

Briefly

SPOTLIGHT ON INDIA

Communities protect Amur falcons despite pandemic hardships

Amur falcons roost in the north-east Indian state of Nagaland in October each year while migrating 20,000 km from breeding grounds in Mongolia to Africa. Ten years ago, people trapped an estimated 120,000–140,000 falcons annually, for trade in wild meat. Hunting is a livelihood for local people, and convincing them to protect the falcons was vital to end unsustainable exploitation. The Nagaland Wildlife and Biodiversity Conservation Trust was established to change local attitudes. The Trust organized educational activities and helped train local people as tourist guides and homestay hosts, to provide alternative livelihoods. During the pandemic, the project's stakeholders feared a resurgence in hunting as tourism stopped. However, in October 2020, villages in Nagaland and other states reported more flocks of Amur falcons and more roosting sites than before. Many people now follow updates on the falcons' movements on social media, a sign that communities are developing an emotional connection with Amur falcons that is compelling more people to protect the birds. Source: *The Third Pole* (2021) [thethirdpole.net/en/nature/communities-protect-amur-falcons-india-despite-pandemic-hardships](https://www.thethirdpole.net/en/nature/communities-protect-amur-falcons-india-despite-pandemic-hardships)

World's smallest hog released into wild in India

A dozen of the world's smallest pigs have been released into the wild in north-eastern India as part of a conservation programme. The pygmy hog *Porcula salvania* lives in wet grasslands and was once found along plains on the Himalayan foothills in India, Nepal and Bhutan. Its population declined in the 1960s, and it was feared extinct until it was rediscovered in the state of Assam in 1971. The Pygmy Hog Conservation Programme, involving several organizations, including from state and national governments, established a captive breeding scheme with six hogs in 1996 to try and revive the population. The programme now looks after c. 70 captive hogs and is breeding more to be released. In June 2021, five female and seven male pygmy hogs were released in in Manas National Park, taking the number of pigs reintroduced into the wild by the programme to 142. The wild population is estimated to be < 250. Source: *Phys.org* (2021) phys.org/news/2021-06-world-smallest-hog-wild-india.html

Research project to help save dhole populations from extinction

The elusive dhole *Cuon alpinus* is among the most threatened carnivores: the global wild population of this canid is estimated to be < 2,500 mature adults. India probably hosts the largest number of dholes, but the species has disappeared from c. 60% of its historic range in the country in the past 100 years, primarily as a result of forest degradation and fragmentation, and persecution. Transfer of diseases from feral and domestic dogs is also a threat. However, research on the dhole is sparse. Realizing the urgent need to protect dholes and other wild canids in the country, the Wild Canids–India Project was launched in 2018 by researchers from various organizations and universities. The research aims to improve knowledge about wild canids and formulate science-based strategies including citizen science projects to conserve them. Researchers have mapped dhole distribution across India and found the species occurs across 249,606 km², which is c. 49% of their potential habitat. Most populations are in the Western Ghats, central and north-east India. Researchers also found that people's perception of dholes varies by region, insights that are important to facilitate effective conservation. Source: *WorldAtlas* (2021) [worldatlas.com/articles/asia-s-red-dog-aka-dhole-on-the-red-list-can-it-be-saved-on-time.html](https://www.worldatlas.com/articles/asia-s-red-dog-aka-dhole-on-the-red-list-can-it-be-saved-on-time.html)

Tiger reserve in India doubles its tigers

Ten years ago, wild tigers were heading towards extinction. At the start of the 21st century there were an estimated 100,000 tigers in the wild, but by 2010 this number had declined to just 3,200 individuals, and their range had been reduced to only 5% of its historical size. In 2010, the governments of all 13 tiger range countries came together at the world's first global tiger summit and agreed a commitment to double the number of wild tigers by 2022. A global recovery plan followed and WWF, together with individuals, businesses, communities, governments and other conservation partners, have worked to turn this ambitious conservation goal into reality. In northern India, in the Terai Arc Landscape, the narrow Pilibhit Tiger Reserve is surrounded by areas of high human population density. And yet, the Reserve managed to double its tiger population within a decade, to an estimated 65 individuals. There have been similar success stories in the transboundary area of Manas Tiger Reserve in India and Royal Manas National Park in Bhutan. Source: *WWF* (2021) [wwf.org.uk/success-stories/tiger-reserve-india-doubles-its-tigers](https://www.wwf.org.uk/success-stories/tiger-reserve-india-doubles-its-tigers)

