

Briefly

INTERNATIONAL

Rate of deforestation slowing

A comprehensive survey of the status of the world's forests has shown that deforestation rates appear to be decreasing in certain countries, such as Brazil and Indonesia, but persist at a high rate in other countries. A significant reduction in the net rate of loss in forest area on a global scale is attributed to afforestation projects and natural regeneration. The Global Forest Resources Assessment estimates that the net change in forest area between 2000 and 2010 was c. -5.3 million ha year⁻¹, an improvement on the figure of -8.3 million ha year⁻¹ seen between 1990 and 2000. South America and Africa suffered the greatest loss of forests between 2000 and 2010, whilst forest area increased in Europe. China's large-scale afforestation programme means that forest area in Asia underwent a net gain in forest area despite many countries in this region still undergoing heavy deforestation.

Source: *Global Forest Resources Assessment 2010* (2010), <http://www.fao.org/forestry/fra/fra2010/en/>

CITES reject ban on tuna

A proposal to place bluefin tuna on CITES Appendix 1, thus banning all trade in the species, has been rejected at the most recent CITES meeting. Monaco, which tabled the proposal, pointed to the failure of the International Commission for the Conservation of Atlantic Tunas, which is responsible for managing bluefin tuna stocks, to implement suitable measures to protect the species. Countries opposing the proposal, which included Canada and Japan among others, claimed that such a ban would have a serious effect on fishing economies. Bluefin tuna, a key component of Japanese sushi, has suffered an 85% collapse in numbers since the commencement of the industrial fishing era.

Source: *BBC News* (2010), <http://news.bbc.co.uk/1/hi/8574775.stm>

Some good news for Arctic species

The Arctic Species Trend Index 2010 contains some positive news on the state of Arctic wildlife. According to the Index, which examines trends in 965 populations of 306 Arctic species since 1970, populations have increased by 16% on average. However, this trend is not consistent across areas or species, with species from both the High and Sub Arctic areas declining in

abundance, while Low Arctic species have increased by 46% on average during the same period. These differences may be attributable to the characteristics of the different regions: the High Arctic species include sea-ice associated species such as narwhal and polar bear, and this area has experienced large reductions in sea-ice extent in recent years, while the Sub Arctic is the most accessible region to humans with the result that human impact and land-use change has been most marked in this area. Source: *Arctic Species Trend Index* (2010), http://asti.is/images/stories/asti%20report%20april%2020_low%20res.pdf

Take to the trees for longevity

Birds and bats are known to live longer than comparable non-volant species, with evidence suggesting that flight reduces the exposure of these species to terrestrial predators, disease and environmental hazards. Now a study that examined a data set of mammalian longevity records has found similar results for arboreal mammals when compared to mammals that dwell on the ground. The maximum lifespans of arboreal mammals were in fact found to be almost twice the length of terrestrial mammals of similar body size. Examination of the data set also indicated that species that became arboreal generally experienced increased longevity. These findings support the evolutionary theory of ageing, in that the reduction of extrinsic mortality rates will result in increased longevity.

Source: *Proceedings of the National Academy of Sciences of the USA* (2010), <http://dx.doi.org/10.1073/pnas.0911439107>

Extinction models may be right after all

A real-world study of the factors driving lizards to extinction suggests that predictions stating that climate change may cause the extinction of one-fifth of plant and animal species by 2100 may be accurate. These predictions have attracted scepticism because they are largely based on theoretical models. However, evidence from 48 lizard species in Mexico found that 12% of populations had gone extinct since 1975 despite their habitat remaining intact. The populations had disappeared because increasing temperatures meant that the lizards were unable to spend as long foraging for food before having to retreat to the shade. When compared to field studies of lizard populations on four continents, these

predictions from Mexico were found to be accurate. Based on this work the researchers suggest 20% of lizard species may be extinct by 2080.

Source: *Science* (2010), 328(5980), 894–899 and *New Scientist* (2010), 206(2761), 14

Forest growth increases with climate change

Evidence collected from 55 temperate forest plots in the USA over the past 22 years has indicated that recent growth in these plots exceeds that expected by natural recovery. The authors of this study considered six hypotheses that could explain the accelerated recent growth of these forest stands, and concluded that the changes in forest growth were most likely related to a combination of long-term temperature increases, longer growing seasons and changes in CO₂ fertilization. The reported increase in forest biomass in this study has important implications for research into carbon storage and atmospheric carbon cycling.

Source: *Proceedings of the National Academy of Sciences of the USA* (2010), 107, 3611–3615

City growth affects forests

Researchers have used satellite-based data for forest loss estimates between 2000 and 2005 to examine the correlation between deforestation and economic, agricultural and demographic factors in 41 countries in the humid tropics. Surprisingly, increases in the rural population were not positively correlated with forest loss. Instead urban growth and exports of agricultural produce were found to be linked with deforestation over the time period studied. It would appear, therefore, that the movement of people to cities is related to increased deforestation in the tropics, probably because of the associated rise in demand for meat and processed food from city dwellers. The study's authors suggest that, rather than aiming to reduce deforestation among rural populations, efforts need to focus on more efficient, export-orientated agricultural production.

Source: *Nature Geoscience* (2010), 3, 178–181, and *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/02/07/urban-uprising/>

Atrazine induces chemical castration in male frogs

Atrazine, one of the world's most commonly used pesticides, has been found to feminize male frogs that are exposed to the

chemical as adults. Previous studies found that amphibian larval development was adversely affected by exposure but this new study indicates that the pesticide can also have detrimental effects on reproduction in African clawed frogs. Ten percent of the frogs exposed to the chemical in the study developed into functional female frogs and were able to produce viable eggs after copulating with males not exposed to atrazine. As these frogs remained genetically male, the larvae their eggs produced were all male, thus further affecting the frog population. Other male frogs in the study showed lower testosterone levels, lower fertility and suppressed mating behaviour. *Source: Proceedings of the National Academy of Sciences of the USA* (2010), 107, 4612–4617, and *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/03/03/he-said-she-said/>

Fisheries and turtles an uneasy mix

The creation of a comprehensive database of reported marine turtle bycatch for 1990–2008 makes for depressing reading, with the global total number of turtles caught in gillnet, trawl and longline fisheries during this time estimated at 85,000. Furthermore, the authors speculate that, given low observation and reporting levels of fishing effort, the true number may be higher by as many as two orders of magnitude. Despite its grim content, the global nature of this study does mean that conclusions can be drawn regarding where intervention would be most effective, however. For example, high rates of turtle bycatch and observed fishing effort for all fishing gears in the Mediterranean and eastern Pacific indicate the need for conservation action in these regions.

