

Briefly

INTERNATIONAL

Vanishing wilderness...

An assessment of the state of global wildernesses, using a human footprint index that included measures such as road, building, farm and population density, has found that wilderness now covers less than a quarter of the world's land area and is disappearing rapidly. Defined as ecologically intact landscapes that are mostly undisturbed by human activity, wilderness areas are vital refuges for threatened species, and also act as carbon sinks. The Amazon alone has lost 30% of its wilderness over the past 2 decades. The failure to conserve wilderness areas may be attributable in part to the focus of conservation efforts on protecting and restoring degraded environments, and wilderness areas are not mentioned explicitly in the 2020 targets of the Convention on Biological Diversity. The researchers who carried out the assessment are calling for the inclusion of wilderness areas in the 2030 targets of the Convention, and measures to address existing threats, such as invasive species.

Source: *Current Biology* (2016) [dx.doi.org/10.1016/j.cub.2016.08.049](https://doi.org/10.1016/j.cub.2016.08.049), & *New Scientist* (2016) [newscientist.com/article/2105253-paradise-lost-weve-destroyed-most-of-the-worlds-wilderness/](https://www.newscientist.com/article/2105253-paradise-lost-weve-destroyed-most-of-the-worlds-wilderness/)

... and wildlife declines by 58% in 40 years

The Living Planet Report, published every 2 years, assesses the state of the world's wildlife. The 2016 analysis looked at 3,700 species of birds, fish, mammals, amphibians and reptiles (c. 6% of the total number of vertebrate species). Data comes from peer-reviewed studies, government statistics and surveys collated by conservation groups and NGOs. Any species with data from 1970, with two or more time points, was included. The 2014 report estimated that the world's wildlife populations had halved in 40 years. The 2016 assessment suggests that this trend has continued, with populations having declined by an average of 58%. Some groups of vertebrates have fared worse than others, with strong declines in the freshwater environment. Vertebrate populations are declining by an average of 2% each year, and could fall to 67% of 1970 levels by the end of the decade.

Source: WWF & Zoological Society of London (2016) assets.wwf.org.uk/custom/lpr2016/, & *BBC News* (2016) [bbc.co.uk/news/science-environment-37775622](https://www.bbc.co.uk/news/science-environment-37775622)

Human activity taking its toll on the North Sea

A 2-month survey in the North Sea by marine scientists has found that although hotspots of biodiversity remain, in general the region has been heavily affected by dredging and other human activities. There is an ongoing rapid decline in long-lived species such as sharks, rays and skates, and large molluscs, quahog and horse mussels are also becoming more difficult to find. The expedition visited 13 sites covering a diverse range of habitats and ecosystems, including coastal areas, coral reefs, kelp forests and areas with a seabed of mud and clay. The findings will help to strengthen proposals for a network of marine protected areas across the North Sea, to preserve biodiversity and help to restore depleted fish stocks. Data will be shared with governments, scientists and conservation organizations to support broader efforts to protect the marine environment.

Source: *New Scientist* (2016) [newscientist.com/article/2105301-human-activity-means-sharks-are-disappearing-from-the-north-sea/](https://www.newscientist.com/article/2105301-human-activity-means-sharks-are-disappearing-from-the-north-sea/)

Loss of sea ice opens up new habitat for baleen whales...

The dramatic transformation of the marine ecosystem of the Pacific Arctic region that has occurred with the unprecedented loss of sea ice over the past 3 decades has opened up favourable habitat for subarctic species of baleen whales. Humpback, fin and minke whales are now regularly observed in the region, where none were encountered during surveys in the 1980s. The lack of ice results in phytoplankton blooms as more light penetrates the surface water. This in turn creates favourable conditions for zooplankton, on which the whales feed. Changes are also apparent higher up the food chain, as toothed cetaceans such as orcas and sperm whales are also moving into the region in greater numbers to prey on the baleen whales. In the longer term, however, another result of the loss of sea ice—increased commercial activity—could have a negative impact on Arctic whale populations.

Source: *Biology Letters* (2016) [dx.doi.org/10.1098/rsbl.2016.0251](https://doi.org/10.1098/rsbl.2016.0251), & *New Scientist* (2016) [newscientist.com/article/2104716-boom-time-for-whales-in-the-arctic-driven-by-the-loss-of-sea-ice/](https://www.newscientist.com/article/2104716-boom-time-for-whales-in-the-arctic-driven-by-the-loss-of-sea-ice/)

... but is bad news for seabirds and caribou...

Data on sea ice and zooplankton, fish and seabirds in the south-east Bering Sea for 1975–2014 indicate that most seabirds and large zooplankton species were less abundant when sea ice melted early in spring. The loss of sea ice has also resulted in a decline in connectivity between islands, which is likely to have a significant impact on the Peary caribou. The caribou, which are culturally important for indigenous people, who hunt them for food and clothing, are an important part of the ecosystem of the Canadian Arctic Archipelago, which comprises more than 36,000 islands. The caribou travel between the islands by crossing the sea ice, in search of food and shelter, and to mate and raise their young. Plants are also likely to be affected, as they will need to move to colder places in response to the warming climate but their dispersal may be hampered by the loss of ice.

Source: *Biology Letters* (2016) [dx.doi.org/10.1098/rsbl.2016.0276](https://doi.org/10.1098/rsbl.2016.0276), [dx.doi.org/10.1098/rsbl.2016.0235](https://doi.org/10.1098/rsbl.2016.0235), [dx.doi.org/10.1098/rsbl.2016.0264](https://doi.org/10.1098/rsbl.2016.0264), & *New Scientist* (2016) [newscientist.com/article/2106529-arctic-ice-melt-is-killing-birds-and-will-leave-caribou-stranded/](https://www.newscientist.com/article/2106529-arctic-ice-melt-is-killing-birds-and-will-leave-caribou-stranded/)

... as ivory gulls disappear along with the ice

Numbers of the distinctive ivory gull *Pagophila eburnea* are declining rapidly in parts of the species' range. Ivory gulls are migratory and spend their lives on or near pack ice throughout the Arctic, where the ice is crucial to their feeding and breeding patterns. Canadian populations have been known to be in decline for several decades, with numbers in the early 2000s being 80% lower than those recorded in the 1980s. Research conducted on board an icebreaker travelling between Greenland and Svalbard between 1998 and 2014 has revealed numbers of ivory gulls living near the Greenland Sea are also falling. Researchers counted six times more ivory gulls each year before 2007 than after that year. Whilst it remains unclear what caused such a drastic change, populations of ivory gulls remain under threat from anthropogenic pressures, including climate change, pollution and human intrusion into breeding areas.

Source: *Polar Biology* (2016) [dx.doi.org/10.1007/s00300-016-2027-6](https://doi.org/10.1007/s00300-016-2027-6), & *New Scientist* (2016) [newscientist.com/article/2105380-white-gulls-dependent-on-ice-are-disappearing-from-the-arctic/](https://www.newscientist.com/article/2105380-white-gulls-dependent-on-ice-are-disappearing-from-the-arctic/)

DNA discovery: the giraffe is not a single species

DNA analysis has revealed there are four species of giraffes rather than one, as previously thought. Working with skin biopsies of 190 giraffes, researchers tracked the distribution of seven genetic sequences in nuclear DNA. The findings exposed four distinct lineages of giraffe, which don't interbreed in the wild and have distinct species-level characteristics. The current species name *Giraffa camelopardalis* could be replaced with four new names to represent the southern giraffe *Giraffa giraffa*, the reticulated giraffe *Giraffa reticulata*, the Masai giraffe *Giraffa tippelskirchi* and the northern giraffe *Giraffa camelopardalis*. Global giraffe numbers are plummeting, with only c. 80,000 remaining, compared to c. 140,000 individuals in the late 1990s. There are fewer than 4,750 northern giraffes remaining and it is hoped that this DNA discovery could help tailor conservation efforts to individual giraffe species.

