

Briefly

INTERNATIONAL

Seeking nature-based solutions for business

At a meeting in Paris in December the World Business Council for Sustainable Development entered into a 5-year partnership with IUCN to find joint solutions for conservation and business, and scaling up resilience to climate change. Under the objectives of the agreement, which comes 10 years after the two organizations signed their first Memorandum of Understanding, businesses will apply the mitigation hierarchy towards a net positive impact on biodiversity where possible, integrate ecosystems considerations in their core strategies, and consider natural infrastructure as an alternative or a complement to grey infrastructure. Business decision making will be informed by the Natural Capital Protocol, which is currently under development and is being tested by 50 companies globally prior to its release in July. The Protocol is intended to be a comprehensive guide to measuring and valuing natural capital in making decisions for business.

Source: IUCN (2015) iucn.org/news_homepage/?22266/IUCN-and-global-business-leaders-pledge-to-scale-up-resilience-to-climate-risks-by-focusing-on-nature-based-solutions

Enhanced protection status expected for African lions

Following the killing of Cecil the lion in Zimbabwe last July by an American trophy hunter and the ensuing public outcry, significant global attention has been focused on the plight of the African lion *Panthera leo*, which has suffered a population decline of 50% since the 1990s. In December the U.S. Fish and Wildlife Service categorized lions from central and western Africa as endangered, and lions from southern and eastern Africa as threatened, making it significantly more difficult to import lion trophies from all parts of the continent into the USA. In a separate development, CITES, the international body that governs the trade in species, is expected to enhance the status of lions at its key meeting in South Africa in September, with calls to upgrade the species from Appendix II, whereby the trade is regulated by permit, to Appendix I, which would see all trade banned.

Source: BBC News (2016) bbc.co.uk/news/science-environment-35294840

Hydropower expansion threatens freshwater fish

There has been an unprecedented boom in the construction of hydropower dams in the Amazon, Mekong and Congo river basins, with insufficient consideration given to the negative impacts on biodiversity of such construction, which is placing one third of the world's freshwater fish at risk. There are at least 346 new dams proposed for the Amazon, which will not only affect freshwater biodiversity but will also result in forced relocation of human populations, and deforestation for the construction of new roads. At least 88 new dams are planned for the Mekong by 2030, which would necessitate the expansion of agricultural land by 19–63% to maintain food security in the region in the face of projected fisheries losses. More comprehensive and rigorous impact analyses are needed before new projects are initiated, to minimize the impacts of dam construction on biodiversity, ecosystem services and rural communities.

Source: Science (2016) [dx.doi.org/10.1126/science.aac7082](https://doi.org/10.1126/science.aac7082), & IUCN (2016) iucnredlist.org/archives

Report highlights 25 most threatened primates...

The latest edition of the report *Primates in Peril: The World's 25 most Endangered Primates* features five species from Madagascar, five from Africa, 10 from Asia and five from Central and South America that are in need of urgent conservation action, including the Hainan gibbon *Nomascus hainanus* and the northern sportive lemur *Lepilemur septentrionalis*, of which there are thought to be only 25 and 50, respectively, remaining in the wild. New additions to the list include the Philippine tarsier *Tarsius syrichta* and the Lavaso Mountains dwarf lemur *Cheirogaleus lavasoensis*. More than half of primate species are threatened with extinction, the main threats being habitat destruction, hunting for food, and the illegal wildlife trade. The report is compiled every 2 years, and its purpose is to raise public awareness of the plight of primates and to encourage governments to implement the required conservation measures.

Source: IUCN (2015) iucnredlist.org/news/worlds-25-most-endangered-primates-revealed

...and the blue-eyed black lemur has come off the list!

The prospects of the blue-eyed black lemur *Eulemur flavifrons* are improving thanks to a research and monitoring programme in Madagascar's Sahamalaza-Iles Radama National Park, which offers some protection from habitat loss and hunting for bushmeat. The species is not yet safe in the wild, but the population of c. 3,000 individuals is stable and the species is no longer included on IUCN's list of the 25 most threatened primates. This is good news for a species that was facing almost certain extinction less than a decade ago.

Source: New Scientist (2016) newscientist.com/article/2073991-meet-the-animals-that-are-defying-odds-by-escaping-extinction/?utm_source=NSNS

CITES demands urgent action to tackle illegal ivory and rhinoceros horn trade...

At its 66th meeting, which took place in Geneva in January, the Standing Committee of CITES demanded urgent action from a number of key countries to help stem the illegal trade in rhino horn and ivory. Both Mozambique and Tanzania have lost more than half of their elephants since 2009, and both countries have been called on to take critical steps against ivory trafficking. Vietnam, the largest consumer of rhino horn, will be required to report on its progress in halting the illegal trade, and Mozambique will be required to report on the progress of its action plan to save the rhinoceros. The Committee recommended trade sanctions against Angola, Laos PDR and Nigeria for their failure to report on the progress of their national ivory action plans. At one of its busiest meetings to date, the Committee also endorsed measures that will benefit many other threatened species, including totoaba fish, tigers, great apes and pangolins.

Source: WWF (2016) wwf.panda.org/wwf_news/?259751/CITES-calls-for-urgent-action-to-maintain-pressure-on-illegal-ivory-and-rhino-horn-trade

...and faces calls to protect rosewood species as demand is booming

According to a briefing prepared by the Environmental Investigation Agency for the 66th meeting of the CITES Standing Committee, CITES is failing to address the urgent conservation challenge posed by the

booming demand for rosewood in Asia. Three-quarters of the global trade in rosewood, or hongmu, is focused on just three of the 33 species, *Pterocarpus erinaceus*, *Pterocarpus macrocarpus/pedatus* and *Dalbergia oliveri/bariensis*, and none of these three is currently listed on CITES. As rosewood species have declined across South-east Asia as a result of decades of over-harvesting, Chinese traders have turned to sources in Africa and Latin America to meet the demand. Many West African countries have put regulatory measures in place to protect rosewood species, from stricter controls to total bans on harvesting and export, and Senegal is calling on CITES to protect *P. erinaceus*. Mexico and other countries are also calling for the protection of all *Dalbergia* species.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/countries-call-for-new-cites-protections-for-rosewood-species/

Global fisheries catches may be significantly underestimated

According to official fisheries data assembled by the UN Food and Agriculture Organization global marine fisheries catches peaked at 86 million tonnes in 1996 and then decreased to c. 77 million tonnes in 2010. However, the results of a decade-long catch reconstruction project covering the Exclusive Economic Zones of maritime countries and the high seas for the period 1950–2010 suggest that catches may be underestimated by more than 50%. The researchers involved in the study argue that the data submitted to the FAO are mainly from large-scale industrial fishing activities, and do not include crucial data on small-scale commercial fisheries, subsistence fisheries, illegal fishing activity, and discarded bycatch. The study also suggests that the decline in the global fisheries catch since the mid 1990s is greater than officially estimated, reflecting the unsustainable nature of fisheries globally and pointing to a need for improved monitoring of all fisheries.

Source: *Nature Communications* (2016) [dx.doi.org/10.1038/ncomms10244](https://doi.org/10.1038/ncomms10244), & *BBC News* (2016) [bbc.co.uk/news/science-environment-35347446](https://www.bbc.co.uk/news/science-environment-35347446)

Pledge to restore degraded forests for climate change mitigation...