Source: Conservation Letters (2010), <http://dx.doi.org/10.1111/j.1755-263X.2010.00105.x>

Indigenous knowledge points to changes in weather persistence in the Arctic

Since the early 1990s Inuit elders and hunters have noticed that their weather predictions, based on factors such as cloud formations and star colours, have become less reliable than in the past. Now researchers examining a 50-year data set of weather conditions at Baker Lake, Nunavut, Canada have revealed that there has been a change in temperature persistence during the local spring over the last 15 years, which tallies with the reports of less predictable weather by Inuit. Changes in weather persistence have implications for agriculture, human health and ecosystems but an important aspect of this study is how the combination

of indigenous knowledge with scientific methods can result in significant insights. *Source: Global Environmental Change* (2010), <http://dx.doi.org/10.1016/j.gloenvcha.2010.02.002>, and *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/04/09/true-north/>

Mangrove menace

Mangroves perform vital roles in ecosystems, including flood protection, providing habitat for a variety of terrestrial and marine species, and nutrient recycling. Estimates suggest that these services are worth USD 1.6 billion a year worldwide, and that almost 80% of global fish catches are dependent on mangroves, either directly or indirectly. Now a survey of the 70 true mangrove species has found that 16% qualify as either Critically Endangered, Endangered or Vulnerable. The highest proportion of threatened mangroves is found along the Atlantic and Pacific coasts of Central America, where the threats facing the species include clearance for settlement, agriculture and shrimp ponds. The study's authors point out that mangroves around the world are generally not adequately represented within protected areas, and thus advocate initiatives that allow the acquisition of privately-owned areas of coastal land, particularly those containing threatened mangrove species.

Source: PLoS One (2010), <http://dx.doi.org/10.1371/journal.pone.0010095>

Killer whale split

Killer whales are currently classified as a single, cosmopolitan species, although research over the past 30 years has indicated the presence of sympatric ecotypes that are not known to interbreed. However, genetic studies have found little evidence of diversity in the mitochondrial control region, although this may be because of the low levels of mitochondrial mutation rates seen in cetaceans as a whole. Now a new method, in which complete mitochondrial sequences are analysed, has been developed and applied to samples from killer whale populations from the North Pacific, North Atlantic and Southern Oceans. The findings suggest that each of the ecotypes examined warrants elevation to full species status, with divergence times ranging from 150,000 to 700,000 years ago. *Source: Genome Research* (2010), <http://dx.doi.org/10.1101/gr.102954.109>

Snakes in mystery global decline

A recent analysis of 17 snake populations of eight species from the UK, France, Italy, Nigeria and Australia has shown that 11 have declined sharply over the same relatively short period of time. Although the causes of these declines are currently unknown it is

suspected that they are multifaceted (such as habitat quality deterioration, prey availability), and with a common cause, such as global climate change. For reasons that are not entirely clear, some populations shrank abruptly in number around 1998. Populations shrank even in protected areas, suggesting that the progressive loss of habitat for wild animals being seen all over the world is not the only cause. The year when many of the snake declines began—1998—raises the question of whether climatic factors might be involved, as very strong El Niño conditions contributed to making it the hottest year recorded in modern times.

Source: BBC News (2010), <http://news.bbc.co.uk/2/hi/science/nature/8727863.stm>, and *Biology Letters* (2010), <http://dx.doi.org/10.1098/rsbl.2010.0373>

Biodiversity still declining

Researchers who examined 31 biodiversity indicators have found that most indicators of the state of biodiversity, which included areas such as extinction risk and population trends, showed declines. At the same time, most indicators relating to pressures on biodiversity, such as climate change impacts and invasive alien species, have increased. Although there are a few positive findings, such as an increase in extent of protected areas, overall these indicators suggest that the rate of biodiversity loss is not decreasing. This is despite the commitment by world leaders in 2002, through the Convention on Biological Diversity, to achieve a significant reduction in the rate of biodiversity loss by 2010.

Source: Science (2010), 328, 1164–1168

EUROPE

Long shadow of overfishing

An analysis of previously neglected government data has revealed that the commercial value of demersal fisheries in Britain, measured through changes in landings per unit of fishing power, has declined by 94% since 1889. Bottom-trawling has been used to catch bottom-living fish since the 14th century but the development of steam trawlers in the 1880s heralded the start of the expansion of fishing effort that has continued into the late 20th century. These findings have important management implications for fish stocks, with the European Commission's estimates of overfished stocks being based on data that go back 20–40 years; these new findings suggest that stocks were already overfished at this point in time.

Source: Nature Communications (2010), <http://dx.doi.org/10.1038/ncomms1013>

Neighbours are important when it comes to organic farms

Although there is much interest in agri-environment schemes as a means of protecting biodiversity on farms, results of these schemes at the single-farm level are inconclusive. Researchers in Britain therefore carried out a study that looked at farmland biodiversity in 100 km² of farmland that either contained high or low levels of organic cultivation. Investigation of the organisms present in fields and field edges showed that biodiversity was dependent on the practices of the farm in question but also on the management of neighbouring farms. To maximize effectiveness of agri-environment schemes for biodiversity, therefore, these schemes need to be targeted at multiple spatial scales.

Source: *Nature* (2010), 465(7296), 270, and *Ecology Letters* (2010), <http://dx.doi.org/10.1111/j.1461-0248.2010.01481.x>

Fishing boats influence bird movements

Satellite tracking of two Mediterranean bird species has revealed that the movements of these species are linked to the presence of fishing trawlers. When the trawlers were at sea the birds tended to congregate in certain areas, presumably the locations of the trawlers, but in the absence of trawling activity the birds foraged over a more diffuse area. The study's authors suggest that fishing trawlers may represent a reliable source of food for the birds, which eat the fish discarded overboard. This predictable food source may even be contributing to the birds having a higher rate of breeding success, although the authors warn that there might be a sting in the tail, as the boats often throw out benthic-dwelling fish that live in areas with accumulations of contaminants.

Source: *Current Biology* (2010), 20, 215–222, and *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/01/28/fly-through-restaurant/>

Climate adaptation out of sync

An assessment of > 25,000 rates of phenological change for 726 UK species has indicated that the seasonal timing of biological events (such as dates of flowering, migration and insect flight periods) has advanced by an average of 0.39 days year⁻¹. This corresponds to a period of rapid climate change during the study period, with temperatures in the UK's terrestrial, freshwater and marine environments increasing by 0.04–0.05°C year⁻¹. However, not all taxonomic groups have responded at the same rate, leading the authors to voice their concern about the possibility of trophic mismatching.

In particular, secondary consumers in food chains show slower rates of phenological change than primary consumers, a pattern that is repeated across all three environments studied in this research.

Source: *Global Change Biology* (2010), <http://dx.doi.org/10.1111/j.1365-2486.2010.02165.x>

Iberian lynx seen in Portugal for first time in 9 years

For the first time since 2001 a Critically Endangered Iberian lynx has been recorded in Portugal, according to the Portuguese State Conservation Agency and Junta de Andalucía, Spain. The lynx, which was wearing a radio collar, crossed the Spanish border into the Moura/Barrancos region, where Fauna & Flora International and its partner, the League for the Protection of Nature, have been working with local landowners for the last 5 years to protect habitat for the species. Although this lynx has now returned to Spain, it is hoped that it is the first step in the recolonization of Portugal by a species that used to occur throughout the Iberian Peninsula.

