

Peat Anthology
2020
EU EDITION

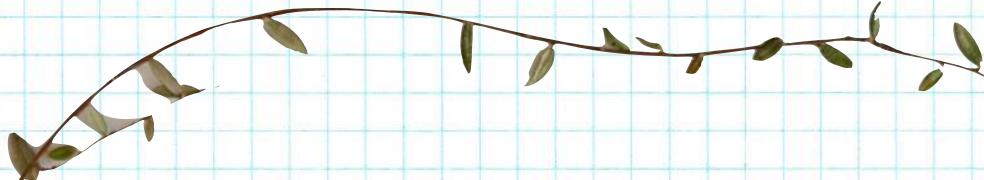




We are RE-PEAT, a youth-led collective pushing for a paradigm shift in the way that peatlands are treated, valued, and understood. We came together with the view that the present moment is not a precipice but a crossroads, and that recognizing and supporting peatland ecosystems offers us another path, away from environmental destruction, spiralling inequality, and climate chaos. We believe peatlands have a unique ability to reconnect us to the now and then, the here and there, and perhaps most crucially, the *us* and *them*. Today, decisions are tied up in power and preconceived ways of doing; the decisions made by some disproportionately affect others in a game of who can develop the most in the shortest amount of time. These choices, that are currently tearing through lives in the myriad corners and centers of the world, will continue to rupture the webs of life if repeated endlessly. As young people, we do not feel so bound by the old paradigms of working. We see that perhaps peatlands can help us imagine a more regenerative, and appreciated path forward.

Many of us at RE-PEAT were either born or live in Europe. So, in the spirit of „think global act local“, when we found out that the EU has been subsidising peatland drainage for many years and not offering farmers any viable alternatives, we felt the need to do something. We would like to recognise that a peatland-specific policy paper has been published by the Griefswald Mire Center, Wetlands International and the National University of Ireland¹, especially for the CAP. To this position paper we applaud them, and are truly grateful for their work. Yet, we wonder, do these fact sheets communicate the deep care that many of us feel? Do they communicate the pain and fear that many of us struggle with? Do they speak to you, CAP decision-maker, as a living, breathing being that relies on the water being clean, the soil fertile, and the land not flooded or burnt? Do they make you consider the futures of your children? Or the present reality of climate chaos?

The
Peat Anthology
2020



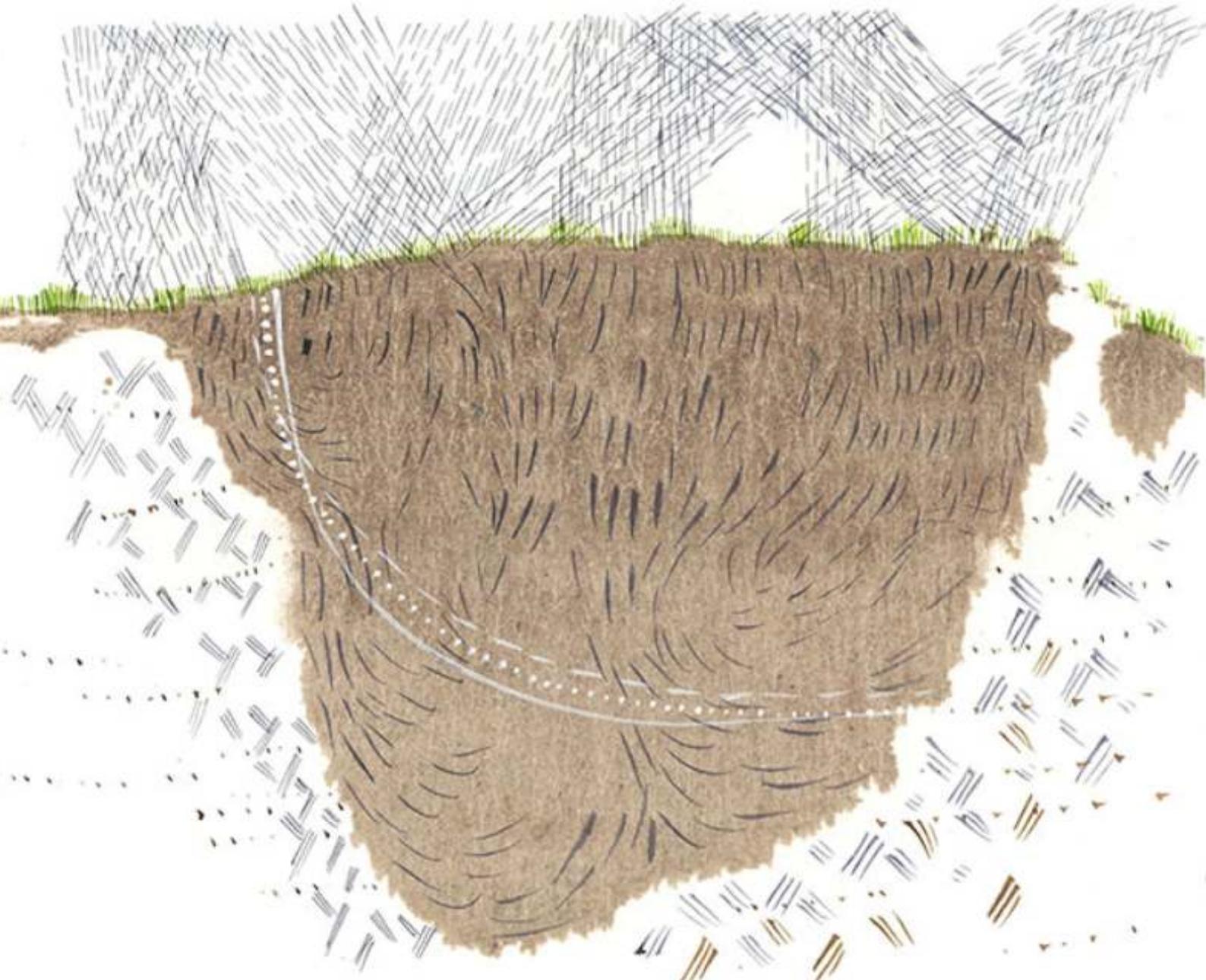
We decided, as part of the peatland paradigm shift that we strive for, to do something a little different to compliment this policy paper. So we reached out to lots of different people to bring their stories and experiences to the policy level, with the hope that these personal reflections might give you the energy to make a brave decision.