Source: *Nature* (2016) [dx.doi.org/10.1038/nature.2016.20567](https://doi.org/10.1038/nature.2016.20567)

Protection for pangolins...

Following the 17th meeting of the Conference of the Parties to CITES (CoP17), trade of all eight species of pangolin is now illegal. Pangolins are the world's most illegally trafficked mammal, and are believed to account for approximately 20% of all illegal trade in species. Found across Asia and Africa, pangolins are hunted as bushmeat and their scales are dried and roasted for use in traditional Chinese medicine. The scale of the pangolin trade is exceptional and multiple species are facing extinction as a result of widespread poaching. During January–September 2016 authorities seized more than 18,000 tonnes of pangolin scales from 19 countries. It is estimated that a single kilogramme of scales requires the killing of three or four pangolins. It is hoped that the upgrade of all pangolin species to Appendix I, the highest level of protection under CITES, will be accompanied by more effective law enforcement and tougher penalties for criminals.

Source: *BBC News* (2016) bbc.co.uk/news/science-environment-37494823, & *The Guardian* (2016) theguardian.com/environment/2016/sep/28/pangolins-thrown-a-lifeline-at-global-wildlife-summit-with-total-trade-ban

... rosewood ...

Rosewood is the most trafficked wild product in the world, accounting for a third of all seizures by value, more than the combined value of pangolins, elephant

ivory, rhinoceros horn, lions and tigers. The deep red centre of the tree is used for elite hongmu furniture in China, and the remaining 70–80% of the tree is often discarded. China's demand for rosewood is growing rapidly and since 2005 there has been a 65-fold increase in the value of the rosewood trade, which is currently worth an estimated USD 2.2 billion annually. Traffickers target over 80 countries across the tropics but west Africa and central America are currently bearing the brunt of China's burgeoning demand for rosewood. In the first half of 2016 China imported USD 216 million of west African rosewood. CITES has now placed all 300 species of rosewood under trade restrictions and, with appropriate enforcement, these are expected to deter criminals from passing illegal rosewood off as one of the previously unprotected species.

Source: *The Guardian* (2016) theguardian.com/environment/2016/sep/29/wildlife-summit-cracks-down-on-illegal-rosewood-trade

... and sharks and rays

Four species of sharks and nine species of rays were added to CITES Appendix II at the CITES Congress of the Parties (CoP17) in Johannesburg in October. Trade in the silky shark, three species of thresher sharks, and nine species of mobula rays will now be regulated by means of a system of permits. This follows the listing of seven species of sharks and rays at the last CITES CoP, in 2013, in a significant move towards the listing of commercially fished marine species, and feedback at the latest meeting indicated that regulation of the trade in those species had been largely successful. Delegates also supported improved traceability measures for marine products. Prior to CoP17, Red List assessments were completed for a number of mobula rays, also known as devil rays, and members of the IUCN Shark Specialist Group concluded that mobula rays were among the species of rays and sharks least resilient to fishing pressure.

Source: *TRAFFIC* (2016) traffic.org/home/2016/10/4/traceability-key-to-successful-shark-listing-implementations.html, & *IUCN* (2016) iucn.org/news/growing-support-regulating-international-trade-rays-and-sharks

Committing to sustainable futures for World Heritage sites

Funded by Norway, a new collaboration between IUCN and the International Centre for the Study of the Preservation and the Restoration of Cultural Property (ICCROM) aims to support the contribution of World Heritage sites to sustainable development. The World Heritage

Leadership project will improve nature-culture conservation practice by enhancing the skills of World Heritage Convention practitioners. The programme is designed to integrate nature and culture at all levels and will include training on impact assessments, resilience and the contribution of World Heritage sites to communities and sustainable development. The project will focus on areas where World Heritage has the most potential to address urgent threats such as climate change and impacts from development. IUCN and ICCROM aim to adopt a common objective, a series of shared results and a set of coordinated actions in each of their World Heritage related programmes.

Source: *IUCN* (2016) iucn.org/news/new-iucn-iccrom-nature-culture-project-sustainable-development-world-heritage

Conservation status of Mediterranean butterflies assessed

The Mediterranean region is home to 462 native species of butterflies, and more than 21% of these are endemic to the region, most of which are concentrated in north Africa. A recent assessment of the conservation status of Mediterranean butterflies has found that 19 species are threatened with extinction, and 15 of these are endemic. Butterflies are declining in many parts of Mediterranean Europe as a result of conversion of grasslands for arable farming or forestry, and unsustainable levels of grazing. Other threats include climate change, tourism, and increased frequency and intensity of fires. The conservation status of Mediterranean butterflies could be improved by appropriate habitat management, and conservation measures need to be implemented, with full implementation of relevant national and international legislation and habitat action plans, and prioritization of data collection for species currently categorized as Data Deficient on the IUCN Red List.

Source: *IUCN* (2016) iucn.org/news/first-assessment-conservation-status-butterflies-mediterranean

Assessing the effectiveness of lethal predator control methods

Recent research suggests that there is little evidence to demonstrate lethal methods are effective in controlling carnivores that prey on livestock. Evaluation of past studies of efforts to combat livestock predation by canine, feline and ursid carnivores in North America and Europe have indicated that non-lethal methods were generally more effective than lethal methods in preventing predation. Non-lethal methods

can include livestock-guarding animals, repellents, sterilization and diversionary feeding. The study highlighted that lethal practices, including culling and regulated hunting, had, in some cases, been followed by increases in predation on livestock. The research team has recommended the suspension of predator control programmes that do not have strong evidence to demonstrate their effectiveness, and instead advocates evidence-based, fully informed decision making.

Source: *Mongabay* (2016) mongabay.com/2016/09/based-on-available-evidence-non-lethal-predator-control-is-more-effective-than-lethal-means/

EUROPE

Forest restoration approaches at odds with historical ecology?

In the forests of Central Europe, oak and European beech are considered to be the natural dominant species at low and mid elevations, respectively, and current restoration practice is focused on the planting of broadleaf trees. However, historical and palaeoecological data for a study region in the central highlands of the Czech Republic indicate that the region was dominated by conifers throughout the entire Holocene, with broadleaved trees occupying a much smaller area than envisaged by the current natural vegetation. The study considered a vegetation and land-cover model based on pollen data, and a taxonomic survey conducted in the late 18th century, before the onset of modern forestry. The findings challenge established ideas about the natural distribution of tree species and highlight the importance of historical data in the development of forest restoration strategies.

Source: *Conservation Biology* (2016) [dx.doi.org/10.1111/cobi.12763](https://doi.org/10.1111/cobi.12763), & *Nature* (2016) [dx.doi.org/10.1038/538009e](https://doi.org/10.1038/538009e)

EU Overseas achieve Aichi marine protection target

The EU Overseas, comprising the European Outermost Regions and Overseas Countries and Territories, have surpassed the target for marine protected areas outlined in the Aichi 2010 declaration. To meet target 11, at least 10% of coastal and marine areas must be effectively conserved by 2020. Between all the EU Overseas islands, 16% of marine areas (3.5 million km²) are currently under some form of protection. Despite this good news, only five EU Overseas entities have protected 10% or

more of their marine area by establishing large-scale marine protected areas within their waters, accounting for nearly 90% of the total EU Overseas marine protected area. Although the network of protected areas needs to be improved—only 4% of the ocean is protected, compared to over 15% of the global land area—notable progress towards international sustainability targets is being made.