Source: *FFI News* (2010), http://www.fauna-flora.org/news_lynx_sighting.php

Radar threat for Zino's petrel

The only known breeding site of Europe's rarest seabird, the Endangered Zino's petrel, is under threat from the creation of a military radar on top of a mountain peak in Madeira. After years of indecision, and in the face of opposition from environmental groups, construction on the radar began in November 2009. Pico do Areeiro is located within a Natura 2000 site designated as a Special Protection Area, which means the area has the highest level of protection under EU law. Not only is the mountain used by Zino's petrel for breeding, the area is also home to high-altitude flora, and is one of Madeira's most popular tourist destinations. As part of the Environmental Impact Assessment for the site no work will be carried out during the petrel's breeding season.

Source: *BirdLife International News* (2010), <http://www.birdlife.org/news/news/2010/02/madeira.html>

Two million EU seabirds killed in a decade

Fishing gear in EU waters is estimated to have killed two million seabirds in the past 10 years. It is estimated that 90,000 birds drown annually through entanglement in gill-nets in the Baltic and North Seas although the actual mortality could be twice this high. In a single Spanish longline fishery off western Ireland another 50,000

seabirds die every year on longline hooks. Many of the species affected, such as the Critically Endangered Balearic shearwater, are protected by European law and are in rapid decline. On 8 June, World Oceans Day, a 23,000-strong petition was presented in Brussels by the RSPB and BirdLife International to Maria Damanaki, European Commissioner for Maritime Affairs and Fisheries, calling for the urgent delivery of the EU's overdue Seabird Action Plan to protect Europe's seabirds from their fatal attraction to baited hooks and fishing nets.

Source: *BirdLife International News* (2010), <http://www.birdlife.org/news/news/2010/06/seabird-petition.html>

SUB-SAHARAN AFRICA

UN gives gorillas a lift

UN peacekeepers have flown four Endangered eastern lowland gorillas out of a conflict zone to a rehabilitation centre 200 km north of Goma in the Democratic Republic of the Congo. The four young gorillas were feared to be at risk of being poached or trafficked. It was decided that air travel was best for the gorillas because ground transportation was deemed too difficult and traumatic. The 50-minute flight transported the gorillas, along with veterinarians and other caregivers, from Goma to a village near Tanya Nature Reserve in north Kiva province. A recent report blamed militia violence in eastern DRC for hastening the decline of the eastern lowland gorillas.

Source: *UN News Centre* (2010), <http://www.un.org/apps/news/story.asp?Cr=monuc&Cr1=&NewsID=34531#>

Frogs on the menu in West Africa

Surveys in Burkino Faso, Benin and Nigeria have revealed the extent of the consumption of amphibians in this part of West Africa. Interviews with amphibian collectors, stallholders and consumers indicated a difference in the frog trade between these countries. In Burkino Faso amphibian trade was generally not a commercial activity, with people, for the most part, collecting amphibians for consumption. In northern Benin and Nigeria, however, researchers discovered an intensive, cross-border trade in amphibians that is likely to be unsustainable in the long-term. People's responses to the interviews indicated there is already a perception that amphibian numbers have declined over the past 2 decades.

Source: *TRAFFIC Bulletin* (2010), 22, 117–128

Pirates affect research

The presence of Somali pirates in the Indian Ocean is having a detrimental effect on research in the area. In the past fishing boats in the area regularly carried researchers, who both monitored fish stocks and ocean health and ensured that fishermen complied with laws on fishing. Now researchers have been replaced with armed guards, and marine investigation is confined to ports. There is evidence that the lack of observers in the open ocean means that unsustainable fishing practices are on the increase. Of particular concern are fish-attracting devices, where bamboo rafts with netting are left to drift for days at a time. These devices attract fish such as tuna but also present a hazard to turtles and sharks. *Source: New Scientist* (2010), 205(2747), 6

Rhinos adapting well to life on African soil...

Four of the last eight remaining Critically Endangered northern white rhinos, transported from a zoo in the Czech Republic to Kenya's Ol Pejeta Conservancy in December 2009, are settling well into their new home. Three of the rhinos were born in captivity, and the oldest male, Sudan, was caught in the wild in the 1970s. The rhinos' behaviour has already altered since their arrival, with all four appearing more alert and conscious of their surroundings. On their arrival in Kenya the rhinos were initially kept in small enclosures but are now starting to spend more time in larger paddocks. Eventually the four will be reintroduced into two 24-km² breeding paddocks.

Source: FFI News (2010), http://www.fauna-flora.org/news_rhinos.php

...but are they actually members of the sixth rhino species?

An exhaustive examination of various taxonomic and genetic features of the northern and southern forms of the white rhinoceros indicates that these forms are sufficiently distinct to warrant recognition as separate species. In particular, dental morphology and cranial anatomy clearly distinguish the two forms and genetic analysis indicates the species diverged from one another > 1 million years ago. Whatever the taxonomic status of these two forms, differences in their conservation status are extreme: whereas the southern white rhino recovered from near extinction at the start of the 20th century, the northern white rhino is Critically Endangered. *Source: PLoS One* (2010), <http://dx.doi.org/10.1371/journal.pone.0009703>

You can't change a penguin's spots

Marking seabirds is difficult and expensive and may have adverse effects on the welfare of the birds. Researchers have therefore come up with a way of distinguishing between individuals at an African penguin colony on Robben Island, South Africa. African penguins have a unique set of spots on their chest plumage, so the researchers developed a computer system that creates a unique biometric identifier for adult penguins and compares this to a population database. Cameras set up along busy penguin routes found that fewer than 1 in every 10,000 matches of penguins to patterns in the database were incorrect. Furthermore, for every penguin waddling past, the cameras had a 13% chance of detecting a pattern to add to the database. The researchers believe that this method has the potential to identify more penguins than current levels of flipper banding at Robben Island.

Source: Endangered Species Research (2010), <http://dx.doi.org/10.3354/esr00267>, and *Journal Watch Online* (2010), <http://journalwatch.conservationsmagazine.org/2010/04/01/on-the-spot/>

Alaotra grebe is extinct

The Alaotra grebe, formerly restricted to Lake Alaotra and surrounding areas in east Madagascar, has been declared extinct. The last known sighting of the bird was in 1985. It was killed off by a combination of poaching, entanglement in monofilament nylon gill-nets, and predatory fish. With small wings, the bird is thought to have been incapable of flying long distances, living a mainly sedentary lifestyle on the lake and in surrounding ponds and highland lakes. Surveys in 1999 and 2000 found no individuals. The bird, usually found in pairs, fed almost exclusively on fish in Lake Alaotra, a large brackish lake which was once covered in dense papyrus and reeds.

