

Briefly

SPOTLIGHT ON REPTILES AND AMPHIBIANS

Discoveries: a new female of the rarest turtle...

The Ha Noi Department of Agriculture and Rural Development, in collaboration with the Asian Turtle Program of Indo-Myanmar Conservation and the Wildlife Conservation Society, have made dramatic progress to possibly prevent the extinction of Swinhoe's softshell turtle *Rafetus swinhoei*, the world's most threatened turtle. Until late 2020 it was thought that only one individual remained, a male kept at Suzhou Zoo in China. The last known female of the species died in April 2019, when artificial insemination was attempted. However, in October 2020 an individual of unconfirmed sex was captured in 1,400 ha Dong Mo Lake near Viet Nam's capital Hanoi. Genetic testing revealed in December 2020 that the 86 kg turtle was a female. Authorities believe there is at least one more of these turtles in Dong Mo Lake and another in nearby Xuan Khanh Lake. Conservationists hope to capture and determine the sex of the other turtles in both lakes in 2021. The new discoveries offer renewed hope that it will be possible to return Swinhoe's softshell turtle from the brink of extinction. Surveys in other areas of Viet Nam suggest more individuals may still survive in the wild.

Sources: *The Guardian* (2021) [theguardian.com/environment/2021/jan/01/hopes-for-most-endangered-turtle-after-discovery-of-female-in-vietnam-lake](https://www.theguardian.com/environment/2021/jan/01/hopes-for-most-endangered-turtle-after-discovery-of-female-in-vietnam-lake) & *The Turtle Survival Alliance* (2020) [turtlesurvival.org/turtle-news-of-the-decade](https://www.turtlesurvival.org/turtle-news-of-the-decade)

... and the smallest known reptile

Scientists believe they may have discovered the smallest reptile on Earth: a chameleon subspecies that is the size of a seed. Two of the tiny lizards were discovered by a German-Madagascar expedition team in Madagascar. The male *Brookesia nana*, or nano-chameleon, has a body length of just 13.5 mm. This makes it the smallest of c. 11,500 known species of reptiles. Its length from top to tail is 22 mm. The female is bigger at c. 29 mm. Other specimens have not yet been located, despite considerable search efforts. Researchers found that the chameleons hunt for mites on the rainforest floor and hide from predators at night in blades of grass. The forests where the individuals of *B. nana* were located are still well connected with others across the north of the island. In their report, scientists recommended that the chameleon be categorized as Critically Endangered on the IUCN Red List, to help protect it and its habitat.

Source: *BBC* (2021) [bbc.co.uk/news/world-africa-55945948](https://www.bbc.co.uk/news/world-africa-55945948)

To protect snake and lizard habitats, German court halts factory plan

Electric car manufacturer Tesla has been ordered again to suspend preparations for a car factory in Germany. The company has been clearing forest land near Berlin for its first European car and battery plant. But opponents argued this will endanger the habitats of lizards and snakes. A court in Frankfurt an der Oder ordered forest clearing to be halted, pending further examinations. A similar court order was made earlier in 2020 about Tesla's plans for what it calls the Gigafactory in Grünheide, in the eastern state of Brandenburg. The earlier ruling was in response to concerns about wildlife and the water supply. Tesla has not publicly commented on the latest ruling, resulting from an ongoing legal dispute with the Nature and Biodiversity Conservation Union and Green League. A final decision on the case was still pending in December 2020. The environmentalist groups say Tesla's deforestation will destroy the habitats of sand lizards and smooth snakes, both of which are protected species.

Source: *Insight News* (2020) [insightnewsreport.com/2020/12/08/tesla-german-court-halts-factory-plan-over-snake-and-lizard-habitats](https://www.insightnewsreport.com/2020/12/08/tesla-german-court-halts-factory-plan-over-snake-and-lizard-habitats)

Glass frogs wave their hands and feet to attract mates

Frogs that live near roaring waterfalls and streams face a problem: loud rushing water that can drown out their mating calls. Some species have overcome this obstacle by using visible rather than audible signals: they attract mates by waving a foot, flapping a hand or bobbing their head. Frogs that use visual signals have so far been documented in India, Borneo and Brazil. In a new study, researchers have discovered such behaviour among glass frogs *Sachatamia orejuela* in Ecuador. It was already known that this species has an extremely high-pitched call, which helps it communicate above the lower-pitched noise of waterfalls. However, this is the first time that the frogs have been observed to use visual cues for communication. The researchers hope their findings remind us that we share this planet with incredible biodiversity, the protection of which is important not only for ecosystems to function, but also for our physical and emotional well-being and our sense of wonder.