Source: *IUCN* (2016) iucn.org/news/europe-overseas-have-bypassed-aichi-target-16-their-marine-areas-under-protection

Sound warning system to deter whales from wind farm sites

Anthropogenic noise pollution in the oceans can cause temporary or permanent hearing loss in whales, which use sound to navigate, communicate and locate food. Excessive noise levels underwater can interrupt normal behaviour, driving whales away from important breeding and feeding areas and potentially resulting in injury or death. The use of acoustic deterrent devices to deter minke whales from wind farm construction sites is being tested in Iceland, where researchers are investigating how far and how fast the whales will travel away from the deterrent, and how quickly they will return to the site once construction has been completed. Minke whales are thought to be abundant in many areas where there are proposed wind farm developments, and it is hoped that the deterrents will discourage whales from entering certain areas while construction is underway, but that they will return when it is safe to do so.

Source: *New Scientist* (2016) newscientist.com/article/2107425-sound-blasts-could-keep-whales-away-from-wind-farm-construction/

Controversial plans to cull more than 66% of Norway's wolf population

Concentrated in the south-east of the country, an estimated 68 wild wolves remain in Norway. Following the government's approved cull of up to 47 wolves, more than two thirds of this population could disappear. The cull has been justified on the basis of damage to sheep flocks caused by wolves but conservationists say it is out of proportion and risks decimating family groups. Under the new plan 24 wolves will be shot within a region specifically designated for wolf habit, and 13 will be killed in neighbouring regions. Norway hasn't seen such a high legal hunting quota for wolves since 1911. Hunting is a popular sport in the country, with more than 11,000 hunters applying for licences to shoot just 16 wolves in 2015. The planned

cull has raised widespread opposition, however, as experts fear three out of six wolf family groups could be shot.

Source: *The Guardian* (2016) theguardian.com/environment/2016/sep/16/norway-wolf-cull-government-wwf-friends-earth-environment-protest

Britain's dormice in a precarious situation

According to a report from the People's Trust for Endangered Species the population of Britain's native hazel dormouse *Muscardinus avellanarius* has decreased by more than a third since 2000. The dormouse has never been recorded in Scotland or Northern Ireland and is no longer found in 17 of the 49 English counties where populations were thriving in 1885. Habitat fragmentation, changes in weather, and loss of woodland and hedgerows are contributing to the decline of these tiny creatures. Reintroduction projects are underway, and more than 850 individuals have been reintroduced at 26 sites across Britain. The People's Trust for Endangered Species has been collecting data on the hazel dormouse since 1998 and continues to monitor sites and train both woodland managers and landowners to protect the species.

Source (2016): *BBC News* (2016) bbc.co.uk/news/science-environment-37290176

Buying time for crayfish populations on the brink

Parts of Wales have lost between 50 and 98% of their native white-clawed crayfish *Austropotamobius pallipes* as a result of competition from the invasive alien North American signal crayfish *Pacifastacus leniusulus*. Introduced to Britain in the 1980s, this larger species spread widely and infected native populations with a deadly disease, as well as out-competing them for food resources. Since 2009 Natural Resources Wales has reared and released approximately 4,000 native white-clawed crayfish at specially selected sites. These so-called ark sites have natural barriers that protect them from invasion, and monitoring has shown that juveniles are surviving there for at least 2 years after release. The project is currently focusing on the River Wye and its tributaries and it is hoped that this temporary solution can slow the large-scale and rapid decline of the white-clawed crayfish in Wales.

Source: *BBC News* (2016) bbc.co.uk/news/uk-wales-37225797

Are UK butterfly numbers dropping?

A 2016 volunteer-run survey of UK butterflies recorded an average of 12.2 butterflies per count, compared to the 2013 high of 23. The fall in numbers, despite a warm summer and mild winter, is concerning conservationists. The count recorded more than 390,000 butterflies in 2016 but with many species experiencing declines. The common blue was down by 55% and five other species fell by 40% or more when compared to 2015 numbers. Butterflies in the UK are under increasing pressure from industrialized farming and it is feared that recovery from 2016 lows may be slow. The decline is not across all species, however, with red admirals up by 70% and the green-veined white by 58%. Although causes of the fluctuation in numbers are still unknown, it has been suggested that migratory species, such as the red admiral, have fared better than those that winter in the UK.

Source: *BBC News* (2016) bbc.co.uk/news/uk-england-37607759

Numbers of common toad down two-thirds

Toad numbers in the UK have fallen by more than two-thirds in 30 years, according to a study using data from volunteer patrols that help the amphibians cross roads during migration to breeding ponds. Volunteers for Froglife's Toads on Roads scheme carry tens of thousands of toads across roads each year. Data on the number of toads transported across roads at 153 sites has revealed a 68% decline in the past 3 decades. The worst declines were in south-east England. In Wales, south-west and west England populations had also declined but have been stable for the past decade. In the east severe declines in previous decades were followed by a recovery since 2005, but not enough to reverse overall falling numbers. The reasons for the declines are unclear, but likely causes are changing farming practices, a loss of ponds, urban sprawl and more deaths on roads as traffic increased and, potentially, climate change.

Source: *PLoS One* (2016) [dx.doi.org/10.1371/journal.pone.0161943](https://doi.org/10.1371/journal.pone.0161943), and *The Guardian* (2016) theguardian.com/environment/2016/oct/06/uk-common-toad-numbers-down-two-thirds-in-30-years

Efforts to boost numbers of red squirrels in Wales

The arrival of grey squirrels from America in the 19th century, combined with the threats of habitat loss and persecution by people, almost decimated the native red

squirrel population in the UK. Although there are a few strongholds of the red squirrel in Scotland and the border counties, grey squirrels now outnumber red squirrels 20 to one. A programme to remove non-native grey squirrels from the island of Anglesey has been successful, and the initial colony of 40 red squirrels on the island has increased to 700 since 1998. As this colony has flourished individuals have been crossing bridges and are finding niches in mainland Wales. Conservationists are transporting red squirrels from across the country to boost one such population in Ogwen valley. The area is surrounded by mountains and, at present, is isolated from grey squirrel populations.

Source: *The Guardian* (2016) theguardian.com/environment/2016/oct/13/red-squirrels-wales-protected-military-style-strategy-ogwen-valley

Soaring success for Ireland's white-tailed sea eagles

2016 has been the most successful year to date for a project seeking to reintroduce the white-tailed sea eagle *Haliaeetus albicilla* to Ireland. The project's goal is for at least 10 chicks to fly from their nests each year, and in 2016 six Irish-born birds fledged successfully, including one in Glengarriff—the first white-tailed sea eagle chick to fledge in County Cork in 120 years. Between 2007 and 2011 100 white-tailed sea eagles were brought from Norway to the Killarney National Park, where the reintroduction project is centred, and 13 chicks have survived to date. The project has cost over EUR 1.5 million and has seen a high mortality rate. Despite the project's slow progress, it is on par with an earlier project on the Isle of Mull in Scotland that ultimately succeeded.