How to read The Peat Anthology:

Submissions have been randomised and can be found in no particular order. We believe that through dis-ordering the texts and images, their diversity can layer upon each other and create a feeling of connectivity and complexity. There are 4 main sections in which you can find information about the peatlands of Eastern Europe, South, North and West of Europe. The 4 chapters give reference to the corners of this part of the world but do not describe the contents of the chapter - in each section you can travel between various parts of the planet, for example from Ireland to the UAE and from Spain to the UK to Estonia. We have also included some submissions from the UK, this felt appropriate considering the close (albeit complicated) relationship between EU policy and UK policy.

¹<https://www.eurosite.org/wp-content/uploads/CAP-Policy-Brief-Peatlands-in-the-new-European-Union-Version-4.8.pdf>



Impression of a rain-fed raised Bog © Kate Foster

What are Peatlands?

Also known as bogs, mires, moors, and fens, peatlands are composed of a mass of “pickled” plant matter (peat). The plant matter is suspended in its path towards decomposition by a lack of oxygen and the acidity of the surrounding stagnant water.

Although peatlands make up only 3% of the world’s landmass, they have a huge impact on the global climate. Because peatlands prevent plant matter from decomposing, they are the largest terrestrial carbon store - storing more than double the carbon of all the world’s forests combined. Also, peatlands host a plethora of weird and wonderful life, including the insect-eating sundew and the infamous sphagnum moss (peat moss), the most abundant plant in peatlands. Yet, when drained, peatlands also pose a number of threats. To name a few: they can exacerbate flooding and pollute local water with the runoff, they can become highly flammable and also cause land subsidence. Drainage also turns the land from a carbon sink to a very potent carbon emitter. Currently drained peatlands are emitting roughly 5% of all anthropogenic carbon dioxide.

Why the CAP?

The Common Agricultural Policy (CAP), is an EU-wide agricultural policy that receives almost 40% of the total EU budget. The upcoming decision stands from 2021-2027, which is a considerable length of time given the critical moment we are living in. There are two pillars to the CAP: the first deals with direct payments (so assists farmers against the many variabilities that factor into farming, i.e. weather conditions or market fluctuations); the second pillar covers subsidies for environmental improvements, rural development and innovation.

Throughout the EU, attention has been given to environmental concerns, including peatlands (such as in the EU Biodiversity Strategy and the UNEA-4 Resolution where the EU was one of the resolution co-negotiators pushing for a more ambitious global commitment to peatlands conservation and sustainable management). Yet, despite the fact that peatlands represent one of the most efficient and effective nature-based solutions to the climate and ecological crisis, the CAP has lagged behind, pursuing instead paths that harm and hinder peatland conservation. Currently, paludiculture - the form of agriculture that takes place on wet and healthy peatlands - is not considered an agricultural practice. This means that farmers who practise paludiculture are not eligible for subsidies under the first pillar, which makes it almost impossible for individual farmers to stop drainage-based agriculture. They would not only lose their current subsidies, but they would also not be able to claim alternative subsidies. The EU is currently the second largest emitter of greenhouse gases from drained peatlands worldwide, accounting for 15% of the total global CO₂ emissions (220 Mt CO₂/year)². For these reasons we think the CAP decision is fundamental.

The 2 year transition period

The EU have granted agriculturalists a 2 year “transition period” for their current farming practises according to the CAP. What an oxymoron those two words, “transition” and “period”. While one signifies movement, the other stops it. What force is the more powerful we are yet to see. But, perhaps if the dreams are large enough, the plans clear enough, the motivation wide enough and the actions organised enough, the period will be a transition rather than a pause. That way, over the next two years we can transform the “transition period” into a just transition rather than a full stop.

