Restoring peatlands in Russia

Preventing peat fires, mitigating climate change

Millions of hectares of drained and abandoned peatlands in European Russia are highly vulnerable to fires, such as those that covered Moscow in smoke during the extremely dry summer of 2010. Rewetting degraded peatlands, especially abandoned peat mining sites, and establishing a sustainable usage will prevent fires and their negative impacts on climate and biodiversity.

Cause and threats

Peatlands cover more than 8% of the Russian territory, making up for as much as 20% of the country's land area if shallow peat soils are included. Most peatlands have remained untouched, but in European Russia several million hectares of peatlands have been drained and used for agriculture, forestry and peat extraction, in particular in Moscow oblast (province). In the 1990s these uses became unprofitable and the peatlands were abandoned.

Drained peatlands oxidise and release large amounts of carbon dioxide (CO_2) into the atmosphere. In dry summers, drained peatlands are also highly prone to fire. The heavy clouds of smoke resulting from peat fires, such as those in Moscow region in 2010, have a significant economic and public health impact. The fires also affect biodiversity, degrading the habitats of many species that depend on peatlands for survival. Fire related carbon losses furthermore add to the already significant CO_2 emissions from peat oxidation in drained peatlands; peat oxidation and fires are among the main contributors to global CO_2 emissions and thus play an important role in fuelling climate change.

Abandoned peat extraction field. Courtesy Andrey Sirin

Solutions

Rewetting drained peatlands returns them to their original water-logged state. Rewetting and establishing a sustainable use of these areas prevents fires, while also mitigating the negative impacts of peatland degradation on the climate and biodiversity. Rewetting is done by blocking drainage ditches so that the peatlands' water storage capacity is restored.

Regeneration of the natural vegetation of peatlands helps to restore and maintain their important ecosystem services, such as water regulation, biodiversity and carbon sequestration. Sustainable peatland use under wet conditions, including wet agriculture and forestry, is known as paludiculture and can be beneficial for both economy and ecology.

Peat fires create heavy smoke clouds, which pose a health hazard for the population in affected areas, and release large amounts of CO_2 into the atmosphere. Courtesy Gennady Rusanov

Large-scale peatland rewetting programme

In reaction to the extensive peat fires in 2010, the Russian Government started a large-scale rewetting programme in Moscow oblast and adjacent regions. Within the framework of Russian-German bilateral cooperation, technical assistance and international expertise is provided by the global NGO Wetlands International, the Michael Succow Foundation, Greifswald University and the Institute of Forest Science of the Russian Academy of Sciences.Together, the partners provide input for the restoration and rewetting of more than 40,000 hectares of degraded peatlands and assist Moscow oblast in making an inventory of peatland areas, evaluating their susceptibility to fire and monitoring their greenhouse gas emissions.

The partners will also develop guidelines for peatland conservation and rehabilitation, and advise on national planning and implementation of rewetting activities.

Sphagnum farming as a form of paludiculture - sustainable use of rewetted peatlands in Germany. Courtesy Susanne Abel

Pilot business cases will be developed to demonstrate opportunities for effective peatland restoration and sustainable use (paludiculture), and for generating carbon credits.

Restored mire vegetation 4 years after rewetting. Meschera National Park, Vladimir oblast. Courtesy Anna Vozbrannaya

Cranes foraging in the Cranes Homeland Nature Reserve (Moscow oblast). Courtesy I.V. Bartashov

More information

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