At the Paris Climate Conference last December delegates from Burundi, Honduras, India, Mexico and Pakistan, as well as Asia Pulp and Paper, pledged to restore up to 18 million ha of deforested and degraded land. The commitments were made as part of the Bonn Challenge, a

global initiative launched by Germany and IUCN in 2011, which has a current target of 350 million ha under restoration by 2030. Achieving this goal could generate significant benefits in terms of watershed protection, food security and soil conservation, as well as sequestering up to 1.7 gigatonnes of carbon dioxide equivalent annually. India's pledge to restore 13 million ha is the first Bonn Challenge commitment from a BRIC country (Brazil, Russia, India and China), and Asia Pulp and Paper is the first private-sector company to make a pledge under the initiative, with a commitment to restore 1 million ha.

Source: *IUCN* (2015) [iucn.org/media/news-releases/?22258/Leaders-pledge-to-restore-additional-18-million-hectares-of-critical-landscapes-as-part-of-global-target](https://www.iucn.org/media/news-releases/?22258/Leaders-pledge-to-restore-additional-18-million-hectares-of-critical-landscapes-as-part-of-global-target)

...as 2015 declared the hottest year on record

Global temperature data from three independent sources—NASA, the U.S. National Oceanic and Atmospheric Administration, and the UK's Met Office—reveal that global temperatures reached an unprecedented high in 2015, with the global average at least 1°C above pre-industrial levels. Almost all areas, both terrestrial and marine, experienced higher than normal temperatures. Although the high temperatures were partly driven by an El Niño system, marked by warming in the tropical Pacific Ocean, they are in line with a long-term trend in which increasing concentrations of greenhouse gases in the atmosphere are driving overall warming. Scientists predict that the current El Niño will continue to raise the average global temperature into 2016. Meanwhile, the Pacific Decadal Oscillation, a 15- to 30-year cycle, appears to have flipped from a negative to a positive phase, resulting in increased sea surface temperatures across the eastern Pacific.

Source: *Nature* (2016) [dx.doi.org/10.1038/nature.2016.19216](https://doi.org/10.1038/nature.2016.19216)

Publish and perish

Academic journals have begun withholding the geographical locations of newly discovered species after poachers used the information in peer-reviewed articles to collect previously unknown lizards, frogs and snakes from the wild. The journal *Zootaxa* recently announced that an article describing two new species of large gecko in southern China deliberately omitted the species' locations (the relevant data have been lodged with government agencies, and are available to scientists upon request). The locations were withheld from the article because of the popularity of this genus of gecko as

pets and cases of commercial collectors using locations published in scientific descriptions to poach herpetofauna. For example, only 4 months after *Zootaxa* published information about a new leaf-tailed gecko in Madagascar in 2015, the species appeared in Europe.

Source: *The Guardian* (2016) [theguardian.com/environment/2016/jan/01/poachers-using-science-papers-to-target-newly-discovered-species](https://www.theguardian.com/environment/2016/jan/01/poachers-using-science-papers-to-target-newly-discovered-species)

EUROPE

Wildlife at risk from fences erected to block refugees

Academics at the University of Zagreb, in Croatia, are calling for the removal of barbed-wire barriers erected by Slovenia to prevent refugees from crossing the border between the two countries. The fences pose a significant threat to Europe's wildlife, obstructing the migration of deer from high to low altitudes, as well as the movement of their predators, lynx and wolves. Both lynx and wolves use habitat in both countries, but the fences are preventing them from moving throughout their range, posing the risk of inbreeding as gene flow is curtailed. The c. 3,000 bears in the Balkans could also be at risk, with their habitat fragmented by such fences in Macedonia, Bulgaria, Greece, Hungary and Slovenia. Croatia's foreign minister has written to the European Commission about the threat posed by the fences to the migration of wild native species, and calls to remove the fences have been echoed by WWF and IUCN.

Source: *New Scientist* (2015) [newscientist.com/article/mg22930544-100-fences-put-up-to-stop-refugees-in-europe-are-killing-animals/](https://www.newscientist.com/article/mg22930544-100-fences-put-up-to-stop-refugees-in-europe-are-killing-animals/)

Tourism threatens Europe's oldest lake...

Plans for large-scale tourism development on the shores of Lake Ohrid in Macedonia pose a serious threat to the wetland ecosystem of the >1 million-year-old lake. The lake, which is designated a UNESCO World Heritage site based on its natural value, is the most biodiverse lake of its size and is home to more than 350 species found nowhere else, including fish, snails, sponges and worms, many of which are restricted to just a few square metres of the lake. The authorities have announced plans to drain the lake's only surviving wetland, the 75 ha Studenchishta marsh, and build luxury housing and a marina in its

place. The wetland cleans polluted water flowing into the lake from the town of Ohrid, and harbours a number of rare species, including the Macedonian crested newt *Triturus macedonicus* and four globally threatened butterfly species. Concerned citizens have launched a petition to save the lake.

Source: *New Scientist* (2015) [newscientist.com/article/dn28693-europes-oldest-lake-faces-destruction-to-make-way-for-tourists/](http://www.newscientist.com/article/dn28693-europes-oldest-lake-faces-destruction-to-make-way-for-tourists/)

... and toxic pollutants threaten dolphins and killer whales

A pan-European study of >1,000 stranded or biopsied cetaceans found that striped dolphins, bottle-nose dolphins and killer whales had levels of PCBs (polychlorinated biphenyls) that exceeded all known PCB toxicity thresholds for marine mammals. PCBs were banned in the 1970s because of their toxic effects, such as immunosuppression and reproductive impairment, in humans and other mammals but their biomagnification in marine food webs continues to have a negative effect on top predators. The contamination appears to be affecting the breeding success of Europe's cetaceans, particularly killer whales, with several monitored populations, including around Scotland and Ireland, and in southern Europe, at risk of extinction. The researchers highlight the need for urgent action among global policy-makers to address the legacy of PCBs in the environment, and the leakage of contamination from landfills into rivers and estuaries, and eventually into the marine environment.

Source: *Scientific Reports* (2016) [dx.doi.org/10.1038/srep18573](https://doi.org/10.1038/srep18573), & *BBC News* (2016) [bbc.co.uk/news/science-environment-35302957](http://www.bbc.co.uk/news/science-environment-35302957)

New marine conservation zones designated in UK waters...

In January the UK government designated 23 new marine conservation zones to protect the country's rich marine biodiversity and habitats, including seahorses, stalked jellyfish, spiny lobsters, dolphins, chalk and coral reefs, and seagrass meadows. Although the move has been welcomed by conservation organizations, many remain sceptical about the level of protection offered, in the absence of a management plan for the protected areas. The reserves will effectively be no more than 'paper parks' until legislation has been put in place to regulate activities. This expansion of the marine protected area network brings the total number of designated marine conservation zones to 50, covering c. 20,000-km² of UK waters; however, this number falls far short of the 127 sites proposed

following an earlier consultation. Further consultations will be held on special areas of conservation for harbour porpoises, and special protection areas to protect feeding and bathing areas used by spoonbills and puffins.