Source: *The Irish Times* (2016) irishtimes.com/news/environment/six-irish-born-white-tailed-eagles-fly-nests-in-2016-1.2785621

Romania bans trophy hunting of brown bears, wolves, lynx and wild cats

A hunting trophy from the Carpathian mountains can cost as much as EUR 10,000, and hunting quotas have been on the rise in Romania. 2016 saw the largest hunting quotas to date, with the shooting of 550 bears, 600 wolves and 500 wild cats over 12 months. Traditionally hunting associations have estimated the total population of each large carnivore species and the number of animals they believed were likely to cause damage. Following the collation of these data the government issued a quota for each species, which was divided between hunting companies and the public, who can

purchase hunting rights. However, these data may have significantly overestimated populations, as roaming individuals can be counted multiple times by different hunting associations. In a surprise reversal, Romania has now banned all trophy hunting of brown bears, wolves, lynx and wild cats but conservationists warn that in rural areas where large carnivores pose a threat to livestock, hunting may be replaced by poaching.

Source: *The Guardian* (2016) theguardian.com/environment/2016/oct/05/romania-bans-trophy-hunting-of-brown-bears-wolves-lynx-and-wild-cats

NORTH EURASIA

Can Persian leopards make a comeback in Russia?

Currently fewer than 1,000 Persian leopards *Panthera pardus saxicolor* remain in the wild, with the majority of individuals found in Iran. The release of three captive-bred Persian leopards in the Caucasus Biosphere Reserve, Russia, marks the first-ever attempt to reintroduce the species in the wild, into an area where it was once prolific. The mountainous Western Caucasus region is a UNESCO World Heritage site and one of the most biodiverse areas in Russia. Persian leopards once roamed throughout the region but hunting and human activities in the 1950s drastically reduced populations. The reserve has steadily increased the abundance of prey animals such as deer and wild boars within the release area and has provided local communities with guidelines for living with leopards. Individual satellite collars, a mobile response unit and camera traps will monitor the progress of this initial attempt to create a sustainable, wild population of Persian leopards in Russia.

Source: *WWF* (2016) wwf.panda.org/wwf_news/?273470/Persian-leopards-set-to-make-roaring-comeback-in-Russias-Western-Caucasus

Signs of recovery for Russia's western grey whale population

The western grey whale *Eschrichtius robustus* population, which feeds in the waters of Russia's Far East, is categorized as Critically Endangered on the IUCN Red List. However, a joint report by IUCN, WWF and the International Fund for Animal Welfare points to early signs of recovery for this migratory species. There were an estimated 115 individuals in 2004 but since then the population has increased by 3–

4% annually, with c. 174 individuals recorded in 2015. Although these data are encouraging, recovery is slow and further progress will require best practice from all fisheries and oil and gas operators in the area. An independent panel of scientists will continue to work with Sakhalin Energy, one of the largest companies operating in the area, to minimize and mitigate their impacts on the whales' feeding grounds.

Source: IUCN (2016) iucn.org/news/iucn-led-panel-finds-critically-endangered-whales-russia-recovering-warns-industry-still-poses

NORTH AFRICA AND MIDDLE EAST

Discovery of a houbara bustard nest is good news for Jordan

The houbara bustard is categorized as Vulnerable on the IUCN Red List, with a natural range covering Asia, North Africa and the Arabian Peninsula. Abu Dhabi and Jordan are collaborating to re-establish a viable population of houbara bustards across Jordan, and the International Fund for Houbara Conservation released 500 and 300 of the birds in Jordan in 2014 and 2016, respectively. For the first time since these releases under the Shaikh Khalifa Bin Zayed Houbara Reintroduction Project, field teams have identified a houbara bustard nest, which contained three eggs. It is hoped that this discovery could mark the beginning of a sustainable population in Jordan. Migration routes and the ability of captive birds to adapt to wild environments will be monitored using tracking devices. The initiative also aims to implement a national awareness-raising programme, develop legislation to protect release sites and establish community development projects near the release sites.

Source: BirdLife International (2016) birdlife.org/middle-east/news/houbara-bustard-nest-discovered-jordan

Bird migration bottlenecks in Israel

Twice per year an estimated 500 million birds use Israel as a stopover point on their long migrations. The entire global populations of lesser spotted eagles and Levant sparrowhawks, the European populations of great white pelicans, and considerable numbers of white and black storks arrive on Israel en masse. However, the species are coming under increasing pressure as crucial salt-marshes and wetlands are being degraded, and habitat is lost to urbanization and agriculture. Wind turbines trap

birds, cultivated fields are replacing salt-marshes and many wetlands and swamps have been converted to fish farms. Great white pelicans are the heaviest migratory bird to pass through Israel and require vast amounts of fish to fuel their flight across the Sahara to the Sudan marshes. Conflict has arisen as birds target fish farms and are caught in the nets erected by fish farmers. The Society for the Protection of Nature in Israel is working to restore sections of salt-marsh and stock areas with non-commercial fish to reduce pressure on neighbouring fish farms.

Source: BirdLife International (2016) birdlife.org/europe-and-central-asia/news/wings-over-israel-conservation-challenges-second-chances

SUB-SAHARAN AFRICA

Bleak future for slow-to-breed forest elephant

The forest elephant, a small elephant species that inhabits tropical forests, is being heavily poached for its ivory, with an estimated 12,000–15,000 being killed every year. Across the Central African Republic numbers of forest elephants declined by c. 65% during 2002–2013. If poaching continues at this rate the species will probably be extinct by 2023. Unlike the more abundant female savannah elephants, which start breeding at 12 years of age, female forest elephants only begin breeding at the age of 23, and give birth only once every 5–6 years. The slow rate of reproduction is exacerbated by the tendency of elephants to stop reproducing when they sense they are under threat. Even if poaching were to end immediately, the species could take up to 90 years to recover from recent losses.

Source: New Scientist (2016) newscientist.com/article/2103783-slow-to-breed-elephant-hurtles-towards-extinction/

Good news for Liberia's forests

The Guinean Forest in West Africa once stretched from Guinea to Togo, but now only a few strongholds remain. The newly established Gola Forest National Park in Liberia will safeguard one of these remaining areas of rich evergreen and semi-deciduous rainforest. The park will connect with Sierra Leone's Gola Rainforest National Park and the resulting transboundary area will comprise 395,000 acres of protected land. The forest is home to the Endangered African bush elephant *Loxodonta africana* and the common chimpanzee *Pan troglodytes* as well as multiple Vulnerable bird

species, including the yellow-casqued hornbill *Ceratogymna elata* and the white-necked picathartes *Picathartes gymnocephalus*. Several new species have also been discovered recently, including six dragonfly and damselfly species, one frog species and three butterfly species. Mining, quarrying and charcoal production have decimated areas of Liberia's forest and widespread hunting continues to threaten forest-dwelling species.

Source: BirdLife International (2016) birdlife.org/africa/news/threatened-african-rain-forest-teeming-unique-life-declared-national-park

Elephant footprints create habitat for diverse aquatic communities

A study of elephant footprints in the swamp forests of Kibale National Park, Uganda, has shed light on the role of elephants as ecosystem engineers. Water-filled footprints constitute the majority of stagnant ponds in the dry season, and can hold up to 200 litres of water with diverse aquatic invertebrate communities. A survey of 30 such footprints recorded 61 morphospecies, including beetles, spiders and worms, with species composition dominated by Hydrophilidae and Dytiscidae. The footprints form a network of connected ponds that act as stepping-stone habitats that facilitate the dispersal of these species. If the elephants were to disappear, these important aquatic habitats would also be lost and it is likely that some aquatic species would become extinct locally in the absence of suitable breeding habitats.

