

Submission: T-2020-168-87

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Theme 2: Observing in Support of Adaptation and Mitigation

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Poster title (brief) Observing of the permafrost-affected soils as a key step to sustainable development of the Russian Arctic

Abstract - text box

The permafrost-affected soils, which represent the storage of a significant amount of organic matter, are valuable objects of study responding to climate changes and ensuring the functional diversity and integrity of arctic ecosystems in Western Siberia.

The aim of our study was to assess the functional diversity and integrity of permafrost-affected soils on the north of Western Siberia.

Obtaining monitoring data on the current state of permafrost-affected soils, as well as studying trends in their further development under natural and anthropogenic dynamics of landscapes, is necessary for the implementation of large-scale infrastructure projects for the development of the Yamal and Gydan peninsulas, which is a priority in accordance with the "Strategy for the Development of the Arctic Zone of the Russian Federation and National Security for the period until 2020 "(approved by the President of the Russian Federation).

The results of the study were used to refine regional and global models of climate change and the economic definition of environmental damage, to accurately assess the sustainability of natural ecosystems under anthropogenic pressure during the development of the Arctic, to predict the contribution of cryogenic ecosystems to the climate change, and to monitor the current state of permafrost and greenhouse gas emissions. The obtained data were used to monitor the current state of permafrost soils, the trends of their further development in the natural and anthropogenic dynamics of landscapes, as well as to assess the current state of the environment of Western Siberia.