Briefly

INTERNATIONAL

Untouched forests essential for conserving biodiversity

The results of a review of 138 existing studies, comparing wildlife in tropical forests that had been modified and those that had not, have shown there is no substitute for primary forests when it comes to maintaining tropical biodiversity. Researchers analysed the impact of disturbance and land conversion in tropical forests where changes ranged in severity from complete clearance for agriculture to plantation and agroforestry usage to selectively logged forests. Although mammals were found to do better under some kinds of forest modification, birds, insects and plants all undergo an unequivocal loss. The study is pertinent to current debates on how best to preserve biodiversity across the tropics in areas where the most rapid human development is taking place. The researchers believe it is crucial that funds, available through the UN's Reducing Emissions from Deforestation and Forest Degradation initiative, are prioritized for the preservation of primary forest.

Source: BBC News (2011), http://www.bbc.co.uk/news/science-environment-14912813, and *Nature* (2011), http://dx.doi.org/10.1038/nature10425

Conservationists broadly agree that the future looks bleak

A survey in which 583 conservation scientists were interviewed about a range of conservation issues has revealed a general consensus of views, including near unanimity (99.5%) that a serious loss of biological diversity is likely, very likely or virtually certain. The habitat considered most at risk by those interviewed was marine tropical coral, with 38.7% and 49.3% of respondents believing that a serious loss of biological diversity in marine tropical coral is very likely or virtually certain, respectively. Tropical moist and dry broadleaf forest and mangrove ecosystems were also considered to be at risk of serious levels of biodiversity loss. The most commonly identified priorities among interviewees were gaining an understanding of how people and nature interact under certain conditions, and the role of biological diversity in maintaining ecosystem function.

Source: Conservation Biology (2011), http://dx.doi.org/10.1111/j.1523-1739.2011.01772.x

Arctic sea ice sheds more light underwater

In the summer months Arctic sea ice, increasingly composed of first-year ice as opposed to multi-year ice, forms a mosaic of bare ice, meltwater and ice floes. Now research into the physical and optical properties of this mosaic in the Chukchi Sea in the summer of 2010 has revealed that the distribution of solar radiation is unexpectedly complicated in the water beneath these floes. Sunlight's transmission to the water below meltwater ponds is generally an order of magnitude greater than through bare ice, partly because the latter is thicker. In addition light was also found to travel further in areas with a mosaic of meltwater and ice, because the ice was responsible for scattering the light. This increase in light in the sea water of the Arctic may have significant effects on the biological productivity of these waters.

Source: Geological Research Letters (2011), http://dx.doi.org/10.1029/2011GL049421, and *Nature* (2011), 479(7372), 153

Fatal stress

Experiments in which dragonfly larvae were exposed to predators showed that the stress of exposure to predators was sufficient to increase the mortality rate of the larvae. In the first experiment, in which one group of larvae were exposed to a high density of predatory fish, and another to a high density of an invertebrate predator, survival was 2.5–4.3 times greater for the larvae that were not exposed to any predator. In a second experiment, 11% of dragonfly larvae exposed to predators died during metamorphosis, compared to just 2% in the predator-free treatment. The study's authors speculate that stress induced by the presence of predators may have rendered the larval dragonflies more susceptible to other mortality factors.

Source: Ecology (2011), http://dx.doi.org/10.1890/11-0455.1

Small ranges and a historically stable climate pose threat in face of future climate change

A comparison of the speed of climate change over the last 21,000 years in various parts of the world with patterns in the range sizes and numbers of species in those areas has shown that places that have undergone rapid changes in climate, such as Europe and north-eastern America, contain fewer endemic species. The results from this study provide evidence for a link between dispersal ability and extinction risk from climate change, as the relationship between climate-change velocity and endemism was weakest in birds and strongest in amphibians. This suggests that species in areas of the world where the climate has been relatively stable in recent geological time periods, such as the Andes, are at an increased risk of extinction in future climate fluctuations.

