

Fedchenko Glacier, Yazgulem Mountains, Tajikistan



Glacier of the Month January/February 2026



FEDCHENKO GLACIER

The Fedchenko Glacier is situated in the northern central part of Tajikistan's Gorno-Badakhshan Autonomous Region, within the Yazgulem Range of the Western Pamir Mountains. It is the largest glacier outside the polar regions. Officially renamed *Vanch-Yakh* by the Tajik government, the glacier extends for 77 km, descending from approximately 6,200 m asl to about 2,900 m asl. Its surface area is roughly 700 km², with a maximum ice thickness of around 1,000 m and an estimated total ice volume of 144 km³.

Although the glacier was long regarded as relatively stable compared with many other glaciers worldwide, long-term observations and recent datasets indicate a clear trend of retreat. Notably, pronounced ice-thickness reduction was recorded between 2010 and 2021. One factor moderating the rate of mass loss is the extensive debris cover (moraines) on its surface, which provides thermal insulation and reduces melt rates.

In certain parts of the Pamir Mountains, increased snowfall over recent decades has temporarily contributed to glacier stability or even slight advances - a phenomenon often referred to as the "Pamir anomaly." However, recent studies, including work by ISTA Austria and Swiss research teams, suggest that this phase of stability has ended. Since approximately 2018-2021, even the previously most stable glaciers in the region have exhibited substantial mass loss, indicating that a critical climatic tipping point has been surpassed under ongoing warming.

1982_expedition_to_Tartu_Ülikool Courtesy of Jaan Künnap



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