE DEEP

Discover the new robot cameras helping us reveal the secret lives of Scotland's basking sharks



“WE’RE COMMITTED TO RESTORING OUR OCEANS FOR FUTURE GENERATIONS”



In the Arctic, natural sound is in danger of being overwhelmed by an increasingly loud, manmade racket, putting bowhead whales, belugas and narwhals at risk

PROTECTING OUR BLUE PLANET

Oceans are an important part of our planet’s life-support system. They produce around two-thirds of all the world’s oxygen, and absorb around a third of all climate-warming carbon dioxide and over 90% of all the heat we produce. Without the oceans protecting us, our planet would be 35°C hotter. So it’s vital we keep them healthy.

But our oceans are under pressure. Almost six billion tonnes of fish and invertebrates (such as crustaceans) have been caught since 1950. Marine plastic pollution has increased tenfold since 1980, and the climate crisis is destroying precious coral reefs and having devastating effects on sealife.

Thanks to your support, we’re working to ensure oceans are well managed, and to protect whales from the impacts of climate change (page 14). Together with Sky Ocean Rescue, we’re challenging governments to do more to safeguard our amazing seas. From expanding protected areas to revealing the secret lives of basking sharks, we’re committed to restoring our oceans for future generations. You can help by becoming an ocean hero (page 29).

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MEET THIS ISSUE’S GUEST CONTRIBUTORS



CHRIS JOHNSON leads our Antarctic programme, and is using innovative technology to monitor the effects of climate change. “Marine ecosystems are undergoing a rapid transformation,” says Chris. “We must act now.”



DR MELANIE LANCASTER, WWF’s Arctic species specialist, is studying the effects of manmade noise on marine life. “We’re trying to reduce the stressors that sealife experiences as sea ice melts,” she explains.



SHEREN SHRESTHA is a research officer for WWF-Nepal. He was part of a recent expedition to fit snow leopards with tracking collars. “We’re proud and relieved our efforts produced such great results,” he says.

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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 AUSTRALIA

YOU HELPED CARE FOR BUSHFIRE VICTIMS

You donated more than £2.7 million to our Australia bushfire emergency appeal for rescuing and treating injured wildlife and restoring their habitat. Over 120,000 sq km of forest were destroyed by the fires, and an estimated 1.25 billion animals killed. Your support enabled us to partner with organisations providing veterinary care and food and water for starving animals, and even deploying sniffer dogs to find surviving koalas. It's also helping us assess the damage, protect and replant forest habitat, and advocate for better climate policies from the Australian government. On top of the generosity of supporters, we were overwhelmed by donations from celebrities and companies, including Formula One's Lewis Hamilton and Pets At Home. There's a long way to go in our bushfire recovery mission, but together we're helping save what survived and restore what was lost.



© GETTY

2 UGANDA/DRC

YOU HELPED GIVE MOUNTAIN GORILLAS A BOOST

Thanks to your support, the number of mountain gorillas in the Bwindi-Sarambwe ecosystem has risen from an estimated 400 in 2011 to at least 459 in 2018. This brings the total number of wild mountain gorillas to a minimum of 1,063 when combined with results from the Virunga volcanoes survey of 2015-16. They're still endangered, but this increase shows what can be achieved. We work through the International Gorilla Conservation Programme to ensure communities benefit from living alongside mountain gorillas and see the value in protecting the apes and their habitat. All mountain gorilla tourism is currently suspended in response to coronavirus, but by helping to embed best practice into the day-to-day management of mountain gorilla sites, we can ensure that, when visits resume, responsible gorilla tourism continues to be a cornerstone of mountain gorilla conservation.



© GETTY

3 BOLIVIA

YOU HELPED FIRE-HIT COMMUNITIES START TO RECOVER

Thanks to your generosity, communities in Bolivia are rebuilding their lives after last year's devastating forest fires. Our Amazon emergency appeal raised almost £1 million to support efforts in Bolivia and Brazil. We provided medicine, food, water pumps and firefighting equipment to areas affected by the fires. We've also been working with indigenous communities who depend on the forest for their livelihoods and have been hit by the loss of fruits, nuts, timber and other products they harvest. Looking ahead, we'll support our local partners to assess the environmental and socioeconomic impacts of the fires not only in the Amazon but in the neighbouring Chiquitano dry forest and Pantanal regions too. We'll help them determine the restoration efforts that will be needed to help forests, biodiversity and communities recover.



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"IT IS ONLY THROUGH COLLECTIVE ACTION TOWARDS A SHARED MISSION THAT WE CAN ACHIEVE BIG RESULTS"
 MARCO LAMBERTINI, DIRECTOR GENERAL, WWF INTERNATIONAL



The world's only remaining population of Javan rhinos has increased despite threats such as poaching and the risk of natural disasters and disease

© STEPHEN BELCHER PHOTOGRAPHY/WWF

4 INDONESIA

YOU HELPED RARE RHINOS BREED SUCCESSFULLY

Your support has been critical in increasing the population of one of the world's most endangered animals. Javan rhinos are found in only a single protected area, Ujung Kulon National Park on the Indonesian island of Java. Numbers are precariously low, but camera traps have recently spotted four new calves, bringing the total population to 72 – up from about 50 a decade ago. That's the result of intensive conservation work you helped fund, including population monitoring, clearing invasive arenga palm trees, and working with local communities to grow rhino food plants to enrich their habitat. The rhinos clearly appreciate our efforts.



There are around 430 adult wild tigers in the Russian far east and a small number have recently been recorded across the border in China

6 RUSSIAN FAR EAST

YOU HELPED RUSSIAN TIGERS ROAR BACK

Thanks to you, Amur tigers are making a remarkable comeback in the Russian far east. Tigers had been almost wiped out in the province of Evreiskaya, but with your support we've been working with partners to release tigers from the rehabilitation centre back into the wild. A recent survey revealed there's now a stable population with an estimated 20 individuals. Even better, they're successfully breeding: the survey found three tigresses with litters of one, two and three cubs. There's now real potential for this tiger population to spread into neighbouring areas in Russia and China, taking us that bit closer to our goal of doubling the number of tigers in the wild. The presence of a healthy tiger population in the region will also boost efforts to establish a transboundary protected area, linking Amur tigers in the Russian far east with those in northern China. This will help tigers range freely, help to safeguard their habitat from logging and mineral extraction, and protect all wildlife from poaching.

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5 KENYA

YOU'RE HELPING CREATE A BUZZ

You helped provide 150 beehives for communities in Kenya's Mara ecosystem – and that's good news for elephants too. As human populations rise and natural habitats shrink, people and elephants are increasingly coming into conflict. Elephants can destroy crops, and they can be dangerous too – but they're scared of bees. Not only are the hives a great deterrent, but by enabling local people to improve their incomes they can also support more positive attitudes towards conservation. In Oloisukut conservancy, over 100 women will benefit from 50 of the new modern hives. The women have kept bees before, but traditional hives made from wooden logs weren't as efficient. Now, they expect to harvest 850kg of honey, worth around 340,000 Kenyan shillings (£2,600), twice a year.



