

Briefly

INTERNATIONAL

Climate benefits of mangroves still untapped

Mangroves are carbon-rich forests of salt-tolerant trees and shrubs found along tropical and subtropical coastlines, and a report issued by UNEP (United Nations Environment Programme) during the December 2014 climate conference in Lima has called for increased conservation and restoration of these forests. Mangroves are being cleared 3–5 times faster than terrestrial forests, and UNEP estimates that resultant economic damages could amount to USD 42 billion annually. The economic cost is accompanied by significant impacts on climate. For every hectare of mangrove cleared in Central Africa 1,299 t of carbon dioxide is released into the atmosphere. With 90% of mangroves found in developing countries, their conservation is fundamental in shaping how global climate targets are to be met. According to UNEP new strategies and methodologies for carbon accounting and mangrove monitoring are necessary. Possibilities include satellite technology, field surveys, new carbon finance mechanisms, and ensuring mangroves are included in REDD+ strategies.

Source: UNEP (2014) www.unep.org/NewsCentre/default.aspx?DocumentID=2814&ArticleID=11103, and *Mongabay.com* (2015) news.mongabay.com/2015/0311-gfrn-gaworecki-un-mangroves-should-have-more-protections.html

Foraging behaviour linked to collapse of honeybee colonies . . .

Honeybees react to stressors such as parasites, pathogens and pesticides by flying out of their colonies at a younger age to forage. To investigate a potential link between this behaviour and rapid declines in bee populations, researchers have radio-tagged bees in experimental colonies and manipulated them to induce so-called precocious foraging. Monitoring of flight behaviour revealed that fewer successful foraging trips were made by bees that began foraging prematurely, and these bees had a lower survival rate than those that began foraging later. Mathematical modelling revealed that increased mortality among foragers, and the resulting decrease in the colony's food supply, caused a rapid collapse of the colony. Supplemental feeding of bee colonies to address the shortfall in

their food supplies has been proposed as a measure to mitigate declines in bee populations.

Source: *Proceedings of the National Academy of Sciences of the United States of America* (2015) [dx.doi.org/10.1073/pnas.1422089112](https://doi.org/10.1073/pnas.1422089112), and *Nature* (2015) [dx.doi.org/10.1038/518140d](https://doi.org/10.1038/518140d)

. . . and neonicotinoids are in the news again

In a letter to President Barack Obama, a coalition of 11 U.S. environmental organizations has called for tougher regulations governing the use of neonicotinoid pesticides. The chemicals have been linked to declines in bee populations, and the organizations, which include Friends of the Earth, the Audubon Society, and the Sierra Club, are calling for more research into how the pesticides affect pollinators, as well as a ban on the use of neonicotinoids to treat seeds. A federal strategy to address the health of bee populations is expected this year. Meanwhile, a leading bee scientist has reanalysed a 2013 study by the UK's Food and Environment Research Agency and concluded that it may provide the first conclusive evidence of the threat that neonicotinoids pose to bee populations, and that the government misinterpreted the data. The British government subsequently lobbied against the EU moratorium on neonicotinoids on the basis of their incorrect conclusions.

Source: *Nature* (2015) [dx.doi.org/10.1038/518142a](https://doi.org/10.1038/518142a), and *The Guardian* (2015) www.theguardian.com/environment/2015/mar/26/uk-drew-wrong-conclusion-from-its-neonicotinoids-study-scientist-says

From land to ocean: researchers quantify plastic waste inputs . . .

Researchers in the USA have quantified the amount of land-based plastic waste entering the oceans, and ranked the top 20 countries responsible for contributing 83% of all uncaptured waste. Their analysis is based on worldwide data on solid waste, population density and economic status. China tops the list, having added an estimated 1.32–3.53 m tonnes of plastic to the oceans in 2010, which is perhaps unsurprising given that a large proportion of its population lives along the coast. Population size and quality of waste management systems are major factors in determining how much plastic reaches the ocean. Unless waste

management infrastructure is improved it is predicted that by 2025, 17.5 million tonnes of plastic could be entering the oceans annually. The authors of the report suggest stringent preventative measures, including reduction in consumption of single-use, disposable items and improvements in waste management practices, could avoid this scenario.

Source: *Science* (2015) [dx.doi.org/10.1126/science.1260352](https://doi.org/10.1126/science.1260352), and *BBC News* (2015) www.bbc.co.uk/news/science-environment-31432515

. . . and sailing expedition to assess plastic pollution in ocean gyres

The Race for Water Odyssey began in March in Bordeaux, France, from where a team set sail to collect and analyse plastic pollution from the five major ocean gyres, in the North and South Atlantic Ocean, North and South Pacific Ocean, and South Indian Ocean. Vast quantities of plastic debris have accumulated in these gyres, and this is the first expedition to evaluate the quantities and types of plastic waste in all five gyres. Previous research expeditions have generally focused on a single gyre, and quantified the microplastics present in surface waters. The Race for Water crew will use a range of technology, including aerial drones, to study plastic pollution around 11 islands within the gyres, some of which are uninhabited. They will discuss with local communities how they deal with the problem of plastic waste washing up on their shores, and aim to complete their mission within 300 days.

Source: *IUCN* (2015) www.iucn.org/news_homepage/?19049/Race-against-oceans-of-plastic

Plateau in carbon emissions last year

The International Energy Agency (IEA) has reported that global emissions of carbon dioxide did not rise last year, which is the first time such a plateau has been recorded in the absence of economic collapse. In 2014 32.2 billion t of carbon was emitted globally, the same as in 2013. That this plateau occurred despite a growth of 3% in the world's economy supports the argument that carbon emissions can be decoupled from economic growth. According to the IEA the plateau is largely attributable to a slowdown in China's economy, and the country's increasing focus on renewable energy and energy efficiency in the face of significant environmental problems. Although the news

about emissions is positive it should not be viewed as a cause for complacency; further action is needed to achieve a substantial fall in carbon emissions and prevent a rise in global temperature of more than 2°C.

Source: *Mongabay.com* (2015) news.mongabay.com/2015/0319-hance-carbon-emissions-flat.html

Allure of hairy spider

Field experiments using infrared cameras have revealed that the white moustache of the brown huntsman spider *Heteropoda venatoria* is a lure to attract prey at night. This is the first time such a visual communication strategy has been found in a nocturnal cursorial predator. The stripe of fine white bristles below the spider's eyes reflects light differently from the rest of the body, and attracts nocturnal insects such as moths. In the experiments, spiders whose moustaches had been shaved off attracted significantly fewer insects. The researchers suggest that moths may mistake the white coloration of the bristles for a blooming flower during their nocturnal foraging. The phenomenon of colour-mediated prey attraction is known in other brightly coloured arachnids, including the northern golden orb weaver *Nephila pilipes*.

Source: *Animal Behaviour* (2015) dx.doi.org/10.1016/j.anbehav.2014.12.028, and *New Scientist* (2015) www.newscientist.com/article/mg22530123_500-zoologger-moustache-helps-hipster-spider-catch-prey.html#.VR78QiFwZxB

Insects threaten forests' climate mitigation potential

An experimental study in a northern temperate research forest exposed to raised carbon dioxide levels has found that herbivorous insects increased their consumption of the forest canopy by 88% under the high level of CO₂. As a result, 70 g of carbon-sequestering biomass was lost per square meter of forest per year. This phenomenon could limit the capacity of forests to function as carbon sinks, and the researchers suggest this insect behaviour should be included in models used to predict the effects of raised carbon emissions on forest productivity. They propose that the increase in consumption of foliage by insects may be attributable to a change in the nutrient content of leaves or an increase in the population of leaf-eating insects as a result of increased CO₂.