Source: BirdLife International News (2010), <http://www.birdlife.org/news/pr/2010/05/red-list-for-birds-2010.html>

SOUTH AND SOUTH-EAST ASIA

Giant lizard shimmies forth

Surveys in the northern forests of the Philippines have revealed the existence of a hitherto unknown species of giant lizard. The new species, which belongs to the genus *Varanus*, grows to nearly 2 m long and is frugivorous. Molecular phylogenetic analysis indicates that the species is closely related to *Varanus olivaceus*, although there are a number of different characteristics

between these two species, including colour pattern and body size. Furthermore, the two species are separated by > 150 km, including three river valleys that act as barriers to the dispersal of these lizards. The researchers who discovered this new species hope it will become a flagship for the biodiverse forests of northern Luzon.

Source: Biology Letters (2010), <http://dx.doi.org/10.1098/rsbl.2010.0119>

Documenting sacred sites and bio-cultural diversity in the Eastern Himalayas

Conservationists, religious leaders and practitioners, academics and government agencies met for 3 days in Thimphu, Bhutan, to document sacred natural sites in the Eastern Himalayan region and to detail their importance to the conservation of the region's bio-cultural diversity and to the documentation of climate change in the region. The workshop, hosted by WWF Bhutan, is part of the Living Himalayas Initiative to engage faith groups in practical conservation and to explore the threats and adaptation needs of faith communities across the Eastern Himalayan region.

Source: Kuensel Newspaper (2010), <http://www.kuenselonline.com/modules.php?name=News&file=article&sid=15493>, and *WWF* (2010), <http://wwf.panda.org/193304/Sacred-Himalayan-sites-bring-together-religious-leaders-conservationists>

Partners work together to rehabilitate Critically Endangered vultures

Two Critically Endangered vultures, one white-rumped and one slender-billed vulture, have been returned to the wild 2 weeks after being rescued by the Cambodian Vulture Conservation Project. A number of vultures were fatally poisoned following their consumption of a poisoned dog in an Important Bird Area, Western Siem Pang, in north-eastern Cambodia, but the survivors were taken to Phnom Tamao Zoo and Wildlife Rescue Centre where they were nursed back to health prior to their release. Vultures across Asia have suffered dramatic declines, chiefly as a result of poisoning by diclofenac, but Cambodia is one of the countries where vulture populations are growing, thanks to the efforts of the Cambodian Vulture Conservation Project, which is a partnership between Cambodian government ministries and international non-governmental organizations.

Source: BirdLife Indochina News (2010), http://birdlifeindochina.org/cepf/Released_two_vultures_Cambodia

New gecko found in Cambodia

A new species of gecko, endemic to the Cardamom Mountains, has been named in honour of Mr Neang Thy, a Cambodian herpetologist who is the head of research for Fauna & Flora International's Cardamom Mountains Research Group. *Cnemaspis neangthyi* is only the second member of the *Cnemaspis* genus to have been discovered in Cambodia, with 30 *Cnemaspis* geckos known from South-East Asia as a whole. These geckos are diurnal, and their cryptic colouration and habit of foraging on shaded surfaces means they often go unnoticed. The discovery of *C. neangthyi* is further evidence of the rich biodiversity harboured by the Cardamom Mountains, which includes > 62 threatened animal and 17 threatened tree species.

Source: *FFI press release* (2010), http://www.fauna-flora.org/docs/Media_release-New_species_of_gecko_named_after_Fauna_and_Flora_International_scientist.pdf

Wildlife-unfriendly plantations

One of the most serious threats facing biodiversity, particularly in the tropics, is the conversion of natural habitats into agricultural land. Now a study has shown that one of the supposedly wildlife-friendly techniques for growing oil palm, the retention of forest fragments within agricultural areas, is not particularly beneficial for wildlife. Surveys of the abundance and diversity of birds in oil palm plantations, forest fragments and contiguous forest in Sabah, Borneo, has found that the abundances of near-threatened or threatened bird species were 60 times lower in forest fragments and 200 times lower in oil palm plantations than in contiguous forest. Furthermore species assemblages in fragments were more similar to assemblages in plantations than contiguous forest. These results strongly suggest that protection of existing contiguous forest would be more effective for biodiversity conservation than efforts to improve the wildlife friendliness of oil palm plantations.

Source: *Conservation Letters* (2010), <http://dx.doi.org/10.1111/j.1755-263X.2010.00107.x>

World's largest marine protected area designated

An area twice as large as the UK, covering > 544,000 km², has been designated in the Chagos archipelago. The waters of the archipelago contain some of the least disturbed coral reefs in the Indian Ocean and include the largest living coral structure, the Great Chagos Bank, home to > 220 coral species and > 1,000 reef fish species. The new marine protected area is a fully protected reserve, meaning that all extractive

industries such as deep sea mining and industrial fishing are banned. The UK's decision to protect this area was made after a 4-month public consultation during which over 275,000 people sent messages of support for full protection of this area.

Source: *Chagos Environment Network* (2010), <http://protectchagos.org/blog/u-k-designates-world%E2%80%99s-largest-marine-reserve/>

Orang-utan crosses rope bridge

Evidence has come to light for the first time of an orang-utan crossing a rope bridge, in the Lower Kinabatangan Wildlife Sanctuary, in Sabah, Malaysian Borneo. The bridges were installed in 2003 across tributaries of the Kinabatangan to reconnect fragmented parts of the Sanctuary. The bridges were deemed necessary because the large trees that would normally ford wetlands and river tributaries have been lost through deforestation, and because, unlike other primates, orang-utans cannot swim. The orang-utan that crossed the bridge on this occasion apparently lingered at the start of the bridge for about 20 minutes but once he commenced the crossing he did so very fast. Although this is the first record of an orang-utan using a rope bridge other species, such as macaques, proboscis monkeys and gibbons, have been recorded using them.

Source: *World Land Trust News* (2010), <http://www.worldlandtrust.org/news/2010/04/first-evidence-of-wild-orang-utan-using.htm>

Eastern hoolock gibbon found in Assam

The Vulnerable eastern hoolock gibbon has been found for the first time in the state of Assam, by a survey team led by Dilip Chetry of the NGO Aaranyak, in three reserved forests of Sadiya subdivision. Previously, Assam was known to harbour nine species of primate but now the number is 10. A total of 23 groups of eastern hoolock gibbons were sighted. The eastern hoolock gibbon also occurs in Arunachal Pradesh, in Myanmar, east of the Chindwin river, and in south-west Yunnan province of China. The study has recommended Kundi Kolia reserve forest as a potential conservation site for the species.

Source: *The Telegraph, Calcutta, India* (2010), http://www.telegraphindia.com/1100513/jsp/northeast/story_12440629.jsp

First observation of the Horton Plains slender loris in 72 years

The Horton Plains slender loris, previously known only from two specimens collected in 1937 and a number of sightings from eye shine in 2002, has been examined and

photographed in Sri Lanka. This loris clearly demonstrates adaptations to montane forest, as previously suggested from the preserved skins of the two specimens. Confirmation of the continued existence of this loris raises concerns over its taxonomic distinctiveness, its apparent low abundance in a highly fragmented and diminishing habitat, and the actions necessary to eliminate the threats to its survival.