Source: Science (2011), http://dx.doi.org/10.1126/science.1210173, and *Nature* (2011), 478 (7368), 158–159

Washing machines latest culprit in marine pollution

Samples from sites on 18 shorelines located around the world have found pieces of microplastic (plastic particles < 1 mm) at each site, with a greater density of microplastic particles at densely populated sites. The proportions of polyester and acrylic fibres found in sediments from habitats that receive sewage-water discharge are similar to the proportions of these fibres used in clothing. Further experiments in which wastewater from domestic washing machines was sampled showed that a single article of clothing can produce over 1,900 fibres per wash, suggesting that many of the microplastic particles found in the marine environment may originate from this source. The effects of microplastics in the marine environment are not yet fully understood, but the ingestion of these particles by marine species may result in the transfer of pollutants within marine food webs.

Source: Environmental Science & Technology (2011), http://dx.doi.org/10.1021/es2018115

Genetics sheds light on spread of chytridiomycosis ...

A fungal infection that is responsible for amphibian declines worldwide, *Batrachochytrium dendrobatidis* (*Bd*), has been found to occur in three deeply diverged lineages. One of these lineages, the global panzootic lineage (*Bd*GPL), has spread to at least five continents during the 20th century, and is highly virulent. *Bd*GPL shows evidence of genetic recombination, suggesting that contact between previously genetically isolated populations of *Bd* enabled the development of this

of Central African Forests (COMIFAC) met in Cameroon to finalize the COMIFAC Regional Action Plan for Strengthening National Wildlife Law Implementation. The new Action Plan covers the period 2012–2017 and consists of four main components: cooperation and collaboration among relevant wildlife law enforcement and prosecution authorities; investigations at key border and transit points, domestic markets and transboundary areas; effective deterrents and prosecutions; and awareness of illegal wildlife trade issues. The Action Plan will form the basis of a wildlife enforcement network in Central Africa, similar to networks operational or in development in Central America, Europe, South and South-East Asia.
Source: TRAFFIC News (2011), http://www.traffic.org/home/2011/11/15/central-african-countries-agree-plan-to-strengthen-wildlife.html

Record number of rhinos killed in South Africa

The number of rhinoceroses killed in South Africa in the 10 months between January and November 2011 exceeds the entire number killed in 2010, itself a record year for rhino killing. Three hundred and forty one rhinos had been killed by the beginning of November 2011 according to statistics from South Africa National Parks. A CITES meeting held in 2010 concluded that demand for rhino horn in Vietnam, where it is believed to have medicinal properties, is largely to blame for the surge in poaching. This news comes at the same time as news of the extinction of the Javan rhino from Vietnam, with the last individual of this subspecies found with gunshot wounds and missing its horn.
Source: TRAFFIC News (2011), http://www.traffic.org/home/2011/11/3/rhino-horn-demand-leads-to-record-poaching.html

Gola Forest protected by Sierra Leone

The future of Sierra Leone's most important forest, Gola Forest, is now more secure as a result of the creation of Gola Rainforest National Park. The new National Park is 710 km^2 in size, and is a global biodiversity hotspot and home to the world's most important population of pygmy hippo as well as hundreds of other species. Furthermore, the protection of this forest will protect 13.6 million t of carbon, which provides hope for the future of the forest, particularly as Sierra Leone is investigating new mechanisms to attract long-term funding through the UN's Reducing Emissions from Deforestation and Forest Degradation in Developing Countries programme. It is hoped that the creation of the National Park will reduce the threats currently posed to the forest in the form of commercial logging and small-scale mining.
Source: RSPB Press Release (2011), http://www.rspb.org.uk/news/298937-sierra-leone-protects-gola-forest-for-the-world

