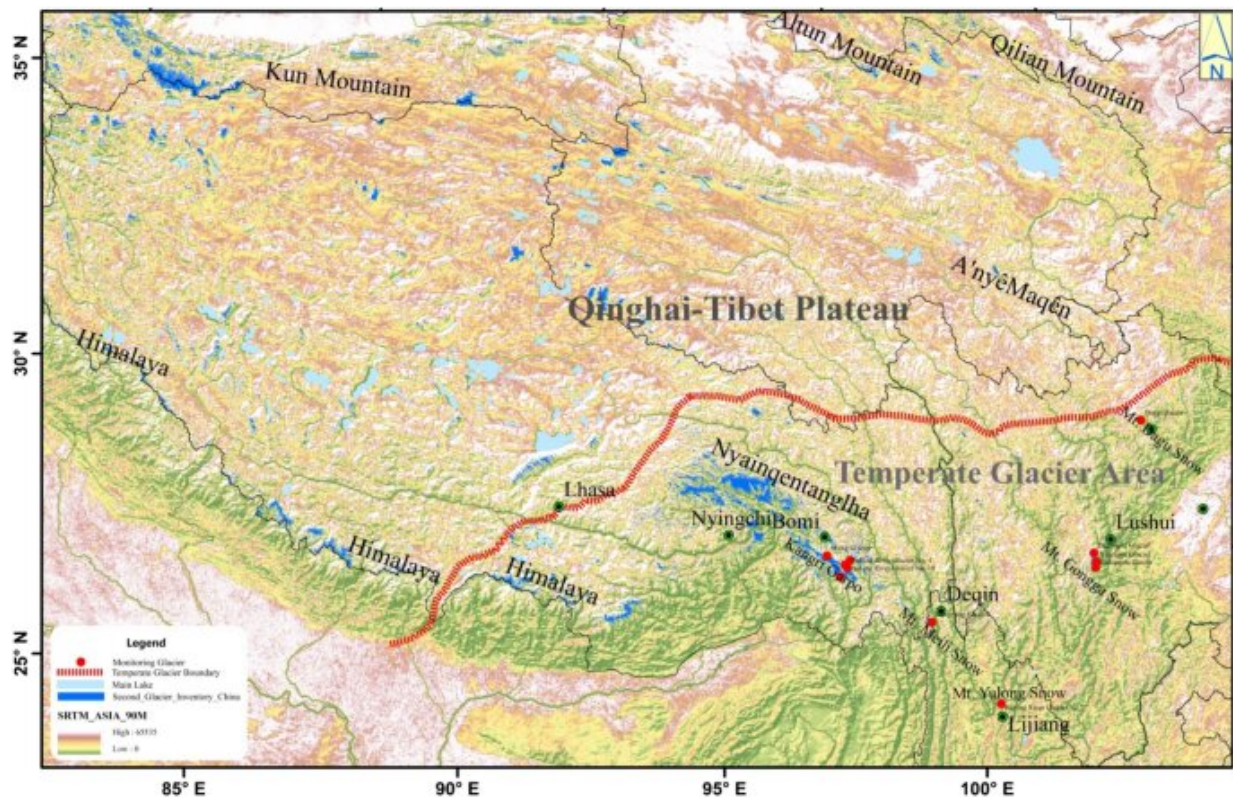


China's temperate glaciers are melting at accelerating rate

February 22 2021, by Zhang Nannan



The range of China's temperate glaciers and the prevailing airflow affecting the region. The final map was created by ArcMap version 10.2 (<http://desktop.arcgis.com/en/arcmap/>).

Temperate glaciers are very sensitive to variations in temperature and precipitation, and thus represent a good indicator of climate change.

China's temperate glaciers have a relatively warm and humid climate and hydrothermal conditions at low latitudes, which are more significantly affected by climate change.

However, China's temperate [glaciers](#) are showing signs of accelerated melting because of their strong accumulation and melting, high temperature, fast movement, and violent bottom sliding. Therefore, it is necessary to reveal the spatiotemporal dynamic characteristics of typical temperate glaciers in China and put forward some new ideas and understandings of accelerated temperate glacier changes.

Recently, a research team led by Prof. Wang Shijin from the Northwest Institute of Eco-Environment and Resources (NIEER) of the Chinese Academy of Sciences (CAS) systematically analyzed the temporal and spatial dynamic characteristics of typical temperate glaciers.

On the basis of topographic maps, aerial photography, and Landsat Operational Land Imager (OLI) images, and combined with existing research results, the researchers observed the fronts of these glaciers and monitored changes in glacier fronts during the study period.

The results indicated that China's temperate glaciers showed strong retreat and ablation trends in terms of area, length, ice flow speed, and [mass balance](#) from the 1950s to the 1970s. Therefore, the mass loss of China's temperate glaciers was much higher than that of continental and polar continental glaciers.

"This comprehensive study of the interaction of temperate glaciers with [climate](#) and environment can deepen our understanding of the dynamic characteristics of these temperate glaciers and their impact on sustainable economic and [social development](#)," said Prof. WANG, first author of the study.

In the future, scientists will continue to strengthen ground monitoring using unmanned aerial vehicle (UVA) technology and high-resolution radar data to automate and digitize glacier monitoring.

This study has been published in *Scientific Reports*, titled "Spatiotemporal Dynamic Characteristics of Typical Temperate Glaciers in China."

More information: Wang Shijin et al. Spatiotemporal dynamic characteristics of typical temperate glaciers in China, *Scientific Reports* (2021). [DOI: 10.1038/s41598-020-80418-7](https://doi.org/10.1038/s41598-020-80418-7)

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