Source: *Nature* (2015) dx.doi.org/10.1038/519133e

Global assessment reveals decline in pollinators

The first global assessment of trends in the conservation status of bird and mammal pollinator species has revealed that many such species are declining, with serious implication for global pollination services and, consequently, food security. The assessment, which was carried out jointly by BirdLife International, IUCN and other organizations, used the Red List Index to investigate trends in survival probability over time. The findings revealed that, on average, 2.4 bird and mammal pollinator species have been uplisted by one threat category on the IUCN Red List in recent decades. Humans rely heavily on the ecosystem services provided by pollinators: animals pollinate c. 90% of flowering plants, many of which we use for food, livestock forage, medicine and materials. Habitat loss as a result of unsustainable agricultural practices was identified as a major cause of decline in many mammal and bird species; other causal factors include bushmeat hunting and invasive alien species.

Source: *BirdLife International* (2015) www.birdlife.org/worldwide/news/pollinating-birds-and-mammals-declining-reveals-first-global-assessment-trends-status

Drugs linked to extended beard growth in bearded vultures

The effects of the veterinary drug diclofenac on vultures in India and elsewhere have been widely documented. Vulture populations in the Indian subcontinent have declined by 99% since the 1980s, largely as a result of the birds feeding on the carcasses of livestock contaminated with diclofenac, and subsequently dying of kidney failure. Now evidence is emerging that increasing levels of drugs in the vultures' food chains are also having visible physiological effects. Unusually long beards have been observed among populations of bearded vultures, and have been attributed to certain drugs acting as male growth hormones. According to BirdLife International, vultures are now among the most threatened families of birds. Their decline has implications for human health, as they play an important role in cleaning up carcasses and preventing the spread of disease. Effects of chemical accumulation in ecosystems have also been recorded for other species, including the feminization of fish.

Source: *BirdLife International* (2015) www.birdlife.org/worldwide/news/extended-beard-bearded-vulture-incredible-effect-drug-revealed

Calls for improved monitoring of narwhal trade

A study by TRAFFIC and WWF calls for more vigilant monitoring of the trade in narwhals. Although there is no evidence that the international trade is currently a threat to this species of toothed whale, found only in the Arctic, climate change is likely to have a negative impact on narwhal populations as changes in sea ice will make it more difficult for them to find food. The species is currently categorized as Near Threatened on the IUCN Red List, and trade in narwhal tusks is regulated under CITES. During 1987–2009 trade in 4,923 narwhal tusks was reported; however, this figure is considered an underestimate as it does not necessarily include ivory carvings or items exported as personal or household effects. Narwhals are an important resource for many Arctic communities, and Canadian Inuit and Greenlandic hunters are permitted to hunt the species for subsistence purposes. Source: *TRAFFIC* (2015) www.traffic.org/home/2015/3/13/new-report-calls-for-better-monitoring-of-international-narwhal-trade

Commitments on wildlife crime reaffirmed at follow-up conference

Government representatives from 31 countries came together for a 1-day meeting in Kasane, Botswana, on 25 March to review the progress made during the 13 months since the London Conference on Illegal Wildlife Trade. Key successes were reported, including stricter law enforcement and improvements in domestic legislation relating to wildlife. In Asia 13 tiger range countries have committed to a zero poaching framework and toolkit, which could be adapted globally to tackle poaching. Participants reaffirmed their commitments to curbing the illegal wildlife trade through eradicating the market for wildlife products, implementing effective deterrents and enforcement, and supporting sustainable livelihoods, and agreed to a number of additional measures to address financial aspects of wildlife crime, including money laundering. They also agreed to increase the level of engagement with relevant parties in the private sector, such as transportation and logistics companies, which could unwittingly act as vectors for the wildlife trade.

Source: *TRAFFIC* (2015) www.traffic.org/home/2015/3/25/critical-conference-main-takes-global-momentum-to-curb-wildlife-trade

Tiny bird, epic journey

Researchers have shed light on the epic migration of the blackpoll warbler

Setophaga striata, which has long been thought to fly from north-eastern North America to the Caribbean or the north-eastern coast of South America in a single, unbroken journey during autumn migration. Miniature light-level geolocators were fitted to the tiny boreal forest songbirds to record light levels over time and thus infer geographical coordinates from the date and the timing of dusk and dawn. Data retrieved from five recaptured individuals indicated that the birds had flown in a straight line over the Atlantic Ocean, stopping over in the Caribbean before continuing their migration to their wintering grounds in South America. This is one of the longest recorded non-stop transoceanic migrations for a bird of this size (weighing c. 12 g), covering c. 2,500 km and including 3 days of non-stop flight. Source: *Biology Letters* (2015) [dx.doi.org/10.1098/rsbl.2014.1045](https://doi.org/10.1098/rsbl.2014.1045), and *Nature* (2015) [dx.doi.org/10.1038/520134d](https://doi.org/10.1038/520134d)

Lilliput effect in acidified oceans

Many species of marine shellfish, corals and fish that survived previous mass extinction events were found to have shrunk by at least one third in the process, and remained small for tens of thousands of years. This so-called Lilliput effect may become apparent again as marine species adapt to ocean acidification as a result of increasing levels of carbon dioxide emissions in the atmosphere. Researchers found that members of two species of sea snails living around volcanic seeps in the Mediterranean Sea, where carbon dioxide concentrations are naturally higher, were about one and a half times smaller than members of the same species found in an area beyond the influence of the seeps. Smaller organisms are better adapted to high CO₂ conditions because they do not need as much oxygen as larger species. The potential shrinking of marine shellfish in response to environmental change could have negative implications for commercial fisheries.

Source: *New Scientist* (2015) www.newscientist.com/article/dn27385-miniature-sea-snails-found-in-acidic-sea-near-volcanic-seeps.html#.VTPrYiFwZhE

2015 Goldman Environmental Prize winners announced

The winners of this year's Goldman Environmental Prize, which honours grass-roots environmentalists for their leadership in bringing about positive change for the natural environment, are Phyllis Omida of Kenya, who spearheaded a campaign to shut down a smelter that

was causing lead poisoning in her community; Myint Zaw, who launched a national movement in Myanmar to halt the construction of a dam on the Irrawaddy River; Howard Wood, who was instrumental in establishing Scotland's first community-developed Marine Protected Area (see also p. 382); Jean Wiener, who led community efforts in Haiti to establish the country's first Marine Protected Areas; Marilyn Baptiste of the Xenigwet'in First Nation, who galvanized her community to prevent a proposed gold and copper mine in British Columbia, Canada; and Berta Cáceres, who organized a campaign among the indigenous Lenca people of Honduras to pressure the world's largest dam builder to pull out of the Agua Zarca dam project.

Source: *Goldman Prize* (2015) www.goldmanprize.org/blog/introducing-the-2015-goldman-environmental-prize-winners/

EUROPE

Extent of illegal massacre of wild birds in the Mediterranean revealed...

The first pan-Mediterranean study of illegal killing of wild birds is being carried out by 27 partner organizations of BirdLife International, and will provide a basis for conservation planning and priority-setting in the region. Early results of the study indicate that at least 10 million birds, including many threatened species, are killed and taken annually. A wide range of illegal activities are involved, including shooting, trapping, collecting eggs and juveniles, poisoning, and taking birds from areas, or at certain times, when this is forbidden. The drivers of these crimes are varied, with national and local patterns. Although in some cases the killings are linked to organized crime and financial gain, in others they can be attributed to poor education and lack of awareness. The large-scale study will provide a baseline for monitoring changes over time and assessing the impact of conservation actions at country and regional levels.