India's Forest Rights Act is the most viable forest conservation law

For a long time, forest conservation has been dominated by so-called fortress conservation, whereby people are separated from natural areas. With the idea of preserving them as wildernesses unspoiled by human interference, these areas are typically enclosed, policed by guards and increasingly militarized. An estimated 10–173 million people have been displaced to make way for such protected areas worldwide, and 1.65–1.87 billion people still live in important biodiversity conservation areas. India's Forest Rights Act 2006 is perhaps the first law globally to outright discard state-led fortress conservation, adopting conservation-based community forest governance instead. The Act became operational in 2008 and recognized all conceivable traditional rights, except hunting. The previous demarcation of protected forest areas based on restrictive or graded access and usage rights has ceased. Conservation agenda was made central, and forest governance was entrusted to all habitations that have any rights to the forests. Conservation science affirms rights-based frameworks as the future of conservation. Source: *The Wire Science* (2021) [science.thewire.in/environment/why-indias-forest-rights-act-is-the-most-viable-forest-conservation-law](https://www.science.thewire.in/environment/why-indias-forest-rights-act-is-the-most-viable-forest-conservation-law)

Wildlife corridors in Chhattisgarh

A strategic plan for conservation, monitoring and management of wildlife corridors has been prepared by the Chhattisgarh Forest Department. As part of this exercise under the Compensatory Afforestation Fund Management and Planning Authority, potential corridors in the state are being identified. The target species include wide-ranging species such as tigers and elephants. So far, 121 corridors have been identified across the state, 14 of which have been recognized as critical corridors needing special attention, resource allocation, specific policies, awareness raising and crisis management plans. Connectivity is essential for natural ranging behaviour of animals, such as movement between foraging sites or dispersal of individuals from their natal areas. Lack of such corridors restricts dispersal and genetic exchange between protected areas, reducing genetic diversity and increasing the risk of extinction of species. The work in Chhattisgarh is expected to benefit other Indian states by providing a scientific approach for the identification, management and monitoring of natural connectivity between large habitats. Source: *Mongabay* (2021) india.mongabay.com/2021/05/forest-department-identifies-wildlife-corridors-in-chhattisgarh-for-conservation

INTERNATIONAL

A standard tool to compare species conservation efforts

In 2010 the Convention on Biodiversity proposed a list of 20 targets aimed at preserving global biodiversity—from increasing public awareness to preventing species extinctions—but none were achieved by the deadline. To meet the 2021–2030 iteration of the targets, scientists have proposed a tool that assigns value to extinction prevention efforts in the hopes that governments, communities and private interest groups can work together to protect biodiversity. The tool—called the Species Threat Abatement and Restoration, or STAR, metric—determines how much a given action can help reduce a species' extinction risk. A team of > 80 international researchers compiled publicly available data on extinction risk categories for amphibians, birds and mammals, and the threats they face. They then scored countries on the potential for mitigation action. The tool is the first of its kind to provide a common measurement across species for how contributions from various stakeholders can prevent biodiversity loss.

Sources: *Nature Ecology & Evolution* (2021) doi.org/10.1038/s41559-021-01432-0 & *Anthropocene Magazine* (2021) anthropocenemagazine.org/2021/05/a-better-way-to-fight-extinction-put-a-number-on-it

Healthy shark populations are critical to restoring damaged ecosystems

A study at one of the world's largest and most biodiverse seagrass meadows in Shark Bay, Western Australia has indicated that the absence of large predators could exacerbate the effects of climate change on marine ecosystems. Following an extreme marine heatwave in 2011 that caused the die-off of a quarter of the bay's seagrass canopy, scientists conducted a field experiment to establish whether apex predators such as sharks played a role in the ecosystem's recovery. When new, heat-resistant seagrass had grown, divers replicated the impact of grazing by animals such as dugongs, whose feeding patterns have previously been shown to be less destructive in the presence of sharks. They found that the seagrass canopy was being disturbed too frequently by the divers' simulated grazing to recover, concluding that top predators play a vital role in seagrass recovery by regulating the numbers and behaviour of herbivorous species.

Source: *The Guardian* (2021) theguardian.com/environment/2021/mar/22/sharks-critical-restoring-climate-damaged-ecosystems-study

Only 3% of the land on Earth is still ecologically intact

Most of the Earth's terrestrial habitats have lost their ecological integrity, including areas previously categorized as being intact. Ecological integrity encompasses measures of habitat, faunal and functional intactness of ecosystems. A recent study combined data on human impacts and loss of animal species from various global databases to map the ecological integrity of different regions. The researchers found that only 2–3% of terrestrial areas had the same fauna and flora as 500 years ago, in pre-industrial times. Only 11% of ecologically intact sites lie within environmentally protected areas. However, many other of the intact sites, including parts of the Sahara, Amazon and northern Canada, are within territories managed by Indigenous communities, which have played a role in maintaining ecological integrity. The team determined that by re-introducing 1–5 species to sites that are not completely degraded, ecological integrity could be restored across c. 20% of the Earth's land areas.

