



Global Peatland Hotspot Atlas:
The State of the World's Peatlands in Maps
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Mining, oil, and gas deposits on peatland

The global extraction of minerals, along with oil and gas exploration and exploitation, poses significant threats to peatlands in both boreal and tropical regions.

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ISBN: 978-92-807-4197-1
Job Number: DEP/2684/NA
DOI: <https://doi.org/10.59117/20.500.11822/46635>

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Suggested Citation

United Nations Environment Programme (2024). Global Peatland Hotspot Atlas: The State of the World's Peatlands in Maps. Visualizing global threats and opportunities for peatland conservation, restoration, and sustainable management. Nairobi.

Production

United Nations Environment Programme (UNEP).
<https://www.unep.org/resources/report/global-peatland-hotspot-atlas-2024>

Supported by:

The Global Peatland Hotspot Atlas is a product supported by the Michael Succow Foundation, partner in the Greifswald Mire Centre, under the umbrella of the Global Peatlands Initiative: Assessing, Measuring and Preserving Peat Carbon project (GPI project) which is funded by the International Climate Initiative (IKI) of Germany.

Supported by:



based on a decision of the German Bundestag



Acknowledgements

The United Nations Environment Programme (UNEP) would like to thank the Greifswald Mire Centre (GMC) for the access to their Global Peatland Database (GPD) and for the production of the Global Peatland Map and all Thematic Maps.



UNEP would also like to thank the Global Peatlands Initiative (GPI) Team for the overall coordination of this Atlas.

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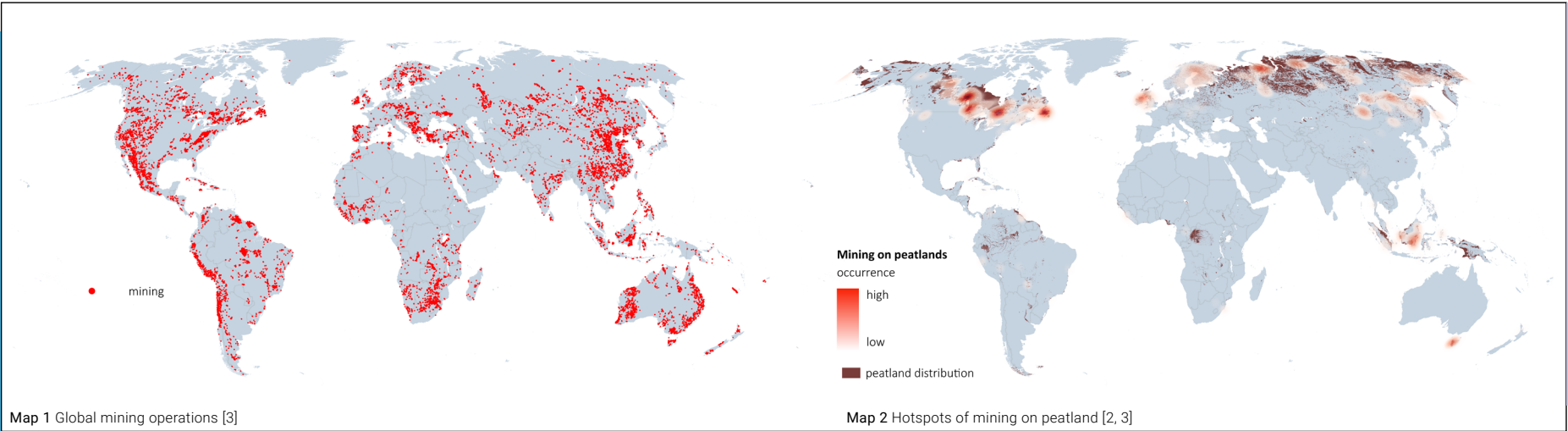
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Thanks also to:

Caroline Borowski, Martha Burckhardt, the Global Peatland Database mapping team, the contributors of the UNEP 2022 Global Peatland Assessment, Susan Gardner, Jane Muriithi, Mónica López Conlon, Cisca Devereux, and Fabrice Inkonyo

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Mining on peatland



The global extraction of minerals, along with oil and gas exploration and exploitation, poses significant threats to peatlands in both boreal and tropical regions.

Global extraction of minerals has grown at an unprecedented pace in the past decades, causing a wide range of environmental impacts around the world. Surface mining involves the removal of all surface vegetation, soils, and near-surface geological deposits, resulting in habitat fragmentation, ecosystem degradation, biodiversity loss, and pollution of rivers and land. Many oil sands deposits are extracted using in situ methods, requiring the construction of production platforms (wells) and associated infrastructure, including access roads, pipelines and processing plants [1].

