Briefly

INTERNATIONAL

Large carnivores in decline

Researchers have found that three quarters of the world's large carnivore species are in decline, which could have serious repercussions for ecosystems worldwide. The majority of these animals now occupy less than half of their former ranges and are under increasing pressure from habitat loss, declines in prey species, and conflict with humans. The researchers identified the Amazon, South-east Asia, and southern and east Africa as hotspots of decline, where many large carnivores are at risk of extinction. Large predators play important and complex roles in ecosystems, and their decline can have a cascading damaging effect. For example, the decline in wolves and cougars in Yellowstone National Park resulted in an increase in the number of browsers such as elk and deer, which is bad for vegetation and consequently for birds and small mammals. The researchers have cited the Large Carnivore Initiative for Europe as a role model for saving large carnivores worldwide.

Source: Science (2014) dx.doi.org/10.1126/science.1241484, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-25675002

Population growth intensifies pressure on tropical ecosystems

Researchers have highlighted the potential effects of human population growth and related agricultural expansion on biodiversity in the tropics, where much of the expansion is likely to occur because of the availability of cheap, productive land. According to UN projections the world's human population is set to reach 11 billion before the end of the century, and it is estimated that global demand for food could double by mid century. The predicted increases in the demand for food and biofuel could require up to a billion hectares of new cultivation. Conversion of tropical habitats will have a significant ecological effect because these areas are characterized by high biodiversity and provide essential ecosystem services. To avoid loss of species and habitats there is a need for novel agricultural strategies that include more ecologically efficient methods of food production and protection of valuable habitat and wilderness areas.

Source: Trends in Ecology & Evolution (2013) dx.doi.org/10.1016/j.tree.2013.12.001, and *Mongabay.com* (2014) news.mongabay.com/2014/0116-population-growth-food-deforestation.html

Trees grow faster as they age

It has long been believed that tree growth slows with age but a recent study of > 400 species has revealed that the growth rate of most trees increases after they reach maturity. This discovery highlights the ecological importance of old, large trees, showing that they actively sequester large amounts of carbon each year in addition to their other known roles of providing wildlife habitat and fruits and flowers. Despite their importance old trees are usually the first to be targeted by loggers and they are also particularly vulnerable to the effects of climate change, including more frequent and intense droughts and wildfires.

Source: Nature (2014) dx.doi.org/10.1038/nature12914, and *Mongabay.com* (2014) news.mongabay.com/2014/0115-hance-trees-growth-age.html

Models underestimate global warming…

Recent climate models have indicated that the rate of global warming has slowed down but new research that takes into account temperature data over the Arctic suggests otherwise. The datasets used by the Hadley Centre and Climatic Research Unit and by NOAA's National Climatic Data Center cover > 80% of the planet but do not account for temperatures in the Arctic. This gap in the data has led to an underestimation of total warming. Satellite data are only available for the Arctic from 1979 but data from the last 15 years reveal that the rate of warming in the Arctic has increased rapidly and the Arctic is now warming more than eight times faster than the rest of the world. Since 1980 the Arctic has lost c. 40% of its sea ice, reaching the lowest point on record in 2012, and scientists have predicted that it will be ice-free sometime between 2020 and 2100.

Source: Quarterly Journal of the Royal Meteorological Society (2013) dx.doi.org/10.1002/qj.2297, and *Mongabay.com* (2014) news.mongabay.com/2014/0115-hance-gap-arctic-temps.html

…and top seven global warming culprits identified

New calculations suggest that the USA, China, Russia, Brazil, India, Germany and the UK are responsible for > 60% of the global warming that occurred between 1906 and 2005. In absolute terms, the seven countries are global warming's worst offenders. Researchers calculated national contributions to warming by weighting each type of emission according to the atmospheric lifetime of the temperature change it causes. Using historical data, they included carbon dioxide from burning fossil fuels and changes in land use such as deforestation. They also accounted for methane, nitrous oxide and sulphate aerosols. Together these account for 0.7 °C of the world's 0.74 °C warming between 1906 and 2005. The USA is responsible for 22% of the 0.7 °C warming, China accounts for 9%, Russia for 8%, Brazil and India for 7% each, and Germany and the UK for 5% each.

Source: *New Scientist* (2014) www.newscientist.com/article/mg22129523.100-the-seven-deadly-sinners-driving-global-warming.html, and *Environmental Research Letters* (2014) iopscience.iop.org/1748-9326/9/1/014010/

Concerns over implications of international trade deal for shark fin ban

There are fears that a new trade deal involving the USA and 12 Pacific countries could weaken attempts to end shark finning. A leaked draft of the Trans-Pacific Partnership agreement merely suggests that countries should address shark finning as appropriate and contains no binding commitment to curb finning. Environmental groups are concerned that the USA is making concessions on important environmental issues to secure the deal with the Pacific nations, which are among the world's biggest exporters of natural resources, including timber and fish. According to a representative of the Sierra Club, one of America's oldest environmental organizations, if the chapter on the environment is finalized as it currently stands then President Obama's trade record will be worse than that of George W. Bush, who reached an agreement with Congress in 2007 that future free-trade agreements would include a list of environmental treaties to be upheld by all signatories.

Source: BBC News (2014) www.bbc.co.uk/news/science-environment-25743459

Why birds fly in a V formation…

Scientists have solved the mystery of why so many birds fly in a V formation, by fitting

data loggers to a flock of northern bald ibis. The birds were being trained to migrate behind a microlight as part of a conservation project by the Waldarappteam in Austria, whose aim is to bring the northern bald ibis back to Europe by retraining them to navigate a lost migration route. The study revealed that the V formation was the optimal energy-saving configuration, giving birds an aerodynamic advantage by remaining close to the wingtip of the bird in front to gain lift from the upward-generated air. The birds also timed their wing beats to get the maximum benefit from the upwash and their heart rates decreased when they were flying together in V formation.
Source: Nature (2014) dx.doi.org/10.1038/nature12939, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-25736049

...and tattoos are all the rage for tortoises

In an attempt to save one of the world's most threatened tortoises from poachers, conservation organizations are engraving identification codes on the animals' shells, reducing their market value and making them more easy to trace. The Critically Endangered ploughshare tortoise is endemic to Madagascar and highly sought for its beautiful shell and as an exotic pet. Illegal collection for the international pet trade, and particularly to meet the high demand in South-east Asia, has decimated the population and there are only an estimated 400 adults remaining in the wild. A Tattoo the Tortoise event was held in Singapore Zoo in December 2013 to raise public awareness of the plight of the ploughshare tortoise. The zoo currently holds two of these tortoises, which were confiscated in 2009, and these animals will be used to establish an insurance colony in Singapore.
Source: TRAFFIC (2013) www.traffic.org/home/2013/12/16/worlds-rarest-tortoise-loses-face-value.html

Report links human health problems with environmental degradation

A report by the Heal (Health & Ecosystems Analysis of Linkages) consortium highlights the effects of environmental degradation on human health. Examples cited in the report include the rise in cardiopulmonary disease in Singapore attributed to smoke from widespread burning of rainforests in Indonesia, and the destruction of coral reefs and mangrove forests, which act as coastal barriers against rising sea levels and protect the third of the world's population that lives within 100 km of the sea. The report also examines the demographics at most risk from environmental change and concludes that the poor and future generations will suffer disproportionately, whereas the wealthy are more likely to accrue any benefits from such change. The report aims to provide policymakers with better information to enable them to understand the effects of ecological damage and anticipate the public health implications of their decisions.
Source: Mongabay.com (2014) news.mongabay.com/2014/0107-barrett-environmental-degradation-leads-public-health-crises.html

Long-haul flight for Amur falcons...