² (*Greifswald Mire Centre, 2019*)

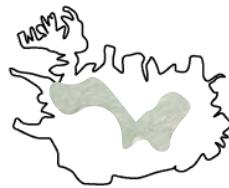
Table of Contents

Part 1 - Western Europe

- 1 A+E
- 2 Ali Foxon
- 3 Below the Blanket
- 4 Bethany Copsey
- 5 Carolina Maienza
- 6 Catherine Farrell
- 7 Conservation Revolution
- 8 Deborah Curtis
- 9 Elise Alley
- 10 Elizabeth-Jane Burnett

Part 2 - Southern Europe

- 11 Frankie Turk
- 12 Frouke van Wieren
- 13 Gavin Turk
- 14 Guaduneth Chico
- 15 Hans Joosten
- 16 Heather Ackroyd
- 17 Jaap Soentjens
- 18 Jan Peters
- 19 Jay Griffiths
- 20 Jeremy Purseglove



**please note that the submissions in this section are not correlated to this part of Europe
(see section "How to read the Peat Anthology")*



Part 3 - Northern Europe

- 21 Jessi
- 22 John Lind
- 23 Kate Foster
- 24 Katrien Wijns
- 25 Laimi Truus
- 26 Lilian Cooper
- 27 Mari-Liis Kotsar
- 28 Musa Taal
- 29 Myrte Rischen
- 30 Niall O Brochain

Part 3 - Central/Eastern Europe

- 31 Peter Roworth
- 32 Richard Webb
- 33 Samuel Mandiola
- 34 Shirleen Chin
- 35 Tanya Lippmann
- 36 Tim Holt-Wilson
- 37 Wouter Veening
- 38 Tim Kisner
- 39 Wij.land
- 40 Veronica Sekules
- 41 Willie Towers
- 42 Deirdre Lane
- 43 Mai Shalaby
- 44 Tina Claffey
- 45 Derek Gladwin

If the Anthology is aimed at the EU Common Agricultural Policy, why are submissions from outside of the EU included?

We included submissions from around the world because the decisions made in the EU regarding agricultural practices and policy affect everyone. We also believe that this EU decision could pave the way for other parts of the world to also take action, especially considering the fact that the EU often positions itself as frontrunners in the protection of peatlands.

The world is connected and interconnected in a myriad of ways. Carbon dioxide does not respect borders; indeed, if it *did* remain suspended above the region that emitted it, perhaps we would find it easier to conceptualise. The carbon dioxide released once peatlands are drained in Europe travels the globe with lasting impacts for all. To hold the promises of the Paris Agreement*, Europe must substantially reduce its agricultural emissions. Given the historical responsibility that Europe has in terms of emissions, there is no way around it.

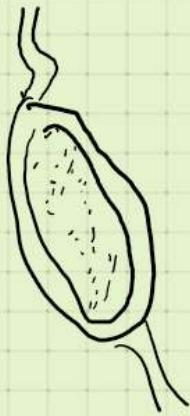
Luckily, the EU is well situated to implement policies that support and incentivise non-drainage based agriculture. Not only does Europe have a great deal of peatlands, but they also have the resources to invest in innovation.

*promises that are, by the way, not even in line with the IPCC report



PART ONE

Western Europe



	UK	Ireland	Netherlands	France	Belgium
total peatland area	~2.68mln ha	~1.46mln ha	273,342 ha	275,000-300,000ha	24,787 ha
% of land area	~11%	~17.5%	~6.6%	~0.5%	~0.8%
State	barely 6% raised bogs left in relatively natural state ~80% of blanket bogs degraded	less than 1/5 in semi-natural state (compared to original peatland area) 77% = anthropogenically modified	no bogs or fens are untouched, or unaltered raised bogs almost disappeared	no complete survey	almost all heavily damaged
Usage	agricultural land, commercial peat extraction, burning as management tool for grazing & sport/hunting	- fuel - grazing - agricultural land	35% used for agriculture	extraction for fuel, horticultural substrates	commercial peat extraction (for fuel) drained for agriculture & forestry
Terms	marsh, moor, moorland	moin, bogach, eanach, moing, corrach	moerass, veen, turf, moer	sagna, gwann, fan, tourbe, tourbe	veen, tourbe etc.
Notes	conservation started end of 19th century (NGOs + individuals) 2011 - IUCN aims to restore peatland across the UK	earliest date of peat extraction = 7th century recognition since 1970's no holistic gov't strategy	1658 Schoockius wrote world's first scientific book on peatlands conservation began start of 20th C.	dysfunction of some EU agri programmes → added to destruction of lowland mires. substantial recent progress from NGOs + increased research	many plant species protected since 1976 some wetlands under protection

long recognition of importance, yet continued degradation



Part 1 - Western Europe

1	A+E	Letter	Scotland	Memory
2	Ali Foxon	Activity	England	Contemplation
3	Below the Blanket	Artwork	Scotland	Creation
4	Bethany Copsey	Letter	New Zealand	Vision
5	Carolina Maienza	Letter	Italy	Youth Voice
6	Catherine Farrell	Q + A	Ireland	Natural Capitalism
7	Conservation Revolution	Q + A	Netherlands	Conservation
8	Deborah Curtis	Letter	England	Education
9	Elise Alley	Letter	France	Youth Voice
10	Elizabeth-Jane Burnett	Poem	England	Contemplation