Sources: *Frontiers in Forests and Global Change* (2021) doi.org/10.3389/ffgc.2021.626635 & *New Scientist* (2021) [newscientist.com/article/2274576-just-3-per-cent-of-the-land-on-earth-is-still-ecologically-intact](https://www.newscientist.com/article/2274576-just-3-per-cent-of-the-land-on-earth-is-still-ecologically-intact)

Quick fixes to the climate crisis risk harming nature

Climate change and nature loss are interlinked and must be tackled together, finds a key report by 50 leading scientists searching for combined solutions to the climate and biodiversity crises. Quick fixes for climate change risk harming nature, say the experts. Potential climate and biodiversity fails include misguided tree planting and large-scale bioenergy crops. The report was compiled by scientists from the influential Intergovernmental Panel on Climate Change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. It found that previous policies have largely tackled biodiversity loss and climate change independently of each other rather than taking a holistic approach. The authors warned of the dangers of actions that, although well-intentioned, could have disastrous consequences for climate and biodiversity. One example of such harmful practices is planting of trees for forestry on peatlands, which happened in the 1970s and 1980s in the UK. Peatlands extract carbon dioxide from the air when in a healthy condition, but 80% of the UK's peatlands are damaged, meaning they contribute to carbon emissions.

Source: *BBC* (2021) [bbc.co.uk/news/science-environment-57425311](https://www.bbc.com/news/science-environment-57425311)

Climate crisis drives a drastic drop in Arctic wildlife populations...

Wildlife is struggling to cope with drastic changes to conditions in the Arctic tundra as a result of climate change, according to the latest State of the Arctic Terrestrial Biodiversity report. Released by the Arctic Council in May 2021, the report highlights the diverse, unpredictable and increasingly severe impacts of the changing climate in the region, which is warming at twice the rate of the rest of the world. A range of southerly species is shifting northward, bringing non-native diseases and altering predator–prey interactions. Shrubs are proliferating in areas previously home to mosses and lichens, and pollinators have declined, probably because of a mismatch between the timing of plant flowering and pollinator flight activity. Of the 88 shore bird species examined, over 50% declined in at least one population, and 80% of high-Arctic shore birds are at risk of losing large parts of their breeding grounds within 50 years. Caribou populations are threatened by food scarcity and harassing insects, and bacterial infections previously unable to survive Arctic temperatures have proven deadly to musk oxen.

Source: *The Guardian* (2021) theguardian.com/environment/2021/may/20/climate-crisis-dramatic-drop-arctic-wildlife-populations-aoe

... and ice melt in Antarctica approaching tipping point

If carbon emissions are not cut more aggressively, Antarctic ice melt could speed up dramatically around the middle of this century, triggering rapid and unstoppable sea-level rise for hundreds of years to come, a new modelling study has found. Nearly 200 nations have submitted emission reduction targets under the Paris Agreement. But although the global climate accord calls for limiting warming to 2 °C, the initial pledges would lead to at least 3 °C of warming this century. New research shows the impact this difference could have on the Earth's largest ice sheet. If global warming is limited to 2 °C, Antarctica will continue to lose ice at a steady pace throughout the 21st century. But if the current trend continues, there may be an abrupt acceleration in melting c. 2060, resulting in rapid sea level rise. Since the early 1990s, Antarctica has lost c. 3 trillion t of ice. The rate of loss is accelerating as warm ocean water melts and destabilizes the floating ice shelves that hold back West Antarctica's glaciers, causing those glaciers to flow more quickly into the sea.

Source: *National Geographic* (2021) nationalgeographic.co.uk/environment-and-conservation/2021/05/antarcticas-ice-could-cross-this-scary-threshold-within-40-years

EUROPE

First breeding golden eagles in Orkney in almost 40 years. . .

Golden eagles *Aquila chrysaetos* have started breeding again in Orkney, Scotland, for the first time in almost 40 years. The birds of prey were once a common sight across the islands but just a single pair was left by 1848. Orkney had to wait until 1966 to see the return of breeding golden eagles, but one of those adults died in 1982. Staff from RSPB Scotland spotted a pair nesting at the organization's nature reserve in Hoy, and have been able to confirm that they have chicks. The number of chicks is not known; those watching the nest have been keeping a safe distance from it because golden eagles are extremely sensitive to disturbance. The species typically has one or two chicks at a time. The most recent national survey in 2015 estimated there are > 500 pairs of golden eagles in the UK. The uninhabited areas in Orkney are well-suited for eagles.

Source: BBC (2021) [bbc.co.uk/news/uk-scotland-north-east-orkney-shetland-57200983](https://www.bbc.com/news/uk-scotland-north-east-orkney-shetland-57200983)

. . . and after 20 years, the saker falcon breeds again in Bulgaria

The saker falcon *Falco cherrug* is an Endangered bird of prey whose global population is estimated to be 6,100–14,900 breeding pairs. In Bulgaria the species was considered locally extinct since the early 2000s, but rediscovered in 2018 when an active nest was found, built by two birds that were reintroduced in 2015 as part of the first saker falcon reintroduction programme. Many anthropogenic factors contributed to the decline of the saker falcon in Bulgaria and globally. Even after European legislation for the protection of wildlife was implemented, and regulations were issued on the use of pesticides in Bulgaria, the saker falcon population did not stabilize. As a result, a reintroduction programme for the saker falcon in Bulgaria was initiated in 2015, aiming to release birds using adaptation aviaries, also known as hacks. During 2015–2020, a total of 80 saker Falcons—27 females and 53 males—were released via the hacking method from four aviaries near the town of Stara Zagora. Observation records from 2018 confirmed that at least one pair of the falcons released in 2015 was breeding in the wild in Bulgaria. This demonstrates that with the help of hacking, saker falcons can survive in the wild until maturity, return to the region of their release and breed successfully.