The migration of three Amur falcons from Nagaland in India to Africa has been tracked using satellite, providing new insight into the long-distance migration of these birds. Thousands of Amur falcons were saved from massacre in Nagaland, a remote part of north-east India, in 2013 following an international effort to halt trapping of the birds there. The falcons stop for a few weeks in India during their migration from Siberia to southern Africa, and the importance of protecting the birds during this stopover is increasingly recognized. The satellite data revealed that the falcons flew over the Bay of Bengal and over central India and then non-stop over the Indian Ocean until they made landfall in Africa, after which they headed south. It is assumed that their migration is timed to coincide with that of dragonflies from India to East Africa.
Source: BirdLife International (2013) www.birdlife.org/asia/news/amur-falcons-tracked-africa

...with Icarus set to uncover the secrets of other animal migrations

The fitting of a dedicated wildlife radio receiver, known as Icarus, to the International Space Station next year will not only allow scientists to uncover the mysteries of long-distance bird migrations but will also facilitate tracking of very small organisms. Transmitters weighing 5 g will be used initially but there are plans to develop much smaller ones that can be fitted to butterflies and other insects. In addition to its conservation value it is expected that the data gleaned from satellite tracking will facilitate improved health forecasting, as epidemics such as SARS and bird flu arise when humans come into contact with infected animals. By fitting animals in disaster-prone areas with transmitters, scientists may receive advanced warning of earthquakes or volcanic eruptions because it is known that animals can sense imminent tectonic activity and respond by moving away from the danger zone.
Source: The Guardian (2014) www.theguardian.com/environment/2014/jan/19/migration-secrets-birds-icarus-space-station

Tags reveal leatherback turtle bycatch hotspots

A study using satellite data from tagged leatherback turtles has identified possible bycatch hotspots in the Pacific Ocean. By tracking 135 turtles, researchers have highlighted areas where they were likely to come into contact with fishing vessels. Data were collated from numerous projects between 1992 and 2008, and then integrated with data on where the longline fishing activity in the Pacific Ocean was highest. For East Pacific nesters, an area of potential risk occurs along the primary leatherback migration corridor between Costa Rica and the Galapagos Islands. For the West Pacific population the greatest bycatch was predicted to occur adjacent to nesting beaches in north-west New Guinea.
Source: Proceedings of the Royal Society B (2014) dx.doi.org/10.1098/rspb.2013.2559, and *BBC News* (2013) www.bbc.co.uk/news/science-environment-25593643

Microplastics pose toxic threat to marine biodiversity

Tiny particles of waste plastic that are ingested by shoreline worms may be negatively affecting biodiversity. So-called microplastics may be able to transfer toxic pollutants and chemicals into the guts of lugworms. An estimated 150 million t vanishes from the global waste-stream each year. When particles of plastic go into the environment they accumulate large quantities of pollutants. The tiny bits of plastic, which measure 1 mm or smaller, transfer pollutants and additive chemicals (such as flame-retardants) into the guts of lugworms. This process results in the chemical reaching the lugworms' tissue, causing a range of biological effects such as thermal stress and the inability to consume as much sediment. If the animals are not able to eat as much then there is a change in the function of the organisms and thus an impact on the associated species.
Source: Current Biology (2013) dx.doi.org/10.1016/j.cub.2013.10.068, and *BBC News* (2013) www.bbc.co.uk/news/science-environment-25186871

EUROPE

European Parliament votes to stop wildlife crime

On 15 January 2014 the European Parliament voted in favour of an EU Resolution on Wildlife Crime. Member states can no longer ignore the fact that tonnes of plants and animals cross European borders every year. WWF and TRAFFIC are now calling on the European Commission and member states to ensure that existing legislation on the illegal wildlife trade is fully implemented. They are also calling for tighter border controls, increased penalties for convicted traffickers, and cooperation between relevant law-enforcement agencies to prevent the trade of illicit wildlife products in the EU. It is expected that the European Commission will present a communication on illegal trade, including timber and fisheries, at an EU conference in Brussels in April.

Source: TRAFFIC (2014) www.traffic.org/home/2014/1/15/europe-needs-to-rid-itself-of-illegal-wildlife-products.html

Shortage of honeybees to pollinate Europe's biofuel crops

Declines in insect pollinators across Europe have coincided with substantial growth in the area of land cultivated for insect-pollinated crops, which has highlighted and exacerbated the shortfall in pollination services. The European Union's agricultural and biofuel policies have driven increased cultivation of biofuel feed crops, including oilseed rape, sunflowers and soybeans, and researchers have identified a mismatch between the demand for pollination services and the availability of managed honeybee stocks. This highlights the dependence of many countries on wild pollination services and the need for conservation action to protect wild pollinators, which are at risk from an increased use of agrochemicals in some countries, including the UK, Germany and Hungary, and are under pressure as a result of the declining availability of resources.

Source: PLoS ONE (2014) dx.doi.org/10.1371/journal.pone.0082996, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-25656283

Rare water lily stolen from Kew

A specimen of the pygmy Rwandan water lily, which is the world's smallest water lily, has been stolen from the collection at Kew Royal Botanic Gardens in London. The plant, which is categorized as Extinct in the Wild on the IUCN Red List, was discovered in 1987 at a single location in Rwanda and is now propagated at only two locations worldwide. The theft of the plant is just one of many incidences of rare and threatened plants being targeted by thieves for the illegal wildlife trade, with rare orchids and cacti being particularly sought after. In 2011 live plants accounted for c. 6% of all wildlife seizures (including rare animals, ivory and animal parts) in the EU.

Source: The Guardian (2014) www.theguardian.com/environment/shortcuts/2014/jan/14/kews-lost-waterlily-ladys-slipper

Government urged to take responsibility for biodiversity of island territories

The UK's overseas territories account for 90% of the biodiversity for which the British government is responsible, yet according to a report by members of parliament on the environmental audit committee the territories are allocated only 0.3% of the UK's biodiversity conservation budget. The territories span vast areas of ocean, coral atolls, tropical forests and a polar wilderness and are home to at least 500 threatened species. These include the Ascension predatory shrimp, which is found in only two rockpools, the red berry tree, which is found only on the Pitcairn Islands and of which there are only four specimens remaining, the blue iguana and the rockhopper penguin. In its southern territories, including the British Antarctic Territory and the Falkland Islands, there are sperm whales and southern elephant seals, and the British government is responsible for more penguins than any other nation. However, 2 million pairs of northern rockhopper penguins have been lost from Tristan da Cunha in the past 60 years.

