

## A06-P16

### TERRESTRIAL ECOSYSTEMS OF THE NOVOSIBIRSK ARCHIPELAGO (ARCTIC OCEAN, RUSSIA): CURRENT STATUS AND NEW THREATS

Innokentiy Michalovitsch Okhlopkov (*Institute for Biological Problems of Cryolithozone under Siberian Branch of Russian Academy of Sciences, Russian Federation*)

Vasily Egorovitsch Kolodezchnikov (*North-East Federal University, Russian Federation*)

Roman Vasiljevitsch Desyatkin (*Institute for Biological Problems of Cryolithozone Siberian Branch of Russian Academy of Sciences, Russian Federation*)

Shirow Tatsuzava (*University of Hokkaido, Japan*)

Nikita Gavrilovitsch Solomonov (*North-East Federal University, Russian Federation*)

imokhlopkov@yandex.ru

Islands of Novosibirsk Archipelago located in the Arctic Ocean, on the border of the Laptev Sea and East Siberian, and unite the three groups of Islands: Lyakhovsky, Anjou and De Long. The Northern half of Novosibirsk Archipelago is in the Arctic soils area and the Archipelago's southern half and other islands as well as all tundra zone on the continental part of the country are in the area of tundra- gleysols and tundra-illuvial-humus soils of the Sub-Arctic. Landscape structure includes 5 types of landscape – mountains-deserts, mountains-tundra, tundra and intrazonal valley. On floristic zonation of Yakutia, all the islands of Novosibirsk Archipelago belong to the Arctic floristic region and the prevailing type of vegetation is tundra type (65% of the area). Arctic deserts occupy about 8% and the swamp is about 10%, maritime marshes - a little more than 1% of the area. Stony and gravelly Arctic desert accounts for less than 1%. Fauna of the Novosibirsk Islands is closely connected with the fauna of the mainland tundra in North near-Arctic Yakutia. However, the modern fauna of the Novosibirsk Islands is slightly different from the fauna of the coast of Northern Yakutia and both the composition and abundance of most animals is lesser expressed in general. Breeding bird fauna is typical for high-latitude Arctic and belongs to the Arctic bird zoogeographic district and includes about 40 species. Up to 9 species of terrestrial mammals can occur on the Novosibirsk Islands but the species composition of the permanent inhabitants is about 6 species. By nature of the geographical distribution, terrestrial fauna are autochthons of the Holarctic tundra (Siberian lemming, Arctic Fox, Polar Bear, wild Reindeer) and Holarctic boreal elements of the Northern taiga (Wolf, Ermine). There are no settlements and virtually no economic activity on the territory of the Islands. By integrated assessment, terrestrial ecosystems of the Islands currently has a high degree of natural integrity and pristine. At the same time, at the present stage, there is the threat of violation of terrestrial ecosystems of the Islands as a result of global climate change as well as plans for active involvement of the region in economic turnover in the near future. For example, the total analysis of changes in permafrost conditions of the Arctic zone in Eurasia North-East showed that in 2000 years the situation has worsened with air temperature increasing: comparison with 1990s, the soil temperature at a depth of 1.6 m averagely increased by 1.5°C with the increase of averagely annual air temperature for 1.8°C at the present time. In the context of existing and upcoming approval of schemes on territorial plans of the region economic development, some part of the Islands will belong to the development of transport infrastructure while expanding of Northern sea route international opportunities, military and supporting bases at the development of offshore oil reserves. One of the ways to protect terrestrial ecosystems and adjacent water areas can be creation of Federal National Natural Park here and the extensive development of scientific research.