Straw-coloured bats are a significant constituent of bushmeat in Ghana

A survey of bat hunters, vendors and consumers in Ghana has revealed that an estimated 128,000 straw-coloured bats are sold in the country each year. Unlike most bushmeat in Ghana, which is sold in specialized bushmeat markets and in restaurants, straw-coloured bats are generally sold in marketplaces, and many hunters also take bats for personal consumption. Straw-coloured bats are an easy target for hunters, as they gather in large roosts and their capture is not illegal in Ghana. Bat hunting is particularly prevalent during the dry season in Ghana, when agricultural produce is less abundant. The population of straw-coloured bats in Ghana is c. 2.5 million, but the authors estimate that a population of 10 million is needed to support current rates of hunting. Not only is the current offtake unsustainable but the consumption of straw-coloured bats is also potentially dangerous, as the species is the ideal host for a number of diseases.
Source: Biological Conservation (2011), http://dx.doi.org/10.1016/j.biocon.2011.09.003, and *Conservation Magazine* (2011), http://www.conservationmagazine.org/2011/11/the-new-bushmeat/

SOUTH AND SOUTH-EAST ASIA

Last Javan rhino confirmed extinct in Vietnam

Despite concerted efforts by conservationists the Critically Endangered Javan rhinoceros is now extinct in Vietnam, meaning that the *annamiticus* subspecies of the Javan rhino has become extinct. Of three original subspecies, only one, the *sondaicus* subspecies, now survives, and is restricted to a small population on Java, Indonesia. The extinction of the subspecies from Vietnam was confirmed by surveys carried out in Cat Tien National Park. Dung collected between 2003 and 2006 indicated the presence of at least two individual rhinos but subsequent surveys between October 2009 and February 2010 only found dung from one individual. Genetic analysis confirmed that these dung samples came from a rhino that was found dead at the end of April 2010. This rhinoceros appeared to have been the victim of poachers, as it had been shot in the leg, and its horn had been removed.
*Source: WWF report—Extinction of the Javan Rhinoceros (*Rhinoceros sondaicus*) from Vietnam* (2011), http://wwf.panda.org/wwf_news/?202074/Inadequate-protection-causes-Javan-rhino-extinction-in-Vietnam

High numbers of orang-utans killed in Kalimantan

Interviews with 6,983 people living in 687 villages in the range of the Critically Endangered orang-utan in Kalimantan, Indonesia, have revealed that an estimated 750–1,800 orang-utans were killed in the year leading up to April 2008. Within the lifetime of the survey respondents an estimated 1,970–3,100 orang-utans were killed per year. Reasons for killing orang-utans included for food (54% of respondents), self-defence (14%) and protecting crops (10%). Although only a small number of incidences of human–orang-utan conflict were mentioned, the data suggest that loss of orang-utan habitat can result in orang-utans entering villagers' gardens and raiding crops, which can result in orang-utans being killed. The results of this study are perturbing for orang-utan conservation. The number of orang-utans being killed is higher than previously thought, and appears to exceed the maximum sustainable off-take rates for the population.
Source: PLoS One (2011), http://dx.doi.org/10.1371/journal.pone.0027491

Malaysia seizes tusks

Malaysia has been criticized in recent months for its apparently lax approach to ivory smuggling, which has led it to becoming a transshipment point for ivory smuggled from Kenya and Tanzania. Now it appears that the authorities in the country are taking action; between July and September 2011 > 1,500 tusks were confiscated in three seizures. All three were made at ports in Malaysia, with the most recent consisting of 695 tusks in two containers labeled 'recycled craft plastic' and weighing nearly 2,000 kg. This confiscated shipment originated in Tanzania and was en route to China. Conservationists have urged continued vigilance, as the crackdown on ivory smuggling into Malaysia's ports may cause the smugglers to turn to other entry points for their illegal trade.
Source: TRAFFIC News (2011), http://www.traffic.org/home/2011/9/5/large-ivory-seizure-in-malaysia-the-third-in-past-three-mont.html