Source: The Guardian (2014) www.theguardian.com/environment/2014/jan/16/uk-failing-protect-wildlife-overseas-territories

Early signs of spring in the UK

In line with the trend of recent years, signs of spring appeared early in the UK this year following an unusually mild winter and the third warmest December on record. Snowdrops appeared as early as December and the early appearance of ladybirds and butterflies was also reported. However, the number of insects reported in early spring was relatively low and this has been attributed to very wet weather, which left the ground saturated and slowed the emergence of bumblebees, hoverflies and other insects. The early emergence of plants and animals leaves them vulnerable to cold spells that can occur later in spring.

Source: The Guardian (2014) www.theguardian.com/environment/2014/jan/16/spring-appearing-uk-mild-winter-woodland-trust

Public-led Garden Wildlife Health project launched

The Garden Wildlife Health project was launched in January to investigate the health of Britain's wildlife. The large-scale citizen science project represents a collaboration between the Zoological Society of London, the British Trust for Ornithology, Froglife, the Royal Society for the Protection of Birds, and garden owners nationwide. The public are being asked to monitor common species, including amphibians, reptiles, birds and hedgehogs, and to report any signs of disease via the project's website (gardenwildlifehealth.org). The data collected will enable the Garden Wildlife Health team to assess the well-being of native species and to identify where and when diseases are occurring and whether they are responsible for declines in species' populations. Disease is already known to be a cause of the decline of common frog and greenfinch populations in the UK.

Source: Zoological Society of London (2014) www.zsl.org/science/news/nurture-the-nature-in-your-garden,1166,NS.html

Major decline in eelgrass in Scottish sea loch

In Scotland's Loch Fleet National Nature Reserve two species of seagrass—narrow-leafed eelgrass *Zostera angustifolia* and dwarf eelgrass *Zostera noltei*—have declined by 85% over the past 12 years. The eelgrass beds are an important part of the ecosystem, providing food for overwintering wildfowl, a nursery area for young fish, and coastal protection against the impact of waves and erosion. Such declines have occurred at similar marine habitats across the UK. The reason for the decline in Loch Fleet is not fully understood but it could be attributable to a number of natural or anthropogenic factors, including grazing by wildfowl, contamination by herbicides, increases in the nutrient or salinity levels of the water, or changes in sedimentation in the loch.

Source: Scottish Natural Heritage (2013) www.snh.gov.uk/news-and-events/press-releases/press-release-details/?id=975

Scottish birds make epic migration...

Research into the migration of the red-necked phalarope has revealed some

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surprising results. It had been assumed that the Scottish breeding population, which is found only in Shetland and the Western Isles, spent the winter months with the Scandinavian population, probably in the Arabian Sea. However, geolocators attached to 10 of the birds on the island of Fetlar in 2012 have revealed that the red-necked phalarope is actually a long-distance migrant whose annual migration comprises a 16,000-mile round trip. The small birds fly across the Atlantic via Iceland and Greenland, down the east coast of the USA and across the Caribbean and Mexico before reaching their final destination on the coast of Ecuador or Peru. This is the only known westward migration to the Pacific and it suggests that the Scottish population is an offshoot of a North American population and not a Scandinavian population, as previously thought.
Source: BBC News (2014) www.bbc.co.uk/news/uk-scotland-25661650

…and, surprisingly, so do British bats

The body of a bat that was ringed in the south-west of England, near Bristol, was found recently in the Netherlands, providing the first known evidence that bats migrate across the North Sea from the UK to Europe. The tiny Nathusius' pipistrelle was found at a known roost site in a farm building during routine monitoring by the Friesland Mammal Working Group. The species was first recorded on the Shetland Islands in 1940 and breeding populations were discovered in England and Northern Ireland in the 1990s, but very little is known about the bat's migratory movements because it is too small to carry the kinds of tags used to track birds and larger animals. This is the first time that a ringed pipistrelle has been recorded on both sides of the continent and it was one of only 34 bats ringed at a lake in Blagdon. Samples from the bat are now being analysed to see if they can reveal more information about the bat's journey.
Source: BBC News (2014) www.bbc.co.uk/nature/25759149

English seas get new marine conservation zones

The UK government has announced it will create 27 new marine conservation zones to protect the seas around the English coast. The MCZs will help seahorses, coral reefs and oyster beds to remain safe from dredging and bottom-trawling. The Marine Conservation Society, however, warned there are still fewer than a quarter of the number of MCZs recommended to complete an ecologically coherent network. In 2012 a 2-year consultation involving the government's own science advisers recommended the creation of 127 MCZs to halt the rapid decline of fish, lobsters, oysters and seahorses. But earlier this year ministers announced plans to construct just 31 zones aimed at protecting life on the ocean floor. Two were later determined to be too costly and a decision on the two remaining sites will be made in the next phase of the project. There are plans to designate two more phases of MCZs over the next 3 years.
Source: BBC News (2013) www.bbc.co.uk/news/science-environment-25032255

Isles of Scilly rat eradication begins

Brown rats were accidentally introduced to the Isles of Scilly from shipwrecks in the 18th century. The project to eradicate them is part of a 25-year programme to protect internationally important seabird numbers, including those of Manx shearwaters and storm petrels. A feasibility study estimated the population of brown rats on the Isles of Scilly was c. 34,500, with 3,100 occurring on St Agnes and Gugh. The rodents will be poisoned on these two islands by Wildlife Management International Limited, which has helped eradicate rats from Ramsey Island off Wales, Lundy Island off Devon and the Isle of Canna in the Scottish Hebrides. A period of intensive baiting started in November 2013, followed by a long-term monitoring programme at the beginning of 2014 to check the rodents have been eradicated from the islands.
Source: BBC News (2013) www.bbc.co.uk/news/uk-england-cornwall-24583514

Germany pledges support for tiger conservation

The German government has pledged EUR 20 million to the IUCN's Integrated Tiger Habitat Conservation Programme, which aims to support the world's 13 tiger range states to meet their 2010 goal of doubling the number of tigers in the wild by 2020, by restoration of the tiger's declining forest habitat. The 5-year programme will designate funds to conservation organizations and wildlife authorities for habitat restoration projects. The tiger is categorized as Endangered on the IUCN Red List and three subspecies are already extinct, with two subspecies categorized as Critically Endangered. The major threats to the remaining tigers are deforestation and habitat degradation, poaching, decline of prey species, human population growth, and human–tiger conflict. Countries eligible for funding under the new programme include Bangladesh, Bhutan, Cambodia, India, Indonesia, Lao PDR, Myanmar, Nepal and Vietnam.
Source: Mongabay.com (2014) news.mongabay.com/2014/0114-hance-germany-tiger-funding.html

Fresh effort to clone extinct animal

Scientists in Spain have received funding to test whether an extinct mountain goat can be cloned from preserved cells. The bucardo, or Pyrenean ibex *Capra pyrenaica pyrenaica*, became extinct in 2000 but cells from the last animal were frozen in liquid nitrogen. In 2003 a cloned calf was brought to term but died a few minutes after birth. Scientists will now test the viability of the female bucardo's 14-year-old preserved cells. The Aragon Hunting Federation signed an agreement with the Centre for Research and Food Technology of Aragon in Zaragoza to begin preliminary work on the cells from the last animal, named Celia. In addition to this, they will also attempt to clone embryos and implant them in female goats. The bucardo was a subspecies of ibex with distinct physical and genetic characteristics. It was adapted to life in its mountain habitat and to survive the extreme cold and snow of winter in the Pyrenees.
Source: BBC News (2013) www.bbc.co.uk/news/science-environment-25052233

