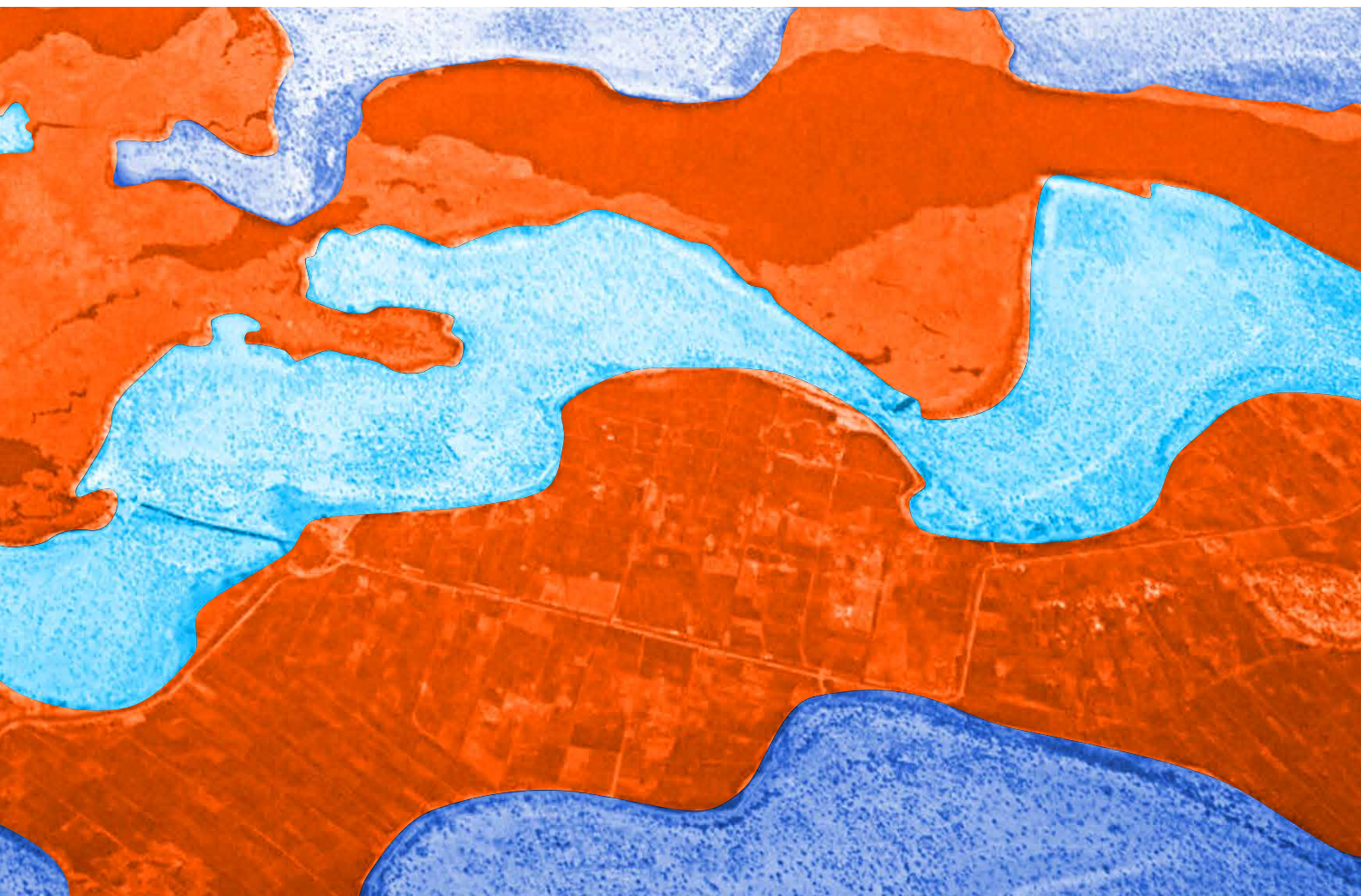


Global Peatland Hotspot Atlas: The State of the World's Peatlands in Maps

Visualizing global threats and opportunities for peatland
conservation, restoration, and sustainable management



Key Messages

1. Peatlands play a critical role in climate change mitigation and provide essential ecosystem services, yet they face significant threats and remain among the least understood and monitored ecosystems globally.

2. The Global Peatland Hotspot Atlas builds on the Global Peatlands Assessment and accompanying Global Peatland Map 2.0, both flagship products of the UNEP Global Peatlands Initiative. This Atlas introduces updated and newly designed hotspot maps, offering a clearer visualization of peatland distribution and the threats they face, setting a new standard for global peatland mapping, research, and policy development.

3. Global peatland distribution is shaped by atmospheric circulation patterns and varying climatic conditions, resulting in a high diversity of peatland types, with greater concentrations in boreal regions and the tropics.

4. Major threats to peatlands include drainage for agriculture, forestry, and peat extraction, intensified by industrial activities and infrastructure development. Climate change further exacerbates these issues, leading to significant degradation, loss of ecosystem functions, and increased greenhouse gas emissions, representing currently 4% of global anthropogenic emissions.

5. Peatlands are vital habitats for rare and threatened species, supporting unique flora and fauna. However, human encroachment is driving significant biodiversity loss, with 303 plant and 767 animal species threatened globally. Protecting peatlands is critical for safeguarding these vulnerable species and maintaining ecosystem health.

6. Peatlands exist in various landscapes, from tropical and temperate forests to mountains, tundra, and drylands. In polar and boreal regions, permafrost shapes peatland dynamics, but climate change is thawing the frozen ground and potentially promoting degradation. Peatlands are vital water sources, including in the mountains with high-altitude conditions leading to slower decomposition and greater carbon accumulation. Meanwhile, peatlands in arid regions are increasingly at risk of shrinking as climate extremes intensify.

7. Rapid urban and infrastructure development, including road and railway construction, along with industrial activities such as mining and oil and gas exploitation, cause peatland degradation, habitat fragmentation, pollution, and increased greenhouse gas emissions, posing a global threat to peatlands.

8. In temperate, tropical, and subtropical climates, drainage for agriculture, livestock farming, and oil palm plantations are the primary drivers of peatland degradation, yet ongoing research on paludiculture (sustainable wet agriculture) may offer promising sustainable alternatives.

9. Peatland drainage leads to peat subsidence (land loss and shrinkage) and increases flood risk, particularly in regions where peatlands are already vulnerable to floods, along major rivers, coastlines, and at the base of mountains.

10. Drained peatlands are highly vulnerable to smoldering fires during dry seasons, releasing significant greenhouse gas emissions and hazardous haze detrimental to human health. In contrast, undrained peatlands may only experience surface fires that do not penetrate the peat soil.

11. Effective protection of peatlands requires holistic water management and a landscape approach to conserve the entire hydrological catchment and preserve its valuable ecosystem services for both people and for nature.