Source: *BirdLife International* (2015) www.birdlife.org/europe-and-central-asia/news/first-ever-pan-mediterranean-study-reveals-scale-wild-birds-massacre

...and disappointing outcome of Maltese referendum

On 11 April 75% of the population of Malta voted in a national referendum that proposed putting an end to spring hunting of migratory birds in the country. The proposed ban was rejected by a majority of

50.9%, a narrow margin of only 2,220 votes. Malta is an important resting place for migrating birds as they journey north from Africa to Europe to breed. Under EU law spring hunting of birds is prohibited but Maltese authorities continue to implement a derogation allowing the killing of certain birds, including rare and threatened species. The turtle dove, quail and many other species are targeted by hunters during the spring hunting season, and turtle dove numbers have declined by 77% since 1980. Allowing spring hunting to continue represents a critical threat to bird conservation in Europe, with adult birds being killed before they have a chance to breed.

Source: *BirdLife International* (2015) www.birdlife.org/europe-and-central-asia/news/malta-misses-chance-end-spring-hunting-birds

First assessment of all European wild bee species

The first ever assessment of all European wild bee species has been published as part of the IUCN European Red List of Bees and the Status and Trends of European Pollinators project. The assessment provides information on the status, distribution and population trends of all of Europe's 1,965 wild bee species, as well as information on the threats to their survival. According to the report, 7.7% of the species are in decline, 12.6% are stable and 0.7% are increasing. Because of a lack of expertise and resources for monitoring, our knowledge of bee populations is incomplete; 56.7% of the species are categorized as Data Deficient on the IUCN Red List. Major threats to European bee populations include intensive agriculture, changes in farming practices, climate change, and urban development. Crop pollination by bees is estimated to be worth EUR 153 billion globally each year.

Source: *IUCN* (2015) www.iucn.org/news_homepage/?19073/Nearly-one-in-ten-wild-bee-species-face-extinction-in-Europe-while-the-status-of-more-than-half-remains-unknown---IUCN-report

Montenegro's Ulcinj Salina salt flat saved from development

Over the past decade authorities in Montenegro have been under increasing pressure to grant approval for tourist development in the coastal wetlands of Ulcinj Salina, on the border with Albania. Developers planned to drain the wetland to build hotels and golf courses, which would have destroyed the Important Bird and Biodiversity Area. The wetland is used by some 250 species of migratory birds,

either for nesting or as a resting place along the eastern Adriatic's migratory flyway. These include the little tern, stone curlew, Eurasian spoonbill, and Dalmatian pelican. Following years of campaigning by NGOs and communities, the government has now publicly recognized the ecological importance of Ulcinj Salina, and has begun the process of designating it a protected area. The site will also be officially designated part of the Emerald Network of areas of special conservation interest under the Bern Convention.

Source: *BirdLife International* (2015) www.birdlife.org/europe-and-central-asia/news/bird-paradise-montenegro-now-safe-developers

Scallop numbers soar in Scottish marine reserve . . .

A new study has shown how a community-led marine reserve in Scotland has boosted scallop populations, with potential benefits for local fishers. Scallops are among the species to have benefited from protection afforded by Lamlash Bay No-Take Zone on the east coast of the Isle of Arran in Scotland's Firth of Clyde. The No-Take Zone was established in 2008 after more than a decade of campaigning by members of local organization, Community of Arran Seabed Trust. Closed to all forms of fishing, the no-take zone was the first of its kind in Scotland and also the first to have been successfully established as a result of community action. The research found a greater abundance of juvenile scallops inside the reserve than outside, and adult scallops within the reserve were larger and more fertile. Mounting evidence indicates that no-take zones can benefit fisheries as eggs and larvae from within a reserve are carried by water currents into surrounding areas.

Source: *Marine Biology* (2015) 162, 823–840, [dx.doi.org/10.1007/s00227-015-2627-7](https://doi.org/10.1007/s00227-015-2627-7), and *Fauna & Flora International* (2015) www.fauna-flora.org/news/scallop-numbers-soar-in-scottish-marine-reserve/

. . . and Community of Arran Seabed Trust co-founder receives Goldman Environmental Prize

Howard Wood, co-founder of Community of Arran Seabed Trust, spearheaded the campaign that established the first community-developed Marine Protected Area in Scotland, giving citizens a voice in a debate that had been dominated by the commercial fishing industry. Over the course of hundreds of dives, Howard witnessed the destruction of marine wildlife brought on by irresponsible fishing practices around Arran. In 1995 Wood and his friend Don

MacNeish founded the Community of Arran Seabed Trust, a citizen group of volunteer activists committed to protecting the local marine environment. Although Wood had no formal training as an environmental activist, he understood his responsibility as a member of the tight-knit community in Arran to restore and protect a resource that had been a source of cultural identity—and economic sustainability—for the people on the island.

Source: *The Goldman Environmental Prize* (2015) www.goldmanprize.org/recipient/howard-wood, and *Fauna & Flora International* (2015) www.fauna-flora.org/a-tale-of-tenacity-standing-up-for-scotlands-seas

Beavers are making a comeback!

By the 16th century beavers had been hunted to extinction throughout the UK but in 2014 wild beavers were seen on the River Otter in Devon, where they may have been living for up to a decade. Five beavers were captured by the Animal and Plant Health Agency and tested for the parasitic tapeworm *Echinococcus multilocularis*, which can be harmful to humans. The beavers were also tested for bovine TB. They were given a clean bill of health and were released back into their river habitat, where the population will be monitored and managed by Devon Wildlife Trust. DNA tests confirmed the beavers were Eurasian beavers *Castor fiber* rather than North American beavers *Castor canadensis*. There are concerns among farmers and anglers that the beavers will cause damage to land and to fish migration routes; their impact on the local landscape, communities, wildlife and economy will be measured over 5 years.

Source: *The Guardian* (2015) www.theguardian.com/environment/2015/mar/24/englands-only-wild-beavers-returned-to-their-devon-river-home

Citizen scientists monitor rabbits and hares . . .

The Mammal Society has called on the public to report sightings of rabbits and hares throughout the UK, to contribute to a national atlas of mammals, which will be used to inform conservation efforts and future research. The current level of information on the status of rabbit and hare populations is low, although they are known to be in decline in parts of the UK. In other areas, however, populations have become so abundant that the animals are regarded as pests. Outbreaks of disease, including myxomatosis, have affected population abundance in some places. As grazers, rabbits and hares are important ecosystem engineers; they are also a source of food for

foxes and birds of prey. Citizen scientists can distinguish rabbits and hares by their gait and appearance. Hares are bigger and have longer ears, with black tips. They have long limbs and a lolling gait, whereas rabbits have a bobbing gait.

Source: *BBC News* (2015) www.bbc.com/news/science-environment-32160617

. . . and reveal how climate change is affecting native oak

Data on first leafing and flowering of oak trees *Quercus* spp., recorded by members of the public, reveal that in warmer years the acorn crop is smaller as a result of less synchronized flowering, which offers less opportunity for trees to cross-pollinate over wide areas. A number of species rely on acorns as their primary food source, including jays, pigeons, squirrels and deer, and some of these also help to disperse the seeds; however, when synchronized flowering occurs the trees can also disperse their genes by means of wind-dispersed pollen. Over 160,000 records were added to the Woodland Trust's Nature's Calendar database, and analysis of these data indicated that the greater the variation in first flowering dates, the poorer the ensuing acorn crop. As the warming trend in the UK is likely to continue, such data will be valuable in informing management plans for the protection of native woodland.