© GETTY

WWF IN ACTION

How we've been fighting for wildlife and our world

Conversion of forests to oil palm plantations is one of the biggest causes of habitat loss for orangutans. We want more companies to commit to sourcing sustainable palm oil that respects nature, wildlife and people

BROKEN PROMISES ON PALM OIL ARE HARD TO STOMACH

Products on our supermarket shelves are still causing the destruction of tropical rainforests and harming wildlife including orangutans and elephants, according to our latest *Palm Oil Buyers Scorecard*

It's been 10 years since we began scoring companies on their efforts to clean up the palm oil sector, and many top brands and retailers have trumpeted commitments to eliminate deforestation from their supply chains by 2020. Yet despite many encouraging signs of progress, not a single company scored top marks in the latest assessment. And those broken promises mean vital natural habitats continue to be destroyed.

"Consumers don't want their food or other purchases to come with a side order of deforestation and destruction of wildlife," says our palm oil expert, Dr Emma Keller. "UK companies must prove to their customers

that they're not selling products involved in destroying nature – and that they're fully committed to a world where unsustainable palm oil no longer exists."

The scorecard examined 173 companies from Europe, North America, Australia and Asia, including all the big UK supermarkets as well as brands such as McDonald's and Unilever (the company behind products such as Magnum ice cream and Dove soap). We scored them according to what they're doing to tackle the impacts of their own operations, such as having a public and time-bound commitment to eliminate deforestation from their supply chains, and buying palm oil that's been certified as sustainable by the Roundtable on Sustainable Palm Oil (RSPO).

But we also awarded marks to those organisations that are going a step further – by insisting that their suppliers also have deforestation-free policies, for instance,

or investing in projects to restore the environment and protect human rights in landscapes where palm oil is produced.

Shockingly, a quarter of the companies surveyed didn't have any commitments to buying only certified sustainable palm oil. Of the rest, two-thirds set 2020 as a target – but only half of them have reached it.

Some companies are leading the way, however. Topping the list was Ferrero, maker of Nutella, which scored 20 points out of a possible 22. Among UK companies, Marks & Spencer and Co-op scored highest, with Tesco, Asda and Unilever also doing well.

Palm oil is a highly efficient vegetable oil crop that can be produced in a way that safeguards people, wildlife and nature. We need to show companies and governments that we want deforestation off our plates for good. You can find out more at: www.wwf.org.uk/deforestation-free

DISCOVER OUR SUSTAINABLE SHOPPING BASKET

Unsustainable food production and unnecessary food waste contributes to climate change and causes almost 60% of global biodiversity loss. So we're working with Tesco to make sustainable food available to everyone



1. THE AIM

We're working with Tesco to **halve the environmental impact** of the average UK shopping basket. To do this, we need to understand the impact our **favourite foods** are having on the planet



2. THE INVESTIGATION

We're starting by focusing on **20 typical household staples** – from tuna to tomatoes, beef to bread, biscuits and bananas. We'll be looking at more products in future



3. THE IMPACT

We measured the impact each product has on **seven key issues affecting the planet**: climate change, deforestation, sustainable agriculture, marine sustainability, sustainable diets, packaging waste and food waste

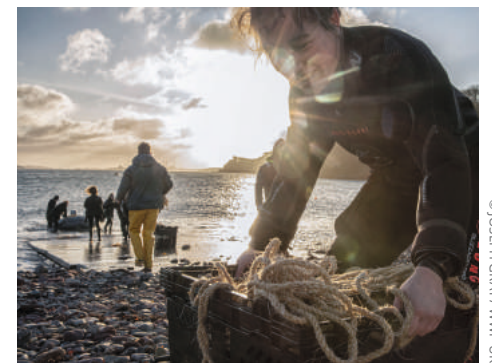


4. THE IMPROVEMENTS

We're working to find ways to **reduce the impact** of all these foods. For example, we're making sure the soy used to feed animals in Tesco's supply chain doesn't contribute to deforestation

Find out more at www.wwf.org.uk/basket

NEWS IN BRIEF



© JOSEPH GRAY / WWF-UK

PLANTING SEEDS OF HOPE

Over 750,000 seagrass seeds have been planted in Dale Bay, Pembrokeshire, as part of our seagrass restoration project with Sky Ocean Rescue and Swansea University. Thanks to around 2,000 volunteers, thousands of small hessian bags were filled with sand and prepared for planting. Cultivated seeds were added to the bags, tied at metre intervals to a length of rope, and dropped along the seabed. Over time, the bags and rope will disintegrate, leaving the seedlings to take root and grow into a seagrass meadow that will store carbon and provide habitat for amazing marine life.

NEWS IN NUMBERS

594



Rhino poaching in South Africa has fallen for the fifth year in a row, according to the latest government figures. Last year, 594 rhinos were killed by poachers – down from 769 the year before, and a peak of 1,215 in 2014. Habitat loss and poaching remain huge threats to rhinos, but these figures suggest our conservation efforts are working.

1.6M

Thanks to our campaigning, 1.6 million people in China pledged to 'travel ivory free' during last autumn's Golden Week holiday, the busiest time for foreign travel. Despite a global ban on the commercial international trade of ivory, a recent study found 27% of Chinese nationals who travelled outside the country at least once a year bought ivory while away.

NEWS IN BRIEF



© TRISTAN FEMINGS / WWF-UK

MARATHON MAN

Running one marathon is an achievement; running 52 in a year is something else! But that's what long-standing Team Panda member and WWF supporter Craig Brewster did over 12 months. Craig came up with the 'ridiculous' (his word!) idea to celebrate his 50th birthday. After thousands of miles in six countries, he ran his final marathon on New Year's Eve. It was tough at times. "We had snow, ice, torrential rain, 50mph winds and 36°C heat," he says. "Several times I almost quit, particularly when facing 11 marathons in December." Craig, we salute you!



© WILD WONDERS OF EUROPE / MIDSTRAND / WWF

SAFEGUARDING FRESHWATER HABITATS

With a group of scientists, we've published an Emergency Recovery Plan to tackle the crisis facing the world's freshwater ecosystems. Life can't exist without fresh water. Our rivers, lakes and wetlands provide us with water, food and livelihoods, and protect us from floods, droughts and storms. But they're in trouble. Over the past 50 years, populations of freshwater species have fallen by 83% and nearly a third of our freshwater ecosystems have been lost. We're urging governments to adopt the solutions in our six-point plan as part of the new global deal on biodiversity being agreed this year.

GETTING THE LOWDOWN ON LIONS

With our partners in Kenya, we've embarked on the biggest and most accurate survey of lion populations ever undertaken

The number of African lions has fallen by an estimated 43% over the last three generations. But for conservation efforts to really make a difference, we need accurate data on where lions are found and how they're faring.

It's thought there were about 2,000 lions in Kenya 10 years ago. But that figure was based on estimates and various different study techniques, so it's not likely to be very reliable.

To put that right, we've joined forces with Kenya Wildlife Service, Kenya Wildlife Trust and other local partners to carry out the first ever lion survey to apply the same methods across a whole country. The survey will provide us with an accurate 'baseline', and will be repeated in future so we can see how things change.

There are two parts to it. First, we're carrying out sight-based surveys in the places we know the main lion populations are found – an area of 77,595 sq km. The teams have already driven tens of

thousands of kilometres, identifying hundreds of individual lions (from their unique whisker patterns, for example).

To supplement this, we'll be carrying out interviews with more than 3,500 local experts across the rest of the country to get a clear idea of how many lions and other large carnivores are living outside the main areas.

So far, results are mixed. In parts of southern Kenya, numbers are lower than had been estimated. But they're holding up in the Maasai Mara, where much of the conservation work you support is focused. The stats suggest the Mara ecosystem is home to 484 lions, and that numbers are stable or even increasing slightly.