Sources: *Behaviour* (2020) doi.org/10.1163/1568539X-bja10048 & *Earth.com* (2021) [earth.com/news/glass-frogs-wave-their-hands-and-feet-to-attract-mates](https://www.earth.com/news/glass-frogs-wave-their-hands-and-feet-to-attract-mates)

Size of amphibians determines extinction risk

The size of animal species such as frogs and toads may determine how likely they are to become extinct. A study conducted by a team of researchers at the Australian National University has found smaller amphibians have a higher risk of dying out compared to larger ones. This is in contrast to other types of animals such as mammals or reptiles, where larger species are more vulnerable to extinction. The researchers used computer modelling to determine the levels of risk factors involved in extinction for amphibians around the world. The findings were a wake-up call for conservation efforts for some of the world's smallest species. Although the research did not reveal the reason why smaller species were more at risk, the team say habitats may be among the key factors. Species of smaller body size are more likely to inhabit a smaller geographical area. This makes them more sensitive to human impacts and the destruction or alteration of rivers and waterways, and they have fewer refuges.

Source: *The Canberra Times* (2021) [canberra.com.au/story/7112077/size-no-small-factor-for-extinction-risk](https://www.canberra.com.au/story/7112077/size-no-small-factor-for-extinction-risk)

Bacteria on their skin could protect frogs from deadly fungi

Researchers in Costa Rica have found that some bacteria on the skin of amphibians prevent growth of the fungus causing chytridiomycosis, which has been dubbed the amphibian apocalypse. The disease is caused by the fungus *Batrachochytrium dendrobatidis*, and a particularly dangerous strain, called BdGPL-2, is responsible for mass amphibian die-offs around the world. It is believed that almost 700 species of amphibians are vulnerable to the fungus, and that it has already led to the extinction of 90 amphibian species. To investigate why some amphibian populations in Costa Rica were more resilient to chytrid fungus than others, a research group sampled the circulating strains of the fungus and the skin microbiome of amphibians at different sites. They found that the bacteria on the skin of some surviving amphibians prevented growth of the fungus in the lab. These findings suggest that locally adapted skin bacteria may offer protection from the disease. The researchers hope to combine their findings with other disease control strategies to protect amphibian populations from decimation by chytrid fungus.

Sources: *Microbiology* (2021) doi.org/10.1099/mic.0.001017 & *Science Daily* (2021) [sciencedaily.com/releases/2021/02/210203123410.htm](https://www.sciencedaily.com/releases/2021/02/210203123410.htm)

INTERNATIONAL

Global temperatures in 2020 equalled record highs from 2016

According to jointly reported assessments from Copernicus, NASA, the UK Met Office and other institutions, 2020 saw global temperatures equal the record high of 2016. Overall, the planet was c. 1.25 °C warmer than during preindustrial times. In 2016, previously the hottest year on record, temperatures were boosted by a strong El Niño, whereas 2020 was a La Niña year, which should have resulted in a cooling effect. That this effect was not enough to prevent such high global surface temperatures—calculated as an average of readings from thousands of weather stations and ocean probes around the world—has resulted in serious concern among climate scientists. The increasing volatility of weather and climate in a warming world has widespread ramifications for people and wildlife, and if the current rate of warming continues, the world will breach the 1.5 °C target limit set by the Paris Agreement as soon as 2035.

Source: *Science* (2021) [sciencemag.org/news/2021/01/global-temperatures-2020-tied-record-highs](https://www.sciencemag.org/news/2021/01/global-temperatures-2020-tied-record-highs)

Twelve new species discovered in the deep Atlantic

Almost 5 years of studying the deep Atlantic in unprecedented detail has revealed 12 species new to science. The sea mosses, molluscs and corals had not previously been discovered because the sea floor is so unexplored. Researchers warn that the newly discovered animals could already be under threat from climate change. Carbon dioxide absorbed by the ocean is making it more acidic, causing coral skeletons in particular to corrode. The team also found c. 35 new records of species in areas where they were previously unknown. The project involved researchers from 13 countries around the Atlantic, combining ocean chemistry, physics and biological discovery to work out how the ocean environment is changing as the world warms and as people exploit more of the deep sea for fishing and mineral extraction. Examination of ocean currents and depositions of fossils on the seabed revealed that the major currents in the North Atlantic have slowed dramatically in response to climate change. The implications of this are not fully understood, but it could mean that connections between ecosystems are being reduced.

Source: *BBC* (2020) [bbc.co.uk/news/science-environment-55427860](https://www.bbc.co.uk/news/science-environment-55427860)

Global shark and ray population decreased by > 70% in 50 years...

A significant increase in fishing since 1970 has ravaged the abundance of sharks and rays in our oceans, with previously widespread species such as hammerhead sharks now at risk of becoming extinct. Half of the world's 31 oceanic shark species are now categorized as either Endangered or Critically Endangered on the IUCN Red List. Using previous studies and catch data, researchers compiled the first global census for shark and ray species. They found that there has been an overall 71% decline since 1970, as a result of an 18-fold increase in relative fishing pressure. This could be an underestimate of real losses, because available data are insufficient to chart population trends back to the 1950s, when industrialized fishing started increasing. Governments need to enforce science-based catch limits on a domestic and regional basis to ensure sharks can continue to play their vital ecosystem role as predators. Sharks are also an important source of protein for poorer communities.

