

Briefly

SPOTLIGHT ON REPTILES

Rare Parson's chameleons hatched at Chester Zoo

Chester Zoo has become the first in the UK to successfully breed the rare Parson's chameleon *Calumma parsonii*. The species' population has declined by more than 20% in the last 2 decades as a result of widespread habitat loss on the island of Madagascar. Forests there have become so fragmented that the reptiles are unlikely to survive without intervention. Parson's chameleons have the longest known incubation period of any reptile: they hatch c. 2 years after the eggs have been laid. The first of the Zoo's hatchlings arrived measuring just 2 cm long and weighing only 1.5 g, following a 569-day incubation period. Conservationists at the zoo described the success as a 'momentous event' and said that the skills and techniques developed to achieve the breakthrough could help save other species from extinction.

Source: Chester Zoo (2022) chesterzoo.org/news/10-extremely-rare-parsons-chameleons-have-hatched-at-the-zoo

More than 1 million sea turtles illegally killed over past 30 years

Scientists at Arizona State University, USA, estimate that > 1.1 million sea turtles have been illegally killed in the past 30 years. Over the past decade alone, at least 44,000 turtles across 65 countries have been illegally killed and exploited every year. Sea turtles are hunted for food, for use in traditional medicines and to be sold as artefacts, décor or jewellery. The study found that South-east Asia and Madagascar are hotspots for sea turtle hunting, and most illegal sea turtle trafficking starts in Viet Nam, with the products often ending up in China and Japan. About 95% of the poached turtles are two species: the Endangered green sea turtle and Critically Endangered hawksbill turtle. The researchers note that in the area these are being targeted, these species have relatively large and stable populations, reducing the effect of illegal trafficking to some extent. The report also uncovered some good news: illegal exploitation of sea turtles has declined by 28% over the past 10 years, possibly because of increased legal protection.

Source: The Guardian (2022) theguardian.com/environment/2022/sep/09/more-than-11m-sea-turtles-illegally-killed-over-past-30-years-study-finds

Scientists sequence chromosome-level genome of Aldabra giant tortoise

Researchers have for the first time assembled the chromosome-level genome of the Aldabra giant tortoise *Aldabrachelys gigantea*. The species is endemic to the Aldabra Atoll in the Western Indian Ocean. Individuals can weigh up to 300 kg and typically live for > 100 years, with one reportedly reaching 250 years of age. Because of their limited distribution and the threats posed by climate change, the species is categorized as Vulnerable on the IUCN Red List. The genome may hold clues to the species' exceptional life history traits such as a long life span and gigantism, and is important information for breeding efforts in zoos, to maintain genetic diversity. To demonstrate how the genome information can be used in practice, researchers determined the sequence of 30 giant tortoises from the wild and two from a zoo, and used the reference genome to determine where in the Aldabra Atoll the captive-bred animals originally stemmed from.

Source: Science Daily (2022) sci.news/genetics/aldabra-giant-tortoise-genome-11284.html

Technology: artificial intelligence helps detect lizard trafficking...

Research in Australia has shown the potential for new technology to detect illegally traded wildlife in luggage or mail. The technology uses artificial intelligence to recognize the shapes of animals when scanned at locations of international traffic such as airports and mail centres. Examples from seized cases suggest that traffickers target reptiles and birds in particular, with shingleback lizards *Tiliqua rugosa* considered one of Australia's most trafficked species. The new technology uses real-time tomography, an imaging technique that uses a series of X-rays, to scan an item such as a lizard. It produces a 3D image of the animal that is then used to develop algorithms to alert mail and airport operators to the presence of wildlife in luggage. The study scanned species known to be trafficked, to create an image reference library, with 294 scans from 13 species of lizards, birds and fish. The detection rate was 82% and false positives were only 1.6%. This is the first study to document the use of 3D security scans for wildlife protection.

Source: The Conversation (2022) theconversation.com/lizard-in-your-luggage-were-using-artificial-intelligence-to-detect-wildlife-trafficking-189779

... and heat-sensing drone cameras reveal threats to sea turtle nests

Researchers have used thermal infrared sensors on drones to monitor sea turtle nesting on a beach in Costa Rica's Osa Peninsula. Using these heat-detecting cameras, scientists could see moving turtles and their tracks, differentiate the tracks of different species, detect hatchlings and observe other wildlife and potential poachers. The technology has been used before, but this is the first time these methods have been empirically tested for night-time sea turtle monitoring. Using the infrared imagery, the researchers detected 20% more turtle nesting activity than on-the-ground patrollers did. The drone imagery also revealed 39 nest predators and other animals, as well as people who might be poachers, that were not detected by patrollers. In Costa Rica, turtle eggs are sold locally and illegally for their alleged aphrodisiac properties. Six out of seven species of sea turtles are threatened globally, and protecting their eggs is one of the easiest ways to help their populations to survive.