Surveys like this are important because having an accurate picture of lion populations enables us to see how well conservation initiatives are working, and to make better decisions in future. And a nationwide picture means we can protect key areas and improve connections between different prides of lions.

We'll let you know when the results are in. To get more involved, you can adopt a lion at www.wwf.org.uk/lionadopt



Consistent monitoring techniques will enable us to accurately assess lions across Kenya, both in densely populated areas and more remote regions

© JUOZAS CERINUS / WWF-UK



While Russian polar bear numbers are holding up, Canadian populations are suffering. Rapidly melting sea ice is believed to be a key factor in this decline

MIXED PICTURE FOR POLAR BEARS

The latest assessments of polar bear populations have brought both good and troubling news

Scientists from the IUCN Polar Bear Specialist Group studied trends in the 19 'subpopulations' of polar bears across the Arctic. Encouragingly, they found that numbers were stable in the Chukchi Sea between Alaska and Russia, and the Barents Sea off the northern coasts of Norway and Russia. It's the first time we've had enough data to assess the status of these important populations.

But in Canada, things aren't looking so good. Four polar bear subpopulations now seem to be in decline in Hudson Bay and the Beaufort Sea as sea ice breaks up earlier in the year, making it harder for bears to find food.

According to scientists, numbers in Southern Hudson Bay dropped by 17% and in Western Hudson Bay by 18% between 2011 and 2016 – though local people say they've seen more bears, which highlights the need for more research.

With the Arctic heating up at least twice as fast as the rest of the planet, polar bear habitat is visibly shrinking. It's vital we keep monitoring how the bears are coping with the changing climate, while doing everything we can to put the lid on global warming before it's too late.

You can help fight climate change by adopting a polar bear: www.wwf.org.uk/polarbearadopt

© SHARON DREYFUSS / WWF-US

UNITED FOR EARTH HOUR

With the news headlines dominated by the global health crisis, this year's Earth Hour event was focused on connecting people and inspiring hope for the future. And your support blew us away!

On 28 March, people around the globe switched off their lights at 8.30pm for one hour to show their support for a more sustainable future. Dozens of UK landmarks, including Buckingham Palace and Blackpool Tower, went dark, as did football stadiums, universities and even hotels.

With the world staying at home to prevent the spread of Covid-19, the Earth Hour celebrations moved online. Our Facebook Live quiz attracted 21,000 viewers, while a virtual dance party organised by Secret Sunrise was enjoyed by hundreds of house-bound revellers.

There was also a guided meditation session, online storytelling, a kids' quiz and even a virtual tour of the 'Among The Trees' exhibition at London's Hayward Galleries, which attracted over 9,000 viewers. And those are just the events in the UK. Hundreds more took place around the world.

Your support for these Earth Hour events was incredible – we all came together to show we care about the future of our planet. Our health and happiness depend on nature, so Earth



Supporters around the world expressed their creativity online for Earth Hour

© WWF-PORUGAL

Hour is more than a symbolic event, it's a global environmental movement to stop the destruction of the natural world we depend on.

You told us the coronavirus outbreak made you want to take part in Earth Hour even more, to feel connected to a global community during this challenging time. One supporter said: "Thank you for making us feel less helpless." During these difficult times, we need more than ever to find ways to connect with each other and inspire hope for the future. For more ideas about how you can help beyond the hour, visit page 28.

CHASING SHADOWS

Looking for a snow leopard is like searching for a needle in a haystack. But to protect the 'ghost of the mountains' we need to understand its habits and how it uses its habitat. Collaring two of these elusive cats in Nepal is a crucial step forward

ROCK STAR

A young male snow leopard melts away into the rocks in Nepal's mountainous upper Dolpa region. He is one of two individuals successfully fitted with satellite-tracking collars last November during a pioneering 40-day expedition you supported. The team named him Zeborong after a local snow leopard conservation committee. His collar will send GPS locations at four-hourly intervals, offering insights into how these spectacular but vulnerable cats use the landscape in which they live.

LOFTY AMBITIONS

The expedition team treks into the high Himalayas to the base camp at Samling Monastery, perched at an altitude of 4,150m. The group includes WWF conservationists, working with staff from Shey Phoksundo National Park and Nepal's Department of National Parks and Wildlife Conservation, vets from the National Trust for Nature Conservation, and the local community. During the 12-day journey from Kathmandu, the team traversed 5,300m passes to reach the heart of Shey Phoksundo. It's Nepal's largest national park, home to Himalayan wolves, antelope-like gorals, blue sheep, black bears and snow leopards.



MAPPING CAMERA TRAPS

As well as collaring snow leopards, the expedition team worked with park staff and local citizen scientists - here seen planning camera locations - to set up more than 300 camera traps. The data gathered will help improve population estimates for these elusive cats. The Dolpa region in which Shey Phoksundo lies is thought to host the highest density of Nepal's 301-400 snow leopards - 10% of the world's estimated total of 4,080-6,590 individuals. Information from the camera traps and local insights helped the team decide where to set the traps. "We can only work in the landscape with the community's help," says Sheren Shrestha, a WWF senior researcher, who joined the expedition. "They know the snow leopards' movements and coexist with them."



CAT SCAN

Zeborong, a three- to four-year-old adult male weighing 38kg, is captured and swiftly sedated. Then he's weighed, measured and given a once-over by a vet to ensure he's healthy. The traps are connected to transmitters that inform the monitoring team as soon as they're triggered - though there are some false alarms triggered by livestock or other wildlife. Great care is taken to set the traps in locations that provide space for the team to safely sedate and collar the leopards. Each collar, which costs around US\$3,500, will transmit for 18 months then drop off automatically.

ADOPT A SNOW LEOPARD

Your membership already helps support our work monitoring snow leopards and helping to conserve their environment. But if you'd like to do more, adopting a snow leopard could help us expand our vital research by fitting collars on two more cats in Nepal. This will help us understand snow leopards' movements and influence conservation planning. You'll also support community-run livestock insurance schemes to help local herders protect their livelihoods and reduce conflict with these top predators. You can find out more at www.wwf.org.uk/snowleopardadopt

FREE TO ROAM

Samling, the second male snow leopard collared during the expedition, is five or six years old and named after an ancient monastery. After he wakes from sedation, he gradually vanishes into the mountainous terrain. The team is now monitoring the GPS data from Zeborong and Samling's collars to build a picture of their movement patterns and identify their home ranges and corridors, as well as their behaviour patterns. Thanks to your support, this work will help us identify and protect critical and climate-resilient habitats to safeguard the future of this extraordinary animal.





DROWNING IN SOUND?

Our oceans are alive with an orchestra of marine wildlife. But as the ice melts, the harmony of Arctic seas is being drowned out by increasing human activity. We're working to understand the impact of this audio intrusion – and how to help combat it

Marine mammals such as beluga whales in the Arctic depend more on their hearing than other senses because sound travels well under water. But the Arctic Ocean is getting noisier and this could have a profound impact on animals that rely on sound to survive

WORDS BY PAUL BLOOMFIELD
IMAGE © FLIP NICKLIN/NATUREPL.COM

UNDERWATER NOISE

The once-serene Arctic Ocean is now an aural assault course for wildlife, as melting ice opens it up for intrusive human activity

THE EFFECTS OF OIL AND GAS

- Oil and gas exploration uses seismic airguns that are six to seven orders of magnitude louder than the loudest ship sounds.
- The sounds they emit are at frequencies similar to cetaceans' communication signals, causing confusion among marine mammals and increasing the potential for harm.
- Ships with airguns fire them every 10–12 seconds for weeks or months. The sound can travel further than **4,000km**.