Sources: *Nature* (2021) [nature.com/articles/s41586-020-03173-9](https://www.nature.com/articles/s41586-020-03173-9) & *The Guardian* (2021) [theguardian.com/environment/2021/jan/27/sharks-rays-global-population-crashed-study](https://www.theguardian.com/environment/2021/jan/27/sharks-rays-global-population-crashed-study)

... and baby sharks emerge from eggs earlier and weaker in warmer oceans

A new study that examined the impact of warming oceans on shark embryos found that baby sharks emerge from their egg cases earlier and weaker as water temperatures rise. The researchers found that epaulette sharks, a species unique to the Great Barrier Reef of Australia, emerged from eggs up to 25 days earlier under temperatures expected by the end of the century. The embryos ate through their egg yolks faster, and when they were born, the higher temperatures affected their fitness. Weaker sharks were less efficient hunters, which could upset the balance of the ecosystem in which they live. As waters get warmer, egg-laying sharks could potentially populate cooler areas, if they find the right habitat. Alternatively, they could genetically adapt to the warmer temperatures, but sharks are slow to reach maturity and reproduce, which makes them vulnerable to extinction.

Sources: *Nature* (2021) doi.org/10.1038/s41598-020-79953-0 & *The Guardian* (2021) [theguardian.com/environment/2021/jan/12/baby-sharks-emerge-from-egg-cases-earlier-and-weaker-in-oceans-warmed-by-climate-crisis](https://www.theguardian.com/environment/2021/jan/12/baby-sharks-emerge-from-egg-cases-earlier-and-weaker-in-oceans-warmed-by-climate-crisis)

Marine protected area networks could help protect Antarctic penguins

New research led by BirdLife International, the University of East Anglia and British Antarctic Survey highlights how a network of marine protected areas could help preserve some of the most important habitats for breeding Antarctic penguins. The Southern Ocean is home to four species: the Adélie, chinstrap, gentoo and emperor penguin. Many of their habitats remain unprotected, putting them at risk of human-related threats such as pollution, overfishing and climate change. The international research team used a new approach based on colony location, population estimates and tracking data, to identify 63 key sites known as Important Bird and Biodiversity Areas. Currently 27–31% of the important sites for the Adélie and emperor penguins are within adopted marine protected areas, but almost none of the areas important for gentoo and chinstrap penguins are formally protected. The team also examined krill fishery activities over the last 50 years and found that a disproportionate amount of krill is being harvested within the Important Bird and Biodiversity Areas.

Source: *Open Access Government* (2021) openaccessgovernment.org/network-of-marine-protected-areas-could-help-safeguard-antarctic-penguins/101983

There is no vaccine for climate change

The world is not prepared for climate change, a new United Nations report has warned, highlighting how far countries have fallen behind in implementing adaptation measures. The Paris Agreement goal to keep warming at < 2 °C above pre-industrial levels this century is unlikely to be met, with 3 °C more likely. There is not only a lack of adequate policies and planning to adapt to the climate crisis, but also major financing shortfalls, and COVID-19 has pushed planning for climate change down the list of priorities for most countries. But 2020 was not only the year of the COVID-19 pandemic. It was also the year of intensifying climate change, with heatwaves, floods, droughts, storms, wildfires and locust plagues. Inger Andersen, Executive Director of the UN Environment Programme, has noted there is no vaccine for climate change, highlighting the need for a global commitment to put half of all global climate finance towards adaptation over the next year.

Sources: *Mongabay* (2021) [news.mongabay.com/2021/01/there-is-no-vaccine-for-climate-change-u-n-environment-chief-says](https://www.mongabay.com/2021/01/there-is-no-vaccine-for-climate-change-u-n-environment-chief-says) & *UNEP* (2021) [unep.org/resources/adaptation-gap-report-2020](https://www.unep.org/resources/adaptation-gap-report-2020)

EUROPE

Sweden creates wildlife crossings to aid reindeer movements . . .

Every April, Sweden's main highway comes to a standstill. Hundreds of reindeer overseen by Indigenous Sami herders shuffle across the asphalt on the E4 as they begin their journey west to the mountains after a winter gorging on the lichen near the city of Umeå. As Sweden's main arterial road has become busier, the crossings have become increasingly fractious, especially if authorities do not arrive in time to close the road. Sometimes drivers try to overtake the reindeer as they cross, spooking the animals and causing long traffic jams as their Sami owners struggle to regain control. In January 2021, Swedish authorities announced they would build up to a dozen wildlife bridges to aid the crossings. It is hoped the crossings will make it easier for herders to find fresh grazing lands and alleviate traffic jams, and also help moose and lynx to move around the landscape. The country's 4,500 Sami herders and 250,000 reindeer have been hit hard by the climate crisis, battling forest fires in the summer and freezing rain in the winter.

