Environment News Futures

From King Cobras to Geckos, 20 Percent of Reptiles Risk Extinction

April 27, 2022—Leer en español

The first global analysis of its kind found that logging and farming are taking away reptile habitat at an unsustainable pace, exacerbating a worldwide decline in biodiversity.

About 20 percent of reptile species risk extinction, mainly because people are taking away their habitats for agriculture, urban development and logging, according to the first global reptile assessment of its kind.

From inch-long geckos to the iconic king cobra, at least 1,829 species of reptiles, including lizards, snakes, turtles and crocodiles, are threatened, the study found.

The research, published Wednesday in Nature, adds another dimension to a substantial body of scientific evidence that points to a human-caused biodiversity crisis similar to climate change in the vast effect it could have on life on Earth. "It's another drumbeat on the path to ecological catastrophe," said Bruce Young, co-leader of the study and a senior scientist at NatureServe, a nonprofit conservation research group. Such a collapse threatens humans because healthy ecosystems provide necessities like fertile soil, pollination and water supplies.

Among reptiles, particularly hard hit are turtles, with almost 60 percent of species at risk of extinction, and crocodiles, with half. In addition to habitat loss, both groups are depleted by hunting and fishing.

But the results also brought a sense of relief. Scientists have known far less about the needs of reptiles as compared with mammals, birds and amphibians, and they had feared the results would show reptiles slipping away because they required different conservation methods. Instead, the authors were surprised at how neatly the threats to reptiles overlapped with those to other animals.

"There's no rocket science in protecting reptiles, we have all the tools we need," Dr. Young said. "Reduce tropical deforestation, control illegal trade, improve productivity in agriculture so we don't have to expand our agricultural areas. All that stuff will help reptiles, just as it will help many, many, many other species."

The authors found that climate change played a role in the threat faced by 10 percent of species, suggesting that it was not currently a major factor in reptile loss. But the effects could be underrepresented, Dr. Young said, because scientists simply don't know enough about many reptiles to determine whether a warming planet threatens them in the short term.

Hunting for the Next Virus

April 29, 2022—By Nancy Wartik

This is the Coronavirus Briefing, an informed guide to the pandemic.

The Covid-19 pandemic is not over yet, but some researchers are already worrying about mousepox.

Colin Carlson, a biologist at Georgetown University, has spent the last few years training computers to predict which dangerous viruses could jump from animals to humans, following in the footsteps of the coronavirus (which came from bats), H.I.V. (chimpanzees) and hundreds of other pathogens.

His team used machine learning to develop a short list of potentially dangerous viruses that could eventually make a leap. Mousepox — a virus that infects mice and is similar to smallpox but had not been considered a significant danger to humans — repeatedly came up "super high," he told my colleague Carl Zimmer.

Digging through the scientific literature, the researchers came across documentation of a mysterious outbreak in 1987 in rural China. Schoolchildren came down with an infection that caused sore throats and inflammation in their hands and feet. When samples from that outbreak were analyzed decades later, scientists found mousepox DNA.

Mousepox is just one of many possible viruses that could cause a new pandemic that computers might be able to suss out beforehand. I asked Carl to explain the complex process experts use to look for potentially dangerous viruses. He said the work started in the field: "It's not easy. You have to go and catch bats or rodents or tranquilize a lion with darts to take a sample. Not only that, but chances are that in one animal, you wouldn't find a virus. So you have to catch a bunch.

"Let's say you're looking in raccoons. You have to swab them, get feces samples, identify the genetic material. You identify 10 new viruses. Now what? Should we worry about them? Do they pose a threat? What machine learning can do is say, 'This virus looks a lot like other viruses we're familiar with.' You can go through thousands of known viruses. You can make predictions. Then you can test them on a virus you've never seen before."

Could machine learning, in its still-early phase, have foretold Covid's advent? No, Carl said, because the virus wasn't known before 2019. But now that we're sure it originated in bats, machine learning might help us identify types of bats that pose a threat. "Finding those bats should be really high-priority," he said.

Mammals alone may carry up to 100,000 separate viruses, not even counting those in birds or reptiles. "We're swimming in an ocean of virus diversity and we barely know about it," said Carl, author of the book "A Planet of Viruses." "That's one reason scientists need to harvest powerful tools like machine learning."

One thing seems certain: Opportunities for animal-to-human transmission will keep rising because of climate change. As animals seek cooler climes, species will bump against each other. Viruses will leap between them. "A virus that was very distant will become very close," Carl said.

The Extreme Heat Pummeling India and Pakistan is About to Get Worse

The Indian subcontinent has recorded above-average temperatures for weeks. Heat-related weather watches or alerts are now in effect for hundreds of millions of people.

April 28, 2022 —By Hari Kumar and Mike Ives

NEW DELHI — Across a wide swath of the Indian subcontinent, scorching temperatures have damaged harvests. People are suffering from heat stroke. And the lights are flickering in some cities amid surging demand for air-conditioning.

