Briefly

INTERNATIONAL

Ebola exemplifies links between human, animal and environmental health

In a statement to the 12th Conference of the Parties to the Convention on Biological Diversity, IUCN's Wildlife Health Specialist Group highlighted the connections between biodiversity loss and human health in the context of the devastating outbreak of the Ebola virus in West Africa. Ebola is a threat to both human health and biodiversity and, although the initial cause of the recent outbreak is unclear, it may be linked to significant landscape change in the affected areas in recent years. In addition to its fundamental effects on ecosystem functioning, land-use change also threatens food security and deprives communities of access to traditional medicines. The Wildlife Health Specialist Group is working with the organization EcoHealth Alliance to examine the links between the health of humans, wildlife and the environment.
Source: IUCN (2014) www.iucn.org/news_homepage/?18439/Ebola-outbreak-highlights-critical-links-between-biodiversity-loss-and-human-health-says-IUCNs-Wildlife-Health-Specialist-Group

Wild relatives of food crops threatened

The most complete database (at www.cwrdiversity.org/checklist) of the wild relatives of common food crops has been released, and the compilers have highlighted hotspots where many types of the wild relatives are concentrated. The wild species may contain useful traits such as drought tolerance or resilience to pests and diseases. The inventory lists 173 crops and their 1,667 priority wild relatives, along with their traits and locations. The researchers have found that 12% of the crop wild relatives are threatened by extinction and all have probably suffered a loss of genetic diversity as a result of urbanization, climate change and conflict. Half of the priority species in temperate regions are located in the Fertile Crescent, in the Near East, where ongoing conflict makes access to crop wild relatives difficult. Together with the Food and Agriculture Organization of the UN, researchers are working on strategies to protect the hotspots.
Source: BBC News (2014) www.bbc.co.uk/news/science-environment-29086719

Global map of world's forests circa 1990

Researchers have created a global map of the world's forests in the year 1990, facilitating accurate comparisons between past and current deforestation rates. The research is based on 30-m resolution NASA satellite data. The data are consistent with recently developed maps for 2000 and 2005 forest cover, allowing researchers to measure change in forest cover during the 1990s. The researchers are now working on maps that will depict forest cover in 1975 and 2010. The study confirms that deforestation was particularly high in boreal regions and the tropics in the 1990s.
Source: Remote Sensing of Environment (2014) dx.doi.org/10.1016/j.rse.2014.08.017, and *Mongabay.com* (2014) news.mongabay.com/2014/1014-global-forest-map-1990.html

Wildlife depressed by anti-depressants

The use of pharmaceutical drugs is increasing rapidly and consequently so is the environmental contamination caused by these drugs, which are flushed into the environment in human and animal sewage. The extent of the damage is not yet known, as relatively few studies have been carried out, but a number of significant effects have been identified. Synthetic hormones used in birth-control pills have been found to feminize male fish; India's vulture population has been decimated by the anti-inflammatory drug diclofenac administered to cattle, on whose carcasses they feed; inter-sex frogs have been found in contaminated ponds; and a recent study has attributed reduced feeding in starlings to the presence of the antidepressant fluoxetine in the environment. It has been reported that 75% of fish and amphibians have been lost from freshwater habitats, where drug residues are most commonly found.
Source: The Guardian (2014) www.theguardian.com/environment/2014/oct/13/drugs-flushed-into-the-environment-could-be-cause-of-wildlife-decline

Slow progress towards Aichi Biodiversity Targets

A mid-term analysis to assess progress towards achieving the Aichi Biodiversity Targets has concluded that most of the targets will not be met by 2020 at the current rate of progress. The assessment was based on a broad range of biodiversity data and human indicators such as pressure on fisheries, efforts to manage invasive species, and financial investment. The 20 targets were agreed by 193 nations in 2010 but, despite international commitment to preserve ecosystems and biodiversity, pressure on natural resources continues to increase, with large-scale loss of habitat. More investment is needed to halt biodiversity declines. However, with renewed commitment and investment there is still time to meet the targets and substantial progress has been made in some areas, with expansion of marine and terrestrial protected areas, more widespread implementation of certification schemes for forests and fisheries, and increasing public awareness of the threats to biodiversity.
Source: Science (2014) dx.doi.org/10.1126/science.1257484, and *BirdLife News* (2014) www.birdlife.org/worldwide/news/more-investment-needed-reach-international-biodiversity-targets-2020

Living Planet Report 2014

The WWF Living Planet Report 2014, released in September, uses the Living Planet Index to measure the state of biodiversity based on population trends of over 10,000 populations of more than 3,000 vertebrate species. The Report shows that the global loss of species is worse than previously thought, with a 52% decline in populations of mammals, birds, reptiles, amphibians and fish between 1970 and 2010. Previously, the Living Planet Index was calculated using the average decline in all of the species populations monitored, but a new weighted methodology was used in this Report to provide a more accurate calculation of the collective status of populations in all species and regions.
Source: Living Planet Index (2014) www.livingplanetindex.org/home/index, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29418983

Plants absorb more CO_2

According to new research into how CO_2 spreads inside leaves, global climate models have underestimated the amount of CO_2 absorbed by plants. During 1901–2010 they took in 16% more of the gas than previously thought. This explains why models have consistently overestimated the increase of carbon in the atmosphere. This effect may require a recalibration of climate models but doesn't change the need for long-term

emissions cuts to limit the impact of carbon dioxide.
Source: Proceedings of the National Academy of Sciences of the USA (2014) dx.doi.org/10.1073/pnas.1418075111, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29601644

Revision of saki monkeys identifies five new species

A new revision of the genus *Pithecia* describes five new saki monkeys, with a total of 16 species for the group. Work was conducted in 36 museums in 28 cities in 17 countries in North America, South America, Europe and Japan, resulting in the examination of 876 specimens, 690 skulls, and hundreds of photographs of captive and wild sakis. To understand the differences between the species, a 'saki code' was cracked, revealing information previously unknown for the genus, including: (1) females have sexual swelling and a slightly distended clitoris, (2) juvenile and subadult males have transitional pelage coloration that mimics females, and (3) based on skull morphology, it appears sakis live longer and have a larger window of reproduction than previously expected.
Source: Neotropical Primates, 21, 1–168 (http://www.primate-sg.org/storage/pdf/NP_special_issue_lores_part1_1-82.pdf).