Source: *The Guardian* (2021) [theguardian.com/environment/2021/jan/23/how-wildlife-crossings-are-helping-reindeer-bears-and-even-crabs-aoe](https://www.theguardian.com/environment/2021/jan/23/how-wildlife-crossings-are-helping-reindeer-bears-and-even-crabs-aoe)

. . . and Scotland's thriving reindeer offer hope for struggling species

A herd of free-range reindeer *Rangifer tarandus* in the Scottish Cairngorms mountain range are thriving, in a rare bit of good news for a species struggling to adapt to a rapidly changing climate. Believed to have once been native to Scotland, reindeer were hunted to extinction there c. 800 years ago. However, a small herd of eight animals was reintroduced to the Cairngorms, the UK's only sub-Arctic ecosystem, in 1952. Their number has grown to c. 150 animals and they are looked after by 10 full-time herders. To keep them from overgrazing the area, the herders keep the size of the herd at c. 150 by controlling how many cows are allowed to run with bulls during the breeding season. The population of wild reindeer in the Arctic has declined by more than half in the last 2 decades, to c. 2.1 million. Despite the good news of the thriving population in Scotland, without meaningful efforts to tackle the climate crisis, the decline of reindeer in the Arctic is likely to continue.

Source: *Positive News* (2021) [positive.news/environment/the-scottish-reindeer-offering-hope-for-an-imperilled-species](https://www.positive.news/environment/the-scottish-reindeer-offering-hope-for-an-imperilled-species)

Farmers protest as Spain protects Iberian wolves

Farmers have condemned Spain's move to declare the Iberian wolf a protected species, arguing a nationwide hunting ban would lead to an increase in attacks on livestock. The Environment Ministry ruled in early February 2021 that protections for wolves in the south would extend north of the Douro river, where controlled hunting had still been allowed. Spain is home to an estimated 1,500–2,000 Iberian wolves, with 90% in the northern regions of Castile and Leon, Asturias and Galicia. The ministry stressed the cultural and scientific importance of the species, and its vital role in maintaining ecosystems. However, farmers said a recent rebound in the wolf population had led to more attacks on cattle. Farmers and environmentalists have repeatedly clashed over campaigns to bolster populations of apex predators such as the brown bear and the Iberian lynx, particularly in Spain's mountainous north, which is home to extensive sheep herds. Conservation group Ecologists in Action praised the new protections and urged authorities to work with farmers on ways to protect cattle without harming wolves.

Source: *Reuters* (2021) [reuters.com/article/idUSKBN2A519G](https://www.reuters.com/article/idUSKBN2A519G)

One of the most abundant bats in Europe is attracted to wind turbines

Researchers have found that one of the most abundant bats in Europe may be attracted to wind turbines. The activity of common pipistrelle bats was monitored at 23 British wind farms and control locations that were nearby but without wind turbines. The bats' activity levels were c. one-third higher at turbines than at control locations, and two-thirds of occasions with high activity were recorded at turbines rather than the controls. The reasons for this are not clear. It is possible that bats are attracted to the turbines themselves, or that there is more insect prey around the turbines. Common pipistrelle bats account for more than half of all bat fatalities at turbine sites in Europe. The researchers note that environmental impact assessments conducted before the installation of turbines are poor predictors of actual fatality rates, because the presence of turbines alters bat activity. Ongoing monitoring is required, and operational measures such as minimizing blade rotation in periods of high collision risk are probably the most effective way to reduce fatalities.

Sources: *Scientific Reports* (2021) [dx.doi.org/10.1038/s41598-021-82014-9](https://doi.org/10.1038/s41598-021-82014-9) & *SciTechDaily* (2021) [scitechdaily.com/one-of-the-most-abundant-bats-in-europe-is-attracted-to-wind-turbines-increasing-risk-of-fatality](https://www.scitechdaily.com/one-of-the-most-abundant-bats-in-europe-is-attracted-to-wind-turbines-increasing-risk-of-fatality)

Study will advise on policies to protect UK's insect population

Researchers will conduct a nationwide study to assess the health of the UK's insect population. The data will be used to advise on policies that can help to protect insects post-Brexit. Insect populations perform crucial ecosystem services, but are in decline in Europe and beyond. Although the factors driving these declines are not yet clear, intensive agriculture and climate change are thought to play a major role. The researchers have been awarded GBP 2.3 million from the Natural Environment Research Council to provide definitive evidence on whether insects are in decline, and to understand the key drivers threatening their existence. The scientists will undertake the most comprehensive analysis to date and will draw on three different types of data: scientific monitoring, volunteer wildlife recorders and high-tech sensors. The project will then model how different policy options could counter the identified threats. It is hoped that the findings of this study will make an important contribution to the UK's biodiversity conservation strategy now it is no longer part of the EU.

Source: *Environment Journal* (2021) [environmentjournalonline.org/articles/nationwide-study-will-advise-on-policies-to-protect-uks-insect-population](https://www.environmentjournalonline.org/articles/nationwide-study-will-advise-on-policies-to-protect-uks-insect-population)

Historic step: European Parliament approves green recovery fund

Lawmakers in the European Parliament have voted to pass the EU's EUR 672.5 billion recovery and resilience facility, unlocking unprecedented funding aimed at helping Europe recover after the COVID-19 crisis. The fund confirms a political agreement reached by EU leaders in December 2020, which reserves 37% of the fund for spending on climate-friendly measures. With the Parliament's green light, EUR 265 billion from the total will be made available for the green transition in the form of grants and loans handed out to EU countries. The regulation establishing the new facility came into force in February 2021. The facility, made up of EUR 312.5 billion in grants and EUR 360 billion in loans, is designed to help countries recover from the COVID-19 pandemic and navigate the green and digital transition. Even though Green Party members of the European Parliament were disappointed that biodiversity protection will not be covered by the fund, they said the new facility will be a game changer and an unprecedented sign of EU solidarity in response to the COVID-19 crisis.

