

SPOTLIGHT ON HEALTH AND CONSERVATION

Strong regional commitment to One Health approach in Central Asia

Five Central Asian countries—Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan—have jointly confirmed their interest in mitigating the risk of zoonosis emergence in the region by enhancing overall landscape resilience through the One Health approach. Natural processes that regulate disease occurrence and transmission are affected by climate change, habitat loss and fragmentation, and increased contact between people, wildlife and domesticated species. With the support of IUCN and international partners, national authorities and experts are ready to take steps towards improving the effective governance and management of protected areas, and apply the One Health approach together with the IUCN Green List Standard and the latest knowledge on zoonoses. The efforts should result in conservation outcomes beneficial to people, especially local communities and vulnerable groups.

Source: IUCN (2023) [iucn.org/news/202303/strong-regional-commitment-one-health-approach-central-asia](https://www.iucn.org/news/202303/strong-regional-commitment-one-health-approach-central-asia)

Uganda's first wildlife vet highlights links between gorilla and human health

Gladys Kalema-Zikusoka became Uganda's first wildlife veterinarian in the 1990s. Since then, she has founded the wildlife charity Conservation Through Public Health (CTPH), became vice president of the African Primatological Society and joined the leadership council of Women for the Environment Africa. A particular focus of her work is to protect gorillas and other wildlife by prioritizing human health. Many people living near wild gorillas lack access to good hygiene facilities and often struggle with food insecurity—both factors that pose a risk to gorillas as people enter forests and potentially spread diseases to the apes or hunt them for food. Tackling poverty and improving human health are thus central to the mission of CTPH. Kalema-Zikusoka also highlights the role of family planning in reducing poverty and disease among rural communities.

Source: *The Guardian* (2023) [theguardian.com/environment/2023/may/11/ugandas-first-wildlife-vet-on-breaking-the-mould-and-why-gorilla-and-human-health-are-linked](https://www.theguardian.com/environment/2023/may/11/ugandas-first-wildlife-vet-on-breaking-the-mould-and-why-gorilla-and-human-health-are-linked)

Preventing future pandemics by protecting bats . . .

The Covid-19 pandemic can be traced back to a bat virus, and bats are known reservoirs for a wide range of viruses that can infect other species, including people. One solution to reduce the risk of future pandemics may thus lie in a global taboo against consuming, harming or disturbing bats, according to a new study. Many rural communities globally rely on wild meat, but bats do not appear to be critical to most people's food security and could thus potentially be omitted from the human diet with minimal negative effects. Given that most of the activities of concern—such as bat hunting, consumption and trade, bat guano harvesting, cave tourism and incursions into key bat habitats with livestock, homesteads, mines and crop agriculture—occur in low- and middle-income countries, the authors recognize the need to mitigate any socio-economic or cultural burdens that changes in behaviour would cause, and call for wealthier countries to provide compensation.

Sources: *The Lancet Planetary Health* (2023) [doi.org/10.1016/S2542-5196\(23\)00077-3](https://doi.org/10.1016/S2542-5196(23)00077-3) & *Cornell University* (2023) [vet.cornell.edu/news/20230606/preventing-pandemics-not-seizing-low-hanging-fruit-bat](https://www.vet.cornell.edu/news/20230606/preventing-pandemics-not-seizing-low-hanging-fruit-bat)

. . . and analysing their droppings

A team of scientists from the University of Ghana's veterinary school are analysing bat droppings in an effort to obtain clues about how to prevent any future pandemics. Ghana has joined other countries including Bangladesh and Australia as part of a global project called Bat OneHealth, which investigates how pathogens are transmitted from one species to another and what can be done to prevent so-called spillover events. In light of the Covid-19 pandemic, the bat-borne viruses that are the focus of this research include coronaviruses as well as paramyxoviruses. In humans, these viruses are more familiarly experienced as illnesses such as mumps, measles and respiratory tract infections. When working with wild bat populations, the team did not detect the Covid-19 virus. The University of Ghana has been at the forefront of this new area of research, with this project being the first of its kind. There are still many gaps in scientific understanding, and improving our knowledge of bats and their unusual immune systems is crucial.

Source: *BBC News* (2023) [bbc.co.uk/news/world-africa-66122925](https://www.bbc.co.uk/news/world-africa-66122925)

Prescribed time in nature linked to improved health

Prescriptions encouraging people to spend more time in nature are linked to improvements in mental and physical health, according to an analysis of 92 studies. Australian academics reviewed research into the impacts and effectiveness of nature prescribing in different countries and found that the most frequently recommended activities were walking in nature (46% of all programmes), farming or gardening (29%) and mindfulness exercises (29%). Common settings were forests and nature reserves (35% of prescriptions), parks (28%) and community or home gardens (16%). A meta-analysis of data in 28 of the studies that measured similar outcomes found that nature prescriptions were associated with better blood pressure control, improvements in anxiety and depression symptoms, and an increase in average daily step counts among participants.

