

Biodiversity

In 2021, the Company planned extensive baseline biodiversity surveys, covering exploration, mining, production, transport, logistics, and energy facilities of the Norilsk, Kola, Trans-Baikal and Energy Divisions. The Siberian Branch of the Russian Academy of Sciences (RAS), which oversees this effort, was commissioned to conduct the surveys.

Its researchers will help to accomplish the following key survey tasks:

- Delineate the areas where ecosystem biodiversity is affected by the Company and establish the ecosystems' exposure to anthropogenic impact
- Study and assess the current state of biodiversity inside and outside the adversely affected areas
- Establish biodiversity composition in the disturbed areas, as well as in areas outside those that are adversely affected

- Identify the indicator species for the local environment (ecosystem), as well as protected species in the survey area
- Identify adverse impacts and threats to biodiversity from the Company's production facilities
- Classify habitat areas into natural, altered and critical habitat categories

The data from the surveys will provide a basis for building a biodiversity impact management system and identifying specific divisional-level targets to measure the common ambition to achieve the overall goal of no net loss of biodiversity. The system will also lay the foundation for developing divisional biodiversity conservation and monitoring programmes and targeted programmes for cooperation with agencies managing protected areas.

TARGET:

manage impacts on biodiversity.

PLANNED ACTIVITIES:

- develop and deploy a biodiversity impact management system,
- restore biodiversity disturbed by the NTEC accident which damaged the environment,
- develop divisional biodiversity conservation and monitoring programmes,
- and update programmes to support nature reserves.

CHPP-3 ACCIDENT RESPONSE

On 29 May 2020, pile sinking and loss of containment in an emergency fuel storage tank at CHPP-3 in the Kayerkan District of the city of Norilsk resulted in a spill of 21 thousand tonnes of diesel fuel. Since CHPP-3 is located in a remote area, the city was not impacted by the spill. The Company responded immediately, completing the first and second phases of clean-up (collecting spilled fuel) as well as the third phase (transportation and disposal of contaminated soil and water/fuel mixture) by end-2020. In 2021, the Company commenced phase 4 – land restoration and remediation, with the following activities completed:

- Settlement of the Rosprirodnadzor claim related to soil and water damage and the claims of the Krasnoyarsk Territory Ministry of Natural Resources related to damage to wildlife

- Use of sorbents on bank lines to remove remaining contamination (a continuation of the work commenced in 2020)
- Transportation of over 127 thousand tonnes of soil from temporary storage to an industrial disposal site near Nadezhda Metallurgical Plant for biological remediation
- Restoration of soil cover and seeding the areas (a continuation of the work commenced in 2020)
- Monitoring of water bodies, soils, flora, and fauna (a continuation of the work commenced in 2020)
- Reproduction of aquatic biological resources (ongoing programme)

Also in 2021, independent expeditions and assessments were conducted to observe and study various environmental components. The Siberian Federal University reported that, according to the survey results, no significant damage by the

petroleum product spill to vegetation and wildlife was observed across most of the affected area.

The following activities are planned for 2022:

- Discussion with the Federal Agency for Fishery of in-kind compensation for damage to aquatic bioresources
- Disposal of contaminated soil by microbiological remediation (bioremediation), as well as the disposal of sorbent and barrier booms, sorbents, and containers made of polymeric materials by thermal treatment
- Survey of the remediation area to assess the effectiveness of activities and the progress of contaminated and disturbed land restoration (continuation of work in warm periods)
- Contaminated land remediation project in the remaining area: 209,100.0 m² of disturbed land and 65,312.8 m² of contaminated land



GREAT NORILSK EXPEDITION 2021

In 2021, as part of the Great Norilsk Expedition 2021 in Taimyr, scientists from 11 research institutions of the RAS Siberian Branch thoroughly assessed the condition of water bodies and soils on the peninsula for several months. Overall, the three stages of the 2021 expedition covered more than 100 sites, taking over 1 thousand samples weighing about 800 kg in total.

Over a four-month period, the experts observed changes in the total content and composition of hydrocarbons in water samples. The 2021 detailed study of the spill's consequences covered all watercourses in the survey area: the Bezymianny (Nadezhdinsky) Stream, the Norilskaya, Dal'dykan and Ambarnaya Rivers, Pyasino Lake, the Pyasina River, as well as reference areas – Melkoe and Lama Lakes, the Boganida River and the adjacent plateau. The surveys also covered soils in all floodplains, as well as zoo- and biodiversity.

Ichthyological research was an important focus area of the Great Norilsk Expedition 2021. The research benefited from active contribution of indigenous peoples of the North, who helped the RAS Siberian Branch scientists with sampling in northern areas.

Laboratory work was carried out by various scientific institutes of the RAS Siberian Branch in Novosibirsk, Barnaul, Tomsk, Krasnoyarsk, Norilsk, and Yakutsk, using advanced equipment to study the collected samples.



