# Briefly

## INTERNATIONAL

### Competition and dispersal: important considerations for understanding climate change impacts

A multi-species model, developed to investigate how competition and interspecific differences in dispersal affect community responses to climate change, has revealed that more species may become extinct through climate change than current forecasts suggest. The model, which incorporated a 20 °C temperature gradient, examined the effects of a 4 °C rise in temperature over 100 years on 40 species. The results of the model reveal that differences in dispersal and intraspecific competition could have a significant effect on extinction risk and community richness, with variation in dispersal resulting in dramatic biodiversity losses. In cases with high interspecific dispersal variance, for example, the most effective dispersers kept pace with climate change, outcompeting slower dispersers, and thus leading to the extinction of the latter. The study's authors urge the inclusion of species' dispersal differences and interactions into future models of climate change effects.

*Source: Proceedings of the Royal Society, B* (2012), http://dx.doi.org/10.1098/rspb.2011.2367

### Illegal bushmeat could pose viral threat to humans

Findings of a recent pilot study have shown wildlife products, illegally imported into the USA, could pose a threat to public health. Screening of samples collected at several international airports revealed the presence of potentially harmful pathogens in confiscated bushmeat. The meat was identified as originating from non-human primates such as baboons and chimpanzees but also rodents. Furthermore, the research team identified threatened species among the samples, including Guinea baboon and sooty mangabey. Subsequent pathogen screening of the samples identified retroviruses (simian foamy virus) and/or herpesviruses (cytomegalovirus and lymphocryptovirus). The handling and consumption of infected meats is considered a significant route of transmission for viruses and the results of this study suggest better surveillance measures are needed to ensure the illegal trade in bushmeat does not result in the emergence of new disease outbreaks in humans.

*Source: BBC News* (2011), http://www.bbc.co.uk/news/science-environment-16514637, and *PLoS One* (2011), http://dx.doi.org/10.1371/journal.pone.0029505

### Remarkable wheatear migration recorded

With the aid of light-level geolocators researchers have ascertained the migratory routes of the northern wheatear, an insectivorous bird weighing c. 25 g. Northern wheatears have one of the largest ranges of any songbird, breeding in areas from the eastern Canadian Arctic, through Greenland, Eurasia and into Alaska. Researchers have now discovered that birds from these New World regions overwinter in northern sub-Saharan Africa, with individuals from Alaska making a migratory journey of c. 14,500 km each way to their east African overwintering areas, taking in Asia en route. Eastern Canadian Arctic birds cross a large expanse of the North Atlantic as they travel to their overwintering sites in western Africa. This is the first migratory songbird identified as being capable of linking Old World African ecosystems with Arctic regions of the New World.

*Source: Biology Letters* (2012), http://dx.doi.org/10.1098/rsbl.2011.1223, and *New Scientist* (2012), 213(2852), 5

### Wetland restoration effectiveness questioned

A study that examined the biological structure and biogeochemical functioning of 621 restored or created wetlands relative to 556 reference wetlands has found that even 100 years after restoration wetlands failed to recover to original levels of wetland ecosystem functions. Biological structure of restored wetlands (which included variables such as abundance and density of vertebrates and macroinvertebrates, and plant cover) recovered to an average of only 77% compared to reference wetlands, while biogeochemical functioning (such as carbon and nitrogen storage and cycling) recovered to an average of 74%. The degree of recovery depended on the type and location of the wetlands being restored, with wetlands > 100 ha in size and wetlands restored in temperate and tropical climates recovering more quickly than smaller wetlands and wetlands restored in cold climates. It also appears that riverine and tidal wetlands recovered more rapidly than depressional wetlands.

*Source: PLoS Biology* (2012), http://dx.doi.org/10.1371/journal.pbio.1001247

### Jury's out on jellies

Events in 2010 appear to have borne out warnings that changes in the marine environment may result in swarms of jellyfish: power plants in Israel, Scotland and Japan were forced to close amid fears that jellyfish swarms would block pipes, and the work of fishing crews in Japan was hampered by groups of Nomura's jellyfish, which can weigh up to 200 kg each. Although a link between increased jellyfish numbers and ocean degradation is plausible, researchers are urging caution. Jellyfish are difficult organisms to study, which, combined with their complex life cycles, means there are few data on jellyfish population numbers. This lack of data prompted the creation of the Jellyfish Database Initiative (JEDI) in 2010, which aims to compile jellyfish records. Analysis of the JEDI database commenced in February 2012 but the researchers suspect that many more jellyfish monitoring programmes will need to be in place before a global picture emerges.

*Source: Nature* (2012), 482(7383), 20–21

### Widespread consumption of cetaceans revealed

An examination of c. 900 sources of information about marine mammal consumption by humans has revealed that these species are widely consumed. The research found that people in at least 114 countries have consumed one or more of at least 87 marine mammal species since 1990. In at least 54 countries the consumption of marine mammals provides some economic benefits to people, and in many areas it is seen as a significant component of food security. In some parts of the world the capture and consumption of cetaceans is decreasing, but in others socio-economic conditions and new technologies are leading to increases in the capture of marine mammals. Of particular concern is the increased capture of small cetaceans in conjunction with fishing since 1970, which the authors attribute to declines in captures of species lower down the food-chain.

*Source: Biological Conservation* (2011), http://dx.doi.org/10.1016/j.biocon.2011.07.034

### Some turtle hatchlings avoid the crowd

Experiments simulating the Earth's magnetic field have shown how finely tuned the navigational abilities of turtle hatchlings are and also how turtles may cope with changes in the magnetic field. Loggerhead hatchlings were exposed to a magnetic field that simulated locations off the Portuguese coast, an area in the path of the North Atlantic Subtropical Gyre. Near the artificial north coast turtles swam south, in keeping with the Gyre, but exposure to artificial south coast locations saw the turtles leave the path of the Gyre and move south-west. The researchers expect this is so that, in the wild, the hatchlings avoid the dangerous, predator-filled waters around northern Africa. Throughout the experiments, however, some hatchlings consistently swam in directions that would, under current magnetic cues, cause them to swap the safety of the Gyre for more dangerous waters but which, in the case of an altered magnetic field, could see them orientate themselves into the safety of the Gyre.
*Source: New Scientist* (2012), 213(2846), 10

### New partnership for oceans

A coalition led by the World Bank has set targets to improve the state of the world's oceans and to raise USD 1.5 billion to support these ambitions. The Global Partnership for Oceans, which is supported by a variety of developed and developing countries, as well as NGOs, science bodies, private investors and industry groups, aims to promote a more coordinated approach to ocean conservation, science and business. Specific targets for the Partnership include rebuilding at least half of the fish stocks currently categorized as depleted, and developing aquaculture sustainably in the hope that, in time, two thirds of the world's fish can be provided through this method. An increase in the number of marine protected areas to cover 5% of the ocean area is also among the aims of the coalition.
*Source: Nature Newsblog* (2012), http://blogs.nature.com/news/2012/02/global-partnership-aims-to-save-the-oceans.html#wpn-more-15607