Source: Mongabay (2022) news.mongabay.com/2022/10/heat-sensing-drone-cameras-spy-threats-to-sea-turtle-nests

Two species of venomous pit viper discovered in South America

Researchers have described new species of venomous pit viper in the eastern Andes mountains. The reptiles reside in areas that are difficult to reach, including the Choco rainforest in Ecuador, the western lowland Amazon rainforest, the Pacific highlands and the eastern slopes of the Amazon. The species, *Bothrocophias tulitoi* sp. nov. and *Bothrocophias myrringae* sp. nov., were named in honour of educators Tulio Angarita and Myriam Sierra, who developed an educational model that is used in all schools in Colombia. Both species were previously often mistaken for *Bothrocophias microphthalmus*, but differ in colour pattern and number and arrangement of scales. *Bothrocophias tulitoi* is brown with bright reddish speckles with black spots, and *B. myrringae* has a creamy yellow ventral surface and mottled and dark brown ventral scales. The researchers performed phylogenetic and morphological analyses to confirm the snakes were genetically different to *B. microphthalmus*.

Source: Reptiles Magazine (2022) reptilesmagazine.com/two-new-species-of-venomous-pitviper-snake-discovered-in-south-america

INTERNATIONAL

New reports: first overall picture of global wildlife trade. . .

The Pilot World Wildlife Trade Report was officially launched in November 2022 at the World Wildlife Conference in Panama. The groundbreaking report is a joint production of a partnership of UN organizations and leading conservation organizations. Included are statistics on the routes, scale and patterns of legal, international trade in CITES-listed species, together with the values, conservation impacts and socio-economic benefits of this trade and the links between legal and illegal trade. The report draws on millions of records, with more than 1.2 million CITES trade permits issued per year. It is the first report of its kind that is designed to help inform conservation policies and practices for governments, organizations, businesses and trade bodies as well as the media and general public. It will also contribute to the global vision of CITES, which is that by 2030, all trade in listed species should be legal, traceable and sustainable.

Source: *CITES* (2022) cites.org/eng/news/first-world-wildlife-trade-report

. . . and UN report concludes climate adaptation is 'too little, too slow'

Climate risks are growing, but global efforts to adapt to them are not keeping pace, concludes a new UN report. The report, which is candidly titled 'Too Little, Too Slow', says ambitious, accelerated action to adapt to climate change is paramount. But who is going to pay for that action is a point of contention. A group of countries that are most vulnerable to climate change—known as the V20—said they are considering halting their debt payments to wealthier nations. They instead proposed a debt-for-nature swap, a mechanism that allows a developing country's foreign debt to be forgiven in exchange for commitments to invest in nature conservation. Although wealthier, developed nations cause the majority of greenhouse gas emissions, the burden of adapting to climate impacts disproportionately falls on poorer nations, with costs up to 10 times higher than what they are currently receiving in finance. Nature can play an important role in helping communities adapt to climate change.

Source: *Conservation International* (2022) conservation.org/blog/news-spotlight-un-report-concludes-climate-adaptation-is-too-little-too-slow

Bird encounters and birdsong improve mental health

A new study found that everyday encounters with birds were associated with long-lasting improvements in mental well-being. These improvements were evident not only in healthy people, but also in those with a diagnosis of depression, the most common mental illness. This has potential implications for both environmental and wildlife protection, as well as mental healthcare policies. The study used data collected from the Urban Mind smartphone app, tracking 1,292 participants from the UK, EU, USA, China and Australia for 2 weeks, and prompting them at random intervals to record how they were feeling and whether they could see or hear birds. It found that participants' mental well-being was significantly better when seeing or hearing birds compared to when not. This positive effect was more pronounced when individuals were outdoors, although the beneficial effect was found to wane over time. The authors suggest that visits to habitats with a high degree of birdlife could play a role in preventing mental health difficulties, alongside more traditional interventions.

Source: *Nature* (2022) nature.com/articles/s41598-022-20207-6

Patagonia's owner gives away company to fight climate crisis

Yvon Chouinard, the billionaire founder of the outdoor apparel brand Patagonia, has transferred his family's ownership of their company to a specially designed trust and non-profit organization that will use its profit of c. USD 100 million/year to fight the climate crisis. Mr. Chouinard has had a longstanding love of the environment and disregard for business norms and said of the transfer: 'We are going to give away the maximum amount of money to people who are actively working on saving this planet.' The company will continue to operate as a private, for-profit corporation selling jackets, hats and ski wear, but the family no longer own the company. Their voting stock has been transferred into a newly established entity, the Patagonia Purpose Trust, which will be overseen by the family and is intended to ensure that Patagonia commits to running a socially responsible business and gives away its profits. The remainder of the shares have been donated to a new non-profit called the Holdfast Collective, which will use the funds to combat climate change.