Source: *BBC News* (2016) [bbc.co.uk/news/science-environment-35328286](http://www.bbc.co.uk/news/science-environment-35328286), & *The Guardian* (2016) [theguardian.com/environment/2016/jan/17/englands-23-new-marine-conservation-zones-branded-useless-by-expert](http://www.theguardian.com/environment/2016/jan/17/englands-23-new-marine-conservation-zones-branded-useless-by-expert)

... but seagrass ecosystems are under threat

In a study of the environmental health of seagrass meadows around Britain and Ireland it has been found that most of the sites surveyed were in poor condition relative to global averages, although two remote sites, in the Isles of Scilly and in Mannin Bay off the west coast of Ireland, were in relatively good condition. All of the sites were considered to be at risk from anthropogenic disturbance, in particular from reduced water quality and mooring or anchoring of boats. Agricultural run-off is a significant threat, and the surveyed meadows were found to have tissue nitrogen levels 75% higher than the global average. Seagrass provides benefits to people and nature, providing a nursery ground for fish and helping to sustain the marine food chain, and there is a need for action to ensure protection of seagrass meadows in the long term and prevent further loss and degradation of these important ecosystems.

Source: *Royal Society Open Science* (2016) [dx.doi.org/10.1098/rsos.150596](https://doi.org/10.1098/rsos.150596), & *BBC News* (2016) [bbc.co.uk/news/science-environment-35199046](http://www.bbc.co.uk/news/science-environment-35199046)

Calls for new national charter to protect Britain's trees...

A coalition of 48 conservation and cultural groups is campaigning for a new national charter that recognizes the importance of trees in British society in the 21st century, and their contribution to people's health and well-being as well as to the economy. The original Charter of the Forest was signed by Henry III almost 800 years ago to restore and protect people's right to access and use the royal forests, and as forests come under increasing threat from development, disease and climate change, campaigners say it is time for a new charter to ensure that future generations will benefit from trees and woodlands. The total value of woodland to the UK's economy is estimated to be c. GBP 280 billion, and research has shown the health benefits of living close to trees; however, the area of new woodland

created each year is decreasing, and ash and oak trees continue to be threatened by disease.

Source: *The Guardian* (2016) [theguardian.com/environment/2016/jan/13/campaigners-call-for-new-british-charter-for-trees](http://www.theguardian.com/environment/2016/jan/13/campaigners-call-for-new-british-charter-for-trees)

... but will it be too late for rare butterfly?

According to a 2015 report on the state of the UK's butterflies, the population of the white-letter hairstreak butterfly *Satyrion w-album* has declined by 96% in the past 4 decades. The species exclusively inhabits elm trees, and its habitat has virtually disappeared as a result of an outbreak of Dutch elm disease in the 1970s and 1980s, with the loss of more than 30 million trees. There are estimated to be only c. 1,000 mature English elms remaining. Residents in the city of Sheffield, supported by the Wildlife Trust, petitioned Sheffield council to protect a 150-year-old elm tree that was found to be home to a colony of hairstreaks, which are a UK Biodiversity Priority Species. The tree had been designated for destruction as part of a street tree replacement programme.

Source: *The Guardian* (2016) [theguardian.com/environment/2016/jan/11/butterfly-white-letter-hairstreak-elm-trees-disease](http://www.theguardian.com/environment/2016/jan/11/butterfly-white-letter-hairstreak-elm-trees-disease)

Fragile state of Britain's wildlife

Analysis of records spanning 40 years has shown that Britain's wildlife is in an increasingly fragile state, with species providing ecosystem key functions (decomposition, carbon sequestration, pollination, pest control and cultural values) being lost more rapidly than others. The researchers looked at records of more than 4,000 types of plant and animal living in England, Wales and Scotland during 1970–2009. The picture that emerges is of an increasingly fragile system, particularly in species that provide key functions. Groups providing pollination and pest control benefits had undergone declines whereas those involved in functions such as decay or mopping up carbon emissions were more stable. Plants and animals regarded as of cultural importance to humans, such as birds, butterflies and hedgehogs, have also fared badly.

Source: *Nature Communications* (2015) [dx.doi.org/10.1038/ncomms10122](https://doi.org/10.1038/ncomms10122), & *BBC News* (2015) [bbc.co.uk/news/science-environment-35039662](http://www.bbc.co.uk/news/science-environment-35039662)

Using biotechnology to protect wildlife

Researchers at France's Haute-Touche reserve are developing biotechnology

techniques to help conserve threatened species through the use of assisted reproductive technology. They aim to boost populations of threatened animals by harvesting egg and sperm cells, producing embryos by means of in vitro fertilization, and implanting the embryos in females of more common species. There are significant challenges associated with the differences in physiology and reproductive cycles among species, requiring a specific cryogenics process in each case to freeze semen, embryos and other tissue. In 2006 a Sika deer fawn was born to a common red deer surrogate mother and integrated with naturally conceived Sika deer, but the same operation carried out later on a rare subspecies was unsuccessful, as the fawn was rejected by the surrogate mother. The reserve also maintains a diverse wildlife sperm and tissue bank, which includes deer and markhor embryos, and semen samples from 400 individuals of 30 wild species.

Source: *The Guardian* (2016) theguardian.com/environment/2016/jan/18/biotechnology-endangered-wildlife-conservation-species

Lethal amphibian disease killed off on island

For the first time researchers have eliminated an amphibian fungal disease in a wild population of toads. The chytrid fungus *Batrachochytrium dendrobatidis*, which has affected amphibian species worldwide, driving population declines and species extinctions, is highly infectious and is responsible for devastating amphibian populations. Over 5 years researchers were able to clear the disease from toads native to the Spanish island of Mallorca. Tadpoles of the Mallorcan midwife toad *Alytes muletensis* were collected from the wild, transported to a laboratory and bathed in an anti-fungal solution. The tadpoles were returned to the collection sites and a laboratory decontaminant used to sterilize the environment around each breeding site. Infection at four of the five pools where infection had previously been recorded was eradicated, and remained so for 2 years post-application.

Source: *Biology Letters* (2015) [dx.doi.org/10.1098/rsbl.2015.0874](https://doi.org/10.1098/rsbl.2015.0874), & *BBC News* (2015) bbc.co.uk/news/science-environment-34850807

SUB-SAHARAN AFRICA

Marine monitoring inspires new approach to studying wild animal offtake

Based on approaches used to monitor exploitation of fisheries and population trends

in marine species, scientists have proposed two novel indicators for harvested terrestrial species, to assess the harvesting pressure on groups of wild animals within a region, and whether hunters are relying increasingly on smaller species over time. The indicators were applied to data for mammals and birds of West and Central Africa, where overharvesting of wild animals is one of the greatest threats to biodiversity, and the results indicated that harvesting pressure increased over the 40-year study period and that hunters may target smaller species over time, as larger species disappear. For such indicators to be useful in providing insights into the dynamics of wild meat harvesting there is a need for the collection of more data to facilitate large-scale long-term analyses.

Source: *Ecology and Society* (2015) [dx.doi.org/10.5751/ES-07823-200340](https://doi.org/10.5751/ES-07823-200340), & *WCS* (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8473/Land-bound-Scientists-Find-Inspiration-From-the-Sea-to-Monitor-Wild-Animal-Hunting-in-African-Forests.aspx

Sixty new dragonfly species described in Africa

Researchers have recently described 60 new species of African dragonflies, bringing the total number of known dragonfly species on the continent to 760. All dragonflies and damselflies breed in freshwater, yet the new species exhibit considerable diversity in their habitats; for example, the pale cascader *Zygonyx denticulatus*, found in Zambia and the Democratic Republic of the Congo, prefers sunny rapids whereas the Gabon slim sprite *Pseudagrion dactyloidium* is found near muddy puddles in deep shade, and the black relic *Pentaplebia mangana* occupies dark areas near forest waterfalls. Freshwater habitats, which are home to 10% of all animal species worldwide, are under enormous pressure in Africa, and knowledge of the dragonflies is important as they are indicators of the health of freshwater ecosystems. There is a need to develop local expertise in biological research to ensure that new species are discovered and protected.