Source: *The Guardian* (2015) www.theguardian.com/environment/2015/apr/17/uk-acorn-crop-being-hit-by-climate-change

Butterfly survey reveals good news for some species

A survey by the UK Butterfly Monitoring Scheme recorded an increase in numbers in 2014 for more than half of the 56 species studied. The warm wet spring boosted the numbers of some species, including the high brown fritillary, one of two species categorized as Critically Endangered in the UK. Once widespread in England and Wales, the high brown fritillary is now found only in a single colony in Wales, and in Morecambe Bay and on Dartmoor in England. There has been a significant conservation effort for the species in recent years, including wildlife-friendly farming schemes to restore its woodland and moorland habitat. Other species that fared well in 2014 include the Duke of Burgundy and the Lulworth skipper, whereas species that emerge in high summer, including chalk hill blue and Adonis blue, struggled in the cooler August weather.

Source: *BBC News* (2015) www.bbc.com/news/science-environment-32145984

Wildlife in the city

Researchers at the University of Frankfurt have discovered that the structure of rabbit burrows varies with distance from the city, with urban rabbits living in smaller, simpler burrows than their rural counterparts. European rabbits are thriving in cities, whereas rural populations are generally in decline throughout central Europe, and the rabbits have adapted to city-living by changing their lifestyle accordingly. Instead of huddling together in large groups in complex burrows, city rabbits tend to live in smaller groups. Cities offer a ready supply of food, as well as access to vegetation and burrowing sites. In cities, rabbits are less dependent on the group for keeping warm, and they have less need for elaborate burrows with multiple exits, because the threat of predators is reduced. The study findings highlight the potential role of cities in providing new habitat for wildlife, and source populations for rewilding rural areas.

Source: *Journal of Zoology* (2015) [dx.doi.org/10.1111/jzo.12207](https://doi.org/10.1111/jzo.12207), and *New Scientist* (2015) www.newscientist.com/article/mg22530072-000-urban-rabbits-downsize-to-smaller-studio-warrens.html#.VRgM-yFwZxA

Black vulture shows signs of recovery in Portugal

Two breeding pairs of Eurasian black vultures have been sighted at artificial nesting platforms in the Alentejo region of Portugal, marking the first time in 40 years that the species has successfully nested in the south of the country. With a wingspan of almost 3 m, the black vulture is one of the largest birds of prey. The species declined in Portugal as a result of the loss of its montado habitat, comprising cork and holm oak woodlands, as well as other threats, including accidental poisoning, collision with power lines, and a decline in the rabbit population (the vulture's preferred prey) as a result of myxomatosis and rabbit haemorrhagic disease. By the 1970s the entire breeding population had been wiped out in Portugal, but as a result of conservation efforts breeding birds returned to some areas in 2010. There are currently c. 13 breeding pairs in central and northern Portugal.

Source: *Fauna & Flora International* (2015) www.fauna-flora.org/news/black-vultures-return-to-southern-portugal/

NORTH EURASIA

Soviet Union collapse affected region's wildlife

The socioeconomic shocks following the collapse of the Soviet Union in 1991 also

affected the region's wildlife, research has suggested. A study of populations of eight large mammal species in Russia from 1981 to 2010 found that most declined sharply in numbers from 1991. There was a simultaneous decline of wild boar, brown bear and moose in most regions of Russia in the decade following the collapse, but a large increase in numbers of the grey wolf (probably a result of the cessation of governmental population control). Likely reasons for the declines include poaching and the erosion of wildlife protection enforcement. After 2000 some trends reversed, with roe deer abundance in 2010 the highest of any period in the study. The widespread declines after the collapse of the Soviet Union highlight the magnitude of the effects that socioeconomic shocks can have on wildlife populations and the possible need for special conservation efforts during such times.

Source: *Conservation Biology* (2015) [dx.doi.org/10.1111/cobi.12450](https://doi.org/10.1111/cobi.12450), and *BBC News* (2015) www.bbc.co.uk/news/science-environment-30886952

SUB-SAHARAN AFRICA

Regional action plan for ape conservation

A 10-year plan for the conservation of the Critically Endangered western lowland gorilla *Gorilla gorilla gorilla* and the Endangered central chimpanzee *Pan troglodytes troglodytes* in Central Africa has been published by a group of conservation NGOs, including WWF, IUCN and the Wildlife Conservation Society. Conservation priorities for both apes were assessed based on population density maps produced using survey data from 2003–2013, and 18 landscapes were identified as critical for their continued survival in the region. Poaching, habitat loss, and disease have contributed to the ongoing decline of these great apes, which have also faced pressure from human population increase and the expansion of industrial agriculture and extractive industries in the region. Furthermore, 80% of the apes live outside protected areas across six range countries. The plan calls for improved governance and law enforcement, more effective management of great ape habitat outside protected areas, and improved land-use planning.

Source: *WWF* (2015) wwf.panda.org/wwf_news/?243890/New-plan-to-save-declining-great-apes-of-Central-Africa

Senegal's seabirds threatened by oil discovery

At the February meeting of the Experts Panel at the Abidjan Convention on Marine Environmental Standards for Offshore Oil and Gas Development, in Dakar, Senegal, BirdLife International highlighted the potential consequences of oil and gas exploitation off the coast of Senegal on the world's largest breeding colony of royal terns. Oil was discovered recently in the Sangomar Deep block, close to the 73,000 ha Saloum Delta National Park, on Senegal's Atlantic coast. Île aux Oiseaux, one of several isolated sandy islands a few kilometres from the mainland, is one of Senegal's most important breeding sites for colonial seabirds, including Caspian terns, slender-billed gulls, grey-headed gulls, and royal terns. More than 80% of the global population of royal terns are sustained on the island, with up to 42,000 pairs breeding in Saloum Delta National Park.

Source: *BirdLife International* (2015) www.birdlife.org/africa/news/future-oil-production-sites-threaten-seabirds-shore-senegal

Efforts to protect East Africa's elephants are heating up

Supported by funds from USAID, the Wildlife Conservation Society and the Tanzanian government have launched a project to protect East Africa's largest population of elephants. The Southern Highlands and Ruaha-Katavi Protection Program aims to reduce poaching of the c. 25,000 elephants remaining in the area. Working with multiple partners, communities and NGOs the project focuses on elephant monitoring and protection, habitat conservation, livelihoods and Wildlife Management Areas, and is dedicated to reducing human–elephant conflict through various innovative methods of crop protection. These include planting deterrent fences of chilli bushes, or coating wire fences with chilli-infused oil. These tactics exploit the elephant's natural sensitivity to capsaicin, the heat-causing chemical in chilli peppers, and can effectively protect agricultural land. One of the most significant features of the programme is its focus on increasing law enforcement, using a variety of anti-poaching activities to strengthen the capacity of existing ranger patrols.