Source: *Primate Conservation* (2010), http://www.primatesg.org/PDF/PC25_Gamage%20et%20al_slender%20loris.pdf

Ramsar designation urged for spoon-billed sandpiper site

One of the most important non-breeding sites for the Critically Endangered spoon-billed sandpiper in the Inner Gulf of Thailand, Khok Kham, has taken a major step towards Ramsar designation. During 1979–1996 up to 90% of the mangroves of the area were converted to shrimp ponds but after 10 years the shrimp industry crashed. As a result, a local grassroots environmental movement started in the late 1990s. The Bird Conservation Society of Thailand (BCST) supported this movement and now there are four local conservation groups working in coordination with BCST on the conservation of the Inner Gulf. On World Wetlands Day 2010 local people sent a petition to Suwit Khunkitti, Thailand's Minister of the Nature Resources and Environment, requesting that Khok Kham be designated a Ramsar Site. Their petition was welcomed by the Office of Natural Resources and Environmental Policy and Planning, the Ramsar Administrative Authority in Thailand.

Source: *BirdLife International News* (2010), http://www.birdlife.org/news/news/2010/03/thai_ramsar.html

EAST ASIA

Whale meat travels from Japan to South Korea and the USA

Genetic analysis of whale meat bought in sushi restaurants in Seoul and Los Angeles has revealed that some of the meat came from fin, sei and Atlantic minke whales. These species are listed on Appendix I of CITES, prohibiting their international trade. Furthermore, genetic comparisons between the meat purchased in LA and products bought in Japan in 2007 and 2008 suggest that this meat came from a whale killed during a Japanese scientific hunt of sei whales in the North Pacific. Similarly, DNA profiles confirmed that fin whale meat sold

in Seoul was an exact match with fin whale products first sold in Japanese markets in September 2007, making it likely that these products came from the same individual whale. This study underlines the importance of access to whale DNA registers in countries with whaling programmes.

Source: *Biology Letters* (2010), <http://dx.doi.org/10.1098/rsbl.2010.0239>

Illegal wildlife trade occurring across China's borders

A report by TRAFFIC about the wildlife trade in China indicates that porous boundaries between China and her neighbours allow trade in wildlife between these countries. The report describes the door-to-door service offered by vendors of wildlife products, including tiger bone wine, in Myanmar to customers in China. Often the remote locations of these boundaries make monitoring difficult, and in the case of the China–Myanmar border, its >1,000-km length is also an issue. Elsewhere in the country tiger and leopard parts were found for sale, although trade in these species is becoming less visible. It is not clear whether this is because the trade is diminishing or becoming more covert.

Source: *The State of Wildlife Trade in China* (2010), <http://www.traffic.org/home/2010/3/16/porous-china-myanmar-border-allowing-illegal-wildlife-trade.html>

NORTH AMERICA

Lingering effect from predators

The populations of snowshoe hares in Yukon province, Canada, undergo a 10-year cycle of boom and bust, which is closely linked to the populations of their predators. However, researchers have been puzzling as to why hare populations are slow to recover even when predator numbers are low and food abundant. A study of hormone levels has now revealed that maternal stress hormone levels are related to predator density during the breeding season. These maternal hormones are transferred to their offspring, and remain with the hares into adulthood. As a consequence, offspring born during years of high predator numbers suffer reduced reproductive output, leading to a slow recovery of the hare populations.

Source: *Ecology* (2010), <http://dx.doi.org/10.1890/09-1108> and *Nature* (2010), 464 (7289), 653

Lead poisoning exposure underestimated in condors

One of the greatest threats to the recovery of the Critically Endangered California condor is lead poisoning. Lead concentra-

tion levels in the remaining wild condors' bloodstream are analysed on a biannual basis. Now new research has found that this may not be sufficient, because biannual blood sampling only reveals c. 10% of a bird's annual lead exposure history. A better way of monitoring concentrations of lead, according to the researchers, would be to look at sequential feather sections alongside the blood samples. These feather sections provide a comprehensive history of lead exposure during the 2–4 months of feather growth. When combining this information with that gleaned from the blood sample analysis researchers are able to build up a comprehensive history of lead exposure for the birds.

Source: *Environmental Science & Technology* (2010), 44, 2639–2647

Humans eating up the food chain while fish descend

A analysis of 3,092 recipes from seafood cookbooks published between 1885 and 2007 in the Seattle area have shown that during this time, recipes have moved from mainly using lower trophic level invertebrates to using higher trophic level rockfish. This is despite the fact that, at the same time, overfishing has resulted in more seafood originating from the lower trophic levels of food chains. The study's authors suggest that familiarity with the social drivers of eating up the food web, as illustrated by these cookbooks, is important when it comes to sustainable management of fisheries and marine ecosystems, and in particular in designing policies to mitigate pressures on fish stocks.

Source: *Fish and Fisheries* (2010), <http://dx.doi.org/10.1111/j.1467-2979.2010.00355.x>

Benefits of MPA network revealed through monitoring

Marine protected areas are one of a suite of techniques to protect marine biodiversity. The creation of MPA networks presents difficulties in terms of monitoring these areas; in the case of the Channel Islands National Marine Sanctuary, off the Californian coast, for example, the network covers 488 km², incorporating a range of biogeographical regions. Now researchers have devised a monitoring system that evaluates the performance of MPA networks in the light of different biogeographical areas. The results indicated that, 5 years after the creation of the Sanctuary, fish species targeted by fishermen had significantly greater densities and biomass inside reserves than outside, while non-targeted fish species showed no significant difference. It remains to be seen whether fisheries around the Sanctuary will benefit

from spillover from the reserves into fishing areas, although evidence from other reserves in southern California suggest this is likely.

Source: *Proceedings of the National Academy of Sciences of the USA* (2010), <http://dx.doi.org/10.1073/pnas.0908091107>

Redwoods to become dry woods?

Research undertaken using a variety of data sets concerning the weather at the Californian coast indicates that the fogs that are a significant source of water for California's coastal ecosystems have reduced in frequency by 33% since the early 20th century. The presence of fog along this coast is correlated with a number of factors, including wind speed along the north-western coast, sea surface temperatures and the broader ocean-atmosphere system in the north-east Pacific. The coastal fogs are associated in particular with the iconic Californian redwood, with previous tree-ring studies indicating that growth of endemic pines along this coast is correlated with summer fog frequency. There is concern, therefore, that the reduction in fog frequency will lead to more drought stress among these trees and the other ecosystems that occur along California's coastline.

Source: *Proceedings of the National Academy of Sciences of the USA* (2010), <http://dx.doi.org/10.1073/pnas.0915062107>

Toadally different behaviour

Species with a wide distribution may behave differently in different parts of their range, a fact that needs to be taken into account when managing the populations of threatened species. Most studies of the Canadian toad, for example, have examined the species on prairies, where it is closely associated with aquatic areas. However, the toad is also associated with boreal habitats, where a study that tracked 29 toads found that their use of habitats and, in particular, their long-distance terrestrial movements, differed from the movements of their conspecifics on the prairies. The study's authors point out that applying the knowledge gleaned from the toads in the prairies to boreal-dwelling toads would not be appropriate in this situation.