NORTH EURASIA

Pursuit of Arctic oil continues despite opposition

Late last year the Russian oil company Gazprom announced that it had begun pumping oil from the Arctic seabed at the offshore site of Prirazlomnoye, despite widespread opposition from international environmental organizations. The controversial project became the focus of media attention worldwide when 28 Greenpeace activists, a British journalist and a Russian videographer were arrested and imprisoned in September while protesting against Gazprom's work to exploit the Arctic's fossil fuels. They were charged with piracy and hooliganism. There are concerns about the ability of any oil company to deal with an oil spill in the extremely harsh yet fragile Arctic environment, where the effects of global climate change are already being felt and the loss of sea ice is threatening wildlife and indigenous people. According to the global carbon budget calculated by the Intergovernmental Panel on Climate Change, remaining fossil fuel deposits must be left untapped to avoid catastrophic climate change.

https://doi.org/10.1017/S0030605314000131 Published online by Cambridge University Press

Source: Mongabay.com (2013) news.mongabay.com/2013/1223-hance-russia-arctic-oil.html

Uzbekistan's elusive snow leopards caught on camera

Late last year camera traps captured the first ever photographs of snow leopards in Uzbekistan. The photographs were taken in the country's largest protected area, Gissar Nature Reserve, which was established in 1983 and spans almost 81,000 ha in the Pamir Mountains. The snow leopard, categorized as Endangered on the IUCN Red List, is one of the world's most elusive mammals. The global population has declined to 3,000–7,000 and one of the threats to its survival is lack of knowledge about the species. The camera-trap programme will provide scientists with valuable information about the snow leopard's range and numbers, which will inform conservation efforts for the species. Known threats to the species include poaching, human–wildlife conflict and declines in prey species. In addition to capturing snow leopards the camera traps in Gissar Nature Reserve also photographed bear, lynx, ibex, wild boar and other mammals.
Source: Mongabay.com (2014) news.mongabay.com/2014/0116-hance-snow-leopard-uzbekistan.html

NORTH AFRICA AND MIDDLE EAST

The state of Jordan's birds

A report by Jordan's Royal Society for the Conservation of Nature provides a detailed assessment of the country's rich avifauna, including assessments of bird populations, the threats they face, and the conservation strategies in place to protect them. Jordan has a rich biodiversity despite its relatively small size and is home to over 430 bird species. Almost 80% of these are migrants, as Jordan lies on a major migration route from Asia and Europe to Africa. Jordan's birds include a number of threatened species, including the Syrian serin, a small canary categorized as Vulnerable on the IUCN Red List. Jordan is an important breeding site for this bird, with c. 80% of the global population breeding there. An assessment revealed that all of Jordan's Important Bird and Biodiversity Areas are experiencing threats, with wetlands being particularly at risk.
Source: BirdLife International (2013) www.birdlife.org/middle-east/news/state-jordan%E2%80%99s-birds-report-launched

SUB-SAHARAN AFRICA

Fruit bats harbour more deadly viruses

Researchers have found that henipaviruses, which spread to other animals and humans, and a disease that is similar to rabies, are widespread in the straw-coloured fruit bat *Eidolon helvum,* found in Africa. There is a potential risk to human health because the bats roost close to cities and are also hunted for food. Of 2,000 bats in 12 African countries, 42% were harbouring henipaviruses, which can be deadly if they spread to other animals and humans. About a third of the fruit bats were infected with the rabies-like Lagos bat virus, which is a risk for people who hunt bats, as it is most likely transmitted by bites. There may be transmission of henipaviruses from urine, raising important questions for people who live in close proximity to large bat roosts. Removing or culling the bats is not an option as this could spread the viruses.
Source: Nature Communications (2013) dx.doi.org/10.1038/ncomms3770, and *BBC News* (2013) www.bbc.co.uk/news/science-environment-25003792

West African lions facing extinction

The NGO Panthera has published the results of an extensive survey of West African lions, with findings indicating that there are now <250 mature lions of breeding age in the region and only c. 400 lions in total. The West African lion is genetically distinct from other African lions and there has been a collapse in the population in the past decade, attributed to large-scale conversion of habitat for agricultural plantations of cotton and food crops. The survey results suggest that West African lions now exist at only four of 21 protected areas where they were believed to be present in 2005. They now roam in only 1.1% of their historic range and are present in only five countries—Senegal, Nigeria, Benin, Niger, and Burkina-Faso—where poverty is rife and there is little funding for conservation. The remaining lions are threatened by poaching for bushmeat and conflict with herdsmen over killing of livestock.
Source: PLoS ONE (2014) dx.doi.org/10.1371/journal.pone.0083500, and *BBC News* (2014) www.bbc.co.uk/news/world-africa-25722058

Ol Pejeta Conservancy in last bid attempt to save the northern white rhinoceros

The world's last two remaining fertile male northern white rhinos have been translocated, along with two female northern white rhinos, from the Czech Republic's Dvůr Králové Zoo to Ol Pejeta Conservancy in Kenya. The species is thought to be extinct in the wild and captive-breeding attempts have been unsuccessful. It was hoped that the environment and climate of Ol Pejeta would provide favourable breeding conditions for the rhinos but so far there have been no successful matings. In a final bid to conserve the genes locally adapted for the northern white rhino's habitat, attempts will be made to cross breed the northern white rhino females with a southern white rhino male, with potential for the offspring to be bred back with pure northern white rhinos in the future.
Source: Fauna & Flora International (2014) www.fauna-flora.org/news/ol-pejeta-conservancy-extends-breeding-plan-for-the-northern-white-rhino/

Ugandan school children build fuel-efficient stoves to mitigate deforestation

A group of primary school children in Uganda have become ambassadors for the conservation of Kibale National Park, which is threatened by deforestation, through a project to build fuel-efficient stoves and promote more sustainable wood consumption. The stoves burn c. 40% less wood than traditional stoves and therefore provide an added benefit for the children themselves, who typically collect the wood for their families. By reducing fuel consumption the children have more time for play and for school work. The children have been inspired to become actively involved in combating local deforestation, collecting the raw materials and building the stoves themselves and sharing their knowledge with their peers in other schools in the vicinity of Kibale. They now hope to build the stoves in all homes close to the National Park, which was established in 1993 to protect the high biodiversity of the area.
Source: Mongabay.com (2014) news.mongabay.com/2014/0110-millar-children-build-fuel-efficent-stoves-uganda.html

Growing demand for rhinoceros horn fuels poaching in South Africa

The rate of poaching of white rhinoceros in South Africa has risen starkly in recent years, and government figures indicate that more white rhinos were killed illegally in 2013 than in any previous year. Much of the poaching occurs in Kruger National Park and is believed to be orchestrated by criminal gangs based in neighbouring Mozambique, which shares a porous border with South Africa. The main driver of the

illegal killing is the increasing demand for rhino horn in China and Vietnam, where it is believed to have medicinal properties and is also considered a status symbol. There was a remarkable recovery of the white rhino population in South Africa in response to conservation efforts, from only 100 at the end of the 19th century to an estimated 20,000 today. However, the escalation in the number of killings in recent years could threaten the long-term survival of the species.
Source: BBC News (2014) www.bbc.co.uk/news/science-environment-25781746