Sources: *The Lancet Planetary Health* (2023) [doi.org/10.1016/S2542-5196\(23\)00025-6](https://doi.org/10.1016/S2542-5196(23)00025-6) & *The Guardian* (2023) [theguardian.com/environment/2023/apr/04/prescribed-time-in-nature-linked-to-improvements-in-anxiety-depression-and-blood-pressure](https://www.theguardian.com/environment/2023/apr/04/prescribed-time-in-nature-linked-to-improvements-in-anxiety-depression-and-blood-pressure)

Women's group to reopen oxygen homes if wildfires intensify

In July 2023, Indonesia's oldest women's Islamic organization prepared volunteers in Kalimantan and Sumatra to open clean air sanctuaries, should a strengthening El Niño accelerate wildfires over the coming months. The organization 'Aisyiyah was founded in 1917 to advocate for education rights for girls. In 2015, 'Aisyiyah established its environmental subgroup to respond to environmental damage in the community. As wildfires burned across 3.1 million ha in Indonesia during 2019, 'Aisyiyah volunteers operated *Rumah Oksigen* (Oxygen Homes) equipped with air purifiers to help those most susceptible to hazardous air circulating outside. In West Kalimantan province, two Oxygen Homes have remained active every year since the 2019 fires. Indonesia's meteorology agency has advised that a potentially dangerous dry season looms, elevating risks of wildfires on the largest reserves of tropical peatlands.

Source: *Mongabay* (2023) [mongabay.com/2023/07/muslim-womens-group-to-reopen-oxygen-homes-if-indonesia-wildfires-intensify](https://www.mongabay.com/2023/07/muslim-womens-group-to-reopen-oxygen-homes-if-indonesia-wildfires-intensify)

INTERNATIONAL

Indigenous and local communities see gains in land rights

Land legally designated or owned by Indigenous, Afro-descendant and local communities increased by 102.9 million ha during 2015–2020, according to a new report released by the Rights and Resources Initiative. These groups now own more than 11% of Earth's land. Over the last decades, there has been a concerted push by human rights bodies and environmental organizations to recognize Indigenous rights because of their role in tackling the climate and biodiversity crises. A growing body of research has connected Indigenous land rights in certain regions with low rates of deforestation and forest degradation. Covering 73 countries representing 85% of the world's terrestrial surface, the report showed increases across 21 countries, with 85% of these being newly recognized areas owned by communities.

Sources: *Rights and Resources Initiative* (2023) rightsandresources.org/publication/who-owns-the-worlds-land-2nd-ed & *Mongabay* (2023) news.mongabay.com/2023/06/indigenous-and-local-communities-see-big-gains-in-land-rights-study-shows

Record heat waves sweep across northern hemisphere

Temperatures soared towards new highs across three continents in July 2023, as heatwaves and wildfires were scorching parts of the northern hemisphere. Health authorities sounded alarms from North America to Europe and Asia, urging people to stay hydrated and shelter from the burning sun. California's Death Valley, often among the hottest places on Earth, reached a near-record 53.3 °C. Near Athens, Greece, a forest fire flared in strong winds by the popular beach town of Loutraki, where children had to be evacuated from holiday camps. Europe, the globe's fastest-warming continent, was bracing for its hottest-ever temperature on Italy's islands of Sicily and Sardinia, where a high of 48 °C was predicted. China reported a new high for mid-July in the northwest of the country, where the temperature reached 52.2 °C. Along with the heat, parts of Asia have also been battered by torrential rain. South Korea's president vowed to completely overhaul the country's approach to extreme weather, after at least 40 people were killed in flooding and landslides during monsoon rains.

Source: *Al Jazeera* (2023) [aljazeera.com/news/2023/7/17/extreme-weather-grips-the-globe-as-heatwaves-and-wildfires-rage](https://www.aljazeera.com/news/2023/7/17/extreme-weather-grips-the-globe-as-heatwaves-and-wildfires-rage)

Agreement adopted for conservation in over two-thirds of the ocean

In June 2023, the UN adopted a historic agreement aiming to ensure the conservation and sustainable use of marine biodiversity of areas beyond national jurisdictions, which cover over two-thirds of the ocean. Building on the legacy of the Convention on the Law of the Sea, this groundbreaking agreement significantly strengthens the legal framework and provides an essential framework for cross-sectoral cooperation between nations and other stakeholders to promote the sustainable development of the ocean and its resources and to address threats. The effective and timely implementation of this agreement will make crucial contributions to achieving the ocean-related goals and targets of the 2030 Agenda for Sustainable Development and the Kunming–Montreal Global Biodiversity Framework.