KEY FINDINGS OF THE GREAT NORILSK EXPEDITION 2021

- Boom defences proved to be effective
- Remediation efforts proved to be effective
- Overall impact of the diesel fuel oil spill on the ecosystem has shown a decline
- The ecosystem was confirmed to be capable of significant self-restoration when biological products based on strains of hydrocarbon-oxidising microorganisms were used



“Nornickel demonstrates its ever increasing commitment to being a responsible user of natural resources and conducts detailed studies of its operating regions. This systematic engagement with academia, which offers superior research capabilities and numerous cases of their successful combination, can be hailed as a role model for all major natural resource users in Russia.”

ACADEMICIAN VALENTIN PARMON,

President of the Siberian Branch of the Russian Academy of Sciences, Research Supervisor of the Great Norilsk Expedition

CLEAN-UP OF LEGACY POLLUTION

Nornickel's ongoing programme to clean up areas and address legacy pollution, including abandoned building demolition and scrap metal collection and recycling, is a separate and a very important focus of the Company's Environmental Strategy.

In 2021, a total of 1 million m² were cleaned:

- in the between-pipe spaces of the trunk pipeline networks
- on the premises of combined heat and power plants Nos. 1 and 3
- on some sections of the Company's mines in Talnakh.

Other work completed:

- Collection and disposal of stainless steel and other scrap metal (over 37 kt)
- 247 kt of construction waste removed
- 87 dilapidated buildings dismantled

COOPERATION WITH NATURE RESERVES

There are no nature reserves in the proximity of Nornickel's operations. In the Murmansk Region, the Pasvik and the Lapland nature reserves are 10 to 15 km away from the Kola Division production facilities. In the Krasnoyarsk Region, the boundaries of the Putoransky Nature Reserve buffer zone are at a distance of 80 to 100 km from the Norilsk Division production sites.

Nevertheless, the Company has been supporting nature reserves for over 10 years now, in line with its long-term strategy to maintain biodiversity in its regions of operation and to preserve the unique Arctic nature.

2021 saw the launch of the Zatundra project for the integrated development of a unique area located in the Arctic Circle, near Norilsk. Plans are in place to establish the necessary tourist infrastructure for the development of nature tourism in one of the most spectacular and remote places in Siberia – on the basalt Putorana Plateau – over the next five years (between 2021 and 2026). The project involves building the tourist village hub of Kanchul Bay, which will have a total accommodation capacity of 605 rooms, as well as related utilities and amenities. This will be supplemented by an

The goal is to dismantle unused facilities and clean up the areas:

467
abandoned
buildings and
structures

>1.3
mln t
of industrial
waste

>2
mln t
of rubbish

>600 kt
of scrap metal

extensive network of campsites for 600 pitches, hiking trails and paddling routes for nature and expedition tourism. Plans include the construction of necessary supporting infrastructure. The tourist infrastructure will be located outside the Putoransky Nature Reserve, with accommodation sites used as starting points for various tourist routes throughout the Taymyrsky District, including visits to the Putoransky Nature Reserve.

The Kola Division also helps to develop and implement further measures to protect rare animal species. In particular, in 2021, the Lapland Nature Reserve launched the Let's Save Reindeer Together project, supported by the Company under its World of New Opportunities corporate charitable programme. The project aims to protect the wild reindeer, a species listed in the Red Data Book of Russia due to poaching. The Lapland Nature Reserve is the only place in Northern Europe with a wild reindeer population as large as some 1 thousand.

The Pasvik Nature Reserve's ongoing environmental monitoring programme covering the Kola Division's footprint and the reserve's adjacent areas has been running since 2006. The shutdown of smelting operations in Nikel has expanded the scope of monitoring activities, with Pasvik environmental scientists expected to assess the restoration of terrestrial and aquatic ecosystems in the Pechenga District on a larger scale over the coming decades. The focus will be on the ongoing ecosystem changes: overgrowing of wasteland and new plant and animal species found in the district and in areas adjacent to the former industrial site. Another focus of the monitoring programme is studying the composition of atmospheric precipitation. This effort will build on the

research conducted at the Pasvik Nature Reserve between 2009 and 2014 under the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests). This research has now been resumed, with monitoring capabilities enhanced through camera trap data. Pasvik scientists have already used camera traps before, but now they will also be installed near Nikel and Zapolyarny. New vegetation growth on wasteland will also be studied.

The Tourist Routes of the Pechenga District project commenced in the spring of 2021. Two natural monuments have been made accessible to visitors: access to a waterfall on the Shuonijoki River and a cedar forest in the Nikel forestry. Infrastructure in these places has been completely renewed.

In the Zabaykalsky Region, the Company supports the development of research and technical capabilities of the Urumkansky Nature Reserve.

1 mln m²
of the territory was cleared in 2021

87
dilapidated buildings were dismantled