Source: African Journal of Ecology (2016) dx.doi.org/10.1111/aje.12358, & New Scientist (2016) newscientist.com/article/2103867-elephants-footprints-leave-behind-tiny-oases-for-aquatic-life/

Connecting Western Tanzania's forests

The newly approved boundaries of the proposed Tongwe West Local Authority Forest Reserve in western Tanzania encompass 3,650 km² of forest and miombo woodland. This stretch of forest will connect government forest reserves and community-owned Village Land Forest Reserves, forming an integral part of the Greater Mahale Key Biodiversity Area. By connecting previously isolated forest areas it is hoped that species migration across the wider ecosystem, which includes Katavi National Park and Mahale Mountains National Park, will be encouraged. Protection of this swathe of forest will safeguard habitats for a significant proportion of Tanzania's chimpanzee population. Watersheds that provide lifelines for agriculture in Tanganyika District

will be protected and, although sustainable timber harvesting and ecotourism may be permitted, the area will be carefully monitored. Tongwe West Forest Reserve will be managed by the Tanganyika District Council in conjunction with 10 village communities adjacent to the forest.

Source: *BirdLife International* (2016) birdlife.org/africa/news/chimpanzee-motorway-connecting-forest-habitats-western-tanzania

Building resilience to climate change in Africa

The transboundary Lake Kivu and Rusizi River basins between Rwanda, Burundi and the Democratic Republic of Congo are under threat from poor catchment and land management. The basins cover parts of at least 14 Key Biodiversity Areas, which in turn are home to at least 55 species included on the IUCN Red List. These basins are crucial sources of freshwater, and they provide rich areas for agriculture and fishing, increase soil fertility and contribute to carbon sequestration. With climate change the state of these basins is predicted to deteriorate, as extreme weather events, changes in water levels and temperatures, accelerating rates of soil erosion and sedimentation and loss of biodiversity are all expected. To build resilience to climate change l'Association pour la Conservation de la Nature au Rwanda is undertaking sediment fingerprinting to identify erosion and sedimentation hotspots, and hosting workshops to share information across agencies.

Source: *BirdLife International* (2016) birdlife.org/africa/news/efforts-enhance-climate-change-resilience-lake-kivu-and-rusizi-river-basins

Great apes slide closer to extinction

The latest update of the IUCN Red List does not bear good news for great apes. Four of the great ape species—the eastern gorilla, the western gorilla, the Bornean orang-utan and the Sumatran orang-utan—are now categorized as Critically Endangered, and the chimpanzee and the bonobo are under considerable threat of extinction. In 20 years the eastern gorilla population has decreased by more than 70%, and there are estimated to be < 5,000 remaining. Grauer's gorilla, a subspecies of eastern gorilla, declined from 16,900 individuals in 1994 to 3,800 in 2015. Despite experiencing a welcome population increase, the second subspecies of eastern gorilla—the mountain gorilla—is still in a precarious position, with an estimated 880 individuals remaining. Although the killing and capturing of great apes is illegal, hunting has been

identified as the primary threat to these populations.

Source: *IUCN* (2016) iucn.org/news/four-out-six-great-apes-one-step-away-extinction-%E2%80%93-iucn-red-list

SOUTH AND SOUTH-EAST ASIA

Asia's illegal tiger trade still flourishing

Tiger trafficking persists, with parts equating to a minimum of 1,755 tigers seized across Asia during 2000–2015. According to a joint report from TRAFFIC and WWF, at least 30% of the tigers seized during 2012–2015 were captive-sourced tigers. With only an estimated 3,900 tigers remaining in the wild, it is suspected that Asia's thriving tiger farms are contributing significantly to levels of illegal trade. Since 2000 there have been 801 recorded seizures of tigers and tiger products in Asia, with the largest number of overall seizures reported in India. There is evidence that traffickers are using a trade route through Thailand, Laos PDR and Viet Nam, and the number of tiger farms has risen in all three countries. Laos PDR and Thailand are discussing phasing out tiger farms, and India is asking other governments to share photographs of seized tiger skins for comparison against camera trap images of wild tigers.

Source: *TRAFFIC* (2016) traffic.org/home/2016/9/28/new-report-finds-no-slowdown-in-tiger-trafficking.html

Fish changes colour to match coral bleaching

In early 2016 sea surface temperatures above 31 °C resulted in outbreaks of coral bleaching in the Maldives. On a dive in North Ari Atoll in May a research team discovered a warty frogfish *Antennarius maculatus* camouflaging itself against the bleached corals. The individual was completely white and had several camouflage flaps and appendages that resembled the turf algae that colonizes dead parts of coral skeletons. The warty frogfish is a sedentary species that rarely changes location, and its typical coloration matches the orange or pink hues of a healthy coral reef. It appears that the fish had adapted to match the white coral following the bleaching event. With widespread coral bleaching expected to continue, the ability of the frogfish to adapt to changes in coral pigmentation may prove critical for its survival.

Source: *New Scientist* (2016) newscientist.com/article/2108979-frogfish-turns-itself-white-

[to-blend-in-with-bleached-corals/](http://dx.doi.org/10.1007/s00338-016-1500-6), & *Coral Reefs* dx.doi.org/10.1007/s00338-016-1500-6

Malaysia identified as major transit hub for illegal ivory trade

A report by the wildlife trade monitoring network TRAFFIC has identified Malaysia as a major transit hub for the flow of tonnes of illicit ivory between Africa and Asia. The country was linked with 66 confiscations worldwide during January 2003–May 2014, amounting to > 63,000 kg of ivory, and 47 of these seizures occurred outside Malaysia, mostly after shipments had passed undetected through Malaysian ports. The large-scale nature of many of the seizures suggests the potential involvement of organized criminal networks. More than 30% of all seizures originated in Kenya, Tanzania and Uganda, the three major gateway countries for the supply of illegal elephant ivory from Africa, and in July 2016 Malaysian authorities seized more than 1 tonne of ivory that had originated in the Democratic Republic of Congo. Malaysia is required by CITES to implement a National Ivory Action Plan to tackle the problem effectively.

Source: *TRAFFIC* (2016) traffic.org/home/2016/9/8/malaysia-key-conduit-in-global-illegal-ivory-trade.html

Red ivory trade decimates bird numbers

Helmeted hornbills are found predominantly in Indonesia, Borneo and Thailand and have long been poached for their tail feathers, and more recently for their distinctive red beaks. Chinese demand for carving ivory has led to extensive targeting of the birds, and so-called red ivory fetches several times the price of elephant ivory on the black market. Poaching to fuel the trade in casques has decimated helmeted hornbill numbers: in 2012 the species was categorized as Near Threatened on the IUCN Red List; 3 years later it was recategorized as Critically Endangered. An estimated 6,000 are killed per year, and the bird's distinctive call and vast wingspan make it an easy target for poachers. Helmeted hornbills are slow to breed, mating for life and producing only one or two eggs per year. All helmeted hornbill trade is illegal under CITES but conservationists are calling for urgent international action to tackle the devastating red ivory trade.

Source: *The Guardian* (2016) theguardian.com/environment/2016/sep/28/rare-bird-being-driven-to-extinction-by-poaching-for-its-red-ivory-bill

In search of the Javan fishing cat

A survey is under way to search for the elusive Javan fishing cat, which has not been recorded for more than 2 decades and may be the world's rarest cat. Much of the cat's habitat in Java's wetlands and coastal mangroves has been destroyed, and this loss of habitat is one of the major threats it faces, along with poaching. Fishing cats are found across South and South-east Asia and are categorized as Endangered on the IUCN Red List, although the Javan subspecies may qualify for categorization as Critically Endangered. Local reports of sightings of the fishing cat have turned out to be cases of mistaken identity. The more common leopard cat is similar in appearance and shares a similar habitat. However, the fishing cat's tracks are quite distinctive because of its semi-retractable claw system. Unlike the tracks of other cats, claw marks are often visible in fishing cat tracks.

