



Lead Author e-mail: kras_varan@mail.ru

Title: *The glaciation of Severnaya Zemlya: changes since the middle of XX century and current conditions*

Tatiana Vasilyeva¹

¹*Moscow State University, Faculty of Geography*

Contemporary glaciations of Polar regions is the main natural phenomena. As an indicator of landscape-geographical conditions, surface glaciation of Arctic islands and Arctic basin marine ice determine many hydrological, meteorological, geomorphological and ecology processes and features on the neighbor territories.

Can we speak about the common degradation of glaciations on Earth? Unfortunately, we have a few data about glaciers and their regime and the period of observations of glaciers is rarely more than 100 years. Significant anomalies of air temperature were recorded in the Arctic region since the middle of XX century. So that, the aim of this investigation is generalization of data about the regime of Arctic islands surface glaciation and its dynamic in the global climate changes on the example of Severnaya Zemlya glaciers.

Severnaya Zemlya is the second in the glaciation area size and water supply after the Novaya Zemlya in Russian Arctic sector. The majority of glaciers are ice caps with the outlet glaciers on the periphery, but there are also valley and cirque glaciers.

Severnaya Zemlya is the most eastern glaciation centre of Eurasian Arctic sector. Only the glaciers of De Long and Wrangel islands are located more eastern. It is interested that archipelago glaciations and its regime differs a lot from the other islands of Eurasian Arctic sector, especially Svalbard.

Basing on the data of meteostations Golomyanniy, Dikson and Chelyuskin were plotted graphs and determined trends of main climate characteristics fluctuation – air temperature and precipitation. As a result of glacier changes map for the period 1980-2000 analyses were determined visual characteristics of glacier regime changes in the XX century end. The ice cores data gave an opportunity to find out the main properties of climate change in this region during the last 60 years.

It is possible to conclude that in global climate change the most part of Severnaya Zemlya glaciers degradate, which could be seen in recession of glacial borders, decreasing of their surface, disappearance of some small glaciers and negative mass balance. Herewith the largest ice cap (Akademia Nauk), located in the north of archipelago is possibly stable.



It was attempted to correlate different meteorological and glacier regime characteristics. The field researches of Arctic glaciers are rare and fragmentary. That is why searching of such dependences and using remote sensing data can play a big role in investigation of Arctic surface glaciation regime in global climate change.