

SPOTLIGHT ON PLANTS

Rare trees found in Tanzania

In July 2023, a botanist noticed broad pods on a tree growing in a maize field near a road in the Nguru Mountains of eastern Tanzania. The tree turned out to be one of two specimens of *Millettia sacleuxii*, a rare species that scientists had feared was extinct. Thousands of their seeds have since been collected and germinated so that they can be planted as part of a reforestation project. In the local Kihehe language the tree shares its common name, *muhafu*, with other closely related *Millettia* species found in this region. Scientists previously knew the species from only three forest reserves in the Nguru and Usambara mountains, but two of these were cleared decades ago.

Source: Mongabay (2024) news.mongabay.com/2024/07/extinct-trees-found-in-tanzania-sparks-hope-for-ecosystem-recovery

New kind of wood discovered

Scientists have discovered an entirely new kind of wood, a finding that could turbocharge the ability of trees to store carbon. Researchers investigated the nanoscale structure of live wood samples, analysing the size of each wood type's macrofibrils, tiny rod-like filaments that house wood cells. They found that hardwood trees such as oak or birch have macrofibrils of c. 15 nm diameter, whereas softwood trees such as pine or spruce have larger macrofibrils of ≥ 25 nm. However, the two surviving species of the *Liriodendron* genus, the tulip tree *Liriodendron tulipifera* and the Chinese tulip tree *Liriodendron chinense*, have a different structure, with macrofibrils of c. 20 nm, midway between softwood and hardwood. Previous research has shown that *Liriodendrons* are fast-growing with high carbon sequestration rates, making them popular candidates for carbon capture plantations. The trees may have developed larger macrofibrils that those typical of hardwood to make them more effective at drawing carbon from the atmosphere. If this intermediate size of macrofibrils is best suited for carbon sequestration, it may be possible to breed other tree species with those optimum-sized macrofibrils to boost their carbon storing capacity.

Source: New Scientist (2024) newscientist.com/article/2442082-we-have-discovered-an-entirely-new-kind-of-wood

Report reveals > 50% of Kew's trees could be at risk

A new report published by the Royal Botanic Gardens, Kew, reveals over half of the 11,000 trees currently found at the Gardens in London, UK, may be at risk by 2090, including British natives such as English oak, common beech, silver birch and holly. Spurred by a drought in 2022 that resulted in the loss of > 400 trees at Kew Gardens (compared to an average loss of 30 trees most years), *Planting for the Future: Kew's Landscape Succession Plan* uses novel climate models that have been empirically tested by Kew horticulturists to determine the species that need to be planted now, to protect UK landscapes for future generations. Trees and woody shrubs mitigate the effects of urban heat islands both on people and wider ecosystems. However, their long lifespan means their ability to adapt to rapidly changing climate conditions is limited, and many of the trees currently being planted in the UK are failing. Kew calls on the horticulture industry and urban planners to recognize concerns around an exclusive focus on native species.

Source: Royal Botanic Gardens, Kew (2024) kew.org/about-us/press-media/landscape-succession-plan

Newly discovered plant defies deforestation in Ecuador

Botanists have identified a new plant species, *Amalophyllon miraculum*, in a small forest fragment in north-western Ecuador. The discovery highlights the importance of preserving even small patches of threatened ecosystems. The tiny plant, only 5 cm tall, was found growing on a boulder in an area that has lost 70–97% of its original forest cover because of agricultural expansion and past government policies encouraging deforestation. *Amalophyllon miraculum* has distinctive features, including bright green leaves with serrated edges and purple undersides, and minuscule white flowers. Only two populations of this plant are known, both in small protected areas. This limited distribution has led to its preliminary assessment as Critically Endangered. Despite this, the new species represents hope for biodiversity conservation, showing that unique species can persist even in heavily altered landscapes. Conservation organizations are working with local landowners to protect remaining forest areas and cultivate rare species.

Source: Mongabay (2024) news.mongabay.com/2024/06/miracle-in-miniature-as-rare-new-plant-defies-deforestation-in-ecuador

Critically Endangered plant makes daunting move across the UK

A 4 m tall specimen of the Critically Endangered *Tahina spectabilis* palm has been transported from Cambridge University Botanic Garden to the Eden Project in Cornwall. There are only c. 40 of these plants, which were first discovered in north-western Madagascar in 2006, left in the wild. The species is commonly known as the suicide palm or self-destructive palm for its unique lifecycle: it flowers only once in its lifetime before dying. The Cambridge specimen had reached the top of the glasshouse and stands a better chance of reaching its full potential in the domed facilities of the Eden Project. It could grow up to 18 m high over its 50-year lifespan and display leaves with a diameter of up to 5 m. The large palm was carefully removed from the glasshouse and forklifted into a van, where it was laid on hay bales and strapped into place for the 7-hour journey. The move highlights the collaborative nature of botanic gardens, which form a global network of great importance for horticulture and conservation.