Fish catches bird in flight

The first confirmed record of a freshwater fish preying on birds in flight has been documented by a motion video camera during a radio telemetry study. A population of African tigerfish *Hydrocynus vittatus* from the Schroda Dam in the Mapungubwe National Park actively prey on barn swallows *Hirundo rustica* in flight. Rumours of such behaviour by the African tigerfish, which has been reported to reach 1 m in length, have circulated since the 1940s. But the research team had not been convinced by the anecdotal reports and had set out to study the migration and habitat use of the species. However, during the 15-day study, they saw as many as 20 successful African tigerfish strikes on barn swallows every day. These ranged from pursuits by fish at the surface, followed by leaps, to direct attacks from deeper water.
Source: Nature (2014) www.nature.com/news/video-fish-leaps-to-catch-birds-on-the-wing-1.14496, and *Journal of Fish Biology* (2014) dx.doi.org/10.1111/jfb.12278

Last known population of rare fish found in Madagascar

The rare Mangarahara cichlid is native to the Mangarahara River in Madagascar but was believed to be extinct in the wild following destruction of its habitat as a result of deforestation and agricultural development. The Zoological Society of London (ZSL) launched an appeal in May 2013 to find a mate for the two male individuals of the species held at London Zoo's Aquarium, and one of the respondents was a farm and business owner in Madagascar who reported seeing the fish in a village in the north of the country. ZSL sent an exploratory expedition to Madagascar to search for the Mangarahara cichlid and after days of fruitless searching in empty streams the team finally found the first of the last remaining individuals of the species in existence. The team transferred 18 of the fish to a private aquaculture facility for specialist care and work is underway to develop a conservation strategy for the species.
Source: Zoological Society of London (2013) www.zsl.org/zsl-london-zoo/news/world-wide-fish-appeal-successful

SOUTH AND SOUTH-EAST ASIA

Camera traps confirm presence of the world's largest lizard

Researchers have confirmed the presence of the Komodo Dragon *Varanus komodoensis*, the world's largest lizard, in the west of Flores Island, Indonesia. Categorized as Vulnerable on the IUCN Red List, Komodo dragons have been found at sites on the north and south coasts of Flores but recent survey work by Burung Indonesia and others provides the first confirmation that the species also survives in the west of the island. Camera traps recorded at least 12 individuals in the Mbeliling forest in the far west of Flores, opposite the small islands of Komodo and Rinca.
Source: BirdLife International (2013) www.birdlife.org/asia/news/komodo-dragons-found-unprotected-indonesian-iba

Rare Tibetan antelope threatened by demand for luxury shawls

Shahtoosh shawls, made from the fine under-fur of the chiru, or Tibetan antelope, are highly sought after in Pakistan. However, trade in the shawls is illegal and the Tibetan antelope is listed by CITES, to which Pakistan is a signatory. The shawls are considered a status symbol by wealthy Pakistanis and are sold for c. USD 4,000 in markets in Islamabad, although they are not displayed openly by vendors. The demand for shahtoosh is threatening the survival of the chiru—the animals are killed for their fur and about four animals are needed to make a single shawl. During the 1980s and 1990s the chiru's population declined by $>50\%$ and it is estimated that a small migratory population of 75,000–100,000 remains, which is not a large number for a slow-breeding antelope. The chiru are native to Tibet and migrate to Ladakh in the north of India during the summer. The species is already extinct in Nepal.
Source: The Guardian (2014) www.theguardian.com/environment/2014/jan/17/shahtoosh-shawl-rate-tibetan-antelope-kashmir

Rare frog rediscovered in Sri Lanka...

Researchers from the Herpetological Foundation of Sri Lanka have rediscovered the webless shrub frog, which has not been seen since it was first discovered in 1876 and was believed to be extinct. The researchers encountered 40 of the frogs during a nocturnal survey in the Peak Wilderness Sanctuary, and comparison with museum specimens confirmed they are the long-lost species. The frogs were found in an area of the Sanctuary that had not previously been explored by scientists and although it is in a protected area the frog's habitat is under threat from tea cultivation, forest fragmentation, soil erosion, illegal construction and pollution. The team has also rediscovered other rare species, including the starry shrub frog, which had not been seen for over 160 years, and the Kandyan dwarf toad, which had not been seen since 1876. In addition to the rediscoveries, the team has also discovered eight new frog species in the same area.
Source: Journal of Threatened Taxa (2013) dx.doi.org/10.11609/JoTT.03547.5181-93, and *Mongabay.com* (2014) news.mongabay.com/2014/0110-hance-hypomelas.html

...which is also home to the first known dwarf elephant

The first documented evidence of dwarfism in an adult wild animal has been published by biologists in Sri Lanka, who discovered a male Asian elephant just over 1.5 m in height. The dwarf elephant had disproportionately short legs but otherwise appeared to be normal, both morphologically and behaviourally. Dwarfism can be caused by a number of genetic mutations but is extremely rare among wild animals. Dwarfism puts wild animals at a big disadvantage, whether they be predator or prey, and therefore dwarf animals have little chance of survival in the wild. However, elephants in Sri Lanka have no predators. Although the dwarf elephant has overcome many of the challenges associated with dwarfism it still faces the challenges to survival that all elephants face, including conflict with humans. There is evidence of gun-shot wounds on its back and legs and a scar on the trunk from a noose set to catch bushmeat.
Source: Mongabay.com (2013) news.mongabay.com/2013/1219-salisbury-dwarf-elephant.html

Palm oil company fined for illegal deforestation in Aceh

The palm oil company PT Kallista Alam has been found guilty of illegal clearing and burning of protected peat forest in Tripa peat swamp, which is part of the Leuser ecosystem and an important habitat for Sumatra's Critically Endangered orang-utans. The company cleared forest without

securing permits or the free, prior and informed consent of local communities, sparking an international campaign for greater protection of Indonesia's rainforests. It is hoped that the court's decision to fine the company USD 30 million represents an important step towards greater environmental law enforcement in the country. It remains to be seen, however, whether the judgement in relation to PT Kallista Alam will actually be enforced. Only a fraction of the fines levied against companies for illegal deforestation and other illegal activities in relation to mining, logging, palm oil and pulp and paper in Sumatra in recent years have been paid.
Source: Mongabay.com (2014) news.mongabay.com/2014/0109-aceh-tripa-court-decision.html

China's shrinking wetlands

According to China's State Forestry Administration almost 9% of the country's wetlands have been lost since 2003. This is bad news for a nation whose population is already suffering from severe water shortages in many areas, jeopardizing food and energy production and manufacturing activity, as a large proportion of China's freshwater resources are stored in wetlands. Protection of wetlands has been poor and hampered by legal loopholes, with losses attributable to land conversion for agriculture, large-scale infrastructure projects and degradation as a result of climate change. Recognizing the importance of water supply for economic growth and social stability, China has set aside a budget of USD 660 billion for projects to improve supply this decade. However, of the USD 1.5 billion fund set aside for wetland protection during 2005–2010 only 38% was allocated to projects.
Source: The Guardian (2014) www.theguardian.com/environment/2014/jan/13/china-wetlands-shrank-decade