Source: *Mongabay.com* (2015) news.mongabay.com/2015/0312-sharpp-elephant-protection.html

A fatal drink for Lilian's lovebirds

The population of Lilian's lovebirds in Liwonde National Park, Malawi, represents

c. 20% of the global population of these brightly coloured birds. However, research suggests that illegal poisoning of water-holes is placing 32% of the Park's population at risk. Researchers from the University of KwaZulu-Natal in South Africa suggest the poisoning is targeted at larger animals such as bushbuck, impala and guinea fowl, which are used for food. During 2000–2012 31 incidents of water-hole poisoning were reported by park scouts. Lilian's lovebirds are particularly vulnerable because of their dependence on water pools during the dry season, when congregations of lovebirds can comprise up to c. 100 individuals. The researchers call for the Malawi government to increase monitoring and prevent illegal activity in protected areas, using measures including camera traps and increased patrols at sites where repeated poisonings have taken place.

Source: *African Journal of Ecology* (2015) [dx.doi.org/10.1111/aje.12216](https://doi.org/10.1111/aje.12216), and *BBC Earth* (2015) www.bbc.com/earth/story/20150310-lovebird-threatened-by-poisoning

SOUTH AND SOUTH-EAST ASIA

Demand for rubber threatens South-east Asia's forests

The global demand for natural rubber is threatening forest ecosystems and biodiversity in South-east Asia, where rubber is the most rapidly expanding tree crop. Over 2 million ha of rubber plantations have been established during the past decade, driven by the increasing demand from the tyre industry, which consumes 70% of all rubber cultivated. Conservationists are concerned that conversion of forests to monoculture rubber plantations will affect soil, water and tropical biodiversity, and put bird, bat, primate and invertebrate species at risk. Numbers of bird, bat and beetle species have reportedly declined by up to 75% in forests that have been converted to rubber, and habitat loss threatens many species, including the white-shouldered ibis, the yellow-cheeked crested gibbon, and the clouded leopard. Recommendations for making rubber production more wildlife-friendly include agroforestry approaches, where rubber is cultivated with other crops, and conserving patches of natural vegetation.

Source: *Conservation Letters* (2015) [dx.doi.org/10.1111/conl.12170](https://doi.org/10.1111/conl.12170), and *BBC News* (2015) www.bbc.co.uk/news/science-environment-32350985

Absent storks risk Keoladeo's heritage status

Half a century ago up to 10,000 painted storks could be found roosting in India's Keoladeo National Park, where the birds nest, breed and raise chicks in winter before returning to southern India in April. In October 2014, however, the entire colony of more than 1,000 birds abandoned their nests, and the unguarded eggs were destroyed by scavenger birds. In a recent survey at the world heritage site, ecologist T.K. Roy found only two painted storks, and he attributes the loss of the storks to climate change and disturbance from construction, which may have caused the migratory birds to shift their seasonal activities. During the 2006–2007 season Keoladeo was affected by drought and the birds did not return until 2 years later. Unless water management infrastructure projects are completed rapidly in the Park it risks losing its heritage status, which is based on its stork population.

Source: *International Business Times* (2015) www.ibtimes.co.uk/world-heritage-site-keoladeo-national-park-india-could-lose-tag-birds-stay-away-1490052

Fresh hope for near-extinct forest turtle

The Arakan forest turtle is one of the 25 most threatened turtle species. First discovered in 1875 and thought to be endemic to Myanmar it wasn't until 2009 that conservationists recorded individuals living in the wild. An initiative headed by the Bangladesh Python Project found a new population of the Arakan forest turtle in the Chittagong Hill Tracts, which border Myanmar and Bangladesh. The Cameras for Conservation project gave digital cameras to members of Mro indigenous communities and asked them to record the wildlife they encountered. Thirty percent of the species identified from the photographs were on the IUCN Red List of Threatened Species, and photographs included the shells of recently killed Arakan forest turtles. Working with the community, conservationists subsequently discovered live turtles in nine new localities. There was no evidence of commercial trade in turtles but populations are threatened by indigenous subsistence hunting.

Source: *Mongabay.com* (2015) news.mongabay.com/2015/0224-hance-arakan-turtle-bangladesh.html

Forests of Hope in Vietnam

In the first such partnership in Vietnam, government authorities, environment officials and members of the Viet Nature

Conservation Centre signed a 30-year lease on a 768-ha tract of forest in Dong Chau-Khe Nuoc Trong Forest, in the country's north-central region. The lowland broadleaved evergreen forest is a biodiversity hotspot where species have been declining as a result of illegal logging and hunting to supply the international wildlife trade. Threatened species in the region include the Critically Endangered saola, the Endangered red-shanked douc langur and the Critically Endangered Edwards's pheasant, which was once widespread in the lowlands of north-central Vietnam but of which there have been no confirmed sightings since 2000. The forest was leased as part of BirdLife International's Forests of Hope programme, which aims to benefit people and nature through large-scale conservation and restoration of forests, using locally appropriate approaches.

Source: *BirdLife International* (2015) www.birdlife.org/asia/news/new-hope-vietnam%E2%80%99s-forests

River dolphins face uncertain future in Lao PDR

Only five individuals remain of the population of Irrawaddy river dolphins in the Mekong River in Lao PDR, following the death of an elderly female in April. Gill-net fishing is the main threat to dolphin survival in the river, and the use of these nets by local fishermen has increased in recent years. Although Cambodia has banned gill-net fishing in and around the transboundary Wang Paa Khaa river pool, in Lao PDR the nets are banned only in the deepest parts of the pool. A potentially greater threat to the dolphins is the planned construction of a 260 megawatt dam 3 km upstream from the pool. To protect the remaining dolphins in the Mekong River, estimated to number 85, the majority of which are in Cambodia, collaboration between Cambodia and Lao PDR is necessary to address the problem of illegal fishing and regulate boat traffic and use of gill-nets.

Source: *WWF News* (2015) www.panda.org/wwf_news/?243737/Mekong-River-dolphin-death-reduces-Lao-population-to-five

EAST ASIA

Numbers of giant pandas are on the rise...

The results of China's fourth decadal survey of giant pandas suggest that there has been a 16.8% increase in the number of giant pandas over the last decade. Endemic to China, giant pandas are categorized as Endangered

on the IUCN Red List and are the only remaining species of their genus. Famous for surviving only on bamboo, giant pandas are found in the bamboo forests of China's Sichuan, Shaanxi and Gansu provinces, and have been the focus of considerable conservation effort by the government and conservation organizations. Despite threats to their habitat, the survey found populations are not only rising but spreading to new areas. The species now covers 2.57 million ha, an expansion of 11.8% since 2003. Although the population has increased to 1,864 individuals it is estimated that a third of these inhabit ranges outside protected areas.

Source: *Mongabay.com* (2015) news.mongabay.com/2015/0302-hance-giant-panda-population.html

...but what about the Yangtze finless porpoise?

A translocation project is underway to help save the Critically Endangered Yangtze finless porpoise from extinction. There are estimated to be 1,000 of the porpoises remaining, and without conservation intervention the subspecies could be extinct within 5–10 years, based on the current rate of population decline. Four individuals were captured in Poyang Lake, in eastern China, and translocated to the He-wang-miao/Ji-cheng-yuan oxbow, 400 km away, to establish a new population. Four other individuals are being moved to Tian-e-zhou oxbow to increase the genetic diversity of the population there. The decline of the porpoise is attributable to human impact on the Yangtze, from activities including shipping, sand mining, illegal fishing and dam-building projects. Efforts to conserve the species will take time and will need to address the livelihood needs of local fishing communities, whose support and involvement will be critical to the success of the project.