### When the chips are down...

An analysis that projected the demand for oilseed from current rates of use to 2100 under three alternative consumption trends has underlined the impact that changes in consumer behaviour in industrialized nations can have on mitigating environmental pressures associated with agricultural production in the tropics. A business-as-usual course of consumption would result in serious pressures on producer countries to clear land for oil-palm and soybean agriculture, with concomitant negative effects on the biodiversity of these countries. However, the models showed that a daily reduction of vegetable oil intake of 25 g by each person in the EU and USA could reduce the pressure to convert tropical forests for oilseed expansion by up to 70%. To put this in context, this is the equivalent of a large serving of French fries.
*Source: Biological Conservation* (2011), http://dx.doi.org/10.1016/j.biocon.2011.10.029

### Food security threatened by growing scarcity of land and water

A new report published by the Food and Agriculture Organization raises concerns that the increasing degradation of the natural resources on which food production depends is posing a threat to future food security. Although the last 50 years have seen considerable increase in agricultural production as a consequence of significant increases in yields of major crops, in many areas these rates are now slowing and a number of areas are approaching the limits of their production capacity. This report includes the first global assessment of the state of the Earth's land resources, which calculated that 25% of these resources are highly degraded, 36% are stable or slightly degraded and 10% are improving. For the purposes of the report degradation encompassed not just soil and water degradation but also other factors in these ecosystems such as biodiversity loss.
*Source: FAO Press Release* (2011), http://www.fao.org/news/story/en/item/95153/icode/

### Snakes need to get a wriggle on in the face of climate change

Researchers have used a series of palaeoclimate reconstructions, using stable oxygen isotope ratios, of the last 3.2 million years to map ancestral climatic envelopes for North American rattlesnakes. This group of species was chosen because, as with other reptile species, they are highly dependent on the ambient temperature of their environment and the current ranges of some North American rattlesnakes extend beyond former glacial margins, suggesting that their ranges have changed in the past. Despite major changes in climate over the last 3.2 million years, during which temperatures have fluctuated by 6–8 °C, the results of this study suggest that the annual rate of displacement in a clade of rattlesnakes over the next 100 years will be 2–3 orders of magnitude greater than it has been over the last 3.2 million years.
*Source: PLoS One* (2011), http://dx.doi.org/10.1371/journal.pone.0028554

### Rapid decline of world's seabirds

The status of the world's seabirds has deteriorated rapidly over recent decades and they are now more threatened than any other group of birds. Of the 346 seabird species, ninety-seven (28%) are globally threatened and a further 10% are close to being so, according to a recent review based on data and an assessment for the IUCN Red List. Furthermore, the review revealed that nearly half of all seabird species are known or suspected to be experiencing population declines. The albatross family is especially imperilled, with 17 of the 22 species currently threatened with extinction. The review calls for the sites where seabirds congregate, both onshore breeding colonies and offshore feeding grounds, to be protected. It is hoped that existing Important Bird Areas (IBAs) for seabirds on land, together with the soon to be published first inventory of marine IBAs in the high seas, will support the development of a global network of marine protected areas.
*Source: BirdLife International* (2012), http://www.birdlife.org/community/2012/03/new-review-reveals-worrying-declines-in-the-worlds-seabirds/

### Priority sites for forest-dependent birds identified

Using distribution maps for all of the world's forest-dependent birds researchers have identified priority sites for their conservation. Each partly or wholly forested 5-km cell was given an impact score, based on that cell's contribution to the distribution of the forest bird species that occur within its borders. The score for each cell is thus proportional to the impact of the loss of that cell's forest on the conservation status of the world's forest-dependent birds. Only a small number of cells had high scores, including Hawaii, Palau, Indonesia, the Philippines, and South America's Atlantic forests and the northern Andes. Of the cells with high scores those that are suffering high rates of deforestation and have low coverage in the protected area network are recommended as targets for the expansion of protected areas: these include Indonesia's Seram rainforests and the moist forests of Trinidad and Tobago.
*Source: PLoS One* (2011), http://dx.doi.org/10.1371/journal.pone.0029080

## EUROPE

### Ladybirds under threat from alien invaders

The rapid decline of ladybirds native to the UK and other European countries has been linked to the spread of an invasive Asian species. Researchers measuring the scale of the impact of the harlequin ladybird's arrival found that seven out of the eight native British species have declined, with problems also identified in Belgium and Switzerland. The harlequin was first seen in the UK and Switzerland in 2004 and numbers of the two-spotted ladybird are estimated to have fallen by 44% in the UK in the 5 years following the invader's arrival. The only UK species apparently unaffected is the seven-spotted ladybird, which is of a similar size and does not share the same habitat. The highly variable colour pattern of the harlequin means it can be hard to distinguish from native species and may cause confusion for gardeners undertaking pest control.
*Source: BBC News* (2012), http://www.bbc.co.uk/news/science-environment-16916726

### Earth's oldest living organism identified

Research into colonies of the endemic Mediterranean seagrass *Posidonia oceanica* at 40 sites across the Mediterranean Sea has found a number of large clones of the species. Seagrasses are clonal marine plants that form underwater meadows and are one of the most valuable, and increasingly threatened, marine ecosystems. *P. oceanica* is a particularly slow-growing species, and has no native competitors or predators in the littoral zone in which it occurs. In this study the researchers found one seagrass meadow at least 15 km long off the coast of Formentera Island that appears to consist of a single clone, and is thus treated as a single organism. Given the slow growth rates of *P. oceanica*, researchers estimate that this seagrass meadow off the Spanish coast may be between 80,000 and 200,000 years old.
*Source: PLoS One* (2012), http://dx.doi.org/10.1371/journal.pone.0030454

### New nature zones to benefit habitat and wildlife

The UK government has selected England's first 12 Nature Improvement Areas (NIAs), in which wildlife and ecosystems will be protected and enhanced. Heath in the Midlands, salt marshes along the Thames and peat beds in Cheshire are among the areas that will share GBP 7.5 million of government funding. The NIAs stem from an independent review of England's wildlife sites undertaken in 2010 that recommended the expansion of existing protected areas, the establishment of new areas and linkage between sites. While some projects will aim to restore degraded habitat such as the River Don floodplain, others will be aimed directly at enhancing specific species, such as the Duke of Burgundy butterfly on the South Downs and Critically Endangered freshwater pearl mussels in the River Torridge in Devon. Wider environmental objectives are to be addressed by the Birmingham and Black Country Living Landscape project, which will convert brownfield sites to heathland.
*Source: BBC News* (2012), http://www.bbc.co.uk/news/science-environment-17175683

### Rogue seals unmasked

A commonly-used strategy for mitigating human–carnivore conflict is to remove problem animals, despite there being little concrete evidence for the existence of a small number of problem or rogue animals within a carnivore population. Now a study that collected data on seals in three Scottish rivers using photo-identification has revealed that a small fraction of the seal population along the north-east Scottish coast are river specialists and thus pose a threat to salmon and trout fisheries. Analysis of a small sample of seal digestive tracts showed that a higher proportion of river-specialist seals tested positive for trout and salmon DNA compared to seals at coastal sites. This work suggests that targeting seals that occur in rivers is more likely to result in the removal of seals that consume salmon. This study thus supports the use of problem-animal removal as a management tool in the case of human–carnivore conflict.
*Source: Animal Conservation* (2011), http://dx.doi.org/10.1111/j.1469-1795.2011.00469.x