Murder comes naturally to chimpanzees

Recent research has shown that murder comes naturally to chimpanzees *Pan troglodytes*. Other than humans, chimpanzees are the only primates known to gang up lethally on their conspecifics, and it has previously been suggested that human activity, including destroying habitats and providing food, increased aggression. The research showed, however, that this lethal aggression is better explained by adaptive strategies than by human impacts, with murder rates in chimpanzee communities reflecting the number of males and the overall population density.
Source: Nature (2014) 513, 414–417 (dx.doi.org/10.1038/nature13727), and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29237276

Demand for agricultural products drives loss of tropical forests

A new report shows that consumer demand in Europe and the USA for beef, leather and timber is driving losses of tropical forest, and that the majority of illegal deforestation for commercial agriculture takes place in Brazil and Indonesia (although it is spreading rapidly in Asia and Africa). The study estimates that during 2000–2012, 49% of tropical deforestation was a result of illegal conversion for commercial agriculture. The report values this trade in commodities, including timber, leather, beef, soya and palm oil, at USD 61 billion per year, and calls for laws requiring that companies show due diligence with respect to the import of these commodities. Illegal deforestation is spreading to new countries in Latin America, Africa and Asia. In Papua New Guinea millions of hectares of forest have been licensed for deforestation but an inquiry found that 90% of these licences were issued by corrupt or fraudulent means.
Source: Forest Trends (2014) www.forest-trends.org/illegal-deforestation.php, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29144568

Ban on shark trade comes into force

Regulation of trade in five species of sharks, and manta rays, has now come into effect. The regulation was agreed last year at a meeting of CITES in Thailand. The shark species have been under severe pressure for their fins, for culinary purposes, and the manta rays for their gills, for use in Chinese medicine. The oceanic whitetip, porbeagle, three varieties of hammerhead, and manta rays are now on CITES Appendix II. Trade in these sharks and rays across 180 countries will not be allowed unless they have been authorized by the designated national authorities. Several countries have entered reservations to the CITES regulations on some of these species. Under the regulations, however, they are only allowed to trade with other countries that have also registered a reservation.
Source: BBC News (2014) www.bbc.co.uk/news/science-environment-29175592

EUROPE

European Network against Environmental Crimes

BirdLife's partner organizations in Spain and the UK have launched a project to tackle environmental crime by improving the implementation of European environmental laws and addressing inconsistencies in the application of the law by EU Member States. Environmental crimes are defined as illegal activities that cause significant harm or risk to the environment or human health, including pollution of air, water and soil, as well as activities that are detrimental to species and biodiversity conservation. The new European Network against Environmental Crimes aims to strengthen the application of the *EU Directive on the Protection of the Environment* through criminal law by facilitating knowledge exchange among relevant parties, including lawyers and conservationists, identifying loopholes in the application of national and international laws, and organizing workshops on various topics, including illegal hunting, environmental education and habitat destruction.
Source: BirdLife News (2014) www.birdlife.org/europe-and-central-asia/news/

EU takes action to combat illegal fishing

Since 2010 the EU has imposed sanctions against countries that do not comply with international standards to tackle illegal fishing. The EU is the world's largest importer of fish and maintains a list of nations that are banned from selling fish to its 28 Member States. Belize was removed from the list after it reformed its vessel inspection practices, as were Fuji, Panama, Togo and Vanuatu upon implementation of measures against illegal fishing. However, a ban on imports from Sri Lanka has been proposed and will take effect from mid January unless the EU's concerns are addressed in the meantime. Sri Lanka does not have appropriate legislation in place to safeguard its fisheries but it is required to comply with international maritime law. It will need to put in place an effective monitoring system for fishing vessels and a sanction scheme for fishing fleets operating on the high seas.
Source: Scientific American (2014) www.scientificamerican.com/article/eu-to-ban-fish-from-sri-lanka/

Young citizen scientists reveal urban bee 'surprise'

More bumblebees visit a patch of lavender in a city centre than a patch in the country, according to results from a citizen science project. Circa 30,000 schoolchildren from 400 schools across the UK made the counts as part of the Big Bumblebee Discovery. Rather than generally higher bee numbers in cities, the results probably reflect a higher concentration of urban bees on more limited flowers. Groups of schoolchildren watched for bumblebees visiting lavender for intervals of at least 5 minutes. Some 27,000 individual bees were sighted. Overall, there was a tendency to spot more bees on patches of lavender in dense urban environments compared to suburban and rural areas. There also tended to be more sightings in places were lavender was planted alongside other flowers. English lavender attracted twice as many bees as French lavender, which may reflect the

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difficulty bees have accessing nectar in more ornate flowers.
Source: BBC News (2014) www.bbc.co.uk/news/science-environment-29122851

Footprints lead the way in hedgehog monitoring

Researchers in the UK have tested the use of footprint tunnels for large-scale monitoring of hedgehogs. Tunnels baited with tinned meat were set up so that hedgehogs had to walk over ink pads to reach the food, in the process leaving their paw prints on paper. Tunnels were positioned at 111 urban and rural sites. Hedgehog presence was confirmed at only 39% of locations. Populations were not widely distributed across the countryside, as was previously believed. The results of the study also indicated that hedgehog presence is more likely in areas where there are no badgers, although it is not yet known why. Footprint tunnels are now being used in the first national hedgehog survey, which is underway in England and Wales and will continue until September 2015. It is hoped the survey will yield valuable information about the decline of hedgehogs and inform appropriate conservation measures.
Source: Mammal Review (2014) dx.doi.org/10.1111/mam.12026, and *BBC News* (2014) www.bbc.co.uk/nature/29208304

Managing moorlands for shooting is destroying peat

The results of a 5-year study have shown that heather burning on UK moorland, practised mainly to support red grouse *Lagopus lagopus* populations for hunting, has significant negative impacts on the hydrology, chemistry and physical properties of peat, and on river water chemistry and ecology. Drying of the peat as a result of burning causes significant losses of carbon from the soil, which is of concern as peatlands are the largest natural store of carbon in the UK.
Source: University of Leeds (2014) www.wateratleeds.org/ember/, and www.leeds.ac.uk/news/article/3597/grouse_moor_burning_causes_widespread_environmental_changes

Alien invader poses ecological and economic threat. . .

The invasive quagga mussel, which was discovered for the first time in the UK during routine water quality testing in the Wraysbury River in south-east England, is one of a group of freshwater species that have been spreading westward towards England from the Ponto–Caspian region of south-east Europe. The quagga mussel could have a devastating impact on native freshwater species, both through predation and by filtering out blue-green algae and thus increasing plant growth. The mussel could also have serious economic implications by blocking pipelines in irrigation systems and water and power plants. The discovery of the quagga highlights the need for tightened biosecurity measures, as further invasions from the Ponto–Caspian region are likely.
Source: The Guardian (2014) www.theguardian.com/environment/2014/oct/13/alien-quagga-mussel-may-already-have-been-joined-by-other-invasive-species

. . .and UK waters face invasion meltdown

Species from Turkey and Ukraine are poised to invade Britain's waterways. Besides the recently discovered quagga mussel, at least 10 other species are established in the Netherlands and there is a risk of them invading the UK. The research looked at 23 invasive species that originate from the waters of the Black, Azov and Caspian seas and that have spread across Europe as a result of canal construction. At least 14 of the species are now well established in the Rhine estuary and in Dutch ports, and some have recently crossed the Channel and established themselves in the UK. The invading species travel in ballast water from ships and in ornamental plants. The threat from the invaders is not just to native species. The invasions also have a significant economic impact, costing the UK economy more than GBP 1.8 billion every year.
Source: Journal of Applied Ecology (2014) dx.doi.org/10.1111/1365-2664.12348, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29570347

