

techniques to help conserve threatened species through the use of assisted reproductive technology. They aim to boost populations of threatened animals by harvesting egg and sperm cells, producing embryos by means of in vitro fertilization, and implanting the embryos in females of more common species. There are significant challenges associated with the differences in physiology and reproductive cycles among species, requiring a specific cryogenics process in each case to freeze semen, embryos and other tissue. In 2006 a Sika deer fawn was born to a common red deer surrogate mother and integrated with naturally conceived Sika deer, but the same operation carried out later on a rare subspecies was unsuccessful, as the fawn was rejected by the surrogate mother. The reserve also maintains a diverse wildlife sperm and tissue bank, which includes deer and markhor embryos, and semen samples from 400 individuals of 30 wild species. Source: *The Guardian* (2016) theguardian.com/environment/2016/jan/18/biotechnology-endangered-wildlife-conservation-species

Lethal amphibian disease killed off on island

For the first time researchers have eliminated an amphibian fungal disease in a wild population of toads. The chytrid fungus *Batrachochytrium dendrobatidis*, which has affected amphibian species worldwide, driving population declines and species extinctions, is highly infectious and is responsible for devastating amphibian populations. Over 5 years researchers were able to clear the disease from toads native to the Spanish island of Mallorca. Tadpoles of the Mallorcan midwife toad *Alytes muletensis* were collected from the wild, transported to a laboratory and bathed in an anti-fungal solution. The tadpoles were returned to the collection sites and a laboratory decontaminant used to sterilize the environment around each breeding site. Infection at four of the five pools where infection had previously been recorded was eradicated, and remained so for 2 years post-application.

Source: *Biology Letters* (2015) dx.doi.org/10.1098/rsbl.2015.0874, & *BBC News* (2015) bbc.co.uk/news/science-environment-34850807

SUB-SAHARAN AFRICA

Marine monitoring inspires new approach to studying wild animal offtake

Based on approaches used to monitor exploitation of fisheries and population trends

in marine species, scientists have proposed two novel indicators for harvested terrestrial species, to assess the harvesting pressure on groups of wild animals within a region, and whether hunters are relying increasingly on smaller species over time. The indicators were applied to data for mammals and birds of West and Central Africa, where overharvesting of wild animals is one of the greatest threats to biodiversity, and the results indicated that harvesting pressure increased over the 40-year study period and that hunters may target smaller species over time, as larger species disappear. For such indicators to be useful in providing insights into the dynamics of wild meat harvesting there is a need for the collection of more data to facilitate large-scale long-term analyses.

Source: *Ecology and Society* (2015) dx.doi.org/10.5751/ES-07823-200340, & *WCS* (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8473/Land-bound-Scientists-Find-Inspiration-From-the-Sea-to-Monitor-Wild-Animal-Hunting-in-African-Forests.aspx

Sixty new dragonfly species described in Africa

Researchers have recently described 60 new species of African dragonflies, bringing the total number of known dragonfly species on the continent to 760. All dragonflies and damselflies breed in freshwater, yet the new species exhibit considerable diversity in their habitats; for example, the pale cascader *Zygonyx denticulatus*, found in Zambia and the Democratic Republic of the Congo, prefers sunny rapids whereas the Gabon slim sprite *Pseudagrion dactyldium* is found near muddy puddles in deep shade, and the black relic *Pentaplebia mangana* occupies dark areas near forest waterfalls. Freshwater habitats, which are home to 10% of all animal species worldwide, are under enormous pressure in Africa, and knowledge of the dragonflies is important as they are indicators of the health of freshwater ecosystems. There is a need to develop local expertise in biological research to ensure that new species are discovered and protected.

