



PHOTO SHUTTERSTOCK

Tipping climate led to substantial warming

In the past, the Earth has experienced lengthy hot periods after climate tipping points were exceeded. This finding comes from research by Earth scientists and mathematicians from Utrecht and Wageningen.

The study, which was published in *Science Advances* in April, shows for the first time that tipping points can be exceeded. Some scientists doubt whether this is possible; they assume the climate system is too stable. The new publication describes three periods – tens of millions of years ago – when exceeding climate tipping points led to a chain reaction that released extra amounts of greenhouse gases. The

result was an increase in temperatures worldwide of five degrees on average. After the tipping point has been passed, a new stable condition is reached that is irreversible for a long period. ‘So long that you can see it as a permanent change from a human perspective,’ says Shruti Setty, a mathematician in the Aquatic Ecology and Water Quality Management group. Info: shruti.setty@wur.nl