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27% dense
porous

positive cumulative

We,

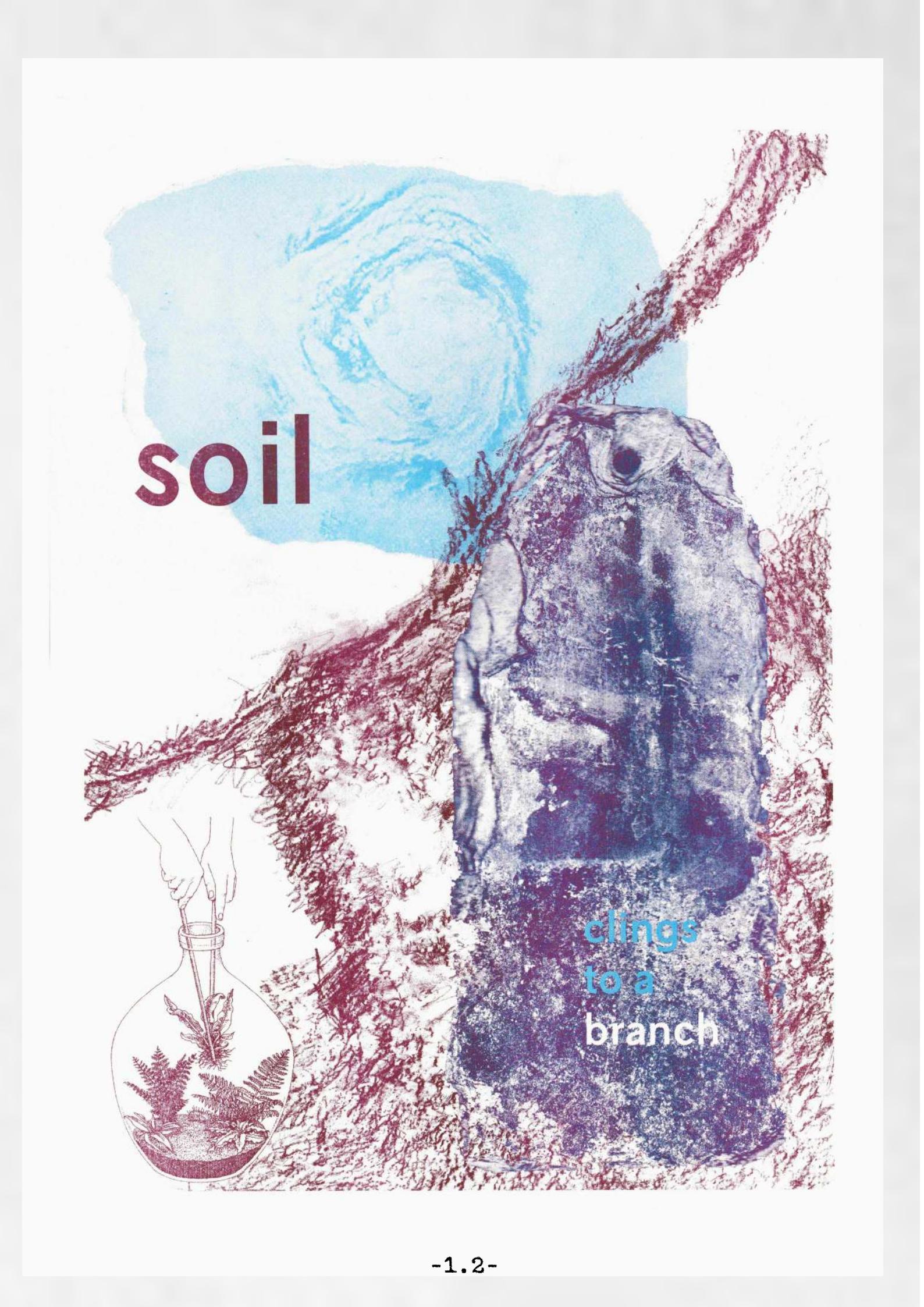
as artists, have devoted the last four years to researching, promoting and exploring creative ways through which we can come closer to the more-than-human, with a focus on recognising and venerating biodiversity in ancient ecosystems, including peatlands.

Much of our projects are informed by scientific facts, but we are no scientists or peat experts. We often base our projects on our deep-rooted relationship to the environment and it is from this instinctive, personal point of view that we are reaching out to you as policy makers.

It is of common knowledge that peatlands are the largest natural terrestrial carbon store, but why are they often unnoticed and so poorly valued? We also believe as a collective that peatlands play a key role in shielding our memories—to look at peatlands is to take a glimpse into the past and the future. Many of our projects incorporate these memories, and as a result we are expressing real concern for the loss of our precious peatlands in storing these unique stories and narratives. We are on the edge of ecological collapse and we simply ask you to use your power to protect not only our collective memory, but also this unique habitat which quietly does so much to protect and compensate for our actions. It's very simple: by increasing the subsidies towards protecting these ancient ecosystems we can really begin to tackle this ecological crisis. There's only so much we as individuals can do, but as policy makers you are capable of actioning so much more. We hope you listen to our appeals to help preserve the peatlands. For us, the planet and our future.

Finn Arsquivir, Ane Lopez, Maria Sledmere, Lucy Watkins

A+E, Scotland



soil

clings
to a
branch

Boggy Doodles: how to see our precious peatlands with fresh eyes

Peatlands are a precious and valuable ecosystem that deserve far greater protection and appreciation. But how can we persuade people to take greater care of them? As a geographer and former climate change adviser, I used to believe the answer lay in sharing knowledge and evidence. If only we could persuade people how important peatlands were for carbon storage, biodiversity and flood protection, then surely they would want to look after them? Well, we've already had plenty of compelling evidence-based reports. What we really need is a rapid change of heart.