Source: *IUCN* (2016) iucnredlist.org/archives

Scientists predict decline of deadly chytrid fungus in Albertine Rift

The Albertine Rift region in central Africa is the continent's richest area for vertebrate diversity and is home to >145 amphibian species, at least 42 of which are endemic. The fungal pathogen *Batrachochytrium dendrobatidis* has been associated with

infections, die-offs or extinctions in more than 200 amphibian species worldwide and has been identified in at least eight African countries. A study has documented the distribution and prevalence of the chytrid fungus in existing and proposed protected areas of the Albertine Rift, and used modelling software to predict how climate change will affect its distribution. Model predictions indicate that the fungus is currently widespread across the Albertine Rift but that under predicted climate change scenarios its range will contract substantially by 2080 as optimal habitat suitability decreases. Although the predicted decrease in the chytrid fungus may offer hope for amphibians, they are likely to also experience negative impacts of climate change, including loss of habitat.

Source: *PLoS ONE* (2015) dx.doi.org/10.1371/journal.pone.0145841, & *WCS* (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8503/Study-Deadly-Amphibian-Fungus-May-Decline.aspx

2015 worst year on record for rhino poaching...

Overall, rhinoceros poaching figures for Africa reached a record high last year, despite a slight decrease in poaching in South Africa. Losses in Zimbabwe and Namibia rose sharply, and the continent-wide total for the year is at least 1,305 rhinos. Of the four major rhinoceros range states, only Kenya is expected to report a significant decrease in poaching in 2015. In January the South African Government lost its appeal against the lifting of a ban on the domestic trade in rhino horn. The ban was overturned in November following legal action by two game ranchers, leaving open the possibility that South Africa will again become a link in the illegal trade from Africa to Asia. At the 66th meeting of the Standing Committee of CITES at the start of the year, all countries affected by rhino poaching were instructed to implement key strategies and actions set out by the CITES Rhinoceros Enforcement Task Force.

Source: *TRAFFIC* (2016) traffic.org/home/2016/1/21/south-africa-reports-small-decrease-in-rhino-poaching-but-af.html

...and Northern white rhino dies in USA, leaving only three alive

One of the world's last four remaining northern white rhinos has died in a zoo in the USA. The condition of 41-year old Nola had deteriorated after surgery and she had to be put down. Nola had been a popular attraction at the San Diego Zoo Safari Park since 1989. The remaining three northern white

rhinos are at the Ol Pejeta Conservancy in Kenya. The northern white rhino population was devastated by poachers seeking their horns, and was declared extinct in the wild in 2008. San Diego zoo has recently brought in six southern white rhinos, hoping to use them as surrogate mothers for northern white rhino embryos. There are about 20,000 southern white rhinos in the world, but studies are still taking place to determine whether the subspecies are genetically similar enough for the surrogacy to work. If successful, the programme could see a northern white rhino calf born within 10–15 years.

Source: *BBC News* (2015) bbc.co.uk/news/world-us-canada-34897767

Ghana's grey parrots undergo catastrophic decline

Ghana has lost 90–99% of its grey parrot *Psittacus erithacus* population in the past 2 decades, with the almost total loss of all major roosts known in 1992. The species is now rarely sighted in the country, having been heavily traded for decades, and an intensive 150-day search, including of roosts that previously had as many as 1,200 individuals, yielded only a few sightings. The researchers involved in this latest study attribute the decline to four main factors: trade, overall forest reduction, silvicultural practices and timber harvesting on farmland. Reduction in habitat quality is another significant factor, particularly in relation to the felling of large trees such as the commercially important species *Terminalia superba* and *Ceiba pentandra*, which parrots use for nesting and roosting. Interviews with 906 local people in the study areas revealed a public perception that there had been a decline in grey parrot abundance during the previous 2 decades.

Source: *Ibis* (2016) [dx.doi.org/10.1111/ibi.12332](https://doi.org/10.1111/ibi.12332), & *BirdLife International* (2016) birdlife.org/africa/news/ghana%E2%80%99s-grey-parrot-population-may-soon-cease-exist

British helicopter pilot killed by Tanzania poachers

A British helicopter pilot, Roger Gower, has been shot dead by elephant poachers in Tanzania whilst tracking poachers in the Maswa Game Reserve for the Friedkin Conservation Fund. The pilot had been approaching the last of three elephants killed by poachers when he was shot. He managed to land his helicopter, but died before he could be rescued. Mr Gower's main role had been flying people between the different camps on the reserve where he worked, but he had also flown daily patrols to

support ground staff in their work against poachers.