### Lucky (dam) break for salmon

Approval has been given by the French Minister for Ecology for the dismantling of a 17-m high dam in the upper Allier river, a major tributary of the Loire. The Allier river is the last river in France that is home to large, wild salmon, but the construction of the Poutés dam in 1941 resulted in an obstacle that has prevented unfettered fish migration ever since. The dam will be replaced with a 4-m high structure, probably in 2013, which will allow the movement of fish both up and downstream, while maintaining hydroelectric production at c. 90% of current productivity rates. The project to remove the dam was initiated by the French energy supplier EDF and supported by many environmental NGOs. The Poutés dam will be the fourth large dam to be removed from the Loire basin since 1998.
*Source: European Environmental Bureau Newsletter* (2011), 63, 6

### Tougher penalties for crimes against nature

Matthew Gonshaw, a serial egg collector from Bow, has become the first person in England to receive an antisocial behaviour order (ASBO) for crimes against nature. Gonshaw, who was jailed in 2011, had repeatedly taken eggs from the nests of rare birds such as avocets, red kites and peregrine falcons. For the next 10 years the ASBO will prevent him from travelling to Scotland during the breeding season (1 February to 31 August) because of his repeated trips to steal eggs. He is further prevented from visiting all RSPB and Wildlife Trust land for the next 10 years. The ASBO also strengthens the penalties for any future wildlife crimes. Instead of the GBP 5,000 maximum fine and 6 months imprisonment that can be imposed under the Wildlife and Countryside Act, Gonshaw could receive a GBP 20,000 fine and a 5-year jail term for breaking the conditions of the ASBO.
*Source: RSPB Media Release* (2012), http://www.rspb.org.uk/media/releases/306523-first-asbo-for-wildlife-crimes

### European Fisheries Fund is found wanting by auditors

The EU Court of Auditors has published a damning report that criticises measures taken to reduce illegal fishing in Europe. The European Fisheries Fund, set up to bring sustainability into fishing activities, is accused of having exacerbated the problem through the existence of loopholes that allow fleet owners to receive subsidies to increase the capacity and fishing power of their boats. The overcapacity of Europe's fishing fleet is leading to the depletion of fisheries in the area, with three out of four European fish stocks overfished, and concomitant damage to marine life, the fishing sector and coastal communities.
*Source: BirdLife International* (2011), http://www.birdlife.org/community/2011/12/official-report-confirms-massive-misuse-of-eu-fisheries-funds-billions-of-euros-to-promote-sustainable-fishing-are-doing-the-reverse/

## NORTH EURASIA

### Ancient flora comes to life again after researchers tap squirrels' hoards

A team of researchers has successfully grown a plant from seed collected and

stored by ground squirrels in north-eastern Siberia c. 30,000 years ago. The seeds were found, preserved in the permafrost, in the squirrels' burrows 20–40 m below the current surface of the tundra. A total of 70 burrows were found, surrounded by bones of mammoths and other prehistoric animals. Previous attempts to grow plants from seeds found in these burrows failed post-germination, so in this instance researchers used placental tissue from *Silene stenophylla*, which, when cultivated in vitro, produced shoots that were then used to propagate more plants. These plants produced fertile seeds, which have been grown into a second generation of fertile *S. stenophylla*. Differences between the prehistoric *S. stenophylla* and modern plants of the same species suggest that the 30,000-year old specimens are a distinct phenotype adapted to the environment of the Ice Age.
*Source: Nature* (2012), 482(7386), 454

## NORTH AFRICA AND MIDDLE EAST

### Iranian wildlife documentary wins award

An Iranian Cheetah Society's (ICS) documentary entitled *In Search for Persian Leopard* has won the category for Best Documentary Feature at the 2012 Fajr International Film Festival. ICS film maker, Fathollah Amiri, received the award at Iran's annual film festival during a ceremony on 12 February in Tehran. The film was also nominated for two other awards in the category for documentaries including Best Director (Fathollah Amiri) and Best Research (Bagher Nezami and Mohammad Farhadinia). *In Search for Persian Leopard* reveals the efforts of a dedicated research team studying the elusive large cat at high altitudes in Alborz, northern Iran and highlights the threat to the species posed by poaching. Celebrating the 10th anniversary of its establishment, the ICS is hopeful that the documentary will increase community support for effective protection of the Persian leopard in Iran.
*Source: ICS* (2012), http://www.wildlife.ir/ShowInfo.aspx?Lang=2&InfoId=342

### Sociability in elephants goes back a long way

Analysis of a fossil trackway of a proboscidean herd in the United Arab Emirates dating from the late Miocene has shown that the complex social structures seen in living elephants was probably already extant. The fossilized tracks at the site, known as Mleisa 1, are of a herd of at least 13 individuals of different sizes, including a single, small-sized individual whose prints are faint, suggesting a lighter body weight. The way in which the tracks are displayed is indicative of a group of animals moving and interacting simultaneously. In addition to the group of footprints, the site also contains fossilized prints of a solitary trackway over a distance of 260 m, which appear to have been made by a single, large individual moving at a steady pace. The tracks from Mleisa 1 are consistent with the social arrangements seen in living elephants, of a matriarchal family and solitary or loosely associated groups of adult males.
*Source: Biology Letters* (2012), http://dx.doi.org/10.1098/rsbl.2011.1185

### Egypt's illegal ivory trade continues apace

Despite the fact that no ivory can be sold legally in Egypt without a permit, none of which have ever been issued, Egypt is one of Africa's largest markets for ivory items. The authors of a recent report examining the Egyptian ivory trade believe this is because there has been little law enforcement in Egypt over the last 6 years, while the number of tourists, particularly from China where the trade in ivory is booming, has increased. Chinese buyers are now reported to buy over half the worked ivory sold in Egypt. According to Egyptian government officials interviewed for the report, only two seizures of ivory have been made since 2009, and there have been no confiscations of ivory from retail outlets since 2003. The report's authors call on the Egyptian authorities to carry out raids and confiscations of ivory items to end the open sale of ivory in the country.
*Source: TRAFFIC Bulletin* (2011), 23, 117–122

### Licences given to hunt houbara bustards

Dignitaries from the Arabian Peninsula have been given permits to hunt the houbara bustard in the 2011–2012 hunting season, according to a report in a Pakistani newspaper. Twenty-five permits have been issued, with 12 being given to the United Arab Emirates, seven to Qatar, five to Bahrain, and a single permit to Saudi Arabia. In the majority of cases the licenses have been given to rulers, crown princes and other members of royal families. The 10-day permits come with codes of conduct, which stipulate that the named permit holder is the only person allowed to hunt the bustards, using falconry, and the maximum number of birds that can be caught is 100. The houbara bustard is categorized as Vulnerable on the IUCN Red List because of a rapid population decline over 3 decades caused by unsustainable hunting levels.
*Source: Dawn* (2011), http://www.dawn.com/2011/12/04/houbara-hunting-permits-issued-to-gulf-dignitaries-3.html