Source: *Animal Conservation* (2010), 13, 43–52

Thoreau's data aid climate change research

A data set initiated by Henry David Thoreau in 1851 has revealed that non-native plant species, particularly those that are also invasive, are able to adapt their phenology to climate change at a faster rate than native plant species. The mean annual

temperature in Concord, Massachusetts, the site of the data set originally collected by Thoreau and continued by later observers, has increased by 2.4°C since 1851. Over the last 100 years, non-native invasive plant species in Concord have shifted their flowering time to be 11 days earlier than native plant species, and 9 days earlier than non-native non-invasive plants. Furthermore, there has been a significant increase in the abundance of non-native, and particularly invasive, plant species. The findings of this study suggest that non-native species share a set of phenological traits that have increased their success in recent years.

Source: *PLoS One* (2010), <http://dx.doi.org/10.1371/journal.pone.0008878>

300,000 km² of boreal forest protected in Canada

An agreement between logging companies and environmental groups will result in the protection of >300,000 km² of Canada's boreal forest, as well as putting in place strict guidelines for sustainable logging in an additional 385,000 km². In exchange for setting aside just under half the land they hold leases for across seven Canadian provinces, the 21 logging companies involved will have do-not-buy campaigns for their products dropped by nine environmental organizations. The environmental organizations, which include Greenpeace and The Nature Conservancy, will actively endorse the companies' products. When combined with previous declarations of forest protection, the area of boreal forest protected from logging will amount to 1.6 million km², the largest area of protected forest in the world.

Source: *Nature* (2010), 465(7296), 279

Deforestation affects wing shape

An examination of the wing shape of songbirds in eastern North America over the last 100 years has shown that the wings of several bird species associated with boreal areas have become more pointed over time, while the wings of birds living in temperate forests have become less pointed. This change coincides with the deforestation of boreal habitats and the afforestation of most temperate areas in this part of the USA. Pointed wings enable birds to fly greater distances more efficiently, consistent with the need of boreal-dwelling songbirds to move between patches in their increasingly fragmented habitat. These findings are consistent with the habitat isolation hypothesis, whereby songbird morphology is expected to evolve in response to changes in available habitat.

Source: *Ecology* (2010), <http://dx.doi.org/10.1890/09-2202>, and *Journal Watch*

Online (2010), <http://journalwatch.conservationmagazine.org/2010/02/04/looking-sharp/>

Roads cut swaths through mammal numbers

An intensive study of road mortality of mammals in St Lawrence County, New York, found that the average observed roadkill rate was 3.8 mammals per 100 km each week, with at least 50% of mammalian species in the study area affected. The researchers point out that number of species killed is likely to be higher than this because their weekly checks could not account for carcasses scavenged between visits. Of the carcasses found during the surveys the most frequently located were porcupines, racoons, cottontails and striped skunks, whilst carnivores were killed less often than predicted, based on their frequency in the area. Extrapolating these findings across the county, the authors suggest that drivers in St Lawrence may be killing >45,000 mammals per year. Source: *Biodiversity and Conservation* (2010), 19, 1611–1629, and *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/02/08/mean-streets/>

Fishery has an impact on turtle size

An investigation of diamondback terrapins from two areas of the USA has revealed that female turtles in Chesapeake Bay have carapaces that are c. 15% wider than females from Long Island Sound. Furthermore, museum specimens from Chesapeake Bay are also smaller than the contemporary female terrapin population. The turtle population in the Bay appears to be subject to selective pressures from the commercial crab-fishing industry, with many turtles drowning in crab traps. Female terrapins are vulnerable to becoming caught in traps until they reach a certain size but male terrapins almost never reach this size. In addition to larger carapace sizes, researchers also found that the population structure of the terrapins in the Bay had shifted towards younger males, and that females were reaching their maximum size at a younger age.

Source: *Conservation Biology* (2010), <http://dx.doi.org/10.1111/j.1523-1739.2010.01469.x>, and *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/03/20/big-mama/>

Hurricane Katrina linked to baby boom in dolphins

Surveys of the Mississippi Sound before and after Hurricane Katrina have revealed higher encounter rates with Atlantic bottlenose dolphin calves, and a higher per-

centage of calves in relation to non-calves, c. 2 years after the storm. Researchers suggest the increase could be related to three main factors. Firstly, a decrease in commercial and recreational fisheries landings after the hurricane could have increased dolphin food availability. Secondly, the numbers of private recreational fishing boats was also lower, meaning that dolphins were not having to expend as much energy avoiding boats and could spend more time foraging for food. Lastly, any females that lost their calves during the hurricane could become reproductively active in the following breeding season, so if a large number of calves perished in the storm this could account for the increase in calves seen c. 2 years later.

Source: *Marine Mammal Science* (2010), <http://dx.doi.org/10.1111/j.1748-7692.2010.00371.x>

Beware the enemy within

Whilst most invasive species are not native to the country they invade new evidence from the native odorous house ant in North America suggests that under some circumstances native species can take on invasive characteristics. In natural habitats colonies of the ant are small, with an average of 74 ants, one queen and a single nest. In urban environments, however, the odorous house ant can form supercolonies, containing an average of 238 queens, seven nests and >58,000 ants per nest. Colonies in semi-natural habitats were in between these two extremes, containing hundreds of ants but only one queen. The findings also suggest that the odorous house ant has outcompeted other native ant species in the urban environments where it had formed supercolonies.

Source: *Biological Invasions* (2010), <http://dx.doi.org/10.1007/s10530-010-9727-6>, and *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/03/31/living-large/>

Oil lingers for decades

A study that monitored the levels of a biomarker induced in response to crude oil exposure has found that harlequin ducks from areas affected by the *Exxon Valdez* oil spill in 1989 have elevated levels of this chemical compared to birds from unaffected areas. This suggests that, 20 years on, these ducks continue to be exposed to oil. Harlequin ducks are particularly sensitive to oil pollution for a number of reasons, including their diet of invertebrates that live in or on nearshore sediments and small body size. These findings also suggest that conventional assumptions about the longevity of oil in environments after a spill may be underestimated. On a more positive note, another study has

indicated that harlequin duck survival rates during the winters of 2000–2003 did not differ between oiled and un-oiled areas, indicating that the effects of the spill on demographic rates may be lessening.

Source: *Environmental Toxicology and Chemistry* (2010), 29, 1138–1145

CENTRAL AMERICA AND CARIBBEAN

Windfarm development rejected in Puerto Rico

The Planning Board of Puerto Rico has rejected a permit for an industrial windfarm development in Karso del Sur Important Bird Area (IBA), a move applauded by Puerto Rican environmental organizations. Karso del Sur is home to 19 restricted-range species that occur on Puerto Rico and the Virgin Islands, including c. 20% of the population of the Critically Endangered Puerto Rican nightjar, as well as other threatened animal species and over 700 plant species. The Karso del Sur IBA is in an area of karst limestone, and the Planning Board was concerned that the construction and operation of the windfarm would damage this fragile habitat. At the same time as the permit's rejection the Environmental Impact Statement for the development is also being legally disputed.