Source: *Edie* (2021) [edie.net/news/11/-Historic-step--as-European-Parliament-approves-green-recovery-fund](https://www.edie.net/news/11/-Historic-step--as-European-Parliament-approves-green-recovery-fund)

AFRICA

Success as Namibian fishery reduces seabird deaths by 98%

The Albatross Task Force has reported a 98% reduction in seabird deaths in Namibia's demersal longline fishery, previously one of the world's deadliest fisheries for seabirds. Prior to intervention, several threatened species such as the Atlantic yellow-nosed albatross *Thalassarche chlororhynchos* and white-chinned petrel *Procellaria aequinoctialis* were among the estimated 30,000 birds lost annually to the longline fishing hooks or thick steel cables used to haul trawl nets through the water. However, after a decade's work involving dedicated grassroots engagement with industry and effective government regulation, mitigation measures are now required by law. Bird-scaring lines—simple lines with colourful streamers towed behind the vessel that keep birds away from baited hooks or dangerous trawl cables—are now being used widely by fishing fleets. The bird-scaring lines are made and sold by a local women's group, connecting bycatch reduction with women's empowerment.

Source: *BirdLife International* (2021) birdlife.org/worldwide/news/namibian-fishery-reduces-seabird-deaths-98

Tourists could spread COVID-19 to wild gorillas

Tourists who take selfies with wild mountain gorillas could put the primates at risk of developing COVID-19. Scientists from Oxford Brookes University, UK, looked at 858 photos posted on Instagram in 2013–2019 tagged with #gorillatrekking or #gorillatracking. Of these pictures, 86% showed people within 4 m of gorillas, and 25 photos showed tourists touching gorillas. The researchers found that tourists visiting gorillas rarely wore face masks, increasing the potential for disease transmission. People visiting gorillas in the wild were asked to wear face masks even before the pandemic, as part of the *Best Practice Guidelines for Great Ape Tourism* developed by the IUCN. Mountain gorillas are categorized as Endangered on the IUCN Red List, with an estimated 1,063 left in the wild. They live in the Democratic Republic of the Congo, Uganda and Rwanda. Although there is no evidence that wild gorillas have developed COVID-19 thus far, it is vital that tour regulations are strengthened and better enforced to ensure gorilla trekking practices do not further threaten these great apes.

Source: *CNN* (2021) edition.cnn.com/2021/02/16/africa/gorilla-covid-selfie-safety-scli-intl-scn/index.html

Human–elephant conflict in Kenya heightens

A team of conservationists investigated the seasonal, temporal and spatial trends of crop use by elephants in the Trans Mara, Kenya, during 2014–2015, and compared results to a previous study from 1999–2000. They found that elephants living around the Maasai Mara National Reserve were foraging on crops more frequently, closer to the protected area and throughout the year, but were causing less damage when doing so. The number of crop-use incidents increased by 49% over the 15-year period, but crop damage per incident dropped by 83%. This could be because farmers are better prepared to frighten off elephants, or because land-cover change makes it harder for elephants to hide in forest patches. Although the direct economic impact of crop use by elephants has dropped, farmers now have to spend more time protecting their fields, which further reduces support for conservation in communities who currently receive few benefits from living with wildlife. Restoring the elephants' feeding habitat in the Park is vital to reduce human–elephant conflict in the area.

Sources: *Biological Conservation* (2021) doi.org/10.1016/j.biocon.2020.108941 & *University of Kent* (2021) kent.ac.uk/news/environment/27781/human-elephant-conflict-in-kenya-heightens-with-increase-in-crop-raiding

Funding boost for Africa's Great Green Wall

The Great Green Wall for the Sahel and the Sahara Initiative, which seeks to restore 100 million ha of degraded land and create 10 million green jobs by 2030, has entered a new phase of quicker growth. Partners pledged USD 16.85 billion in international finance for the 11 countries involved in the project over the next 5 years. The Great Green Wall was launched in 2007 by the African Union as a 7,000-km barrier stretching from Senegal to Djibouti. The objective is to stop creeping desertification through a trans-continental mosaic of green, productive landscapes that will counter land degradation and biodiversity loss. To date, 4% of the Great Green Wall is estimated to be complete, or 18% when considering associated improvements outside the direct intervention areas. Donors include the African Development Bank (USD 6.5 billion), the World Bank (USD 5 billion) and the European Commission (USD 2.5 billion). Until 2020, the initiative had only received c. USD 1 billion.

