

Briefly

INTERNATIONAL

Biodiversity likely to be affected by increasingly serious fungal infections

Although emerging infectious diseases caused by fungi have been regarded as a risk to agriculture, and thus food security, for years, their risk to animal health has been less well recognized. It is becoming clear, however, that a number of species are undergoing population declines as a result of fungal infections. This includes well-documented cases such as chytridiomycosis in amphibians and white-nose syndrome in bats but other taxonomic groups, including corals, sea turtles and bees, are also negatively affected by fungal pathogens. The authors of a review of emerging fungal threats urge the development of better global monitoring and control of animal-associated fungi, including more control in the international trade of biological material, as well as the development of increased understanding of interactions between hosts, pathogens and the environment.

Source: *Nature* (2012), 484(7393), 186–194

Climate change costly in oceanic terms

A study looking at the impacts of climate change on the oceans indicates that an average temperature rise of 4 °C by 2100 could lead to costs of USD 1.98 trillion in terms of a reduction in economic values from key ocean services. The five services investigated in the study are fisheries, tourism, sea-level rise, storms, and the ocean carbon sink. A scenario in which emissions were reduced so that temperatures rose by only 2.2 °C would avoid nearly USD 1.4 trillion of these damages. Furthermore, climate change is not the only stressor placing pressure on oceans. Other serious threats to oceans include acidification, ocean warming, hypoxia, sea-level rise, pollution and over-harvesting of marine resources. The study's authors point out that the concatenation of multiple stressors could lead to damages that far exceed those resulting from an individual threat such as climate change.

Source: *Stockholm Environment Institute Press Release* (2012), <http://www.sei-international.org/press/press-releases/2312>

Tough measures required to meet fishing targets

A model developed to estimate the costs and benefits of restoring overexploited fish

stocks, one of the targets to come out of the World Summit on Sustainable Development in 2002, has found that global fishing capacity will need to be cut by 36–43% from the 2008 level for this to be achieved. This will result in 12–15 million fishers losing employment and will cost USD 96–358 billion in buybacks. To meet the Summit's target fisheries need to maintain or restore fish stocks to levels that can produce the maximum sustainable yield (MSY) by 2015; 68% of global fish stocks were at or above the MSY in 2008, and this study suggests the target is unlikely to be met. Meeting the target, the report's authors say, will have long-term benefits, however, including increasing annual fishery production by 16.5 million tonnes and improving biodiversity and functioning of marine ecosystems.

Source: *Fish and Fisheries* (2012), <http://dx.doi.org/10.1111/j.1467-2979.2012.00460.x>

New study identifies high-use areas for leatherback turtles...

A study that examined migration patterns of leatherback turtles in the Pacific Ocean has identified areas that are particularly important for the species, and thus where conservation efforts could be focused for maximum effectiveness. In the study 135 leatherback turtles from two populations were tagged with satellite tags; individuals from the eastern Pacific population were tagged at their nesting sites in Costa Rica and Mexico, and turtles from the western Pacific population were tagged at nesting sites in Indonesia and foraging grounds off California. The western population migrated to feeding sites in productive coastal areas including in the South China Sea, south-eastern Australia and the west coast of the USA. Their predilection for coastal areas makes them vulnerable to being caught in fishing gear. Eastern Pacific turtles tended to migrate south, to offshore upwelling areas in the south-eastern Pacific.

Source: *University of Maryland Press Release* (2012), <http://www.umces.edu/cbl/release/2012/feb/29/landmark-study-leatherback-turtle-migration-identifies-pacific-danger-zones-crit>

... while green turtles prove keen on marine protected areas

A satellite tracking programme that mapped the foraging areas of Endangered green turtles in tropical and subtropical habitats has found that the species occurs

more often than would be expected by chance in marine protected areas. A team of researchers from 10 countries tracked the movements of 145 green turtles, which were tagged at 28 different nesting sites. Analysis of where these turtles foraged revealed that 35% aggregated in designated marine protected areas, despite only a small proportion of these areas covering the shallow oceans that are the turtles' preferred foraging areas. In particular, large, well-established marine protected areas were more likely to contain turtles. These results clearly suggest the value of marine protected areas in providing safe foraging areas for large marine creatures such as turtles.

Source: *University of Exeter Press Release* (2012), http://www.exeter.ac.uk/news/research/title_195734_en.html, and *Global Ecology and Biogeography* (2012), <http://dx.doi.org/10.1111/j.1466-8238.2011.00757.x>

Important areas for biodiversity still unprotected

An investigation of the effectiveness of protected areas in mitigating the extinction risk to species has found that species that occur in sites (Important Bird Areas, IBAs, for birds, and Alliance for Zero Extinction, AZE, sites for vertebrates and conifers) with greater protected area coverage have undergone smaller increases in extinction risk over recent years than species that occur in largely unprotected sites. For example, the extinction risk over the last 2 decades for a bird species where >50% of the IBAs in which it occurs are completely covered by protected areas was half as great as that for a bird species where <50% of the IBAs are completely covered. The researchers also found that, globally, 49% of IBAs and 51% of AZEs remain unprotected, and that the proportion of protected areas covering important land, compared to less important land, has declined since 1950.

Source: *PLoS One* (2012), <http://dx.doi.org/10.1371/journal.pone.0032529>

Warning about growth in number of farm animals

Between 1980 and 2010 the global population of farm animals rose by 23%, with a particularly steep rise in developing countries in reaction to urbanization and rising incomes. According to the UN Food and Agriculture Organization 80% of growth in the livestock sector now comes from industrial production systems. Worldwide,

concentrated animal feeding operations account for 72% of poultry production, 43% of egg production, and 55% of pork production. Intensive animal rearing of this nature requires large quantities of water and land for feed production, produces large amounts of waste, including greenhouse gas emissions, and has been linked to the spread of human and animal diseases and biodiversity loss. Its reliance on a narrow range of commercial breeds means that factory farming is also threatening the survival of indigenous livestock breeds, with at least 21% of the world's livestock breeds now at risk of extinction.

Source: *Worldwatch Institute Press Release* (2012), <http://www.worldwatch.org/rising-number-farm-animals-poses-environmental-and-public-health-risks-0>

Protection urged for Arctic waters

In recent years the loss of permanent sea ice in the Arctic has resulted in as much as 40% of the Central Arctic Ocean becoming accessible, which makes industrial fishing a possibility in this region for the first time. Now > 2,000 researchers from 67 countries have signed an open letter to Arctic leaders urging them to develop an international fisheries accord to protect these unregulated waters. The letter calls for the catch level to be set at zero until research can be carried out to assess the impacts of fisheries on this fragile ecosystem. This precautionary approach has already been adopted by the USA, which closed its Arctic waters to commercial fishing in 2009. The newly accessible Arctic waters are closer to Asian ports than Antarctic waters, where krill and toothfish populations are coming under pressure from fisheries using large bottom trawlers.