Symbolic move by China in the battle against the illegal ivory trade

On 6 January 2014 China destroyed 6.15 tonnes of illegally traded ivory, just weeks after eight Chinese citizens were convicted of smuggling ivory and sentenced to 3–15 years in prison. As the largest consumer of trafficked ivory, most of which comes from elephant poaching in Africa, such strong evidence of the government's commitment to enhance law enforcement and reduce the demand for ivory could have a significant effect on the illegal wildlife trade and support international action against poaching of tens of thousands of African elephants. The ivory crushing ceremony was attended by representatives from CITES, the UN Environment Programme, IUCN, and international NGOs, including WWF and TRAFFIC.
Source: WWF (2014) wwf.panda.org/wwf_news/?213932/China-destroys-seized-ivory-in-symbolic-move

Discovery of new breeding sites for rare bunting

Last year a team from Beijing's Bird Watching Society discovered three previously unknown breeding sites for the rufous-backed bunting, also known as Jankowski's bunting, which is Asia's rarest bunting. The three sites are in the Inner Mongolia Autonomous Region, where at least 70 individuals were identified, most of which were singing males. The species has declined because of habitat loss to farmland but conservation efforts involving fencing one of the previously known sites to prevent trampling by livestock during the breeding season are proving successful. A number of workshops have been held to raise awareness of the bird and develop a strategy for its conservation, and a communications network of local government agencies, nature reserves and researchers has been established.
Source: BirdLife International (2013) www.birdlife.org/asia/news/new-breeding-sites-found-asia%E2%80%99s-rarest-bunting

Bacteria hold key to halting desertification

A researcher at the Chinese Academy of Sciences has developed an innovative solution to desertification, which has become a big problem for China as a result of overgrazing. Livestock destroy the soil's cryptobiotic layer, which comprises lichen, algae and mosses that bind sand and soil to the ground. Without this layer, creeping sand can encroach on infrastructure and farmland and even make its way into cities via dust storms. Regularly coating dunes with photosynthesizing cyanobacteria has been found to create a biological crust that holds the soil particles in place and improves the topsoil, providing more favourable conditions for plant growth. The method is now being used to stabilize the verges of roads and railways as well as oases and farmland in China, and similar techniques are being investigated in the USA, parts of which are also prone to desertification.
Source: New Scientist (2014) www.newscientist.com/article/mg22129502.800-spray-bacteria-on-the-desert-to-halt-its-spread.html#.UtkR87lFC1s

New phone app for citizen scientists

The Cornell Lab of Ornithology has released an iPhone app that will enable users in North America to identify bird species on the basis of five simple questions. The app, called Merlin, was developed using data from the eBird citizen-science project, which involves bird watchers reporting their sightings from across North America every day of the year. The app uses location and time of year to narrow down the list of potential bird species and currently includes 285 species, with the team at Cornell working to add more species. Merlin is just one of many new apps for species identification; some identify birds by their calls, others identify species based on physical descriptions.
Source: Mongabay.com (2014) news.mongabay.com/2014/0115-bird-iphone-app.html

Duke Energy pays out over eagle deaths

A U.S. energy supplier has agreed to pay out USD 1 million over the deaths of golden eagles at two wind farms. Duke Energy Renewables pleaded guilty to charges over the deaths of 14 eagles in the past 3 years at sites in Wyoming. The fines will go to conservation bodies. The charges were brought under the Migratory Bird Treaty Act. Wind energy facilities in 10 U.S. states have killed at least 67 golden and bald eagles since 2008. The eagles often fail to look up as they search for prey, until it is too late and they hit the turbines. They can also be sucked in by the vortex created by the blades. Duke Energy Renewables are working with the U.S. Fish and Wildlife Service to take steps to correct the problem, including installation of radar technology to help detect eagles in flight nearby and curbing turbines at times of high eagle flight activity.
Source: BBC News (2013) www.bbc.co.uk/news/world-us-canada-25058346

Northward expansion of Florida's mangroves

Florida's mangrove forests have expanded northward in response to climate change, according to the findings of recent research based on satellite and temperate data. The data indicate that there has been a 1,240 ha increase in mangroves in the Miami area since 1984 and the expansion is attributed to a decline in the number of days of extreme cold weather (< -4 °C), which can kill mangrove trees. Mangroves are usually restricted to tropical environments because of their inability to thrive at very low temperatures, but increasing temperature

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as a result of climate change may increase the abundance of mangroves at more northerly latitudes. Although the potential effects of mangrove forests encroaching on other ecosystems remain to be seen, mangroves provide some important ecosystem services. They act as nurseries for fisheries, store significant amounts of carbon and provide coastal protection against storms and erosion.
Source: Proceedings of the National Academy of Sciences (2013) dx.doi.org/10.1073/pnas.1315800111, and *Mongabay.com* (2013) news.mongabay.com/2013/1230-florida-mangrove-expansion.html

CENTRAL AMERICA AND CARIBBEAN

Primates eat more than their five a day

A review of the diets of primates in neotropical forests of South and Central America has revealed a link between primate size and dietary preferences. Researchers from the University of East Anglia examined data from 290 studies of primate diet spanning 42 years. They found that the preference for juicier foods increases with body size, with small monkeys such as marmosets and tamarins preferring a more insect-based diet to meet their higher metabolic requirement. Medium-sized species, including saki monkeys, prefer a fruit-dominated diet and consume up to 50 species of fruit every day. Larger primates, including woolly spider monkeys and howler monkeys, prefer leaves and foliage and are better able to cope with the higher levels of toxins found in these food sources. Knowledge of the dietary requirements of different species is important in assessing their conservation needs and identifying the role as seed dispersers for tropical plants.
Source: Oikos (2013) dx.doi.org/10.1111/j.1600-0706.2013.00745.x, and *BBC News* (2013) www.bbc.co.uk/news/science-environment-25231555

The future of forest restoration?