According to a 2014 report, Inuit throughout the Arctic say seismic surveys are driving animals away from their hunting grounds.

THE RISE OF SHIPPING NOISE

60,000 commercial tankers and container ships are on the seas at any given time.

90% of all goods travel by ship.

Arctic shipping traffic is expected to **quadruple** by 2025.

The distance travelled by ships in the Canadian Arctic has nearly **tripled** in 25 years.

Recorded underwater noise from ship traffic is doubling every decade.

In 2017, almost **90 vessels** travelling the Northern Sea Route violated safety rules.



HYDROPHONES PICK UP SOUND WAVES

REFLECTED ENERGY

SEISMIC AIRGUN: FIRES HIGH-ENERGY SOUND WAVES AT THE SEABED

WHERE VESSEL NOISE COMES FROM

DRAG FROM POOR HULL MAINTENANCE

ENGINE AND ON-BOARD MACHINERY

BOW/STERN THRUSTER

PROPELLER

CAVITATION (IMPLoding LIQUID BUBBLES TRIGGER SHOCKWAVES)

THE SOUNDS OF MARINE ANIMALS

Bowhead whales sing for almost 24 hours a day in winter to woo mates.

East Greenland narwhals spend on average 27% of their time echolocating.

Noise can damage beluga whales' hearing by causing a loss of hair cells in their ears.

Underwater noise makes it hard for walrus mothers and calves to find each other if they're separated.



KEY TO ARCTIC SHIPPING ROUTES

- Northwest Passage
- Northeast Passage
- Arctic Bridge Route

MAJOR SOURCES OF UNDERWATER NOISE



Piledriving and other offshore construction



Military activity



Seismic surveys



Shipping and fishing boats



Sonar



Wind farms



Pleasure craft

A soft alto voice swells in the darkness. Rising to a strident treble, it swoops and soars, then settles into a soothing adagio, ebbing and flowing in pitch, volume and urgency. Eventually the last note recedes, and another mesmerising performance by the Arctic's oldest crooner is over.

The bowhead whale – the longest-lived mammal on Earth, reaching 200 years old – has been dubbed 'the jazz singer of the Arctic', intoning diverse melodies almost non-stop during its winter mating season. In truth, the bowhead is more Miles Davis than Al Jolson, its music akin to that

maestro's free-jazz horn playing – and just as varied. A three-year study published in 2018 recorded 184 different song types in just one area, the Fram Strait between Greenland and Svalbard.

The bowhead's unique vocalisations are accompanied in the Arctic by a range of other sounds: whistles and clicks of narwhals and belugas, creaking of ice, barks and grunts of seals and walrus. But they're being increasingly backed by an expanding and disruptive percussion section – the rhythmic throb of ships' engines, the airgun shots of seismic surveys, the thump of piledrivers. In short, the sounds of humans

accessing areas that were previously icebound and therefore inaccessible.

The 2019 *Special Report on the Ocean and Cryosphere in a Changing Climate* by the Intergovernmental Panel on Climate Change (IPCC) makes sobering reading. It concludes that the current loss of summer Arctic sea ice is at its worst in at least 1,000 years. IPCC models project continued declines in Arctic sea ice through to the end of the century.

The loss of sea ice opens up areas of the Arctic that were historically inaccessible to human activity, presenting economic opportunities – for exploitation of mineral

resources, for shipping navigation, for installing infrastructure such as wind turbines, and for ship-based tourism – but also potentially detrimental impacts.

Along with oil spills and ship strikes on marine wildlife, there's another, less well-studied threat: underwater noise.

SHRINKING SEA ICE

We know that maritime traffic in the Arctic has grown. The IPCC suggests that shipping activity during the Arctic summer increased significantly over the past two decades, concurrent with reductions in Arctic sea ice. The Northern Sea Route

along the Arctic coast of Russia can cut the distance between ports in east Asia and Europe by 30–40% compared with using the Suez Canal, and traffic on that route increased significantly from 2009 (two vessels) to 2013 (71 vessels).

Similarly, the Northwest Passage speeds up travel between north Atlantic and north Pacific ports. Because more vessels are taking advantage of this shorter route, the total distance travelled by ships in Arctic Canada nearly tripled between 1990 and 2015. As shipping traffic grows, so does noise – an effect more noticeable in the formerly tranquil Arctic Ocean.

"Noise travels at a shallower depth in Arctic waters," explains Dr Melanie Lancaster, WWF's Arctic species specialist. "Also, ice blankets the water from wave and wind action for much of the year, so it's much quieter than most of the rest of the world's oceans. Hence we think that the marine wildlife of the Arctic is less used to noise than animals in other regions."

Shipping is not the only human activity that produces noise. Vessels exploring for oil and gas reserves use seismic airguns to survey the seabed, and construction of infrastructure such as wind turbines often involves percussive piledriving, ▶



Narwhals emit intense high-frequency clicks and use the echoes to locate prey and avoid obstacles. Distant icebreakers cause them to stop calling and sink lower in the water

both increasingly common in the Arctic as summer sea ice becomes less extensive.

Increasingly, then, manmade noise may mask or obscure important natural sounds, heighten stress levels among animals and change their behaviour.

THE SEARCH FOR HARMONY

Narwhals and belugas, both Arctic residents, produce a range of vocalisations – squeaks, whistles and clicks – for communication and echolocation. Research in the western Canadian Arctic showed that recorded beluga vocalisations decreased significantly when vessels were close, suggesting that belugas either moved away or reduced how often they vocalised in response to traffic.

Another study in the Canadian high Arctic found that belugas showed a strong ‘flee’ response to an icebreaker between 35km and 50km away. “Imagine yourself in a noisy restaurant where you have to keep

raising your voice to be heard,” says Melanie, providing a helpful analogy. “You have a couple of alternatives: you don’t talk as much, or you just go somewhere else – and belugas seem to do one of these things.”

NARWHALS ‘FREEZE’ AT THE APPROACH OF SHIPS

It’s a similar story for our sub-aqua soloists, bowhead whales. An acoustic study in the Alaskan Beaufort Sea found that their communication rate dropped significantly

near airguns during seismic surveys. This may be because the whales stopped calling, moved away, or both. It’s also noteworthy that bowhead courtship songs are a similar frequency to ship noise, so they are more likely to be masked.

Arctic cod, too, react to vessel noise by moving away from the sound and curtailing their exploratory activities, which reduces the distance over which they forage, so they’re less effective at finding food. Indeed, manmade noise is the biggest factor affecting the ability of fish in various marine environments to feed, avoid predators and reproduce successfully.

Older studies suggest that narwhals ‘freeze’ at the approach of ships, staying still and silent. But more research is needed. We’re working with the Canadian Department of Fisheries and Oceans on a long-term seasonal project at Tremblay Sound, Baffinland. This is an important

summer area for narwhals that’s also close to an iron-ore mine opened in 2014, which drives ship traffic through the Sound via the Arctic Bridge Route. By satellite-tagging narwhals, we hope to improve our understanding of this cetacean’s ecology and the impacts of climate change – including increased noise from shipping.

CHANGING BEHAVIOUR

We also need to understand larger-scale impacts. “Ship noise doesn’t necessarily cause injury or death, but it does tend to change the way animals behave,” Melanie explains. “It might cause animals to temporarily move out of an area where they’ve been feeding, for instance, and the result could be mass displacement of animals, separating large numbers from their food source. It’s important for us to understand how those behavioural changes will have an impact at population level.”