Source: *United Nations* (2023) un.org/sg/en/content/sg/note-correspondents/2023-06-19/note-correspondents-press-release-historic-agreement-adopted-for-conservation-and-sustainable-use-of-biodiversity-over-two-thirds-of-the-ocean

Global interactive map of marine protected areas released

ProtectedSeas, a marine conservation organization, has launched the first global map of the world's marine life regulations and their boundaries. The free, interactive map, called Navigator, shows marine protected and managed areas across 220 countries and territories and in 25 languages. The Navigator map offers a global view of marine protections to help inform progress towards international conservation goals, including protecting 30% of the global ocean by 2030. In addition to a comprehensive inventory of marine protected areas, the map includes other marine managed areas such as water protection areas, speed-limit zones to protect marine mammals, fisheries management areas and other effective area-based conservation measures. The Navigator team scoured the globe to compile all marine protection information in the global database for large and small marine protected areas. The work involved creating the first digital maps for over 2,400 (c. 10%) of the areas that were previously only detailed on paper. The team also created a system to evaluate an area's level of protection from fishing, with each area being assigned a Level of Fishing Protection score based on an analysis of restrictions on the extraction of marine life.

Source: *Global Seafood Alliance* (2023) globalseafood.org/advocate/protectedseas-releases-global-interactive-map-of-marine-protected-areas

Microbes play leading role in soil carbon capture, study shows

More carbon is stored in the soil than in all plants, animals and the atmosphere combined, making it among the most critical conservation frontiers as we face the climate crisis. According to a recent study, microbes are the key drivers behind carbon storage in soil, surpassing other soil processes by a factor of four. When plants and other organisms die, microorganisms such as bacteria and fungi release enzymes that break those organisms down into reusable nutrients and smaller carbon compounds. Some of those carbon compounds feed soil organisms, some accumulate in the soil and become attached to particles, and some are exhaled as carbon dioxide into the atmosphere. When carbon is held in the soil, it can remain stable there for millions of years if undisturbed, making soil a very effective carbon sink. Conservationists and policymakers are now paying more attention to the soil as a nature-based solution to climate change.

Sources: *Nature* (2023) doi.org/gr9qbq & *Mongabay* (2023) news.mongabay.com/2023/06/microbes-play-leading-role-in-soil-carbon-capture-study-shows

Hundreds of at-risk species not covered by global trade protections

A new study has revealed that two-fifths of species likely threatened by the international wildlife trade are not covered by the global agreement that regulates it. This includes 370 species that are Critically Endangered or Endangered on the IUCN Red List. With the Kunming–Montreal Global Biodiversity Framework recently put into place, a team of researchers set out to identify potential gaps in international trade protections for biodiversity. They identified species likely threatened by international trade and compared these with the species listed in the international wildlife trade protections set by CITES. In total, there were 2,211 species that are likely to be threatened by international trade. Of these, 904 are not included in current CITES protections, including hundreds of fishes and flowering plants, as well as many species of birds, reptiles and amphibians. Of these species, 370 are classed as Endangered or Critically Endangered, including 31 species of sharks and rays, and 23 species of palm traded for horticulture. To date, there has been no robust, repeatable methodology to inform the CITES listing process.

Sources: *Nature Ecology & Evolution* (2023) doi.org/kkb4 & *The University of Oxford* (2023) ox.ac.uk/news/2023-07-12-more-900-risk-animal-and-plant-species-not-covered-global-trade-protections-new

EUROPE

Black eyes in seabirds indicate bird flu survival

A study has discovered evidence that northern gannets can recover from Highly Pathogenic Avian Influenza H5N1, with black irises being an indicator of a previous infection. Scientists from multiple organizations investigated outbreak timings at colonies across their North Atlantic range. At their largest colony at Bass Rock, UK, a detailed study was conducted to estimate the impact of the virus on colony size, breeding success, adult survival, and whether gannets were potentially able to recover from an infection. Black irises—instead of the usual pale blue—were first seen in gannets breeding on Bass Rock in June 2022. The team took blood samples from 18 apparently healthy adult gannets with both normal and black irises, which were tested for bird flu antibodies to determine whether the birds had been previously infected. Eight tested positive, of which seven had black irises. This could prove useful as a non-invasive diagnostic tool. The northern gannet is the first species of wild bird known to be able to recover from avian flu.