Source: *The Pew Environmental Group Press Release* (2012), <http://www.oceansnorth.org/arctic-fisheries-letter>

Waterfowl toes fingered in search for fungal transport mechanism

The way in which the fungal infection *Batrachochytrium dendrobatidis*, responsible for worldwide declines in amphibians, spreads between areas is not fully understood. Now researchers have found that waterfowl may play a role in its movement. Samples taken from the toes of 397 wild geese in Belgium revealed that 15% of the birds tested positive for the fungus. In vitro tests appeared to show that *B. dendrobatidis* is attracted to the keratinous toes of aquatic birds, and that the fungus is able to stick to the birds' feet, and even proliferate, although it did not tolerate prolonged desiccation. Although this work suggests that wildfowl may play a role in the spread of

B. dendrobatidis, the authors point out that the chances of direct contact between geese and amphibians may be limited in some areas, with geese generally preferring large wetlands and lakes, whereas European amphibians prefer ponds.

Source: *PLoS One* (2012), <http://dx.doi.org/10.1371/journal.pone.0035038>

Global challenges highlighted in new report

The findings of a major new study investigating the links between global population and consumption were published by the Royal Society in April 2012. The report, *People and the Planet*, provides an overview of the impacts of human population growth and consumption on finite resources. Population growth and unprecedented levels of consumption present profound challenges to human health and the natural environment. The report explicitly acknowledges regional variations in population dynamics, and the inequality that exists in consumption patterns around the world. Global in its scope, the aims of the report are to provide policy guidance to decision makers and inform interested members of the public. Debates about population have tended to inspire controversy and the report raises questions relating to the opportunities that changes in population may bring as well as highlighting the most harmful impacts.

Source: *Royal Society* (2012), <http://royal.society.org/policy/projects/people-planet/>, and *The Guardian* (2012), <http://www.guardian.co.uk/environment/2012/apr/26/earth-population-consumption-disasters>

IPBES springs into life

After years of negotiations governments from > 90 countries have agreed to the establishment of the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES), an independent panel of scientists that will function in a similar way to the Intergovernmental Panel on Climate Change. The IPBES will aim to support policy makers in their efforts to deal with global biodiversity loss and ecosystem degradation through the production of scientific assessments. The first plenary meeting of IPBES will take place in 2013, at which point the themes of the panel's assessments, and its budget, will be decided but some activities are already underway, including the reviewing of existing assessments such as the Millennium Ecosystem Assessment. The IPBES secretariat will be based in Bonn, after the German government won the vote to host the panel.

Source: *Nature* (2012), <http://dx.doi.org/10.1038/nature.2012.10505>

Mismatch between experimental and observational data in climate change studies

Experimental attempts to calculate the effects of climate change on plants have underestimated the rate at which spring flowering and leafing are affected by warmer conditions, according to researchers who compared results from warming experiments with long-term observational data. Compared to the observational data, warming experiments, in which plants are subject to increased temperatures using lamps and open top chambers, underestimate the change in spring flowering and leafing by as much as 8.5-fold and 4.0-fold, respectively. The assumption that conditions in a warming experiment can mimic natural conditions appears to have led to the underestimation, as climate change does not just affect temperature, but instead alters a whole suite of conditions, some of which are currently not possible to replicate experimentally. The study's findings suggest that flowering and leafing will advance at a rate of 5–6 days per year for every degree Celsius of warming.

Source: *BBC News* (2012), <http://www.bbc.co.uk/news/science-environment-17924653>, and *Nature* (2012), <http://dx.doi.org/10.1038/nature11014>

Oceans may contain more plastic than suggested in previous estimates

One of the major, and growing, threats posed to ocean health comes from plastic pollution. To date, calculations of the amount of plastic debris in the oceans have been based on samples of plastic pollution at the ocean's surface but a new study has found that this technique risks underestimating the quantity of plastic debris. A model that incorporated wind-driven mixing of the water in the water column found that plastic particles are distributed vertically in the water column, and would therefore be missed during samples of the ocean's surface. The study suggests there may be 2.5 times more plastic in the oceans than previous estimates have calculated, and the study's authors urge the use of a geophysical approach when quantifying and managing oceanic plastic pollution.

Source: *Geophysical Research Letters* (2012), <http://dx.doi.org/10.1029/2012GL051116>, and *New Scientist* (2012), 214(2863), 5

Case for the link between biodiversity and human health strengthened

A study in which 118 teenagers living in eastern Finland were analysed for their disposition to allergies has found that

individuals with higher allergen sensitivity had lower environmental biodiversity in the surroundings of their homes. Individuals with more forest and agricultural land within 3 km of their homes had higher genetic diversity of proteobacteria on their skin and were healthier than those with less forest and agricultural land in their surroundings. Additionally, the species richness of uncommon native flowering plants was also significant, with the number of these plants c. 25% higher in the yards of healthy individuals compared to people with greater allergen sensitivity. The three systems examined in this study, environmental biodiversity, human commensal microbiota, and the human immune system, are complex, with many interacting components, but this study reveals some significant correlations between the three.

Source: *Proceedings of the National Academy of Sciences of the USA* (2012), <http://dx.doi.org/10.1073/pnas.1205624109>

Plant species richness ranked

Researchers have ascertained where and what the world's areas of greatest vascular plant species richness are, at different spatial scales, by examining all the published and unpublished literature on plant species richness on plots of any size. At smaller spatial scales the maximum plant species richness (e.g. 89 species in 1 m²) was discovered to be in semi-natural, oligo- to mesotrophic, temperate grasslands, managed by chronic mowing, grazing or fire, located in Eastern Central Europe, the Southern Baltic and Argentina. At the larger spatial scale unmanaged, natural tropical lowland rainforest in Mesoamerica and north-west South America contained the greatest species richness (e.g. 942 species in 10,000 m²).

Source: *Journal of Vegetation Science* (2012), <http://dx.doi.org/10.1111/j.1654-1103.2012.01400.x>

Link between biological and linguistic diversity

An investigation of biodiversity hotspots and high biodiversity wilderness areas has confirmed a link between linguistic and biological diversity, with these biodiverse areas home to nearly 70% of all languages. In many cases the languages are endemic to particular areas, and are threatened with extinction. This study shows a marked geographical concentration, with 70% of languages spoken in c. 24% of the earth's terrestrial surface, which is home to only one-third of the world's population. It is not yet clear why there is such overlap between biological and linguistic diversity, with the

authors of this study speculating that the reasons for this co-occurrence are likely to be complex and to vary between sites.

Source: *Proceedings of the National Academy of Sciences of the USA* (2012), <http://dx.doi.org/10.1073/pnas.1117511109>

EUROPE

Bees at risk from commonly used pesticides

Two studies of the effects of commonly-used pesticides called neonicotinoids on bees indicates that exposure to neonicotinoids has negative effects on bee colonies. A group of British researchers who exposed bumblebee colonies to field-realistic levels of the neonicotinoid imidacloprid found that not only was colony growth slower in treated colonies but these colonies also had 85% lower rates of queen production compared to untreated colonies. Studies on honeybees in France revealed that foraging bees exposed to thiamethoxam, another neonicotinoid, at typical exposure levels to those found on farms were less likely to return to their hives than honeybees not exposed to thiamethoxam. Neonicotinoids, used on crops such as cereals and sunflowers, are often applied to the seeds, meaning they are present in all parts of the plant including nectar and pollen. Current tests on pesticides make no allowance for behavioural consequences for pollinators of exposure to these pesticides.