Source: *The New York Times* (2022) nytimes.com/2022/09/14/climate/patagonia-climate-philanthropy-chouinard.html

Astounding amount of fishing gear lost in ocean each year

A new study provides the first reliable global estimate of the amount of fishing equipment lost in the ocean each year, a problem that has previously been hard to quantify. The research estimates that the annual amount of so-called ghost gear includes enough nets to cover an area the size of Scotland, and fishing line that could wrap around the equator 400 times. To quantify the amount of gear lost, Kelsey Richardson, a marine and social scientist, organized anonymous surveys of 451 people working on fishing vessels in seven countries that fish intensely with five specific types of gear. The selected gear was identified through analysis of international fisheries data and includes bottom trawl nets and the long lines of hooks used to catch cod, tuna and other large fish. The surveys revealed that on average fishing vessels lose about 2% of their gear each year. By multiplying the loss rates by global estimates of the number of fishing vessels using each type of gear, the scientists were able to estimate the annual quantity of lost gear.

Source: *Science* (2022) science.org/content/article/astounding-amount-fishing-gear-lost-ocean-each-year

Eradicating invasive species from islands produces global impact

A new study shows that eliminating invasive species from islands has been implemented with high success. This is the first synthesis of all reported eradication events of invasive vertebrates on islands worldwide. It includes over 100 years of 1,550 attempts to eradicate invasive vertebrates from 998 islands, using the publicly available Database of Island Invasive Species Eradications. This conservation action is key for protecting native plants and animals, creating ecosystem resilience to climate change, and providing co-benefits to people. Completely removing invasive species from islands has proven to be one of the most effective tools at halting and reversing damage from species either deliberately or accidentally introduced by humans. The analysis found that eight countries were responsible for 80% of documented eradications: New Zealand, Australia, France, UK, USA, Mexico, Seychelles and Ecuador. The study also showed that more countries are implementing eradications today than ever before. However, invasive species have only been eradicated from less than 20% of islands with globally threatened species, and more action is urgently needed.

Source: *Island Conservation* (2022) islandconservation.org/new-study-shows-eradicating-invasive-species-from-islands-produces-global-impact

EUROPE

Wildlife protection helps species thrive in Europe

A new report commissioned by Rewilding Europe, and compiled by the Zoological Society of London, Birdlife International and the European Bird Census Council, has found that the populations of some European wildlife species have grown over the last 40–50 years, both in size and geographical range. This shows that measures including better legal protection, larger and more connected protected areas and dedicated species and habitat recovery work are effective. The findings also indicate that wildlife will return if we give it the space to recover and strive to live alongside it harmoniously. Of the mammal species covered in the report, the Eurasian beaver, grey seal and European bison showed the strongest comeback. Amongst birds, the barnacle goose, griffon vulture, great white egret and Dalmatian pelican showed strong recoveries. Although encouraging, in-depth analysis shows that wildlife comeback in Europe is still varied, with some species such as the Eurasian otter and cinereous vulture showing range contractions.

Source: *Rewilding Europe* (2022) rewildingeurope.com/news/european-wildlife-comeback-new-report-shows-wildlife-will-return-if-we-give-it-space-to-recover

Simple conservation strategy saving threatened Roseate terns

A simple conservation strategy deployed by conservationists and scientists is greatly assisting in the extraordinary success of threatened roseate terns on Rockabill Island, off the coast of Dublin. Ireland is home to the majority of Europe's roseate terns, with the tiny Rockabill Island, which is only the size of a football pitch, hosting 85% of the European population. The number of breeding terns has increased tenfold since the project started in 1989. Roseate terns nest on the ground in sheltered spots, usually under vegetation or beside rocky overhangs or in crevices, and like their nests to be hidden to protect them from predators and poor weather. For the past 33 years, Birdwatch Ireland wardens have been placing hundreds of wooden nest boxes out on Rockabill Island, providing the terns with shelter. This is helping the birds to have more success in raising their young: more eggs hatched and more chicks survived to fledge when they were born in the nest boxes.