Decline in migratory birds

Long-term population declines have been recorded in almost half of the 29 species of migratory birds that breed in the UK in spring and spend the winter in Africa. The species that are particularly badly affected include the nightingale, cuckoo, whinchat and spotted flycatcher. The birds are suffering because of habitat loss as a result of agricultural and urban development and the growing population of deer, which browse on woodland. Many birds fall victim to hunting as they migrate across the Mediterranean, with turtle doves being particularly vulnerable. It is estimated that 2–4 million turtle doves are killed annually in southern Europe, and the species has declined by 95% in the past 4 decades. Environmental change in Africa is also having an impact on bird populations, with wetlands being drained and dammed, and large-scale forest clearing for fuel and agriculture.
Source: The Guardian (2014) www.theguardian.com/environment/2014/oct/16/britains-migrating-birds-are-declining-in-number

Garlic therapy for trees

An experimental study is pioneering the use of an injected garlic solution to fight disease in trees in the UK. Garlic is known for its powerful antibacterial and antifungal properties, which are particularly associated with the active compound allicin. The treatment has had a 95% success rate among 350 trees around the UK and is being tested for its efficacy against a number of diseases, including bleeding canker in horse chestnut, acute oak decline and ash die-back. However, there are concerns about such interventions. The Woodland Trust favours an approach that builds resilience in native woodlands by growing trees from seed so that they are fully traceable and disease-free.
Source: BBC News (2014) www.bbc.co.uk/news/science-environment-29522647

Hope for Ireland's threatened birds

Under Ireland's new Rural Development Programme, farmers will be offered financial incentives to manage their land in an environmentally sensitive manner to conserve threatened farmland bird species, including the corncrake, hen harrier, grey partridge, curlew, lapwing and redshank. Of all of Ireland's birds, farmland birds have experienced some of the most significant population declines and range contractions, and the causes of decline include habitat loss, degradation and loss of hedgerows, and changes in agricultural practices in recent decades, including increased use of pesticides and fertilizers and increased mechanization. The new programme offers an opportunity to restore bird populations on farmland while also delivering wider benefits for native wildlife and biodiversity.
Source: BirdWatch Ireland (2014) www.birdwatchireland.ie/News/NewRDPofferslifelineforfarmlandbirds/tabid/1404/Default.aspx

Power companies secure overhead cables to protect birds

The Bulgarian Society for the Protection of Birds has been engaging with power companies to insulate dangerous overhead power cables that are a threat to migratory

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birds such as white storks, which stopover in Bulgaria to feed and rest en route to Africa. The birds perch in treetops, on buildings and on electricity poles, and many are electrocuted. Other birds at risk include raptors and the threatened imperial eagle and Egyptian vulture. Over 1,000 power lines have been insulated by the companies EVN Bulgaria and ENERGO-PRO, and it is expected that thousands of birds will be saved by this ongoing collaboration.
Source: BirdLife News (2014) www.birdlife.org/europe-and-central-asia/news/bspb-cooperates-power-companies-secure-bird-killing-power-lines

New deadly virus found in amphibians

A range of new viruses is attacking species of frogs, toads and newts in Spain. The first indication of the problem was the death of amphibians in the Picos de Europa National Park in 2005. Since then, all common amphibian species in the Park have experienced disease and mortality, and three species have experienced population collapses: the common midwife toad, the common toad and the alpine newt. The viruses can be transmitted between different species and there are indications that it can also spread to reptiles. Since their discovery in Spain the viruses have also been emerging elsewhere, including China, France and the Netherlands. With 41% of amphibian species already threatened with extinction, the viruses could have a devastating impact on populations worldwide.
Source: Current Biology (2014) dx.doi.org/10.1016/j.cub.2014.09.028, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29649273

SUB-SAHARAN AFRICA

Local engagement to save the Cape Verde shearwater

The Cape Verde shearwater is threatened by overharvesting of chicks for food. The bird has long been a component of traditional Cape Verdean cooking, and thousands are killed each year. Individuals take 6–7 years to reach sexual maturity and therefore it is essential to protect the chicks to allow the species to persist. A national NGO in Cape Verde is working with local communities, including fishermen and hunters, to raise awareness of the threats facing the Cape Verde shearwater and to monitor and protect the species, and a Species Action Plan is being prepared.
Source: BirdLife News (2014) www.birdlife.org/africa/news/biosfera-i-and-conservation-near-threatened-cape-verde-shearwater

Liberia signs deal to halt deforestation

Liberia is to become the first African nation to halt deforestation in return for development aid. Norway will pay the country USD 150 million to stop deforestation by 2020. Liberia holds a significant part of West Africa's remaining rainforest and is a biodiversity hotspot. Since the civil war ended in 2003 illegal logging has become rife, and in 2012 the President was criticized when she handed out licences to log primary rainforest. Many of the permits were cancelled but it has been suggested that the current outbreak of Ebola is connected with deforestation, bringing people into contact with reservoirs of the virus. Norway will help Liberia build the capacity to monitor and police the forests and Liberia will refrain from issuing new logging concessions until existing ones have been reviewed. The country has also agreed to place 30% or more of its forest estate under protected area status by 2020.
Source: BBC News (2014) www.bbc.co.uk/news/science-environment-29321143

Good news for Cross River gorillas

The government of Cameroon has officially designated the Tofala Hill Wildlife Sanctuary a protected area, as part of a plan of action to protect the Critically Endangered Cross River gorilla. This is the third reserve to be created for the gorillas since 2006, when a group of experts developed a conservation action plan for the subspecies. The Cross River gorilla is Africa's most threatened great ape and was feared to have been driven to extinction during the conflict in Nigeria in the 1960s. Small populations were rediscovered in the 1980s but their numbers remain low and they are restricted to small patches of habitat in remote mountain areas, where hunting pressure is low. In setting up the Tofala Hill Wildlife Sanctuary the needs of local communities were considered, to help them establish sustainable livelihoods in harmony with the gorillas.
Source: Fauna & Flora International (2014) www.fauna-flora.org/news/cross-river-gorillas-benefit-new-protected-area-cameroon/

The thorny issue of plant survival

The presence of carnivores helps plants without thorny defences thrive, a study of life on the Kenyan savannah has revealed. By combining global positioning system telemetry of an abundant antelope (impala) and its main predators (leopards and wild dogs) with field experiments, the research showed that herbivores' risk-avoidance behaviour and plants' anti-herbivore defences interact to determine tree distributions on the savannah. Well-defended thorny acacia were abundant in low-risk areas where impala aggregated but rare in high-risk areas that impala avoided, whereas poorly defended acacia were more abundant in high- than in low-risk areas. The results suggest that plants can persist in landscapes characterized by intense herbivory either by defending themselves or by thriving in risky areas where carnivores hunt. As carnivores are experiencing declines, with the majority now occupying less than half of their historical range, this contraction could have a wide-reaching and long-lasting impact on ecosystems.
Source: Science (2014) 346(6207), 346–349 (dx.doi.org/10.1126/science.1252753), and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29617533

