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2010 Year of Biodiversity Tries to Rein in Runaway Extinctions

NEW YORK, New York, January 4, 2010 (ENS) - Due to human activities, the world's animal and plant species are disappearing at a rate some experts put at 1,000 times the natural progression, the United Nations said January 1, marking 2010 as the International Year of Biodiversity - the variety of life on Earth.

The purpose of the International Year is to raise public awareness of the importance of biodiversity and the consequences of its loss to human well-being.

The Year's official launch will take place in Berlin on January 11. This will be followed on January 21 and 22 by the first major event of the International Year, a high-profile meeting at the Paris headquarters of the UN Educational, Scientific and Cultural Organization, UNESCO, which is expected to bring together heads of state, royalty and their representatives.

"If any part of the web suffers breaks down, the future of life on the planet will be at risk. That is why the UN General Assembly proclaimed 2010 as the International Year of Biodiversity," said former UNEP Executive Director Klaus Toepfer.

Ten species likely to be hardest hit by climate change are profiled in a new research report from the International Union for the Conservation of Nature, IUCN, which maintains the authoritative Red List of Threatened Species.

A koala in a eucalyptus tree (Photo © Daniele Sartori)

The Arctic fox, leatherback turtle and koala are among these most vulnerable species and so are the beluga whale, clownfish, emperor penguin, quiver tree, ringed seal, salmon and staghorn corals.

The report, "Species and Climate Change," shows how climate change is adversely affecting marine, terrestrial and freshwater habitats.

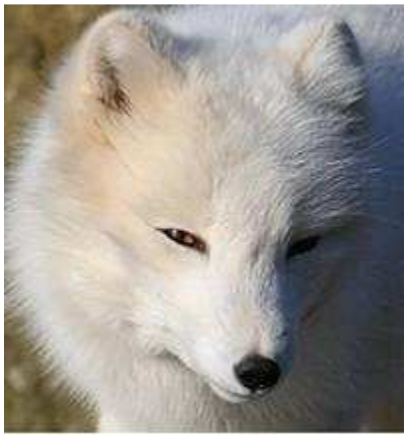
"Ordinary people are not powerless to stop these tragic losses," says Simon Stuart, who chairs the IUCN's Species Survival Commission. "They can cut down on their own CO2 [carbon dioxide] emissions and voice their support for strong action by their governments to change the dire climate prognosis we are currently facing."

Polar species are being affected by loss of ice due to global warming, according to the report. An Arctic species, the ringed seal is being forced further north as the sea ice it relies on for pup-rearing retreats.

"If the extremes predicted for losses of sea ice do occur, it is difficult to envisage how this ice-breeding seal will survive beyond the small refugia-areas where ice cover will remain, despite its currently broad range and high abundances," said Kit Kovacs, chair of the IUCN SSC Pinniped Specialist Group and leader of the Norwegian Polar Institute's Biodiversity Research Programme.

"Marked decreases in ringed seal abundance are likely to have cascading effects in Arctic food webs. They are the most important species in the diet of polar bears," said Kovacs.

The Arctic tundra on which the Arctic fox depends is disappearing as warming temperatures allow new plant species to flourish. As the habitat changes from tundra to forest, the red fox, which preys on the Arctic fox and competes with it for food, is able to move further north, reducing the Arctic fox's territory.



Arctic fox (Photo © Orvar Atli Porgeirsson)

The Arctic's beluga whale is likely to be affected by global warming both directly, through loss of sea ice and resulting difficulty finding prey, and indirectly, through human activity as melting sea ice opens up previously inaccessible areas. Ship strikes, pollution and gas and oil exploration all put this marine mammal at greater risk.

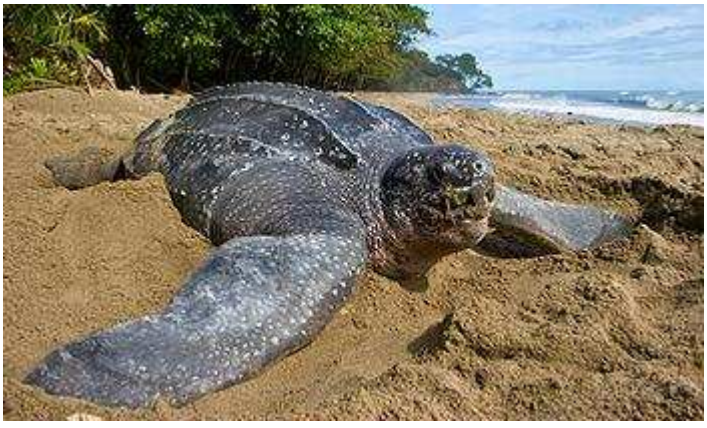
The emperor penguin, adapted to unforgiving Antarctic conditions, faces a similar problem. Regional sea ice, which it needs for mating, chick-rearing and moulting, is declining. Reduced ice cover also means less krill, affecting food availability for the emperor penguin and many other Antarctic species.

"Emperor penguins are not only the largest penguins alive, they are also the oldest," says Barbara Wienecke of the Australian Antarctic Division, who says their ancestors were on Earth 200 million years ago.

"Having been successful on this planet for millions of years, emperor penguins now face the most serious challenge in their long history; in geological terms a very rapid warming of their home," said Wienecke. "They stand to lose their breeding grounds on the fast ice and potentially their main prey species. Will they be able to adapt rapidly to a completely altered southern Ocean ecosystem? Their chances are slim."