Source: *IUCN* (2016) iucnredlist.org/archives

Scientists predict decline of deadly chytrid fungus in Albertine Rift

The Albertine Rift region in central Africa is the continent's richest area for vertebrate diversity and is home to >145 amphibian species, at least 42 of which are endemic. The fungal pathogen *Batrachochytrium dendrobatidis* has been associated with

infections, die-offs or extinctions in more than 200 amphibian species worldwide and has been identified in at least eight African countries. A study has documented the distribution and prevalence of the chytrid fungus in existing and proposed protected areas of the Albertine Rift, and used modelling software to predict how climate change will affect its distribution. Model predictions indicate that the fungus is currently widespread across the Albertine Rift but that under predicted climate change scenarios its range will contract substantially by 2080 as optimal habitat suitability decreases. Although the predicted decrease in the chytrid fungus may offer hope for amphibians, they are likely to also experience negative impacts of climate change, including loss of habitat.

Source: *PLoS ONE* (2015) [dx.doi.org/10.1371/journal.pone.0145841](https://doi.org/10.1371/journal.pone.0145841), & *WCS* (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8503/Study-Deadly-Amphibian-Fungus-May-Decline.aspx

2015 worst year on record for rhino poaching...

Overall, rhinoceros poaching figures for Africa reached a record high last year, despite a slight decrease in poaching in South Africa. Losses in Zimbabwe and Namibia rose sharply, and the continent-wide total for the year is at least 1,305 rhinos. Of the four major rhinoceros range states, only Kenya is expected to report a significant decrease in poaching in 2015. In January the South African Government lost its appeal against the lifting of a ban on the domestic trade in rhino horn. The ban was overturned in November following legal action by two game ranchers, leaving open the possibility that South Africa will again become a link in the illegal trade from Africa to Asia. At the 66th meeting of the Standing Committee of CITES at the start of the year, all countries affected by rhino poaching were instructed to implement key strategies and actions set out by the CITES Rhinoceros Enforcement Task Force.

Source: *TRAFFIC* (2016) traffic.org/home/2016/1/21/south-africa-reports-small-decrease-in-rhino-poaching-but-af.html

...and Northern white rhino dies in USA, leaving only three alive

One of the world's last four remaining northern white rhinos has died in a zoo in the USA. The condition of 41-year old Nola had deteriorated after surgery and she had to be put down. Nola had been a popular attraction at the San Diego Zoo Safari Park since 1989. The remaining three northern white

rhinos are at the Ol Pejeta Conservancy in Kenya. The northern white rhino population was devastated by poachers seeking their horns, and was declared extinct in the wild in 2008. San Diego zoo has recently brought in six southern white rhinos, hoping to use them as surrogate mothers for northern white rhino embryos. There are about 20,000 southern white rhinos in the world, but studies are still taking place to determine whether the subspecies are genetically similar enough for the surrogacy to work. If successful, the programme could see a northern white rhino calf born within 10–15 years.

Source: *BBC News* (2015) bbc.co.uk/news/world-us-canada-34897767

Ghana's grey parrots undergo catastrophic decline

Ghana has lost 90–99% of its grey parrot *Psittacus erithacus* population in the past 2 decades, with the almost total loss of all major roosts known in 1992. The species is now rarely sighted in the country, having been heavily traded for decades, and an intensive 150-day search, including of roosts that previously had as many as 1,200 individuals, yielded only a few sightings. The researchers involved in this latest study attribute the decline to four main factors: trade, overall forest reduction, silvicultural practices and timber harvesting on farmland. Reduction in habitat quality is another significant factor, particularly in relation to the felling of large trees such as the commercially important species *Terminalia superba* and *Ceiba pentandra*, which parrots use for nesting and roosting. Interviews with 906 local people in the study areas revealed a public perception that there had been a decline in grey parrot abundance during the previous 2 decades.

Source: *Ibis* (2016) [dx.doi.org/10.1111/ibi.12332](https://doi.org/10.1111/ibi.12332), & *BirdLife International* (2016) birdlife.org/africa/news/ghana%E2%80%99s-grey-parrot-population-may-soon-cease-exist

British helicopter pilot killed by Tanzania poachers

A British helicopter pilot, Roger Gower, has been shot dead by elephant poachers in Tanzania whilst tracking poachers in the Maswa Game Reserve for the Friedkin Conservation Fund. The pilot had been approaching the last of three elephants killed by poachers when he was shot. He managed to land his helicopter, but died before he could be rescued. Mr Gower's main role had been flying people between the different camps on the reserve where he worked, but he had also flown daily patrols to

support ground staff in their work against poachers.

Source: *BBC News* (2016) bbc.co.uk/news/uk-35450490

Congo joins Elephant Protection Initiative

The Republic of the Congo has confirmed that it will join the African-led Elephant Protection Initiative, which was established to eradicate the ivory trade and bring an end to elephant poaching. The announcement was made at the 66th meeting of the Standing Committee of CITES in January. The Central African region lost 65% of its elephants during 2002–2012, and Congo is working hard to protect its elephants through a number of initiatives, including the creation of new protected areas, improved protection in production landscapes, such as forestry concessions, and the development of an anti-poaching strategy. Last year the country's president symbolically set fire to almost 5 tonnes of seized elephant ivory. The Elephant Protection Initiative was launched in 2014 by leaders from Botswana, Chad, Ethiopia, Gabon and Tanzania in response to the poaching crisis in Africa, and was later joined by Uganda, Kenya, Malawi and the Gambia, and most recently by Liberia and the Congo.

Source: *WCS* (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8489/Republic-of-Congo-Becomes-11th-Nation-to-Join-Elephant-Protection-Initiative.aspx

Plans for Atlantic's largest marine reserve

Blue Marine Foundation has announced plans to establish the largest marine protected area in the Atlantic Ocean, around Ascension Island, midway between Brazil and Angola, funded by a grant of GBP 300,000 from the Bacon Foundation. It is intended to close just over half of the proposed 234,291 km² reserve to commercial fishing, with monitoring and enforcement by a combination of satellite and patrol boats, with a strictly controlled tuna fishery in the remainder, policed according to international best practice and with a total ban on shark finning. The waters around Ascension are home to some of the world's largest marlin, one of the largest populations of green turtles, several endemic fish species, and important colonies of tropical seabirds. The fishery has previously been exploited by foreign boats using unsustainable methods, but all vessels will now be required to implement measures to facilitate

the live release of bycatch of seabirds, turtles and sharks.

Source: *New Scientist* (2016) newscientist.com/article/mg22930554-100-uk-territory-could-host-atlantics-largest-protected-area, & *Blue Marine Foundation* (2016) bluemarinefoundation.com/blog/2016-begins-with-the-creation-of-the-largest-marine-reserve-in-atlantic-ocean-2/

Two new frog species discovered in Madagascar

Two new frog species of the genus *Rhombophryne* have been discovered in the rainforests of the Tsaratanana Massif region in the north of Madagascar. Both species, *R. ornata* and *R. tany*, live on the forest floor, where they are camouflaged by fallen leaves. They belong to a group of species characterized by small, fleshy spines over the eyes, but both of the new species have fewer spines than other members of the group. Micro-CT scans indicate they may be sister species, as they also share common differences between their skeletons and those of other species in the group. Madagascar's rainforests may be home to many species that are still unknown to science, and the difficulty in gaining access to remote areas is a challenge to the discovery of new species. The country is thought to be home to as many as 500 species of frogs that are found nowhere else.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/two-new-frog-species-discovered-in-remote-madagascar-rainforest, & *Herpetologica* (2015) [dx.doi.org/10.1655/HERPETOLOGICA-D-14-00048](https://doi.org/10.1655/HERPETOLOGICA-D-14-00048)

SOUTH AND SOUTH-EAST ASIA

New genus of tree frog discovered in India . . .