Abalone poaching linked to drug gangs

Extensive poaching of perlemoen abalone has been linked to growing drug addiction in coastal communities in South Africa, according to a report produced by TRAFFIC and funded by USAID. Illegal trade in this sea snail, from Africa to Asia, is controlled by crime syndicates. Divers harvesting the abalone are paid in drugs instead of cash, fuelling social problems in impoverished communities. South African abalone is considered a delicacy in East Asia, where it is expensive, and most of it ends up in Hong Kong. Although annual quotas have been set for harvesting of the snails, these have been exceeded by more than ten times in the past decade. The species is particularly vulnerable to overexploitation because it inhabits shallow water, is slow moving and slow growing and is late to reproduce. The TRAFFIC report will provide a basis for future interventions to address the poaching crisis and improve enforcement.
Source: TRAFFIC (2014) www.traffic.org/home/2014/10/8/organized-crime-drugs-and-poverty-are-behind-south-africas-a.html

World's rarest duck threatened by habitat loss

The last known population of the Critically Endangered Madagascar pochard is confined to a single wetland, where most chicks die of starvation at 2–3 weeks old. Researchers found that, although the wetland is intact and undisturbed, the waters are too deep and the chicks are unable to

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feed on the lake bottom. It is estimated that only 25 individuals now remain in the wild because the species' habitat has been destroyed by activities such as deforestation, farming and fishing. Nonetheless, hope remains that the species could recover, with the reintroduction of captive-bred ducks to a new wetland home. A suitable lake has been identified, and conservationists are working with local people on a project to restore the lake on which their livelihoods depend, and to reintroduce the pochard.
Source: BBC News (2014) www.bbc.co.uk/news/28897118

Marine management is undergoing a sea change

Traditional fisheries in developing countries are a vital source of livelihood and provide food security for millions of people. In response to declining fish stocks there has been a proliferation of grass-roots conservation projects in the Indian Ocean, with 3.6% of the continental shelf now covered by locally managed marine areas. This model of community management of marine resources is proving successful in Madagascar, where 34 locally managed marine areas have been established in the past 7 years. Meanwhile in Kenya, Mozambique and Tanzania, coral reefs, mangroves, lagoons and beaches are being protected using a community-based approach that is proving to be resilient and cost-effective. To address the challenges associated with issues of compliance and an underdeveloped legal framework, practitioners are establishing networks across the region, to facilitate knowledge sharing and best practice.
Source: The Guardian (2014) www.theguardian.com/global-development-professionals-network/2014/oct/15/plenty-more-fish-in-the-sea-preserving-stocks-in-madagascar

SOUTH AND SOUTH-EAST ASIA

First ever photo-documentation of ratel from Karnataka

A recent camera-trap study has documented the ratel or honey badger *Mellivora capensis* for the first time in Cauvery Wildlife Sanctuary in Karnataka state, southern India, extending its previous known range from Nagarjuna Sagar–Srisailum Tiger Reserve, Andhra Pradesh. A study to estimate leopard densities employed camera traps for 3,652 trap-days. A total of 41 records of the ratel were obtained from four of the five wildlife administrative ranges in the protected area. The relatively frequent camera-trapping records suggest that the ratel may not be uncommon locally. All photographs of ratel were captured in the night, indicating the nocturnal nature of the species in the region. Ratels were detected in all forest types in the study area (scrub, dry deciduous and riverine), perhaps suggesting they are not habitat specialists locally.
Source: Small Carnivore Conservation (2014) 50, 42–44 (www.smallcarnivoreconservation.org/home/wp-content/uploads/2014/08/Gubbi-et-al_SCC50-lr.pdf)

Identifying a high-priority landscape for conservation of the dhole

Recent research by the Wildlife Conservation Society, India Program, has identified the Western Ghats, a biodiversity hotspot in India, as a potentially important conservation landscape for the Endangered Asiatic wild dog or dhole *Cuon alpinus*. Historically treated as vermin, the dhole is yet to attract the conservation attention it requires. The only social canid in the region, the study shows that the species is now restricted to areas of low human disturbance and high prey density. There are at least four geographically separated protected forests in the 33,000 km² conservation landscape that can support stable and viable populations of the species. The research also highlighted a large area of overlap between dholes and domestic dogs, emphasizing that communicable disease is a potential threat to the species in addition to the primary conservation concern of maintaining prey populations.
Source: PLoS ONE (2014) 9(6), e98803 (dx.doi.org/10.1371/journal.pone.0098803)

Community-managed forests do not play a substitutive role for elephant conservation

A recent study led by scientists at the University of Florida and the Wildlife Conservation Society, India Program, assessed the conservation role of community-managed forests as being subsidiary to protected forests. Taking the example of the Asian elephant, the research found that although elephants occasionally used private lands, high-intensity use was restricted to protected forests devoid of human presence. The researchers conceptualized two roles for such lands: (1) substitutive, where such lands offer similar conservation utility as protected areas, and (2) subsidiary, such that the conservation utility of community- or privately-managed lands falls short of protected forests. A number of conservation programmes include lands under diverse management regimes; this study provides a framework by which to evaluate the role of these different lands and highlights the importance of such an evaluation for effective long-term conservation.
Source: Biological Conservation (2014) dx.doi.org/10.1016/j.biocon.2014.06.013

Earless monitor lizard becomes latest victim of illicit trade

An investigative report by TRAFFIC warns that an unusual and little-known monitor lizard from Borneo is emerging as the latest victim of the global illicit wildlife trade. Until recently there had been few reports of instances of private ownership of the earless monitor lizard *Lanthanotus borneensis*. However, an emergence in the trade of this small, orange-brown lizard has been reported over the past 2 years and the report reveals international trade in the species has largely been carried out online from 2013 onwards. The earless monitor lizard is legally protected in its native range countries of Brunei Darussalam, Indonesia and Malaysia but growing international interest and online trade across Europe by unscrupulous collectors has raised concerns for the species. Currently, this is the only species of monitor lizard not protected from overexploitation under CITES.
Source: TRAFFIC (2014) www.traffic.org/home/2014/9/8/international-smuggling-threatens-borneos-remarkable-earless.html

Impact of violent conflict on wildlife in Manas National Park

Researchers have investigated the status of wildlife populations in Manas National Park in north-east India following 15 years of armed conflict in the region. Although many biodiversity hotspots occur in areas of political instability, which can have a detrimental effect on wildlife and the natural environment when resources are diverted away from conservation activities, the effects of conflict on biodiversity are not well understood and are difficult to assess. In Manas it was found that, overall, the conflict has had a negative effect on wildlife populations. Although most species have survived, the rhinoceros has been extirpated. Ongoing restoration efforts and management interventions in the park appear to be successful in contributing to the recovery of depleted populations, and the abundance of ungulates is sufficient to support more tigers than are currently present.
Source: Tropical Conservation Science (2014) 7(3), 475–487 (http://tropicalconservationscience.mongabay.com/content/v7/TCS-2014-Vol7(3)_475-487_Goswami.pdf)

