



**Project acronym:** MIPOLARCT

**Project title:** Microplastic pollution and effects on carbon-degrading microbial communities in Arctic Peatlands

**Project leader:** Juanita Mora-Gómez, Institut des Sciences de la Terre d'Orléans (ISTO), France

**Discipline:** Earth Sciences & Environment: Ecosystems & Biodiversity

**Station(s):** Mukhrino Field Station - Nymto Park (Russia)

The present project is an intent to determine the relevance of microplastics (MP) pollution in northern environments and study their possible effects on peat soil microbial communities. Peatlands represent one of the most important terrestrial carbon pools, despite only covering 3% of the earth's surface they store one third of all terrestrial carbon. Peat microbes from the Bacteria, Archaea and Fungi domains of life lead carbon cycling in peatlands. This ecosystem has shown to be sensitive to different human disturbances in terms of their carbon storage capacity and it is expected a huge CO<sub>2</sub> and CH<sub>4</sub> release as well as an increase in dissolved organic carbon exportation to freshwater systems, due to environmental changes. One of the current most increasing environmental concerns is contamination by MP (i.e. plastic particles < 5mm), they are present in the sea, freshwater, soil, and air, and their ecological effects might vary with MP origin and type. The main aim of the present project is to determine the relevance and effect of MP on carbon degrading microbial communities in northern peatlands. This project is part of a bigger research proposal aimed at investigating MP pollution in wetlands from different regions, led by the principal investigator. It is expected MIPOLARCT will help to fill the research gap we have in understanding MP pollution, improve our knowledge of microbial communities and shed some light for management in northern environments.