In the peat-rich boreal regions of North America and Asia, there is a high risk of peatland destruction by mining and oil extraction. For instance, the discovery of extensive mineral deposits in the Hudson Bay Lowlands region has led to numerous active mining sites covering more than 200,000 hectares. The expansion of mining in the peat-rich boreal and subarctic regions of North America could affect large areas of peatlands in the coming decades. Additionally, peatlands in Indonesia, Tasmania, the UK, Ireland, Sweden, Finland, European Russia and Northeast China overlap significantly with ongoing mining activities [2, 4].

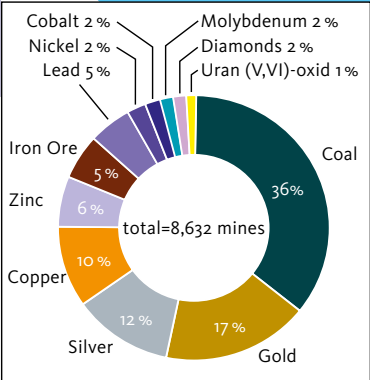
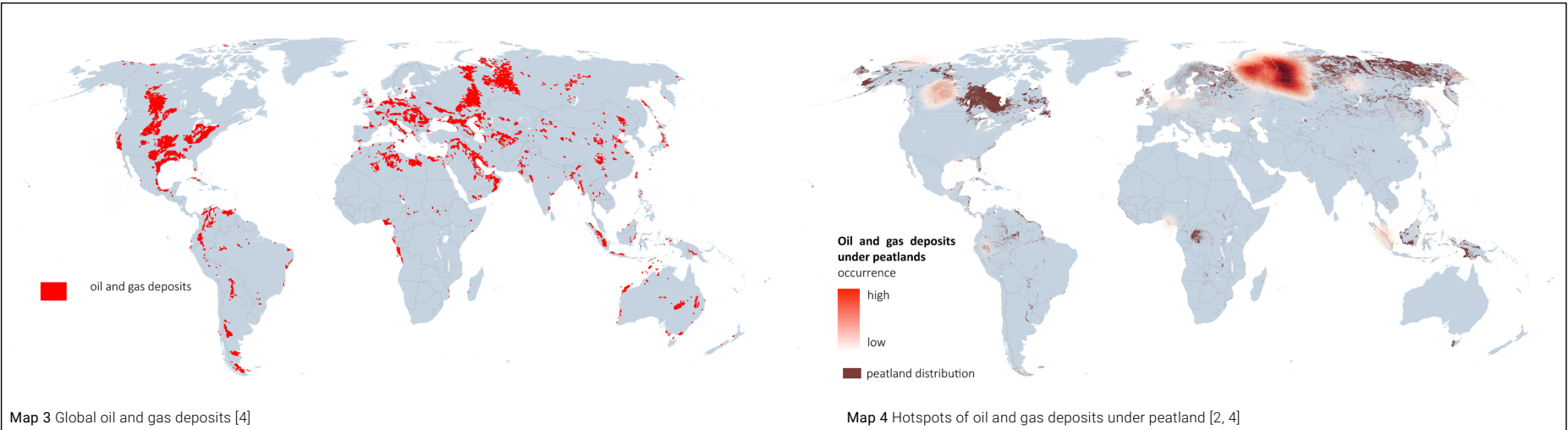


Figure 1 Commodities with > 100 active mines globally between 2000 and 2017 [after 3].

Oil and Gas deposits on peatland



Oil and gas exploration has historically led to the pollution of peatlands, especially in Canada (370,000 ha affected), and Russian Siberia. Moreover, several regions are currently under threat from oil and gas development, including the Magdalena, Oriente and Marañón River Basins (South America), the Gulf of Mexico, the Great Lakes region (USA), the West African coast, the Brahmaputra River Basin, the island of Sumatra, and the northeastern plains of China (Map 3). In the tropics, oil field exploration and development contribute to deforestation and habitat loss, along with other environmental impacts such as pollution from oil spills and production water (well brine). Notably, 8.3 %

(107,000 km²) of the total area of tropical peatlands overlaps with a 30 km buffer zone around oil and gas infrastructure [1, 2, 4].



Figure 2 Extraction infrastructure and pipe lines on peatlands: A) scheme of an in-situ oil pad built on peatland (Canada [1]), UNEP 2022 [1]; B) foundation of an oil pad on peatland (Canada), photo: M. Guéné-Nanchen; C) gas pipeline on peatland in Russia, photo: H. Joosten; D) oil infrastructure and contamination in wetland/peatland of the Pastaz-Marañón Basin in Peru, photo [5].

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