Source: RSPB (2023) rspb.org.uk/about-the-rspb/about-us/media-centre/press-releases/black-eyes-in-seabirds-indicates-bird-flu-survival

Wildlife poisoning incidents in Central Apennines

Instances of suspected poisoning in the Central Apennines rewilding landscape in Italy, which have led to the deaths of an entire wolf pack, a number of griffon vultures and other wildlife, drive home the fact that human-wildlife coexistence in Europe is not without challenges. Instances of poisoning in the area frequently coincide with the driving of livestock to high-altitude pastures in the spring. Although the vast majority of livestock farmers value the nature around them and respect wildlife protection laws, some individuals have been convicted of placing poisoned carcasses in areas frequented by wolves, in an attempt to stop predation on calves and lambs. Truffle pickers and hunters have also been known to kill dogs and wolves by poisoning. These poisoning incidents featured in a wide range of Italian media and a letter was sent to national and regional authorities, asking for actions to reduce the risk to wildlife and people.

Source: *Rewilding Europe* (2023) rewildingeurope.com/news/poisoning-incident-in-central-apennines-highlight-the-challenges-and-opportunities-of-wildlife-comeback

Scotland: wildcats released in Cairngorms National Park . . .

After years of extensive preparations by the Saving Wildcats conservation partnership project, the release of 22 Critically Endangered wildcats into the Cairngorms Connect Partnership Area began in June 2023 as part of landmark efforts to save this charismatic species from extinction within Scotland. The partnership has released the cats into undisclosed locations within the Cairngorms Connect landscape of the Cairngorms National Park, where they will be carefully monitored using GPS radio collars. It is envisioned that c. 20 cats will also be released in 2024 and 2025. These trial releases of c. 60 wildcats over 3 years constitute the first ever conservation translocation of wildcats in Britain. The project, which has undertaken widespread engagement with local communities, has drawn on global conservation and scientific expertise to further our knowledge of wildcat ecology and behaviour. The cats were born in a purpose-built conservation breeding centre based at Highland Wildlife Park in 2022. The cats bred for release are not available for public viewing to help them prepare for life in the wild.

Source: *Cairngorms Connect* (2023) cairngormsconnect.org.uk/news/wildcats-released-into-Cairngorms-Connect-landscape

. . . and more than 50 pilot whales die after mass stranding

A pod of more than 50 pilot whales died after becoming stranded on a beach on the Isle of Lewis, Scotland, UK. British Divers Marine Life Rescue (BDMLR), the organization that responded to the report of the stranding, said most of the 55-strong pod died shortly after washing up on the coastline, with only 15 still alive when they were found. Dan Jarvis of BDMLR explained that whales can only survive for c. 6 hours on land before they start to deteriorate, and it is thought the pod had been stranded during the night. After attempts to refloat two of the more active whales, one was successfully released, while the other was re-stranded and later died. Rescuers later decided to euthanize the remaining stranded whales, which had been out of the water for hours, on welfare grounds, after concluding that the conditions were not safe enough to attempt to refloat the remaining animals. The Scottish Marine Animal Stranding Scheme said it could be the largest fatal mass stranding event in Scotland for decades.

Source: *CNN* (2023) edition.cnn.com/2023/07/17/uk/lewis-scotland-pilot-whales-stranding-deaths-intl-scli-scn-uk/index.html

Rebellious birds make nests out of anti-bird spikes

In a new study, biologists have described bird nests made from anti-nesting spikes. Researchers from two Dutch natural history museums collected such nests for the first time and described this remarkable behavior as ‘an ultimate adaptation to life in the city’. Sharp metal spikes are often placed on city buildings to prevent birds from resting and nesting. The researchers collected nests of a carrion crow and a Eurasian magpie that were largely composed of anti-bird spikes. In Antwerp, in a hospital courtyard, the first such nest was spotted in a tree: magpies had made a large nest using up to 1,500 metal spikes. Magpies often make a roof of thorny twigs over their nests to prevent predators from consuming their eggs and young. It appears that in an urban environment, they may use the metal spikes for the same purpose: to keep other birds away. Magpie nests made with anti-bird spikes had previously been reported from the Netherlands, Belgium and Scotland, but crows’ nests using such materials are so far only known from the Netherlands.

Sources: *Deinsea* (2023) hetnatuurhuis.nl/fileadmin/user_upload/documents-nmr/Publicaties/Deinsea/Deinsea_21/Deinsea_21_17_25_2023_Hiemstra_et_al.pdf & *Phys.org* (2023) phys.org/news/2023-07-rebellious-birds-anti-bird-pins.html

Huge amounts of plastic from artificial grass end up in the sea

Pieces of artificial grass can make up a large portion of the plastic found in the sea close to a major city, a study in Spain has revealed. A team at the University of Barcelona analysed 217 water samples collected off the coast of Barcelona, in north-east Spain, and 200 from the Guadalquivir River in Seville, in the south-west of the country. They focused their analysis on plastic pieces > 5 mm, excluding smaller particles because it is harder to determine where they come from. Fibres that make up artificial grass are usually thin, long, curled and green, making them easy to identify. In Barcelona, there was a high concentration of fibres from artificial grass, which accounted for 15% of plastic pieces in the water samples. In the Guadalquivir River in Seville, the concentration of plastic pollution from artificial grass was on average 50 times lower than off the coast of Barcelona. The researchers believe the issue is likely to be global.