Source: *BBC News* (2016) bbc.co.uk/news/uk-35450490

Congo joins Elephant Protection Initiative

The Republic of the Congo has confirmed that it will join the African-led Elephant Protection Initiative, which was established to eradicate the ivory trade and bring an end to elephant poaching. The announcement was made at the 66th meeting of the Standing Committee of CITES in January. The Central African region lost 65% of its elephants during 2002–2012, and Congo is working hard to protect its elephants through a number of initiatives, including the creation of new protected areas, improved protection in production landscapes, such as forestry concessions, and the development of an anti-poaching strategy. Last year the country's president symbolically set fire to almost 5 tonnes of seized elephant ivory. The Elephant Protection Initiative was launched in 2014 by leaders from Botswana, Chad, Ethiopia, Gabon and Tanzania in response to the poaching crisis in Africa, and was later joined by Uganda, Kenya, Malawi and the Gambia, and most recently by Liberia and the Congo.

Source: *WCS* (2016) newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/8489/Republic-of-Congo-Becomes-11th-Nation-to-Join-Elephant-Protection-Initiative.aspx

Plans for Atlantic's largest marine reserve

Blue Marine Foundation has announced plans to establish the largest marine protected area in the Atlantic Ocean, around Ascension Island, midway between Brazil and Angola, funded by a grant of GBP 300,000 from the Bacon Foundation. It is intended to close just over half of the proposed 234,291 km² reserve to commercial fishing, with monitoring and enforcement by a combination of satellite and patrol boats, with a strictly controlled tuna fishery in the remainder, policed according to international best practice and with a total ban on shark finning. The waters around Ascension are home to some of the world's largest marlin, one of the largest populations of green turtles, several endemic fish species, and important colonies of tropical seabirds. The fishery has previously been exploited by foreign boats using unsustainable methods, but all vessels will now be required to implement measures to facilitate

the live release of bycatch of seabirds, turtles and sharks.

Source: *New Scientist* (2016) newscientist.com/article/mg22930554-100-uk-territory-could-host-atlantics-largest-protected-area, & *Blue Marine Foundation* (2016) bluemarinefoundation.com/blog/2016-begins-with-the-creation-of-the-largest-marine-reserve-in-atlantic-ocean-2/

Two new frog species discovered in Madagascar

Two new frog species of the genus *Rhombophryne* have been discovered in the rainforests of the Tsaratanana Massif region in the north of Madagascar. Both species, *R. ornata* and *R. tany*, live on the forest floor, where they are camouflaged by fallen leaves. They belong to a group of species characterized by small, fleshy spines over the eyes, but both of the new species have fewer spines than other members of the group. Micro-CT scans indicate they may be sister species, as they also share common differences between their skeletons and those of other species in the group. Madagascar's rainforests may be home to many species that are still unknown to science, and the difficulty in gaining access to remote areas is a challenge to the discovery of new species. The country is thought to be home to as many as 500 species of frogs that are found nowhere else.

Source: *Mongabay.com* (2016) news.mongabay.com/2016/01/two-new-frog-species-discovered-in-remote-madagascar-rainforest, & *Herpetologica* (2015) [dx.doi.org/10.1655/HERPETOLOGICA-D-14-00048](https://doi.org/10.1655/HERPETOLOGICA-D-14-00048)

SOUTH AND SOUTH-EAST ASIA

New genus of tree frog discovered in India...

Scientists have rediscovered a species of tree frog that was thought to be extinct for over a hundred years, and identified the species as part of a new genus, *Frankixalus*, bringing the total number of known genera of tree frogs to 18. The frogs were found in abundance at high altitudes in forests of north-east India, where their survival is threatened by deforestation for agricultural expansion, human settlements and infrastructure development, as well as pollution from industry. The frogs live in tree holes up to 6 m above ground, and their habitat is uniquely high among tree frogs. This, and the fact that there is relatively little scientific exploration in the remote region, may explain why they remained undiscovered for so long. In