Source: BBC News (2024) bbc.co.uk/news/articles/c1wjn34vgqlo

First Antarctic-wide survey of plant life

The first continent-wide mapping of plant life across Antarctica reveals vegetation growth in previously uncharted areas, and is set to inform conservation measures across the region. The satellite survey of mosses, lichens and algae will form a baseline for monitoring how Antarctica's vegetation responds to climate change. Until now, the spatial coverage and abundance of vegetation across the continent was unknown. An international team of scientists combined satellite observations with field measurements taken over several summer seasons, and detected almost 45 km² of vegetation, with 80% of plant growth within the Antarctic Peninsula and neighbouring islands. Dominated by mosses and lichens, the vegetation has adapted to survive the harsh polar conditions, and the environmental sensitivity of Antarctica's plants makes them effective indicators of regional climate change. Monitoring their presence in Antarctica's minimally disturbed landscape could provide clues as to how similar vegetation types may respond to climate in other fragile ecosystems.

Sources: Nature Geoscience (2024) doi.org/10.1038/s41561-024-01698-5 & British Antarctic Survey (2024) bas.ac.uk/media-post/first-antarctic-wide-survey-of-plant-life-to-aid-conservation-efforts

INTERNATIONAL

IUCN SSC network awarded Guinness World Records title

The IUCN Species Survival Commission (SSC) has been recognized by Guinness World Records as the largest volunteer conservation science network. This prestigious recognition was possible thanks to the dedication of > 10,000 volunteer experts from nearly every country in the world. Together, they work to achieve the vision of 'a just world that values and conserves nature through positive action to both prevent the loss and aid recovery of the diversity of life on Earth'. Guinness World Records is the global authority on record-breaking achievements, documenting and celebrating superlative accomplishments. Each record title must fulfil all of the following criteria: measurable, breakable, standardizable, verifiable, based on one variable, and the best in the world. IUCN SSC members are encouraged to use their SSC affiliation when they present their work at conferences, in articles or in the news, to identify themselves as part of the largest volunteer conservation science network.

Source: IUCN (2024) iucn.org/news/202407/historic-achievement-iucn-species-survival-commission-recognised-guinness-world-records

Incorporating traditional knowledge into the Biodiversity Plan

Countries must respect the rights of Indigenous Peoples and local communities to achieve the world's major international commitment on biodiversity, the Biodiversity Plan. This includes acknowledging their rights to nature and their contributions to the conservation and sustainable use of biodiversity. Monitoring how their rights are realized is crucial. In May, a subsidiary body of the UN Convention on Biological Diversity (CBD) accepted new recommendations on traditional knowledge indicators, which are now included in the monitoring framework for the Biodiversity Plan. These recommendations were informed by a workshop that brought together experts at the UN Environment Programme World Conservation Monitoring Centre's (UNEP-WCMC) headquarters in Cambridge, UK. Adopting these recommendations will be a huge step forward towards integrating indicators that relate to the rights of Indigenous Peoples and their traditional knowledge in national reporting to the CBD. Source: UNEP-WCMC (2024) unep-wcmc.org/en/news/remarkable-progress-made-towards-incorporating-traditional-knowledge-into-the-biodiversity-plan

CITES study reveals inconsistent reporting of shark and ray trade

Inconsistent reporting of data on shark and ray trade causes problems for conservation efforts. Over 24% of all shark and ray species are threatened with extinction. A new study found that different countries and organizations use varying units of measurements related to shark and ray trade, leading to discrepancies in reported data. It also identified a lack of clarity on reporting requirements for certain types of catches and inconsistencies in how catches from different territories are reported. One of the most concerning findings is the widespread underreporting of CITES-listed shark and ray species. This underreporting could be because of a lack of awareness or understanding of reporting obligations, or wilful non-compliance. The report calls for increased collaboration between international organizations to standardize data collection and reporting practices, including reporting all catch with details on its fate, mandating reporting by weight and at the species level, and adopting internationally recognized coding systems.