Sources: *Biodiversity Data Journal* (2021) [dx.doi.org/10.3897/BDJ.9.e63729](https://doi.org/10.3897/BDJ.9.e63729) & *Phys.org* (2021) phys.org/news/2021-05-years-saker-falcon-bulgaria.html

More bison to be released in southern Carpathians

In May 2021, 13 more European bison arrived from Germany to Bison Hillock rewilding area, in Romania's southern Carpathians. Rewilding Europe and WWF Romania have been reintroducing European bison into the area since 2014. Bison Hillock hosts the largest free-roaming bison herd in the country, with c. 80 individuals. The LIFE-Bison rewilding project aims to create a viable population that breeds in the wild and supports the area's biodiversity; numerous animal and plant species benefit from the bison's grazing. Each bison is carefully chosen by specialists to ensure genetic diversity of the herd. The animals in the latest release came from nine different European reservations. Rangers monitor the newcomers for at least 21 days in an acclimatization enclosure before releasing them into the wild. The largest subpopulations are now found in Poland, Belarus and Russia, but only eight of these herds are large enough to be genetically viable in the long run. The species therefore remains dependent on ongoing conservation measures.

Source: *Romania Insider* (2021) romania-insider.com/13-bison-armenis-may-2021

New tool to help boost water vole conservation

Genetics could be used as a new tool to help boost conservation of the water vole *Arvicola amphibius* in the UK, after scientists analysed the DNA of one of the country's most threatened mammals. Water voles are semi-aquatic rodents, threatened in the UK by habitat loss and predation by the American mink. Their population declined from 7.3 million in 1990 to an estimated 132,000 in 2018. In collaboration with conservation charity the Wildwood Trust, researchers at the Wellcome Sanger Institute have sequenced the species' genome, using blood from a live male water vole. Details have been published through Wellcome Open Research and are available to researchers and conservationists looking to better manage reintroduction efforts. Researchers suspect that some water vole populations have become inbred in recent decades because of shrinking numbers and the fragmentation of populations through habitat loss. The high-quality reference genome will help support ongoing conservation efforts to preserve existing populations and reintroduce new ones in a way that ensures these populations are genetically robust.

Source: *The Irish News* (2021) [irishtimes.com/magazine/science/2021/06/24/news/genetics-a-new-tool-to-help-boost-water-vole-conservation--2366124](https://www.irishtimes.com/magazine/science/2021/06/24/news/genetics-a-new-tool-to-help-boost-water-vole-conservation--2366124)

Electricity supplier in Spain sued over electrocution of birds

In a landmark case, a Spanish electricity company is being prosecuted over the deaths of hundreds of birds electrocuted on pylons and overhead cables and for failing to comply with regulations to protect wildlife. After a 3-year investigation, Antoni Pelegrin, the attorney general for the environment in Barcelona, has brought a case for ecological crimes against the electricity company Endesa and six of its senior executives for allegedly failing to meet safety requirements. The lawsuit claims that during 2018–2020, 255 birds were electrocuted on pylons near Osona in northern Catalonia. Most were storks, eagles, peregrine falcons and vultures. The company has not formally responded to the charge, but claims that this year it will invest EUR 4.6 million in bird protection and that in 2020 it made safe 659 pylons at a cost of EUR 2.2 million. There is hope that the case against Endesa will increase pressure on companies to comply with environmental regulations.

Source: *The Guardian* (2021) [theguardian.com/environment/2021/apr/16/spains-power-company-endesa-sued-over-electrocution-of-birds](https://www.theguardian.com/environment/2021/apr/16/spains-power-company-endesa-sued-over-electrocution-of-birds)

EU needs legally binding targets to protect nature

The European Union needs legally binding measures to protect nature and biodiversity, as previous voluntary plans have failed to deliver. In 2020 the EU's Executive Commission published a plan to protect biodiversity, and has set out goals to halve the use of chemical pesticides, cut fertilizer use by 20% and expand protected areas of land and sea by 2030. In June the European Parliament approved a report calling for the targets to be fixed in law and backed up by measures to enforce them. The EU has put its climate change targets in law, but not yet those to protect nature. Previous plans have failed to stop unsustainable farming, forestry and the sprawl of urbanization from degrading natural habitats. Most of Europe's protected habitats and species have a poor conservation status. Fixing the targets in law could be difficult. The EU has rallied behind scientists' recommendations that to halt the decline of nature, 30% of the planet should be safeguarded through protected areas and conservation. Parliament said the EU should push to make that pledge legally binding.

