Say goodbye to cool summers: climate study

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People sunbathe in Bryant Park during a heat wave on June 9, 2011 in New York City. By 2050, the coolest summers in the tropics and parts of the northern hemisphere will still be hotter than the most scorching summers since the mid-20th century if global warming continues apace, according to a new study.

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Tropical regions in Africa, Asia and South America could see "the permanent emergence of unprecedented summer heat" even within the next decades, said the study, to be published later this month in the journal *Climatic Change Letters*.

Such dramatic changes in temperature would have a major impact on human health, food supplies and biodiversity, warn the researchers.

"Large areas of the globe are likely to warm up so quickly that, by the middle of this century, even the coolest summers will be hotter than the hottest summers of the past 50 years," said lead author Noah Diffenbaugh, a professor at Stanford University's Woods Institute for the Environment.

Scientists have long predicted that climate change driven by greenhouse gas emissions would cause more frequent heat waves, such as struck Europe in 2003, or the United States this week.

"That got us to thinking -- at what point can we expect the coolest seasonal temperatures to always be hotter than the historically highest temperatures for that season?" Diffenbaugh said in a statement.

To find out, he chose a basket of 50 climate models that accurately matched past increases and projected them into the future.

The analysis assumed a scenario of a "moderate" increase in heat-trapping carbon dioxide emissions as forecast by the UN's panel of climate scientists.

A fishing boat lies on the dried up bank of the Chaohu lake, the fifth largest freshwater lake in China, as water levels remain low in Chaohu, east China's Anhui province on June 4, 2011. Wide swaths of North America, China and Mediterranean Europe are likely to enter a new "heat regime" by 2070 if global warming continues apace, according to a new study.

Many regions of the globe, they found to their surprise, can anticipate a "new normal" of summers that today would be classified a heatwave within a matter of decades.

The researchers also analysed historical data from weather stations around the world to see if the projected increase in temperatures had already begun.

"This extreme heat emergence is occurring now, and climate models represent the historical pattern remarkably well," Diffenbaugh said.

Results differed somewhat from region to region, with the tropics being

hit earliest and hardest.

In the model, up to 70 percent of summer seasons from 2010 to 2039 exceeded the late-20th century maximum in the zones straddling the Equator.

Wide swaths of North America, China and Mediterranean Europe are also likely to enter a new "heat regime" by 2070, the study found.

Recent heat waves and their consequences provide a foretaste of the ways in which hotter summers can disrupt lives, the researchers cautioned.

The likelihood of out-of-control fires such as raged across Australia and Russia in 2009 and 2010 increases dramatically with higher temperatures. Likewise loss of life: the 2003 heatwave in Europe killed some 40,000 people.

A recent report by a consortium of agriculture experts shows that projected increases could devastate staple food crops in tropical regions where hundreds of millions of people are already mired in subsistence-level poverty.

The pace of species loss is also projected to gather pace as persistently hotter climate kicks in.