Source: TRAFFIC (2024) traffic.org/news/missing-sharks-ii

Action needed to conserve most threatened vertebrate group

An updated Amphibian Conservation Action Plan, a collaborative document authored by > 100 global experts, was published in July, synthesizing developments in amphibian knowledge and practice over the last 15 years. The IUCN Species Survival Commission Amphibian Specialist Group, who oversaw the document development, hopes that this freely available Action Plan will help provide a solid evidence base for amphibian conservation actions globally, as well as highlighting areas of knowledge where more research is needed. Nearly 41% of amphibian species are at risk of extinction according to the Second Global Amphibian Assessment published on the IUCN Red List in 2023, which confirmed the group's status as the most threatened class of vertebrates. The new Action Plan emphasizes the need for urgent action to address this conservation crisis. The goal is for this globally scoped document to inform action at regional and local levels, and for the Amphibian Specialist Group to act as a conduit to feed regional experiences into global knowledge, improving amphibian conservation action worldwide.

Source: IUCN (2024) portals.iucn.org/library/node/51531 & iucn.org/news/202407/action-needed-protect-most-threatened-vertebrate-group-updated-amphibian-conservation

Deadly bird flu infects hundreds of species globally

The world is experiencing the fastest-spreading, largest-ever outbreak of H5N1, a highly contagious, deadly strain of avian influenza. Scientists believe this virus now presents an existential threat to the world's biodiversity, with the risk to humans rising as it continues to leap the species barrier and reach new host species. It has already affected at least 485 bird and 48 mammal species, killing seals, sea otters, dolphins, foxes, California condors, albatrosses, bald eagles, cougars, polar bears and a zoo tiger. Since it emerged in Europe in 2020, the virus has spread globally. It is both lethal and unusually transmissible, jumping between birds, wild mammals and livestock. Carried by birds along migratory pathways, it has invaded six continents, including Antarctica, with only Australia and the Pacific Islands being spared so far. The virus continues to spread to new hosts as it evolves and picks up genes from other bird flu strains.

Source: Mongabay (2024) news.mongabay.com/2024/08/animal-apocalypse-deadly-bird-flu-infects-hundreds-of-species-pole-to-pole

Study reveals global conservation gaps and opportunities for protected areas

The global network of protected areas has expanded significantly in the past decade and is expected to cover at least 30% of land and sea by 2030. However, the distribution of protected areas is highly heterogeneous and the social-environmental conditions enabling or hindering the establishment of protected areas are not well understood. Using a range of 14 socio-economic and environmental factors, a team of scientists have characterized the multidimensional niche of terrestrial and marine protected areas. They examined, at the global scale, whether particular locations have pre-existing conditions that are favourable for the establishment of protected areas. The researchers found that protected areas, particularly the most restrictive ones, are most common in locations where human development and the number of NGOs are high. Based on the spatial distribution of vertebrates and the likelihood to convert non-protected areas into strictly protected areas, the study identified areas of high vertebrate diversity that are either favourable or unfavourable to protected area establishment. In locations where protected areas are unrealistic, alternative strategies such as other effective area-based conservation measures or privately protected areas could deliver conservation outcomes.

Source: Nature Communications (2024) doi.org/10.1038/s41467-024-51531-1

EUROPE

Good news for felids: kitten births in the wild signal hope for wildcats . . .

Following the release of 19 wildcats last summer by the Saving Wildcats partnership, at least two females have given birth in the wild. This marks a significant milestone in the project's efforts to restore the wildcat to Scotland, after the species was on the verge of extinction in 2018. With the support of landowners, gamekeepers and the local community, the field team managed to monitor and film the kittens in the wild, taking care not to disturb the animals. The births demonstrate that breeding wildcats for release into the wild is possible, as the animals have learnt to hunt and survive, and now reproduce in their first breeding season, a clear indication that they are doing well. When the kittens are old enough the team will attempt to get a DNA profile from them, to check whether they are the offspring of male wildcats that were released in 2023, as there is a risk of interbreeding between wildcats and domestic cats.

Source: *Saving Wildcats* (2024)
savingwildcats.org.uk/kittensborninwild

. . . and Iberian lynx rebounding thanks to conservation action

The IUCN Red List status of the Iberian lynx has improved from Endangered to Vulnerable, continuing its dramatic recovery from near extinction thanks to sustained conservation efforts. The population has increased exponentially from 62 mature individuals in 2001 to 648 in 2022, and the total population, including young and mature individuals, is now estimated to be > 2,000. Conservation efforts for this keystone species have focused on increasing the abundance of its main prey, the Endangered European rabbit, protecting and restoring Mediterranean scrub and forest habitat, and reducing deaths caused by human activity. Expanding the species' genetic diversity through translocations and an ex situ breeding programme has also been key to increasing numbers. Since 2010, > 400 Iberian lynxes have been reintroduced to parts of Portugal and Spain. The species now occupies at least 3,320 km², an increase from 449 km² in 2005. In its first Green Status of Species assessment—the global standard for measuring species recovery and assessing conservation impact—the Iberian lynx is Largely Depleted. However, its high Conservation Legacy reflects the impact of conservation efforts to date.