Sources: *Environmental Pollution* (2023) doi.org/10.1016/j.envpol.2023.07.015 & *New Scientist* (2023) [newscientist.com/article/2383869-huge-amounts-of-plastic-from-artificial-grass-end-up-in-the-sea](https://www.newscientist.com/article/2383869-huge-amounts-of-plastic-from-artificial-grass-end-up-in-the-sea)

AFRICA

Similar to humans, elephants vary what they eat for dinner

Not only are elephants hard to monitor, but it is nearly impossible to identify what they eat by simply observing them. A new, detailed analysis of their diets showed a surprising variation, which could have important ramifications for conservation. The study analysed the dietary habits of two groups of African elephants in Kenya, down to the specific types of plants eaten by individuals. The researchers used DNA metabarcoding, which reveals the composition of biological samples by matching DNA fragments from samples to a library of plant DNA barcodes. The approach was combined with GPS-tracking, remote-sensing data and analyses of carbon stable isotopes from elephant faeces and hair, and showed that dietary differences among individuals were often far greater than expected. Individual elephants appear to vary their diets based not only on what is available, but also their preferences and physiological needs.

Sources: *The Royal Society Open Science* (2023) doi.org/kjpt & *Brown University* (2023) brown.edu/news/2023-07-05/elephants

Gabon is becoming a global leader in biodiversity conservation

Gabon is sparsely populated, and c. 88% of the country's land remains covered by intact native forest. These, together with expansive river networks, wetlands and the mangrove-dotted Atlantic coast, provide crucial habitats for diverse wildlife including western lowland gorillas, African forest elephants and countless species of birds, as well as manatees, African dwarf crocodiles and leatherback sea turtles. As Gabon's oil reserves run out, leaders are looking for more sustainable ways to support the economy. High unemployment and the country's heavy reliance on imported food could threaten the pristine forest landscapes with conversion to agriculture, yet Gabon continues to scale up its conservation ambitions. To achieve its goals, the country is employing a range of political and financing mechanisms, supported by various philanthropic and non-profit organizations. For example, a so-called debt-for-nature swap with The Nature Conservancy is expected to save Gabon c. USD 5 million per year for 15 years, which will be used to pay for conservation projects.

Source: *Landscape News* (2023) news.globallandscapesforum.org/61259/green-gabon-the-west-african-nation-leading-the-world-in-biodiversity-protection

A primate success story in Tanzania

A recent census showed that the population of the kipunji monkey *Rungwecebus kipunji* in Tanzania's Southern Highlands has increased by 6.5%, while signs of human impacts in its habitat decreased by 81%, over a 13-year period. The increase follows 20 years of intensive holistic conservation efforts by the Wildlife Conservation Society and Tanzanian government partners, including greater legal protection for forests and community engagement. The kipunji, which is endemic to Tanzania, is categorized as Endangered on the IUCN Red List, with an estimated total population of 1,966 individuals in two subpopulations. The species was first described in 2005, after being spotted by two separate research groups in 2003 and 2004. The primate was initially named the highland mangabey *Lophocebus kipunji*, but following genetic analysis of a dead specimen it was renamed, making it the first new primate genus described in Africa in > 80 years. The discovery drew international attention and attracted funding, allowing the Wildlife Conservation Society to work with partners to implement a long-term conservation programme.

Sources: *International Journal of Primatology* (2023) doi.org/kk2r & *Mongabay* (2023) news.mongabay.com/2023/07/meet-the-kipunji-a-rare-primate-success-story-in-tanzania

Seagrass meadows have supported green turtle populations for millennia

For c. 3,000 years, generations of green sea turtles have returned to the same seagrass meadows to forage. Willemien de Kock, a historical ecologist at the University of Groningen, discovered this by combining modern data with archaeological findings. De Kock studied the bones of green and loggerhead turtles that had been previously excavated from archaeological sites in the Mediterranean Sea, and was able to identify what the turtles had been eating by inspecting the bone collagen with a mass spectrometer. Modern satellite tracking data then provided information on the current routes and destinations of sea turtles. This made it possible to connect diets of millennia ago to specific locations, finding that for c. 3,000 years, generations of sea turtles have been feeding on sea grass meadows along the coasts of Egypt and West Libya. The fact that the same breeding and foraging areas are revisited by turtles over many generations highlights the importance of protecting seagrass meadows along the coasts of North Africa.

