Briefly

INTERNATIONAL

Big is bad if you are a hungry carnivore

An investigation into the relationship between body mass and prey abundance as observed in 199 populations of 11 carnivores has shown that relative decreases in prey abundance have a worse effect on large carnivores compared to their smaller relatives, with the larger species showing a five- to six-fold decrease in density compared to smaller species. The reasons for this disproportionate decrease in larger carnivore density in such situations are not clear, and further research is recommended, but the study's authors speculate that interactions between predator size, energetics and population processes may play a role. The implications of this study for carnivore conservation are significant, however, in that this work makes clear the vulnerability of larger carnivore species to changes in the abundance of their prey.

Source: Biology Letters (2010), http://dx.doi.org/10.1098/rsbl.2010.0996

Herbaria harbour new species

Botanists working on reclassifying varieties of *Strobilanthes*, a plant native to Asia, have found that many of the 60 species they were working on had been collected years earlier. Further research indicated that only 16% of new species records published between 1970 and 2010 involved species that had been collected within the last 5 years or less, suggesting a sizeable time lag between the date on which a species is collected for the first time and its subsequent description. Of the remaining 84% nearly one quarter of new species descriptions were of specimens $>$ 50 years old. Extrapolating from their findings, the researchers hypothesize that c. 50% of the estimated 70,000 plant species still awaiting discovery may already have been collected and are currently awaiting attention in herbaria.

Source: Proceedings of the National Academy of Sciences of the USA (2010), http://dx.doi.org/10.1073/pnas.1011841108, and *Nature* (2010), 468(7326), 870

Biodiversity loss is complex

An analysis of two large datasets, one of local population sizes of vertebrates since 1970 and the other focusing on the distributions of Galliform birds over 1728–2008, has shown that the story of biodiversity loss is more complex than headline figures suggest. Both datasets indicated that only a few species show large changes in range size or abundance over time, with the majority of species' populations remaining stable while others are on the increase. Further investigation found only weak evidence for ecological and biological traits acting as predictors of local declines in range or abundance, and instead pointed to extrinsic factors, such as anthropogenic effects and changing environments, as contributing more to range and population change in the studied species. These findings will be of interest to conservation practitioners, as they indicate that averaged species trends are an oversimplification.

Source: Philosophical Transactions of the Royal Society B (2010), http://dx.doi.org/10.1098/rstb.2010.0264

Epic journey tracked by satellite

The migratory routes of leatherback turtles have been revealed for the first time using satellite tracking. In a 5-year study researchers tracked the movement of 25 female leatherback turtles as they made their epic journeys across the South Atlantic. Three migratory routes were identified between the world's largest leatherback breeding colony in Gabon to feeding grounds in the south-west and south-east Atlantic and off the coast of Central Africa. The longest recorded journey was 7,563 km straight across the South Atlantic from Africa to South America. All three migratory routes take the leatherback turtles through areas where they are at risk from fisheries but it is hoped the increased knowledge of their migratory patterns and routes will inform conservation strategies for the future protection of the species.

Source: Proceedings of the Royal Society B (2011), http://dx.doi.org/10.1098/rspb.2010.2467, and *ScienceDaily* (2011), http://www.sciencedaily.com/releases/2011/01/110104193045.htm

Another ecosystem service?

Similarities between the banking system and ecological models may not be immediately obvious but a study carried out by a banker from the Bank of England and an ecological theorist has unearthed parallels. Specifically, the study draws analogies between the dynamics within ecological food webs and the relationship between complexity and stability in models of financial networks. Work on ecological dynamics since the 1970s has resulted in a shift from the idea that the more complex an ecosystem the more stable it is towards the realization that complex systems contain critical points where, for example, the removal of one species can have a disproportionate effect on the ecosystem as a whole. This study implies that the global financial system may behave in a similar way but the authors suggest that current thinking about the dynamics within the financial system is comparable to ideas about ecological dynamics from the 1960s.

Source: Nature (2011), 469(7330), 351–355, and *New Scientist* (2011), 209(2796), 6

Fisheries quotas not extensive enough

An international meeting to determine fishing quotas for the Atlantic and Mediterranean has received a mixed reception from conservationists. Some of the meeting's outcomes have been commended, such as the moves to protect oceanic whitetip and hammerhead sharks in the Atlantic, but the decisions regarding quotas for bluefin tuna have been widely criticized. The body responsible for setting fishing quotas for bluefin tuna catches in the Atlantic, the International Commission for the Conservation of Atlantic Tunas, agreed to reduce the amount of tuna caught annually from 13,500 to 12,900 t, a reduction of 4%. Conservationists had hoped for a far more sizeable reduction in quota size, or even a suspension of tuna fishing, on the grounds that illegal fishing is a big problem in the Mediterranean.

Source: The Guardian (2010), http://www.guardian.co.uk/environment/2010/nov/29/iccat-conservation-conference-fishing-quotas

Biodiversity guards against disease

The role of biodiversity in disease transmission is not entirely clear: whereas high biodiversity may increase the potential source of novel pathogens it may also reduce pathogen transmission. Although questions remain on this issue there is increasing evidence that the preservation of intact ecosystems and their attendant biodiversity reduces the prevalence of infectious diseases. In some cases biodiversity loss appears to be correlated with an increase in pathogen transmission and disease incidence, a phenomenon observed across different ecological systems and involving different pathogens, hosts and transmission methods. The study's authors also speculate that changes in microbial fauna

call this an invasion debt, and suggest that it arises from a time-lag between a species' first invasion and that species' establishment. Socio-economic conditions are known to correlate positively with the number of alien plants and animals in a region, possibly because they are surrogate measures of human pressure on natural systems. The findings of this study suggest that the relationship between current levels of socio-economic activity and biological invasions may not be fully appreciated until several decades' time.
Source: Proceedings of the National Academy of Sciences of the USA (2010), http://dx.doi.org/10.1073/pnas.1011728108