Scientists have rediscovered a species of tree frog that was thought to be extinct for over a hundred years, and identified the species as part of a new genus, *Frankixalus*, bringing the total number of known genera of tree frogs to 18. The frogs were found in abundance at high altitudes in forests of north-east India, where their survival is threatened by deforestation for agricultural expansion, human settlements and infrastructure development, as well as pollution from industry. The frogs live in tree holes up to 6 m above ground, and their habitat is uniquely high among tree frogs. This, and the fact that there is relatively little scientific exploration in the remote region, may explain why they remained undiscovered for so long. In

identifying the new genus, the scientists studied the frogs' behaviour, collected specimens and described their outer appearance and skeletal features, and sequenced their genetic code.

Source: *The Guardian* (2016) theguardian.com/environment/2016/jan/21/scientists-find-tree-frog-believed-extinct-for-more-than-100-years

... and new species of Himalayan thrush

During a field study in the mountains of Arunachal Pradesh in the north of India researchers noticed that there were two groups of the bird known as the plain-backed thrush, occurring at different elevations and in different habitats. Although very similar in appearance, the birds had different songs. The thrushes in the forests had more tuneful songs than those occupying rocky peaks above the tree line. During several years of detailed study, including DNA analysis, the scientists confirmed that the two groups are two distinct species: the alpine thrush *Zoothera mollissima* and the newly discovered Himalayan forest thrush *Zoothera salimalii*, which is named in honour of the late Indian ornithologist Dr Salim Ali. The team also discovered that a thrush population in neighbouring parts of China, previously considered a subspecies of the plain-backed thrush, is also physically and genetically distinct: the newly named Sichuan forest thrush *Zoothera griseiceps*.

Source: *Avian Research* (2016) [dx.doi.org/10.1186/s40657-016-0037-2](https://doi.org/10.1186/s40657-016-0037-2), & *BBC News* (2016) bbc.co.uk/news/science-environment-35361044

India signs raptor conservation agreement

India has become the 54th country to sign an international agreement to protect migratory birds of prey. The Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia was concluded under the United Nations Environment Programme's Convention on Migratory Species and, although not legally binding, is an important instrument for the monitoring, research and conservation of birds of prey, and provides guidelines for national strategies for conservation action. India's vultures have suffered catastrophic declines linked to veterinary use of the drug diclofenac. During 1992–2007 populations of the Indian vulture *Gyps indicus* and slender-billed vulture *Gyps tenuirostris* declined by almost 97%, and the white-rumped vulture *Gyps bengalensis* declined by 99.9%. All three species

are now categorized as Critically Endangered on the IUCN Red List.

Source: *BirdLife International* (2016) birdlife.org/asia/news/indian-government-signs-raptor-conservation-agreement, & birdlife.org/datazone/sowb/casestudy/156

Illegal trade in pangolins continues in Myanmar

Although all of Asia's pangolin species are listed in Appendix II of CITES and there is a ban on international trade, ongoing demand for pangolins and their parts and derivatives, and lack of enforcement against criminal networks involved in the wildlife trade are pushing all four species towards the brink of extinction. Myanmar is an important transit hub for smuggling of pangolins and other wildlife, and surveys of the morning market in the town of Mong La, on the border with China, revealed that the illegal trade in live pangolins, as well as their meat and scales, is booming. Rhinoceros horn and hippopotamus teeth have also been observed for sale in this market in recent years. The pangolins sold in the market appear to be sourced from within Myanmar itself, where trade in pangolins is prohibited by law, as well as from neighbouring countries and possibly from Africa.

Source: *Global Ecology and Conservation* (2016) [dx.doi.org/10.1016/j.gecco.2015.12.003](https://doi.org/10.1016/j.gecco.2015.12.003), & *TRAFFIC* (2015) traffic.org/home/2015/12/31/illegal-pangolin-trade-in-myanmar-booming.html

Hope for elephants in the Cardamom Mountains...

A camera trap in the Cardamom Mountains, Cambodia's largest forest sanctuary, has captured footage of a herd of 12 elephants, including several young. The presence of young elephants is a positive indicator that the environment is stable and the elephants are not under stress, heralding the success of a 14-year conservation programme supported by Conservation International. Illegal logging remains a significant threat to Cambodia's forests but the decline in the protected forest area during 2006–2012 was significantly less than in the immediately surrounding areas. To secure the future of the forest, one of South-east Asia's most biodiverse areas, Conservation International has launched a trust fund for its ongoing protection, including paying for rangers and community engagement. Cambodia is home to some of the largest remaining populations of the Asian elephant *Elephas maximus*, with an estimated 200–250 elephants in the Cardamom Mountains and another

population of similar size in the east of the country.

Source: *The Guardian* (2016) theguardian.com/environment/2016/jan/15/footage-of-elephants-in-cambodia-raises-hopes-for-asian-species-in-the-wild

... and waterbirds make a comeback on Tonle Sap Great Lake

Prek Toal, on Cambodia's Tonle Sap Great Lake, was designated a wetland of international importance under the Ramsar Convention last October. Recent surveys have shown that wildlife is flourishing there, with increases in the numbers of lesser and greater adjutant storks, spot-billed pelicans and Asian openbills, with a record breeding year recorded for the latter two species in 2014. Other bird species were also recorded in the wetland, including the Endangered masked finfoot, and camera traps confirmed that both hairy-nosed and smooth-coated otters were present in good numbers. In the early 2000s, bird hunters were retrained as nest protection rangers, and in 2012 there were institutional changes relating to fishing access, coupled with an increase in protective measures, including platform-based monitoring of the waterbirds and protection of streams.

Source: *WCS* (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8530/Waterbirds-Make-Dramatic-Comeback-to-Cambodia-Wetlands.aspx

Proposed road through Bornean wildlife sanctuary

NGOs and scientists have expressed concerns about the Malaysian federal government's proposal to pave a road through part of Borneo's Kinabatangan Wildlife Sanctuary and build a bridge close to the protected area. The proposed Sabah Development Corridor is intended to stimulate economic growth and connect the communities of Litang and Tomanggong with the town of Sukau, which is the hub for a fledgling ecotourism industry. The 26,000 ha Sanctuary, which is surrounded by oil palm plantations, comprises important habitat for Borneo's unique subspecies of pygmy elephants as well as 11 primate species, including orang-utans, gibbons and proboscis monkeys, and is home to some of the densest populations of megafauna in Malaysia. Critics of the proposed development say it will further fragment valuable habitat and increase human-wildlife conflict. It also appears to be in contravention of Sabah's Elephant Action Plan, which prioritizes the prevention of any activity that would cause further fragmentation of elephant habitat.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/malaysia-plans-road-expansion-through-dwindling-elf-elephant-orangutan-habitat/

Black rats rainforest invasion speeded by deforestation

Research has suggested that logging in rainforests facilitates the spread of invasive black rats, which normally avoid mature forests as they provide little cover. Fallen wood, however, contains more insect food for the rats. Black rats often cause the extinctions of native species, and spread disease. In Borneo, where large tracts of natural forest have been degraded, four species of rats were trapped and their movements then tracked. Black rats had the strongest preference for the type of disturbed habitat associated with logging. The destruction of forests throughout the tropics may be multiplying the threat from invasive species such as black rats, the presence of which could pose a significant threat to nesting birds and other small mammals.