Source: *New Scientist* (2016) newscientist.com/article/2101886-the-mission-to-find-the-worlds-rarest-cat-in-jungles-of-java/

How sustainable is South-east Asia's trade in python skins?

Reports published by the Python Conservation Partnership assert that the wild harvesting and farming of pythons is ecologically sustainable and provides much needed socioeconomic benefits for lower income households in South-east Asia. The Python Conservation Partnership is a collaboration between Kering, the International Trade Centre and the Species Survival Commission Boa and Python Specialist Group of IUCN. The reports highlight that whether involving wild harvest or captive farming, the python trade gives poor households in Malaysia and Viet Nam the opportunity to increase and diversify their income. In Sumatra the wild harvest of pythons was found to be ecologically sustainable, and the Python Conservation Partnership has tested methods to verify the source of pythons and improve the traceability of skins. The reports recommend ongoing monitoring of harvested snakes and management of the trade through size limits to ensure the python skin trade remains sustainable.

Source: *IUCN* (2016) iucn.org/news/kering-ic-and-iucn-release-new-data-sustainability-and-livelihood-benefits-python-trade

Launch of first sustainable conservation trust fund in the Philippines...

A conservation trust fund has been launched for the Mount Mantalingahan Protected Landscape on the island of

Palawan, in the Philippines, to ensure its protection in perpetuity. The fund was established by Conservation International's Global Conservation Fund, and is the first of its kind for a national protected area in the Philippines. The 120,000 ha landscape is Palawan's largest protected area and is home to more than 1,000 species, at least 23 of which are globally threatened, including the Palawan pangolin *Manis culionensis*, the Palawan flying fox *Acerodon leucotis*, the Philippine cockatoo *Cacatua haematuropygia*, the Palawan peacock pheasant *Polyplectron napoleonis* and the Palawan hornbill *Anthracoceros marchei*. The fund will support the protection of biodiversity within the protected area in the face of constant pressure from timber-cutting and mining, as well as livelihood diversification for the local indigenous people to improve their well-being and ensure they have access to ecosystem services such as clean water.

Source: *Conservation International* (2016) conservation.org/NewsRoom/pressreleases/Pages/First-Sustainable-Conservation-Trust-Fund-launched-in-Philippines.aspx

... and sanctuary ensures a safe haven in the Philippines for Critically Endangered bird

The Isabela oriole *Oriolus isabellae* is endemic to the lowland forests of the island of Luzon in the Philippines. In some areas of Luzon, forest cover has diminished by 83% since the 1930s, and deforestation and fragmentation of habitat continue to threaten this Critically Endangered bird. Until its rediscovery in 1993 the secretive Isabela oriole was thought to be extinct, and now just 50–249 adults remain in five scattered sites on the island. Little is known about the bird's feeding and nesting habits, but with funding from the Conservation Leadership Programme, Project ORIS has been able to carry out extensive surveys of areas of suitable habitat. In August 2016 local officials in the municipality of Baggao announced the designation of 5,500 ha of forest as a wildlife sanctuary. The sanctuary will protect critical habitat of the Isabela oriole and other threatened endemic species, including the Philippine eagle *Pithecophaga jefferyi*, one of the largest raptors in the world.

Source: *BirdLife International* (2016) birdlife.org/worldwide/news/sanctuary-declared-elusive-oriole-once-believed-extinct

The plight of bleeding-heart doves

The isolation of the Philippine's 7,100 islands has resulted in exceptionally high levels of endemism. Of 569 bird species 226 (40%) are endemic to the island nation, compared to avian endemism levels of just 7.5% in the

USA. All five species of the ground-dwelling bleeding-heart dove are endemic to the Philippines, with three species categorized as Critically Endangered. Bleeding-heart doves forage on the forest floor and are particularly vulnerable to forest disturbance, including slash-and-burn agriculture, mining, deforestation and human encroachment. The birds are also hunted for consumption, trapped accidentally alongside other target species and captured for sale in the pet trade despite threats of penalties, fines and imprisonment. The Negros bleeding-heart dove *Gallucolumba keayi* is the focus of a decade-long conservation initiative by the Bristol Zoological Society. Just 70–400 birds are left on the islands of Negros and Panay, but efforts are under way to reforest areas and establish programmes to ensure local people benefit from conservation.

Source: *Mongabay* (2016) news.mongabay.com/2016/09/philippine-bleeding-heart-doves-flutter-at-the-brink-but-ngos-respond/

EAST ASIA

From Endangered to Vulnerable: the new status of giant pandas

Results of range-wide national surveys suggest that the numbers of giant pandas have begun to increase after considerable efforts in China to restore bamboo forests. Latest estimates indicate the total number of giant pandas is now > 2,000, with c. 1,864 adults. Reflecting the population increase, the conservation status of the giant panda has been changed from Endangered to Vulnerable in the latest IUCN Red List update. As bamboo makes up 99% of a giant panda's diet, environmental degradation can have serious ramifications. Loss of habitat during the 1980s reduced giant panda numbers to just over 1,200 individuals and IUCN warns that climate change is predicted to wipe out over one-third of the bamboo habitat in the next 80 years. It is hoped that China can continue to build on this conservation success to ensure the future of its national animal.

Source: *BBC News* (2016) bbc.co.uk/news/world-asia-china-37272718, & *BBC News* (2016) bbc.co.uk/news/world-asia-china-37273337

NORTH AMERICA

The world's longest-lived vertebrate

A Greenland shark *Somniosus microcephalus* has been found to be at least 272 years old, beating the bowhead whale *Balaena mysticetus* to the title of world's longest-lived vertebrate. The layers of calcified tissue

growing on a fish's fin scales or other bony structures are usually used to age sharks but in the case of the Greenland shark the vertebrae are too soft for countable layers to be deposited. Measurements of radioactive carbon-14 in the fibres of the shark's eye lens reflect the levels of radiocarbon in the ocean when the lens was first formed, and thus informed estimates of the shark's age can be made. Surveys of 28 female Greenland sharks conducted during 2010–2013 suggested that the largest female, at 5.02 m in length, was between 272 and 512 years old. Greenland sharks are exceptionally slow growing and female sharks do not reach sexual maturity until they are c. 150 years old. Source: *Nature* (2016) nature.com/news/near-blind-shark-is-world-s-longest-lived-vertebrate-1.20406

2016 record high for U.S. endangered species recovery...

2016 saw a record number of species being removed from the U.S. Endangered Species Act, and 19 species have recovered and been delisted in the past 7 years. Among the delistings are three subspecies of fox *Urocyon littoralis* native to California's Channel Islands. Conservation efforts for the foxes have included a captive-breeding programme and vaccination against a canine virus, and have resulted in the fastest recovery to date of any mammal listed under the Endangered Species Act. Despite these successes the process of listing species for protection under the Act has been heavily criticized. A 2016 report estimated that rather than the 2 years specified by the legislation, it takes an average of 12 years for a species to be listed after the point of first consideration. Source: *Nature* (2016) nature.com/news/us-endangered-species-recovery-surges-to-record-high-1.20448

...as most humpback whale populations come off the endangered species list

Nine of 14 distinct humpback whale populations have recovered sufficiently in the last 40 years to be removed from the U.S. endangered species list. Four populations remain listed as endangered and one as threatened. An estimated 11,000 humpback whales breed in Hawaii's waters and, as one of the primary species targeted by whale watching excursions, they contribute significantly to local economies. Populations of humpback whales in California, the Pacific north-west, Mexico and Central America will continue to receive protection under the Endangered Species Act, however, as numbers remain low. The Mexican population is estimated to be 3,200, and the Central American

population numbers only c. 400 individuals. Whale populations have increased steadily since the international community banned commercial whaling nearly 50 years ago.