Source: WWF (2015) wwf.panda.org/wwf_news/?242992/Milestone-in-race-to-save-species-ten-years-from-extinction

China conference on transboundary conservation

Delegates from environmental institutes, universities and conservation NGOs met in China in March to discuss issues of biodiversity conservation and the illegal wildlife trade in the transboundary region of China, Myanmar, Laos PDR and Vietnam. Participants explored approaches to tackling the illegal wildlife trade through improved law enforcement, and the adoption of the FairWild standard for sustainable harvesting of wild plants for medicinal use. They also discussed land

utilization and conservation of threatened species, and agreed the importance of sustainable resource use, enhanced benefit-sharing, addressing human–wildlife conflict, and providing alternative livelihoods for communities in conservation areas. Concerns were raised about poaching and illegal wildlife trade in border regions, and the town of Mong La, on the China–Myanmar border, was highlighted as a hotspot for illegal wildlife smuggling (see also p. 391). A declaration issued at the end of the meeting recognizes key areas of action for biodiversity conservation and curbing wildlife trade in the region.

Source: TRAFFIC (2015) www.traffic.org/home/2015/3/31/focus-on-transboundary-conservation-in-china.html

Fishy creator of mystery sand circles named

Mysterious circular designs in the seabed off the coast of Japan have been discovered to be part of a puffer fish mating ritual. Found at depths of 10–27 m, the 2 m diameter circles are made by male puffer fish to impress potential mates and eventually serve as spawning nests, where eggs are protected by the fortress of troughs within the sandy structures. The species of puffer fish responsible for the creation of these intricate structures is a newly described species of the genus *Torquigener*, named the white-spotted puffer fish *Torquigener albomaculosus*. Two specimens collected off the coast of Amami-Oshima Island revealed a number of distinctive physical characteristics of the species, including many white spots on the dorsal half of the head and body, and a pale yellow colouration of the dorsal rim of the eye. The white-spotted puffer fish is the only *Torquigener* species known to create these elaborate circles in preparation for mating.

Source: *Ichthyological Research* (2015) dx.doi.org/10.1007/s10228-014-0428-5, and BBC Earth (2015) www.bbc.com/earth/story/20141205-new-pufferfish-named

NORTH AMERICA

Female orca elders impart wisdom to the pod

Although they typically stop reproducing at 40 years of age, female orcas often live into their 90s. Only two other species are known to live for such a long time after menopause (humans and pilot whales). To learn about the role of female elders, scientists studied 750 hours of film footage of more than 100 orcas recorded in the Pacific Ocean

off the coast of British Columbia and Washington states in the USA since 1976. They concluded that post-menopausal females act as repositories of information critical for survival, and use this information to benefit the entire pod. The study findings revealed that post-menopausal females were 57% more likely to lead the pod than adult males, and 32% more likely than adult females of breeding age. They were also more likely to assume a leadership role in the group at times when chinook salmon, their staple food, was scarce.

Source: *Current Biology* (2015) dx.doi.org/10.1016/j.cub.2015.01.037, and *New Scientist* (2015) www.newscientist.com/article/mg22530122.800-postmenopausal-orcas-wisdom-helps-family-survive.html#.VR7sviFwZxB

Small trees important for forest resilience

Removing small trees from conifer forests to reduce the risk of wildfires could be misguided, according to research carried out at the University of Wyoming at Laramie. An analysis of records for dry forests in the western USA for the period 1999–2012 revealed that insect outbreaks caused more damage to such forests than fire, resulting in the loss of 5.6 times more forest area. Furthermore, land surveys from the late 19th century show that trees with diameters of c. 40 cm or less accounted for 62% of all forest trees, and the study findings indicate that the significant proportion of smaller trees present, as well as a greater diversity of species, may have made forests more resilient to a variety of disturbances. These findings could inform efforts to improve the resilience of forests against the effects of climate change, to which dry forests may be particularly vulnerable.

Source: *Frontiers in Ecology and Evolution* (2015) dx.doi.org/10.3389/fevo.2014.00088, and *Nature* (2015) dx.doi.org/10.1038/517414e

Black death on the prairie

The same bacterium that caused the Black Death is transforming the grassland ecosystems of North America. The plague bacterium was first introduced in North America c. 1900 and although it rarely infects people it has been a significant cause of death among black-tailed prairie dogs. The loss of prairie dogs will have implications for the entire ecosystem. Declining abundance of prairie dogs will result in declines in the abundance and diversity of native species, altering the food web and reducing the ecosystem's resilience against invasive plant species. As well as being an important

food source for predators, the prairie dogs regulate grass growth, and their burrows provide a habitat for other animals. Researchers are working to control the spread of the plague and reduce the number of fleas carrying the bacterium.

Source: *Conservation Biology* (2015) [dx.doi.org/10.1111/cobi.12498](https://doi.org/10.1111/cobi.12498), and *New Scientist* (2015) www.newscientist.com/article/mg22630162.800-plague-hits-prairie-dogs-and-changes-us-ecosystems.html#VTEsgFiWZhE

Wolves on the wane in 57-year project

The longest-running predator-prey study may be nearing its end, as it is running out of predators. Only three wolves remain on Michigan's Isle Royale, where researchers have studied the population dynamics of moose and wolves for 57 years. The wolf population has suffered the effects of inbreeding, including skeletal abnormalities such as malformed spinal columns, and high death rates. The last influx of DNA into the population was in 1997, when a lone male arrived on the 544 km² island in Lake Superior via a temporary ice bridge. As the wolves have declined, the moose population has grown by c. 22% annually and is estimated to be c. 1,250. The researchers say it is probably too late for genetic rescue of the wolves, and there is disagreement over whether the U.S. National Park Service should have intervened or whether nature should be left to take its course.

Source: *Nature* (2015) [dx.doi.org/10.1038/nature.2015.17263](https://doi.org/10.1038/nature.2015.17263)

Breeding programme may save rare voles

It was announced in April that preparations were underway to release the first captive-bred Amargosa voles into the wild in desert marshes in California. This threatened subspecies of the widely distributed California vole has been driven to the brink of extinction by habitat loss and climate change, and it is estimated that only a few hundred individuals remain in the marshes of the Mohave Desert. The captive-breeding programme was initiated in July 2014, in a collaborative effort between state and federal wildlife authorities and the University of California, Berkeley. The captive population has grown from 20 to 90 individuals since then, and the first release will involve c. 24 individuals, which will be released near Tecopa and tracked for up to 1 year post-release using radio transmitters.

Source: *Nature* (2015) [dx.doi.org/10.1038/520268a](https://doi.org/10.1038/520268a)

Mexico's president vows to protect the vaquita

The vaquita, the smallest and most threatened cetacean species, is found only in the Sea of Cortez, Mexico, and it is estimated there may be as few as 100 individuals remaining. In April, Mexican president Enrique Peña Nieto launched a USD 37 million initiative to save the Critically Endangered porpoise, providing the navy with new boats to enforce a 2-year ban on gill-net fishing across the vaquita's habitat, and improve monitoring of illegal fishing for the totoaba to supply the Chinese market, which poses a serious threat to the vaquita. Light aircraft and drones will also be employed in the bid to save the species, and fishers will be compensated for income lost as a result of the gill-net ban. Conservationists have welcomed the government's plan but warned that strong measures will need to be taken to tackle the illegal trade in totoaba bladders.

