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Recent behaviour of Slovenian glaciers

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Just two glaciers, below the peaks of Triglav (2864 m) and Skuta (2532 m), are persisting in Slovenian Alps, both on a relatively very low elevation. Their present surfaces do not exceed one hectare, thus we can speak only about two glacierets or very small glaciers. The Anton Melik Geographical Institute of the Scientific Research Centre at the Slovenian Academy of Sciences and Arts has regularly performed measurements since 1946. The size of the Triglav glacier, measured in 1946, was 14.4 hectares, and by the year 2012 the glacier had shrunk to a half of a hectare. The direct vicinity of the meteorological station on Mt. Kredarica makes possible an analysis of the dependency of the glacier's fluctuation on weather changes. Several methods of measuring have been applied. Since 1999 we have regularly performed photogrammetric measurements of the glacier, which render possible exact calculations of changes in the glacier's area and volume by individual years. In addition, we also performed georadar measurements in 2000 and 2013. Besides regular annual measurements performed at the end of melting seasons, the Triglav glacier has also been photographed monthly since 1976, from two fixed positions on Mt. Kredarica. In 2012, we performed aerial laser scanning (LIDAR) of the Triglav glacier. While for the last decade of the 20th century we reported that the Triglav glacier has not only retreated but literally disintegrated, in the first decade of the 21st century we can observe its stagnation. Due to the present concave form of the glacier's surface, snow remains on it late into summer, and since the year 2007, the ice of the lower part of the glacier has not been revealed even at the end of the melting season but has remained covered with the firn and snow of previous winters. Should such weather conditions continue and the amount of winter precipitation further increase, the remainder of the Triglav glacier will, though very small in size, continue to exist for next ten years or even more.