Source: IUCN (2024) iucn.org/press-release/202406/iberian-lynx-rebounding-thanks-conservation-action-iucn-red-list

Sweden leads the way with landmark ban on bottom trawling

Sweden and Greece have become the first countries in the EU to ban bottom trawling. In April, Greece announced that it would ban bottom trawls in its marine protected areas, which came after the UK committed to banning bottom trawling in 13 of its marine protected areas. Sweden, however, has taken it a step further by banning this fishing method in all of its territorial waters. Bottom trawling—in which a vast net is dragged across the ocean floor behind a trawler—is a harmful method that permanently damages ecosystems, releases carbon into the ocean, and contributes significantly to overfishing. As well as damaging the ocean floor, the method is indiscriminate: bottom trawls catch almost everything in the way of the nets, including non-target species, such as juvenile fish, dolphins and threatened whales. This bycatch usually ends up dead, and the unwanted animals are discarded as waste. The move by Sweden is an encouraging one to NGOs working in the region, as the country is one of Europe's major fishing powers.

Source: *Strong Coast* (2024) strongcoast.org/sweden-announces-landmark-ban-on-bottom-trawling

Mass stranding of pilot whales in Orkney

A pod of 77 long-finned pilot whales died after washing ashore on a beach in Orkney, UK, in what is thought to be the biggest mass stranding event in Scotland since 1995. Twelve of the whales stranded at Tresness Beach on the island of Sanday were still alive when they were found, however, the British Divers Marine Life Rescue took the decision to euthanize them after efforts to refloat them failed. There is no obvious explanation for why the whales stranded, but the Scottish Marine Animal Stranding Scheme conducted post-mortems on about 30 of the animals. Long-finned pilot whales are usually found along the continental shelf edge north and west of the British Isles but are frequent visitors to Shetland and Orkney. In 2023, the UK saw a mass stranding of 55 long-finned pilot whales on the Isle of Lewis. Upon investigation, it was found that one of the animals had experienced complications while giving birth, leading to the whole pod stranding, highlighting the strong social bonds formed within the pods: if one individual strands, the rest often follow.

Source: *Sea Watch Foundation* (2024) seawatchfoundation.org.uk/latest-news-2/pod-of-77-long-finned-pilot-whales-die-in-mass-stranding-on-the-isle-of-sanday-orkney

Captive-bred Egyptian vultures breed successfully in Bulgaria

The Bulgarian Society for the Protection of Birds (BSPB) and BirdLife Bulgaria have recorded the first successful wild breeding of captive-bred Egyptian vultures *Neophron percnopterus* in Bulgaria, marking a critical step in the recovery of the species in the Balkans. The breeding pair exemplify the success of the restocking programme. The female, born at the Wildlife Rehabilitation and Breeding Centre in 2019, was released in 2020, and a wild male tagged with a GPS transmitter was paired with her in 2022. This year, the pair successfully hatched two chicks. The species has a rich cultural history, revered in ancient Egypt and celebrated in the local legends of the Eastern Rhodopes. However, it faces severe threats, including habitat loss, poisoning and illegal killing, and collisions with energy infrastructure. Once widespread, the population has dwindled to less than 60 pairs in the Balkans. To combat this decline, in 2018, the BSPB launched a reinforcement programme that raises vultures in captivity and releases them into the wild.

Source: *Endangered Landscapes and Seascapes Programme* (2024) endangeredlandscapes.org/news/captive-bred-egyptian-vultures-breed-successfully-in-bulgaria-for-the-first-time

Cornwall badger vaccination shows promise

Farmer-led badger vaccination work could play a vital role in plans to eradicate bovine tuberculosis (bTB) in the UK, say researchers. A 4-year pilot vaccination programme showed the percentage of badgers testing positive for bTB in the study area dropped from 16% to 0%, according to a report by the Zoological Society of London, Cornwall Wildlife Trust and Imperial College London. The team behind the study, including farmers, scientists and conservationists, is calling on the UK government to support further evaluations of community-led badger vaccination. They vaccinated badgers across 12 farms, and more badgers were vaccinated per square-kilometre than were caught by nearby culls, with separate counts from camera traps suggesting that 74% of local badgers received the vaccine. Blood sampling showed that the proportion of badgers with bTB fell, even though overall badger numbers remained high. Interviews with the participating landowners indicated they were keen to continue vaccination beyond the original 4 years.