Source: *Global Landscapes Forum* (2021) news.globallandscapesforum.org/49608/newly-seeded-with-16-billion-african-great-green-wall-to-see-quicker-growth

Saving the Gola Forest: reimagining forest conservation in West Africa

Covering > 350,000 ha and straddling the Liberia and Sierra Leone borders, Gola Forest is the largest remaining block of Upper Guinean Forest. Years of deforestation and degradation, driven by logging, agriculture, armed conflict and mining, have led to the loss of globally important biodiversity and decreased resilience to climate change. This has affected local communities, who depend on the forest for their livelihoods. In February 2020, the governments of Liberia and Sierra Leone signed an amended memorandum of understanding (an earlier version was signed in 2011), reaffirming their cooperation in the management, research, protection and conservation of the Gola Forest. In August 2020, the European Commission-funded Programme to Support the Conservation of Forest Ecosystems in West Africa (PAPFoR) was rolled out: working with local communities, national partner organizations and government agencies in both countries, PAPFoR will support effective forest management across the Gola Landscape, in protected areas and community forests. A key aspect of this programme is the establishment of land-use plans to support conservation efforts.

Source: *BirdLife International* (2021) birdlife.org/africa/news/saving-gola-forest-reimagining-forest-conservation-west-africa

Artificial insemination for captive lions is bad news for conservation

It is tempting to believe that technology will save the day when it comes to environmental crises. For example, the recent birth of a lion cub at Singapore zoo following artificial insemination was widely reported as a success for wildlife conservation. But presenting technological success against the backdrop of rapidly diminishing lion populations could do more harm than good, as overconfidence in technology's ability to solve complex environmental problems becomes a psychological barrier for human behaviour change. Technology will not fix the factors responsible for the drop in wild lion numbers. Lions breed easily given a chance, but are threatened by loss of habitat and prey, increased competition for space and food with humans, desertification, disease and hunting. Changing the way people think and behave is fundamental to protecting and restoring wild lion populations. Anything else is a diversion of attention and resources.

Source: *The Conversation* (2021) theconversation.com/artificial-insemination-in-captive-lions-is-bad-news-for-conservation-155664

AMERICAS

Electric eels work together to zap prey

More than 200 years after the electric eel inspired the design of the first battery, researchers have discovered that the animals can coordinate their zaps. A research team working in the Amazon filmed eels gathering in packs to herd prey, then stunning them with a synchronized electric shock. The expeditions into the murky, remote waters of the Amazon have revealed 85 new species of electric fishes. In one recent study, the researchers discovered that there are actually three species of electric eel, rather than just one. It is the most powerful of these species that was observed to hunt in packs: Volta's electric eel, capable of producing an 860-Volt electric shock, the strongest electric discharge of any animal. The eels' habitats are under immense pressure from climate change, fires and deforestation. The new study provides an example of how much we have yet to learn about the life histories of many organisms.

Sources: *Ecology and Evolution* (2021) [dx.doi.org/10.1002/ece3.7121](https://doi.org/10.1002/ece3.7121) & *BBC* (2021) bbc.co.uk/news/science-environment-55652672

Rewilding sees jaguars return to Argentina's wetlands

The largest predator in South America, the jaguar, has returned to the Iberá wetlands in Argentina 70 years after the species was driven to local extinction through hunting and habitat loss. Currently only c. 200 jaguars remain in Argentina. Mariua, an adult jaguar who was rescued as an orphan cub in Brazil, and her two captive-born cubs were released into Gran Iberá Park in January 2021. They are the first of nine jaguars slated to repopulate the 687,966 ha protected area, which offers an abundance of wild prey. The release marks the first reintroduction of jaguars in a place where they have gone extinct. It is part of an effort known as rewilding: restoring missing species, biodiversity and natural processes in areas affected by human activity. Without keystone species such as apex predators, important ecosystem functions can break down. The jaguar has lost over half its historical range, leaving some populations geographically isolated and with reduced gene pools, increasing their risk of local extinction. Saving the species was deemed a priority by the IUCN at the World Conservation Congress in September 2020.

Source: *UNEP* (2021) unenvironment.org/news-and-stories/story/rewilding-sees-jaguars-return-argentinas-wetlands

Amazon rainforest lost area the size of Israel in 2020

The Amazon rainforest lost over 2 million ha in 2020, an area roughly the size of Israel, according to a recent report on the region. Experts warn that unchecked deforestation in the Amazon basin, which encompasses nine countries in South America, could trigger a tipping point in the world's largest tropical rainforest within decades. Using satellite imagery, the report by Amazon Conservation Association and the Monitoring the Andean Amazon Project provides an early glimpse of deforestation in the Amazon throughout 2020. Troubling data points are highlighted, including large-scale deforestation in Brazil and Bolivia, where primary forests were obliterated at rates even higher than in 2019, a year that saw prolific and highly publicized fires raging in the Amazon. Both in terms of deforestation and fires, the data indicate that 2020 was worse than 2019 across the Amazon. Beyond large-scale mitigation of deforestation in the region, the researchers see political consensus and leadership among wealthy nations as important tools to help save the Amazon.