An increase in leisure cruises in the Arctic is adding to the noise. This drowns out communication between walrus mothers and their calves

Clearly, further research is crucial. We need to record underwater noise levels now so we can measure future increases. We need to further study the ecology of Arctic species, and how they react to increased underwater noise. And we must work to limit these impacts.

“Currently, we’re working with the government of Canada and the Arctic Council working group on the Protection of the Marine Environment to map underwater noise from shipping across the Arctic, and overlay this with important areas for Arctic biodiversity,” reports Melanie. “We’re aiming to understand what the normal background levels are, to identify quiet areas that could potentially be sanctuaries for marine mammals and other wildlife, and to define areas that are already starting to get noisy.”

On a global scale, we’re following the upcoming submission by the governments of Canada, Australia and the US to the Marine Environment Protection Committee of the UN International Maritime Organisation (IMO, the global shipping regulator) to put underwater noise back on its agenda. By highlighting the global nature of the problem, we’re hopeful that many of IMO’s 174 member states will recognise the need for new action on this issue.

The UK doesn’t have Arctic territory, but it has £279 billion invested in companies that are active in the region. We’re working to influence the UK government’s Arctic Policy Framework to ensure activity in the Arctic is sustainable. This includes following our Arctic Blue Economy principles and steering away from oil and gas extraction

that accelerates global warming and the loss of sea ice. And we’re continuing our efforts to ensure the UK government follows through on its commitment to meet a net-zero emissions target.

There’s much to be done to understand and manage the impacts of underwater noise in this beautiful region. But with your help, we hope to ensure that the love songs of bowheads will continue to serenade the Arctic for many centuries to come.

PROTECT THE ARCTIC

You’re supporting our work to combat the most urgent threats to the Arctic and its rich biodiversity. If you’d like to make an extra gift, this will make a bigger difference.

£10 could help pay for acoustic tags for narwhals, belugas or bowhead whales

£20 could go towards hydrophones to record underwater noise levels

£50 could help our work to implement a network of marine protected areas across the Arctic

£100 could support our advocacy work to ensure that UK development activities in the Arctic are sustainable

Donate today: www.wwf.org.uk/noise



EYES IN THE SKIES

This shocking image shows an ugly secret hidden deep in the heart of the Amazon rainforest – recent deforestation on a large scale. But thanks to you we are increasing chances of detection in remote areas

This image was captured by a drone you helped fund, making its first surveillance flight over once-pristine rainforest in the Brazilian state of Rondônia. Home to the indigenous Uru-Eu-Wau-Wau people, the region covers 18,671 sq km and contains undiscovered wildlife, unexplored caves full of rock drawings and the source of water for at least 12 of Rondônia’s river systems.

The Uru-Eu-Wau-Wau rely on the rainforest for their way of life, but loggers and land grabbers covet their land. Over the years, they’ve regularly invaded, but since 2018 the level of threat has intensified. Last year, land grabbers burned forests here and elsewhere to make way for cattle pasture, believing they were unlikely to be punished by the government. The devastating fires were so widespread they could be seen from space.

Thanks to your amazing response to our Amazon emergency appeal, and in partnership with Kanindé Ethno-Environmental Defense Association, we’re helping the Uru-Eu-Wau-Wau protect their rainforest. We provided 13 drones to monitor deforestation and land grabbing, and trained 42 indigenous people to operate them. These ‘eyes in the skies’ will enable the Uru-Eu-Wau-Wau to find and document incursions and alert local authorities to illegal activities. The drones will also help them prepare for the next dry season in July by increasing surveillance and monitoring. See page 4 to find out how else the emergency funds have been spent.

© MARILZA DA CRUZ/PE/WWF-UK



WHAT LIES BENEATH

In a first for UK marine conservation, underwater cameras have been used to observe the behaviour of basking sharks in the Inner Hebrides. These graceful giants binge on plankton from late April to autumn

WORDS BY DEREK NIEMANN; IMAGE © NATUREPL.COM / ALEX MUSTARD / 2020VISION / WWF

Together with Sky Ocean Rescue and other organisations, we're uncovering the secret lives of basking sharks in the UK, revealing hidden depths to these gentle giants of the ocean

A flash of fin; a cavernous gape like the inside of a ribcage; a tapering body the length of a school bus. Until very recently, the world's second-largest shark was all mouth and no biology: our understanding of the basking shark barely dipped below the surface. But thanks to an exciting project involving underwater robot cameras, all this is about to change. We'll be able to see and understand these mysterious sharks as never before.

These fish need our help. Though they roam the seas of every continent except Antarctica, scooping up plankton in their wide-open jaws, basking sharks are globally endangered. Fortunately, the UK is ideally positioned to help them, because a small area off the west coast of Scotland is the summer home to astonishing numbers. In the so-called Sea of the Hebrides, bounded to the west by the archipelago that includes Coll and Tiree, as many as 900 sharks have been counted in a single day, thought to be the largest recorded gatherings on the planet. However, this vital drop of the ocean currently affords the basking shark no special protection in law.

SUBMARINE SURVEILLANCE

Last summer, we embarked on a project with Sky Ocean Rescue to support our case for designating the area as a marine protected area (MPA) to better safeguard the sharks. We were joined by experts from Scottish Natural Heritage and the University of Exeter, along with Woods Hole Oceanographic Institution (WHOI) of Massachusetts, who made the same journey across the Atlantic that the sharks themselves might have followed in the spring. Except our travellers brought with them some extraordinary kit we hope will enable us to make some remarkable discoveries.

Just about everything scientists know about basking sharks is based on observations at the surface. But groundbreaking new technology can provide clear and sharp film of the animals' lives from the bottom of the sea. The REMUS SharkCam autonomous underwater vehicle is equipped with 360-degree cameras and navigational and scientific instruments that enable it to locate, track and film tagged marine animals, such as ►

MARINE TAGGING TECHNOLOGY



Despite their size, little is known about basking sharks' lives. Most studies have been restricted to watching them feed on plankton near the surface of the ocean. But what they get up to on the seabed has remained a mystery... until now

great whites. Nothing like this has ever been attempted with basking sharks before.

But first you have to tag several sharks with a device that guides SharkCam in visual pursuit. And this involves a long day at sea. The honours fell to two teams who set out from Tobermory harbour before the sun rose. "It took nearly five hours for our boat to reach the basking shark hotspot," explains WWF's Tessa Francis. "While the WHOI team prepared the equipment, I watched puffins and other seabirds. On arrival, a pod of bottlenose dolphins came to greet us, but the telltale dorsal fin of a basking shark was nowhere to be seen. It wasn't until the afternoon that we spotted our first one."

ACCESS ALL AREAS

The teams were in two boats – one responsible for tagging the sharks, the other for deploying SharkCam. The tagging boat had a vet on board and only allowed themselves a maximum of three attempts to approach and tag a shark to avoid distressing the animal. But sharks have slippery backs, and attaching a tag isn't easy.

"After failing to tag three sharks, we were all feeling a bit anxious," recalls Tessa. "Then

success! The whole team cheered. Straight away, we winched SharkCam from the boat into the water and it sped off after the fourth shark. Our mission now was to follow the shark for around four hours. An onboard computer meant the WHOI team could tell where the shark went and how deep it was. They were exhilarated, giving us all a running

THE CAMERAS REVEALED A UNIQUE GLIMPSE INTO THE SHARKS' LIVES

commentary: "The shark is spending a lot of time on the ocean floor.' It was incredible!"

