

Fabled equatorial icecaps to disappear

May 15 2006

Fabled equatorial icecaps will disappear within two decades because of global warming, a study led by UCL (University College London) has found.

Reporting online in the journal *Geophysical Research Letters*, the first survey in a decade of glaciers in the Rwenzori Mountains, East Africa, has found that an increase in air temperature over the last four decades has contributed to a substantial reduction in glacial cover.

The Rwenzori Mountains - also known as the 'Mountains of the Moon' - straddle the border between the Democratic Republic of Congo and the Republic of Uganda. They are home to one of four remaining tropical ice fields outside of the Andes and are renowned for their spectacular and rare Afroalpine flora and fauna. The mountains' legendary status was established during the 2nd century when the Greek geographer Ptolemy made the seemingly preposterous but ultimately accurate proclamation that the River Nile was supplied by snow-capped mountains at the equator in Africa: "The Mountains of the Moon whose snows feed the lakes, sources of the Nile".

The glaciers were first surveyed a century ago when glacial cover over the entire range was estimated to be 6.5 square kilometres. Recent field surveys and satellite mapping of glaciers conducted by UCL with researchers from Makerere University, Uganda and the Ugandan Water Resources Management Department show that some glaciers are receding tens of metres each year and that the area covered by glaciers halved between 1987 and 2003.

The team found that since the 1960s there are clear trends toward increased air temperature around the Rwenzori Mountains without significant changes in precipitation. With less than one square kilometre of glacier ice remaining, glaciers are expected to disappear within the next twenty years if present trends continue.

Dr Richard Taylor, of the UCL Department of Geography who led the study, says:

"Recession of these tropical glaciers sends an unambiguous message of a changing climate in this region of the tropics. Considerable scientific debate exists, however, as to whether changes in temperature or precipitation are responsible for the shrinking of glaciers in the East African Highlands that also include Kilimanjaro and Mount Kenya."

A key focus of the UCL led research is the impact of climate change on water resources in Africa. Their on-going work highlights that glacial recession in Rwenzori Mountains is not expected to have a significant effect on alpine river flow due to the small size of the remaining glaciers. However, it remains unclear how the projected loss of the glaciers will affect tourism and the traditional belief systems of the local BaKonso people. Nzururu, the local word for snow and ice, is the father of the spirits who are responsible for human life, its continuity and its welfare.

"Considering the continent's negligible contribution to global greenhouse-gas emissions, it is a terrible irony that Africa, according to current predictions, will be most affected by climate change," added Dr Taylor.

"Furthermore, the rise in air temperature is consistent with other regional studies that show how dramatic increases in malaria in the East African Highlands may arise, in part, from warmer temperatures as mosquitoes are able to colonise previously inhospitable highland areas."

Source: University College London

Citation: Fabled equatorial icecaps to disappear (2006, May 15) retrieved 27 April 2024 from <https://phys.org/news/2006-05-fabled-equatorial-icecaps.html>

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