Source: *Reuters* (2021) [reuters.com/business/environment/eu-needs-legally-binding-targets-protect-nature-lawmakers-say-2021-06-09](https://www.reuters.com/business/environment/eu-needs-legally-binding-targets-protect-nature-lawmakers-say-2021-06-09)

AFRICA

Coastal areas important for seabirds feeding in pelagic environments

Seabird tracking data gathered from the Tinhosa Grande islet (São Tomé and Príncipe), which hosts the most significant seabird colony in the Gulf of Guinea, is providing insights on linkages between near-shore coastal habitats and marine megafauna feeding in the deep open ocean. Researchers fitted 33 adult brown boobies *Sula leucogaster* with GPS loggers, recording 127 foraging trips in early 2020 and showing that the birds forage preferentially over the open ocean. This, combined with an analysis of 11 regurgitations, identified that brown boobies feed largely on juvenile fish that live in pelagic environments but rely on coastal habitats as adults. The research, a collaborative effort between Fundação Príncipe, Fauna & Flora International, Lisbon University and ISPA – Instituto Universitário, was published in May 2021 and highlights that brown boobies can indirectly benefit from coastal marine protected areas, even if these do not directly overlap with seabird foraging areas. Source: *Marine Biology* (2021) doi.org/10.1007/s00227-021-03904-0

Great apes predicted to lose c. 90% of homelands in Africa

Great apes are predicted to lose a devastating 90% of their homelands in Africa in coming decades, according to a new study. All gorillas, chimpanzees and bonobos are already Endangered or Critically Endangered. And the combination of climate crisis, destruction of wild areas for minerals, timber and food, and human population growth is on track to decimate their ranges by 2050. Half of the projected lost territory will be in national parks and other protected areas. Some new areas will become climatically suitable for the apes, but the researchers doubt they will be able to migrate into these regions in time. The estimated range loss is significant, but current ranges in central and western Africa are already much smaller than in the past. The researchers analysed two scenarios: one where action is taken to curb the climate crisis, habitat loss and human population growth, and one where little is done. The researchers found relatively little difference in the projected range losses, with 85% loss in 2050 in the first scenario and 94% in the second. Sources: *Diversity and Distributions* (2021) doi.org/10.1111/ddi.13358 & *The Guardian* (2021) theguardian.com/environment/2021/jun/07/great-apes-predicted-to-lose-90-of-homelands-in-africa-study-finds

Invasive species costing Africa USD 3.66 trillion a year

Invasive species introduced by human activity are costing African agriculture some USD 3.66 trillion per year, c. 1.5 times the combined gross domestic product of all African countries. Non-native species of plants, insects or worms can have catastrophic effects on farming, reducing yields of staple crops across the continent. Now researchers have sought to estimate the annual economic impact caused by invasive species on African agriculture. The team studied literature on species that were not native to the continent and had caused crop losses, to assess the effect on yield, management and the cost of research. In addition, they surveyed more than 1,000 stakeholders about the financial implications of invasive species. The team found that the average cost of invasive alien species to the agricultural sector in Africa's 54 countries was USD 74.3 billion each year, but this varied considerably between countries. The total economic losses by invasive alien species exceeded the GDP of 27 out of 49 countries included in the study.

Sources: *CABI Agriculture and Bioscience* (2021) doi.org/10.1186/s43170-021-00038-7 & *Phys.org* (2021) phys.org/news/2021-05-invasive-species-africa-tn-year.html

Cross-border efforts to save Critically Endangered tortoise

A Critically Endangered tortoise suffering rapid decline has been thrown a lifeline by a collaborative conservation effort in North Africa. Human development and agriculture have caused numbers of the Egyptian tortoise *Testudo kleinmanni* to dwindle as its habitat disappears in all but a few locations along the Mediterranean coast in western Egypt and eastern Libya. The precarious political and economic conditions in the wake of the Libyan revolution also helped drive smuggling for the pet trade in Egypt, where the tortoises are seen as symbols of luck and longevity and are sold for considerable amounts. BirdLife International supported two civil society organizations in Egypt (Al Hayat organization) and Libya (Hemaya Company) in a transboundary effort to conduct population surveys, identify key threats to the tortoises' survival, and assess their ecological requirements. The organizations have also worked with local communities to raise awareness, and with the Libyan Ministry of Environment to save 250 smuggled tortoises in 2021. Future work of the partnership will develop a joint action plan for the species' conservation. Source: *BirdLife International* (2021) birdlife.org/africa/news/libyan-and-egyptian-conservationists-work-across-border-save-critically-endangered