What the cameras revealed was both extraordinary and unprecedented, giving a unique glimpse into the sharks' highly sociable lives on the seabed. Groups of sharks fed and hung out together, often resting for hours at a time on the lush turf of kelp. The floor became an underwater dance

hall too, as pairs circled each other head to tail. Surely this was courting behaviour; could this be where the sharks mated, too? Dr Suzanne Henderson from Scottish Natural Heritage, who worked on the project, says: "The footage is a first. It makes us reassess our understanding of the basking sharks' underwater behaviour, with these gentle giants spending more time swimming just above the seabed than previously thought. It brings home why it's so important that the species and its habitat is protected."

Last autumn, our findings were submitted to a consultation led by the Scottish government on whether the Sea of the Hebrides should become an MPA – the world's first protected area specifically for basking sharks. Such a move would put legal measures in place to manage fisheries in the area and other activities that could disturb the sharks. We expect a decision will be made later this year, so watch out for updates.

SEE FOR YOURSELF

Watch the incredible footage from our shark-tagging adventure at www.org.uk/baskingsharks



STEP 1: A PURPOSEFUL PAIR

Just before dawn, two boats head out to sea together. The larger one carries the heavy gear – the SharkCam, filming equipment and monitors. The smaller, faster and more manoeuvrable boat will get right up close to the basking shark, without causing it undue stress, so a tag can be fitted.



STEP 2: FIND YOUR SHARK

In the choppy waters of the Hebrides, the crew scan the horizon for hours at a time, looking for the shark's pointed dorsal fin, which protrudes just above the surface of the sea. "Blue, blue, nothing but blue," laments one of the team. And then she spots one.



STEP 3: A 'GAME' OF TAG

A team member wields a pole with a hook on the end, which they loop over the shark's dorsal fin. The tag (right) is secure, trailing along the animal's back. It has a built-in GPS and will drop off after about a week, to be collected later.



STEP 4: SHARKCAM IS OFF!

As soon as the tag is fixed on the shark's back, the crew on the bigger boat prepare to launch SharkCam into the sea. Looking somewhat like a rocket, this 360-degree robot camera is computer-programmed to follow the shark's tag as if it were a magnet.



STEP 5: IT'S BEHIND YOU

Though the SharkCam follows the basking shark at all times, both on the surface and at the bottom of the sea, it's set to keep a respectful 5–10 metres back from the shark at all times, so that it causes minimal disturbance. It's a way of gaining intimate knowledge without being obtrusive.



STEP 6: ANALYSING THE RESULTS

The SharkCam is studded with five or six cameras that relay high-definition videos back to the team on their computer. There are many hours of footage to analyse, as well as sonar imaging to interpret, plus pictures from tiny cameras that were mounted on the tag itself.

FEELING THE HEAT

An inquisitive humpback whale approaches the research team's boat. Humpbacks make an epic 8,500km journey to the Antarctic Peninsula every year to feed and build up sufficient energy stores to sustain them for the rest of the year



Chris Johnson leads WWF's Antarctic programme, using innovative technology to learn how climate change affects whales along the Antarctic Peninsula

What's special about Antarctica?

Antarctica is a place where scientists come to determine the health of the world. And it's changing alarmingly fast here! Antarctica has lost more sea ice in the past four years than the Arctic has lost in the past 34 years. Sea ice is a crucial habitat for krill – tiny planktonic crustaceans that support the whole Antarctic food web. Krill are the reason why so many penguins, seals and whales feed here.

What other changes are you seeing?

As the climate changes, oceans are getting warmer. Sea temperatures along the Antarctic Peninsula have risen by more than 2.7°C since the 1970s – about five times the global rate of warming. As suitable habitat recedes, the range of Antarctic krill is contracting south. Their shifting distribution will affect all the species that rely on this food source. Many whales migrate here to feed, and it will impact their body condition, reproductive fitness and population abundance. It will also bring the whales and other krill predators, such as penguins, seals and seabirds, into increasing conflict with commercial krill fishing, putting Antarctica's iconic wildlife under pressure.

How do you study the whales?

Working with a team of experts, including whale ecologist Dr Ari Friedlaender of the University of California, Santa Cruz, we use new technology to observe minke and humpback whale behaviour beneath the ocean's surface. We're using tags fitted with 'whale cams' to get a whale's eye view under water. This helps us discover where the whales are, what they're doing and how healthy they are.

Can you explain how the tags work?

The tag is the size of an iPhone and has a video camera on the front and suction cups on the bottom. We stick it to the back of a whale, and when it dives we get an awesome view of the whale and its friends feeding on krill. This lets us work out how the whales are feeding and how much krill they're eating each day. The tag also has sensors that show – in 3D – how the whale twists and turns as it dives.

How have drones supported your research?

I'm working with a team from Duke University on new drones that can fly above a whale and take a photograph of its body. This helps us see how big it's growing as it feeds on krill. This is particularly important for migratory species such as the humpbacks that breed off Colombia and Ecuador. They only feed here in the Antarctic Peninsula, then they head back to their breeding grounds, where they don't feed for most of the year. So the whales really have to bulk up when they're in Antarctica!

How will you use this information?

The drone images enable us to do a health checkup, measuring how much weight they put on during the summer feeding season. Then we can find them in their breeding grounds and see how much weight they lost on migration. We're monitoring the long-term health of a number of migratory whale species this way. Comparing the pictures year-on-year will reveal if it's been a good or bad feeding year, and how much climate change affected the availability of krill.

Why is this research so vital?

By combining information from video tags and drones, we can figure out where the whales' most critical feeding habitats are all around the continent. Then we'll work with scientists and governments to try and protect this last great wilderness. If we can get the most vital areas of our oceans designated as marine protected areas, it will help give wildlife breathing space to adapt to our changing climate.

How will your findings inform our work?

Antarctica is special – there's nowhere else like it on Earth. And the science is clear: climate change is threatening the stability of marine ecosystems and they're undergoing a rapid, unprecedented transformation. We have 10 years to limit global warming to 1.5°C. As governments around the world are making commitments to fight climate change, this year we can deliver on commitments to establish marine protected areas around Antarctica, creating a safety net for some of our most precious wildlife.

© KC BIERLICH / DUKE UNIVERSITY MARINE ROBOTICS & REMOTE SENSING LAB

FIGHT FOR YOUR WORLD



At a time when the whole world is fighting one of the most challenging health issues of our generation, the need to unite and make our voices heard for the planet has never been greater. **#FightForYourWorld**



1 DEMAND ACTION

Help us put an end to deforestation in our food

MAKE A PLATE PLACARD

As you may have read in your last issue of *Action*, precious landscapes such as the Amazon and Cerrado are being burned to make way for agriculture every year – killing wildlife and making the climate crisis worse. Shockingly, the food we buy in the UK is part of the system driving this devastation.

