

20014 Perfect storm' of heatwaves, hurricanes and floods caused by climate change is causing a collapse in biodiversity across the tropics

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Earth's tropical regions — the most diverse areas in the world — are facing an unprecedented collapse of biodiversity and ecosystems, a study reveals. Researchers discovered that the combination of climate change, extreme weather and human activity is creating a perfect storm, bringing the regions to the brink of catastrophe. More than 100 locations of tropical forests and coral reefs were mapped after being devastated by extreme climate events such as drought, floods and hurricanes.

Experts involved in the study claim the only way to prevent further damage is to cut carbon dioxide emissions. Dr Cassandra Benkwitt, a marine ecologist from Lancaster University, said: 'Climate change is causing more intense and frequent storms and marine heatwaves. 'For coral reefs, such extreme events reduce live coral cover and cause long-lasting changes to both coral and fish communities, compounding local threats from poor water quality and overfishing. 'Although the long-term trajectory for reefs will depend on how extreme events interact with these local stressors, even relatively pristine reefs are vulnerable to both climate change and extreme weather.'

Tropical forest species are also being threatened by the increasing frequency of another weather event triggered by climate change — extreme hurricanes. Dr Guadalupe Peralta from Canterbury University in New Zealand says the fall-out for tropical rainforests after extreme hurricanes is wide-reaching. He said plants are destroyed which has a knock-on affect to the animals, birds and insects that rely on them for food and shelter. 'In some regions, such as the Caribbean Islands, extreme weather events have decimated wildlife, reducing numbers by more than half,' he continues. 'We are starting to see another wave of global extinctions of tropical birds as forest fragmentation reduces populations to critical levels', explained Dr Alexander Lees, from Manchester Metropolitan University.

The combination of higher temperatures with longer and more severe dry seasons has also led to the spread of unprecedented and large-scale wildfires. El Nino events — a global weather phenomenon that triggers exceptionally warm weather — have also wreaked havoc in tropical areas.

Santarém in the Brazilian state of Pará experienced a severe drought and extensive forest fires, with serious consequences for forest wildlife. The drought also affected the forests' ability to recover from the fires and critically damaged some coral reefs.

Professor Nick Graham from Lancaster University said: 'The 2015-16 coral bleaching event was the worst ever recorded, with many locations globally losing vast tracts of valuable corals. 'Worryingly, these global bleaching events are becoming more frequent due to the rise in ocean temperature from global warming.'

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