Temperate bat discovered in tropical ecosystem

The Indian subspecies of the eastern barbastelle bat has been discovered in the Western Ghats in India. This is the first time the bat has been found in a tropical ecosystem, having previously been reported from temperate forest in the foothills of the Himalayas in India and Pakistan. The species is threatened by war and deforestation across much of its range, and this latest discovery may offer a new conservation opportunity. During the same study a team of scientists from the UK and India assembled a call library of 15 bat species in the Western Ghats, which it hopes will aid further research into bats, which have not yet been studied extensively in the region. The Western Ghats is a UNESCO World Heritage site and a biodiversity hotspot, with over 139 mammal species, almost 50 of which are bats.
Source: Acta Chiropterologica (2014) dx.doi.org/10.3161/150811014X683408, and *Mongabay.com* (2014) news.mongabay.com/2014/1015-dulaney-bats-western-ghats.html

Demand for rhinoceros horn drops in Vietnam

A poll has indicated that demand for rhino horn in Vietnam has decreased by more than 33% in the past year, following a year-long public awareness campaign to deter people from buying and using rhino horn. Vietnam is a major market for the trade in rhino horn, and 38% of Vietnamese still believe it has medicinal value in treating diseases such as cancer and rheumatism. The information campaign focused on dispelling this myth, targeting businesses, schools, universities and women's groups and posting advertisements on buses and billboards. Demand for rhino horn remains high in China and South-east Asia and is driving an explosion of rhino poaching in Africa. In 2013 1,400 rhinos were poached illegally in South Africa alone, and more than 800 were killed in 2014.
Source: The Guardian (2014) www.theguardian.com/environment/2014/oct/16/rhino-horn-demand-in-vietnam-drops-by-more-than-33-in-one-year

Pig-nosed turtles threatened by over-harvesting

A recent study of pig-nosed turtles in Papua has revealed that the species is continuing to decline, with an increase in illegal harvesting for food, traditional medicine and the pet trade. At a conservative estimate, 1.5–2 million eggs are collected from riverbanks each year, and this number is rising as international demand for the turtles increases. Whereas local people previously harvested the turtles as a source of subsistence food, they are now doing so to sell them to traders. The species is categorized as Vulnerable on the IUCN Red List and listed in Appendix II of CITES, which restricts international trade in wild-caught individuals. There is a need for strict enforcement in Papua and at international ports on trade routes, as well as for awareness-raising programmes in harvesting communities, and efforts to address the socio-economic issues that drive the illegal trade.
Source: TRAFFIC (2014) www.traffic.org/home/2014/10/4/intensive-collection-threatens-peculiar-pig-nosed-turtle-in.html

Bid to cut deforestation by 80% in Central Kalimantan...

The provincial government of Central Kalimantan is to introduce an online monitoring system for oil palm plantations, which will enable it to identify areas of deforestation and land-cover change and degraded areas that can be allocated for future plantations. The province has committed to reduce deforestation by 80% by 2020. As part of its roadmap to low-deforestation development and sustainable palm-oil production, Central Kalimantan also aims to use sustainable approaches to increase the productivity of smallholders, to reduce their land requirements. However, considerable challenges will need to be overcome to meet these targets, as widespread destruction of peatlands and rainforest continues across the province, and many plantations are operating illegally. The government of Central Kalimantan is working with Earth Innovation Institute to address these challenges.
Source: Mongabay.com (2014) news.mongabay.com/2014/1005-central-kalimantan-roadmap.html

...but palm-oil companies continue to evade the law...

According to the Oil Palm Farmers' Union, palm-oil companies are evading responsibility for illegal activity by hiring local communities to clear protected forest areas for oil-palm cultivation, offering them attractive prices for mature fruits. There is also evidence that local communities in North Sumatra have converted a significant proportion of their croplands for oil-palm production, which could lead to food security issues. Indigenous people found to be illegally occupying forest land could face prison, whereas the companies paying them can distance themselves from the process. Therefore, there is a need for a more considered approach to law enforcement, and to create incentives for local communities to protect land of high conservation value.
Source: Mongabay.com (2014) news.mongabay.com/2014/1004-lbell-small-palm-oil.html

...and are failing to comply with fire prevention standards

An audit of 17 concessions for oil palm and logging in Indonesia's Riau Province has revealed that none of the companies meet fire prevention and control standards. The audit was conducted by a joint task force of national and international agencies and was carried out in response to the high number of fire hotspots consistently recorded in the province, which have been blamed for unhealthy levels of air pollution in neighbouring Singapore. Government agencies from six districts were also audited and only one was found to be fully compliant. These agencies are responsible for monitoring concessions but the auditors found that enforcement of peatland protection laws and other regulations was poor, and for some companies there was no evidence that any monitoring had taken place. The head of one of the agencies involved in carrying out the audit is calling for the permits of companies responsible for burning to be revoked.
Source: Mongabay.com (2014) news.mongabay.com/2014/1014-lbell-riau-audit.html

Debt-for-nature swap to protect Sumatran wildlife

The U.S. and Indonesian governments have signed agreements to reduce Indonesia's debt payments to the USA in return for an investment by Indonesia, co-funded by Conservation International, in the conservation of critical ecosystems and threatened species in Sumatra. The Sumatran rainforests are home to some of the world's most threatened wildlife, including the Sumatran rhinoceros, Sumatran tiger, and orang-utan. They also provide vital ecosystem services, including the supply of freshwater for irrigation and consumption, climate regulation, and mitigation of flooding and other natural disasters. The Government of Indonesia will pay almost USD 12.7 million into a trust fund over a 7-year period, and the trust will issue grants for conservation projects.
Source: Conservation International (2014) www.conservation.org/NewsRoom/press-releases/Pages/Deal-with-U.S.-Enables-Indonesian-Government-to-Swap-Debts-to-Protect-Sumatran-Rhinos-Tigers-and-Orangutans-.aspx

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Cleaning up the coal sector in Indonesia

Indonesia produced 421 million tons of coal in 2013, more than 80% of which was exported to other Asian countries, including China, India and Japan, to fuel their growing economies. The coal industry is a major source of revenue for the Indonesian government but it is also the cause of many environmental and social problems, including deforestation, greenhouse gas emissions, water pollution, health problems, and conflict with local and indigenous communities. Many of the problems arise from the multitude of small, poorly regulated mining operations, and the corruption-prone decentralized permitting system, whereby district heads can issue mining permits. Although the environmental regulations governing mining practices are stringent they are poorly enforced. In a bid to clean up the mining sector the Anti-Corruption Commission has been tasked with reviewing mining permits. Over 300 permits have already been suspended and only companies with clean permits are authorized to export coal.
Source: Mongabay.com (2014) news.mongabay.com/2014/1016-gfrn-fogarty-indonesia-coal-1.html

EAST ASIA

Chinese sturgeon on the brink...