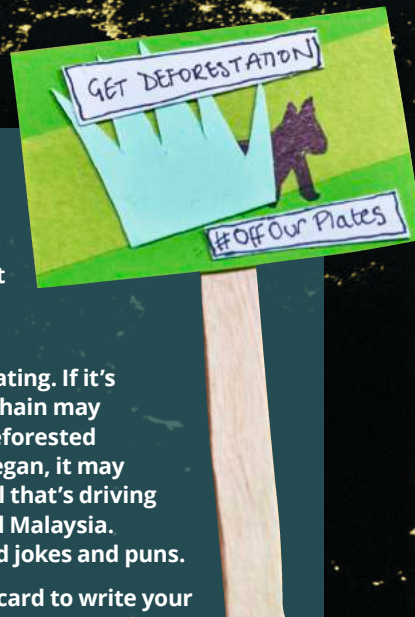


MAKE A STATEMENT

- Next time you sit down to enjoy a meal, get creative and design a plate placard that shows you don't want your food to cause deforestation.
- Think about what you're eating. If it's meat or dairy, the supply chain may have included soy grown on deforested land in South America. If it's vegan, it may contain unsustainable palm oil that's driving deforestation in Indonesia and Malaysia. Now, conjure up your best food jokes and puns.
- You'll need some paper or card to write your message on (recycle a cereal box if you have one), a lollipop stick, glue, ruler and scissors.
- Design your tiny placard, cut it out, stick it on a lollipop stick and place it in your meal.
- Then take a photo and share it as widely as possible on social media with your friends and family as well as all your followers to raise awareness of this vital issue. Don't forget to tag [@wwf_uk](https://www.instagram.com/wwf_uk). You can also email your photo to us at: editor@wwf.org.uk

There's no way for us to know which food is causing deforestation, and we don't think this is right. But if enough of us speak up and raise awareness of this vital issue, we can get deforestation off our plates for good.

By adding a tiny protest sign to your next meal and sharing it with the world, you can show governments and businesses that you want action to protect our amazing forests.



2 BUILD A MOVEMENT

We want to hear from future protectors of the planet

YOUNG PEOPLE UNITE!

Today's young people will be the stewards of our planet in the years to come. That's why we're putting them at the centre of our work. If you know someone aged between 11 and 18 who's passionate about protecting the planet, encourage them to email our youth engagement team and discover how they can be part of WWF.

Please get in touch with us: youngpeople@wwf.org.uk



"I LOVED EVERY MINUTE OF RIDE LONDON AND AM SO PROUD TO HELP THE CAUSE"

BEN G, TEAM PANDA CYCLIST



3 GIVE FOR YOUR WORLD

Join Team Panda by signing up for one of our fundraising events – or take on your own challenge

DO IT FOR THE PANDA

If you've been thinking about doing more for your world, why not take on a personal challenge and support our work at the same time? You can join Team Panda by taking on a run, walk or cycle or by setting your own challenge while raising money to support us.

Every team member receives a fundraising pack, along with regular updates that will help you keep up to date and motivated. Most importantly, you'll get our 'The Panda Made Me Do It' top and panda ears headband!

We offer charity places in the most popular UK-based challenge events, such as the Brighton Marathon, RideLondon and more. And once you've done one, you'll want to do more! So, what are you waiting for?

To see which events you can sign up to, visit [wwf.org.uk/events](https://www.wwf.org.uk/events) or get in touch at TeamPanda@wwf.org.uk

INSPIRING THE NEXT GENERATION

Our youth ambassadors are a dedicated group of young people who are passionate about taking action for the planet. Ollie, Hattie, Anastasia, Sally, Will (above), Izaak, Jemba and Rowan meet regularly with our youth engagement team and colleagues across the organisation to discuss ideas, help shape projects, attend and host events, and meet key stakeholders and decision-makers. Ultimately, these brilliant young people are stepping up to help us take action, protect our planet and create a brighter world for future generations.

To find out more, visit our website [wwf.org.uk/youthengagement](https://www.wwf.org.uk/youthengagement)



Youth ambassadors such as Ollie host events and help bring our work to a wider audience



4 BE THE CHANGE

Become a real-life Ocean Hero

HELP PROTECT OUR OCEANS

Sky Ocean Rescue and WWF are working to protect and restore our amazing oceans, and we need your help. We're committed to tackling the threats, restoring the oceans and challenging the UK government to do more. From finding pioneering ways of bringing back important habitats such



as seagrass, to achieving change at the highest levels of government, we're striving to continue to futureproof our oceans for generations to come.

Join the fight by becoming an Ocean Hero. Whether it's saying no to unnecessary

plastic that could end up in our seas, eating sustainable fish or reducing your carbon emissions, everyone can play an important role in the fight to save our seas.

Find out how you can help at [wwf.org.uk/oceanhero](https://www.wwf.org.uk/oceanhero)

COMPETITIONS



WIN YOUR FAVOURITE EMILY TAN HOMEWARE

Treat yourself to your choice of gift from our exclusive new range

We've teamed up with Suffolk-based artist and designer Emily Tan to create a beautiful new collection of homeware, clothing and gifts.

Driven by a desire to inspire positive impact and help the planet, Emily has designed a unique collection for WWF, including posters, cushion covers and mugs as well as organic cotton tote bags and T-shirts. Each item features one of three powerful designs depicting some of the world's most iconic species – lions, penguins and snow leopards.

As well as featuring Emily's striking artwork, all items are printed in the UK using AZO-free dyes on organic cotton, FSC-certified paper or clay. And they're printed to order to eliminate mass production.

We're giving two members the chance to win an item of their choice from Emily's collection of wildlife-inspired designs. You can see the full range of her products by visiting our online store – wwf.org.uk/shop – and searching for 'Emily Tan'.

To be in with a chance of winning, just follow the instructions in the box below and mark your entry 'Emily Tan Competition'. Good luck!

WIN ECO-FRIENDLY KIDS' CLOTHES!



Take your pick from our new F&F clothing range at Tesco

Kitting out your children doesn't need to cost the Earth thanks to our new sustainable F&F (Florence & Fred) clothing range at Tesco. Featuring a range of endangered wildlife from tigers to giraffes, this charming and exclusive range caters for all young cubs, from babies up to age 14. The 20-piece collection includes sweatshirts, leggings and T-shirts in cool neutral colours, entwined with animals, and aims to inspire a new generation of environmental champions.

Made from sustainable, 100% organic cotton, these desirable essentials are produced with up to 94% lower emissions and no pesticides or chemicals, so they're kinder to the planet. And the people making the clothes are treated right too. For every item sold, a percentage of the price will help fund our work to protect the planet for future generations.

We've got three £25 F&F vouchers to give away. To enter, follow the instructions in the box on the right and mark your entry 'Florence & Fred'.

HOW TO ENTER ACTION GIVEAWAYS

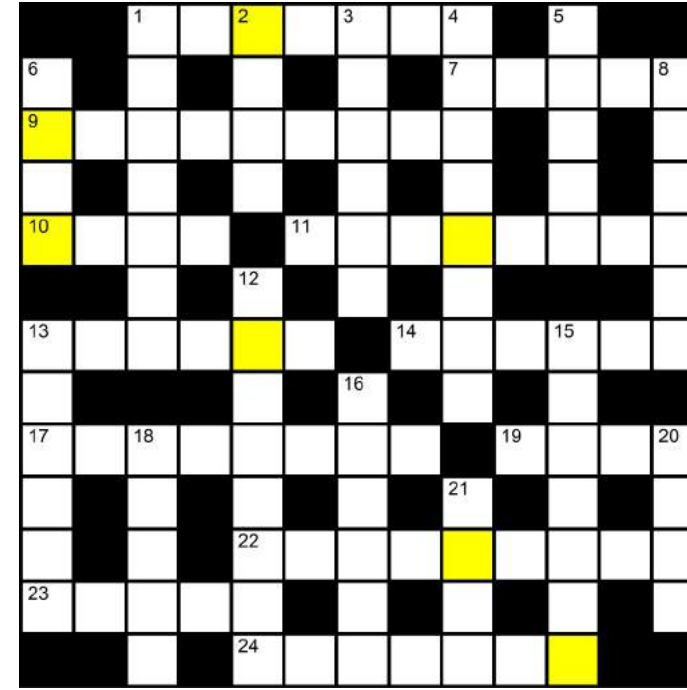
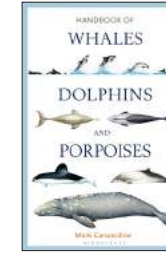
Send an email with your name, address and phone number, along with Emily Tan or Florence & Fred in the subject line, to competition@wwf.org.uk

