

Why peatlands matter

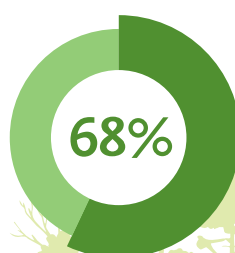
Photo: Nanang Sujana/CIFOR

What is peat?

Peat is a type of organic soil which is made up of partly decomposed vegetation and is formed over centuries in waterlogged conditions. Peat has been on our planet for around **360 million years**. Some **peatlands** in existence today took more than **10,000 years** to develop.

Where is it found?

Peat exists in a variety of climates around the world. From high altitudes to coastal areas and from tropical rainforests to permafrost regions towards the poles, where soil has been frozen year round for at least two years. The vast majority of peatlands can be found in colder climates, in temperate or boreal areas. Tropical countries with large stores of peat include the Democratic Republic of the Congo, Indonesia and Peru. **68%** of tropical peatlands are found in Southeast Asia.



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3-5%

of the earth's surface

Home to more than

30%
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stored in soil worldwide



Peatlands in
tropical regions
store the most carbon

In the peatlands of
**Borneo,
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and Sumatra**



forest cover fell by
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Forest fires in Indonesia in 2015 released

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of carbon dioxide every day



Why are peatlands important?

Millions of people around the world depend on peatlands for their livelihoods, often using unsustainable agricultural practices. Healthy peatlands provide food, clean water and other benefits to nearby communities. They can also help prevent droughts, floods and intrusion of salt water into agricultural areas. Peatlands are important to biodiversity, hosting endangered species like orangutans and the Sumatran Tiger.

Peatlands play a critical role in climate change mitigation and adaptation. They cover only around 3-5% of the earth's surface, but are home to more than 30% of carbon stored in **soil** worldwide. **Estimates suggest** peatlands contain twice as much carbon as all the world's forests and four times as much as the atmosphere. Peatlands in tropical regions store the most **carbon**.

Why are peatlands under threat?

In the northern hemisphere, permafrost is thawing and causing peat to dry out. In tropical

areas, peatlands are being drained, cleared and set on fire to make way for agricultural plantations that produce palm oil and wood pulp. In the peatlands of Borneo, Peninsular Malaysia, and Sumatra alone, forest cover fell by **more than half** between 1990 and 2010 – from 77% to 36%.

Why is this dangerous?

When peat burns, enormous levels of carbon dioxide and other gases are emitted into the atmosphere. This contributes to climate change and can cause serious public health **issues**.

Researchers **found** that the forest fires in Indonesia in September and October of 2015 released **11.3 million tons** of carbon dioxide every day, higher than the daily emissions produced by the entire **European Union** over the same period.

According to **UN Environment**, less than 0.4% of the world's surface is made up of drained or degrading peatlands, but these account for 5% of all global emissions of carbon dioxide produced directly by human activities.

Global, national and local initiatives are working to stop the degradation of peatlands and are promoting ways to restore them

What is being done to protect peatlands?

Cutting carbon dioxide emissions from peatlands is an essential component to achieve the Sustainable Development Goals and the environmental commitments made under the Paris Agreement. Several international, regional and national efforts are underway to protect and restore peatlands, including:

- **The Global Peatlands Initiative** is led by top experts and institutions to save peatlands and to prevent carbon dioxide from being emitted into the atmosphere.
- Interactive maps used to track threats to peatlands like global forest fires and regional **deforestation**.
- Efforts in tropical countries like the launch of Indonesia's **Peatlands Restoration Agency** and research **projects** in Peru to improve data collection.
- Urgent restoration projects for peatlands in colder climates in countries including **Finland**, **Russia** and the **United Kingdom**.
- Analysis of different ways to **stop fires** and **deforestation** in the first place, as studies have shown that **restoration** efforts can never fully regain lost carbon.

Millions of people around the world depend on peatlands for their livelihoods. Low-impact agricultural practices are needed to promote sustainable development while lowering greenhouse gas emissions and preserving biodiversity.





Photo: Pilar Valbuena/CIFOR

Further reading

- Peat fires stoke climate change – UN launches global initiative (bit.ly/2b5ucXO)
- Conversion of intact peat swamp forest to oil palm plantation: Effects on soil CO₂ fluxes in Jambi, Sumatra (cifor.org/pid/4119)
- What is the Global Peatlands Initiative? (bit.ly/2ome2My)
- Tropical wetlands, climate, and land-use change: adaptation and mitigation opportunities (cifor.org/pid/6047)
- On land and in space, understanding the impacts of fires (blog.cifor.org/42098)
- Nazir Foad: 'The keyword for us is cooperation' (blog.cifor.org/47040)
- Indonesian Peatland Fires: Perceptions of solutions (cifor.org/pid/5882)
- Zero-deforestation commitments in Indonesia: Governance challenges (cifor.org/pid/5871)
- Fire carbon emissions over maritime southeast Asia in 2015 largest since 1997 (go.nature.com/2qsT7cT)
- Impacts of land use, restoration, and climate change on tropical peat carbon stocks in the twenty-first century: Implications for climate mitigation (cifor.org/pid/6132)
- Fire economy and actor network of forest and land fires in Indonesia (cifor.org/pid/6357)
- Hinterland Who's Who: The Canadian Wildlife Federation (bit.ly/2q5QNeE)
- Tropical Peatlands: International Peatland Society (bit.ly/2qdf9zE)
- Smoke from 2015 Indonesian forest fires may have caused 10,000 premature deaths (bit.ly/2q4097X)
- Study to measure carbon in Peru's peatlands (blog.cifor.org/21726)
- Ecological restoration in drained peatlands – best practices from Finland (bit.ly/2q4nMwX)
- Peatland Restoration: International Union for Conservation of Nature (bit.ly/2p3bbM3)
- Peat Restoration: The key solution for large peat fires in Russia (bit.ly/2ouQGtj)

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