## SUB-SAHARAN AFRICA

### Illegal hangover cure bad news for South Africa's rhinos

Despite increased law enforcement efforts South Africa lost 448 rhinos to poaching in 2011. Official government statistics reveal that the total loss for 2011 included 19 Critically Endangered black rhinos, of which $<5{,}000$ remain in the wild. Although sentences imposed for poaching-related crimes in South Africa have increased in recent years the increase in rhino killings is thought to be related to an increased demand for rhino horn in Vietnam, where it is viewed as a luxury item and as a purported cure for cancer. Although rhino horn has no proven curative properties for the treatment of cancer it has more recently gained popularity among wealthy Vietnamese as a post-party cleanser used to mitigate the effects of a hangover. Although South Africa remains the epicentre of rhino poaching other African and Asian range countries are also being targeted.
*Source: TRAFFIC News* (2012), http://www.traffic.org/home/2012/1/12/rhino-poaching-deaths-continue-to-increase-in-south-africa.html

### New species of viper discovered

A new species of viper has been discovered in an isolated forest fragment in the Southern Highlands of Tanzania. The yellow and black snake, which has distinctive horn-like scales above its eyes, has been named Matilda's horn viper *Atheris matildae*. The exact location of the new species has not been divulged because of the threat posed by the illegal pet trade. However, it is estimated that the snakes' habitat amounts to only a few square kilometres and has been subject to severe degradation as a result of logging and charcoal manufacture. Researchers involved in the discovery expect the snake will be categorized as Critically Endangered and have already established a small captive breeding colony.
*Source: BBC News* (2011), http://www.bbc.co.uk/news/science-environment-16486549, and *Zootaxa* (2011), http://www.mapress.com/zootaxa/2011/f/z03120p054f.pdf

### Four new mini lizards discovered in Madagascar

One of four new species of dwarf chameleon discovered in Madagascar, *Brookesia micra*, may represent an extreme case of island dwarfism, occurring as it does on the small island Nosy Hara off the Malagasy coast. Whether or not this is the cause of its tiny size, it is clear that *B. micra* is one of the smallest amniotes in the world, as the total length from snout to tail tip of an adult is < 30 mm. In addition to being exceptionally small, the four new chameleons are also restricted to small areas. Such microendemism is seen in all species of *Brookesia* chameleons, which occur in northern Madagascar, leading researchers to suspect that there is a relationship between body and range size in these species, something that has been previously demonstrated in the Malagasy mantellid frog radiation.
*Source: PLoS One* (2012), http://dx.doi.org/0.1371/journal.pone.0031314

### New Marine Natural Park

On 25 February 2012 the Glorieuses Marine Natural Park was created in the Indian Ocean around the Glorieuses Islands, a French overseas territory in the northern Mozambique channel c. 160 km north-west of Madagascar. The 43,000-km² Park is dedicated to the conservation of marine biodiversity (in particular coral reefs, marine turtles and marine mammals), scientific research and the development of sustainable fishing methods. The Park is contiguous with the Mayotte Marine Natural Park and together they form a conservation area of 110,000 km², one of the largest in the Indian Ocean.
*Source: Agence des aires marines protégés Press Release* (2012), http://www.aires-marines.fr/images/stories/presse/decret_creation_pnm_glorieuses.pdf

### Africa's land up for grabs

A set of reports and briefings from the Rights and Resources Initiative, a coalition working to increase community ownership of forests, paints a gloomy picture of the future of Africa's sustainable development. Two-thirds of the land deals reported between 2000 and 2010 were in Africa, where land is being sold for forestry and mineral operations. In South Sudan, for example, investors acquired c. 9% of the country's land soon after the country became independent and in Liberia one-third of the country's land was sold to private investors between 2006 and 2011. According to the reports many of the large-scale acquisitions of land are in areas owned under traditional customary-tenure law, which are maintained by local communities and that are also often environmentally sensitive areas. Africa is particularly vulnerable to these sorts of land deals, because c. 98% of forest land is administered by the government, compared to a lower percentage in Asia and South America.
*Source: Nature* (2012), http://www.nature.com/news/african-land-grabs-hinder-sustainable-development-1.9955#/b3, and *Rights and Resources Initiative* (2012), http://www.rightsandresources.org/documents/quarantined/files/turningpoint/Turning%20Point%20-%20Final%20PDF.pdf

### Agri-monitoring scheme gets a funding boost

A USD 10-million grant from the Bill and Melinda Gates Foundation is to be used to develop an integrated monitoring system in five regions of sub-Saharan Africa where increased agricultural production is underway. The project will provide tools to ensure that agricultural intensification does not result in degradation of natural systems and their services. Furthermore, it is the intention of the project to integrate measurements of agriculture, ecosystem services and human well-being in a way that is accessible to policy makers. The project aims to collect data at multiple scales, from the household to the regional, in a standardized way, to maximize the potential for accurate comparisons. The raw data will be synthesized into six indicators, such as the availability of clean water, and crop resilience to climate variability, to illustrate diagnostic information about complex agro-ecosystems.
*Source: Conservation International Press Release* (2012), http://www.conservation.org/newsroom/pressreleases/Pages/Global_Tool_to_Gauge_Earths_and_Humanitys_Vital_Signs_Launches_in_Africa.aspx

### New range sought for the kipunji

Researchers have developed a habitat use model for the Critically Endangered kipunji (see *Oryx*, 2008: 42, 352–359), a species only recently discovered. This primate only occurs in two sites in southern Tanzania, and the model was developed in the hope of discovering new sites that could offer the possibility of range expansion for the species. The model, developed using 14 floristic, geographical and structural predictors, found that the kipunji is associated with a closed canopy at mid to low altitudes and with specific tree communities. Habitat suitability predictors closely matched the 42-km² area currently occupied by the kipunji, with little scope for expansion into neighbouring areas. The researchers recommend concentrating conservation management for the kipunji on improving forest quality and connectivity, with a particular focus on restoring the Bujingijila corridor that currently separates the two kipunji subpopulations.
*Source: Animal Conservation* (2011), http://dx.doi.org/10.1111/j.1469-1795.2011.00474.x

### Niger creates the largest protected area in Africa

On 6 March 2012 the Niger government formally established the Termit & Tin Toumma Nature and Cultural Reserve. Located in the eastern part of the country the 100,000-km² Reserve will give much needed protection to some of the world's most threatened species, including addax, dama gazelle, Barbary sheep and a small population of the elusive Saharan cheetah. The fruit of almost a decade's efforts, the Reserve's establishment is the result of strong cooperation between authorities in Niger, donors including the French government, the EU, and the Sahara Conservation Fund, and the Convention on Migratory Species. Local stakeholders have also been heavily involved in the process, including pastoralists living in the area who see the Reserve's establishment as an opportunity to preserve their way of life and the natural resources on which they depend.
*Source: Sahara Conservation Fund Press Release* (2012), http://www.saharaconservation.org/?Niger-creates-the-largest