Source: *BBC News* (2012), <http://www.bbc.co.uk/news/science-environment-17535769>, and *Science* (2012), <http://dx.doi.org/10.1126/science.1215025> and <http://dx.doi.org/10.1126/science.1215039>

Of mice and men

Viking ships sailing from Norway carried not just sword-wielding warriors; they were also a means of transport for a less bellicose species, the house mouse. A recent study sampled genetic material from both modern house mice and the remains of Viking Age mice from Iceland and Greenland. In Iceland, mitochondrial DNA (mtDNA) data indicate that both Viking Age and modern day mice have an identical mtDNA haplotype to the house mouse clade linked with Norwegian Vikings, suggesting the mice arrived with the Vikings and that this mouse lineage remained until the present day. In Greenland, Viking Age mice had the mtDNA haplotype associated with the Norwegian Vikings but modern day mice had a completely different haplotype, implying colonization, subsequent extinction and recolonization. In both Iceland and

Greenland, the fate of the house mice population as indicated by this analysis mirrors the history of the European human host population.

Source: *BMC Developmental Biology* (2012), <http://dx.doi.org/10.1186/1471-2148-12-35>

Killer shrimp spreads

Some of the UK's most important wetlands have become home to an invader that preys on shrimps, young fish and insect larvae. *Dikerogammarus villosus*, known as the killer shrimp, was found in part of the Norfolk Broads in March 2012, making this the fourth area in the UK where the invader has been located. The shrimp is considered one of the worst non-native invaders of waterways in England and Wales because its voracious appetite means it can affect the ecology of the habitats it invades. As the Norfolk Broads are a network of connected waterways popular with tourists, there are concerns that the shrimp will spread rapidly throughout the area, particularly as the summer tourist season gets underway. A public awareness plan is underway in the Broads in an attempt to limit the spread of the shrimp. Source: *BBC News* (2012), <http://www.bbc.co.uk/news/uk-england-norfolk-17540322>

UK government urged to act for species on overseas territories

The 14 overseas territories under the UK's jurisdiction are home to more threatened bird species than the entire continent of Europe, and yet only GBP 1.4 million is spent annually on protecting these habitats. A report by the RSPB to the UK Foreign Office, which is preparing a white paper on Britain's strategy regarding its overseas territories, highlights four major threats facing birds in the UK overseas territories, namely invasive species, climate change, poor planning controls and weak management of local fisheries. Birds are not the only taxonomic group at risk; introduced species on St Helena such as bilberry and furze are causing a reduction in the populations of native plant species, and the blue iguana on the Cayman Islands and turtles in the Caribbean are vulnerable to future effects of climate change.

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/03/seabird-species-face-extinction-in-remote-uk-islands/>

Similar species require different mitigation strategies...

An examination of the populations of two threatened amphibian species in a valley in northern Spain has found the population of

the palmate newt is less affected by the presence of low-intensity roads than the sympatric midwife toad. The degree to which the species are affected by traffic was measured through genetic analysis of mitochondrial DNA, which enabled researchers to examine the genetic distance between different colonies of the same species. Traffic calming measures in the Trubia valley mitigated the population fragmentation of the palmate newts but did not alleviate the fragmentation in the populations of the midwife toad, suggesting that even small roads with low-intensity traffic pose a threat to this species. These findings illustrate the need for a variety of mitigation measures in disturbed habitats, even for species from related taxonomic groups.

Source: *Landscape and Urban Planning* (2012), <http://dx.doi.org/10.1016/j.landurbplan.2011.10.012>, and *ScienceDirect* (2012), <http://www.sciencedaily.com/releases/2012/04/120412105424.htm>

... while roads seem positive for fire salamanders in vineyards

In general, vineyards do not appear to be ideal places for biodiversity, as they are intensively managed and lack refugia for wildlife. Researchers who examined spatial variation in abundance of salamander larvae in Swiss vineyards and compared this with land-use and stream characteristics in the vineyards have found that larval abundance was positively correlated with road density. The authors speculate that this is a consequence of indirect effects, with stone walls along roadsides possibly acting as refugia for the larvae. Larvae abundance was also linked to the presence of weirs, amount of riparian vegetation along streams and environmentally-friendly agricultural practice within the vineyards. These findings suggest that, despite appearances, intensively managed landscapes such as vineyards can be managed in ways that may be of benefit to wildlife.

Source: *Animal Conservation* (2012), <http://dx.doi.org/10.1111/j.1469-1795.2011.00492.x>

NORTH EURASIA

National Park provides safe haven for world's rarest cat

At nearly 2,500 km², the newly established Land of the Leopard National Park in Russia's Far East includes all of the breeding territory and c. 60% of the remaining habitat of the Amur leopard. The National Park, which is also home to 10 Endangered Amur tigers, is part of a major effort to save the Critically Endangered Amur

leopard. Various zones exist within the Park, including protected areas, an economic development zone and a recreational zone that will include forested areas and sites for ecotourism. The Amur leopard has been brought close to extinction through conflict with humans and extensive habitat loss, with only c. 30 individuals thought to remain in the wild. It is hoped conservation efforts in conjunction with the establishment of the new Park will help to reverse the plight of this threatened species.

Source: *WWF* (2012), http://www.worldwildlife.org/who/media/press/2012/WWF_Presitem27638.html

Kazakh legislation now includes Important Bird Areas

A revision of Kazakhstan's nature-protection legislation has resulted in the term Important Bird Area (IBA) becoming incorporated into the law on Kazakh Specially Protected Nature Areas. Along with water bodies, remarkable landscape objects or threatened species of animals and plants, IBAs in Kazakhstan are now recognized and considered as 'Objects of state nature-reserved foundation'. The legislation requires the government to implement measures for the protection and management of the IBAs, of which there are currently 121 in the country. Following on from this legislative change, all 121 IBAs in the country now need to be inventoried under the list of 'Objects of state nature-reserved foundation'. This list, normally revised every 3–4 years, is due to be revised later in 2012.

Source: *BirdLife International* (2012), www.birdlife.org/community/2012/04/important-bird-areas-incorporated-into-kazakh-legislation/

NORTH AFRICA AND MIDDLE EAST

Bird trapping continues to rise at alarming rate

The latest monitoring results in Cyprus have found that bird trapping with mist nets and limesticks continues to rise. A field survey carried out by BirdLife Cyprus shows that c. 2.8 million birds were killed by illegal trapping in 2011 and the dramatic figure reflects the increasing trend of bird trapping in the country. The practice also threatens many migrant birds travelling through the Eastern Mediterranean island. Assessments of trapping activities started in 2002 and the latest report covers cases that happened during winter 2011–2012. An overview of the ecological impact of illegal

bird trapping in Cyprus is included in the report and is available with the latest survey results at http://www.birdlifecyprus.org/images/Pdf_files/bc_trappingreport_winter2012_finalversion.pdf

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/05/bird-trapping-on-the-rise-in-cyprus-an-estimated-2-8-million-birds-killed-in-2011/>

Conservation initiative goes mobile

A major new 3 year conservation programme is starting in Iraq and will focus on the mountainous region of Kurdistan. The project, a joint initiative involving experts from Iraq and the UK, will generate new data for conservation and resources for protected area management and environmental education. The project will involve extensive fieldwork in the Kurdistan region of northern Iraq and aims to make serious progress addressing the challenges of conservation resulting from years of unstable government and scientific isolation. An important outcome of the initiative will be the production of interactive identification guides to the biological diversity of Piramagroon (a Key Biodiversity Area) and will include photographic guides that can be downloaded to mobile phones. This technology has been identified as a particularly appropriate, accessible and user friendly way to disseminate information and this will be the first time it has been used for biodiversity information in Iraq.