Sources: *Nature* (2024) doi.org/nb2r & BBC News (2024) bbc.co.uk/news/articles/c80ee5xkrpno

AFRICA

The world's largest land mammal migration in South Sudan

The first large-scale aerial survey of wildlife in South Sudan has confirmed the world's largest land mammal migration. The spectacle, known as the Great Nile Migration, includes c. 6 million antelopes. The survey, part of an ongoing partnership between African Parks and the Government of South Sudan, was conducted in the Boma Badingilo Jonglei Landscape (BBJL) and was the most comprehensive aerial study of wildlife in South Sudan, covering an area of 122,774 km². The migrating antelopes included white-eared kob, Mongalla gazelle, tiang and Bohor reedbuck. The survey results improve our understanding of the landscape, allowing conservationists to develop ways to ensure it can deliver sustainability for both wildlife and people.

Source: *BBC Wildlife Magazine* (2024) discoverwildlife.com/animal-facts/mammals/worlds-largest-land-mammal-migration

CyberTracker: software developed in collaboration with Indigenous trackers

By the early 1990s, game populations in South Africa had diminished, Indigenous trackers could no longer survive by hunting, and young people were showing little interest in developing the skill of tracking. Aiming to preserve Indigenous tracking skills, independent scientist Louis Liebenberg began collaborating with trackers to develop CyberTracker. The idea was to create an intuitive, icon-based interface that would enable nonliterate users to collect detailed data on GPS devices, and ultimately ease collaborations between Indigenous communities, scientists and conservation managers. CyberTracker enables the user to select an icon in the shape of a track to identify an animal track. The platform gained many supporters and is now used worldwide; in the 2 million-ha Kruger National Park, for example, 400 rangers now use the app to record observations, including data on invasive species, breaks in fence lines and evidence of poachers. In April 2024, a software update was released after being tested extensively by Indigenous trackers. The Ju/'hoansi trackers of the Kalahari say their decades long involvement with Liebenberg and CyberTracker has produced results.

Source: *Science* (2024) science.org/content/article/app-developed-indigenous-trackers-helps-almost-anyone-monitor-wildlife

Endangered gazelles find refuge in Libya

Eight young rhin gazelles *Gazella leptoceros*—an Endangered species native to North Africa—have been transferred to an uninhabited Libyan island. The hope is that their new home on the 13-km long Farwa island, near Tunisia, will be a haven for the threatened animal, which lives in desert areas in Algeria, Tunisia, Libya and Egypt. Its population has declined significantly because it is a prized target for hunters. The small gazelle is well adapted to desert life with a pale coat that blends into sandy landscapes. They are sold by hunters for as much as USD 1,000 per carcass. In 2016, when the species was first categorized on the IUCN Red List, there were only an estimated 300–600 mature individuals remaining in the wild. Despite the lack of an official census from Libya, numerous NGOs and activists are working to preserve the species. Farwa, though not part of their natural range, appears to have suited the first group of gazelles released on the island.

Source: *Phys.org* (2024) phys.org/news/2024-07-endangered-gazelles-libyan-safe-haven.html

Giant pangolin recorded in Senegal for first time in > 20 years

The giant pangolin *Smutsia gigantea* had not been seen in Senegal since 1999, but while analysing thousands of camera-trap images taken in Nioloko-Koba National Park, a team of researchers spotted the large scaly mammal. The Park is home to a programme to conserve its Critically Endangered West African lion population. During a large carnivore survey aimed at detecting lions, leopards and other animals, the cameras captured the image of the rare pangolin. The species, which is categorized as Endangered on the IUCN Red List, is known to exist in West Africa in Guinea, Sierra Leone and Mali. Its rediscovery in Senegal signals a conservation opportunity and suggests the need for more large protected areas in the country. The researchers have begun to design a comprehensive plan to protect the newly discovered species in the Park. Because of Nioloko-Koba's extreme temperatures, it is an ideal location to study the burrows of pangolins and armadillos. NGO Panthera, Senegal's Direction des Parcs Nationaux and local universities are devising a plan to investigate the complex microhabitats of these burrows and how giant pangolins act as engineers in their ecosystems.

Source: *Panthera* (2024) panthera.org/blog-post/huge-success-giant-pangolin-recorded-senegal-first-time-nearly-25-years

A single elephant's dung can feed 2 million beetles per day

Recent findings reveal a captivating dynamic within the African savannah. In Kenya's Laikipia region, researchers collected two balls of elephant dung, one exposed during the day and the other at night. The daytime dung attracted just over 3,300 beetles, but as night fell, the number surged to an incredible 13,399 beetles by dawn. On average, 1 kg of elephant dung can sustain > 13,400 beetles. Given that an elephant produces c. 145 kg of dung per day, a single elephant can support > 2 million dung beetles daily. Extrapolating these numbers to the Laikipia-Samburu ecosystem, which harbours 5,000–7,500 elephants, the researchers estimated a staggering 14 billion dung beetles across an area of c. 54,000 km². Population declines of the Endangered African savannah elephant *Loxodonta africana* thus have profound implications for the dung beetle populations that rely on them.