### Protected species on the menu in Madagascar

Despite Madagascar's high biodiversity levels there has been little research on the consumption of wild meat amongst its inhabitants. Interviews with 1,154 households in eastern Madagascar, combined with local monitoring data, have now revealed that, although 74.5% of meals consumed during the study did not contain meat, a wide range of wild-caught species are eaten, with 95% of respondents having eaten at least one protected species. Traditionally, many species in Madagascar have been protected from hunting through the existence of taboos that prohibit the hunting of certain species. Large diurnal lemurs have historically been covered by these taboos but the hunting of many such lemurs recorded in this study implies that these taboos may be waning in power. The study's authors suggest this may be related to rapid social change occurring in the area,

particularly with the influx of illegal artisanal gold mining.
*Source: PLoS One* (2011), http://dx.doi.org/10.1371/journal.pone.0027570

### Dogs mobilized to protect elephants...

Rangers in the Democratic Republic of Congo's Virunga National Park have a new weapon in their fight against poachers. Five bloodhounds have been specially trained to track elephant poachers as part of a programme implemented with the help of a specialized Swiss centre and volunteers from the German police. The canine unit is part of a wider EU-funded project to protect wildlife in the Park and the deployment of the dogs and their handlers has already proved a success. The first investigation involving the dogs led to the seizure of illegal weapons, when a group of poachers fled after opening fire. It is thought the Park is heavily infiltrated by armed groups and the dog team will continue to work alongside rangers to help protect the elephant population from ivory poachers.
*Source: BBC News* (2012), http://www.bbc.co.uk/news/world-africa-17256894

### ...but demand for meat may outstrip that of ivory

An investigation into the dynamics, scale and impact of the trade in elephant meat in four Congo Basin countries has revealed that the demand for the meat is higher than previously expected. The meat is perceived to be prestigious by consumers and means that elephant meat in Central Africa has an earning potential that could exceed that of ivory, according to a new report by the IUCN Species Survival Commission African Elephant Specialist Group and the CITES Monitoring the Illegal Killing of Elephants programme. The meat from an adult male elephant could earn poachers up to USD 5,000, a price that could only be achieved by very large tusks. The report concludes that the incentive and opportunities to hunt elephants could be reduced by an integrated approach to regional development and nature conservation.
*Source: IUCN SSC Species e-Bulletin* (2012), http://www.iucn.org/about/work/programmes/species/?9281/Sale-of-Elephant-Meat-Increases-Threat-to-Elephants-in-Central-Africa

## SOUTH AND SOUTH-EAST ASIA

### Surprise destination of seized ivory

Seizures made in 2011 confirm Malaysia's role as a primary transit country for illegal trade in ivory to end-use markets in China and Thailand. However, in a recent surprising development, Malaysia was listed as the final destination for 492 kg of smuggled tusks. Exported from South Africa and seized in January this year at Port Klang, the shipment of tusks had been falsely declared as polyester and nylon strand matting. The seizure is currently being investigated under the Malaysian Customs Act as a case of fraud and it is hoped investigations both in South Africa and Malaysia will result in arrests and prosecution. Investigations will focus on why Malaysia is now being used as an end destination for smuggled tusks. TRAFFIC reports a sharp increase in illegal ivory trade since 2007, with global seizures weighing an estimated 23 tonnes and representing more than 2,500 elephants.
*Source: TRAFFIC News* (2012), http://www.traffic.org/home/2012/1/9/malaysia-seizes-half-a-tonne-of-ivory.html

### Times of low fruit availability are dangerous for slow lorises...

Researchers working in Ketambe, Indonesia, have documented a female orang-utan feeding on slow lorises on three occasions, bringing the number of recorded cases of slow loris predation by orang-utans to nine. Examination of these nine cases suggests that orang-utans may consume lorises at times of low availability of ripe fruit. This is in contrast to chimpanzees, which appear to hunt monkeys at times when fruit is in abundant supply. Observations of the female orang-utan's hunting technique, which involved her deviating from her route to the capture sites, lead the researchers to hypothesize that she may have used olfactory clues to locate the slow lorises. The researchers also suggest that hunting slow lorises may be a cultural behaviour, which would explain why other orang-utans in the area do not show this behaviour.
*Source: International Journal of Primatology* (2011), http://dx.doi.org/10.1007/s10764-011-9574-z

### ...and orang-utans resort to protein cycling in times of scarcity

A study of Bornean orang-utans has found that the primates catabolize their own fat reserves in times of low fruit availability. A 5-year study of urinary metabolites from wild orang-utans found traces of nitrogen compounds a few months after orang-utans ceased to have access to fruit, an indication that the apes had started to acquire protein from their muscles. During periods of protein recycling orang-utans also consumed more leaves and bark, which contain protein but are difficult to digest. The levels of protein on which orang-utans are capable of surviving are inadequate to sustain humans or mountain gorillas but appear sufficient to avert a severe protein deficit in this species.
*Source: Biology Letters* (2011), http://dx.doi.org/10.1098/rsbl.2011.1040, and *New Scientist* (2011), 212(2843), 5

### Population model reveals dire straits for Indo-Pacific humpback dolphins

Population viability models and estimates of demographic parameters are tools used by conservationists to inform their management of species and populations. Applying these tools to cetaceans has limitations, however, as the required data for these species is often difficult to acquire. Now researchers have used data from stranded Indo-Pacific humpback dolphins to estimate demographic parameters for this Near Threatened species in China's Pearl River Estuary. These estimates suggest a rate of population decline of 2.5% a year, leading to a projected loss of 74.3% of the current population over three generations. The researchers warn, however, that the rapid economic growth of the Pearl River Estuary may lead to an increase in the estimated rate of decline in the future, and urge the development of effective conservation measures for the area.
*Source: Biological Conservation* (2012), http://dx.doi.org/10.1016/j.biocon.2012.01.004

### 'Silent' screams

An investigation into the sounds made by tarsiers has found that these primates belong to the select group of mammals that use ultrasound to communicate. Experiments on Philippine tarsiers in the wild and under laboratory conditions have showed that the species' uppermost limit of auditory sensitivity is c. 91 kHz, and their calls have a dominant frequency of 70 kHz. These are among the highest limits recorded for terrestrial mammals; the upper limits of human-hearing, in contrast, are c. 20 kHz. Although the reasons behind this specialized sensory adaptation are as yet unclear, the researchers suggest that tarsiers may use ultrasound to eavesdrop on their nocturnal insect prey, and to make a secret alarm call that cannot be heard by tarsier predators.
*Source: Biology Letters* (2012), http://dx.doi.org/10.1098/rsbl.2011.1149

### Distinguished researcher receives prestigious award

Dr Kota Ullas Karanth has been awarded India's fourth highest civilian honour, the

Padma Shri, for his outstanding contribution to wildlife conservation and environment protection. Dr Karanth has conducted ground-breaking research on the ecology of tigers and other large mammals and is the founder of the Centre for Wildlife Studies. He has been a senior scientist with the Wildlife Conservation Society since 1988 and has published numerous international peer-reviewed scientific papers, popular articles and seven books. Dr Karanth serves on the Indian Government's Forest Advisory Committee, National Tiger Conservation Authority, Karnataka Government's Tiger Conservation Foundation and Tiger Steering Committee, and the International Board of Editors of *Oryx—The International Journal of Conservation*.
*Source: WCS India Press Release* (2012), http://www.wcsindia.org/pdf/kuk_padma%20shri_2012.pdf