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/04/joint-iraqi-and-uk-team-set-to-work-on-major-new-conservation-initiative-in-iraq/>

SUB-SAHARAN AFRICA

Extinct trees reappear in Tanzania

Two tree species, previously thought to have become extinct, have been found in Tanzania's Eastern African Coastal Forest. Circa 12 mature individuals of the coral tree *Erythrina schliebenii* were found in south-east Tanzania, with researchers recommending that the species be categorized as Critically Endangered on the IUCN Red List. The species is currently categorized as Extinct as it had not been seen since 1935 and the forest in which it was originally located was cleared to make way for a cashew nut plantation in the 1940s. A second species of tree, *Karomia gigas*, has also recently been relocated, in the Mitundumbea Forest Reserve. First described in 1977, subsequent searches for *K. gigas* failed to find any individuals, and it was feared extinct until a single individual was found in 1993. The

researchers recommend that *K. gigas* also be categorized as Critically Endangered (its current category) on the IUCN Red List, as the new population is located in forest being exploited for its timber.

Source: *Journal of East African Natural History* (2011), 100, 133–140

Niger delta under threat

One of the world's largest wetlands, the inner Niger delta in Mali, is at risk of serious desiccation as a consequence of engineering works on the Niger river. Water extraction upstream of the delta, which is home to 1.5 million people dependent on the delta's natural resources, has been sanctioned by the Malian government. Crops such as cotton and sugar will be irrigated by water from the Niger, with two large projects anticipated to use up to the entire flow of the river in the dry season. In addition, a hydroelectric dam planned for 1,000 km upstream, in Guinea, will use much of the river's wet season flow, thus jeopardizing the delta's annual flooding. A model taking these new developments into account suggests that a major drought in the delta may occur on average every 4 years as a consequence of these water extraction projects.

Source: *New Scientist* (2012), 213(2857), 9

Hydroelectric dam threatens existence of people and wildlife

The construction of the Gibe III dam on the Omo river in Ethiopia is mired in controversy, with claims that thousands of semi-nomadic tribespeople are being forcibly moved from their traditional lands in southern Ethiopia to make way for sugar cane and biofuel plantations. The 243-m high Gibe III dam will be Africa's largest hydropower plant, as well as Ethiopia's largest investment project, and will result in the creation of a 225-km long reservoir that will provide water for industrial-scale plantations. Some estimates suggest that Gibe III's construction may eventually affect >1.5 million people, including those who depend on Lake Turkana for their livelihoods, as the lake may shrink to one third of its current size once the reservoir is full. Both Lake Turkana and the Omo delta are listed by BirdLife International as Important Bird Areas and are home to a number of threatened species.

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/02/ethiopia-dam-project-rides-roughshod-over-heritage-of-local-tribes-people/>

Descent from the trees

A recent study to document ground-nest building by wild chimpanzees offers new insight into the transition of early hominins

from sleeping in trees to sleeping on the ground. Although most apes build nests in trees, researchers studied a population of chimpanzees at Seringbara in the Nimba Mountains, Guinea, where ground-nesting behaviour had been shown not to be ecologically determined. Molecular genetic techniques were used to demonstrate that as the chimpanzees sleep both on the ground and in the trees, the transition from trees to the ground did not require a special evolutionary adaptation. The implications of the research suggest early hominins may have slept on the ground before the emergence of ancient humans, *Homo erectus*. Furthermore, the tree-to-ground sleep transition may have been a gradual process rather than a crucial evolutionary shift as previously believed.

Source: *Life Science News* (2012), <http://eu.wiley.com/WileyCDA/PressRelease/pressReleaseId-103197.html>, and *American Journal of Physical Anthropology* (2012), <http://dx.doi.org/10.1002/ajpa.22056>

Ethiopian bush crow plays it cool

Despite its catholic diet and ability to survive in degraded habitats, the Ethiopian bush crow is restricted to an area of <5,000 km² and is categorized as Endangered on the IUCN Red List. Models of suitable habitat suggest that the species should be distributed far more widely but the development of models that include only climate variables reveal that the species' range is limited to a climate envelope that is cooler, drier and more seasonal than surrounding areas. Within this particular climate envelope the species appears to prefer park-like habitats of grassland with areas of taller vegetation, a landscape that is the result of clearance by people and domestic grazers. The bush crow's dependence on a narrow set of climatic variables makes it particularly vulnerable to changes in climate, and researchers now hope to discover the reason for its dependence on these conditions.

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/03/scientists-discover-an-invisible-barrier-that-holds-the-answer-to-one-of-natures-little-mysteries/>, and *Journal of Ornithology* (2012), <http://dx.doi.org/10.1007/s10336-012-0832-4>

Elephant poachers arrested in Cameroon

In keeping with many elephant range states Cameroon is experiencing a wave of elephant poaching in which large numbers of animals have been killed by poachers with sophisticated weapons. In February 2012 nearly 450 elephants were killed in Bouba

N'Djida National Park by poachers believed to be from Sudan who had entered Cameroon via neighbouring Chad. Before this incident the elephant population in the Park was estimated to number <600. A recent military offensive against poachers in Bouba N'Djida National Park appears to have had limited success in curbing the trade in poaching of and trading in elephant tusks and meat, as 12 poachers were arrested and 14 elephant tusks confiscated in south-east Cameroon at the end of March 2012.

Source: *TRAFFIC* (2012), <http://www.traffic.org/home/2012/3/29/cameroon-elephant-poaching-crisis-spreads.html>

Baby ploughshare tortoises hatch in the wild

Two ploughshare tortoises have hatched in the wild in Madagascar to parents bred as part of a captive breeding programme for this Critically Endangered species. As few as 500 adult ploughshare tortoises are thought to exist in their wild habitat, the bamboo scrub of north-western Madagascar, where they face numerous threats including, in recent years, an upsurge in poaching to satisfy demand from the pet trade. The Durrell Wildlife Conservation Trust has been involved in the conservation of this species for 25 years and the organization's work has included the setting up of a successful captive breeding programme, which has seen the release of a total of 65 subadult tortoises into the wild since 1998. The newly discovered baby tortoises are thought to be just over 1 year old but only measure 5 cm from head to tail and weigh 30 g.

Source: *Durrell News* (2012), <http://www.durrell.org/Latest/News/Durrell-reaches-crucial-milestone-in-the-battle-to-save-the-rarest-tortoise-in-the-world/>

SOUTH AND SOUTH-EAST ASIA

Range of grey-crowned crocias makes a 300 km leap northwards

Previously only known from two provinces in Vietnam, and categorized as Endangered on the IUCN Red List, the grey-crowned crocias has now turned up in a third province, Kon Tum. One of the rarest birds in Vietnam, the grey-crowned crocias was first described in 1939 by a Swedish aristocrat, Count Gyldenstøpe. It was not until 1994 that more records of this species were made, when researchers rediscovered the species in Chu Yang Sin National Park, but information about the species remains scanty. The discovery of the species in Kon Tum

Province, by a professional bird tour leader in March 2012, extends the range of the species by 300 km northwards.