Researchers from the Chinese Academy of Fishery Sciences have reported a drastic decline in the Chinese sturgeon, with only an estimated 100 fish remaining in the Yangtze River. For the first time in the 32 years since monitoring began, no wild sturgeon reproduced naturally in the river in 2013, and no young sturgeon were recorded swimming down the Yangtze towards the sea. Without reproduction in the wild the species is at risk of extinction unless appropriate conservation measures are taken. Many dams have been constructed along the Yangtze in recent decades to help meet the country's demand for electricity, and these have been blamed for environmental degradation. Pollution levels in the Yangtze are also rising. The Baiji dolphin went extinct in 2006 and a second native species, the finless porpoise, is threatened by overexploitation, illegal fishing practices, and pollution.
Source: BBC News (2014) www.bbc.co.uk/news/world-asia-china-29201926

...and wild pandas may suffer as a result of forest tenure reform

The Chinese government has passed legislation to reform the system of collective forest tenure, allowing up to 1.8 million km² of collectively owned land to be sold and used for activities such as commercial logging, tourism, collection of non-timber forest products by external commercial enterprises, and industrial development. This legislation could have a detrimental impact on China's wild pandas, which could lose up to 15% of their forest habitat. Alternatively, communities could sell certain development rights to public or private agencies for conservation purposes under eco-compensation schemes. It is estimated that c. USD 5,000 million in eco-compensation could restore sufficient habitat to increase the giant panda population by 40%.
Source: Conservation Letters (2014) dx.doi.org/10.1111/conl.12143, and *New Scientist* (2014) www.newscientist.com/article/dn26350-wild-panda-land-threatened-by-chinas-forest-reforms.html#.VDoF6iFwZhF

Hermaphrodite snail named after marriage equality

A new species of hermaphrodite land snail found in Taiwan has been named in support of marriage equality. The species name, *Aegista diversifamilia*, refers to a diversity of family types and represents the diversity of sex orientation in the animal kingdom. The snail is widespread throughout eastern Taiwan, but was previously mistaken for a closely related species. Pulmonate land snails are hermaphroditic (i.e. they have both male and female reproductive organs in a single individual).
Source: ZooKeys (2014) 445, 31–55 (dx.doi.org/10.3897/zookeys.445.7778), and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29599785

NORTH AMERICA

Man-made structures create productive marine habitats

A submarine study of oil rigs off the coast of California has revealed that fish were 27 times more productive under oil rigs than on reefs in the same region. The rigs were also compared with other highly productive natural marine habitats and were found to host c. 10 times more fish. The oil platforms provide a complex habitat that spans the entire water column from the seabed to the surface, supporting a diverse community of invertebrates that, along with plankton, form the base of the food web that supports an abundance of fish. The findings could inform decisions on the fate of decommissioned structures, and further research could identify particular structural features that are beneficial to marine animals and could be incorporated into other offshore structures such as those used to generate renewable energy.
Source: Proceedings of the National Academy of Sciences of the United States of America (2014) dx.doi.org/10.1073/pnas.1411477111, and *New Scientist* (2014) www.newscientist.com/article/dn26375-fish-love-skyscraperstyle-living-under-oil-platforms.html#.VD-UiyFwZhE

North American birds threatened by climate change

A study by the National Audubon Society has revealed that almost 50% of bird species in the USA and Canada are threatened by climate change, with potentially numerous extinctions, based on current climate forecasts. In all, 314 species have been identified as threatened, and 126 of these are predicted to lose 50–100% of their current ranges by 2050, with no possibility of colonizing new areas. Among the species at risk are many iconic species, including the national bird of the USA, the bald eagle, as well as state birds: the Baltimore oriole (Maryland), brown pelican (Louisiana), California gull (Utah), hermit thrush (Vermont), wood thrush (Washington, D.C.), ruffed grouse (Pennsylvania), purple finch (New Hampshire) and mountain bluebird (Idaho and Nevada). The study also identified some areas that will remain relatively stable and are therefore candidates for targeted conservation measures and protection.
Source: BirdLife News (2014) www.birdlife.org/americas/news/climate-change-threatens-314-north-american-bird-species

U.S. military prepares for the impacts of climate change

The U.S. Department of Defense has published a climate change adaptation roadmap outlining the military's strategy for dealing with the threats posed by global climate change, including political instability, armed conflict resulting from disputes over diminishing natural resources, extreme weather events, natural disasters and rising sea level. More than 7,000 U.S. military installations have already been assessed for their vulnerability and some have already begun mitigation measures against rising sea level. The roadmap also acknowledges that the army may increasingly have a role to play in assisting and supporting civil authorities in the event of natural disasters.
Source: New Scientist (2014) www.newscientist.com/article/dn26379-pentagon-warns-the-us-military-of-climate-change.html#.VD-ZcSFwZhF

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Walrus haul-out linked with warming Arctic...

An aerial survey by the U.S. National Oceanic and Atmospheric Administration recorded an estimated 35,000 walruses hauled up on a single beach in north-west Alaska. This is the largest congregation on record and illustrates a relatively recent trend in unnatural behaviour that scientists are attributing to Arctic warming. The first large-scale haul-out was recorded in 2007. The walrus is one of a number of species dependent on Arctic sea ice for survival, using the ice to rest, breed and give birth, and as a base from which to hunt for food. As sea ice continues to decline, with an almost ice-free summer predicted as early as 2016, these species are altering their behaviour in response to their changing environment. Walruses and polar bears are forced to travel further to find food, and their future remains uncertain as they strive to adapt.
Source: Mongabay.com (2014) news.mongabay.com/2014/1001-morgan-walrus-throng.html

...and plant growth intensifies Arctic warming

Vegetation cover at high latitudes is enhanced by elevated levels of carbon dioxide in the atmosphere, and this in turn could accelerate Arctic warming by reducing the surface albedo. Areas with a surface cover of grasses and shrubs do not reflect as much sunlight as barren surfaces, leading to increased surface warming. Vegetation–climate model simulations have been used to investigate the effects of a two-fold increase in carbon dioxide concentrations on Arctic temperatures, and have shown that the heat generated by increased vegetation growth in summer causes ocean warming and melting of sea ice in the Arctic in winter and spring. More heat is then released from the exposed ocean, which further boosts plant growth the following season, in a positive feedback loop.
Source: Environmental Research Letters (2014) dx.doi.org/10.1088/1748-9326/9/9/094007, and *Nature* (2014) www.nature.com/nature/journal/v514/n7521/full/514143c.html

California blue whales back to near historical numbers...

Researchers believe that, following protection and monitoring, California blue whales have now rebounded from the historical effects of whaling, with an estimated 2,200 on the eastern side of the Pacific Ocean. Individuals of this population are often seen feeding close to the coast of the state but are found from the Gulf of Alaska south to Costa Rica. Now at 97% of their past numbers, it appears that population growth has slowed down as the whales have reached carrying capacity. Concerns remain, however, about their vulnerability to being struck by ships. Most strikes happen off the coast of California, where merchant shipping is now being paid to slow down to avoid strikes. Not all blue whale populations have rebounded, however, and in Antarctica they remain at c. 1% of their historical numbers.
Source: Marine Mammal Science (2014) dx.doi.org/10.1111/mms.12157, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-29069515

