

Scientists warn of dramatic impact of climate change on Africa

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Scientists at the University of York are warning that dramatic changes may soon occur in Africa's vegetation in response to global warming. They believe the effect may be on a similar scale to the climatic disruption in the last Ice Age and the African forest decline 2,500 years ago.

Scientists in the University's Environment Department studied the likely impact of future climate fluctuations on the continent by modelling the responses of more than 5000 plant species to predicted climate changes.

Dr Jon Lovett, who led the research, said: "The results were extraordinary – plants migrate out of the Congo rainforests and there is a massive intensification of drought in the Sahel. Other areas particularly hard hit are eastern Africa and the south-west coast."

Because of a scarcity of hard data, the team used a computer programme written by Dr Colin McClean, of York's Environment Department to study the response of plants to climate change.

Dr Lovett added: "We needed a method that would help fill in gaps in knowledge. The technique we used is called a genetic algorithm because it works in a similar way to the effect of evolution on chromosomes – the programme combines different variables in lots of different ways and the bad fits are knocked out, leaving the best solutions."

The York team collaborated with the Nees Institute for Biodiversity of Plants in Bonn and the South African National Biodiversity Institute to

compile the world's largest database of Africa-wide plant distribution maps.

The research was supported by Conservation International and the BIOTA-Africa Programme of the German Federal Ministry of Education and Research. The findings will be published this summer in the *Annals of the Missouri Botanical Garden* – the USA's leading research institute on African botany.

Dr Lovett added: “The other remarkable thing is that similar changes seem to have occurred in the past. When we showed the results to Jean Maley, a French palaeobotanist from Montpellier who works on past climate change in West Africa, he immediately drew parallels with events in the last Ice Age and in the African forest decline about 2500 years ago.”

He suggested that climate change would also have large-scale social impacts in Africa in the future.

“The social effects of climate change are tightly linked to politics and so difficult to predict, but the way things are going it looks like Africa is going to be in for a rough ride over the next few decades,” Dr Lovett said.

Source: University of York

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