### Amphibian tree of life gains new branch

Research in north-eastern India has resulted in the discovery of seven new species of caecilian, an order of legless, primarily soil-dwelling, amphibians. An investigation of the new species' DNA and cranial anatomy suggest that they represent a new family of caecilian, the Chikilidae, which probably first appeared c. 140 million years ago. Furthermore, their closest known relatives are the Herpelidae family of caecilians, which occur in Africa. This discovery also sheds light on the area of India where the new family was found; previous thinking has viewed the north-eastern states as a gateway between biodiversity hotspots rather than an area of high biodiversity and endemicity in its own right. This is a timely discovery, as deforestation and the growth of the human population pose a growing threat to this part of the country.
*Source: Proceedings of the Royal Society, B* (2012), http://dx.doi.org/10.1098/rspb.2012.0150, and *Nature* (2012), 483(7387), 8

### Deep sea already unsafe for fishes 42,000 years ago

Evidence from coastal cliffs in East Timor indicates that humans were already fishing in deep sea waters 42,000 years ago. Deposits dug from the cliffs include bones of pelagic and deep sea fish, the oldest of which date back to 42,000 years ago. The find also included the world's oldest hook, made of shell, thought to be between 16,000 and 23,000 years old. It is widely accepted that people were capable of long-distance sea travel 50,000 years ago, and evidence exists to show that shellfish harvesting has occurred for > 100,000 years. Prior to this find, however, the earliest evidence of fishing with hooks dated back only 12,000 years. East Timor has few land animals, so it is unsurprising that the island's early inhabitants relied on the sea in this way.
*Source: Science* (2011), http://dx.doi.org/10.1126/science.1207703, and *New Scientist* (2011), 212(2841), 16

### Threatened primate spotted in forest

One of the world's most threatened species of primate, Miller's grizzled langur, has been photographed in East Kalimantan. A study using both camera trapping and direct observation revealed that the Endangered langur is a relatively frequent visitor to two mineral springs in the Wehea Forest, although it is not often encountered elsewhere in the forest. The discovery of the species in this forest confirms its continued existence and also extends its range further inland than had previously been thought. Although Wehea Forest is considered protected by the indigenous Wehea Dayak people who live there it lacks formal protection from the government and is shown as a logging concession on maps. In addition to Miller's grizzled langur the 38,000-ha forest is home to another nine species of non-human primate as well as other large, threatened mammals, including the Sunda clouded leopard and the sun bear.
*Source: American Journal of Primatology* (2012), http://dx.doi.org/10.1002/ajp.21983, and *Mongabay* (2012), http://news.mongabay.com/2012/0119-hance_millersgrizzledlangur.html

## EAST ASIA

### (Inter)net could help fish

An online fisheries company, which posts real-time information about fishery catches online as soon as the fish are landed, has the potential to reduce waste by matching demand and supply, according to the company's owner. It is anticipated that the system will be able to react to customer demand and thus throw back any fish that are unwanted, while also emphasizing the connection between consumers and fishermen. Conservationists are sceptical about the move towards online retail of catches, however, and question the benefits to fish, particularly as the design of trawler nets means that most landed fish that are thrown back into the sea are already dead. Industry observers are also equivocal about the development of an online market for fish, fearing that this could lead to more demand.
*Source: New Scientist* (2012), 213(2848), 12

### New funding will benefit rare primate

A conservation project led by Fauna & Flora International (FFI) to help protect the Myanmar snub-nosed monkey is one of 33 initiatives to share GBP 8.5 million of UK government funding made available from the Department for Environment, Food and Rural Affairs (Defra). The threatened monkey was described for the first time in 2010 from a dead specimen collected by a local hunter and in May 2011 researchers captured the first pictures of the primate in the wild, using camera traps. The FFI project team will carry out fieldwork and establish a community-based monitoring scheme to try to find out how many individuals remain in their natural habitat. It is thought that the species numbers c. 300 but little is known about its distribution and behaviour. Information collected during the study will be used to implement an action plan for conservation.
*Source: BBC News* (2012), http://www.bbc.co.uk/news/science-environment-17261638

## NORTH AMERICA

### Silent seas reduce whale stress

Following the attack on the World Trade Centre on 11 September 2001 shipping traffic in Canada's Bay of Fundy was minimal, resulting in a 6 dB decrease in overall background noise in the Bay. The types of noise in the Bay also changed, with a significant reduction in low-frequency noise below 150 Hz. This noise reduction had a marked effect on the Endangered North Atlantic right whales that occur in the area: right whale faeces sampled in the 2 days after September 11 2001 showed decreased levels of stress-related faecal hormone metabolites (glucocorticoids) compared to faecal samples in subsequent years when shipping levels had returned to normal. Although the researchers in this study recommend future work to explore in more detail the relationship between underwater noise and the levels of glucocorticoids in whale faeces, this finding has potential implications for all baleen whales in areas of heavy shipping.
*Source: Proceedings of the Royal Society, B* (2012), http://dx.doi.org/10.1098/rspb.2011.2429

### Constriction on mammal numbers in the Everglades

Road surveys before and after the proliferation of Burmese pythons in the Everglades National Park provide stark evidence of the serious effects these giant constricting snakes are having on native wildlife.

Nocturnal road surveys during 2003–2011 revealed a 99.3% decrease in the frequency of racoon observations, and decreases of 98.9% and 87.5% for opossum and bobcats, respectively, compared to surveys carried out before 2000. These species were found to be most abundant in areas outside the snake's range. Burmese pythons are known to consume at least 40 different prey items in Florida, including species listed on the US Endangered Species Act such as the Key Largo woodrat and the wood stork. The fact that common and easily observed mammal species such as racoons and bobcats appear to be declining in the presence of pythons is not good news for species of conservation concern.
*Source: Proceedings of the National Academy of Sciences of the USA* (2012), http://dx.doi.org/10.1073/pnas.1115226109

### White-nose syndrome continues to wreak havoc on bat populations

Biologists in North America estimate that the fungal infection known as white-nose syndrome has killed between 5.7 and 6.7 million bats so far and is expected to spread further. At many bat hibernacula sites mortality rates have reached 100%. The disease, first documented in New York in 2006, has now spread to 16 states in the USA and four provinces in Canada. Gauging the total number of bats affected is difficult, as seasonal population counts have traditionally focused on threatened species, such as the Indiana bat, and there is therefore a paucity of information about pre-infection population numbers of species previously considered common. A national white-nose syndrome response plan includes, among other things, the establishment of methods for consistent data collection.
*Source: US Fish and Wildlife Service News Release* (2012), http://www.fws.gov/whitenosesyndrome/pdf/WNS_Mortality_2012_NR_FINAL.pdf