Source: *Nature* (2015) [dx.doi.org/doi:10.1038/520412a](https://doi.org/10.1038/520412a), and *The New York Times* (2015) www.nytimes.com/2015/04/17/world/americas/mexicos-president-rolls-out-plan-to-save-endangered-porpoise.html?_r=0

Rare sighting of elusive waterbird

A rare sighting of the Critically Endangered Zapata rail, one of the most threatened species of waterfowl, has been reported by an ornithological search team supported by BirdLife's Preventing Extinctions Programme. The brief encounter took place during a survey of Zapata Swamp, an Important Bird and Biodiversity Area covering 530,695 ha in south-west Cuba, and is the first documented sighting of the species in more than 4 decades. Little is known about the bird's behaviour and breeding ecology, with only one nest ever having been reported for the species, and it was unknown whether viable populations of the elusive bird remained. Now that the species has been rediscovered, a management plan will be developed to assess its current population size, distribution and status, and conservation efforts will focus on the wetland where it was discovered, finally exposed after the survey team cut thin strips in the saw-grass.

Source: *BirdLife International* (2015) www.birdlife.org/americas/news/rare-glimpse-elusive-rail

SOUTH AMERICA

CENTRAL AMERICA AND CARIBBEAN

Full protection reinstated for the Bay of Panama

Following a hard-fought campaign by NGOs and community and business groups the government of Panama has reversed an earlier decision to withdraw protected status from the Bay of Panama Important Bird and Biodiversity area. On 2 February, World Wetlands Day, President Juan Carlos Varela signed a legislative bill to reinstate full protection for the Bay of Panama, which is a site of international importance for migratory birds, as it is one of five key stopover and wintering areas for migratory shorebirds in the Americas. The Bay's extensive mangroves provide vital ecosystem services, including protection from floods and potential impacts of climate change, supporting fisheries, and filtering pollutants from the water. The government's withdrawal of protected status from the Bay in 2012, along with the decision to relax regulations on mangrove cutting, was in response to economic pressure for urban and tourism development.

Source: *BirdLife International* (2015) www.birdlife.org/americas/news/bay-panama-saved-destruction

Amazon: 1% of tree species store 50% of region's carbon...

A study using a data set of 530 forest plots has estimated that c. 1% of all the tree species in Amazonia account for half of the carbon locked in this rainforest. Of an estimated 16,000 tree species, 182 dominate the carbon storage process. This finding is significant because Amazonia is important for the global carbon cycle, covering an estimated 5.3 million km² and holding 17% of the global terrestrial vegetation carbon stock. Although those species that contribute most to biomass and productivity are often abundant, species maximum size is also influential. Large tree species store and grow more biomass, making them dominant features in the carbon cycle. The researchers cautioned that it is nevertheless important to maintain a biodiverse forest with a wide range of life histories and strategies that will be able to deal differently with any changes in environmental conditions.

Source: *Nature Communications* (2015) [dx.doi.org/10.1038/ncomms7857](https://doi.org/10.1038/ncomms7857), and *BBC News* (2015) www.bbc.co.uk/news/science-environment-32497537

...and the Amazon's dust dependency

Using data collected by the NASA CALIPSO satellite during 2007–2013 researchers have

estimated for the first time how much dust reaches the Amazon rainforest from the Sahara, and recognized the dependency of the Amazon on this dust. Approximately 90% of the Amazon's soils are low in phosphorous, and the phosphorous content is further sapped by hydrological loss, including surface run-off. However, this depletion is counterbalanced by the huge plumes of dust blown across the Atlantic Ocean from the Sahara. Research suggests that the dust brings 22,000 t of phosphorous to the Amazon each year, which almost equals the amount lost through river systems, although the amount of dust can vary significantly from year to year. The ancient Bodélé Depression in Chad has been identified as one of the most important sources of this replenishing dust. It is not yet known how much dust is needed to maintain the productivity of the Amazon.

Source: *Geophysical Research Letters* (2015) [dx.doi.org/10.1002/2015GL063040](https://doi.org/10.1002/2015GL063040), and *Mongabay.com* (2015) news.mongabay.com/2015/0302-hance-sahara-amazon.html

From the Andes to the Atlantic, the world's largest protected area?

At the UN climate talks in Paris later this year Colombian President Juan Manuel Santos is to unveil plans for a protected environmental corridor. The proposed Triple A corridor would cover an area from the Andes to the Amazon and the Atlantic, including multiple ecosystems, jurisdictions and indigenous communities. Almost two thirds of the 135 million ha protected area would lie in Brazil, with approximately one third in Colombia and less than 5% in Venezuela, although Venezuela and Brazil have yet to agree to the proposal. The idea came from the founding director of the NGO Gaia Amazonas, recognizing the importance of connecting isolated protected areas to improve their conservation potential, as a continuous tract of land would yield greater benefits for conservation. However, defining a common standard of safeguards that is appropriate for all of the diverse ecosystems and communities involved will be a considerable challenge.

Source: *Mongabay.com* (2015) news.mongabay.com/2015/0303-gfrn-gaworecki-colombia-proposes-corridor.html

New titi monkey discovered in Brazil

Following a number of information-gathering expeditions a team of scientists supported by the Conservation Leadership Programme have formally described a new species of titi monkey in the Brazilian Amazon. Named *Callicebus miltoni* in honour of the Brazilian primatologist Milton

Thiago de Mello, the monkey has distinctive ochre sideburns, a bright orange tail, and a pale grey stripe on the forehead, and lives in small groups in lowland rainforest south of the Amazon River. Groups comprise a mated pair and their offspring, and they use warning calls to defend their territory, being particularly vocal early in the morning and during the rainy season. The species' range is restricted to a small area because it is unable to swim or traverse mountainous terrain, and only c. 25% of this area is protected. Threats include human activities, deforestation and forest fires, as well as planned development in the Amazon, including road and dam-building.

Source: *Papéis Avulsos de Zoologia (São Paulo)* (2014) www.scielo.br/scielo.php?pid=S0031-10492014003200001&script=sci_arttext, and *BirdLife International* (2015) www.birdlife.org/americas/news/new-monkey-species-discovered-amazon-rainforest-1

Kung fu spider

Brazil's recluse spider *Loxosceles gaucho* faces a tough challenge in bringing down one of its prey species, the armoured harvestman. The harvestman's hard exoskeleton serves as a suit of armour, protecting the spider against predators and making it difficult for other spiders to pin down because their fangs slide over the surface. Laboratory observations of the recluse spider's modus operandi when hunting harvestmen have revealed that it relies on a judo-like move as well as wit and speed to overcome its prey. It uses its legs to feel around the body of the harvestman and identify any weak areas in the armour and then uses a martial arts move to pin the victim's back to the ground before delivering a series of venomous bites to those areas that are unprotected.

Source: *Animal Behaviour* (2015) [dx.doi.org/10.1016/j.anbehav.2014.12.025](https://doi.org/10.1016/j.anbehav.2014.12.025), and *New Scientist* (2015) www.newscientist.com/article/dn26873-zoologist-judo-spider-finds-armoured-foes-achilles-heel.html#.VRgJyFwZxB

First reserve for Critically Endangered Araripe manakin

Found only in north-east Brazil, the Critically Endangered Araripe manakin was discovered in 1996. The bird is now a national symbol of conservation, and the first species in Brazil to receive a National Conservation Action Plan. Conservation groups have now acquired c. 56 ha of land to establish the first-ever reserve for the species. Threats to the population of c. 800 individuals are extensive, as urbanization and

deforestation increase the risk of landslides along the slopes of the Araripe plateau. The region comprising the bird's habitat lost c. 50,000 hectares of tree cover during 2001–2012 and many vital water sources have been exploited for recreational purposes. During the past decade conservation NGOs have attempted reforestation of selected areas and carried out comprehensive mapping of the species' remaining habitat. This information was vital in facilitating the procurement of land for the new reserve by the Brazilian NGO Aquasis and the American Bird Conservancy.