Source: *BBC News* (2016) bbc.co.uk/news/science-environment-35461412

Use of hair traps for carnivore monitoring trialled in Peninsular Malaysia...

Researchers have conducted a preliminary study on the use of scent-baited hair traps to monitor populations of mammalian carnivores in Peninsular Malaysia. The use of non-invasive genetic sampling is becoming increasingly popular for wildlife monitoring, but such monitoring is particularly challenging in tropical rainforests, where densities of carnivores tend to be relatively low, and scat samples decay rapidly in humid conditions. The researchers set 35 traps in total along Malaysia's two main wildlife corridors, and monitored them for a total of 764 nights using motion-triggered camera traps to observe how carnivores reacted to the traps. The cameras detected 18 carnivores near the traps but only one, a male Malayan tiger, rubbed against a trap and left a hair sample. Scent-marking behaviour was also observed in a male clouded leopard at a location where a hair trap had been removed by elephants, which pose a challenge to the successful use of such traps. Source: *Tropical Conservation Science* (2015) tropicalconservationscience.mongabay.com/content/v8/tcs_v8i4_975-982_Hedges.pdf, & *Mongabay.com* (2016) news.mongabay.com/2016/01/scientists-try-hair-traps-to-track-tropical-carnivores/

...and weaver birds seized from traffickers in the north of the country

Almost 1,500 baya weavers *Ploecus philippinus* were seized from two traders in Perak following a raid by the Perak Border Security Agency in collaboration with the Department of Wildlife and National Parks. The birds were allegedly being transported to the state capital, Ipoh, for sale. The baya weaver is native to Malaysia and is a protected species under the country's Wildlife Conservation Act 2010, and illegal possession can incur fines of up to USD 11,900, imprisonment, or both. Trading of the bird's unique ornamental nest is regulated through a licensing system in Peninsular Malaysia. This latest seizure is the largest involving baya weavers in recent times, but at least 739 baya weavers were reported to have been seized by authorities in Peninsular Malaysia during 2012–2015, and it was the second most numerous bird species involved in seizures in 2015, after the white-rumped shama *Copsychus malabaricus*.

Source: *TRAFFIC* (2016) traffic.org/home/2016/1/20/large-weaverbird-seizure-in-northern-peninsular-malaysia.html

Indonesia establishes peatland restoration agency...

In the aftermath of last year's haze crisis caused by the burning of up to 2 million ha of land, much of which was degraded peatland, in Sumatra, Borneo and New Guinea, Indonesian President Joko Widodo has announced reforms to protect peatlands and restore areas that have been burned. He has appointed the conservation biologist Nazir Foead, who previously held high-level roles in WWF Indonesia and the Climate and Land Use Alliance, as the head of a newly created peatland restoration agency. Given Indonesia's history of failed reforestation programmes, the announcement has been received with some scepticism. However, amid concerns about pollution and threats to charismatic wildlife, companies in the plantation sector are coming under increasing public pressure to eliminate peatland destruction from their operations. Asia Pulp and Paper, one of the world's largest pulp and paper companies, has committed to working with local communities to explore alternative livelihood opportunities on peatlands.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/indonesia-appoints-conservationist-to-save-countrys-declining-peatlands/

...but oil palm expansion continues in Aceh

There is ongoing expansion of oil palm plantations in Aceh province, on the island of Sumatra, with plantations covering more than 390,000 ha. Not all of the plantations are legal, and the head of Aceh Tamiang regency, which has been devastated by flash floods as a result of deforestation, is leading a campaign to eradicate illegal plantations. Aceh's unique Leuser Ecosystem, which is the only place where Sumatran tigers, orang-utans, rhinoceros and elephants still coexist in the wild, is under threat, and a spatial plan passed by the Aceh government in 2013 fails to uphold the protection of Leuser despite it being a nationally protected area. A coalition of concerned citizens has given notice of their intention to bring a class action lawsuit against Indonesia's central government unless the spatial plan is revised.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/palm-oil-expands-in-aceh/, & news.mongabay.com/2015/10/aceh-citizens-threaten-lawsuit-over-spatial-plan/

Rare Philippine eagle chick born in captivity

A rare Philippine eagle chick has hatched in captivity, giving hope for this Critically Endangered species. The eaglet is the first in 2 years to be born at a conservation centre in the southern Davao province. Thirty-four eagles, including the hatchling, are currently kept at the centre. Only c. 600 Philippine eagles are thought to remain in the wild. Considered to be the country's national bird, the Philippine eagle is categorized as Critically Endangered because of the loss of its natural rainforest habitat, and hunting.

Source: *BBC News* (2015) bbc.com/news/world-asia-35058369

EAST ASIA

Citizen scientists count China's coastal waterbirds...

More than 150 volunteer bird watchers have participated in the China Coastal Waterbird Census since its inception in 2005, and have recorded a significant body of scientific data that will inform the conservation and management of important sites along the East Asian–Australasian Flyway. China's coastal wetlands constitute some of the most important migratory, passage and wintering sites along the flyway, yet none of the sites of international importance identified are

properly protected. During the latest census a total of 161 species were recorded, with almost 266,000 birds of 111 species recorded at the peak of April's northward migration period, including 20% or more of the entire population of the following globally threatened species: the Critically Endangered spoon-billed sandpiper *Calidris pygmaea* and Siberian crane *Leucogeranus leucogeranus*, the Vulnerable Saunders's gull *Saundersilarus saundersi* and relict gull *Larus relictus*, and the Endangered black-faced spoonbill *Platalea minor*.

Source: *BirdLife International* (2016) bird-life.org/asia/news/decade-long-citizen-science-project-counts-china%E2%80%99s-waterbirds

... and a rare bunting has been sighted close to Beijing

In January the Endangered rufous-backed bunting *Emberiza jankowskii* was found wintering at Miyun Reservoir, 80 km north-east of central Beijing, marking the first record of Asia's rarest bunting in Beijing municipality for 75 years. The initial discovery of a single individual was made on 9 January by two young birders, and by 15 January nine individuals had been found. The species has undergone significant decline since the 1970s, probably as a result of conversion of its grassland habitat to arable farmland and an increase in livestock grazing. However, last year the government banned the cultivation of crops near the reservoir, and the subsequent recovery of grasses and other wild plants has attracted large numbers of passerines to the area. Conservation action for the rufous-backed bunting has focused on its breeding grounds in Inner Mongolia, where educational activities have helped raise awareness of the bunting and its conservation among communities living close to core breeding areas.