Sources: *PNAS* (2023) doi.org/kk9g & *EurekAlert!* (2023) eurekalert.org/news-releases/995472

South African white rhinoceroses relocated to Garamba National Park

In 2008, a survey of Garamba National Park in the Democratic Republic of the Congo (DRC) concluded that the last wild northern white rhinoceros *Ceratotherium simum cottoni* in the Park had died, making this subspecies extinct in the wild. Now, white rhinoceroses are back in Garamba, as 16 individuals of the southern subspecies *Ceratotherium simum simum* have been relocated to the Park from South Africa. More southern white rhinoceroses, also sourced from South Africa, are expected to be sent to the Park in the future. The recent move was funded by a Canadian mining company, which operates a gold mine in north-eastern DRC. The move is part of the company's sustainability policy, and may also have been made in efforts to salvage its reputation, which has been damaged by violent conflicts at its North Mara Mine in Tanzania.

Source: *Save the Rhino* (2023) savetherhino.org/africa/south-african-white-rhinos-relocated-to-garamba-national-park

A voice for amphibian conservation in Ghana

Dr. Caleb Ofori-Boateng grew up in national parks in Ghana, with a father who was passionate about conservation and worked as a ranger and assistant park manager. Caleb credits childhood experiences with his father for his devotion to conservation, but rather than focusing on mammals such as baboons and elephants, which fascinated him as a child, he developed a special affinity for frogs. Caleb was the first formally trained herpetologist in the country, and has since founded Herp Conservation Ghana, a non-profit organization dedicated to amphibian and reptile conservation. The Rainforest Trust has supported the organization since 2017, helping to first create and later expand the Onepono Endangered Species Refuge to protect the elusive Togo slippery frog and other threatened species from logging, hunting and the expansion of agriculture and settlements. There is strong community support for the project, mostly thanks to Caleb's obvious passion for the work and his close connection with the local Avatime people, whose ancestry dates back thousands of years in the region. Thanks to the conservation actions undertaken by Herp Conservation Ghana, which include a successful ecotourism venture, the frog populations in the Refuge are now increasing.

Source: *Rainforest Trust* (2023) rainforesttrust.org/our-impact/rainforest-news/voices-on-the-ground-a-pioneer-for-amphibians-in-africa

AMERICAS

World's rarest marine mammal clings on at the edge of extinction

Against all odds, the handful of remaining Critically Endangered vaquitas are holding on in their only habitat in the Gulf of California in Mexico, according to a new report. Experts estimated they saw 10–13 of the porpoises during nearly 2 weeks of sailing in May 2023, a similar number to that seen in the last such expedition in 2021. Because vaquitas are small and elusive, many of the sightings are categorized as probable or likely. The animals also emit clicks that can be detected through acoustic monitoring devices. The experts also reported seeing at least one and probably two young calves, raising hopes for the survival of the world's most threatened marine mammal. The voyage only covered part of the vaquita's habitat in the Gulf, and more individuals may be out there. The population has declined from nearly 600 in 1997, mostly because the animals become trapped in illegal gillnets set to catch totoaba, a fish whose swim bladder is considered a delicacy in China. Although the Mexican government has made some efforts to stop gillnet fishing, fishers still enter the protected area on a daily basis.

Source: *EuroNews Green* (2023) euronews.com/green/2023/08/08/vaquita-are-survivors-worlds-rarest-marine-mammal-clings-on-at-the-edge-of-extinction

First crocodile virgin birth reported

The first evidence of a virgin birth in crocodiles has been reported in a captive American crocodile *Crocodylus acutus*, who was housed on her own for 16 years in a zoo in Costa Rica. The female crocodile laid a clutch of 14 eggs, of which seven seemed viable and were artificially incubated. The eggs failed to hatch and the contents of six of them were indiscernible, but one contained a fully formed fetus, genetically identical to its mother, showing no evidence of input from a male. Virgin births, known as parthenogenesis, are a form of asexual reproduction. They do not require genetic information from sperm and happen when an embryo develops in an unfertilized egg. Parthenogenesis, which has previously been documented in birds, lizards, snakes and fish but never before in crocodiles, is often triggered when there are not many males around, for example when captive animals are kept in single-sex enclosures.

Sources: *Biology Letters* (2023) doi.org/10.1098/rsbl.2023.0605 & *Phys.org* (2023) phys.org/news/2023-06-crocodile-virgin-birth-science-history.html

Poachers targeting toad containing powerful psychotropic compound

The Sonoran Desert toad is increasingly being caught by poachers. The reason is 5-MeO-DMT, a powerful psychotropic compound within the toads' bodies. The nocturnal toad, one of the largest in the USA, emerges to feed and breed during the wet North American summers. Interest in its psychoactive properties began in the 1960s, rose in the 1990s, and tapered off until c. 2017. Now, there are expensive retreats in Mexico, where 5-MeO-DMT is administered for curative, emotional, spiritual or recreational purposes. The toxin is legal in Mexico, where most poaching of the species has been reported, but is listed as a Schedule 1 drug in the USA. The situation is complicated by the fact that 5-MeO-DMT is currently being studied as a possible treatment for depression and anxiety. The concern is that poaching, combined with worsening drought conditions, could lead to population declines.

