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Tropics' biggest peatland at risk from climate change, study finds

Expanses of peatland that have a significant role in the African environment are vulnerable to climate change and should be protected, research suggests.

Detailed studies in one of the world's biggest swamp forests estimate that its soils contain huge amounts of peat, covering almost 150,000 square kilometres – an area twice the size of Scotland.

The discovery, in the central Congo Basin, confirms the area as the most extensive peatland in the tropics.

Scientists who made the discovery say the soils – estimated to contain about 30 billion tonnes of carbon – should be the focus of conservation efforts.

If the forests were to be drained for development or were to dry out from lack of rain or increases in temperature owing to climate change, carbon in the peat would be exposed to the atmosphere. The peat would then decay, releasing significant amounts of greenhouse gases, contributing to climate change and accelerating the rate of global warming, scientists warn.

Researchers used data from imaging and radar satellites to chart the waterlogged area. By mapping vegetation associated with peaty soils, and manually measuring peat depth across the Republic of Congo, they were able to estimate the peat content below ground across the landscape.

Their findings show that the peat bogs began to form about 10,000 years ago, at the end of the last ice age.

The study, led by the University of Leeds, was carried out with University College London, the Universities of St Andrews, Edinburgh and Leicester and the Université Marien Ngouabi in Brazzaville. It was published in *Nature* and supported by the Natural Environment Research Council.

Dr Ed Mitchard, of the University of Edinburgh's School of GeoSciences, who took part in the study, said: "Our findings reveal the scale of peatlands in this remarkable ecosystem, which is the biggest of its kind in the world. Now that we know its extent, we can continue our efforts to understand how it formed and assess its vulnerability to climate change."

Study co-author Dr Ifo Suspense, from the Université Marien Ngouabi in the RoC capital Brazzaville, said: “The discovery of the Cuvette Centrale peatlands could have a large impact on the climate and conservation policies of the Congo. The maintenance and protection of this peatland complex, alongside protecting our forests, could be central Africa’s great contribution to the global climate change problem.

“It is of the utmost importance that governments, conservation and scientific communities work with the people of the Cuvette Centrale to improve local livelihoods without compromising the integrity of this globally significant region of Earth.”

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