Farmland transformation project receives national award

The Great Fen Project, an ambitious arable reclamation project that aims to link two nature reserves in the east of England, has won the UK's top planning prize. Awarded by the Royal Town Planning Institute, the Silver Jubilee Cup was awarded to the Great Fen Project for being the most outstanding planning project of the past 12 months. The Project, which is already underway, will create a resilient, multi-purpose fenland landscape, with opportunities for farming, conservation and recreation, instead of the intensive, mechanized landscape that exists in the area at present. Furthermore, the wetland currently being constructed on the ex-arable land will act both as a carbon sink and as a major new area for flood water retention.
Source: RTPI news (2011), http://www.rtpi.org.uk/item/4380/23/5/3

Winter sports prove stressful for birds

Researchers examining the levels of stress hormones in the droppings of capercaillie at varying distances from recreational winter sports areas in Europe have found that birds in areas of low recreation intensity had lower levels of stress hormones in their droppings compared to birds in areas of moderate or high recreation intensity. Furthermore capercaillie were found to avoid disturbed parts of their home ranges. One reason for the susceptibility of capercaillie to disturbance during the winter may relate to their reliance on conifer needles during the winter months; these needles have a low nutrient content and are difficult to digest, resulting in a tight energy budget for the birds. The study's authors recommend that access to capercaillie winter habitats should be prevented, and that recreation activities should avoid core capercaillie wintering areas, particularly during sub-zero temperature conditions.
Source: Ibis (2010), http://dx.doi.org/10.1111/j.1474-919X.2010.01083.x

Wolf hunt gets Sweden into trouble with the EU

Sweden's decision to allow 20 wolves to be shot during 2011 has resulted in the threat of legal action by the European Commission for breach of EU law. Wolf-hunting was reintroduced in Sweden in 2010 following a ban that had been in place since 1964. Hunters claim the wolf population in Sweden is on the increase and that the animals now pose a threat to livestock and dogs. The EU's Environment Commissioner, however, states that wolves in Sweden have an unfavourable conservation status, while conservationists claim that the wolf population in Scandinavia as a whole has a narrow genetic base. The total number of wolves in Sweden is thought to be c. 200, and this constitutes the majority of Scandinavia's wolf population.
Source: BBC News (2010), http://www.bbc.co.uk/news/world-europe-12214397

NORTH AFRICA AND MIDDLE EAST

Regeneration of Iraq's Mesopotamian marshes

Large areas of the Mesopotamian marshlands have been restored in a project led by Nature Iraq. During the 1990s the marshes were drained in an act of retribution by Saddam Hussein's regime against the indigenous Marsh Arab tribes. Previously one of the most extensive wetland ecosystems in western Eurasia, covering 15,000 km^2, the marshes were reduced to $<$ 10% of their original size. Since the re-flooding of the area surveys have shown that many species of breeding bird are now increasing. Populations of both the Endangered Basra reed warbler and the endemic Iraq babbler have increased their range in the marshes. Furthermore, Nature Iraq recorded 46,000 Vulnerable marble teal in the marshes in 2010. Most recently high levels of salinity in the area have hampered the reclamation of the marshes but the project continues to work towards solutions with a focus on the interconnection between the people of the region and the marshland environment.
Source: BirdLife International (2011), http://www.birdlife.org/community/2011/01/miracle-in-the-marshes-of-iraq/

Iranian cheetahs confirmed as unique subspecies

The Critically Endangered Iranian cheetah has been confirmed as a unique subspecies, *Acinonyx jubatus venaticus*. Researchers analysed the DNA of cheetahs from a wide geographical and historical range and showed that current Iranian cheetahs share a similar genetic profile to that of a specimen originating from north-western Iran in 800–900 CE. Until recently it had been thought that cheetahs had low genetic variability and it was unclear whether populations in west Africa, north-east Africa, and north Africa and Iran were genetically different enough to warrant their status as a subspecies. The current population of the Iranian cheetah is under threat from habitat degradation and poaching and is thought to consist of just 60–100 individuals, with fewer than half of mature breeding age.
Source: BBC News (2011), http://news.bbc.co.uk/earth/hi/earth_news/newsid_9365000/9365567.stm, and *Molecular Ecology* (2011), http://dx.doi.org/10.1111/j.1365-294X.2010.04986.x

SUB-SAHARAN AFRICA

Rhinoceros poaching increases in South Africa

By September 2010 the number of white and black rhinoceroses killed in South Africa had already exceeded the number killed in 2009, itself the worst year for rhino poaching in 2 decades. Conservationists blame the surge in poaching on a variety of factors, including the availability of mobile phones, the use of the internet, which enables criminals to act anonymously, and the rise of Asian organized crime in Africa. The use of helicopters to track and shoot rhinos, with tranquillizing darts, means that a horn can be removed in as little as 10 minutes. However, enforcement of anti-poaching laws in South Africa has resulted in a number of arrests, with 11 people appearing in court in late September on suspicion of being part of an organized poaching racket.
Source: TRAFFIC Bulletin (2010), 23, 3

African vultures in decline

A comparison of vulture numbers in and around Masai Mara National Reserve in Kenya in 1976 and 1988 with numbers from the same areas from 2003–2005 has found seven of the eight species have undergone severe declines over this period. Changes in land use around the Reserve, particularly the substantial increase in the number of farmers, are likely to be causing the decline in vulture numbers. Farmers are known to leave carcasses laced with carbamate poisons in the area in an attempt to poison hyenas and lions but the communal feeding habits of vultures means that even a few poisoned carcasses can have a serious effect on vulture populations. The authors recommend that at the very least African