Source: *Science Daily* (2022) sciencedaily.com/releases/2022/08/220823095458.htm

Swiss frog populations increase after mass pond digging

Switzerland has reversed the decline of more than half of endangered frogs, toads and newts in one region, research finds. In 1999, a mass conservation effort was started in the canton of Aargau to combat the loss of amphibians, which are in significant decline globally because of factors including habitat loss, urbanization, road infrastructure, disease and invasive species. State authorities, non-profit organizations, private landowners and volunteers worked for 20 years to build 422 ponds in five regions in Aargau. Switzerland has a high human population density, thus habitat loss is a major threat to amphibians. By creating ponds, the animals were provided with more space to thrive and are starting to recover. The collapse of the European tree frog, which needs a very specific habitat to thrive, was of particular concern in the region. However, over the past 20 years of this project, the regional population quadrupled in one area, with its presence there rising from just 16 sites in 1999 to 77 in 2019. There was a regional increase in almost every pond-breeding amphibian species, proving that habitat creation can be extremely successful for conservation.

Source: *BBC* (2022) bbc.co.uk/news/science-environment-63206140

Albania's pelican colony faces threat from a new airport

The Narta lagoon, a marshland near Vlora in south-west Albania, serves as an important feeding site for Dalmatian pelicans *Pelecanus crispus* and many other species, including flamingos, gull-billed terns and Kentish plovers. It is a key Mediterranean wetland that migratory birds use as a stopover during their journey between Africa and central and northern Europe. The Dalmatian pelican came close to disappearing from Albania in the 1990s, but the lagoon received protected status in 1996. This, combined with international conservation efforts and a hunting moratorium in 2014, began to reverse the decline of the species. In 2020, 85 pelican pairs nested in Albania, the highest number since records began. But the approval of the construction of an international airport at Vlora has brought a new threat to the birds. The airport's planned location is within the protected landscape surrounding the Narta lagoon and could have devastating consequences for the birds, as well as putting pressure on migration routes for the other species.

Source: *The Guardian* (2022) theguardian.com/environment/2022/sep/21/albania-dalmatian-pelican-colony-narta-faces-threat-vlora-airport-aoe

Spanish lagoon legally recognized as a person...

Spain's Senate has approved a bill to grant Mar Menor, Europe's largest saltwater lagoon, the rights of personhood, after nearly 640,000 Spanish citizens signed a petition to adopt the new legal strategy and protect the lagoon. In the past, the lagoon has hosted a robust population of the Critically Endangered fan mussel, but since 2016 has been struck by large algal blooms that have sucked up the lagoon's oxygen and killed much of the population of bivalves, along with seahorses, crabs and other marine life. The new law does not regard the lagoon in exactly the same way it does people, but the ecosystem now has a legal right to exist, evolve naturally and be restored. It also has legal guardians, comprising representatives from government as well as citizens, who can suggest legal and other actions on behalf of the lagoon, as well as a scientific committee to gauge ecological health. Any citizen can now sue to protect Mar Menor. The lagoon is the first ecosystem in Europe to get such rights, but this is a conservation approach that has been gaining popularity around the world over the past decade, with concepts promoted by some Indigenous communities helping to drive the trend.

Source: *Science* (2022) science.org/content/article/lagoon-effectively-person-says-spanish-law-s-attempting-save-it

... and Eurasian beaver now legally protected in England

Eurasian beavers have been recognized as a European protected species in England, under The Conservation of Habitats and Species Regulations 2017, making it illegal to capture, kill, injure or disturb them. These protections apply to species that are endangered, rare or at risk across Europe, and include other UK species such as bats, the large blue butterfly and the natterjack toad. The legislation makes it an offence to deliberately injure or disturb a beaver, meaning landowners will not be permitted to damage a burrow or dam without a licence from Natural England. Eurasian beavers, which were once widespread in England but were hunted to extinction 400 years ago, have been reintroduced at multiple sites across Britain. Beavers are ecosystem engineers, creating dams that restore habitats and wetlands and help prevent flooding and drought. Wildlife charities have praised this new legislation. The Wildlife Trusts, which have overseen the release of beavers across the UK, welcomed the news but called for more information on how beaver reintroductions will be facilitated.

Source: *BBC* (2022) bbc.co.uk/news/science-environment-63077068

AFRICA

Poaching crisis in KwaZulu-Natal

KwaZulu-Natal province, South Africa, has been affected by illegal rhinoceros killings since a poaching crisis began in 2008, but in recent years poaching levels have been declining—until now. In 2022, the province saw a surge in poaching: between January and June, 133 rhinoceroses were killed in the region. This was more than half of all rhinoceroses poached in South Africa and more than three times the number poached in the province during the same period in 2021. The increase appears to be linked to a declining rhinoceros population in Kruger National Park, which has previously been the primary target of poaching. Poachers now appear to move south and turn their attention to the higher-density populations in smaller reserves across KwaZulu-Natal. As a result, rangers across the province are regularly facing life-threatening, distressing and demoralizing situations.