Source: *The Guardian* (2016) theguardian.com/environment/2016/sep/06/humpback-whales-endangered-species-list

Largest expansion of Yosemite National Park since 1949

A 162 ha area previously used for logging and grazing cattle is the latest addition to Yosemite National Park, in its largest expansion in almost 70 years. Ackerson Meadows, an area of wetlands and rolling hills on the park's western boundary, will be preserved as a habitat for wildlife, including North America's largest owl, the great grey owl, and bears. The area was purchased for the park for USD 2.3 million by the Trust for Public Land, with the help of funds from the Yosemite Conservancy and anonymous donors. Yosemite National Park, which covers c. 3,108 km², attracts millions of visitors each year. It marked its 125th anniversary in 2015.

Source: *BBC News* (2016) bbc.co.uk/news/world-us-canada-37303251

The first marine national monument in the Atlantic Ocean

Announced at the *Our Ocean* Conference in Washington, D.C., in September, the newly designated Northeast Canyons and Seamounts Marine National Monument is intended to protect 12,725 km² of ocean. The national marine monument, the first in the Atlantic Ocean, will be managed jointly by the U.S. Department of Commerce and the Department of the Interior. The area is home to multiple rare and threatened species, including Kemp's ridley turtles and sperm, fin and sei whales, and the underwater canyons are home to deep-sea corals. The area is predicted to warm almost three times faster than the global average, threatening the future of these species. Situated c. 209 km off the coast of New England, the new national monument will affect local fishing industries. Recreational fishing will still be permitted but red crab and lobster fisheries must leave the area within 7 years, and commercial fishing operators were given 60 days to move from the protected area.

Source: *Mongabay* (2016) news.mongabay.com/2016/09/obama-creates-atlantic-oceans-first-marine-national-monument/

Signs of recovery of the Sierra Nevada yellow-legged frog

The deadly chytrid fungus has been decimating amphibian populations around the world

for several decades, and has taken its toll on the Sierra Nevada yellow-legged frog *Rana sierrae*, which has been in decline for over a century. However, an analysis of > 7,000 population surveys conducted in Yosemite National Park over the past 20 years has revealed that the species is recovering, with numbers increasing by an average of 11% annually across hundreds of populations. This is despite ongoing exposure to multiple stressors, including the presence of non-native predatory trout, pesticides, and chytridiomycosis. Results from a laboratory experiment indicate that the species may have developed some resistance to chytridiomycosis, which offers some hope that with appropriate management of habitat and reduction of stressors, declines of some amphibians may be at least partially reversible.

Source: *Proceedings of the National Academy of the United States of America* (2016) dx.doi.org/10.1073/pnas.1600983113, & *New Scientist* (2016) newscientist.com/article/mg23230943-000-endangered-frog-recovers-thanks-to-resistance-to-deadly-fungus/

4-year study to combat deadly bat disease

A 4-year study, with an investment of USD 2.5 million, has been launched to help scientists understand white nose syndrome, a fungal disease that is causing widespread mortality in North American bats and threatening some species with extinction. The disease disrupts bats' energy balance during hibernation, causing them to use up precious fat stores during more frequent arousals. Scientists will test whether a bioenergetic model can predict which species will survive and which will succumb, based on detailed information, including precise measurements of body fat and energy utilization during hibernation. The disease was first identified in New York State in 2006, and has since been found in 27 eastern and mid-west states and five Canadian provinces. In March 2016 the first known occurrence of the disease in western North America was recorded in Washington State. Bats play a key role in biodiversity and provide a number of important ecosystem services, including pollination and insect control.

Source: *Wildlife Conservation Society* (2016) newsroom.wcs.org/News-Releases/article/Type/ArticleView/articleId/9327/BAT-SIGNALS-25M-Four-Year-Study-Launched-to-Fight-Bat-Decimating-Disease.aspx

First U.S. bees to be protected under the Endangered Species Act

The U.S. Fish and Wildlife Service has added seven species of yellow-faced bees

in Hawaii to the U.S. Endangered Species List. *Hylaues anthracinus*, *H. assimulans*, *H. facilis*, *H. hilaris*, *H. kuakea*, *H. longiceps* and *H. mana* are the first bee species to be protected under the Act. Hawaii's yellow-faced bees are endemic to the state and are crucial to the pollination of many threatened plant species. The bees inhabit diverse habitats, such as coasts, dry forests and subalpine shrublands, but development along the coasts, fire, impacts of invasive plant species and grazing by feral ungulates are threatening these habitats. Populations of yellow-faced bees are vulnerable to the slightest changes in their habitats, and *H. hilaris*, once found on the islands of Lanai, Molokai and Maui, is now restricted to a single, small population. The listing is welcome progress; however, areas of critical habitat have not been designated for the species.

Source: Mongabay (2016) mongabay.com/2016/10/for-the-first-time-bees-get-added-to-us-endangered-species-list/

Lonely tree snail a symbol of Hawaii's biodiversity loss

Only a single individual of the tree snail *Achatinella apexfulva* is known to exist, in a laboratory in the University of Hawaii. The snail was once abundant on the island of Oahu, and its fate is not unique. Hawaii was once home to thriving populations of c. 750 species of terrestrial snails but now only c. 50 remain, and all are threatened with extinction. Multiple factors have contributed to the loss of Hawaii's snails, including overexploitation by collectors, invasive species, habitat loss and climate change. Many of Hawaii's other species are also under threat, including the monk seal, the hoary bat, and many birds, and the limited funds available for conservation are largely targeted at these more charismatic species, while invertebrates are overlooked. This is despite the reverence among native Hawaiians for tree snails, which they regard as being the voice of the forest.

Source: *New Scientist* (2016) newscientist.com/article/2105236-worlds-loneliest-snail-lives-in-hawaii-but-cant-get-a-date/

CENTRAL AMERICA AND CARIBBEAN

White-lipped peccary threatened with regional extinctions in Mesoamerica

The white-lipped peccary *Tayassu pecari* is undergoing rapid population declines in most Mesoamerican countries as a result of hunting, deforestation and cattle ranching. As the only large mammal that moves

through forested environments in herds of up to 200 individuals, the peccary plays a key role as an ecosystem engineer in the region's threatened forests. However, large herds are becoming increasingly rare as hunting diminishes populations and interferes with their social structure. In August 2016 regional experts convened at the 20th Mesoamerican Society for Conservation Biology Congress for an emergency assessment of the current conservation status of the species, and to propose conservation actions for its protection. The group of scientists and conservationists are calling for the species, which is currently categorized as Vulnerable on the IUCN Red List, to be re-categorized as Endangered in Mesoamerica, and have committed to jointly proposing and implementing conservation actions to save the white-lipped peccary.

Source: WCS (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/9329/Peccaries-of-Mesoamerica-Now-Highly-Threatened-Warn-Experts.aspx

The dilemma of Cuban crocodiles

The Cuban crocodile *Crocodylus rhombifer* is Critically Endangered, with just a few thousand remaining in the wild. Despite severe fines for killing the crocodiles, they continue to be hunted for their meat and highly sought after leather. Efforts to conserve the species began in 1960 under former president Fidel Castro but new genetic analyses are raising difficult questions for conservationists. A 2015 study revealed a high level of interbreeding between Cuban crocodiles and the more resilient American crocodile *Crocodylus acutus*; 50% of 227 wild Cuban crocodiles surveyed were hybrids, compared with just 16% of 137 captive individuals. This widespread interbreeding may be attributable to logging and agricultural practices reducing the habitats available to each species. An influx of genes from the hardy, salt-water-tolerant American crocodile could help Cuban crocodiles adapt as sea levels continue to rise, but should conservationists be focusing on preserving the genetic purity of the two species?