Source: *National Geographic* (2023) nationalgeographic.com/animals/article/sonoran-desert-toad-dmt-psychedelic-movement

How frogs win lawsuits in Ecuador . . .

In a historic victory for nature, the Provincial Court of Imbabura in Ecuador stopped a large mining project because it threatened endemic species. Ecuador was the first country to enshrine the Rights of Nature in its constitution in 2008. In 2014 in the biodiverse Intag Valley, a large-scale mining project was established without consulting the affected communities. In the first phase of exploration, the companies cut down 700 ha of forest and poisoned water streams. Local communities had tried to halt the project for > 30 years because of environmental concerns, with little success. However, the rediscovery of two rare frog species, the longnose harlequin frog and confusing rocket frog, prompted the Ministry of Environment to conduct an environmental study in the valley. It found at least 58 Endangered species and several more that are Critically Endangered, and concluded that a previous study conducted by the mining companies had concealed the number of threatened species in the area. Local communities subsequently achieved a revocation of a past court ruling and sued the mining companies on behalf of the frogs. The Court eventually declared that the rights of nature and of environmental consultation had been violated, removing the mining licenses indefinitely.

Source: The London School of Economics and Political Science (2023) blogs.lse.ac.uk/internationaldevelopment/2023/07/17/how-frogs-win-lawsuits-in-ecuador

. . . and Indigenous communities conserve caimans in Colombia

The black caiman is sacred to the Indigenous Peoples of Colombia's lower Caquetá River, who believe it descended from a man and now rules over the waters and fish. Up to 7 m long, it is the largest member of the alligator family. Its dark skin absorbs heat by day and provides camouflage during nocturnal hunts, but has also made it vulnerable to exploitation. As demand for alligator leather has grown, black caimans have become an easy target for hunters because of their large size. In 2008, when the Borikada and Curare communities began to notice the dwindling numbers, they acted to reverse the trend. With funding from Conservation International, a community monitoring programme was set up. Last year, the communities led the first ever survey of the species, counting 123 black caimans. Prior to conducting the survey, Conservation International, the communities' elders and local people working on the project participated in a knowledge exchange, where they learned both about the communities' goals for the survey and the scientific approach to monitoring, including counting and measuring species.

Source: *Conservation International* (2023) conservation.org/blog/news-spotlight-how-indigenous-communities-brought-a-sacred-caiman-back-from-the-brink

California Condors to be vaccinated against bird flu

Officials in the USA have authorized the vaccination of the Critically Endangered California condor against bird flu. It is the first time that the country has approved inoculation of any bird against highly pathogenic avian influenza. The approval comes as the H5N1 strain of bird flu has spread to an unprecedented number of countries and killed hundreds of millions of birds. Some countries already vaccinate birds, including commercial flocks. The severity of the outbreak is driving some nations that have been hesitant, including the USA, to follow suit. In 2023, up to the end of May, officials found 21 dead condors, 15 of which tested positive for bird flu. Deaths were first reported in mid April and the news caused great concern given the precarious state of the bird's recovering population in North America. Scientists have first given the jab to 20 black vultures, which are in the same family but are not threatened, to test the vaccine's safety and efficacy. They will also vaccinate captive California condors during an annual routine health check, before inoculating the wild population.

Source: *Nature* (2023) nature.com/articles/d41586-023-01760-0

ASIA & OCEANIA

Hope for Critically Endangered species: softshell turtles hatch in Myanmar...

Fauna & Flora have, for the first time, documented wild hatchlings of a rare freshwater turtle species only found in the wetlands of Myanmar. The Critically Endangered Burmese peacock softshell turtle owes its name to the striking pattern of orange spots on its shell. Like many other turtle and tortoise species in the region, the turtle has been overharvested to the brink of extinction, mainly to supply East Asian food markets, and is also threatened by habitat degradation and accidental entanglement in fishing nets. Fauna & Flora has been working closely with communities living on and around Indawgyi, one of the largest inland lakes in Southeast Asia and a UNESCO Biosphere Reserve, to protect the remaining Burmese peacock softshells that it harbours. With the help of local people, Fauna & Flora was able to pinpoint five Burmese peacock softshell nesting sites. The clutches of eggs were fenced off and protected through regular patrols conducted by a team of turtle guardians drawn from the community. During a patrol, the team discovered 15 turtle hatchlings at one of the nest sites.