Source: *OneGreenPlanet* (2024) onegreenplanet.org/animals/elephant-dung-feeds-2-million-beetles-per-day

The hidden ivory trade: hippos under threat amidst rising demand

The word 'ivory' is usually associated with elephants, and it is well known that the demand for this material has decimated elephant populations, and that the trade in their tusks has been illegal for decades. But ivory is still highly coveted, particularly in mainland China. Ivory trade is worth USD 23 billion per year, with Hong Kong being the primary trafficking portal. And it is not only elephants that are affected. Earlier this year, Hong Kong customs seized a hoard of hippopotamus teeth, which, like the tusks of warthogs and other mammals, are also classed as ivory. Hippo teeth are used similarly to elephant ivory, for example in decorative carvings, and are not only a legal alternative but are also cheaper and more accessible than elephant ivory. In Uganda, the demand for this alternative source of ivory has led to a significant decline in the common hippopotamus population, with > 50% lost nationally in recent years. Globally, their population has dropped by 30% in the last 30 years. Increased law enforcement and public awareness, as well as tighter regulations on the import and export of wildlife products, are paramount to reduce this threat to the semiaquatic animals, which play a key role in their native ecosystem.

Source: *Africa Geographic* (2024) africageographic.com/stories/the-hidden-ivory-trade-hippos-under-threat-amidst-rising-demand

AMERICAS

Brazil launches mangrove conservation programme

The Brazilian government has launched a programme to enhance the conservation of mangroves in the country, which boasts the second-largest area of mangrove cover in the world. President Luiz Inacio Lula da Silva signed a decree establishing the National Programme for the Conservation and Sustainable Use of the Mangroves of Brazil, called ProManguezal and aimed at defining guidelines and actions for bolstering conservation efforts. The programme will focus on six key areas: advancing conservation activities, promoting sustainable use of mangroves, reducing climate change impacts on local communities, scaling conservation financing, disseminating traditional knowledge and training both local communities and public authority members. Marine pollution control, enhanced monitoring of invasive species and the conservation of threatened species in mangrove ecosystems are among the actions outlined by the decree. Source: *Carbon Pulse* (2024) carbon-pulse.com/293832

One of Earth's biggest freshwater fish is bouncing back

Conservation efforts spearheaded by local communities have turned things around for the arapaima, the largest scaled freshwater fish in the world. In areas of the Amazon where communities have adopted sustainable fishing practices, arapaima numbers have increased by 425% in 11 years. In Brazil, the arapaima is known as the *pirarucu*, which translates to 'red fish' in the aboriginal Tupi language, because of its reddish tail. The predatory fish is an air breather that can only stay submerged for 10–20 min before resurfacing to breathe. This makes it easy to catch, and a 2014 study found demand for the species led to severe overfishing that depleted populations. To mitigate this, Brazil's government set up an extensive network of protected areas throughout the Amazon, with several states banning arapaima fishing. To better manage the species, scientists also developed a method to count arapaimas, working closely with local fishers. Based on fish counts, the communities established a sustainable catch quota. Overall, c. 1,100 communities in the Amazon have adopted conservation initiatives for the fish.

Source: *National Geographic* (2024) nationalgeographic.com/animals/article/arapaima-brazil-amazon-conservation-fishing

Coffee producers capture rare Amazon weasel on video

A group of coffee producers has filmed an extremely rare small carnivore, the Amazon weasel *Neogale africana*, near their shade-grown plots during a citizen science monitoring programme. The species had never previously been recorded in Bolivia. The observation represents the southernmost and, at 1,400 m, highest elevation record for the species. Eyner Quispe, the coffee producer who filmed the weasel near a natural spring on his farm, said 'I was not sure what this animal was, but I knew it was not common. Biodiversity is an important part of our coffee story and so I filmed it as best I could. It's a wonderful surprise to find out how important this observation is for Bolivia.'