Alternatively, you can 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 24 July. For full terms and conditions, visit: wwf.org.uk/comptersms

CROSSWORD

Solve our crossword and you could win a copy of *Handbook of Whales, Dolphins and Porpoises* by Mark Carwardine, published by Bloomsbury and worth £35



WWF Action crossword 45: Summer 2020 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 24 July

Clues across

- 1 Zero-emissions pedal vehicle (7)
- 7 Most Greenland residents belong to this group of Arctic people (5)
- 9 The large-scale restoration of nature (9)
- 10 _ predator, animal at the top of the food chain (4)
- 11 _ Falls, natural wonder on the Zambia-Zimbabwe border (8)
- 13 Sett-dwelling mammal (6)
- 14 Inland shipping route. North America's St Lawrence is one (6)
- 17 The Gulf of Genoa is part of this sea in the Mediterranean (8)
- 19 _ oil, popular product which has led to extensive deforestation (4)
- 22 Harmful phosphates were once common in this laundry product (9)
- 23 _ pollution, a threat to the peace and safety of marine wildlife such as whales (5)
- 24 Extensive Eurasian grasslands (7)
- 4 Decade in which the Exxon Valdez and Chernobyl disasters both occurred (8)
- 5 Sweet product obtained from cane and beet cultivation (5)
- 6 Another term for killer whale (4)
- 8 An agreement such as the Kyoto Protocol (6)
- 12 Inner _, underwater robot cameras filmed basking sharks here in the UK last year (8)
- 13 This group of whales includes blue and right whales (6)
- 15 Hunters of minke and the like (7)
- 16 Domesticated bovine animals (6)
- 18 What's harvested from cereal food crops (5)
- 20 An animal's breeding partner (4)
- 21 Any agricultural product, cultivated and harvested (4)

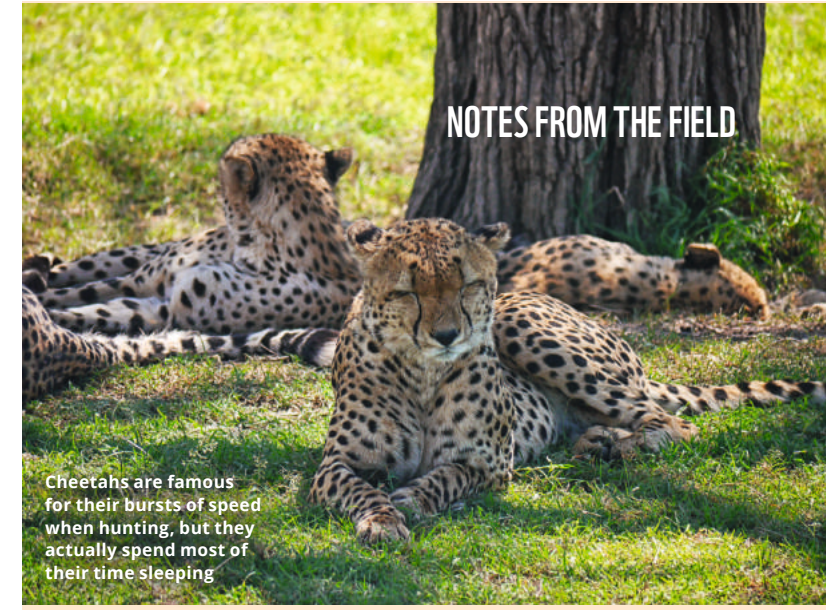
Spring 2020 answers

Prize word: CORALS
Across 1. Agriculture 7. Logging 8. Ozone 9. Park 10. Advanced 13. Amazon 14. Adopts 16. Treeless 19. Pods 21. Bison 22. Extreme 23. Forest fires
Down 1. Algeria 2. Rain 3. Caged 4. Leopards 5. Range 6. Elephant 11. Disaster 12. Lowlands 15. Plovers 17. Rhino 18. Shelf 20. Star

Clues down

- 1 Arctic whale noted for its large ice-breaking skull (7)
- 2 A young whale (4)
- 3 Worryingly, the climate currently finds itself in this state (6)

NOTES FROM THE FIELD



Cheetahs are famous for their bursts of speed when hunting, but they actually spend most of their time sleeping

CELEB SPOTS



You don't expect to encounter TV personalities in the middle of the African savannah. Like millions of people around the world, I was wowed by the footage of the five cheetah brothers hunting together in *Our Planet*, the Netflix series. Now here they were in real life, tails twitching, relaxing in the shade of a tree.

Meeting these spotted celebrities was a highlight of my visit to Kenya's Maasai Mara last year to see the amazing work you're supporting there. It's an incredible landscape with the most spectacular wildlife – scenes of huge herds of wildebeest crossing the croc-filled Mara river are world famous.

But what you rarely see in wildlife documentaries are the people living nearby. Much of the wildlife in the Mara is found outside the Maasai Mara National Reserve, in the community-managed areas, called conservancies, that surround it. With your support, we're helping local communities to run key conservancies at Siana and Oloisukut in ways that allow people and wildlife to thrive together.

WILDLIFE FOR PEOPLE

Tourism creates local jobs and provides income. Oloisukut conservancy has some of the highest giraffe numbers in the region, and giraffe-themed gifts generate extra income for the community. Sadly, the loss of tourism to this region due to coronavirus has had a massive impact on these communities. So we're looking to support the financial sustainability of the conservancies and promote other sustainable livelihoods for local people.

It's important that communities receive benefits from having wildlife on their doorstep, because living close to wild animals can create problems. Elephants destroy crops, while lions, leopards and cheetahs prey on livestock. Thanks to you, and in particular to our lion adopters, the Mara Predator Conservation Programme, our local partner, is offering solutions. Reinforced livestock enclosures built with recycled plastic poles are a lot more effective at reducing attacks than traditional wooden ones. We've also given beehives to local women's enterprise groups: not only does the honey provide a source of income, but bees also deter elephants (see page 5).

Despite the challenges, most local people want wildlife to return to their conservancies. Encouragingly, we saw that key habitats are recovering and wildlife numbers are starting to increase here. I even saw a mother cheetah with no fewer than seven cubs!

Katherine Elliott

WWF-UK regional manager – Africa

© KATHERINE ELLIOTT

ADOPT A BETTER FUTURE

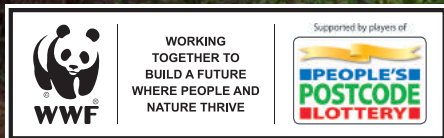


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- 1 Download the free Arloopa app: arloopa.com
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- 3 Watch as a jaguar appears and walks around!

Feeling inspired and want to do more?
Help protect threatened species, including jaguars, with an animal adoption
wwf.org.uk/adoptions



 For a future where people and nature thrive | wwf.org.uk
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FSC logo to go here

ALL INFORMATION CORRECT AT TIME OF PRINTING, MAY 2020