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/04/grey-crowned-croci-as-crops-up-in-new-location>

Pig-nosed turtles seized in Indonesia...

Investigations at airports in Indonesia in January and February 2012 resulted in the discovery of 2,185 Vulnerable pig-nosed turtles in suitcases. In both cases the turtles appeared destined for Jakarta, a major hub of illegal wildlife trade. Pig-nosed turtles are popular for the pet trade and are used in traditional medicine, as well as being sold for their meat. Despite being completely protected in Indonesia, which makes their trade illegal, these recent seizures, and a number of similar seizures in previous years, suggest that thousands of pig-nosed turtles are smuggled out of Indonesia every year. High rates of mortality in the wildlife trade mean that the number of animals that can be returned to the wild from such seizures is low; in the case of the recent seizures in Indonesia 218 turtles died in quarantine.

Source: *TRAFFIC* (2012), <http://www.traffic.org/home/2012/3/2/almost-1500-turtles-crammed-like-sardines-into-suitcases.html>

... while star tortoises make the return trip

Nineteen Indian star tortoises have been repatriated to their native India after having been confiscated at Indonesia's Soekarno Hatta airport, in Jakarta. Despite being protected by law in its range states, and listed on Appendix II of CITES, the species continues to be illegally traded, chiefly to meet demands from the pet trade. The 19 star tortoises were part of a collection of 47 tortoises, as well as various snake species, seized from a woman who was entering Indonesia from Bangkok in November 2011. A number of the tortoises had already died when the woman was apprehended. After being kept in quarantine in Indonesia the surviving tortoises were sent to Arignar Anna Zoological Park in Chennai, from where it is intended to release them back into the wild. This is the first time that tortoises confiscated in Indonesia have been returned to India.

Source: *TRAFFIC* (2012), <http://www.traffic.org/home/2012/3/13/indian-star-tortoises-sent-home.html>

Asia Pulp & Paper accused of breaking legally-binding agreement

Following a default of USD 13.9 billion in 2004 Asia Pulp & Paper (APP) negotiated major restructuring agreements with a number of its creditors, including

Germany, Japan and France, which included agreement on environmental covenants to build a degree of sustainability into the company's operations. Now an investigation by a Sumatran NGO has revealed that only 3 years after signing the legally-binding obligation regarding these environmental covenants, APP started clearing High Conservation Value Forest (HCVF) in the Pulau Muda forest management unit in Sumatra, despite having committed to protect all HCVF in this management unit. The forest clearance, which is ongoing, has so far led to a total of 12,000 ha of HCVF being destroyed, and has included the draining of peat > 4 m deep, which is a significant source of carbon emissions.

Source: *APP: Default on Environmental Covenant* (2012), <http://www.eyesontheforest.or.id/attach/EoF%20%28Mar12%29%20APP%20default%2008%20environmental%20covenant%20report%20FINAL.pdf>

Project launched to tackle uncontrolled harvesting of medicinal wild plants

A project to protect wild plants that rural communities rely upon for traditional medicine has been launched in Vietnam. Co-ordinated by *TRAFFIC* and the Bac Kan Forest Protection Department, the project will implement the FairWild Standard (<http://www.fairwild.org>) to ensure the sustainability of wild and aromatic plant harvesting in the South Xuan Lac Species and Habitat Conservation Area in northern Vietnam. Local workers will be trained in wild plant resource management, harvest monitoring, sustainable collection and value addition processing techniques. South Xuan Lac was chosen as a focus for the project because of its unique floral composition, local communities' use of medicinal and aromatic plants and evidence of uncontrolled harvesting. Ultimately, however, the project aims to develop a model that can be applied throughout Vietnam.

Source: *TRAFFIC* (2012), <http://www.traffic.org/home/2012/4/9/traffic-launches-sustainable-wild-harvested-medicinal-plant.html>

New species of ferret-badger comes to light

Genetic analysis has confirmed the presence of a new species of ferret-badger in Vietnam. Conservationists had suspected that Cuc Phuong National Park might be harbouring a hitherto unknown species, after a male ferret-badger with a severe leg injury was confiscated by rangers in 2005. A veterinarian at the Endangered Primate Rescue Centre who amputated the

ferret-badger's leg noticed phenotypical differences from the two known species in the same area. A year later a freshly dead individual was found on the premises of the Centre, which has become the holotype for the new species, *Melogale cucphuongensis*. Not only does the new species differ phenotypically from the two sympatric species in the same area, *Melogale moschata* and *Melogale personata*, analysis of a 423 bp-long fragment of the mitochondrial cytochrome b of the new species identifies it as representing a sister lineage to a clade containing *M. moschata* and *M. personata*. Source: *Der Zoologische Garten* (2011), 80, 271–286

Pangolins found on Malaysia–Thailand smuggling route

For the second time in 6 months wildlife authorities have seized a number of pangolins from a car on a road that leads to the Malaysia–Thailand border, highlighting the significance of this area in wildlife smuggling routes. Eighteen pangolins were seized on 21 March 2012 after officers from Malaysia's Perak State Wildlife and National Parks Department recognized the vehicle's registration number as that belonging to a known poacher and gave chase. In November 2011 12 pangolins were seized from the boot of another car, belonging to two local villagers. At least 445 pangolins have been seized from traffickers in the northern states of Malaysia since February 2010, despite pangolins being protected under Malaysian law and traffickers facing a fine of up to MYR 100,000 (USD 32,713), up to 3 years in prison, or both. The 18 pangolins confiscated in March were subsequently returned to the wild.

Source: *TRAFFIC* (2012), <http://www.traffic.org/home/2012/3/21/pangolin-seizure-highlights-malaysiathailand-smuggling-route.html>

Fires threaten Sumatra's orang-utans

Despite the Tripa peat swamp's location within the protected Leuser Ecosystem man-made fires have decimated much of the swamp in recent weeks, destroying > 30,000 ha and threatening the survival of 300 Critically Endangered Sumatran orang-utans that occur there. The fires are thought to have been started to clear the swamp to make way for a palm oil plantation. In 2011 the Leuser Ecosystem was declared off-limits to agricultural development following a Presidential moratorium on new plantations in primary forests and peatlands. However, Aceh's governor signed a permit in August 2011 allowing an

Indonesian oil palm manufacturer to create a plantation in Tripa. In addition to the threat posed to the orang-utans and the rest of the biodiversity in the area, the fires in peat swamps are resulting in the release of huge quantities of carbon into the atmosphere.

Source: GRASP News (2012), <http://www.un-grasp.org/news/81-grasp-calls-for-orangutan-protection-in-sumatra>

Slow loris trade continues apace in Indonesia

Despite a surge of publicity surrounding the trade in slow lorises (see *Oryx*, 2012: 46, 169–170), the trade in these primates appears not to have lessened, with >50 individual lorises found in Jakarta's animal markets during a 2-week period in March 2012. Slow lorises are completely protected under Indonesian law but their cute appearance makes them extremely popular as pets, despite this being illegal. Indonesia is home to three slow loris species, all of which are at risk of extinction as a result of their capture from the wild. The threat to their continued existence is reflected in their Red List statuses, with the greater slow loris and the Bornean slow loris both categorized as Vulnerable, and the Javan slow loris categorized as Endangered.