Source: *Nature* (2016) nature.com/news/cuban-crocodiles-pose-conservation-conundrum-1.20691

SOUTH AMERICA

Tropical Andes freshwater biodiversity at risk

An assessment by IUCN and partners has revealed almost 18% of the freshwater

biodiversity endemic to the Tropical Andes region of Bolivia, Colombia, Ecuador and Peru is threatened with extinction. Threats to freshwater species are rife, and include pollution, dams, unsustainable logging and fishing industries, mining and agricultural activities. The assessment covered 967 species, including freshwater molluscs, dragonflies, freshwater fishes and aquatic plants, and yielded a new freshwater dataset for the region. The basins with the highest concentration of threatened species were the Magdalena-Cauca and Dagua in Colombia. As well as identifying 25 new freshwater Key Biodiversity Areas the assessment used IUCN climate change vulnerability methods to assess the vulnerability of species to climate change, based on their biological traits. This is the first time that this process has been applied in the freshwater biodiversity context, and it has identified key species and areas for continued monitoring and sustainable management in the region.

Source: IUCN (2016) iucn.org/news/tropical-andes-freshwater-species-risk-%E2%80%93-first-iucn-red-list-assessment

New sleeping beauty frog described

Individuals of a new species of rain frog have been discovered at elevations of 1,000–1,700 m in and near Tingo Maria National Park in Peru's central Andes. The distinctive red rear legs and groin of *Pristimantis pulchridormientes* identified it as a new species but it owes its name to the region's chain of small isolated mountains known as La Bella Durmiente, the sleeping beauty. Areas of the park were largely inaccessible during the 1980s and 1990s because of terrorism and drug trafficking, with the result that few biological surveys have been conducted there. Although data on the new species are still insufficient, it is thought that the best hope for the frog lies in the protected park area. Clearing land for agriculture is a major driver of deforestation in the region, and although the park lost only 12 ha of tree cover during 2001–2014, the surrounding area lost 32,000 ha.

Source: Mongabay (2016) news.mongabay.com/2016/08/new-sleeping-beauty-frog-discovered-in-fragmented-peruvian-forest/

A fresh start for Brazil's black-fronted piping-guan

The black-fronted piping-guan *Pipile jacutinga* is endemic to the Atlantic Forest of South America. The bird plays an important ecological role as it consumes whole fruits and disperses the seeds, which is crucial for forest growth. The species is globally threatened, and has suffered severe population declines in Brazil as a result of habitat loss and poaching. A 2010 survey

in São Paulo's Sierra do Mar mountain range recorded only one individual, indicating that the species was on the brink of local extinction in the region. Since then the conservation organization SAVE Brasil has established adaptation and rehabilitation enclosures in São Paulo and Rio de Janeiro, where captive birds acclimatize to the forest environment and undergo predator recognition training prior to release. In June 2016 the first nine black-fronted piping-guans were released, and satellite monitoring and observations by local communities have confirmed the birds are adapting well to the natural environment.

Source: *BirdLife International* (2016) birdlife.org/americas/news/reintroducing-black-fronte-d-piping-guan-brazil

Peru capitalizes on its REDD+ potential. . .

Approximately 60% of Peruvian territory is Amazon rainforest, with an estimated total of 73 million ha of jungle. This vast expanse means that Peru's forests store more carbon than the USA emitted in 2014, according to data from the Carnegie Airborne Observatory. Circa 12.5% of Peru's forests in National Protected Areas are involved in REDD+ (Reduced Emissions from Deforestation and forest Degradation) programmes, and REDD+ conservation efforts generated nearly USD 34 million for Peru during 2013–2015. These projects create financial value for the carbon stored in forests, and field inspections and satellite imagery monitor the performance of programmes. The development of such projects involves community consultations but many note that a lack of indigenous land-titling and inadequate governance and forest management are hampering Peru's fulfilment of its carbon sequestration potential.

Source: *Mongabay* (2016) mongabay.com/2016/10/perus-redd-conservation-efforts-paying-off/

. . . but illegal mining is still rampant

Deforestation from illegal gold mining in Tambopata National Reserve in the south-east of Peru now exceeds 450 ha. These latest data are the result of research from the Monitoring of the Andean Amazon Project, which since 2015 has been using

high-resolution satellite imagery to identify areas of mining-driven deforestation within the reserve. It is estimated that > 2,000 people are involved in illegal mining activity within the protected area. Tambopata is home to c. 1,200 species of butterflies, 600 species of birds and 200 species of mammals, including the jaguar *Panthera onca* and the Endangered giant river otter *Pteronura brasiliensis*. This rich biodiversity attracts thousands of tourists each year but mercury pollution and the deforestation of vast tracts of primary forest threaten the future of the reserve.

Source: *Mongabay* (2016) news.mongabay.com/2016/10/gold-mining-deforestation-in-peruvian-reserve-surpasses-450-hectares/

Chile establishes new marine park

Covering 300,035 km², Chile's recently designated Nazca-Desventuradas Marine Park encompasses the islands of San Félix and San Ambrosio, covers 12% of Chile's sea surface area, and is one of the largest protected marine areas in the Americas. The marine park is a no-take zone, and mining and industrial activities are also prohibited. Research will continue to be permitted in the area, however, as 72% of species found in the Park are endemic to the region, with 41% of deep-sea fish and 46% of deep-sea invertebrates found nowhere else. Fish biomass is the highest of all the Pacific islands, with 2.5 tons per ha, and it is hoped that the Park will have a spillover effect that will foster the recovery of populations of over-exploited species in the South Pacific Ocean, including mackerel.

Source: *Mongabay* (2016) news.mongabay.com/2016/09/chile-creates-largest-marine-park-in-southeast-pacific/

AUSTRALIA/ANTARCTICA/ NEW ZEALAND

Bird flu threat to Antarctic penguins

Following the discovery of an unusual strain of avian influenza virus in penguins in Antarctica in 2013 scientists have continued to monitor the birds and have now discovered a second strain of the virus. The discovery is cause for concern because, although the birds are showing no signs of illness, bird flu can have

devastating consequences. The fact that the viruses are reaching the continent, introduced by migratory birds, indicates the potential for other more deadly viruses to be introduced there in the future. Penguins are the second most threatened group of seabirds, after albatrosses, and this latest finding highlights the need for better protection of penguins through monitoring for diseases, and protecting their breeding and fishing grounds through proper enforcement in marine protected areas and appropriate fisheries management.

Source: *BBC News* (2016) bbc.co.uk/news/science-environment-37440164

Could the smell of snails save the Great Barrier Reef?

Researchers in Australia are aiming to identify and synthesize a fear-inducing chemical compound released by the Pacific triton sea snail *Charonia tritonis* in the hope of saving Australia's coral reefs. These giant snails are natural predators of the crown-of-thorns starfish *Acanthaster planci*, the species responsible for 42% of all lost coral cover in Australia between 1985 and 2012. A single crown-of-thorns starfish is capable of eating c. 10 m² of coral in 1 year, and a population explosion of the starfish in 2015 resulted in an estimated 7 million starfish feasting on the Great Barrier Reef. Currently population outbreaks are managed on a small, local scale by divers administering lethal injections to individual starfish, but this is an expensive task. Synthesizing the scent of the Pacific triton snail may offer an alternative solution however, as crown-of-thorns starfish flee when they sense the snails in the area.

Source: *BBC News* (2016) bbc.co.uk/news/world-australia-37091400

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