Source: *Save The Rhino International* (2022) savetherhino.org/africa/poaching-crisis-in-kwazulu-natal

Shocking blow to Indigenous land rights as court dismisses Maasai herder claim

Lawyers for Maasai herders, who say the Tanzanian government is trying to violently evict them from their ancestral land, have lodged an appeal against a court ruling that has dismissed their case. The legal battle dates back to 2017, when residents of four Maasai villages in northern Tanzania went to court to try to stop authorities evicting them from 1,500 km² of land in Loliondo, bordering the Serengeti National Park. If carried out, more than 70,000 Maasai would be affected by the move. The government claims the land is within the Park and should therefore be given over solely to conservation purposes rather than being affected by human activity. The herders, however, say the land has been rightfully theirs for generations and accuse the authorities of wanting to use it to create a luxury game reserve. The court had issued an interim order in 2018 that stopped evictions, but tensions increased in June 2022 when violence erupted between police and Maasai demonstrators, after authorities began to demarcate land boundaries. In its recent ruling, the court found that the Maasai had failed to prove they had been evicted from their village land and not from the Serengeti itself.

Source: *The Guardian* (2022) [theguardian.com/global-development/2022/oct/05/shocking-blow-to-indigenous-land-rights-as-court-dismisses-maasai-herder-claim](https://www.theguardian.com/global-development/2022/oct/05/shocking-blow-to-indigenous-land-rights-as-court-dismisses-maasai-herder-claim)

Ecology of fear in a South African savannah

South African ungulates react differently to different species of predators, according to experiments by a research team. The findings demonstrate that the behavioural responses of ungulates to large predators can shape ecosystem structure and function. In the Greater Kruger National Park, South Africa, the researchers examined the fearfulness that ungulates displayed in response to playbacks of lion, African wild dog, cheetah or non-predator (bird) control vocalizations. They used only short-range sounds like snarls and growls, rather than roars, to imitate the proximity of a predator, then used a speaker attached to a video trap to broadcast these sounds to wild animals. The speaker was activated to broadcast a predator sound when the camera sensed an animal moving in the area. It found that ungulates reacted most fearfully to lions, followed by wild dogs, and least to cheetahs, showing a distinct hierarchy of fear. Notably, the patterns were not predicted by the hunting success rates of the predator species.

Source: *African Conservation Foundation* (2022) africanconservation.org/ecology-of-fear-in-a-south-african-savanna

Malagasy giant jumping rat declared Critically Endangered

The Malagasy giant jumping rat, endemic to Madagascar, has been threatened by habitat loss, degradation and fragmentation for years. In the latest IUCN Red List update, the species has been recategorized from Endangered to Critically Endangered. Substantial habitat loss across the species' range has been the result of aridification and human activities. Slash-and-burn agriculture, logging, charcoal production, and illegal maize and peanut cultivation have all contributed to unprecedented rates of deforestation in the now-protected Menabe Antimena area. By 2014, c. 4,000 ha of forest was being lost per year. The Malagasy giant jumping rat, which can spring almost 1 m into the air thanks to its large back feet, is also susceptible to hantaviruses recently detected in other rodents in Madagascar. In addition, it is subject to negative impacts of feral cats and dogs, which pose a risk as predators and carriers of disease. These challenges have driven a severe and ongoing drop in the species' population, with an estimated decline of 85% between 2007 and 2019, and only c. 5,000 individuals now remaining.

Source: *Durrell Wildlife Conservation Trust* (2022) durrell.org/news/in-need-of-a-bounce-back-malagasy-giant-jumping-rat-declared-critically-endangered

Capacity building in West Africa to save vultures

In recent years, mortality of vultures caused by targeted and unintentional poisoning has increased across Africa. Populations of African-Eurasian vultures have plummeted by up to 97% over the last 50 years, with the biggest declines in West and East Africa, and many species listed as Critically Endangered on the IUCN Red List. There is a critical need to build capacity for responding to poisoning events, including identifying sites where vultures die, collecting samples and employing techniques to investigate the cause of death. In 2022, BirdLife International, in collaboration with Andre Bothe, a vulture specialist from the Endangered Wildlife Trust, organized capacity building workshops in Senegal, The Gambia and Guinea Bissau on responding to wildlife poisoning incidents. The workshops focused on key elements including recognizing signs of poisoning, investigating the scene, and making it safe from toxins, all aimed at reducing the impact of wildlife poisoning in the region.