Source: *ABC News* (2020) abcnews.go.com/International/amazon-rainforest-lost-area-size-israel-2020/story?id=75683477

New species of baleen whale discovered in Gulf of Mexico

Scientists have discovered a new species of baleen whales. The small group in the north-eastern Gulf of Mexico was previously believed to be a population of Bryde's whales, but has now been identified as Rice's whale, named after the American biologist Dale Rice. Estimated at fewer than 100 individuals, the elusive whales feed in deep water around DeSoto Canyon, c. 100 km south of Mobile, Alabama, USA. They can weigh up to 30 t and can grow up to 13 m long. Researchers had known for some time that this group was different from most Bryde's whales; for example, they did not mix with Bryde's whales, which are found in the Indian, Atlantic and Pacific Oceans. Scientist Dr Patricia Rosel carried out the first morphological examination of a complete skull of a Rice's whale, after one stranded in Florida in January 2019. She identified diagnostic characteristics that distinguish it from other closely related baleen whale species. Genetic data provided a second line of evidence supporting the uniqueness of the whales in the Gulf of Mexico. Together, the morphological and genetic data confirm that these whales represent a new species.

Source: *Oceanographic* (2021) oceanographicmagazine.com/news/rices-whale

Tracking the epic journeys of migratory birds in north-west Mexico

In winter, more than 1 million shorebirds that breed in the Arctic visit the coastline of north-west Mexico, but researchers are uncertain as to how the birds use the region and what drives their movements. It is possible they are tracking super-abundant seasonal resources such as fish spawning events in this vast network of coastal wetlands spanning 5,000 km of coastline, or they may be scouting for sites with better habitat to spend their non-breeding season. To make it easier to track birds, scientists have built a large network of radio antenna devices called Motus stations across the USA and Canada that can automatically track the movements of tagged birds. However, such stations are still missing in much of Latin America, resulting in large gaps in our understanding of shorebird movements. A new project aims to deploy 24 Motus stations in 15 coastal wetlands spanning the whole north-west coast of Mexico. Migratory shorebird populations have plummeted by 37% since 1970 because of habitat loss, human disturbance and climate change. The new stations will provide robust information on how birds use important sites, to help focus conservation actions when and where they are most needed.

Source: *The Conversation* (2021) theconversation.com/scientist-at-work-tracking-the-epic-journeys-of-migratory-birds-in-northwest-mexico-154156

Do Colombia's hippopotamuses have to be culled to halt biodiversity disaster?

Hippopotamuses imported into Colombia for Pablo Escobar's private zoo (see also *Oryx*, 55, 105–113) have gone feral in the lush tropical countryside. Although some earlier studies suggested the introduced large herbivores may help restore the ecological functions of now-extinct megafauna, a group of scientists is now warning they must be culled before their invasive presence starts to wipe out indigenous flora and fauna. Government attempts to control the animals' population growth have had limited impact, with their number increasing in the last 8 years from 35 to 65–80. The scientists say the hippopotamuses pose a major threat to the area's biodiversity and that without culling their numbers could reach c. 1,500 by 2035. However, local people have embraced the hippos as their own, in part because of the income from tourism in Escobar's estate and surrounding area.

Source: *The Guardian* (2021) theguardian.com/world/2021/feb/10/pablo-escobars-hippos-must-be-culled-to-halt-biodiversity-disaster-scientists

ASIA & OCEANIA

Severe climate-driven loss of native molluscs reported off Israel's coast

Native mollusc populations along the coast of Israel have collapsed by c. 90% in recent decades because they cannot tolerate the increasingly hot water, which raises concerns about the wider ecosystem and neighbouring regions. Scientists said the sharp decline of native cockles, whelks and other invertebrates in shallow, subtidal waters is likely to also affect other countries in the region and would continue to progress westward to Greece and beyond as global temperatures increased. The study estimates native mollusc populations have fallen to 12% of their historical species richness on sedimentary substrates, and to 5% on rocky substrates. The research team took samples at multiple points, then compared living mollusc numbers with previous population sizes, which were estimated from empty shells found in sediment. The shortfall exceeded anything seen before. As well as stepping up protections of the still relatively pristine deep waters and tackling localized problems like pollution, the only way to address this shift was to tackle climate change by reducing emissions as soon as possible.

Sources: *Proceedings of the Royal Society B* (2021) doi.org/10.1098/rspb.2020.2469 & *The Guardian* (2021) [theguardian.com/environment/2021/jan/06/severe-climate-driven-loss-of-native-molluscs-reported-off-israels-coast](https://www.theguardian.com/environment/2021/jan/06/severe-climate-driven-loss-of-native-molluscs-reported-off-israels-coast)