### Seal deaths unexplained

The US National Oceanic and Atmospheric Administration have declared the deaths of over 60 ringed seals in Alaska an unusual mortality event, and are investigating possible causes. Some walruses have also been affected at the annual mass haul-out at Point Lay. Diseased seals have skin sores, usually on the face or hind flippers, hair loss, spots on the liver and abnormal growths in the brain. In some cases affected animals have been found to have undersized lymph nodes, which can indicate a compromised immune system. Investigations into possible causes of the disease will examine a range of possible factors, including fungal infection, toxin poisoning, radiation exposure, and stressors related to sea ice change.
*Source: NOAA News Release* (2011), http://www.alaskafisheries.noaa.gov/newsreleases/2011/umedeclaration2011.htm

### Tales of the riverbank

One of Alaska's last wild rivers, the Susitna, has become the focus of a plan to generate low-carbon electricity through a hydroelectric dam. Should the proposed dam be approved, it will be the first hydroelectric dam to be built in the USA for 40 years, and, at 213 m high, the fifth tallest. Recent years have witnessed a backlash to the construction of dams in the USA, with a number of dams removed to restore fisheries and riverine habitats. However, the rise in interest in low-carbon power generation means that megadams are once more on the agenda. In the case of this particular project there is a risk of a fly, or shrew, in the ointment: the 1.5-g *Sorex yukonicus* occurs on a riverbank 10 km downstream of the proposed location for the dam, and so far only 38 individuals of this secretive species have been located, despite extensive searches.
*Source: New Scientist* (2011), 212(2841), 5

### Mining of oil sands affects air quality

The first analysis of air quality over the Alberta oil sands in Canada has found that atmospheric levels of two major pollutants, nitrogen dioxide and sulphur dioxide, are comparable to pollution levels seen over mid-sized cities or close to coal-fired power plants. The assessment was undertaken using satellite remote sensing over an area of intensive surface mining. Furthermore, the researchers found that the rate of increase in nitrogen dioxide pollution had risen by 10.4% every year between 2005 and 2010. This increase was attributed to increases in both local values and the spatial extent of the pollution.
*Source: Geophysical Research Letters* (2012), http://dx.doi.org/10.1029/2011GL050273, and *Nature* (2012), 483(7388), 126

### New oceanic research vessels approved

After more than a decade of plans and negotiations the US Navy has announced that it has finalized contracts for two ocean-going research vessels. AGOR 27 and 28, as they are currently known, will replace two 85-m vessels, *R/V Knorr* and *R/V Melville*, which are run by the Woods Hole Oceanographic Institution in Massachusetts and the Scripps Institution of Oceanography in San Diego, California, respectively. At 73 m in length, the two new ships, expected to launch in 2014 and 2015, will be slightly smaller than the vessels they are replacing but will offer improvements on their predecessors, including more efficient engines. The new vessels will also have hulls that reduce noise and bubbles, both of which can interfere with equipment used in high-resolution sea-floor mapping.
*Source: Nature* (2012), http://dx.doi.org/10.1038/nature.2012.10154

## CENTRAL AMERICA AND CARIBBEAN

### Extinction threat in tropical eastern Pacific

According to a recent study 12% of marine species surveyed in the Gulf of California, the coasts of Panama and Costa Rica and the five offshore oceanic islands and archipelagos in the tropical eastern Pacific are threatened with extinction. The findings of the first IUCN Red List of Threatened Species assessment available for all known species of marine shore fish, marine mammals, marine turtles, sea birds, corals, mangroves and seagrasses in a major marine biogeographical region, reinforce the need for conservation action for marine species and the areas where they are most threatened. The study identified the creation of a marine protected area around Clipperton Island in the eastern Pacific Ocean as a high priority, and among others, the need for legislation to limit mangrove removal from important fishery nursing grounds along the coasts of Costa Rica and Panama.
*Source: IUCN SSC Species e-Bulletin* (2012), http://www.iucn.org/about/work/programmes/species/news/?9247/Twelve-percent-of_marine-species-in-tropical-eastern-Pacific-threatened

## SOUTH AMERICA

### Patagonian national park goes up in smoke

A large area of one of Chile's most important protected areas, Torres del Paine National Park, has suffered serious damage as a result of wildfires. Circa 15,000 ha of the 180,000-ha Park, a UNESCO Biosphere Reserve, have been burnt in the fire, thought to have been started by a camp fire. Four percent of the deciduous Magellan forest, 30% of the pre-Andean scrublands and 65% of the Patagonian steppe have been affected by the wildfires. The Park has suffered from fires before,

with 14,000 ha burnt in 2005, and researchers who studied the Park's recovery after this earlier fire found that changes in the area's vegetation affected the distribution and behaviour of some of the animal species that occur in the Park. Of particular concern is the Endangered huemul, a deer whose population numbers only c. 2,000 and which is only found in the extreme south of the Andes.
*Source: Nature News Blog* (2012), http://blogs.nature.com/news/2012/01/wildfires-threaten-patagonia%E2%80%99s-biodiversity.html

## PACIFIC

### World's smallest frogs masquerade as insects

An amphibian, thought to be the world's smallest frog species, has been discovered in Papua New Guinea. Researchers found the tiny frog *Paedophryne amanuensis,* which attains a mean body length of only 7.7 mm, among leaf litter. The diminutive frogs are well camouflaged among the dense, moist leaves on the forest floor, and have evolved high-pitched calls resembling those of insects, making them hard to spot. Before the new species was found the accolade of being the world's smallest frog had been bestowed on the Brazilian gold frog and its slightly larger Cuban relative, the Monte Iberia eleuth, both of which measure $<1$ cm in length. Intriguingly, all but two species of extremely miniaturized frogs inhabit tropical wet-forest leaf litter (the two exceptions, *Choerophryne burtoni* and *Oreophryne minuta*, inhabit dense, moist moss), indicating that amphibians are well placed to occupy this ecological niche.
*Source: PLoS ONE* (2012), http://dx.doi.org/10.1371/journal.pone.0029797

### Petrel spill on Gau

A grounded Fiji petrel has been released by NatureFiji–MareqetiViti staff after it landed in a village on Gau Island, Fiji. Fewer than 50 pairs of this Critically Endangered species are thought to exist, which is threatened by predation by cats, rats and feral pigs. The petrel is believed to breed in the interior of Gau Island, along with Vulnerable collared petrels. In addition to being neighbours, collared petrels are also used as surrogates for Fiji petrels during training of Gau islanders in petrel management, conservation monitoring and management techniques. Proof of the success of this training is illustrated in the reaction of the villagers when the Fiji petrel landed in their midst, as they followed the protocol developed for grounded petrels, enabling NatureFiji–MareqetiViti to check, ring and release the individual. Although infrequently sighted, the Fiji petrel is an important species for Fijian people, appearing on their currency, and having been for many years the emblem for the national airline.
*Source: BirdLife International* (2011), http://www.birdlife.org/community/2011/12/fiji-petrel-crash-lands-in-gau/