Source: *BirdLife International* (2022) birdlife.org/news/2022/11/16/responding-to-wildlife-poisoning-incidents-in-west-africa-to-save-vultures

Breeding success raises hopes for future of Endangered African penguin

Two African penguin *Spheniscus demersus* chicks have emerged from their nest beneath a boulder at De Hoop Reserve in South Africa, where conservationists have used lifelike decoy penguins and broadcast penguin calls to entice adult penguins to breed. This work began 4 years ago as part of a programme to protect the Endangered African penguin along South Africa's coastline. The birds prefer to nest on islands, but scarcity of sardines off South Africa's western coast has led to low survival rates of both adult and juvenile penguins at key breeding colonies. At De Hoop Reserve, there are rich fish stocks, but breeding at this mainland site exposes penguins to lethal predator attacks. To protect the penguins, conservationists erected a fence with electrified strands at the De Hoop breeding site, which is located on a rocky headland. Although a single breeding pair of African penguins at De Hoop will only make a small contribution to the conservation of the species, it is an important indicator of success.

Source: *Mongabay* (2022) news.mongabay.com/2022/11/breeding-success-raises-hopes-for-future-of-endangered-african-penguin

AMERICAS

Election successes: Fat Bear Week winner crowned in Alaska...

Tipping the scales at an estimated 635 kg, the eighth annual Fat Bear Week, in October 2022, was won by brown bear 747, with 68,105 votes. During the event, people from around the world voted for the fattest bear in Alaska's Katmai National Park. A case of voter fraud in the semi-finals nearly prevented the winner from making it to the final, but this was quickly corrected by officials. The competition spotlights the Park's famous brown bears as they feed in preparation for winter hibernation, each consuming c. 226 kg of salmon from the Brooks River during the summer and becoming almost unrecognizable from when they first emerged from hibernation. Live cameras placed around the river enable viewers to tune in to watch the hungry bears and cast a vote. The winner, bear 747, hunted for salmon almost every day between June and September 2022, and had become one of the largest brown bears on Earth, according to the organizers.

Source: BBC (2022) [bbc.co.uk/news/world-us-canada-63218790](https://www.bbc.co.uk/news/world-us-canada-63218790)

... and Lula win in Brazil presidential election hailed as victory for the Amazon

Defenders of the Amazon rainforest celebrated on 30 October 2022, when Luiz Inácio Lula da Silva narrowly secured Brazil's presidency, beating incumbent Jair Bolsonaro by just 1.8% of votes in the divisive election. Under Bolsonaro, deforestation soared to a 15-year high as he publicly promoted development in rainforest areas, diluted environmental regulations and gutted key environmental institutions of funding and expertise. The rate of Amazon deforestation is now much higher than when Bolsonaro took office in 2019, and the 13,000 ha lost in 2021 was the largest annual figure since 2008. Lula, in contrast, has campaigned to protect the rainforest and pledged to remove illegal miners and ranchers clearing the Amazon. His proposals include subsidizing sustainable farming, creating a ministry dedicated to Indigenous peoples, and a national climate change authority that would ensure Brazil's policies are in line with its Paris Agreement goals. Implementing these proposals will be challenging, but if successful, could save the Amazon just as it has reached a crucial tipping point.

Source: *New Scientist* (2022) [newscientist.com/article/2344713-brazil-election-lula-win-hailed-as-victory-for-the-amazon/](https://www.newscientist.com/article/2344713-brazil-election-lula-win-hailed-as-victory-for-the-amazon/)

Latin America's white-lipped peccaries keep disappearing mysteriously

A collaborative study by more than 20 organizations has looked into the mysterious periodic disappearance and reappearance of white-lipped peccaries *Tayassu pecari* in the Americas. The authors say the population fluctuations may represent the first documented case of natural population cyclicity in a Neotropical mammal. White-lipped peccaries are hooved mammals native to the tropical forests of Central and South America and are considered a keystone species as they influence forest regeneration through seed foraging and turnover of leaf litter. They also maintain and expand forest mineral licks and wallows, benefitting many other wildlife species, and are the preferred prey of the jaguar *Panthera onca*; when peccaries disappear, jaguar populations decline. The peccaries form large herds up to hundreds of animals and researchers have been intrigued by the sudden disappearance of their populations across large areas. The new study suggests that it may be triggered by populations growing too big and subsequently crashing, possibly because of disease outbreaks. The study documents 43 disappearances at 38 sites in nine countries and confirms that this poorly-known species has large-scale and long-term population cycles.