Sources: *Check List* (2024) doi.org/m9b9 & *Wildlife Conservation Society* (2024) newsroom.wcs.org/news-releases/articletype/articleview/articleId/22954/coffee-producers-capture-rare-amazon-weasel-on-video.aspx

Online trade of wild bats sold as decorations threatens species

Despite declining numbers in the wild, hundreds of specimens of the painted woolly bat *Kerivoula picta* are being sold online as jewellery, Halloween decorations and curios, on sites including Etsy, eBay and Amazon. Researchers led the first comprehensive study of the ornamental trade in a bat species, finding that bats are being sourced from Asia and then brought to the USA and used as decorations. Over a 3-month period, the team identified 284 listings of painted woolly bats, with USA sellers shipping them from 19 states, although 45% of the listings were being sold from Tennessee. About 20% of listings used sales language evocative of environmental concerns, such as 'ethical' and 'sustainable' or claimed the bats were captive-bred and had not been harmed. *Kerivoula picta* is a small bat prized for its striking orange and black colouring and long, woolly fur. The species lives in parts of South, East and Southeast Asia, roosting in leaves and hunting insects in forests and fields. Categorized as Near Threatened on the IUCN Red List, its conservation status is expected to worsen with the rise and ease of global e-commerce. The study authors recommend formal legal protection of the species by inclusion on CITES Appendix I, to prohibit its international trade.

Sources: *European Journal of Wildlife Research* (2024) doi.org/nb7s & *University of California Davis* (2024) ucdavis.edu/climate/news/e-sales-wild-bat-sold-decor-threaten-species

Conservation success for boreal toads

As part of an initiative to boost the population of boreal toads in Colorado, USA, amphibian and aquatic species experts from Denver Zoo Conservation Alliance and Colorado Parks and Wildlife have teamed up to breed and release 2,200 tadpoles into the wild. Starting with 95 adult toads, the team spent > 6 months preparing them for breeding and nurturing their offspring leading up to the release, which occurred in June. This was the second successful release, following a reintroduction of > 600 tadpoles in 2022. Although categorized as Least Concern on the IUCN Red List, the species is listed as Endangered in the states of Colorado and New Mexico. Once common in montane habitats in the Southern Rocky Mountains, the boreal toad has experienced dramatic population declines over the past 2 decades and officials estimate there may only be 800 wild adult toads left in the state of Colorado. The amphibians face threats from habitat loss, rising temperatures and chytrid fungus.

Source: *Denver Zoo Conservation Alliance* (2024) denverzoo.org/zootales/another-toad-al-success

Indigenous People build road bridges for primates

Brazil has the world's fourth-largest road network, and vehicle collisions are a leading cause of death for the country's primate species, 40% of which are threatened. One such road is the BR-174, which crosses the states of Amazonas and Roraima. Working together, the Reconecta Project and the Waimiri-Atroari Indigenous People build bridges that connect the forest canopy over the road, allowing primates to cross safely. The project was created by biologist Fernanda Abra, who recently won a Whitley Award for her tireless efforts for nature conservation. Finding the best locations to install bridges was one of the most important actions of the project. A 125 km stretch of the BR-174 cuts through part of the land inhabited by the Waimiri-Atroari Indigenous People, who are exemplary custodians of their territory. In 2022, 30 bridges that had been constructed with the help of the Waimiri-Atroari people were installed in this area and monitored. In the first 10 months, eight mammal species were documented using the bridges. Camera-trap videos showed that out of various bridge designs, local arboreal mammals prefer the model that has just a single, thick rope weaved over a steel cable.

Source: *Mongabay* (2024) news.mongabay.com/2024/06/indigenous-people-in-the-amazon-are-helping-to-build-bridges-save-primates

ASIA & OCEANIA

Bornean elephant categorized as Endangered on the IUCN Red List

The Bornean elephant *Elephas maximus borneensis* has been categorized as Endangered following its first assessment as a distinct subspecies on the IUCN Red List, with an estimated 1,000 individuals remaining in the wild. The population has diminished over the past 75 years, initially because of extensive logging of Borneo's forests destroying the majority of the elephant's habitat. As the human population has rapidly expanded in Sabah, elephants are more frequently entering human-dominated landscapes in search of food, where they may cause damage to crops and face retaliation. Further habitat loss from agriculture, timber plantations, mining and major infrastructure projects threatens the future of the subspecies, adding to poaching for ivory, accidental ingestion of agrochemicals and collisions with vehicles. Source: IUCN (2024) iucn.org/press-release/202406/bornean-elephant-endangered-iucn-red-list

Jail term for Malaysian ex-police officer trafficking pangolins

Almost 6 years after he was caught for illegal possession of 81 pangolins, a former police officer has been sentenced to one of the longest jail terms Malaysia has handed out for a crime involving the world's most trafficked mammal. After being arrested in August 2018, he was sentenced in June 2024 to a total of 15 years and 9 months in jail on four charges including illegal possession of juvenile and female pangolins under the Wildlife Conservation Act 2010. However, he is expected to serve only 6.5 years in jail as the terms on the four separate charges will run simultaneously. The sentence is especially significant because no fines were issued, making this a hard-hitting prison-only punishment. The case follows several arrests of other enforcement officers involved in pangolin smuggling who also work in the state of Kedah, which lies in the north of Peninsular Malaysia bordering Thailand and frequently witnesses wildlife smuggling attempts. The trial also spotlights the continued pressure on the Critically Endangered Sunda pangolin in the wild, with TRAFFIC data showing more than 80 incidents involving > 2,500 individuals seized in Malaysia during 2014–2023.