South Africa plans to end controversial captive lion industry

South Africa has taken steps to end its lucrative lion breeding industry, which supplies cubs for tourism, lions for trophy hunts and bones for use in traditional medicine. In an announcement in May 2021, the government acknowledged that the captive lion breeding industry does not contribute to conservation and is damaging South Africa's conservation and tourism reputation. The government will stop issuing permits to breed, keep, hunt, or interact with captive lions and is revoking current breeding permits. There has been increasing public opposition to the industry, which is seen by many as inhumane and wasteful. Concerns about possible links between legal and illegal trade in lion bones, and greater understanding of the diseases that animals can pass to humans, have also influenced the decision. It is estimated that there are 6,000–12,000 captive lions in private facilities throughout the country, compared to only 2,000 wild lions. The decision to end captive lion breeding has been largely welcomed by conservationists, but some are concerned about the possibility that bans could increase illegal trade. The government also accepted expert recommendations that South Africa no longer press to reopen the rhinoceros horn and ivory trades.

Source: *National Geographic* (2021) nationalgeographic.co.uk/animals/2021/05/south-africa-plans-to-end-controversial-captive-lion-industry

Controversy around elephant culling in Zimbabwe

The Zimbabwe Environmental Law Association has objected to the decision by the government to control the country's elephant population by culling. Zimbabwe has Africa's second largest elephant population after Botswana, with c. 83,000 animals, which is 66% more than its optimum capacity of 50,000. The increase in the population of elephants has resulted in habitat destruction, changes in vegetation structure and a rise in human-wildlife conflicts. But the Association said culling might result in long-lasting negative effects on elephants. Research has shown that culling of elephants affects the social structure of those left behind, potentially for decades. The complex social function of herds is a crucial aspect of elephant biology and population integrity. The environmental lawyers said there were other conservative methods that could be used to control elephants and also generate income, and suggested increased hunting quotas or exporting elephants to other countries.

Source: *Newsday* (2021) newsday.co.zw/2021/07/zela-denounces-elephant-culling

AMERICAS

For the climate's sake, listen to urban Amazonians

The Amazon region is renowned for its biodiverse rainforest, which absorbs more carbon than any other land region in the world. However, national governments and international leaders often forget about the urban communities that also exist within the Amazon. From Manaus and Belém in Brazil to Leticia in Colombia or Iquitos in Peru, there are millions of Amazonian city dwellers. Across Amazon cities, there are diverse civil society movements mobilizing to stop deforestation and secure inclusive social and economic policies. They urge national governments and international actors to recognize that the clearance of rainforests to experience economic growth is unacceptable, and that the rainforest can no longer be seen as a pristine environment mostly devoid of people. New ways of development are needed for the region, promoting climate and social justice, and scaling green jobs and the so-called bio-economy. Unless these concerns are addressed, economic stability and climate justice for the people of the Amazon remain out of reach.

Source: *Open Society Foundations* (2021) opensocietyfoundations.org/voices/for-the-climate-s-sake-listen-to-urban-amazonians

New tool to help maritime industry avoid ship collisions with whales

A new toolkit for mariners navigating the Northwest Atlantic has been developed in a collaborative effort, to help them avoid striking whales with their ships. The shipping industry poses a major threat to the recovery of several whale species in the region, such as the North Atlantic right whale *Eubalena glacialis*, blue whale *Balaenoptera musculus* and the St Lawrence Estuary population of the beluga whale *Delphinapterus leucas*, because of the risk of collisions, acoustic disturbance, and pollution. The online platform Navigating Whale Habitat was created by the Marine Mammal Observation Network, WWF Canada, and the St Lawrence Global Observatory, working together with government partners and the maritime industry to guide best practices, improve data collection, identify high risk areas, and improve whale protection and navigation safety. To do so, the platform includes training in whale identification and data collection, as well as protocols, and data entry and visualization tools for use on board ships operating in the area.

Source: *WWF* (2021) wwf.ca/media-releases/navigating-whale-habitat-a-new-tool-kit-for-the-maritime-industry

Study confirms origin of vervet monkeys living near an urban airport

Robust data and genetic analyses are providing important evidence on a colony of wild African vervet monkeys *Chlorocebus sabaues* that landed in Dania Beach more than 70 years ago and settled in a thick mangrove forest in South Florida, USA. The non-native vervet monkey population is relatively unknown to primatologists. Despite wide public interest, there has been only one scientific study, in the early 1990s, suggesting that the monkeys escaped from a failed roadside zoo in the 1950s and 1970s. A team of scientists combined multiple methodological approaches to determine the species of *Chlorocebus* monkey in Dania Beach, where they came from, and their pathway of introduction. Through interviews, historical archives and popular media, the scientists traced the monkeys to an escape from the Dania Chimpanzee Farm in 1948. The facility acted as a zoo and also provided primates imported from Africa as subjects in the development of the polio vaccine and other medical research. Historical archives suggest that the monkeys were originally caught in Sierra Leone.