Source: *BirdLife International News* (2010), http://www.birdlife.org/news/news/2010/02/pr_windfarm.html

Maersk Line containers to the rescue

Shipping containers donated by Maersk Line have been installed in Summit Municipal Park, in Panama, as part of ongoing efforts to protect the country's amphibians. The refrigerated units are part of the Panama Amphibian Rescue and Conservation Project's Amphibian Rescue Centre, and will house the amphibian species most at risk of extinction from the chytrid fungus that is decimating amphibian populations worldwide. Each container provides c. 28 m³ of space for the amphibians, which will first undergo a 30-day quarantine period before they are released into the containers. Panama is home to at least 198 amphibian species, of which 70 are categorized as Critically Endangered, Endangered or Data Deficient.

Source: *Smithsonian Tropical Research Institute News* (2010), http://www.stri.org/english/about_stri/headline_news/news/article.php?id=1134

El Niño may have been behind golden toad's demise

The Monteverde golden toad from Costa Rica, which became extinct in the 1980s

and is seen by some as a poster child for the threats faced by amphibians, appears not to have been a victim of global warming-associated changes in weather. Instead, a new study that used stable oxygen isotope measurements from trees in the Monteverde Cloud Forest in Costa Rica has found that changes in the weather in this area are related to variations in dry season moisture linked to El Niño Southern Oscillation events. The disappearance of the toad coincided with a dry period caused by the 1986–1987 El Niño event, which probably caused the toads to congregate in small puddles to reproduce, assisting the spread of the deadly, and at that stage newly introduced, chytrid fungus.

Source: *Proceedings of the National Academy of Sciences of the USA* (2010), 107, 5036–5040, and *The Earth Institute, Columbia University* (2010), <http://www.earth.columbia.edu/articles/view/2646>

Crackdown on hawksbill turtle trade has excellent results

A survey in the Dominican Republic in 2006 found > 23,000 items made from Critically Endangered hawksbill turtles for sale as tourist souvenirs. Following a crackdown by the government however, a subsequent survey of the same locations in February 2010 found a mere 135 hawksbill items for sale. It is estimated that there are 8,000 nesting female hawksbill turtles worldwide, in the coastal waters of 180 countries. The widespread government action in the Dominican Republic aimed to provide an alternative to shops trading in hawksbill souvenirs, and thus encouraged trade in products such as cow horn or bone. Millions of tourists visit the Dominican Republic each year, with the result that many local communities depend on tourism.

Source: *WWF News* (2010), <http://www.worldwildlife.org/who/media/press/2009/WWFpresitem11966.html>

Belize becomes a magnet for cruise ships

The cruise industry in Belize has increased sharply over the past few years, with the number of cruise tourists in 2008 up by 1,140% compared to figures from 2001. Traditionally Belize has been viewed as a destination for ecotourism but cruises have a reputation for being unsustainable, because of their potential impacts on the marine environment, the number of tourists they carry and because they generally have weaker links to the local economy. Now a survey of the opinions on conservation issues of cruise ship tourists and tourists staying overnight in Belize has

shown that the latter expressed more concern for the environment than cruise tourists. Furthermore, cruise tourists ranked safety, price and cultural expectations as more important factors than the environmental ethics of the cruise company when it came to their holiday choice.

Source: *Journal Watch Online* (2010), <http://journalwatch.conservationmagazine.org/2010/0423/going-overboard>, and *Ocean & Coastal Management* (2010), 53, 234–244

SOUTH AMERICA

Fires destroying Amazon rainforests are increasing

An analysis of satellite-derived data on deforestation and forest fires in the Amazon has shown that forest fires could release amounts of carbon similar to those released by deliberate deforestation. Fire occurrence rates have also increased, rather than decreased, in 59% of areas with reduced deforestation. The rise in fires could jeopardize the success of reducing emissions from deforestation and forest degradation (REDD) schemes (see also this issue, pp. 330–357). A system to monitor fires is required and there is a need to shift land use in the Amazon to a system where fire is not used. Differences in fire frequencies across two land-use gradients revealed that fire-free land-management can reduce fire incidence by up to 69%. If sustainable fire-free land-management of deforested areas is not adopted in the REDD mechanism then the carbon savings achieved by avoiding deforestation may be partially negated by increased emissions from fires.

Source: *Science* (2010), 328, 1275–1278, and *BBC News* (2010), http://news.bbc.co.uk/2/hi/science_and_environment/10228989.stm

Flagging up nests can save turtles

Investigations along a stretch of beach in the north coast of Bahia state, Brazil, have indicated that placing flags over sea turtle nests can reduce nest predation. The beaches in question are among the most important turtle-nesting beaches in Brazil, and are used by loggerhead, hawksbill and olive ridley turtles. Since 2005/2006, however, there has been a substantial increase in predation of turtle nests by crab-eating foxes, despite the use of wire mesh grids over the nest. Of the 324 nests protected by a grid and flag, only 3.95% were predated, compared to 24% of nests predated where only a grid was present. This research suggests that flags may have a role to play in turtle nest protection, although flags may

be less effective in areas without constant coastal winds.

Source: *Marine Turtle Newsletter* (2009), 125, 1–3

Spiders, snakes and scorpions go up in smoke

The world's largest collection of snakes has been destroyed in a fire at a research centre in Sao Paolo. The 100-year old collection at the Butantan Institute contained nearly 80,000 snakes, as well as thousands of scorpions and spiders. The preserved specimens were used in biomedical research but were of interest to conservationists too, as the collection included rare and extinct specimens. A curator at the Institute described the collection's destruction as 'a loss to humanity'. The cause of the fire is not known, although it would appear that the flammable preservative used around the specimens was instrumental in spreading the flames.

Source: *BBC News* (2010), <http://news.bbc.co.uk/1/hi/world/americas/8685921.stm>

Parrot once thought extinct now numbers over 1,000

The yellow-eared parrot has been downgraded from Critically Endangered to Endangered on the IUCN Red List. In 1998 Fundación ProAves rediscovered a colony of 81 yellow-eared parrots in the Andes of Colombia, after the species was thought to be extinct. Protection has allowed the colony to grow and it now numbers > 1,000. ProAves implemented several initiatives to save this parrot. In 2009 the Parrot Conservation Corridor was established to protect the species, with the acquisition of > 4,000 ha of habitat. A nest box programme since 2003 has provided new nest sites. Another important effort has involved the wax palm, Colombia's national tree, which is also in danger of extinction. Because the palm provides critical habitat for the yellow-eared parrot a campaign was successfully instituted to reduce the use of the wax palm for Palm Sunday celebrations by the Catholic Church in Colombia.