The impacts of climate change are not limited to the polar regions. In more tropical areas, staghorn corals, which include some 160 species, are severely affected by rising ocean temperatures, which causes coral bleaching. Ocean acidification, the result of too much CO2 in the oceans, weakens the corals' skeletons.

Clownfish, a species that found fame in the film "Finding Nemo," are also victims of ocean acidification. Acidic water disrupts their sense of smell, impairing their ability to find their specific host anemone, which they rely on for protection. Salmon, worth hundreds of millions of dollars to the commercial fishing industry, are threatened by increases in water temperature, which reduces water's oxygen levels, increases their susceptibility to disease and disrupts their breeding efforts.



Leatherback sea turtle (Photo © Brian J. Hutchinson)

The leatherback turtle is being affected by rising sea levels and increased storm activity due to climate change which destroys its nesting habitats. Temperature increases may lead to a reduction in the proportion of males relative to females.

"Sea turtles are truly resilient creatures that have survived millions of years of global change, yet today they are in decline pan-globally due to the unprecedented pace of climate change and other human-generated impacts," said Dr. Roderic Mast, co-chair of the IUCN SSC Marine Turtle Specialist Group and vice president of the nonprofit Conservation International. "Sea turtles are bellwethers, whose message to man is that slowing and reversing climate change is urgent."

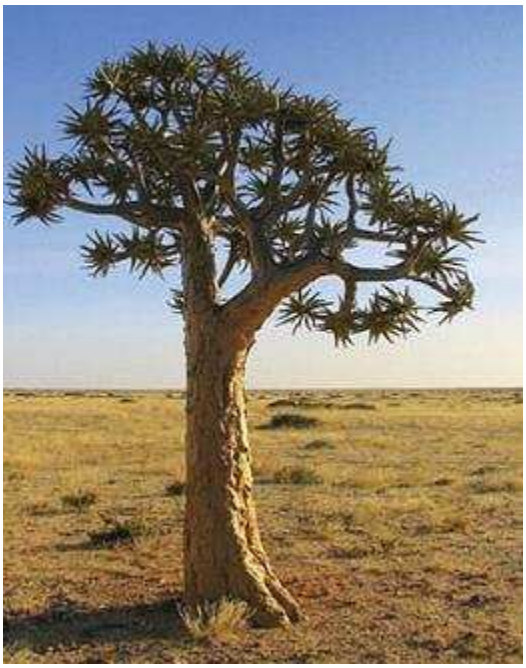
Some salmon populations have declined in recent decades due to human activities, the IUCN report recognizes. The researchers say climate change could now "exacerbate or even supersede these threats, particularly in the southern part of their natural range."

As water temperatures increase, direct biological impacts on salmon could include physiological stress, depletion of energy reserves, greater susceptibility and exposure to disease and disruptions to breeding efforts.

Pete Rand of the IUCN SSC Salmonid Specialist Group, says, "Continued research on how salmon will cope with climate change is important and should be emphasised. But we also need to support efforts to control greenhouse gases, do everything we can to help wild salmon adapt to a new, changing environment, and work on adapting to a new way of doing business through proactive, precautionary management and actively promoting wild salmon conservation."

Staghorn corals are severely impacted by bleaching and disease. They are suffering the impacts of rising sea temperatures and increasing ocean acidification due to climate change. Staghorn corals play crucial roles in reef-building, and in providing food, shelter and other services to an array of associated species.

"Both staghorn corals and coral reefs as a whole are canaries in the coal mine for human impacts from the local your local coastline, to the global scale of climate change," said David Obura of the IUCN SSC Coral Reef Specialist Group. "They serve up a lesson for what will happen to other less sensitive species and ecosystems. We must have consensus to reduce climate change to minimal levels to have a chance of having healthy coral reef ecosystems as long as we are on the planet."



Quiver tree (Photo © Wendy Foden)

Australia's iconic koala faces malnutrition and ultimate starvation, the IUCN report shows. Increasing atmospheric CO2 levels will reduce the nutritional quality of eucalyptus leaves, causing nutrient shortages in the species that eat them. As a result, koalas may no longer be able to meet their nutritional needs.

William Foley at the University of Sydney says, "My view of koalas is that the strong connection between food quality and demography means that they are particularly vulnerable to climate change. Elevated atmospheric CO2 reduces the amount of protein available from eucalyptus leaves for animals. This eucalyptus-marsupial system is one of the very few examples in which the direct effects of CO2 can be linked to populations of wild mammals."

An increase in CO2 levels directly threatens other plants. The quiver tree, found in the Namib Desert region of southern Africa, is losing populations in the equator-ward parts of its distribution range due to drought stress. These trees highlight the problems that all plants and slow-moving species face in keeping up with rapidly accelerating changing climate.

"If the quiver tree is declining as a result of climate change, then other smaller-ranged and more sensitive species are likely to be experiencing even worse impacts. But being inconspicuous, their declines may be passing unnoticed," said the report's co-author Wendy Foden, a member of the IUCN Species Survival Commission's Southern African Plant Specialist Group.

"Several of the species highlighted in the report are already listed as threatened on the IUCN Red List of Threatened Species, due to other threats such as habitat destruction or over harvesting," says Jean-Christophe Vie, deputy head of IUCN's Species Programme. "Others are not currently threatened on the IUCN Red List, but will be very soon as the effects of climate change materialize."

Click here to read the full IUCN report, "Species and Climate Change."