Source: TRAFFIC (2012), <http://www.traffic.org/home/2012/4/3/loris-trade-not-so-slow.html>

Indian Ocean follows Atlantic lead on tuna fishing

The Indian Ocean Tuna Commission (IOTC) has announced that all long-line vessels in the Indian Ocean will now be required to implement seabird bycatch mitigation measures. If used appropriately it is hoped that improved fishing practices will result in significant reductions in albatross mortality. Researchers estimate that >300,000 seabirds are drowned every year by long-line fisheries and this is thought to be the main reason behind 17 of the world's 22 species of albatrosses being threatened with extinction. Tuna long-liners typically deploy several thousand hooks attached by branch lines to a main line that can be more than 100 km long. Seabirds, especially albatrosses, are vulnerable to becoming hooked when they take the bait. The news from the IOTC follows a resolution ratified by the International Commission for the Conservation of Atlantic Tunas to ensure vessels take preventative action to avoid catching seabirds.

Source: BirdLife International (2012), <http://www.birdlife.org/community/2012/04/indian-ocean-tuna-commission-moves-to-protect-albatrosses>

[ocean-tuna-commission-moves-to-protect-albatrosses](http://www.birdlife.org/community/2012/04/indian-ocean-tuna-commission-moves-to-protect-albatrosses)

Blood suckers' stomach contents showcase diversity

Long accepted as a tool in medicine, leeches are now being put to work in a different capacity, namely, in the hunt for threatened species. After experiments in which they were able to extract goat DNA from leeches fed on goat blood, researchers turned their efforts to extracting DNA from leeches collected from the Annamite mountains, which straddle the border between Vietnam and Laos. Twenty-one of the 25 leeches examined yielded DNA from mammals on which the leeches had fed, including two little-known species, the Truong Son muntjac deer and the Annamite striped rabbit. WWF and Conservation International are now intending to collect leeches from the purported range of the Critically Endangered saola, which also occurs in the Annamite mountains, in the hope of finding saola DNA courtesy of a leech and thus shedding more light on the range of this elusive antelope.

Source: *Nature* (2012), 484(7395), 424–425

Indian government criticized as vultures continue to decline

There are fears that the vulture conservation programme in India, set up with the intention of protecting the species affected by the anti-inflammatory drug diclofenac, may not achieve its goals because of a lack of government support. Two out of three vulture restaurants set up by state government have been abandoned, and the third restaurant, which is attracting vultures from the lower Himalayan states, is suffering from a lack of funding that means it is dependent on free carcasses supplied by forest rangers. Furthermore, despite the sale of diclofenac having been banned for veterinary use in 2005 the drug is still being used to treat livestock, with evidence that farmers also turn to diclofenac intended for human use in cases where veterinary diclofenac is not available (also see *Oryx*, 2011: 45, 420–426).

Source: *The Times of India* (2012), http://articles.timesofindia.indiatimes.com/2012-02-25/flora-fauna/31100571_1_vulture-conservation-diclofenac-carcass

EAST ASIA

Izu Islands popular with Japanese murrelets

The second largest concentration of the Vulnerable Japanese murrelet has been

found on the Izu Islands in a recent survey led by the Wild Bird Society of Japan. These islands are thought to support a population of at least 1,000 Japanese murrelets, which is 10–20% of the global population of this seabird. The survey also revealed six new breeding sites for the murrelet, mostly on small uninhabited islands. The strongholds for the species are the Birojima Islets of Miyazaki Prefecture, Kyushu, which are home to an estimated 3,000 individuals. The main threat to the murrelet, as with many island-dwelling seabirds, comes from invasive predators on their breeding islands, as well as crows that are attracted to discards by fishermen. Bycatch in gill nets and oil spills also pose a threat to the survival of the species.

Source: BirdLife International (2012), <http://www.birdlife.org/community/2012/01/new-stronghold-for-japanese-murrelet-found/>

Shocking spike in porpoise mortality rates

The deaths of >32 Yangtze finless porpoises have been reported at Dongting and Poyang lakes since the beginning of 2012. With nine porpoises found dead over a 1-week period, the recent spike in mortalities has raised concern that this rare species is being pushed closer to extinction. Analysis has shown that illegal fishing and accidents are partly to blame for the deaths but food shortages and poison may also be pushing down numbers of porpoises. A 2006 survey found c. 1,800 Yangtze finless porpoises in the Yangtze River and connected lakes, with numbers decreasing at 6.4% per year. From 2006 to 2010 the number of Yangtze finless porpoises in Dongting Lake decreased to 198, an average decrease of 7.9% per year. Government authorities and local communities are working with WWF to reverse the trend and the local government has also promised to implement a ban on illegal fishing, regulate sand dredging and limit shipping speeds.

Source: WWF (2012), http://wwf.panda.org/wwf_news/?204494/WWF-deeply-concerned-over-deaths-of-vulnerable-Yangtze-finless-porpoise

NORTH AMERICA

Backyard species cluster together

A survey of the plant species growing in 137 backyards in the Minneapolis–Saint Paul metropolis in Minnesota has found differences in the characteristics and diversity of species that occur in the yards compared to a more natural area, the nearby Cedar Creek

Ecosystem Science Reserve. Plants growing in yards were more closely related to one another than the species occurring in the Reserve and were also more likely to be shorter-lived, self-pollinating and faster-growing. It appears that the nature of the urban environment, and the preferences of home-owners, select for traits and phylogenetic lineages that can colonize and survive in backyards. The study's authors suggest that the spread of these plants from backyards into the wider environment may reduce the ability of these ecosystems to respond to environmental changes.

Source: *Ecology* (2012), <http://dx.doi.org/10.1890/11-0392.1>, and *Nature* (2012), 484 (7393), 144

Orca sightings increase in Hudson Bay

Declining sea ice extent in Hudson Bay is being linked to an increase in orca sightings in the Bay. Orcas generally avoid ice, as their tall dorsal fins can be a hindrance in icy conditions, but with the coverage of summer sea ice in Hudson Bay decreasing by 16% per decade since the 1970s the number of orcas seen in the Bay has increased from three in the 1970s to 40 between 2006 and 2011. Opinions are divided as to the consequences of this increase in orca sightings. Orcas are adaptable predators known to prey on other cetaceans, which is causing concern for the populations of narwhals, bowhead and beluga whales that occur in the Bay. However, it is not clear what impact orca predation will have on Hudson Bay's mammals, with some researchers pointing out that a rise in sightings does not necessarily even equate with a rise in orca numbers.

Source: *New Scientist* (2012), 213(2858), 37–39

Chytridiomycosis lingers in reservoir species

The spread of chytridiomycosis, a disease caused by the lethal fungal pathogen *Batrachochytrium dendrobatidis* that is decimating amphibians worldwide, has been linked to the introduction of invasive species that are reservoirs for the pathogen. Now researchers investigating how the pathogen appears in remote protected areas have found that certain species are able to tolerate the disease and spread it to new areas. In the high elevation Sierra Nevada in California 67% of native Pacific chorus frogs examined tested positive for *B. dendrobatidis* but, despite being infected, this species survived, while other amphibians in the same area were extirpated. The study's authors suggest that the Pacific chorus frogs may spread the disease to

sympatric species in the same area. Histology of infected Pacific chorus frogs showed heavy *B. dendrobatidis* infection in patches on the frogs' skin whereas neighbouring skin patches were unaffected, which may be a mechanism by which this species tolerates the infection.