Source: *BirdLife International* (2016) bird-life.org/asia/news/beijing-buntings-beguile-birders

Hong Kong moves to end domestic ivory trade

In January the Hong Kong government announced it was actively exploring phasing out the domestic ivory trade, following a campaign by WWF-Hong Kong and a petition to ban the trade, signed by tens of thousands of people in Hong Kong. The city is a major transit and retail hub for ivory, and the demand for ivory products in Asia is driving the poaching of c. 30,000 elephants in Africa each year. The government has expressed concern about poaching and has signalled its intention to strengthen efforts

to tackle the illegal ivory trade by imposing heavier penalties for smuggling. It will also consider enacting legislation to ban the import and export of ivory. This latest milestone for elephant conservation follows the announcement by China and the USA in September 2015 that they would take action to put an end to domestic ivory trade. Source: WWF (2016) panda.org/wwf_news/?259592/Hong-Kong-government-signals-end-to-domestic-ivory-trade

NORTH AMERICA

Photographs shed light on the elusive narwhal

It is difficult to estimate numbers of the narwhal *Monodon monoceros*, as the single-tusked whales spend c. 80% of their time below the surface of the water, and more than half the year in deep offshore waters below dense pack ice. Every 5 years Fisheries and Oceans Canada conducts a survey of the narwhals in summer, when they move to coastal inlets to give birth. Using aerial photographs from the 2013 survey, taken over Eclipse Sound and Admiralty Inlet, off the northern coast of Baffin Island, researchers have been able to assess the numbers of narwhals living in the Canadian Arctic, estimated to be three quarters of the global population, and for the first time have been able to count the number of baby narwhals. Results indicate that Eclipse Sound may be an important calving and nursery habitat, which could provide grounds for reducing the catch limits in this area to protect nursing mothers and their young.

Source: *New Scientist* (2016) newscientist.com/article/dn28729-elusive-narwhal-babies-spotted-gathering-at-canadian-nursery/

Fewer fish for Canada's coastal indigenous communities

A study based on climate change projections has predicted that the fisheries' catch of First Nations communities along the Pacific coast of Canada may decline by up to 49% by 2050. Of the 98 culturally and commercially important fish and shellfish species studied, all are projected to move away from their current habitats towards cooler waters. Herring and salmon are among the most important species for these coastal peoples, and both are expected to decline as a result of climate change. The study is one of only a few that have examined the potential impacts of climate change on small-scale and subsistence

fisheries, which are vitally important to food security and poverty alleviation, with most studies focusing on large-scale commercial fisheries. First Nations have long demonstrated their resilience in the face of anthropogenic and environmental change. Many have already noted a decrease in the availability of their traditional foods in response to the changing climate.

Source: *PLoS ONE* (2016) dx.doi.org/10.1371/journal.pone.0145285, & *UNEP WCMC* (2016) unep-wcmc.org/news/climate-change-could-reduce-the-fisheries-catch-of-canadas-coastal-indigenous-peoples-by-up-to-49-per-cent

U.S. islands going under as sea level rises...

Residents of Tangier Island and other islands in Chesapeake Bay, on North America's Atlantic coast, could become climate refugees within decades unless defences are built against the rising sea level. The Bay, which is America's largest tidal estuary, experiences disproportionate rises in sea level because of a weakening of the North Atlantic Oscillation and the Atlantic Meridional Overturning Circulation. Comparison of the current size of the islands with maps dating from 1850 shows they have shrunk from 875 to just 320 ha, and it is forecast that much of Tangier Island will be under water within 50 years. The neighbouring uninhabited islands of Goose and Uppards are predicted to be lost by 2038 and 2113, respectively. It may be possible to buy more time for the islands by constructing breakwaters and artificial sand dunes.

Source: *New Scientist* (2015) newscientist.com/article/mg22830523-900-rising-seas-expected-to-sink-islands-near-us-capital-in-50-years/

... and climate change threatens America's evergreen trees

A study has predicted that almost all of the needle-leaf evergreen trees in the South-west USA will be wiped out by 2100, on the basis of current climate predictions for the region. Trees have already suffered significant losses as a result of drought conditions exacerbated by climate change, with estimates from the U.S. Forest Service indicating that as many as 12 million trees may have been killed by drought last year in California alone. The study was prompted by the high rate of death among drought-resistant species such as piñon, pine and juniper recorded in Los Alamos, New Mexico, during 2002–2003, and similar reports from around the world. The prospect of a treeless future for the South-west is stark, for a region known for its old

forests of trees such as Ponderosa pine *Pinus ponderosa*, which are not found in many other places.

Source: *Nature Climate Change* (2015) [dx.doi.org/10.1038/nclimate2873](https://doi.org/10.1038/nclimate2873), & *Mongabay.com* (2016) news.mongabay.com/2016/01/widespread-death-of-evergreens-predicted-in-american-southwest/

Hope for sand tiger sharks in Long Island

Scientists studying sharks in Long Island's Great South Bay have discovered a nursery ground for the sand tiger shark, which is categorized as Vulnerable on the IUCN Red List and listed as a Species of Concern by the U.S. National Marine Fisheries Service. The discovery of a dead juvenile sand tiger shark in 2011 prompted follow-up conversations with local anglers and boaters, who revealed that they had been catching small sharks in the bay for years. Efforts are now underway to raise awareness of the conservation status of the sharks among the public, and anglers in particular, to protect the local population. Recovery of the heavily depleted population will take many years as the species has a low reproductive rate, with females giving birth to only one or two pups every 2 years. Acoustic tags are being used to gain a better understanding of the sharks' migration, their habitat requirements and how they can be better protected.

Source: WCS (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8453/Scientists-Discover-Nursery-Ground-for-Sand-Tiger-Sharks-In-Long-Islands-Great-South-Bay.aspx

Using dogs in bear conservation

Researchers in the USA have used detection dogs to locate scat samples of black bears *Ursus americanus* and grizzly bears *Ursus arctos* for genetic analysis, to quantify and map key areas of bear habitat in the Centennial Mountains. Lack of connectivity between protected areas makes it difficult for large carnivores to disperse successfully, and the Centennial Mountains and surrounding valleys are of high conservation importance in connecting the Greater Yellowstone Ecosystem with wilderness areas in central Idaho. Black bears are more abundant in the area than grizzly bears, but could be used as a proxy species to predict grizzly bear habitat, as both species are known to use similar habitats spatially but at different times. The study used two Labrador retrievers and two German shepherds owned and trained by Working Dogs for Conservation, in what

proved to be an effective, non-invasive approach to data collection.

Source: *Western North American Naturalist* (2015) ojs.lib.byu.edu/spc/index.php/wnan/article/view/36547, & WCS (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8501/Bears-Best-Friends.aspx

Wolf population reaches new high in Yellowstone

The number of wolves in Yellowstone National Park has continued to grow. New figures show there were at least 104 wolves in 11 packs in Yellowstone in December 2014, including nine breeding pairs and 40 pups. The number of wolves is now at its highest since they were reintroduced into Yellowstone in 1995 from Canada. Gray wolves had been completely wiped out in this national park in 1926, leading to a range of negative ecological changes that their reintroduction helped correct. The recovery of wolves in Yellowstone and elsewhere has prompted legislation that would remove the species from protection under the Endangered Species Act in the Midwest and Wyoming. But environmentalists say wolves still have a long way to rebound after their numbers were devastated over 200 years through shooting, poisoning and trapping, and now occupy less than 10% of their historical range.