Establishing tree islands in deforested areas is a more cost-effective solution than the traditional method of forest restoration, which involves planting rows of trees to cover the entire restoration area. Researchers tested this method, known as applied nucleation, on abandoned pasture plots in Costa Rica and compared it with plantation-style restoration and passive restoration, which involves no planting. They found that the applied nucleation strategy facilitated the natural establishment of tree seedlings as effectively as the plantation method. As the trees grow they attract frugivorous birds, which disperse the seeds, thereby facilitating natural forest regeneration and the creation of habitat for more birds and animals. The method offers a more economical and natural approach to large-scale reforestation but there are logistical obstacles: it may be easier for land managers to plant and maintain rows of seedlings, particularly if they are using mechanized irrigation and mowing techniques.
Source: Mongabay.com (2014) news.mongabay.com/2014/0109-kimbrough-tree-islands.html

Protected status restored to Panama Bay

The Supreme Court of Panama has restored protected status to Panama Bay, having withdrawn this status in May 2012 in response to pressure from tourism developers. The Bay is one of the most important stopover and wintering sites for migratory shorebirds in the Americas and is also home to threatened species, including jaguars, loggerhead turtles, tapirs and spider monkeys. Its mangrove ecosystem supports biodiversity and acts as a nursery for fish and shellfish, which are important to the country's economy. The mangrove forests are also important for their ability to store carbon from the atmosphere and they provide protection against coastal erosion, storms and flooding. More than 80,000 ha of the Ramsar site were designated a National Protected Area in 2009, and this status was restored following a campaign by local and international environmental, business and community groups.
Source: BirdLife International (2014) www.birdlife.org/americas/news/panama-bay-saved-destruction

Tropical forests help moderate extreme weather events

Long-term monitoring by scientists at the Smithsonian Tropical Research Institute and other institutes has provided strong evidence for the 'sponge effect' of forests. Data gathered in forests and pastures in Panama during 450 tropical storms revealed considerable differences in the hydrological responses of watersheds with different land cover and land-use histories. Tropical forests were found to reduce peak run-off during storms and release stored water during periods of drought, playing an important role in regulating water flow year-round, with benefits for downstream agriculture and in providing the necessary supply of freshwater to the Panama Canal. Although the findings are unsurprising the study has provided a body of strong scientific evidence that was previously lacking.
Source: Mongabay.com (2013) news.mongabay.com/2013/1220-natural-sponges.html, and *Water Resources Research* (2013) dx.doi.org/10.1002/2013WR013956

SOUTH AMERICA

Colombia to declare new protected area

The Colombian government has announced plans to designate the Estrella Fluvial de Inirida river area a Ramsar Wetland of International Importance. This remote area bordering Venezuela is known for its distinctive rock formation known as Mavicure Hills and is home to at least 15 indigenous communities and a high diversity of wildlife. The greatest threat to the region's biodiversity is mining, which will be effectively prohibited in a protected area of 253,000 ha under the Ramsar designation. This follows the expansion of Colombia's largest protected area, Chiribiquete, in the south of the country in 2013.
Source: Mongabay.com (2014) news.mongabay.com/2014/0113-colombia-estrella-fluvial-del-inirida.html

Female capuchin monkeys take aim at potential mates

Scientists studying the social interactions of capuchin monkeys in Brazil have discovered a novel behaviour whereby female monkeys throw stones at potential mates to attract their attention. Female capuchins rely on behaviour to signal to males that they are ready to mate, as unlike other monkeys they do not have physical indicators of fertility. The females initially attract attention by pulling faces, whining and engaging in flirtatious behaviour, touching males and hurrying away. This behaviour culminates in the females throwing stones directly at their chosen mates and is thought to be unique to the bearded capuchins of Serra da Capivara National Park, because females remain within their group and there is little chance of the behaviour transferring to other groups. Capuchin monkeys are known for their intelligence and their ability to use stone tools, and research is now focusing on their ability to aim and throw stones.
Source: PLoS ONE (2013) dx.doi.org/10.1371/journal.pone.0079535, and *BBC News* (2014) www.bbc.co.uk/nature/25667268

Amazon deforestation rises 28%

The rate of deforestation in the Amazon increased by 28% between August 2012 and July 2013, after years of decline.

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The provisional statistics suggest that the area suffering deforestation was 5,843 km^2 compared to 4,571 km^2 in the previous 12 months. Environment Minister Izabella Teixeira has said that the government is working to reverse this 'crime'. The increase in destruction has been blamed on a controversial reform to Brazil's forest protection law. The changes reduced protected areas on farms and declared an amnesty for areas destroyed before 2008. In 2012 Brazil reported the lowest rate of deforestation in the Amazon since monitoring began. The 28% rise interrupts a period of declining deforestation that began in 2009. However, it still remains the second lowest annual figure for forest loss in absolute terms. The worst year on record was 2004, when 27,000 sq km of forest was destroyed.
Source: BBC News (2013) www.bbc.co.uk/news/world-latin-america-24950487

New species of wild cat identified in Brazil

A new species of wild cat has been identified using molecular markers. Comparison of DNA sequences has revealed that two populations of tigrina in Brazil do not interbreed and are evolutionarily distinct. There are at least seven species of small wild cat in the genus *Leopardus* in Central and South America. Researchers collected samples of DNA from pampas cats *Leopardus colocolo* in the north of the country, from Geoffroy's cats *L. geoffroyi* in the south and from north-eastern and southern populations of tigrina *L. tigrinus*. Genetic markers revealed that the southern population of tigrina is breeding with Geoffroy's cat where the species come into contact, and provided evidence for ancient hybridization between the north-eastern tigrina and the pampas cat. There is no evidence of recent mating between the north-eastern and southern tigrinas. The former will keep the name *L. tigrinus* because they live closer to the type locality and the southern form will acquire the newly recognized name *Leopardus guttulus*.
Source: Current Biology (2013) dx.doi.org/10.1016/j.cub.2013.10.046, and *BBC News* (2013) www.bbc.co.uk/nature/25086721

Canopy-dwelling frogs threatened by remote oil roads in the Amazon

Researchers have found that frogs living high in the rainforest canopy of Ecuador's Yasuni National Park are highly sensitive to the effects of remote oil roads, despite claims by government and the oil industry that these roads have little environmental impact. The frogs live inside huge flowers of the bromeliad species *Aechmea zebrina*, which hold pools of water that support high biodiversity, including several frog species. Although the Maxus oil road was constructed with minimal forest clearance, the researchers found that the abundance and occupancy of frogs was significantly reduced along the road, with populations reduced by 50% in low-disturbed forest compared to undisturbed forest. Yasuni National Park has the greatest number of amphibian species found in a single landscape, and according to scientists it may be the most biodiverse place on Earth, but the government has sanctioned exploratory oil drilling in three remote sectors of the Park.
Source: PLoS ONE (2014) dx.doi.org/10.1371/journal.pone.0085470, and *Mongabay.com* (2014) news.mongabay.com/2014/0114-hance-canopy-frogs-oil.html

New marsupial discovered in the Andes

Researchers have identified a new species of shrew-opossum on the eastern slopes of the Andes, in Ecuador's Sangay National Park. The small marsupial, *Caenolestes sangay*, is mouse-like in appearance and was previously thought to be a subspecies on account of its similarities with other populations on the western slopes of the Andes. However, differences in the morphology of the skull, as well as DNA evidence, led to the conclusion that this was a different species. Many of the > 260 known species of marsupials are found in the Australasia region but other species of shrew-opossum are known to exist in the Andean cloud forests. Because of the hostile and remote nature of their habitat shrew-opossums are difficult to study, and it is likely there are other species that have not yet been discovered.
Source: Mongabay.com (2013) news.mongabay.com/2013/1220-barrett-new-marsupial-discovered.html