...but urgent action needed to save the vaquita

A small porpoise endemic to the northern part of the Gulf of California in Mexico faces extinction within the next few years unless gill-net fishing is halted in the Exclusion Zone proposed by the International Committee for the Recovery of the Vaquita. The Critically Endangered vaquita has declined from c. 600–800 individuals in the early 1990s to c. 100 individuals, and conservation measures have been insufficient to halt the decline. The main threat to the species is the illegal totoaba gill-net fishery, with vaquitas drowning as a result of entanglement in nets. The international trade in totoaba is lucrative, and the bladders are highly sought-after in China. The totoaba is listed in Appendix I of CITES, and IUCN is urging the responsible authorities, and particularly the U.S. and Chinese governments, to tighten enforcement and increase their efforts to prevent illegal trade in the species.
Source: IUCN (2014) www.iucn.org/news_homepage/?18337/IUCN-calls-for-immediate-action-to-prevent-the-Vaquitas-extinction

CENTRAL AMERICA AND CARIBBEAN

Local people may trump scientists at biodiversity surveys

Research has found that interviewing people in local communities who are familiar with the species of their region could be just as effective, and much cheaper, than biodiversity surveys by scientists. Miskito and Mayangna community members in the Bosawás Biosphere Reserve in Nicaragua took part in focus group discussions concerning the presence and abundance of plant, mammal and bird species. The main difference between focus group and field data was that the former focused on qualitative data whereas the scientists collected quantitative data, but there were no significant differences between the results of the community members and the scientists, and the focus group method was eight times cheaper. Local community members also surveyed transect routes laid out by scientists. Although results were similar, community members consistently counted higher numbers of animals than did the trained scientists.
Source: Conservation Letters (2014) 7, 380–389 (dx.doi.org/10.1111/conl.12100), and *Mongabay.com* (2014) http://news.mongabay.com/2014/0812-wilson-local-communities-biodiversity.html

Conservation group plans extensive wildlife corridor in Panama

The Azuero Earth Project, an international non-profit organization based in New York and Panama, is enlisting the cooperative efforts of hundreds of ranchers and researchers to replant a swath of tropical dry forest. The corridor would connect the dry tropical Achotines Forest on the Pacific coast to the cloud forest in the Cerro Hoya National Park in Panama. The trees along the 140-km corridor will create a continuous habitat for the Critically Endangered Azuero spider monkey and improve the soil for people who farm and ranch. In the area designated for the corridor, $<5\%$ of the original forest cover remains.
Source: Mongabay.com (2014) news.mongabay.com/2014/0516-devitt-panama-corridor.html

Mexico's scarlet macaw population up 34%

Although categorized as Least Concern on the IUCN Red List, the scarlet macaw has disappeared from almost all of its native range in Mexico. Habitat loss, hunting and illegal trade have resulted in the local and regional extinction of this macaw within its historical range. Between April 2013 and June 2014 there were six successful releases of a total of 92 macaws in the tropical rainforests of Palenque, Mexico, where this macaw has been extinct for more than 70 years. Survival to August was 92%. The reintroduction of the scarlet macaw will restore a seed- and fruit-eating avian species, with important consequences for ecosystem functions and processes.
Source: Tropical Conservation Science (2014) 7 (3), 342–364 (tropicalconservationscience.mongabay.com/content/v7/TCS-2014-Vol7(3)_342-364_AEstrada.pdf), and *Mongabay.com* (2014) http://news.mongabay.com/2014/0925-gfrn-morgan-macaw-mexico.html

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Tiny cloud forests have big biodiversity

Recent research in four of Mexico's remaining cloud forests has found that they contain a significant array of tree and bromeliad species even when the forests are relatively small in extent. The researchers established six survey plots in each of the four sites. They recorded 18 species of epiphytic bromeliads and 45 species of trees. The researchers speculate that forest fragmentation may have led to an increased amount of sunlight exposure in clearings and at the edges of the forests, allowing a greater number of pioneer species to grow.
Source: Tropical Conservation Science (2014) 7(2), 230–243 (http://tropicalconservationscience.mongabay.com/content/v7/TCS-2014-Vol7(2)_230-243-Toledo_et_al.pdf), and *Mongabay.com* (2014) news.mongabay.com/2014/0624-barrett-cloudforests-tcs.html

SOUTH AMERICA

Brazil builds giant observation tower in Amazonia

Construction has begun on a 325-m observation tower in the heart of the Amazon basin. Instruments on the Amazon Tall Tower Observatory will gather data on greenhouse gases, aerosol particles and the weather. Brazilian and German scientists will use the data to investigate sources of greenhouse gases and climate change. Because of the height of the tower it will be possible to investigate the alteration and movement of air masses through the forest over several hundred kilometres. The Amazon rainforest has a powerful influence on the intake and release of carbon into the atmosphere. The tower will be part of a network of existing smaller measuring towers in the region, and will complement a similar observatory built in 2006 in Central Siberia.
Source: BBC News (2014) www.bbc.co.uk/news/world-latin-america-29199728

Reprieve for Juruena National Park. . .for now

The planned construction of two dams in Brazil's fourth largest national park has been omitted from the government's 10-year plan for energy expansion. If constructed, the proposed São Simão and Salto Augusto dams would flood c. 40,000 ha in the Juruena National Park, and other parks and indigenous lands. The survival of 42 species, some of them endemic, would be threatened, as would the ecological function of the Juruena River. The Park, which was established in 2006, has a high diversity and productivity of freshwater species and is important for species of birds, mammals, reptiles, amphibians and plants. WWF launched a campaign to raise awareness of the social and environmental implications of the proposed dams, and about 25,000 people signed a petition opposing the development. The government cited delays in environmental licensing rather than consideration of the Park's rich biodiversity as the reason the dams were not included in the energy plan.
Source: WWF (2014) www.wwf.org.uk/news_feed.cfm?7339/Juruena-National-Park-Safe-for-now

Hunting of wild mammals persists in Brazil's protected areas. . .

Although hunting for subsistence was legalized in Brazil in 1998, the use of wild mammals in protected areas known as Conservation Units is prohibited. However, a study of two communities in the Chapado do Araripe Environmental Protection Area found that wild mammals were still used for food, medicine, and religious and superstitious practices. In interviews, a total of 32 mammal species were recorded, including 24 wild species, of which four are categorized as Vulnerable or Near Threatened on the IUCN Red List: Brazilian three-banded armadillo, oncilla, puma and jaguar. Lack of resources and lack of access to alternative sources of food and medicines were cited as reasons for the use of wild species. These findings indicate a need for current conservation strategies to be reconsidered, taking into account the social and cultural aspects of local communities, to avoid conflict between human needs and wildlife conservation.
Source: Mongabay.com (2014) http://news.mongabay.com/2014/1006-raza-mammals-brazil-tcs.html

. . .and illegal logging is rampant

Greenpeace activists have been undercover in Pará state in Brazil to attach global positioning system (GPS) devices secretly to trucks thought to be involved in illegal logging. The covert operation revealed that trucks were being driven into the heart of protected rainforest, from where logs were transported to sawmills in the port of Santarém, for export to Europe, the USA and Asia. The Amazon has suffered extensive deforestation over the past 3 decades, losing one fifth of its rainforest. Although the rate of deforestation decreased during the past decade, it rose by almost one third in 2013 and this has been blamed on weakening of legal protection. It is estimated that three quarters of the wood produced in Pará state is felled illegally, and that timber laundering is widespread. Existing monitoring and control systems are in need of modernization, and there are plans to introduce a tracking system using GPS chips.
Source: The Guardian (2014) www.theguardian.com/environment/2014/oct/15/activists-use-gps-to-track-illegal-loggers-in-brazils-amazon-rainforest