This is why I've switched my focus away from communicating the latest scientific evidence towards encouraging people to simply slow down, notice and enjoy nature's beauty and colour. I'm convinced that when you help people see our beautiful peatlands with fresh eyes, they start to love, appreciate and take care of them. After all, it's not carbon storage, however important, that makes someone care about peatlands, it's the joyful sight of dancing cotton grass; the mesmerising pattern of sphagnum moss stars; the stripy orange bottom of a bilberry bumblebee... We all respond to beauty and these tiny moments of joy. Indeed, recent research has found beauty, wonder and meaning are powerful pathways to nature connection, which is closely correlated with pro-environmental behaviour.

Or as the writer Robert MacFarlane once said,
'We will not save what we do not love, and we rarely love what we cannot name or do not see.'

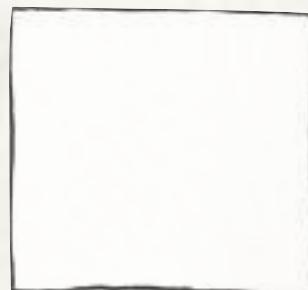
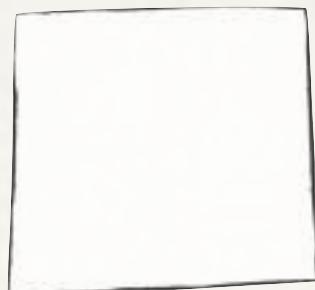
So, what about you? One of the easiest and most effective ways to see beauty and experience the wonder of the peatland environment, is to simply try and sketch it. The process of sketching, however wobbly your lines, changes the way you see your surroundings, revealing beauty and wonder you'd never noticed before.

Anyone can do it - it doesn't take long and requires no artistic 'talent' or knowledge of peatland ecology. The quality of your sketch is irrelevant; it's the process of slowing down and looking really carefully that matters and changes how you feel. It's the observation, not the drawing, that strengthens your connection and relationship with nature. Why not put down your phone, pick up a pencil and have a go! I guarantee, the more you look, the more you'll see.

Dr Ali Foxon is the Founder of Boggy Doodles, helping people of all ages use green sketching to see, enjoy and connect with nature. Find out more at www.boggydoodles.com or follow on Instagram @boggydoodles.

Three little tips to help you start green sketching:

1. Don't worry about whether or not you can draw. Enjoy the process of slowing down and noticing amazing details you'd otherwise miss.
4. Start small: build your confidence with little sketches of little things
5. Focus on joy: try to find details, colours and patterns that make you smile



Your turn! If you're inspired to try green sketching, why not start now and fill these boxes with your own doodles?





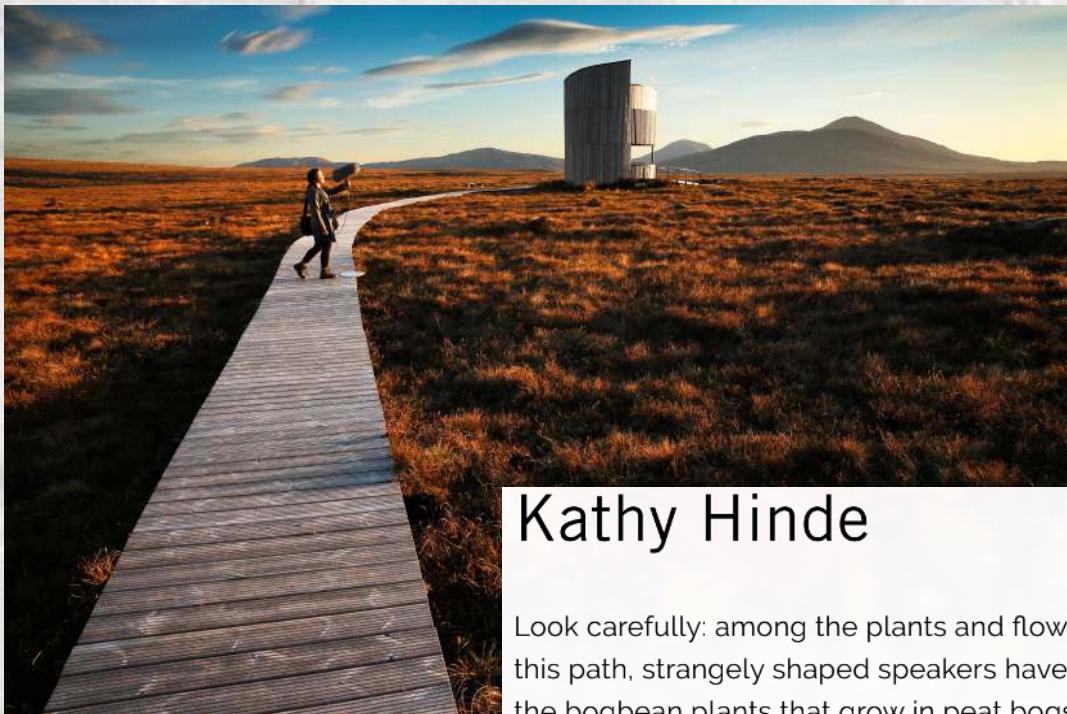
BOGGY DOODLES
see sketch enjoy connect

Below the Blanket was a series of new artworks installed throughout the Royal Botanic Garden Edinburgh and inspired by one of Scotland's most extraordinary and unsung natural features, the Flow Country. It is the world's largest blanket bog, a vast mass of peat and Sphagnum moss, shot through with hundreds of lochs, that covers 200,000 hectares in Caithness and Sutherland. Artists Kathy Hinde, Luci Holland, Heather Lander and Matthew Olden made work responding to this landscape's wildlife and soundscape, the gradual process of peat formation, and even the way the blanket bog 'breathes' as it expands and contracts. Produced by Cryptic and presented as part of The Peatland Partnership's Flows to the Future Project.