New species of toad described

A toad that was previously classified in the *Rhinella margaritifera* group has been described as a new species, named *Rhinella yunga*. The dead-leaf patterned toad lives in leaf litter in the Yungas montane forest ecoregion in the upper reaches of the Amazon rainforest, where it is perfectly camouflaged by its leaf-like body shape and colouration. The toad belongs to the Bufonidae family and has the characteristic toxic glands on the back of its head, which excrete poison when the toad is stressed. However, unlike other toads in the family, its hearing organ does not have a tympanic membrane. According to one of the biologists who described the toad, there are probably a number of other undescribed species in the *Rhinella margaritifera* group.
Source: Mongabay.com (2014) news.mongabay.com/2014/0119-rhinella-yunga-toad-peru.html, and *ZooKeys* (2014) dx.doi.org/10.3897/zookeys.371.6580

Habitat boost for blue-throated macaws

The Barba Azul Nature Reserve in Bolivia, which is home to the world's largest population of the Critically Endangered blue-throated macaw, has been doubled in size. The additional 6 ha of land was purchased by a coalition of groups, foundations and agencies, and includes seasonally flooded savannah and areas of tropical forest, which provide important foraging habitat for the parrot. The blue-throated macaw is one of the world's rarest parrots, with a global population of 100–150, more than half of which may be found in the reserve at any time. The main threats to the species are habitat loss and the pet trade, and conservations actions are targeted at protecting habitat and providing nest boxes for breeding. The extended Nature Reserve is also home to a variety of mammals and a rich avifauna of 250 species.
Source: Mongabay.com (2014) news.mongabay.com/2014/0102-blue-throated-macaw-bolivia.html

New national park created in Chile

A landmark, private–public collaboration is set to establish a new national park in Chile. Fundación Yendegaia will donate the former Estancia Yendegaia (38,040 ha) for the creation of the new national park, and the Chilean government will annex 111,693 ha of adjacent government land, to be upgraded to national park status. Stretching from the Darwin Range to the Argentine border and from the Beagle Channel to Fagnago Lake, Yendegaia will be among Chile's largest national parks, only slightly smaller than the iconic and nearby Torres del Paine national park. Moreover, it will create a contiguous biological corridor between Chile's Alberto D'Agostini National Park and Argentina's Tierra del Fuego National Park.
Source: BirdLife International (2014) www.birdlife.org/americas/news/new-national-park-be-created-chile

New species of coral discovered in French Polynesia...

Scientists on the Tara Oceans International Research Expedition have discovered a new species of coral in underwater lagoons of the remote Gambier Islands at the south-east of French Polynesia. *Echinophyllia*

tarae, which is found at depths of 5–20 m, belongs to the Scleractinia family of corals, also known as stony corals, which are characterized by a hard, rigid calcium carbonate skeleton. It can be distinguished from other corals of the same genus by its large polyps, mottled brown or bright green colouration, and formation of small colonies. The last documented study of the corals of the Gambier Islands was in 1974 by Jean-Pierre Chevalier, who recorded an abundance of *Echinophyllia aspera* but no *Echinophyllia tarae*, but it is now thought he may have mistaken one for the other.
Source: Mongabay.com (2013) news.mongabay.com/2013/1220-mark-new-coral-species.html, and *ZooKeys* (2013) dx.doi.org/10.3897/zookeys.318.5351

...and Pacific coral thrives despite water acidification

Researchers at Woods Hole Oceanographic Institution have discovered that coral reefs around the Palau archipelago in the west Pacific are healthy, with a high density and diversity of corals. This is despite the pH of the water being lower than normal, with a correspondingly low level of carbonate. Corals build their calcium carbonate skeletons from carbonate ions in the seawater and there is evidence that coral growth and survival are threatened by the reduction in carbonate ions caused by ocean acidification as a result of climate change. These new findings suggest that the corals have adapted to low carbonate levels or can somehow calcify in naturally acidified waters. Further research is needed to understand how they do this and to investigate the potential resilience to climate change of coral reefs in other parts of the world.
Source: New Scientist (2014) www.newscientist.com/article/mg22129503.500-pacific-coral-happy-as-acidity-of-the-ocean-rises.html#.UtkVRLlFC1t

AUSTRALIA/ANTARCTICA/ NEW ZEALAND

Emperor penguins adapt breeding behaviour in response to environmental change...

Satellite imagery has revealed that emperor penguins travel long distances to find alternative breeding sites in years when the thin sea ice on which they normally breed is absent or forms later than usual. They have been observed breeding on Shackleton Ice Shelf, where they must find a route past a 30-m high cliff that is too steep for them to climb up directly. It was assumed that the penguins simply didn't breed in years when there was insufficient sea ice but these findings suggest that the penguins, which are categorized as Near Threatened on the IUCN Red List, may be more resilient and adaptable to environmental change than previously thought. The unexpected behaviour was observed for four colonies of penguins and it is not yet known whether this behaviour is common in other penguin populations.
Source: PLoS ONE (2014) dx.doi.org/10.1371/journal.pone.0085285, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-25655664

...and do the Mexican wave in the Antarctic

Researchers have discovered how waves of coordinated motion sweep through huddles of male emperor penguins *Aptenodytes forsteri* as they try to keep warm while incubating eggs. The team analysed video recordings of penguin huddles and built a mathematical model to study the waves. The findings of the study showed that any penguin taking a step of just 2 cm within a densely packed huddle could trigger ripples of disturbance as nearby penguins readjusted to keep close to each other. Waves can move in multiple directions and the motion can be triggered by a penguin at any location in the huddle.
Source: New Journal of Physics (2013) dx.doi.org/10.1088/1367-2630/15/12/125022

Antarctic krill predicted to lose 20% of habitat

Antarctic krill underpin the food chain in the Southern Ocean and are an important food source for many animals, including mackerel icefish, humpback whales, Antarctic fur seals, and grey-headed albatrosses. Krill are dependent on a low-acidity cold water environment and are therefore vulnerable to the ocean warming and acidification effects of climate change, with scientists predicting that their habitat could shrink by 20% (1.2 million km^2). This will have serious implications for predator species and the Southern Ocean fishery. Species such as Antarctic fur seals and macaroni penguins may be forced to travel further afield, to the Atlantic, Pacific and Indian Oceans, in search of food and may face increased competition with fisheries. It is predicted that by the end of the century further warming of 0.27–1.08 °C will occur in the Southern Ocean, parts of which have already warmed by 1°C.
Source: PLoS ONE (2013) dx.doi.org/10.1371/journal.pone.0072246, and *Mongabay.com* (2014) news.mongabay.com/2014/0102-hance-krill-climate-change.html

New species of sea anemone discovered in Antarctic ice sheet

A new species of sea anemone, *Edwardsiella andrillae*, has been found burrowed inside the Ross Ice Shelf in Antarctica. This is the only marine animal known to live embedded in ice and it is not yet known how it survives and reproduces or even how it burrows into the ice. The anemone was discovered by researchers who were exploring the underside of the ice shelf, using a camera attached to a remote-controlled drill, as part of a geological survey. They discovered large numbers of the animals, which are similar in appearance to other anemones, burrowed into the ice, with their tentacles dangling into the water.
Source: PLoS ONE (2013) dx.doi.org/10.1371/journal.pone.0083476, and *New Scientist* (2013) www.newscientist.com/article/dn24797-iceloving-sea-anemones-found-in-antarctica.html#.Utkq_7lFC1t

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