Restoring peatlands in Russia

Preventing peat fires, mitigating climate change

Several million hectares of abandoned and drained peatlands in European Russia are highly vulnerable to fires, such as those that resulted after an extremely dry summer in 2010 that billowed smog over Moscow. Rewetting and establishing a sustainable use of degraded peatlands, especially abandoned peat mining sites, may prevent such fires, and mitigate negative impacts on climate and biodiversity.

Peat fires create heavy clouds of smog, which can cause damage to the health of the surrounding populated areas. By Jan Peters

Cause and threats

Peatlands cover more than 8% of Russia and with the addition of shallow peat soils make up to 20% of the entire country. Most of the peatlands remain untouched, but in many regions of European Russia, several million hectares of peatlands have been drained and used for agriculture, forestry and peat extraction; the largest hectarage being in the Moscow region (oblast). However, in the 1990s, these activities became unprofitable and the peatlands were abandoned without rehabilitation measures.

Drained peatlands become vulnerable to wind and water erosion and to oxidation causing the release of carbon dioxide into the atmosphere. Dry summers are a particular threat as they increase the risk of fires. The heavy clouds of smog from fires, such as those in the Moscow region in 2010, result in significant economic and public health impacts. The fires also affect biodiversity, degrading the habitats of many species that depend on peatlands for their survival. Fire related carbon losses add to the already significant CO_2 emissions from peat oxidation; peatland degradation is one of the main contributors to global emissions - fuelling climate change.

Solution

Rewetting the drained peatlands returns peat to its original water-logged state. Rewetting and establishing a sustainable use of such lands could prevent fires, and also mitigate the negative impacts on the climate and biodiversity. Rewetting is done by blocking drainage ditches so that the peatland's water storage capacity is restored.

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

Abandoned peat extraction field.By Andrey Sirin

Large-scale peatland rewetting programme

In reaction to the extensive peat fires in 2010, the Russian Government started a large-scale rewetting programme in the 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 will provide input for the restoration and rewetting of more than 40,000 hectares of degraded peatlands; assist the Moscow oblast in the development of an inventory of peatlands areas; evaluate their fire danger status; and monitor greenhouse gas emissions.

Sphagnum farming is a form of sustainable use, as done in Germany. By S. Abel

The partners will also develop guidelines for peatland conservation and rehabilitation, and advise on national planning and implementation of rewetting activities. Pilot business cases will be developed to demonstrate opportunities for effective mire restoration and paludiculture and for generating carbon credits.

Dam preventing water to flow from the extracted peatland. By Andrey Sirin

Cranes feeding in a field in the Cranes Homeland Nature Reserve. By I.V. Bartashov

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