

## **Submission: T-2020-179-76**

Title Role of ungulates in the transformations of Arctic habitats

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Theme

- -Theme 1: Design, Optimization and Implementation of the Observing System
- -Theme 5: Arctic Observations in the context of Global Observing initiatives

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Poster title (brief) ungulates in the Arctic

Abstract - text box

Ungulates determine the condition of vegetation: excessive number of them results in the extermination of plants, loss of soil and desertification, while the lack of them results in the excessive growth of trees and bushes. Both cases can be observed in the Arctic now, although the last one seems to be more common. Nowadays the ungulates are scarce in the North, although several thousand years ago they were much more numerous. An attempt to restore the past environment has been undertaken at the Polar circle close to the Kolyma River by Sergey Zimov and his team. Their idea was straightforward: to fence a plot of land and to introduce there the survived representatives of "megafauna" – oxen, horses, sheep and deer. It was expected that ungulates would either eat or trample down the small trees, bushes, mosses and lichens; the grass would grow up; and finally the low-productivity boreal habitats will be replaced by highly-productive grasslands resembling savanna. The fenced area was called "Pleistocene park". Since 1996 it encloses the area of 20 km<sup>2</sup>. Various ungulates have been introduced there. Recent observation showed that such introductions are promising, although by the moment the "transformed" habitats occupy rather small area in the park because of insufficient number of animals. The opposite situation can be observed in some plots of the tundra of Nenets Autonomous Okrug: the excessive number of ungulates (domestic reindeer) resulted in the loss of vegetation.