Sources: *Primates* (2021) doi.org/10.1007/s10329-021-00890-1 & *Phys.org* (2021) phys.org/news/2021-05-vervet-monkeys-urban-airport-decades.html

Drone crash causes tern colony to abandon eggs

Thousands of elegant tern *Thalasseus elegans* eggs were left abandoned at Bolsa Chica Ecological Reserve near Los Angeles, USA, in May 2021 after a drone crashed into the breeding colony. The terns, which nest in dense colonies with nests just 20–30 cm apart, were disturbed by the drone, fearing they were under attack by a predator on 13 May, ultimately leading to thousands of adult terns deserting an estimated 1,500–2,000 eggs. Instead of being a noisy tern colony with hatching chicks, the beach was subsequently empty, occupied only by thousands of egg shells. Another drone that crashed in the Reserve in the same month landed in a colony of least terns *Sternula antillarum*. Fortunately, these small birds proved more resilient than their larger cousins: although the drone temporarily displaced the birds from the colony, they quickly returned to their nests. Although prohibited, drone use in the Reserve's airspace is on the increase, along with other forms of disturbance associated with a rising volume of visitors, such as off-lead dogs and cyclists riding off paths.

Source: *Bird Guides* (2021) birdguides.com/news/drone-crash-causes-tern-colony-to-abandon-3-000-eggs

Copiapoa cacti confiscated in 2020 returned to their native Chile

The 1,035 cacti from the genera *Copiapoa* and *Eriosyce* confiscated in Italy during two seizures in February and November 2020 were repatriated to Chile in April 2021. The repatriation process was led by a working group coordinated by Associazione per la Biodiversità e la sua Conservazione (Italy), Universidad de Concepción (Chile) and the IUCN SSC Cactus and Succulent Plants Specialist Group. Of the seized plants, 107 perished, 844 were repatriated and 84 plants stayed at the Città Studi Botanical Garden in Milan, Italy, to be studied. The plants, temporarily housed in Milan, were shipped to Santiago de Chile, where they were quarantined to prevent the introduction of possible disease vectors. The shipment was funded by contributions from SSC Internal Grants, Città Studi Botanical Garden of Milan and B. Willow. The cacti were removed from the wild in 2013–2019 and had a market value of c. EUR 1 million.

Sources: *IUCN* (2020) iucn.org/news/species-survival-commission/202012/operacion-atacama-recovery-trafficked-threatened-cacti & *IUCN* (2021) iucn.org/news/species-survival-commission/202104/over-a-thousand-illegally-poached-copiapoa-estimated-market-value-one-million-euro-return-their-native-chile

Chile proposes high seas marine protected area off South America

At a virtual climate summit in April 2021, President Sebastián Piñera of Chile proposed the creation of a high seas marine protected area (MPA) that would extend far beyond the exclusive economic zones of South American countries. The proposed MPA would span the Salas and Gomez and Nazca ridges, two underwater mountain chains stretching 2,900 km across the south-eastern Pacific. The site of over 110 seamounts, and isolated by the Humboldt Current and Atacama Trench, the area is home to an incredible array of biodiversity, half of which is endemic, and has been identified as a prime candidate for conservation by numerous international organizations. Effective protection of these waters would help safeguard biodiversity beyond national waters and provide refuge to migratory species that frequent the area to breed. The bold proposal has been welcomed by conservationists, although observers have commented that the unilateral nature of the proposal means the creation of this MPA may require intense diplomatic work with neighbouring countries.

Source: *The Maritime Executive* (2021) maritime-executive.com/editorials/chile-proposes-high-seas-marine-protected-area-off-south-america

ASIA & OCEANIA

Hundreds of rare antelopes killed by lightning in Kazakhstan

In May 2021, villagers in Kazakhstan found the bodies of c. 350 saiga antelopes. The discovery came during the calving season for the saiga. The Kazakh Ecological Ministry said in a statement that lightning was the probable cause of the deaths as there were traces of lightning strikes on the carcasses. The IUCN categorizes the saiga as one of five Critically Endangered antelope species, with a population of c. 124,000 adults. Kazakhstan is home to the majority of the animals, with Russia's Kalmykia region and Mongolia hosting much smaller populations. In 2015, c. 200,000 of the antelopes—well over half the total global population at the time—were wiped out by what scientists later determined was a nasal bacterium that spread in unusually warm and humid conditions. In an aerial survey in 2019, Kazakhstan said its Saiga population was estimated at more than 330,000 individuals. Poaching is a persistent threat, fueled by demand for saiga horn in traditional Chinese medicine. Kazakhstan's leaders pledged to crack down on the crime after two state rangers were killed by poachers in 2019.