### Early results of rat eradication appear positive

A complicated project involving an aircraft carrier, two helicopters and a lot of poison, which aimed to rid a remote forested island of its rat invaders, appears to have gone smoothly. Henderson Island, a UK Overseas Territory in the Pacific Ocean 4,828 km from the nearest mainland, is home to many threatened species, including four endemic bird species. Pacific rats, introduced to the island over 800 years ago, have destroyed the island's habitats, as well as threatening some species directly by eating their chicks. Although the results of the eradication will not be known until 2013 when rat surveyors will visit the island, initial results indicate that populations of Murphy's petrel and Henderson reed warbler have already benefited from the rat removal project. There was an added bonus for cartographers, too, with the discovery that Henderson Island is 15% larger than had previously been thought.
*Source: BirdLife International* (2011), http://www.birdlife.org/community/2011/12/aircraft-carrier-and-helicopters-come-to-unique-islands-rescue/

## AUSTRALIA/ANTARCTICA/ NEW ZEALAND

### Penguins reclaim old kingdoms on Macquarie Island

The king penguin population on Macquarie Island, considered by some to be one of two king penguin subspecies, suffered greatly following the discovery of Macquarie Island by settlers in 1810. Along with other Macquarie species, king penguins were harvested for their blubber, used as lamp oil, with the result that the population decreased to c. 3,400 birds by 1930. In the years that followed Macquarie Island acquired various degrees of protection, culminating in World Heritage status in 1997. As a result of this protection the king penguin population on Macquarie Island now numbers 400,000–500,000. A comparison of the genetic diversity of the ancient penguin population (through DNA extraction from bone fragments) and the modern population show similar levels of genetic diversity, illustrating that it is possible for a historically exploited population to recover to pre-human contact levels when adequate conservation measures are in place.
*Source: Biology Letters* (2012), http://dx.doi.org/10.1098/rsbl.2012.0053

### Mushroom coral captured on camera

Surprising new footage of a mushroom coral releasing itself from a layer of sand has been captured by a researcher from the University of Queensland using time-lapse photography. Sedimentation presents a major threat to corals as they need to breathe and prevent themselves from being smothered. It was already known that a mushroom coral could release itself from the sandy seabed but until now it was not clear how. Specimens were placed in aquaria and photographed every 10 seconds for 20 hours. Mushroom corals, a particularly mobile family of coral, have a relatively thick layer of fleshy tissue on top of their tough calcium carbonate skeleton and inflate and deflate parts of their body to move around the seabed. The footage captured showed they use a similar technique to free themselves from a covering of sand.
*Source: BBC News* (2012), http://www.bbc.co.uk/nature/16843053

### Tasmanian devil cancer's DNA probed

Genetic analysis performed on 104 tumours from 69 Tasmanian devils has revealed that all the tumours can be traced back to a single female who lived on the east coast of Tasmania c. 16 years ago. This one female then passed the cancer, which is infectious, on to other devils through biting. The DNA analysis of the tumours shows how the cancer has mutated as it has moved through the Tasmanian devil population, which has declined by up to 80% in affected areas. It is the researchers' hope that an understanding of which genes have mutated will prove a useful reference point in the development of a vaccine against the cancer. Studying the movement of the cancer from the one original infected female through the population may also help inform how the disease will spread when it reaches previously unaffected areas.
*Source: Cell* (2012), http://dx.doi.org/10.1016/j.cell.2011.11.065, and *New Scientist* (2012), 213(2853), 9

### Plant poisons prepare skinks for toad invasion

Research suggests that bluetongue skinks may be better placed than other native Australian fauna to deal with the ongoing cane toad invasion, thanks to the presence of another invasive species. Mother-of-millions, an ornamental plant originally from Madagascar, produces toxins that are chemically similar to those produced by cane toads. The cane toads' toxicity poses a serious threat to native predators that ingest the toads. However, bluetongue skinks from areas where mother-of-millions is established appear to be less affected by the plant's toxins because selective pressures on the skinks have resulted in their having a higher physiological tolerance of these toxins. Experiments on bluetongue skinks suggest that individuals with a tolerance to the plant toxin are also less susceptible to cane toad toxin, and captive bluetongue skinks were in fact observed to consume both mother-of-millions and cane toads.
*Source: The American Naturalist* (2012), http://dx.doi.org/10.1086/664184

### Winds of change are good news for albatrosses

Wandering albatrosses that breed on the Crozet Islands in the Southern Ocean appear to be benefiting from changes in the nature of westerly winds in the Southern Hemisphere. Over the past few decades these winds have increased in intensity and moved poleward, an apparent manifestation of anthropogenic climate change. Researchers studying the Vulnerable wandering albatross have found that their foraging range has moved polewards too, while their rates of travel and flight speeds have increased. This has led to improved breeding success as well as healthier adults, with birds having increased in mass by $>1$ kg. Unfortunately for the albatrosses current climate change scenarios indicate that these changes to the westerly winds in the Southern Ocean may not be permanent.
*Source: Science* (2012), http://dx.doi.org/10.1126/science.1210270, and *New Scientist* (2012), 213(2848), 14

### Fire guts Brazilian research station in the Antarctic

A Brazilian research station, Commandante Ferraz, has been destroyed in a fire that claimed the lives of two researchers stationed at the base. The fire started in the generator room and spread throughout the station, 70% of which has been destroyed as a result. Research at the station focused on the study of Antarctica's coastal and marine ecosystems, and the fire also destroyed millions of dollars of equipment. The dry air in the Antarctic makes fires a major risk. The Brazilian government intends to rebuild Commandante Ferraz base, a process expected to take 2 years.
*Source: New Scientist* (2012), 213(2854), 5

### Better the hollow you know...

An investigation into the overwintering retreats used by south-west carpet pythons in Western Australia has found that, as with many species in the jarrah forest, tree hollows are an important habitat for these reptiles. Tree hollows were used as overwintering sites by 61% of pythons tracked in the study. Other overwintering sites used by the species were low vegetation cover, ground cover, tree branches and hollow logs on the ground. Unlike some of these alternatives, tree hollows offer a safe refuge for pythons at a time when their lack of responsiveness makes them vulnerable to terrestrial predators such as the introduced red fox. Tree hollows are a limited resource, however. Not only does it take many years for hollows to form in trees but such trees are being cleared in favour of other land uses and competition for remaining hollows is fierce, involving both native and introduced species such as European honeybees.
*Source: Journal of Zoology* (2012), http://dx.doi.org/10.1111/j.1469-7998.2011.00852.x

### Invasive ants stage disappearing act

One of the most invasive of invasive species, the Argentinian ant, appears to be undergoing a population collapse in New Zealand, where it first arrived in 1990. In 40% of sites surveyed Argentinian ant populations were observed to have collapsed, allowing native ant populations to recover, or partly recover, in these areas. The mean survival time for Argentinian ant populations was 14.1 years, with researchers suggesting that the reason for the population collapse is likely to be low genetic diversity and associated reduced resistance to disease. Climate change models for New Zealand suggest that, although changes such as increasing temperatures will increase the longevity of the colonies, the populations can be expected to collapse eventually. This is good news for New Zealand's coffers, as managing the ant invasion was projected to cost NZD 68 million per year.
*Source: Biology Letters* (2011), http://dx.doi.org/10.1098/rsbl.2011.1014, and *New Scientist* (2011), 212(2841), 4–5

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