Source: TRAFFIC (2024) traffic.org/news/long-jail-term-for-malaysian-ex-police-officer-caught-with-critically-endangered-pangolins

Frog saunas help frogs fight deadly fungal disease

One of Australia's most threatened amphibians can fight off the deadly disease chytridiomycosis with the help of a naturally heated shelter, which researchers have dubbed a frog sauna. It has long been known that high temperatures limit fungal infections, and many frog species are particularly susceptible to the disease in winter when it is difficult to raise their body temperatures. Researchers studied two groups of captive bell frogs *Litoria aurea* that were deliberately infected with chytridiomycosis during winter. The first group was provided with bricks with holes in them inside an unshaded greenhouse shelter where temperatures reached highs of nearly 40 °C, whereas temperatures in the second group's greenhouse reached only 35 °C. The number of fungal spores present on the frogs' skin was 100 times lower in the warmer shelters. Chytrid fungus struggles to grow above 28 °C, and the higher temperature also seems to activate the frogs' immune system. The researchers think the technique could also work for other species, providing they naturally seek out warmth. Importantly, these heat shelters can be readily and inexpensively deployed.

Sources: Nature (2024) doi.org/m5mz & New Scientist (2024) [newscientist.com/article/2437179-winter-sauna-helps-endangered-frogs-fight-off-fungal-disease](https://www.newscientist.com/article/2437179-winter-sauna-helps-endangered-frogs-fight-off-fungal-disease)

Using artificial intelligence to save the Tasmanian devil

Scientists at the University of Tasmania are using groundbreaking artificial intelligence (AI) technology to tackle the spread of Devil Facial Tumor 2 (DFT2), a transmissible cancer affecting Tasmanian devils. With potential applications extending beyond Tasmanian devils to other species and diseases, the project could revolutionize wildlife disease management globally. It combines data from remote cameras and AI software to process thousands of images and identify diseased individuals. The use of AI saves time by eliminating the time lag caused when experts need to manually process camera-trap images. A key part of the project is involving local landowners and community members. By working with local councils, government and non-government organizations, the project aims to create a community-based monitoring network. This new methodology is set to become the standard approach to monitor devil populations and DFT infection dynamics across Tasmania.

Source: Phys.org (2024) phys.org/news/2024-06-ai-tasmanian-devil.html

Landmark debt swap to protect Indonesia's coral reefs

The government of Indonesia has announced a deal to redirect more than USD 35 million it owes to the USA into the conservation of coral reefs. The so-called debt-for-nature swap will fund coral restoration in two key areas of the Pacific Ocean's Coral Triangle. Debt-for-nature swaps aim to alleviate two problems for developing countries: heavy debt burdens and a lack of funding for conservation. Indonesia has participated in three earlier swaps, but this will be the first to focus on protecting coral reefs. Roughly 18% of the world's coral reefs are found in Indonesia's waters, where they provide food, livelihoods and storm protection for coastal communities. The deal was made possible under the Tropical Forest and Coral Reef Restoration Act, which allows countries to reduce their debt to the USA in exchange for commitments to conserve nature.

Source: Conservation International (2024) conservation.org/blog/us-indonesia-swap-debt-to-protect-coral-reefs

New hope for the Critically Endangered Siamese crocodile

Sixty Siamese crocodiles, from five separate nests, have successfully hatched in Cambodia's Cardamom National Park—the largest record of this species breeding in the wild this century and a boost for the survival prospects of this Critically Endangered reptile. Once widespread in the wetlands of Southeast Asia, the species has disappeared from 99% of its former range. In May 2024, local people discovered three nests in an area where captive-bred crocodiles have never been released before, suggesting this is a key natural habitat for the species and that long-term protection efforts are allowing wild populations to recover. The nests were reported to Fauna & Flora's Cambodian conservation team and the local community wardens, who ensured they were protected around the clock. Days later, two more nests were found elsewhere in the Park.

Source: Fauna & Flora (2024) fauna-flora.org/news/new-hope-for-critically-endangered-siamese-crocodile

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 Jon Paul Rodriguez. Contributions from authoritative published sources (including websites) are always welcome. Please send contributions by e-mail to oryx@fauna-flora.org.