Source: *ProAves News* (2010), http://www.proaves.org/article.php?id_article=865

New antpitta discovered

A new species of bird, native to Colombia, has been discovered and named Fenwick's antpitta *Grallaria fenwickorum* after American Bird Conservancy President George Fenwick and his family. The species was described from an individual captured, ringed, measured, photographed, sampled for DNA, and then released alive back into the wild. The individual that provided the holotype for the description was captured

in the 4,582 ha Colibri del Sol Bird Reserve on the Paramo del Sol massif in the western Andes of Colombia. The new species inhabits a highly restricted area of montane cloud forest where dwarf bamboo thickets thrive on rich volcanic soils on the less humid eastern-facing slopes; a habitat that has undergone extensive clearance for pastures in recent decades. The bird has been proposed as Critically Endangered under IUCN criteria.

Source: *American Bird Conservancy News* (2010), <http://www.abcbirds.org/newsandreports/stories/100520.html>

Peruvian government announces new conservation areas

The Peruvian Minister of the Environment, Antonia José Brack Egg, has announced his government's approval of three new, community-owned, private conservation areas, encompassing 3,415 ha on community owned lands, to protect *Polylepis* forest in the Vilcanota Mountains of south-east Peru, near Cusco. *Polylepis* is a genus of trees and shrubs that grow at or above the tree line, only in the Andes of South America. The three new private conservation areas are Choquechaca, Mantamay and Sele Tecse Ayllu Lares. Several globally threatened birds are unique to this *Polylepis* habitat, including the Endangered ash-breasted tit-tyrant and white-browed tit-spinetail, and the Critically Endangered and highly range-restricted royal cinclodes. Currently, only about 2–3% of the original high-elevation *Polylepis* forest remains in all of Peru, threatening the rich and specialized biota of this vanishing ecosystem.

Source: *American Bird Conservancy News* (2010) <http://www.abcbirds.org/newsandreports/releases/100527.html>

PACIFIC

American iguanas invade Fiji

Although tentatively reported in 2000 the presence of the American or green iguana in Fiji was not confirmed until 2008, on the island of Qamea, and by 2009 the species was reported from neighbouring Laucala, Matagi and Taveuni Islands. In February 2010 the species was reportedly brought to the main island of Viti Levu from Taveuni/Vanua Levu. This iguana is native to South America and is reported to have been brought into Fiji by a foreign national. Fiji has three native iguana species of the genus *Brachylophus*, two of which are endemic. The range of the Fiji banded iguana overlaps with that of the introduced American iguana, and the latter is a potential risk to the threatened native iguanas through the

spread of disease. The Department of Environment has set up a task force to oversee the incursion response, and the Ministry of Primary Industries through the Department of Agriculture has established an eradication task force.

Source: *NatureFiji News* (2010), <http://www.naturefiji.org/newsstory.php?id=93>

AUSTRALIA/ANTARCTICA/ NEW ZEALAND

Submarine explosion of life

Surveys of the deep sea Kaikoura Canyon off the coast of New Zealand have revealed a cornucopia of megabenthic invertebrates. Researchers sampling these deep waters found the biomass of the invertebrates to be 100 times greater than biomass reported from previous samples of habitats below 500 m. Further evidence from these surveys revealed that the Canyon is home to a large number of rat-tail fishes, thought to feed on the invertebrates. It is believed that at least 660 submarine canyons exist worldwide, and that c. 100 of these may be as species-rich as the Kaikoura Canyon.

Source: *Proceedings of the Royal Society B* (2010), <http://dx.doi.org/10.1098/rspb.2010.0462>

Corals' cloud sunscreen at risk of disappearance

Past research has found that algae dwelling in coral tissue produce dimethyl sulphide (DMS), a gas which, on contact with air, helps clouds form over the sea. This blocks sunlight and in turn reduces the water temperature. Now new research suggests that a rise in ocean temperature of only 2°C will stop some algae producing DMS, leading to a reduction in the cloud cover over reefs. The researchers involved in this work fear that a reduction in the amount of DMS in Australia's northern coral reefs could result in the drying-out of north Queensland's rainforests.

Source: *New Scientist* (2010), 205(2749), 17

A small head and cautious nature can be helpful, if you're a death adder...

The effects of the spread of invasive cane toads on native Australian wildlife is well documented. Now studies on the interactions in northern Australia between a naïve predator, the death adder, and the newly arrived toxic toads has shown that variation in snake behaviour and morphology may at least protect some individuals. Specifically, snakes that were not keen on attacking cane toads in the laboratory, and snakes with smaller heads, had much higher rates of survival in the wild than their conspecifics

without these attributes. Given the strong pressure being exerted on the species by the cane toads since their invasion into this part of Australia, an adaptive response from the adder population is a possibility.

Source: *Animal Conservation* (2010), 13, 53–59

...while quoll school helps educate these endemic species

Poisonous cane toads are closing in on the last stronghold of the Critically Endangered northern quoll, an endemic marsupial with a suicidal tendency to eat the toads. Concerned by the extinction of the quoll across Northern Australia, researchers have experimented to see whether conditioned taste aversion might help to protect the Kimberly's quolls. Young quolls were fed a small (and thus not fatally toxic) dead cane toad impregnated with a nausea-inducing chemical. Thirty-one 'toad-smart' quolls were then fitted with radio-collars and released, along with 31 'toad-naïve' quolls. Of the latter group, 29% died soon after release, following an encounter with large cane toads. However, the taste aversion training had promising results, increasing the daily survival rate of male quolls from 58 to 88%, and from 84 to 94% in female quolls.

Source: *Journal of Applied Ecology* (2010), 47, 558–565, and *Journal Watch Online* (2010), <http://journalwatch.conservation>

magazine.org/2010/04/15/a-lesson-before-dying/

Evidence for stop-start growth of coral reefs

An investigation that examined cores taken from small coral reefs located in a bay on Dunk Island, off Queensland, has shown that the reefs grew at different times. The core samples indicated that the reefs underwent two distinct periods of growth, one between c. 6,500 and 4,500 years ago and the other over the last 1,500 years. The reefs studied have now reached the end of their natural life, as they are no longer able to grow upwards because the sea level is stable and sunlight penetration is restricted by the muddy conditions around the island. The reefs appear to be able to grow rapidly when the opportunity arises, suggesting that sea-level rise could allow these particular reefs to expand once more, although the authors warn that coral bleaching and ocean acidification may hamper their ability to do so in the future.

Source: *Planet Earth Online* (2010), <http://planetearth.nerc.ac.uk/news/story.aspx?id=672> and *Geology* (2010), 38, 119–122

Kiwi flight

Thirty kiwi have flown (with assistance from a Hercules C130 aircraft) from Little Barrier Island to a new home on Pukaha

Mount Bruce, on New Zealand's North Island. This is the biggest ever mass-translocation of kiwi, and their arrival on Pukaha Mount Bruce has doubled the population of kiwis there. The aim of adding to the existing population of kiwis on Pukaha Mount Bruce is to improve the genetic diversity of the existing population, with the ultimate aim of creating a self-sustaining population of kiwi in the wild at Pukaha. The new arrivals appear to be settling in well and there are even indications that two of the translocated birds have paired up.

Source: *Pukaha Mount Bruce News* (2010), <http://www.mtbruce.org.nz/new-kiwi-settling-well>

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