    Now, the heat wave that has been pummeling India and Pakistan for weeks is expected to intensify over the weekend. In some hard-hit areas, it may be weeks before the region's annual monsoon sweeps in to provide relief. Heat-related watches were in effect on Thursday afternoon for all but a few of India's 28 states, encompassing hundreds of millions of people and most of the country's major cities. An alert — one notch up in severity — was in effect for the northwestern state of Rajasthan on Thursday, and would come into effect for other central and western states starting Saturday.

Women and the Environment: An Asia-Pacific Snapshot

March 8, 2022

Informing humanitarians worldwide 24/7 — a service provided byReliefweb

The connections between gender and the environment are complex and multidimensional in nature, and groups of women and men are not all affected equally. As, the availability of data on the gender-environment nexus is limited, it is impossible for the analysis to include all these factors. Acknowledging this limitation, this brief does not attempt to provide a comprehensive picture of environmental issues from a gender angle, but rather it offers a snapshot of available data that could inform environmental decision-making.

Jonathan, the World's Oldest Animal on Land

Meet Jonathan, a Seychelles giant tortoise. He was born in Seychelles but currently lives on the South Atlantic Island of St. Helena.

    Jonathan is the world's oldest animal on land. He will celebrate his 190th birthday this year. He was born in 1832 brought to St. Helena with three other tortoises when he was 50 years old. But experts say he could be older. He has seen two world wars, the Great Depression, the deadly Spanish flu and now the coronavirus. He will celebrate his 190th birthday this year at his home on the South Atlantic Island of St. Helena.

No Country Met WHO Air Quality Standards ..Times of India

March 22, 2022

SHANGHAI: Not a single country managed to meet WHO starndards. Survey of 6475 cities indicated today.

Indonesia's Sinking, Polluted Capital is Moving to New City

February 27, 2022—AP

JAKARTA: Jakarta is congested, polluted, prone to earthquakes ..

Key Infra in Mumbai, Other Coastal Cities may Submerge by 2050

In Mumbai, around 998 buildings and 24km of road length will be affected by potential sea-level rise by 2050 (HT photo).

Updated on Apr 08, 2022 08:07 AM IST—By Jayashree Nandi, New Delhi

A new analysis on the impact of sea level rise on coastal Indian cities has revealed that some critical properties and road networks in Mumbai, Kochi, Mangalore, Chennai, Vishakhapatnam, and Thiruvananthapuram will be submerged by 2050.

The analysis by RMSI, a global risk management firm has found that Haji Ali dargah, JawaharLal Nehru Port Trust, Western Express Highway, Bandra-Worli Sea-link, and Queen's Necklace on Marine drive, all in Mumbai, are at risk of submergence. (*See* Snapshot 2)

RMSI considered findings from the Intergovernmental Panel on Climate Change's sixth assessment report 'Climate Change 2021: The Physical Science Basis' released in August last year; various publications based on the IPCC report , the latest climate change data, and its own models to find out possible impact on the Indian coastline.

Six coastal cities of India , Mumbai, Chennai, Kochi, Vizag, Mangalore, and Thiruvananthapuram were considered for this analysis. RMSI's experts created a high-resolution Digital Terrain Model (topography) for the coastline of the identified cities. They then used a coastal flood model to map the cities' inundation levels based on various sea-level rise forecasts.

IPCC has projected that the sea level around India will rise significantly by 2050. 'Assessment of climate change over the Indian region' a report of the Ministry of Earth Sciences (MoES) also said that sea-level rise in the North Indian Ocean (NIO) occurred at a rate of 1.06–1.75 mm per year during 1874–2004 and has accelerated to 3.3 mm per year in the last two and a half decades (1993–2017), which is comparable to the current rate of global mean sea-level rise.

The moderate emissions (RCP 4.5) scenario of IPCC projects that steric sea level (variation in the ocean volume due to density changes) of the north Indian Ocean will rise by approximately 300 mm (a foot) relative to the average values from 1986 to 2005, the MoES report said. The corresponding projection for the global mean rise is approximately 180 mm.

   "While we talk about sea-level rise, that is not the only factor that can inundate coastal cities. At 1°C global change, coastal regions are already facing the brunt of climate change with increasing intense cyclones, storm surges, and heavy rainfall events that lead to coastal flooding. While cyclones on the west coast have increased by 52% over the last four decades, extreme rains causing floods have seen a threefold rise since the 1950s. By 2050, the global temperature change will be close to 2°C, and these cyclones and heavy rains are projected to intensify further, putting the coastal cities in danger," said Roxy Mathew Koll, climate scientist, Indian Institute of Tropical Meteorology.

For Climate Migrants in Bangladesh, Town Offers New Life

Being forced by climate change to move, within borders or beyond, is a growing reality expected to accelerate in the decades ahead.

Workers walk to work at an export processing zone early in the morning after crossing the Monglariver in Mongla, Bangladesh. This Bangladeshi town stands alone to offer new life to thousands of climate migrants.

Published on Mar 30, 2022 11:38 PM IST

AP | ,Mongla

 Over the next 30 years, 143 million people are likely to be uprooted by rising seas, drought, searing temperatures and other climate catastrophes, according to an Intergovernmental Panel on Climate Change report published last month by the United Nations. Leaders in Asia, already one of the hardest-hit continents, are scrambling to confront major changes taking place.