Hong Kong seizure of seahorses recovers 75 kg of threatened species

Hong Kong customs officers made their biggest seizure of threatened seahorses in 2 years with the arrest of a 63-year-old man during an operation against illegal wildlife trade. They uncovered 75 kg of dried seahorses valued at USD 129,000. Approximately 25 kg were airmailed into the city from Indonesia via a logistic hub in Shenzhen and then found in a Hong Kong truck at a border checkpoint in December 2020. The goods were in two boxes declared to be carrying body scrub. Another 50 kg were seized from a flat in Tuen Mun. The man was released on bail, pending further investigation. Import or export of a threatened species without a licence carries a maximum penalty of 10 years in jail and a fine of HKD 10 million. Seahorses are listed in CITES Appendix II, and are regulated under the Protection of Endangered Species of Animals and Plants Ordinance. Source: *South China Morning Post* (2020) [scmp.com/news/hong-kong/law-and-crime/article/3112120/hong-kongs-biggest-seizure-seahorses-two-years](https://www.scmp.com/news/hong-kong/law-and-crime/article/3112120/hong-kongs-biggest-seizure-seahorses-two-years)

The mission to protect a turtle species in Kasaragod

A young conservation biologist is spearheading an effort to save Cantor's giant softshell turtle, locally known as Bheemanama or Paala Poovan. Ayushi Jain, a research affiliate of the Wildlife Institute of India, is putting in place a community-led conservation initiative in one of the few remaining breeding populations of the species in the Chandragiri river in Kasaragod, India. Jain has spent much of the last 2 years crossing the 60 km stretch of the river in Kasaragod, looking for the elusive turtle and educating local residents that the giant turtles that often get caught in their fishing lines as bycatch are threatened with extinction. Jain's initiative to build a community network of key informants and trained locals who can rescue, rehabilitate and safely release the turtles has met with initial successes. Cantor's giant softshell turtle is one of the rarest species of turtles in India and also one of the largest freshwater turtles.

Source: *Times of India* (2021) timesofindia.indiatimes.com/city/kozhikode/on-a-giant-mission-to-protect-a-turtle-species-in-kasaragod/articleshow/80334804.cms

Can dogs save Mongolia's steppe?

For centuries, the nomadic herders on the Mongolian steppe have used bankhar—large, powerful dogs with shaggy, thick coats—to safeguard their animals from predators. However, Soviet-era socialist campaigns that sought to collectivize herds and encourage families into more sedentary patterns had no place for the dogs, and only few survived. When nomadic families began returning to their traditional way of life in the 1990s, it was without bankhar to protect livestock from wolves, eagles and other predators. Livestock losses were high, and the nomads began keeping more animals to make a living. Larger herds, along with increasingly severe winter storms and temperatures, have led to extreme desertification of the steppe, threatening the herders' livelihoods. Now, an ambitious project aims to return bankhar dogs to their traditional role. With 20 genetically diverse males and females at a breeding facility outside the city of Ulaanbaatar, the Mongolian Bankhar Dog Project is slowly rebuilding the bankhar population. They distribute c. 15 puppies annually. People, livestock, and the environment all benefit from the dogs' presence. When livestock becomes less attractive as prey, conflict between humans and wild animals decreases. Predator populations stabilize, which in turn balances the steppe's ecosystem.

Source: *Atlas Obscura* (2021) atlasobscura.com/articles/mongolia-bankhar-dog

New Zealand's kākāpō are pulling back from the edge of extinction

Kākāpō are large, ground-dwelling, flightless parrots that were once widespread across New Zealand but hunted to near extinction. Thanks to highly specialized conservation efforts, these unique birds are slowly bouncing back. The heaviest living species of parrot, weighing up to 4 kg, they are also the only living species of parrot that cannot fly. As an island species, they originally had few avian predators, which hunted during the day. Kākāpō evolved forest-coloured plumage for camouflage and, when faced with a threat, they freeze, making it difficult for predators to spot them from above. The population began declining with the arrival of the Māori in the 14th century as the birds were hunted for meat and feathers—their defence tactic of sitting still being ineffective against humans and their dogs. Rats were one of the first mammalian predators on the islands, and they devoured kākāpō eggs and chicks. By the time European settlers arrived in the 19th century, kākāpō had become extinct in many parts of the islands. Europeans decreased their habitats further by clearing land for farming and grazing. More mammalian predators were introduced, and once the Europeans learned of the birds, they started hunting them for food and out of scientific curiosity. By the late 19th century, scientists realized kākāpō were on the brink of extinction, and only then were efforts made to preserve them. By 1995, only 51 birds were known to exist and the Department of Conservation implemented the Kākāpō Recovery Programme. The remaining few kākāpō were collected and placed on five off-shore, predator-free islands. Each kākāpō is named and tagged with a smart transmitter, and scientists collect data on their behaviour. The birds receive supplementary food during breeding seasons and nests are carefully observed by specialists. Chicks that would otherwise struggle to survive are hand-reared. Currently, there are 208 kākāpō, a record-breaking number since the conservation work began.

Source: *Natural History Museum* (2021) nhm.ac.uk/discover/new-zealands-quirky-kakapo-are-pulled-back-from-extinction.html

All internet addresses were up to date at the time of writing. The Briefly section in this issue was written and compiled by Emma Muench, Julia Hochbach and Martin Fisher, with additional contributions from Minh Le and Annkathrin Sharp. Contributions from authoritative published sources (including websites) are always welcome. Please send contributions by e-mail to oryx@fauna-flora.org.