Source: *PLoS One* (2012), <http://dx.doi.org/10.1371/journal.pone.0033567>

Invasive species' diet examined

An investigation into the dietary preference of an invasive chameleon, *Chamaeleo jacksonii*, in Hawaii has generated glum results for native species. The stomach contents of 34 chameleons collected from native forest in Maui were analysed, and one-third of the lizards' diets was found to consist of native insects. The chameleons were also found to be consuming large numbers of insects every day. Furthermore, the size of arthropods eaten by the chameleons encompassed almost all sizes encountered within the native Hawaiian arthropod fauna. Distribution maps for the chameleon, based on its range in its native habitat, and the areas in which it occurs in Hawaii, suggest that the species is able to persist throughout the majority of Hawaii, from sea level to > 2,100 m above sea level.

Source: *Biological Invasions* (2012), <http://dx.doi.org/10.1007/s10530-011-0099-3>

Frog species goes unnoticed in the Big Apple

For years the ponds and marshes of Staten Island, mainland New York and New Jersey have been harbouring an undescribed species of leopard frog. It had long been assumed that the leopard frog species that occur in this part of the USA were the northern and southern leopard frog species until a researcher noticed that there was an unusual croak issuing from these wetlands, which was unlike any noises made by the northern or southern leopard frogs. An analysis of the DNA from all the leopard frogs that occur in this region confirmed that there was a hitherto unknown leopard frog species in their midst. Preliminary studies suggest that this species, which has yet to be named, was historically widely distributed but now occurs in a restricted area—making it all the more surprising that the frog's range coincides with one of the world's great metropolises.

Source: *Rutgers Press Release* (2012), <http://news.rutgers.edu/medrel/news-releases/2012/03/hiding-in-plain-sigh-20120309>, and *Molecular Phylogenetics and Evolution* (2012), <http://dx.doi.org/10.1016/j.ympev.2012.01.021>

Glimmer of hope for brown bats

Winter surveys of brown bats in five caves in the greater Albany area, in New York, have revealed that the number of bats in three of these caves have increased following years of serious decline. Bat species in many parts of the USA have suffered significant declines as result of infection by a fungus called white-nose syndrome, which causes high levels of mortality in hibernating bats. In the largest and best documented site in the greater Albany area the 2012 surveys counted 2,402 brown bats, a significant increase on the 1,496 counted in 2011. While positive, this recovery is being treated with caution, with researchers keen to stress that it is premature to assume this rise in numbers to be indicative of population recovery at this stage.

Source: *New York State Department of Environmental Conservation Press Release* (2012), <http://www.dec.ny.gov/press/81767.html>

Chimney swifts' diet studied through guano excavation

The discovery of a 2-m high pile of chimney swift guano in a chimney in Ontario, Canada, has yielded valuable information about the effects of pesticides on the aerial prey of this Near Threatened bird species. From the guano and egested insect remains found in the chimney, which was home to a swift colony from 1944 until 1992, researchers were able to examine the diets of these birds during these years. The droppings revealed an increase in DDT and metabolites over time, which was correlated with a decrease in Coleoptera remains and an increase in Hemiptera remains. This change in the insect community structure had consequences for aerial foragers, such as swifts, because hemipterans generally contain fewer calories than coleopterans. While the significant decline in chimney swifts has previously been linked to loss of suitable breeding habitat, this study suggests that diet may also have played a role.

Source: *Proceedings of the Royal Society B* (2012), <http://dx.doi.org/10.1098/rspb.2012.0445>, and *ScienceNow* (2012), <http://news.sciencemag.org/sciencenow/2012/04/clues-to-species-decline-buried.html?ref=hp>

Whereabouts of elusive birds finally solved

Thanks to the use of tiny, light-tracking devices researchers have made a surprising discovery about the migratory pattern of the northern black swift. In autumn the species flies from its nesting sites near mountain waterfalls in western North America before

returning 7–8 months later. Researchers suspected its destination was South America but little is known about the elusive birds. Geolocator tags recovered from three birds showed they arrived in Brazil between September and October 2009 and started their northward migration in May 2010. Because the tags recorded each bird's location to within 185 km, the birds probably also spent time in Bolivia, Colombia, Peru and Venezuela. The birds' locations, and vegetation maps, revealed they did not fly to areas similar to the mountainous terrain of their breeding habitats but were instead migrating to lowland rainforests. Plans to extend the study to northern black swifts throughout their western North American breeding range are underway.

Source: *ScienceNow* (2012), <http://news.sciencemag.org/sciencenow/2012/03/the-northern-black-swifts-tropic.html?ref=hp>, and *BioOne* (2012), <http://www.bioone.org/doi/abs/10.1676/11-146.1>

CENTRAL AMERICA AND CARIBBEAN

Cuban Red List published

The first ever Cuban Red List for terrestrial vertebrates has just been published, providing baseline information on the conservation status of the 165 Cuban species at greatest risk of extinction. Researchers from 17 Cuban institutions were involved in the compilation of the Red List, in which each threatened species has a data sheet including information such as distribution maps, IUCN category of threat and actions required for its conservation. One group of species that is particularly vulnerable to extinction in Cuba are reptiles. Eighty-seven species are considered threatened, of which 34 are Critically Endangered. For many reptile species this new book represents the first time they have been evaluated according to the Red List criteria. It is intended that the Cuban Red List be used by conservation managers and policy makers to improve the conservation status of the species it covers.

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/03/vertebrates-get-the-red-list-treatment-in-cuba/>

Captive-bred frogs alive and well

Captive-bred mountain chicken frogs, re-introduced to the Caribbean island of Montserrat, are surviving well in their new home, according to researchers. The Critically Endangered frogs have declined

by as much as 80% in the wild. When chytridiomycosis, an infectious fungal disease affecting amphibians globally, was discovered on the island in 2009, healthy frogs were captured and 12 relocated to the Durrell Wildlife Conservation Trust in Jersey. Following a successful breeding programme and a short trial last year, 33 healthy frogs were released onto the island in January. Researchers then spent 3 months tracking their movements and although some of the captive-bred frogs have succumbed to the fungal disease, many are thriving.

Source: *BBC News* (2012), <http://www.bbc.co.uk/nature/17372218>

Collaboration key to mangrove monitoring programme

Sociedad Ornitológica Puertorriqueña Inc. (BirdLife in Puerto Rico) has been awarded funds by the Mangrove Alliance Small Grants Program to conduct the first comprehensive study of mangrove habitat at Caño Tiburones. Located on the north coast of Puerto Rico, Caño Tiburones is the largest estuarine wetland on the island but, despite its importance to biodiversity, the area is under threat from industrial and agricultural development, as well as other human-related activities. The study, which aims to document past and present distribution of mangroves from both scientific research and local knowledge, will combine activities such as compilation of aerial photographs and maps, bird monitoring and identification of flora in the mangrove community with community education and outreach programmes. Furthermore, the team will also record the oral history of the surrounding local communities. The results of the study will be used to inform planning and management decisions relating to Caño Tiburones's mangrove habitat and to improve its protection.

