

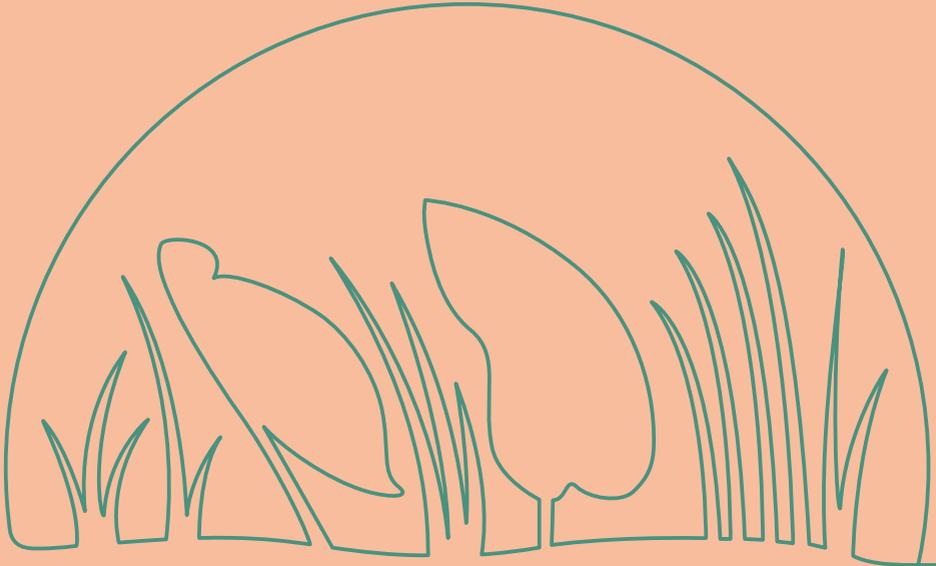


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The Sustainability Series



Tropical peatlands and their importance to people and climate

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Sustainable Development

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Tropical peatlands and their importance to people and climate

Lydia Cole and Katy Roucoux – School of Geography and Sustainable Development
(Article written by Garry MacKenzie)

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Here in the United Kingdom, we are accustomed to the term ‘sustainability’ referring to issues such as energy use, recycling or even seasonal eating. But what does living sustainably mean in remote, flooded, forest regions of the Peruvian Amazon? The peatlands of the Pastaza-Marañón foreland basin are in the Loreto region of northern Peru. This swampy habitat is still largely intact, but in other parts of the world such as Indonesia, tropical peatlands have already been extensively drained for agricultural use. This development has repercussions for both the global climate and the livelihoods of local people.

Little is known about the value placed by the people of the Pastaza-Marañón on the peatlands in terms of their day-to-day subsistence and culture. Is the biodiversity of the region important to the people who live there? Do they find the peatland ecosystems useful, beautiful or spiritually significant? Study of their interactions with the peatlands and the meanings that the terrain holds for them is essential to a fuller understanding of how local and global influences could affect this internationally significant ecosystem.

Dr Katy Roucoux of the School of Geography and Sustainable Development leads an interdisciplinary team exploring the significance of the peatlands of

the Pastaza-Marañón foreland basin. Titled ‘Valuing Intact Tropical Peatlands: an Interdisciplinary Challenge’, the project seeks to understand more about the ecology – including the relationship between local people and the environment – of this region. Using research methods from natural and social science, the researchers aim to create a fuller picture of the importance of the wetland ecosystems in the region. This information is contributing to the Peruvian government’s recognition of the peatlands as a unique ecosystem worth including in its sustainable land management policies.

Why peat matters

Peat is an accumulation of partially decayed plant matter. Peatlands are waterlogged throughout the year, slowing decomposition to such an extent that dead plant remains accumulate faster than they decay. This forms layers of peat which, over thousands of years, can become many metres deep. Peat is among the largest terrestrial carbon stores on the planet: carbon dioxide captured by living plants during photosynthesis is locked in, meaning that it is not released into the atmosphere. Globally, peatlands hold an immense amount of carbon – more than is held in the rest of the world’s vegetation, including forests, combined.

Peatlands are found across the world, and they range from the treeless, boggy Flow Country in northern Scotland to swamp forests in the tropics. In addition to the vital role they play in storing carbon, peatlands are unique habitats that are important for regional biodiversity.

To store carbon and therefore help mitigate global warming, peatlands must be wet. When the land is converted to agricultural use, drainage ditches lower the water table and dry out the upper layers of peat. Oxygen gets into the peat and speeds up decomposition. Once stored for thousands of years, carbon is now released into the atmosphere as carbon dioxide. Dry peat is further susceptible to wildfire, which causes additional carbon release.

Over the last few hundred years, vast tracts of peatland have been lost. Loss is usually due to drainage and conversion for agricultural use. In Scotland, an estimated 80% of peatlands have been affected by drainage and other human interventions. Recently, this trend has rapidly expanded in tropical regions. Peatland drainage for oil palm plantations in Indonesia has resulted in the release of a huge amount of carbon dioxide, frequent peat fires leading to toxic haze events, and land subsidence.

The Peruvian Amazon contains one of the largest remaining areas of intact peatlands in the tropics, but the landscape is under threat. There are economic pressures to drain the peatlands for the development of

transport links and oil palm or cacao plantations. There is a risk that this currently remote region could be viewed as swampy wasteland ripe for conversion into alternative land uses. Protection of these lowland Amazonian peatlands requires the territory to be clearly defined. It also requires official acknowledgement of the region's importance for carbon storage as well as the role played by the peatland in the culture and livelihoods of its inhabitants.

Valuing peatland

Funded by the Leverhulme Trust, the Scottish Funding Council and the British Council Newton Fund, the 'Valuing Intact Tropical Peatlands' project involves Roucoux, together with Research Fellow, Dr Lydia Cole, and other researchers at the University of St Andrews working as part of an international and interdisciplinary network of specialists. Collaboration is helmed under the umbrella of the Tropical Wetlands Consortium, which seeks to understand more about Peru's Amazonian peatlands. Alongside colleagues at the University of Edinburgh and the Instituto de Investigaciones de la Amazonía Peruana (Research Institute of the Peruvian Amazon) in Peru, the team is cooperating with the Peruvian government and the United Nations Global Peatlands Initiative to develop a definition that articulates the value of the peatlands and emphasises the need for their protection.

The team seeks to understand the value of the Pastaza-Marañón basin in terms

of what the ecosystem means to local people. This means finding out about the social, cultural, spiritual, subsistence and economic value that environments, locations and species in the peatlands hold for their inhabitants. They also want to uncover how the peatlands are changing. For example, is the vegetation changing? Are people making use of the

area in new ways? Their aim is to produce a more cohesive understanding of the ecology and value of Peru's Amazonian peatlands, the costs of developing these vital habitats, and the factors that could affect sustainable use of the ecosystems of the Pastaza-Marañón long into the future.

Find out more

Project exhibition website: <https://peatlands.wp.st-andrews.ac.uk/>

Dr Lydia Cole researcher profile: www.st-andrews.ac.uk/geography-sustainable-development/people/lesc1

Dr Katy Roucoux researcher profile: www.st-andrews.ac.uk/geography-sustainable-development/people/khr

Instituto de Investigaciones de la Amazonía Peruana (Research Institute of the Peruvian Amazon): www.gob.pe/iiap

Tropical Wetlands Consortium: <https://tropicalwetlands.wp.st-andrews.ac.uk/en/about/>

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