Source: *Phys.org* (2021) phys.org/news/2021-05-kazakhstan-rare-antelopes-lightning.html

Insect-tracking drones to boost conservation in New Zealand

A swarm of insect-tracking drones and tiny radars are being developed to help conservation of rare insects in New Zealand. The new tag-and-track technology is being developed at the University of Canterbury on New Zealand's South Island. Researchers hope it could lead to a deeper understanding of New Zealand's threatened insects. The research draws on years of experience in bird conservation, where radio tracking methods have helped to protect many threatened species. Experts have said that the technology used for birds may be suitable to study large invertebrates such as giant land snails but was too big and heavy for most insects. Researchers have now made c. 20 tiny so-called harmonic radar tags that are fitted to insects. They would then be tracked by a swarm of drones. Trials will start on ground-based insects before the New Zealand team tries to tackle the complexities of tracking insects in flight. Field testing could begin in 2023. The study could also have applications in other disciplines, from biosecurity to medical imaging.

Source: *Voice of America* (2021) voanews.com/science-health/insect-tracking-drones-boost-rare-bug-conservation-new-zealand

The race to rescue Australia's 50 most vulnerable plant species

The rare snow daphne *Kelleria bogongensis* is a tiny, carpeting plant found only in a 0.25 km² area on Mt Bogong, Australia. Threatened plants like the snow daphne have declined at such a rate in Australia over recent decades that the Threatened Species Recovery Hub has released a new list of the 50 species at greatest risk of extinction, and the steps needed to halt and reverse their declines. To compile the list of the 50 species most at risk of extinction, researchers reviewed all available published information and interviewed more than 120 botanists and land managers across Australia. The team collected c. 10,000 snow daphne seeds, half of which were kept at the Victorian Conservation Seedbank at the Royal Botanic Gardens in Melbourne, and the other half were sent to the Millennium Seed Bank at Wakehurst Place, UK. Seed banks are an insurance policy, and allow researchers to examine the biology of seeds, many of which germinate only after idiosyncratic cues. The Victorian seed bank currently holds seeds from > 1,400 native species.

Source: *The Sydney Morning Herald* (2021) smh.com.au/environment/climate-change/the-race-to-rescue-australia-s-50-most-vulnerable-plant-species-20210511-p57qwf.html

China announces moratoriums for squid fleet

China has announced a moratorium on fishing by its flagged fleet in the south-west Atlantic and in the eastern Pacific. Administered by the Fisheries Regulation Bureau under the Chinese Agriculture Ministry, the fishing ban will impact 70 Chinese distant-water fishing firms and 600 vessels. The ministry said the moratorium is independent and self-enforced. The Atlantic fishing ban is operational during 1 July–30 September and the East Pacific moratorium will take place 1 September–30 November. The ministry said the move aims to conserve and rehabilitate squid stocks, similar to a moratorium on squid fishing implemented by China on its vessels in the south-western Atlantic in 2020. The 2020 moratorium was successful, according to the statement, because this year's squid catch was larger than last year. The ministry is overseeing the moratorium, and local enforcement will also involve the China Distant-Water Fishing Association, an industry body, and the Shanghai Ocean University, one of the country's top centres for ocean and fisheries research.

Source: *Seafood Source* (2021) seafoodsource.com/news/environment-sustainability/china-announces-moratoriums-for-squid-fleet-in-atlantic-pacific

Natural history and conservation importance of the Chinese mountain cat

In the largest study undertaken of Chinese felids, genetic analyses highlight the evolutionary uniqueness and conservation importance of the elusive Chinese mountain cat *Felis silvestris bieti*, found only in the Tibetan plateau of China. The new study compared three different felines living in China: the Chinese mountain cat, the Asiatic wildcat *Felis silvestris ornata*, and feral domestic cats *Felis silvestris catus*. Such studies are important for conservation because scientists have to be clear about taxonomy and species' relation to each other when discussing strategies, and because legal protections have to be specific to the taxa in question.

Sources: *Science Advances* (2021) doi.org/10.1126/sciadv.abg0221 & *EurekaAlert!* (2021) eurekaalert.org/pub_releases/2021-06/nsu-shno62421.php

Camera-trap pictures of rare species in Viet Nam raise conservation hopes

Camera traps placed in a remote nature reserve in central Viet Nam recently captured images of rare muntjac deer and other threatened species, raising hopes for the state of biodiversity there. The sightings took place in Phong Dien Nature Reserve in Thua Thien-Hue province, a rugged part of the Truong Son Mountains (known internationally as the Annamites) near Viet Nam's border with Laos. Local media reported that 110 cameras had been placed by the Reserve's management board and staff from the conservation NGO Viet Nature in an effort to capture the rare Edwards's pheasant *Lophura edwardsi*. Instead, the cameras took pictures of two muntjacs—possibly Roosevelt's muntjac *Muntiacus rooseveltorum*—as well as c. 30 bird and mammal species such as the crested argus *Rheinardia ocellata*, Annamite striped rabbit *Nesolagus timminsi* and Owston's palm civet *Chrotogale owstoni*. The sightings emphasize the importance of this nature reserve to biodiversity in central Viet Nam and neighboring parts of Laos.

Source: *Mongabay* (2021) news.mongabay.com/2021/06/camera-trap-pics-of-rare-species-in-vietnam-raise-conservation-hopes

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