Climate change may reduce the effectiveness of protected areas

Broad-scale environmental change may lead to shifts in species' ranges in line with the changing distribution of suitable habitat, such that existing protected areas may become ineffective in ensuring species survival. A forecasting study of shifts and contractions in the ranges of most tiger moth species inhabiting Brazil's Atlantic Forest has indicated that by 2080 climatic changes in most of the current protected areas will have rendered them unsuitable for sustaining the current number of species, and up to 4.3% of tiger moth species may go extinct. Extinctions of this nature may result in cascades of extinctions and disrupt the ecological functioning of ecosystems. Some species of tiger moths are important plant pollinators, and further extinctions could occur as a result of a lack of synchronization between flowering and pollinating.
Source: PLoS ONE (2014) http://dx.doi.org/10.1371/journal.pone.0107792

Giant Amazon fish locally extinct as result of overfishing

The arapaima, a 3-m long fish that used to dominate the Amazon river, has been fished to extinction in a number of areas. Arapaima can weigh >180 kg and are among the largest freshwater fish. Their need to breathe air makes them easy to catch. They are highly prized because of their size, and are landed by fishermen using harpoons and gill-nets. The researchers interviewed 182 fishermen in 81 communities on the Amazonia floodplains, and counted the fish in 41 of the communities. The census revealed that arapaima populations were depleted in 57% of the survey area, locally extinct in 19%, overexploited in 17%, well-managed in 5% and unfished in just 2% of the communities. Only 27% of the communities studied have management rules for arapaima harvests but those that did have rules that were followed were found to have greater fish stocks.
Source: Aquatic Conservation: Marine and Freshwater Ecosystems (2014) dx.doi.org/10.1002/aqc.2491, and *BBC News* (2014) www.bbc.co.uk/nature/28705053

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Rainforest reserve expanded to protect Ecuador's unique biodiversity

The Río Canandé Reserve in the lowland rainforest of north-west Ecuador has been expanded by 500 ha with the purchase of six adjacent plots of intact forest. The Reserve falls within the Chocó Biogeographical Region, which is home to many threatened and endemic species, including the highest number of endemic bird species in the Americas. Ecuador's portion of the Chocó has experienced extensive deforestation for logging, agriculture and human settlement, and it is estimated that only 10% remains intact. The Río Canandé Reserve is an important area for birds, with more than 360 species, and it is also the only known location of the Mache glass frog, and one of only two known locations of the rare tree *Ecuadodendrum acosta-solisianum*. With the expansion of the Reserve, the habitat of the great green macaw will be protected and connectivity may be established with other protected areas.
Source: Mongabay.com (2014) news.mongabay.com/2014/1009-gfrn-morgan-choco-reserve.html

Giant otters show signs of recovery within protected area

The population of giant river otters has recovered to full capacity in most of its habitat in Manu National Park, Peru, having been almost extirpated by decades of hunting for the fur trade. The recovery of the freshwater predator, known as *lobo de río*, the river wolf, is attributed to a number of factors: the 1973 ban on commercial hunting of the species in Peru; the ban on international trade in the species, which was listed in CITES Appendix I in 1975; the establishment of large protected areas where remnant populations of otters existed; and zoning and management of areas of giant river otter habitat. Despite the positive indications for the species in Manu National Park, it is still significantly threatened by deforestation, overfishing, pollution and disease.
Source: PLoS ONE (2014) http://dx.doi.org/10.1371/journal.pone.0106202, and *Mongabay.com* (2014) http://news.mongabay.com/2014/1014-hance-giant-river-otters-manu.html

Argentinian fishing fleets endeavour to prevent seabird deaths

A major trawl fishery in Argentina is to trial the use of bird-scaring lines to prevent seabird mortality. The lines are deployed on either side of a fishing vessel to create a barrier that prevents birds coming in contact with trawl cables and becoming entangled and being dragged underwater, which is one of the major causes of decline in seabird populations. Albatrosses are one of the most threatened families of seabirds, and it is expected that thousands will be saved as a result of the decision in Argentina, which was taken as part of the National Plan of Action to reduce seabird bycatch by using mitigation measures in trawl fisheries.
Source: BirdLife News (2014) www.birdlife.org/americas/news/fishing-fleets-argentina-agree-use-devices-stop-albatross-deaths

PACIFIC

Network of marine protected areas expanded in the Pacific

U.S. President Barack Obama has signed a memorandum that will expand a marine reserve in the Pacific Ocean to cover approximately 1.2 million km², making it the largest network of marine protected areas worldwide. Commercial fishing, deep-sea mining and other methods of underwater resource extraction will be banned in the area, where the marine environment is still generally pristine. The Pacific Remote Islands Area comprises Howland, Baker and Jarvis Islands, Johnston, Wake and Palmyra Atolls, and Kingman Reef, scattered between Hawaii and American Samoa, and protection has been extended from 50 to 200 nautical miles from their shores. The protected areas are home to corals, sharks, seabirds and endemic vegetation.
Source: BBC News (2014) www.bbc.co.uk/news/world-us-canada-29373068

Juvenile corals and fish sniff out healthy habitat

Research in three marine protected areas in Fiji has revealed that juvenile corals and fish respond to chemical cues in the water that enable them to identify areas of healthy reef habitat and avoid degraded areas. The marine protected areas are adjacent to reefs depleted by intensive fishing, which have become dominated by seaweed. In laboratory tests, fish and corals were placed in a chamber that allowed them to access water either from the healthy reef or from the seaweed-clogged reef, and they consistently chose the former. Further tests revealed that the key scents the animals responded to were from certain seaweeds and healthy corals, and therefore simply prohibiting fishing may be insufficient to restore degraded reefs. Instead, active management to control seaweed may be needed to repopulate coral ecosystems.
Source: Science (2014) dx.doi.org/10.1126/science.1258556, and *BBC News* (2014) www.bbc.co.uk/news/science-environment-28880216

AUSTRALIA/ANTARCTICA/ NEW ZEALAND

Light pollution increases mortality in fledgling shearwaters

Light pollution is altering natural landscapes, and seabirds in particular are known to have a fatal attraction to artificial lights. Thousands of birds are affected annually by the phenomenon known as fallout, in which they are attracted to lights during their first flight from the nest to the ocean. In some cases, fledglings that reach the ocean are attracted back to land by lights on the coast, where they are at risk of collision with human infrastructure, or of becoming grounded and falling victim to predation or colliding with road traffic. The effect of light pollution on fledgling short-tailed shearwaters was investigated on Phillip Island, Australia, during a 15-year period, and it was found that mortality among affected fledglings was at least 39%. The researchers found that the problem could be mitigated by turning off lights during the fledging period and reducing the speed limit and displaying warning signals for traffic.
Source: PLoS ONE (2014) http://dx.doi.org/10.1371/journal.pone.0110114

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