Luci Holland

Throughout the **Flow Country**, parts of the vast peatland bog 'breathe' in different ways, depending on the rise and fall of water levels and the health of the moss and peat. Using data gathered over 18 months in the **Flow Country**, Luci Holland's *Release* lets us hear these variations over time as we make our way through the maze. Each area studied has been interpreted as a different percussion track, whose rhythm alters according to the changes in water levels recorded there. These voices follow us through the maze, reminding us of the complex interplay of human and environmental factors that shape every natural landscape.



Kathy Hinde

Look carefully: among the plants and flowers on either side of this path, strangely shaped speakers have sprung up, resembling the bogbean plants that grow in peat bogs. From them come **Kathy Hinde's Deep Listening Soundscapes**, compositions based around sounds recorded below the surface of the **Flow Country** by submerged microphones called hydrophones. The speakers form a path leading to **Water Balance**, a kinetic sound sculpture in a pond. Vessels fill up with flowing water until they overturn and spill into gongs, generating a shimmering, living composition inspired by the waterlogged conditions necessary to sustain the peat bog. Emerging on the pathway from the pond, soundscapes generated from sonifying the strong winds of the **Flow Country** create haunting Aeolian melodies and pulsing rhythms swirling around the walkway from multiple speakers.



Not long ago,
my grand-
grand-
grandparents cut the peat
They spent a lot of time out there,
knowing & unknowing the land intimately
as they re-organised the shape of the peat



layers to stacks

layers to stacks



It was cold in Ireland and
the warmth provided by the peat briquettes was necessary for comfort and
survival
Over time, this necessity became a tradition

Meanwhile, my upbringing took place half a world away
Familial ties to this ancestral parcel of land were weakened.
Discovering the ecological & cultural importance of peatlands strengthened my ties
to this land and my family

Only now, the storyline has changed.

Not only do we find ourselves in the midst of a climate crisis,
but the industrial peat cutting has severed the first-hand relationship
with the peat regardless

Our ancestors cut peat for warmth, now we must conserve peat
to prevent warmth.

Our ancestors looked out for their survival, now we must
look out for ours

To respect the traditions & memory of our ancestors
we must change our traditions
we must make new traditions

It's necessary for our survival

Bethany Copsey

Mallon

O'Niel

Grimes

MacDonald

Keep

it

layered.

Essere giovani in questo mondo è un'impresa alquanto difficile. Tante responsabilità ereditate dal comportamento di generazioni precedenti poco preoccupate ad assicurare una stabilità globale ecologica e sociale. Ci troviamo, pur non volendo, a farci carico di un mondo futuro instabile. Un mondo in cui dobbiamo far fronte all'alzamento delle temperature, allo scioglimento dei ghiacci, all'innalzamento degli oceani, per non parlare della desertificazione sempre in espansione e dell'inaridimento sempre maggiore del suolo; queste sono solo alcune fra i tante conseguenze attuali e future del cambiamento climatico (IPCC, 2013). Siamo dunque una generazione che deve affrontare gli effetti collaterali di sistema non-sostenibile basato su un modello di sviluppo capitalista, consumista, iniquo e sfruttatore.

Ma che cosa c'entra la torba con tutto ciò?