Source: *BirdLife International* (2012), <http://www.birdlife.org/community/2012/05>

SOUTH AMERICA

Habitat secured for Fuertes's parrot

The Giles-Fuertes Reserve in Colombia, home to the Critically Endangered Fuertes's parrot, as well as 11 other threatened species, has doubled in size following the acquisition of 144 ha of land by a group of NGOs. Fuertes's parrot was thought to be extinct for over 90 years until its rediscovery in Colombia's high-Andean cloud forests in 2002. The species, which feeds on epiphytic mistletoe fruits, is only known from two places in Colombia, and only breeds in an

area < 50 km² in size. The extension of the Giles-Fuertes Reserve, now home to c. 20% of the global population of Fuertes's parrot, occurred just after the discovery of gold by AngloGold Ashanti a few kilometres from the Reserve, which increased the risk of deforestation in the area. Deforestation of areas containing key parrot-nesting sites is the most serious threat to the species, with farming, cattle-ranching and mining the main drivers of deforestation.

Source: *American Bird Conservancy* (2012), <http://www.abcbirds.org/newsandreports/releases/120423.html>

Concern grows for Brazil's forests

The lower house of Brazil's National Congress has passed, by 274 votes to 184, a bill that critics say will reduce the amount of protection afforded to the country's forests. In recent years Brazil has received praise for its efforts to curb deforestation, which is at its lowest level for 20 years as a consequence. The new legislation is a revision of Brazil's forest code, which requires that landowners maintain a minimum proportion of native forest on their land. The proposed revisions, which have been prompted by rural reaction to the crack-down on deforestation, include a reduction of forest protection along rivers and hills and the removal of the obligation for landowners to reforest illegally-cleared land. The ultimate fate of the bill now rests with Brazil's president Dilma Rousseff, whom conservationists hope will use her veto to remove some of the more radical aspects of the bill.

Source: *Nature* (2012), 485(7396), 19

Conservation agreement marks end of long-running dispute

The World Land Trust has signed an agreement that brings to an end years of dispute over the future of shared land within the Yaboti Biosphere Reserve in north-eastern Argentina. The reserve protects the last remaining remnants of Atlantic Rainforest and the indigenous rights of Guarani communities to the shared land had been disputed with neighbours and the government of Misiones for at least 16 years. However, in April 2012 three Guarani communities approved a Multicultural Alliance to designate 3,764 hectares as a protected nature reserve. Under the final agreement the title to the land, purchased by the World Land Trust, will be held as Traditional Indigenous Lands. Under Argentine law this means that it belongs to the Guarani communities and is 'inalienable in perpetuity', which affords strong legal protection. Guarani

representatives stated that the agreement respected their rights and traditional way of life while also ensuring the future conservation management of the rainforest ecosystem.

Source: *World Land Trust* (2012), <http://www.worldlandtrust.org/news/2012/05/landmark-conservation-agreement-indigenous-communities>

PACIFIC

Rise in plastic pollution has surprising consequence

The quantity of small plastic fragments floating in the north-east Pacific Ocean has increased a hundred fold over the past 40 years. Researchers documented the big rise when they trawled the waters off California and compared their plastic 'catch' with previous data for the region. An obvious concern is that the small fragments of plastic could be ingested by marine organisms but the researchers recorded a perhaps unexpected consequence. The plastic fragments make it easier for the marine insect *Halobates sericeus* to lay its eggs out over the ocean. Relatives of pond water skaters, the insects normally use seabird feathers, tar lumps or even pieces of pumice rock as a platform for the task. But results from the recent survey clearly show that *H. sericeus* has been greatly aided by the numerous plastic surfaces now available to it in the Pacific.

Source: *BBC News* (2012), <http://www.bbc.co.uk/news/science-environment-17991993>, and *Biology Letters* (2012), <http://dx.doi.org/10.1098/rsbl.2012.0298>

AUSTRALIA/ANTARCTICA/ NEW ZEALAND

Alien invaders set to colonize Antarctica

Researchers have carried out the first continent-wide evaluation of the threats posed by invasive species to Antarctica, considered to be one of the most significant threats facing the continent. Vascular plant propagules carried by all types of visitor to the continent were sampled, identified and mapped during 2007–2008, and the likelihood of these propagules establishing in

Antarctica was also calculated. On average each visitor to the Antarctic carried an average of 9.5 seeds, although scientists carried greater numbers of propagules than tourists. Mapping where invasive species might become established showed that the Western Antarctic Peninsula is currently most at risk, a finding corroborated by recent discoveries of alien invasive species in this area. With predicted changes in climate the risk of the establishment of alien species is expected to increase in the Antarctic Peninsula, Ross Sea and East Antarctic coastal regions.

Source: *Proceedings of the National Academy of Sciences of the USA* (2012), <http://dx.doi.org/10.1073/pnas.1119787109>

Change, rather than disappearance, more likely for coral reefs

Coral reefs are widely considered to be vulnerable ecosystems, threatened by various anthropogenic factors, including overfishing, pollution and climate change. The latter threat, in particular, has led to fears that entire reefs will disappear as water temperatures increase. Now researchers have examined spatial variation in the species composition and abundance of corals at 132 sites along Australia's Great Barrier Reef. The sites examined covered 13° of latitude and a variety of sea surface temperatures. The results of the study show that the abundance of the majority of coral species sampled was significantly different across the reefs, regardless of the susceptibility of these species to thermal stress and bleaching. The study's authors suggest that the flexibility seen in the community composition of corals throughout the Great Barrier Reef may mean that coral reefs will prove to be more resilient to climate change than previously feared.

Source: *Current Biology* (2012), <http://dx.doi.org/10.1016/j.cub.2012.02.068>

Closed canopies resist fires

Despite growing in highly flammable savannah in northern Australia, the fire-sensitive conifer *Callitris intratropica* appears to be able to withstand low-intensity fires when the trees grow close together with a closed canopy. Experiments in which controlled burns were carried out around *C. intratropica* groves found that

closed-canopy groves had higher densities of seedlings and saplings compared to open-canopy groves, and contained a distinct plant community. This difference between open- and closed-canopy groves extended to fuel availability, with closed-canopy groves containing a lower availability of fine fuels than the surrounding savannah. The ability of *C. intratropica* groves to resist low-intensity fires in an otherwise highly flammable savannah ecosystem enables the persistence of patches of woodland within this ecosystem, contributing to the diversity and structure of these savannahs.

Source: *Journal of Ecology* (2012), <http://dx.doi.org/10.1111/j.1365-2745.2012.01970.x>

Australian icon under threat

Australian officials have listed the koala as a threatened species in some parts of the country because of dwindling populations. Habitat loss, urban expansion, vehicle strikes, dog attacks and disease have all contributed to their declining numbers. The current size of the koala population is unclear but numbers are thought to vary significantly across the country. While koala numbers in Queensland and New South Wales have fallen by as much as 40% since 1990 the marsupials are thriving elsewhere in the states of Victoria and South Australia. Although there are large, stable or even increasing populations in some areas of country, the non-profit Australian Koala Foundation believes that there should be blanket protection for Australia's iconic marsupial.

BBC News (2012), <http://www.bbc.co.uk/news/world-asia-17893014>

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