



African Ice Caps Will Soon Disappear due to Global Warming

East African equatorial glaciers are receding rapidly and will disappear within the next two decades according to a group of scientists that recently surveyed ice cover for the first time in a decade. The study suggests that the increased air temperature resulting from global warming is the main driving force. The loss of these glaciers could have serious consequences for local economies and ecosystems.

During the 20th century, the Earth's average global surface temperature rose by 0.6°C and there is strong scientific evidence that much of the global warming that has occurred over the last 50 years is attributable to human activities. Tropical alpine glaciers, like those that can be found in the East African Highlands, serve as highly sensitive indicators of tropical climate and their study is particularly valuable in areas where meteorological records are scarce. The Rwenzori Mountains, also known as the Mountains of the Moon, are located in the border between the Democratic Republic of Congo and Uganda. They are home to one of four remaining tropical ice fields outside of the Andes and are renowned for their spectacular and rare flora and fauna.

A group of scientists has recently conducted field mapping and assessed the latest satellite images of the glaciers in order to determine current ice cover in the Rwenzori Mountains. The authors have also determined meteorological trends from data collected in the meteorological stations east of the Rwenzori Mountains in Uganda. This study constitutes the first survey in a decade of the glaciers in the Rwenzori Mountains of East Africa.

The results from the current analysis show that the area covered by the glaciers has continued to shrink since the last field measurements were taken in the early 1990s. The glaciers were first surveyed a century ago when glacial cover in these mountains was estimated to be 6.5 sq. km. The results from the most recent analyses of the satellite images indicate that the total area of the glaciers declined by 50% between 1987 and 2003. With less than one square kilometre of ice remaining, the results suggest that the glaciers are likely to vanish within the next 20 years.

Climatologists generally blame the recession of glaciers on two factors: rising air temperatures and reduced rainfall rates. Data from weather stations in Uganda shows that while the air has warmed by about 0.5 degrees Celsius per decade in the Rwenzori Mountain highlands since the 1960s, there have been no significant changes in rainfall. Terrestrial observations of air temperatures are consistent with a warming trend indicated by recent glacier recession. These results suggest that increased air temperature is the main reason for the disappearing glaciers.

Furthermore, the observed rise in air temperatures over the last four decades is also consistent with warming trends predicted in the tropical areas from climate models that incorporate historical increases in greenhouse gasses.

This study shows the worldwide effects of global warming by demonstrating how a region that is a minor contributor to worldwide greenhouse emissions is one of the first to be affected by climate change. It remains unclear how the projected loss of the glaciers will affect the local human population, tourism and local ecosystems.

Source: Taylor, R.G et al. (2006) "Recent glacial recession in the Rwenzori Mountains of East Africa due to rising air temperature", *Geophys. Res. Lett.*, 33, [TBD], doi:10.1029/2006GL025962.

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