Source: *The Guardian* (2015) theguardian.com/environment/2015/dec/03/wolf-population-yellowstone-national-park

U.S. Fish and Wildlife Service held to account over failure to protect Monarch butterfly

Two environmental groups, the Center for Biological Diversity and the Center for Food Safety, gave notice on 5 January of their intention to sue the U.S. Fish and Wildlife Service for failing to submit the required 12-month finding of its official review of the status of the monarch butterfly. The agency had 60 days to correct the violation or agree to discuss a schedule for completion of the overdue finding. The monarch has experienced a severe decline in recent decades, largely as a result of loss of its milkweed habitat. The butterfly lays its eggs on milkweed plants, on which the caterpillars subsequently feed, but the plants have been eradicated from corn and soybean fields by herbicide and the use of genetically engineered crops. It is estimated that in the past 20 years the butterflies may have lost >66 million ha of habitat, including almost one-third of their summer breeding grounds.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/groups-plan-to-sue-u-s-fish-and-wildlife-service-for-failing-to-protect-monarch-butterfly-under-endangered-species-act/

Hawaiian study shows strong link between reef health and land management

A study has investigated the efficacy of land-based sediment remediation, as well as the role of coastal oceanic and biophysical processes, in mediating the effects of sedimentation in the shallow reef environments off Lāna'i Island, Hawaii. Excessive sedimentation and delivery of nutrients from adjacent watersheds is known to have a negative impact on the health of coral reef ecosystems worldwide, and the resilience of many of Hawaii's reefs is threatened by sedimentation caused by soil erosion resulting from development and agricultural activity. Ridge-to-reef monitoring systems were established at two reef sites, one of which was adjacent to a community stream sedimentation remediation project, and the results indicated that interventions such as local sediment remediation and watershed restoration are more likely to be effective if they take into account the effects of coastal oceanic processes in distributing, accumulating or advecting sediment away from reefs.

Source: *Collabra* (2016) dx.doi.org/10.1525/collabra.25, & *Conservation International* (2016) conservation.org/NewsRoom/press-releases/Pages/New-Study-Reveals-Strong-Connections-Between-Reef-Health-and-Land-Management-in-Hawaii.aspx

SOUTH AMERICA

Mining waste reaches Brazilian coast 2 weeks after dam collapse...

A plume of mud and mining waste has spread out along the coast of the Brazilian state of Espírito Santo following the collapse of a dam at an iron ore mine. The plume is expected to spread along 9 km of coastline, threatening the Comboios nature reserve, a regular nesting sites for the Vulnerable leatherback turtle. Mining residue has been working its way down the Rio Doce since the accident at the Fundão dam, controlled by the mining company Samarco (a joint venture between the Brazilian firm Vale and the Anglo-Australian company BHP Billiton), on 5 November 2015. The sludge wiped out several communities in the state of Minas Gerais, before making its way into the Rio Doce. The mud has

extinguished plant and animal life along a 650-km stretch of the river, with the heightened turbidity drastically reducing the levels of oxygen in the water.

Source: *The Guardian* (2015) theguardian.com/world/2015/nov/23/brazil-dam-collapse-mining-waste-reaches-ocean-rio-doce

... and long-term impact of mega-dams on rainforest loss

Hundreds of square kilometres of forest have been lost from an 80,000 km² study area around Brazil's Tucuruí dam every year since the dam began operating in 1984. The dam is the oldest mega-dam in Amazonia and provides an example of the long-term environmental impacts of such dams. There are already more than 400 dams in operation on the Amazon, with many more under construction or proposed, and although they are promoted for their potential to provide sustainable energy they are known to have significant negative impacts on local communities, ecosystems and climate. One of the main factors that contributed to forest loss around the Tucuruí dam was the settlement of thousands of people in the area, including people who were forced to relocate after their homes were flooded by the dam's reservoir. Further studies are needed to investigate the impact of such large infrastructure projects over larger areas and longer time scales.

Source: *Applied Geography* (2015) [dx.doi.org/10.1016/j.apgeog.2015.06.001](https://doi.org/10.1016/j.apgeog.2015.06.001), & *Mongabay.com* (2016) news.mongabay.com/2016/01/forest-loss-increased-annually-for-25-years-at-oldest-amazon-mega-dam/

Proposal to suspend legal status of Brazilian Red List of threatened species

Brazilian Senator Ronaldo Caiado has authored a legislative decree to remove Ministry of Environment Decree no. 444 of 2014 that established a Red List of species of mammals, birds, reptiles, amphibians and terrestrial invertebrates threatened with extinction. Decree no. 444 provides protection for 698 species, forbidding, amongst other matters, their capture, keeping, transport or handling. The justification for the proposal is that the legal protection of these species is contradictory to the principle of sustainability advocated in articles

170 and 225 of the Federal Constitution, and could negatively affect agrobusiness. This new proposal follows on from the suspension of Ministry of Environment Decree no. 445, which covered 475 Red Listed species of marine fish and invertebrates.

Source: *Oeco* (2016) oeco.org.br/noticias/projeto-que-derruba-a-lista-vermelha-de-especies-amecadas-sera-votado/

New nature reserve in Ecuador

Following almost 14 years of campaigning by activists, the Ecuadorian government has approved a new nature reserve in the Carchi Province near the border with Colombia, in a region that has been heavily deforested and has historically been the site of mining and logging activities as well as charcoal production and large-scale agriculture. Spanning 16,800 ha of cloud forests and mountains on the Pacific slope of the Andes, the Provincial Area for Conservation and Sustainable Use in the Eastern Mountain Range is home to a number of threatened species that are endemic to the region, including two Critically Endangered toad species (Lynch's stubfoot toad and the Carchi Andes toad), as well as the Endangered mountain tapir, the Vulnerable spectacled bear, and the pudu, the world's smallest deer. The protected area also includes the headwaters of the Mira River, which supplies water to downstream communities.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/a-new-reserve-for-the-worlds-smallest-deer/

Growing parasite threat to Darwin's finches

Charles Darwin's finches on the Galapagos Islands, which helped him define his theory of natural selection, are being threatened by a fly that lays eggs in their nests, the larvae of which attack the nostrils of young finches. A new mathematical model suggests that the birds could succumb to this pest within 50 years (see also *Oryx*, 44, 588–594). The flies are believed to have arrived in the Galapagos in the 1960s. A study of one of the most common of these finches, the medium ground finch, on Santa Cruz island, used 5 years of data to project the impact of the fly on finch reproductive rates. In two of the three modelled scenarios the finch populations were at risk of

extinction, in the worst case within 50 years. But the model also demonstrated that if the number of infected nests could be reduced by 40% then the risk of extinction would essentially be lifted. There are interventions that could achieve this, including the introduction of wasps that would lay their eggs in the fly larvae.

Source: *Journal of Applied Ecology* (2015) [dx.doi.org/10.1111/1365-2664.12575](https://doi.org/10.1111/1365-2664.12575), and *BBC News* (2015) bbc.com/news/science-environment-35114681

AUSTRALIA/ANTARCTICA/ NEW ZEALAND

Captive breeding of orange-bellied parrot suffers setback

In late 2015 rats killed 14 orange-bellied parrots *Neophema chrysogaster* that were being held in quarantine at a captive-breeding facility in Tasmania. The Critically Endangered species is Australia's rarest bird, and there may be as few as 50 individuals remaining in the wild. The small, ground-feeding parrot is known to breed at only one site, in the south-west of Tasmania, before migrating to its wintering grounds on the Australian mainland, and its rapid decline has been attributed to the fragmentation, degradation and loss of its winter habitat as a result of increased grazing, agriculture and urban development. The species is also threatened by invasive mammalian predators such as foxes and cats, competition from introduced birds, and the degradation of its breeding habitat. In more promising news, two of the 21 wild birds that had returned to the breeding site by October 2015 had been ringed as fledglings there the previous year and had successfully completed their first migration.

Source: *BirdLife International* (2016) birdlife.org/pacific/news/critically-endangered-parrots-killed-rats-breeding-facility

All internet addresses were up to date at time of writing. The Briefly section in this issue was written and compiled by Cella Carr and Martin Fisher, with a contribution from Maria Luisa de Castro Fisher. Contributions from authoritative published sources are always welcome. Please send contributions to oryx@fauna-flora.org