Source: *Science Daily* (2022) [sciencedaily.com/releases/2022/10/22102811652.htm](https://www.sciencedaily.com/releases/2022/10/22102811652.htm)

Mexican fish declared Extinct in the Wild released into native habitat

Amid Mexico's Day of the Dead celebrations, a fish species considered Extinct in the Wild has been granted new life. In November 2022, community members released thousands of golden skiffia *Skiffia francesae* back to their native range in the Teuchitlán River in Mexico's Jalisco state. The fish were part of a captive-breeding programme. Before release, the fish were tagged with a non-toxic elastomer that allows scientists to monitor their populations for 5 years and determine whether they successfully grow and reproduce in the wild. It has been nearly 30 years since the golden skiffia was last observed in the wild; it was declared extinct in the wild in 1996, although captive populations continued to thrive in the aquarium fish trade. The reintroduction marks nearly 10 years of work to restore the species' habitat and remove some of the threats that would prevent successful reintroduction, such as dam construction, pollution, water extraction and invasive species.

Source: *Mongabay* (2022) [news.mongabay.com/2022/11/amid-mexicos-day-of-the-dead-a-fish-declared-extinct-comes-back-to-life/](https://www.mongabay.com/2022/11/amid-mexicos-day-of-the-dead-a-fish-declared-extinct-comes-back-to-life/)

Tiny green frog discovered in Costa Rican nature reserve

A Costa Rican naturalist's well-trained ears have helped to discover a new species of frog, described for the first time in a paper published in August 2022. Donald Valera Soto first heard the shrill call of the tapir valley tree frog *Tlalocohyla celeste* among the calls of more than 10 other frog species, while he was working around a wetland pond after the first heavy rains for the year in March 2018. The unfamiliar frog call stopped him in his tracks as he was walking through the wetland, prompting him to investigate which frog was making it. After months of night walks and surveys, Soto and his small team finally spotted one of the frogs. It measured 2 cm and had slightly different markings than other species, with a yellow line running about halfway down its flanks, red spots and a blue armpit. The frog's DNA did not match any other known species of amphibian. The tapir valley tree frog is only the fifth species to be described within the genus *Tlalocohyla*, and it may be Critically Endangered.

Source: *Re:wild* (2022) rewild.org/press/a-new-tiny-green-frog-with-a-blue-armpit-and-red-spots-has-been-discovered

Digital platform reveals migration data for birds across the Americas

Bird Migration Explorer, a state-of-the-art digital platform that reveals migration data consolidated for 458 bird species that breed in the USA and Canada, has been launched. The free, interactive platform is available in English and Spanish and allows users to see the most complete data collected on migratory species in their neighbourhoods, including where those birds go throughout the year. It provides insights into the journeys of individual species, the connectedness of locations across the hemisphere, and also details how migratory birds encounter threats. The platform can show to what extent each species overlaps with challenges such as light pollution or power lines along their journeys. It will enable users to see how countries in the Americas are all connected by migratory birds, showing, for example, that at least 299 species connect New York City to at least 30 other countries and territories, including places as far away as Argentina and Uruguay. This data will help to emphasize the importance of international cooperation and collaboration in the research and conservation of these species.

Source: *Audubon* (2022) [audubon.org/news/first-its-kind-digital-platform-reveals-migration-data-birds-across-americas](https://www.audubon.org/news/first-its-kind-digital-platform-reveals-migration-data-birds-across-americas)

ASIA & OCEANIA

Workshop on otter conservation held in Malaysia

Otters in South-east Asia face serious threats from trade for pets. In 2020, the International Otter Survival Fund awarded a World Otter Day grant to the Malaysian Nature Society and the Malaysian Otter Network for an awareness event entitled 'Born to be WILD; Not caged; Live WILDLY'. In 2022, the three organizations held a regional workshop to encourage conservation of otters and their habitats. The venue was Kuala Selangor Nature Park, a protected area in the Selangor region of Peninsula Malaysia that is home to three of the four species in South-east Asia: the smooth-coated, Asian small-clawed and hairy-nosed otters. There were 71 attendees (in person and online) from Myanmar, Indonesia, Thailand, Cambodia and Singapore, with additional speakers from Canada, the UK, Germany and Sri Lanka. There were classroom sessions, fieldwork and discussion on future work stressing community involvement and regional cooperation.

Source: *OTTER—Journal of the International Otter Survival Fund* (2022) otter.org/documents/journals/IOSF_Journal_Vol8_2022.pdf

Education can change local perception of bats

Increasing knowledge of ecosystem services is key to conserving bats and supporting communities in Indonesia's North Sumatra province. Researchers found that local communities had limited knowledge about ecosystem services provided by bats. The animals play an important role in pollinating durian, a crop that is vital to local livelihoods. However, awareness of this ecological function of the bats was low among farmers, and many did not know a decline in bats could affect crops. Farmers reported that they hunted bats for meat or use in traditional medicine as a cure for asthma. Three bat species—the large flying fox, cave nectar bat and Dayak fruit bat—are frequently hunted in the area, and all are in decline. The researchers recommend that education initiatives should be extended to local communities by government bodies and conservation organizations to increase knowledge of ecosystem services provided by bats.