Source: *Mongabay.com* (2015) news.mongabay.com/2015/0210-gfrn-panela-araripe-manakin-gets-first-reserve.html

Desperate bid to save Darwin's mangrove finch

There are only 80 mangrove finches surviving in the wild, in 32 ha of isolated mangrove forest on Isabela Island in the Galapagos Islands. Mangrove finches are one of the 15 species known collectively as Charles Darwin's finches. The species has experienced a significant decline in population, primarily attributable to the parasitic fly *Philornis downsi*. The fly lays its eggs in the finch's nest, and its larvae suck the blood of fledgling finches, causing death (see *Oryx*, 2010, 44, 588–594). In a 2014 trial, scientists removed 21 eggs from the finches' nests and raised 15 fledglings, which they released into the wild at 3 months old; the 20 breeding pairs managed to raise only six fledglings in the wild. This year the team returned to the island and collected 30 eggs. This unusual method marks a desperate attempt to save one of the species that informed Darwin's theory of natural selection.

Source: *The Independent* (2015) www.independent.co.uk/news/science/scientists-raid-mangrove-finch-nests-as-they-battle-to-save-birds-discovered-by-charles-darwin-from-extinction-10125363.html

Three new species of 'dwarf dragons' discovered

Scientists have discovered three new species of wood lizards in Ecuador and Peru. Resembling miniature dragons, wood lizards are among the largest and most colourful lizards found in the forests of South America. These latest discoveries bring the number of known species of the lizards to 15, and there may be many more yet to be discovered. The three new species are the Alto Tambo wood lizard *Enyalioides alto-tambo*, the rough-scaled wood lizard *Enyalioides anisolepis* and the Rothschild's wood lizard *Enyalioides sophiarothschildae*. The first specimen of the 13-cm, green and

black *E. altotambo* was collected in the village of Alto Tambo, in northern Ecuador, in 2005. However, it was another 5 years before it could be confirmed a new species because political unrest made it unsafe for scientists to conduct fieldwork in the region.

Source: ZooKeys (2015) [dx.doi.org/10.3897/zookeys.494.8903](https://doi.org/10.3897/zookeys.494.8903), and *National Geographic* (2015) news.nationalgeographic.com/2015/04/150406-new-species-animals-dragons-science-lizards-world/

PACIFIC

Pitcairn Islands marine reserve gets the go-ahead

The British government has announced that it will establish a marine protected area in the Pacific waters around the Pitcairn Islands. If the plan is successful this will be the world's largest continuous marine reserve, covering 834,000 km². Surveys in the area have recorded more than 80 species of fishes, coral and algae, and it is expected that commercial fishing will be banned in the protected area. The announcement has been welcomed by conservation NGOs and celebrities who had campaigned for the creation of the reserve. The 106 signatories to the Great British Oceans Campaign included The Zoological Society of London, The Royal Society for the Protection of Birds, Greenpeace UK, the National Geographic Society and the Marine Conservation Society. In a caveat to the government's announcement the reserve will be dependent on a number of outcomes, including reaching agreement with NGOs and port authorities on monitoring and enforcement issues.

Source: *The Guardian* (2015) www.theguardian.com/environment/2015/mar/18/pitcairn-islands-marine-reserve-budget-2015, and IUCN (2015) www.iucn.org/news_homepage/?18938/Mountingpressureformarineprotection

AUSTRALIA/ANTARCTICA/NEW ZEALAND

Australia supports lion conservation by banning hunting trophies...

Australia's environment minister has signed an order to prevent the import and export of hunting trophies made from the body parts of lions. Effective immediately, the ban was introduced to help combat organized hunting of African lions, whose numbers have decreased by almost 50% in the past 25 years. In three years Australian hunters imported the bodies or parts of 91

lions. Such trophies are often the result of so-called canned hunting, where captive-bred lions are held within enclosures to be hunted by tourists, who pay thousands of dollars to shoot the lions with guns or crossbows. The practice, which mostly occurs in South Africa, has been condemned by the International Fund for Animal Welfare, which has welcomed the ban in Australia and hopes to see similar measures introduced in New Zealand, Europe and the USA.

Source: *The Guardian* (2015) www.theguardian.com/environment/2015/mar/13/australia-bans-hunting-trophies-from-lions-entering-or-leaving-the-country

...and announces a plan to save the Great Barrier Reef

Australia's Great Barrier Reef has lost c. 50% of its coral during the last 30 years and is at risk of having its UNESCO heritage status recategorized as 'in danger'. To increase protection of the reef, which is threatened by climate change, pollution from agricultural pesticides and fertilizer, and dumping of dredging waste, the Australian government has announced its 2050 Long-Term Sustainability Plan for the Great Barrier Reef. An initial investment of GBP 52 million will be targeted at reducing run-off of chemical pollutants into the marine environment, which according to Queensland's environment minister is the most significant medium-term threat, and the government expects to spend more than GBP 1 billion in the first decade of the plan. The dumping of spoil waste from dredging remains a controversial issue; it will be banned in the Great Barrier Reef Marine Park but not the World Heritage Site, which has a different boundary.

Source: *The Independent* (2015) www.independent.co.uk/news/world/australasia/great-barrier-reef-australian-pm-tony-abbott-makes-saving-the-world-heritage-site-his-top-priority-10125221.html

Rare frog saved from the brink of extinction...

The Critically Endangered Southern Corroboree frog is found only in Kosciuszko National Park, Australia, and may be the world's rarest frog. A survey in January found only four individuals, two male and two female. A primary threat to the population is the chytrid fungus, which causes the skin disease chytridiomycosis and is responsible for global declines in frog numbers. Despite this threat to individuals in the wild, the

number of Southern Corroboree frogs in captivity has been increasing. Following a collaborative conservation effort involving academics, zoos and government authorities, 2015 saw the first reintroduction of adult Southern Corroboree frogs to their native habitat. Eighty healthy individuals were released into an enclosed, fungus-free area of the Park, with the hope that future offspring will develop better resistance to the fungus and be reintroduced more widely. If successful, this approach could be adapted worldwide to combat the fatal fungus.

Source: *The Guardian* (2015) www.theguardian.com/australia-news/2015/mar/09/back-from-the-brink-of-extinction-hunting-for-the-worlds-rarest-frog

...but Australia has worst rate of mammal extinctions

The conservation organization Bush Heritage Australia has launched a 10-year plan to rescue dozens of native species from the brink of extinction. Australia has lost 29 mammal species during the past 2 centuries and one in five of its remaining mammals are at risk of extinction. The crisis is also affecting non-mammal species, including birds, reptiles, plants, fish and amphibians. Invasive species are one of the primary causes of decline, as well as habitat loss, hunting and changes in fire regimes. Under the new initiative, 50 scientists from 15 universities will collaborate to find solutions to the problem, working in the Bush Heritage conservation reserves, which span 3.5 million ha. Their research will focus on six broad areas: invasive species, fire ecology, landscape connectivity, habitat restoration, habitat refuges and management of threatened species. It is hoped to establish 120 conservation programmes by 2025, and to apply the research findings more widely.

Source: *The Guardian* (2015) www.theguardian.com/environment/2015/apr/08/decade-long-plan-to-halt-native-animal-extinctions-to-be-led-by-conservationists?utm_medium=twitter&utm_source=dlvr.it

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