Nature's backbone at risk

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The most comprehensive assessment of the world's vertebrates confirms an extinction crisis with one-fifth of species threatened. However, the situation would be worse were it not for current global conservation efforts, according to a study launched today at the 10th Conference of the Parties to the Convention on Biological Diversity, CBD, in Nagoya, Japan.

The study, to be published in the international journal *Science*, used data for 25,000 species from The IUCN Red List of Threatened Species, to investigate the status of the world's vertebrates (mammals, birds, amphibians, reptiles and fishes) and how this status has changed over time. The results show that, on average, 50 species of mammal, bird and amphibian move closer to extinction each year due to the impacts of agricultural expansion, logging, over-exploitation, and invasive alien species.

"The 'backbone' of biodiversity is being eroded," said the great American ecologist and writer Professor Edward O. Wilson, at Harvard University. "One small step up the Red List is one giant leap forward towards extinction. This is just a small window on the global losses currently taking place."

Southeast Asia has experienced the most dramatic recent losses, largely driven by the planting of export crops like oil palm, commercial hardwood timber operations, agricultural conversion to rice paddies, and unsustainable hunting. Parts of Central America, the tropical Andes of South America, and even Australia, have also all experienced marked

losses, in particular due to the impact of the deadly chytrid fungus on amphibians.

Whilst the study confirms previous reports of continued losses in biodiversity, it is the first to present clear evidence of the positive impact of conservation efforts around the globe. Results show that the status of biodiversity would have declined by almost 20% if conservation action had not been taken.

"History has shown us that conservation can achieve the impossible, as anyone who knows the story of the White Rhinoceros in southern Africa knows", remarked Dr Simon Stuart, Chair of IUCN's Species Survival Commission and an author on the study. "But this is the first time we can demonstrate the aggregated positive impact of these successes on the state of the environment."

The study highlights 64 mammal, bird and amphibian species that have improved in status due to successful conservation action. This includes three species that were extinct in the wild and have since been re-introduced back to nature: the California Condor, Gymnogyps californianus, and the Black-footed Ferret, Mustela nigripes, in the United States, and Przewalski's Horse, Equus ferus, in Mongolia.

Conservation efforts have been particularly successful at combatting invasive alien species on islands. The global population of Seychelles Magpie-robin, Copsychus sechellarum, increased from fewer than 15 birds in 1965 to 180 in 2006 through control of introduced predators, like Brown Rat, Rattus norvegicus, and captive-breeding and re-introduction programmes. On Mauritius, six bird species have undergone recoveries in status, including the Mauritius Kestrel, Falco punctatus, whose population has increased from just four birds in 1974 to nearly 1,000.

In South America, protected areas and a combination of the Convention on International Trade in Endangered Species (CITES) and the Vicuña Convention helped spark the recovery of the Vicuña Vicugna vicugna. Similarly, legislation enacted to ban commercial whaling has seen the Humpback Whale, Megaptera novaeangliae, move from Vulnerable to Least Concern. Unfortunately, very few amphibians have yet shown signs of recovery, but international efforts are escalating, including a programme to reintroduce the Kihansi Spray Toad, Nectophrynoides asperginis, back into the wild in Tanzania.

The authors caution that their study represents only a minimum estimate of the true impact of conservation, highlighting that some 9% of threatened species have increasing populations. Their results show that conservation works, given resources and commitment. They also show that global responses will need to be substantially scaled up, because the current level of conservation action is outweighed by the magnitude of threat. In this light, policy-makers at the CBD meeting in Nagoya have been calling for a very significant increase in resources – from extremely low current levels - to make the objectives of the Convention achievable.

"This is clear evidence for why we absolutely must emerge from Nagoya with a strategic plan of action to direct our efforts for biodiversity in the coming decade" said Julia Marton-Lefèvre, Director General of IUCN. "It is a clarion call for all of us – governments, businesses, citizens – to mobilize resources and drive the action required. Conservation does work -- but it needs our support, and it needs it fast!"

The paper highlights that the percentage of species threatened among vertebrates ranges from 13% of birds to 41% of amphibians. Although the study focused on vertebrates, it also reports on the levels of threat among several other groups assessed for the IUCN Red List, including14% of seagrasses, 32% of freshwater crayfish, and 33% of reef-building corals.

The level of threat among cycads is extremely critical, with 63% threatened with extinction. Cycads, the most ancient group of seed plants alive today, are subject to extremely high levels of illegal harvesting and trade, and are in danger of going the same way as the dinosaurs.

Recently, a UN-sponsored study called The Economics of Ecosystems and Biodiversity (TEEB) calculated the cost of losing nature at $2-5 trillion per year, predominantly in poorer parts of the world. A recent study found one-fifth of more than 5,000 freshwater species in Africa are threatened, putting the livelihoods of millions of people dependent on these vital resources at risk.

Failure to meet the internationally agreed 2010 target to reduce biodiversity loss does not mean that conservation efforts have been in vain, as this study demonstrates. However, the erosion of biodiversity has reached such dangerous levels that we cannot afford to fail again. Ambitious targets are needed for 2020, and to meet them will require urgent and concerted action on a greatly expanded scale. It is time for the world's Governments, meeting in Nagoya, to rise effectively to this global challenge.

"We know what has to be done to save individual species from extinction," said Alison Stattersfield, BirdLife's Head of Science and one of the authors on the paper. "Through BirdLife's Preventing Extinctions Programme we are taking effective – and cost-effective - action for the world's Critically Endangered birds. But much more effort is needed, through NGOs, Governments, businesses and committed individuals working together, to stop the slide towards extinction and start to address the root causes of biodiversity loss."

The study involved some 174 authors from 115 institutions and 38 countries. It was made possible by the voluntary contributions of more than 3,000 scientists under the auspices of IUCN's Species Survival

Commission, and a growing partnership of organizations, including BirdLife International, Botanic Gardens Conservation International, Conservation International, NatureServe, Royal Botanic Gardens Kew, Sapienza Università di Roma, Texas A&M University, Wildscreen, and the Zoological Society of London.

Global figures for 2010.4 IUCN Red List of Threatened Species:

Total species assessed = 55,926

- Extinct = 791
- Extinct in the Wild = 63
- Critically Endangered = 3,565
- Endangered = 5,256
- Vulnerable = 9,530
- Near Threatened = 4,014
- Total Lower Risk/conservation dependent = 269 [this is an old category that is gradually being phased out of the Red List]
- Data Deficient = 8,358
- Least Concern = 24,080

More information: For information about more species on the IUCN Red List please visit www.iucnredlist.org

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