Case Study

# CONSERVING BIODIVERSITY ACROSS THE COMPANY'S FOOTPRINT – NORNICKEL'S ENVIRONMENTAL STRATEGY

Nature and biodiversity loss are among the most pressing global challenges - threatening the livelihoods of people, ecosystems, and our global economy.

Biodiversity conservation – understood as the preservation of life in all its forms – is a key indicator of ecosystem health and resilience. This is especially vital in the extreme conditions of the Russian Arctic. As such, biodiversity protection is a cornerstone of Nornickel's Environmental and Climate Change Strategy.

To evaluate the scale and nature of its impact on regional ecosystems, Nornickel conducted comprehensive research in 2022–2023, focusing on biodiversity within its operational footprint. The flagship Big Scientific Expedition marked the beginning of the company's systematic approach to managing biodiversity impacts.

## ASSESSING THE ENVIRONMENTAL IMPACT OF INDUSTRIAL FACILITIES ON ECOSYSTEMS

The large-scale project brought together over 100 experts from seven research institutes under the Siberian Branch of the Russian Academy of Sciences, in collaboration with other academic institutions, nature reserves, and student volunteers. More than 71,000 square kilometres were surveyed during the expedition

Findings revealed that the environmental impact of industrial facilities in the Norilsk Industrial District is relatively localized, extending no more than 11 km for terrestrial ecosystems.

These findings provide a scientific foundation for developing targeted biodiversity management measures and enhancing the company's environmental accountability in one of the world's most sensitive regions.

The Flagship Big Scientific Expedition

An important outcome of the project was the development of a methodology for calculating the Integrated Ecosystem Health Indicator (IEHI) – a tool designed to monitor changes in biodiversity over time in the Norilsk Industrial District. During the research, scientists developed new methods and approaches for assessing the extent of the negative impact of industrial enterprises on biodiversity.

Putorana snow sheep

For example, the research revealed several innovative approaches to assessing ecosystem health:

- **Analysis of secondary metabolites in plant foliage** allows for the evaluation of environmental impacts resulting from changes in industrial production processes. These biochemical markers serve as sensitive indicators of ecosystem stress.

- **DNA metabarcoding** offers a rapid and cost-effective method for identifying species using short genetic markers. This technique eliminates the need for time-consuming and invasive collection of specimens, such as fish or insects, by enabling the detection of species composition and abundance through traces of biological material found in standard water or soil samples.

The collected data on ecosystem conditions and biodiversity have been made publicly available in an accessible, interactive format on the company's dedicated platform: life.nornickel.com. This transparency reflects Nornickel's commitment to environmental accountability and stakeholder engagement.

The research results provide a solid foundation for developing a long-term biodiversity monitoring programme within the company's footprint. Biodiversity inventory work is planned to continue in the Russian Arctic, along with efforts to consolidate data on flora, fauna, vegetation, soil cover, and landscapes.

## MONITORING THE SNOW SHEEP POPULATION IN THE TAYMYR NATURE RESERVE

Another biodiversity-related initiative is Nornickel's cooperation with the Taymyr Nature Reserve.

With financial support from Nornickel, Taymyr Nature Reserve carried out a full-scale study of the rare Putorana subspecies of snow sheep, which is listed in Russia's Red Data Book. The project aims to estimate population size, identify demographic indicators, conduct genetic studies, and examine the territorial distribution of snow sheep, including defining the boundaries of their range and individual habitat pockets.

Nornickel also monitors the state of aquatic biological resources and their habitats. As part of

Fingerlings of Siberian sturgeon

its biodiversity conservation efforts, the company carries out artificial reproduction of juvenile fish, followed by their release into water bodies of the West Siberian Fishery Basin. In 2023 alone, about 330,000 fingerlings of Siberian sturgeon and grayling were bred and released by Norilsk Division's entities.

Human activity alters the natural processes that govern the formation and development of ecosystems. Scientists estimate that species are now going extinct at a rate hundreds of times faster than would occur through natural evolutionary processes. Biodiversity conservation is a vital component of sustainable development and essential to the well-being of humankind. Nornickel recognises the importance of biodiversity and actively works to preserve it, ensuring that future generations will inherit sufficient natural resources as well as the beauty and richness of our planet.

The Norilsk Nickel Group ("Nornickel", the "Group", the "Nornickel Group", or the "Company") is a diversified metals and mining holding company, the world's largest producer of palladium and metal nickel, and one of the leading global producers of platinum, copper, rhodium, and cobalt. Nornickel's key competitive advantages include a vertically integrated production chain that spans a unique mineral resource base and a full production cycle, from ore mining to refining, along with its own energy, logistics, and infrastructure assets. The Group's production facilities are located in Russia, including in the Norilsk Industrial District, on the Kola Peninsula, in the Trans-Baikal Territory, and in Finland. The Head Office of PJSC MMC NORILSK NICKEL (the Group's parent company) is based in Moscow.

Nornickel holds leading positions among industrial companies operating in the Russian Arctic. The Company's enterprises play a vital role in the development of Norilsk, Dudinka, Monchegorsk, and Zapolyarny, contributing to the social and economic development and stability of these cities.