Source: *Mongabay* (2022) news.mongabay.com/2022/09/education-can-change-local-perception-of-bats-help-protect-species-study-says

Mount Everest is teeming with life, from fungi to butterflies

Despite its inhospitable nature, the world's tallest peak is teeming with life. In 3 weeks' trekking around the glacier at the base of Mount Everest, a team of researchers found 16% of all known taxonomic orders on the mountain's southern flank. Foot traffic from hikers, along with climate change, is threatening biodiversity on the mountain, and this study helps to create a baseline so that scientists can track changes in the future. To find signs of life, the researchers collected DNA from pools of thawed water. All living organisms shed DNA into the surrounding air, water and soil, and this can be matched up with existing data to determine which organism it came from. The team collected water from Everest's highest ponds and streams, located between 4,480 and 5,490 m altitude. From this, they identified 187 orders, one-sixth of all of known taxonomic orders. Among the organisms identified were tardigrades and rotifers, butterflies, mayflies and other flying insects, various fungi, bacteria and plants. More research will help create a better record of diversity on Mount Everest and document specific organisms.

Source: *National Geographic* (2022) nationalgeographic.com/animals/article/mount-everest-is-teeming-with-life

Cheetahs arrive in India after 70 years of local extinction

Eight cheetahs have been translocated from Namibia to India in an initiative to reintroduce the felids to the country, where they have been extinct for 70 years. The cheetahs have been vaccinated and fitted with satellite collars and, following a period of quarantine, wildlife officials were planning to release them into Kuno National Park in central India. Worldwide, it is estimated that only c. 6,500 cheetahs remain in the wild, and their population is decreasing. They are categorized as Vulnerable on the IUCN Red List. This is the first translocation of many planned for the future. Over the next 5 years, India plans to release 50 cheetahs into various national parks, according to the Ministry of Environment, Forest and Climate Change. However, not everyone supports this reintroduction mission; there are concerns over the potential for negative interactions with people, and the impact on prey populations and other animals. Some also fear that the cheetahs will not have enough territory to roam or sufficient prey, despite efforts to boost their prey base in the Park.

Source: *Smithsonian Magazine* (2022) smithsonianmag.com/smart-news/cheetahs-arrive-in-india-after-70-years-of-local-extinction-180980795

Connecting forest fragments and gibbons after a century of separation

The Hollongapar Gibbon Wildlife Sanctuary in Assam, India, is a stronghold for the Endangered western hoolock gibbon *Hoolock hoolock*, but a railway track constructed by the British in 1887 acts as a barrier to the movement of wildlife, and the gibbons have been isolated on either side of the track since its construction. To improve connectivity, researchers have been developing a natural canopy bridge across the railway line since 2009, on both sides of the railway track along a 1-km stretch. Trees were planted that were known to be preferred as food and sleeping trees by the gibbons. In 2019, branches on either side of the track were joined in one location, forming a natural bridge that is now being used by gibbons and other arboreal species such as capped langurs, squirrels and rhesus macaques.

Source: *Primate Conservation* (2022) static.1.sqspcdn.com/static/f/1200343/28557572/1667864684637/PC36_Chetry_et_al_hoolock_canopy_bridge.pdf?token=8ujlGE%2BuX%2FANw%2FYnu%2BoFMKVGrMw%3D

Innovative devices bring hope for remaining river dolphins

In India and Pakistan, large numbers of river dolphins die annually from entanglement in fishing nets. A pilot project in the Mahakam River in Indonesia proved that electronic pingers prevent river dolphins from becoming entangled, and now the project has been extended to most gillnetting fishers along the stretch of river where the dolphins live. The pilot aimed to test the feasibility of electronic pingers to potentially eliminate river dolphin bycatch while also benefiting local fishers by decreasing catch loss. The study revealed that river dolphins steer clear of nets with pingers; in the pilot project areas there were no deaths of dolphins in nets. The fact that dolphins no longer tried to catch fish in nets with pingers also reduced costly damage to the nets and resulted in a 40% increase in average catches, helping to boost livelihoods of local fishers.

Source: *WWF* (2022) www.wwf.exposure.co/innovative-dolphin-saving-devices-bring-hope-for-remaining-river-dolphins

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