Source: *Fauna & Flora* (2023) fauna-flora.org/news/freshwater-discoveries-offer-fresh-hope-for-critically-endangered-species

... and rare angel shark rescued from fishing net in Turkey

Turkey-based marine conservation NGO, Akdeniz Koruma Derneği, a long-term local partner of Fauna & Flora, has been involved in the rescue and release of a Critically Endangered angel shark that had become accidentally caught in a local fisher's net. The shark was caught in Gökova Bay, a marine protected area on Turkey's Turquoise Coast, by a small-scale fisher who was participating in a fishing trip. The angel shark was caught as a non-target species and, after being hauled aboard, was quickly freed from the net and released back into the ocean. The Mediterranean waters around Turkey are an important nursery and breeding ground for sharks, but these are vulnerable to illegal fishing and accidental bycatch. Historically, Gökova Bay's deep waters were known to harbour angel sharks, but the lack of sightings in recent years had led conservationists to fear they may have become extirpated, making this incredibly rare sighting extremely special.

Source: *Fauna & Flora* (2023) fauna-flora.org/news/sweet-release-critically-endangered-shark-rescued-from-fishing-net-in-mediterranean

Researcher discovers over 100 new spider species in Iran

Iran is known for its diverse range of flora and fauna, yet the country's invertebrates have not been well studied. To address this knowledge gap, researcher Alireza Zamani conducted a comprehensive survey of spiders in Iran, analysing > 9,000 specimens collected from various habitats. The research resulted in the discovery of 147 new spider species, as well as 11 new spider genera. The findings reveal the incredible diversity of spiders in Iran, where the known number of spider species now stands at 935, and underscores the importance of continued research and conservation efforts to protect these creatures. Zamani's research also revealed that spider populations in Iran are not evenly distributed, with many regions lacking spider sightings altogether and most of the recorded sightings concentrated near large urban centres.

Source: *Helsinki Times* (2023) helsinkitimes.fi/176-information/study/23538-researcher-discovers-over-100-new-spider-species-in-iran.html

Vietnamese companies reject illegal products made with wild species

Thirty Vietnamese traditional medicine, healthcare and pharmaceutical companies are committed to stamping out illegal wild species ingredients in the traditional medicines they manufacture and sell. The use of wild animals and plants for medical purposes dates back millennia and is still deeply rooted in Vietnamese culture. However, modern demand has caused exploitation at unsustainable levels. A workshop organized by TRAFFIC and the Institute of Vietnam Traditional Medicine Remedy Research gathered 30 participants from healthcare and pharmaceutical companies to increase their knowledge, capacity and commitment to stop producing or selling products containing illegal wild species ingredients. The workshop allowed participants to share their perspectives and discuss specific actions, including educating their staff and consumers about sustainable herbal alternatives. After the event, 10 companies and two institutes committed to not using illegal wild species products and to integrating wild species-free principles into their internal coaching agendas. They also committed to disseminating behaviour change messaging on using legal, safe and sustainable traditional medicine ingredients via their communication platforms.

Source: *TRAFFIC* (2023) traffic.org/news/viet-nam-traditional-medicine-and-pharmaceutical-companies-reject-illegal-wild-species-based-ingredients-and-products

Platypus released in Sydney's Royal National Park after absence of 50 years

The platypus has been returned to Sydney's Royal National Park after being locally extinct for 50 years. The native Australian mammal was reintroduced into the country's oldest national park in May 2023. Known for its duck-like bill, flattened tail and webbed feet, the amphibious mammal is rarely seen in the wild. Five females and were released in the Hacking River, with four males due to follow suit. The landmark conservation project is a collaboration between the New South Wales National Parks and Wildlife Service, Taronga Conservation Society Australia, UNSW Sydney and WWF-Australia. Each individual has been fitted with a transmitter and will be tracked over the next 2 years.

Source: *Secret Sydney* (2023) secretssydney.com/platypus-released-royal-national-park-sydney

Empowered communities care for mangroves in Queensland

Mangroves are natural guardians of the Great Barrier Reef. Their matrix of highly connected habitat helps protect shorelines, provides homes and nurseries for marine wildlife, filters water coming from catchments, offers places for local fishing and boating and retains irreplaceable cultural values for First Nations Australians. Despite increasing efforts to assess the health of mangroves, much is still unknown about their state and how to protect them. The MangroveWatch citizen science programme was developed to engage, educate and empower local communities in mangrove conservation and management. Together with Traditional Owners, community groups, education centres and Wet Tropics Waterways, the community network collects and applies data on mangroves across the region. The data are used to develop Local Action Plans to identify community-led actions for mangrove protection and recovery. The Plans have already started to make a difference in local communities, for example through newly developed lessons in a primary school to teach about the importance of mangroves in the local estuary.

Source: *Great Barrier Reef Foundation* (2023) barrierreef.org/news/project-news/empowered-communities-care-for-mangroves-in-queensland

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. Contributions from authoritative published sources are always welcome. Please send contributions to oryx@fauna-flora.org.