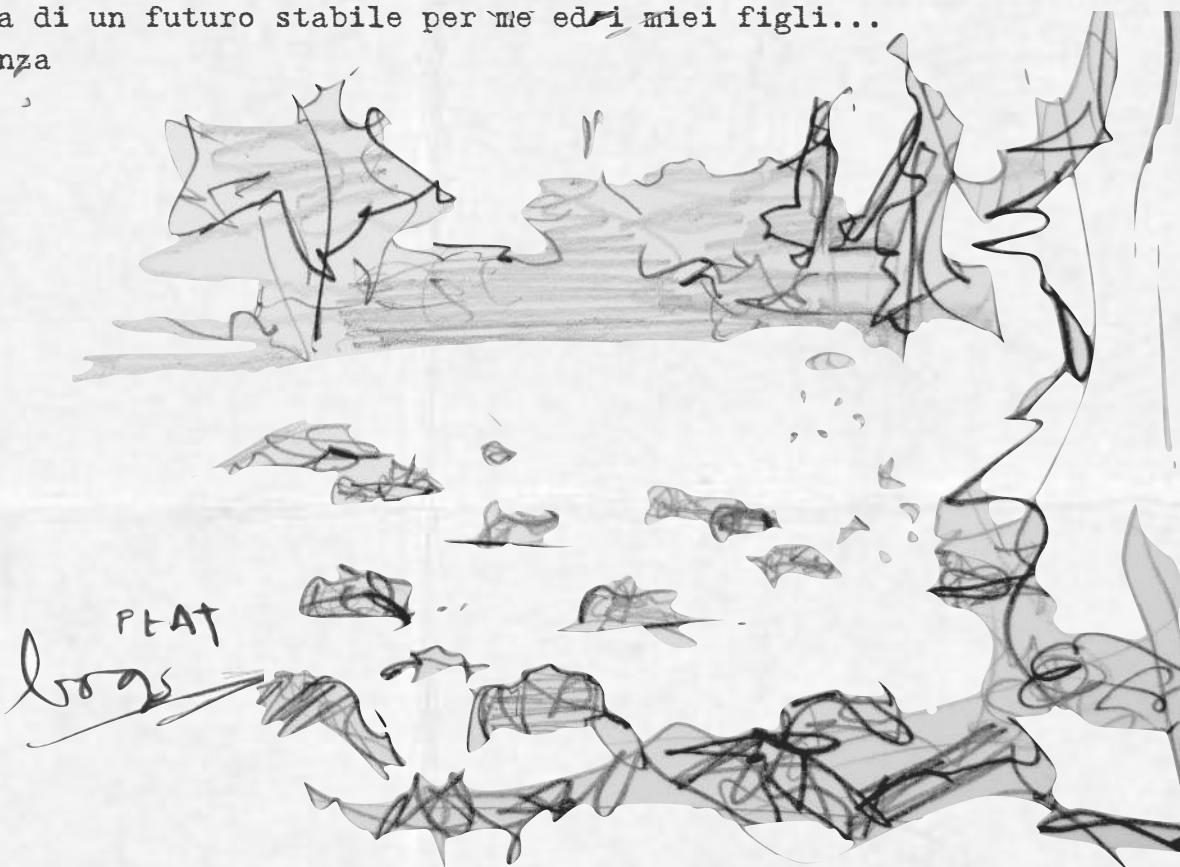
Partiamo dal presupposto, purtroppo non sempre scontato, di una indiscutibile realtà attuale di crisi climatica di origine antropogenica (comprovata dagli scienziati ambientali con un consenso del 98%; vedi Cook et al., 2013); considerando inoltre che le torbiere quando integre svolgono una importante funzione di mitigazione del cambiamento climatico in quanto sono dissipatori di carbonio, purificatori naturali di acqua, barriere naturali anti-inondazioni e fonti di biodiversità sia animale che vegetale; mentre, quando prosciugate o distrutte, sono fonte di emissioni di CO₂ tre volte maggiori a quelle dell'industria aerea (valore corrispondente al 5% delle emissioni di CO₂ antropogeniche globali; vedi Nordic Council of Ministers, 2015); infine, considerando che, in seguito all'accordo di Parigi del 2015 ed all'adozione dall'ottobre 2014, del "quadro 2030 per il clima e l'energia" da parte del Consiglio Europeo, i governi dell'Unione Europea si sono impegnati a ridurre le proprie emissioni del 40% entro il 2030 e a raggiungere la neutralità climatica entro il 2050; è perciò evidente che, in tale contesto, la protezione ed il ripristino delle torbiere diventi un modo pratico, efficiente ed efficace per far fronte a un problema estremamente complesso e difficile da affrontare.

Dunque, come giovane, parlando a nome di tutte le generazioni future e di tutti coloro che credono e lottano per la possibilità di un futuro vivibile ed un mondo ecologicamente stabile, chiedo ai leader europei di non farsi sfuggire una grande occasione per fare la differenza, e dunque di formulare una Politica Agricola Comune più sostenibile partendo dalla protezione e restauro delle torbiere europee.

Chiedo anche di investire nella ricerca di pratiche e tecniche di agricoltura alternative a quelle di drenaggio come ad esempio, la paludicoltura, e di incentivare con sussidi gli agricoltori a dirigersi verso tali pratiche più sostenibili.

Insomma, questo argomento di cui se ne parla ben poco costituisce una soluzione reale e a lungo termine, e dunque dovrebbe essere riconosciuto come tale e datogli il giusto peso e valore nella politica sia nazionale che europea.

Nella speranza di un futuro stabile per me ed i miei figli...
Carolina Maienza



Resources

J. Cook, et al. (2013). "Quantifying the consensus on anthropogenic global warming in the scientific literature," Environmental Research Letters, Vol. 8 No. 2; DOI:10.1088/1748-9326/8/2/

IPCC. (2013): Sintesi per i Decisori Politici. In: Climate Change 2013. The Physical Science Basis: Contributo del Gruppo di Lavoro I al Quinto Rapporto di Valutazione dell'Intergovernmental Panel on Climate Change [G-K. Plattner, A. Nauels, M. M.B. Tignor, Y. Xia, S.K. Allen, V. Bex, J. Boschung, P. M. Midgley, T.F. Stocker, D. Qin, (eds)]. Dal sito www.ipcc.ch.

Nordic Council of Ministers. (2015): Peatlands, climate change mitigation and biodiversity conservation: An issue brief on the importance of peatlands for carbon and biodiversity conservation and the role of drained peatlands as greenhouse gas emission hotspots, [H. Joosten (ed)]. ISBN 978-92-893-4169-1 (PDF) <http://dx.doi.org/10.6027/ANP2015-727>

1). What is your background with peatlands and what brought you to peatlands professionally?

I've always been an outdoors person - I grew up on a farm in the middle of Ireland and loved working with the land, and nature basically! When I studied ecology in university in the mid-1990s, I spotted an advert for a PhD on restoring blanket bogs in NW Mayo. The rest is history as they say. I spent a decade in the west of Ireland learning how peatlands work, how they respond to drainage and cutting, and then I figured out how best to restore them. After that formative time, I came back to the midlands and expanded my experience onto degraded raised bogs. I've been lucky to travel to a range of peatland countries in the northern hemisphere and some of my best friends are peat-people!

2). Perhaps you can also explain a little about the value of peatlands - both in a personal or cultural sense but also in an ecosystem service sense

There is something about big landscapes, and in the west of Ireland those big landscapes are blanketed by peatlands. They have inspired poets and artists, and scientists alike to create great works of art and meticulous study. Being in the wide-open space where sky, earth and water meet in a sphagnum pool is unparalleled and precious. But not only these cultural services - this sense of connection with nature - are given by peatlands for our experience and enrichment. Peatlands provide a range of regulatory ecosystem services. Intact peatlands regulate water flow and quality, they take carbon from the air and lock it in the earth for lifetimes, and they sustain a vibrant diversity of species and habitats.

3). You've worked a lot with restoration of peatlands and bogs, how do you feel about how that has gone over the past number of years? Has there been a cultural shift (in Ireland) in your eyes regarding how people view peatlands?

When I started restoring the bogs, there was some interest focused mainly on Clara Bog and a few raised bogs in the midlands, but little work done elsewhere. Peatlands were viewed as wastelands, places to cut turf, places to dump rubbish or stick wind turbines that needed big spaces far from human settlement. Now it seems (I hope!) that people across Ireland - and the world - are waking up to the hidden value of peatlands. There are a lot more projects and quite a few lessons being learned by the wider scientific and equally, by the local communities. With the new EU Biodiversity Strategy 2030 targets on restoration and the UN Decade of Restoration starting in 2021, we need to ensure the funding and work is focused on the right actions and outcomes for each bog.

4). What is your vision of the future of peatlands?

My vision is a future of healthy, vibrant peatlands alongside an integrated network of freshwater, woodland, grassland, cropland, coastal, upland and marine ecosystems. This equates to a healthy environment for people to live in settlement areas within this tapestry of natural systems. I call this the symphony of ecosystems. Peatlands are integral to this symphony and, instead of being the Cinderella ecosystem, they will be respected and realised for their beauty and silent, natural wisdom.

5). I know you also work with and co-founded the Irish Forum on Natural Capital, what do you feel is the role of business and finance in realising peatland restoration? Do you see peatlands as providing economic potential, and if so, in what ways/uses of the ecosystem? How heavily do the agricultural system and farmers feature in the realisation?

Business can play a central role in restoring the peatlands. Providing the necessary finance or other support enables the design and planning of restoration by peatland ecologists / practitioners. Bringing business, ecology and community together makes a shared platform where all interests can share the experience and learn from each other. Of course, learning new ways of working together is not always easy and we must find a common language. That is part of the natural capital approach and this is where I see the value in natural capital accounting and assessments. These tools facilitate an entry point from the business side to nature in a way. We all learn from this meeting of minds.

In terms of the economic potential of peatland restoration - just look at the number of homes in a catchment that can be spared flooding through holding water in restored bogs? What price would we put on significantly reducing carbon emissions by getting carbon back into the bogs? Does everything have to have a price tag for it to matter? I don't believe so. But often this is the only metric available for policy makers. We need to bring other values to the fore and these include the value of the ecosystem services for which there are no markets presently.

Farmers are businesspeople. They are also the custodians of most of the land in Ireland, so they are in a unique role. How can we restore peatlands without their support and help? This is the challenge for the CAP. This calls for informed and wise decisions around payment schemes through CAP for those who work with their lands and in particular, their peatlands, to enhance the flow of vital ecosystem services for the wider local and global community.

6). Do you see that widespread peatland restoration can be achieved in such a way (economic viability) or do you feel we need more fundamental societal changes in order to do so?

Restoration is ecological, but also demands societal buy in and economic supports to do the work. Building capacity within the existing network of farmers, landowners, communities and interest groups will get the work done - Irish communities are hard-working and creative. They understand the inherent value of nature, but the funding and governance structures must be put in place to enable and allow them to do it effectively and efficiently. This can be provided from 'the top'. So, the change must come from the top, for the work to be realised on the ground. Whether this is achieved through payments for ecosystem services or achieved because it is simply the right thing to do, will be determined by society.

7). What would you like to say to the EU policy-makers before the upcoming Common Agricultural Policy decision?

Peatlands are vital systems. They must be brought front and centre in any discussions around payment schemes through the EU CAP on how to realise their true, inherent value and contributions on economic, environmental and social levels. In Ireland, peatlands are one of the dominant ecosystems in the rural landscape. We can reverse centuries of ecological degradation by restoring them, and in so doing, we can support and sustain vibrant rural communities, realise climate and biodiversity targets, and make our waters healthy again. Restoring peatlands rewards societies and economies with multiple benefits. Equally, continuing to allow them to degrade by not restoring them leads to a plethora of harmful disbenefits. Which outcome do you want? The power is in your hands.



Dr. Catherine Farrell is a restoration ecologist who has worked on a wide range of projects in Ireland to restore degraded peatlands. She has worked on industrial and domestically cut peatlands, as well as expanding her work internationally to develop best practices globally for peatland restoration. Presently, Catherine is a Research Fellow in Trinity College Dublin, working on the INCASE (Irish Natural Capital Accounting for Sustainable Environments) project. Catherine is a founding member of the Irish Forum on Natural Capital and is an active member of the Community Wetlands Forum in Ireland. She is passionate about nature and especially peatlands!

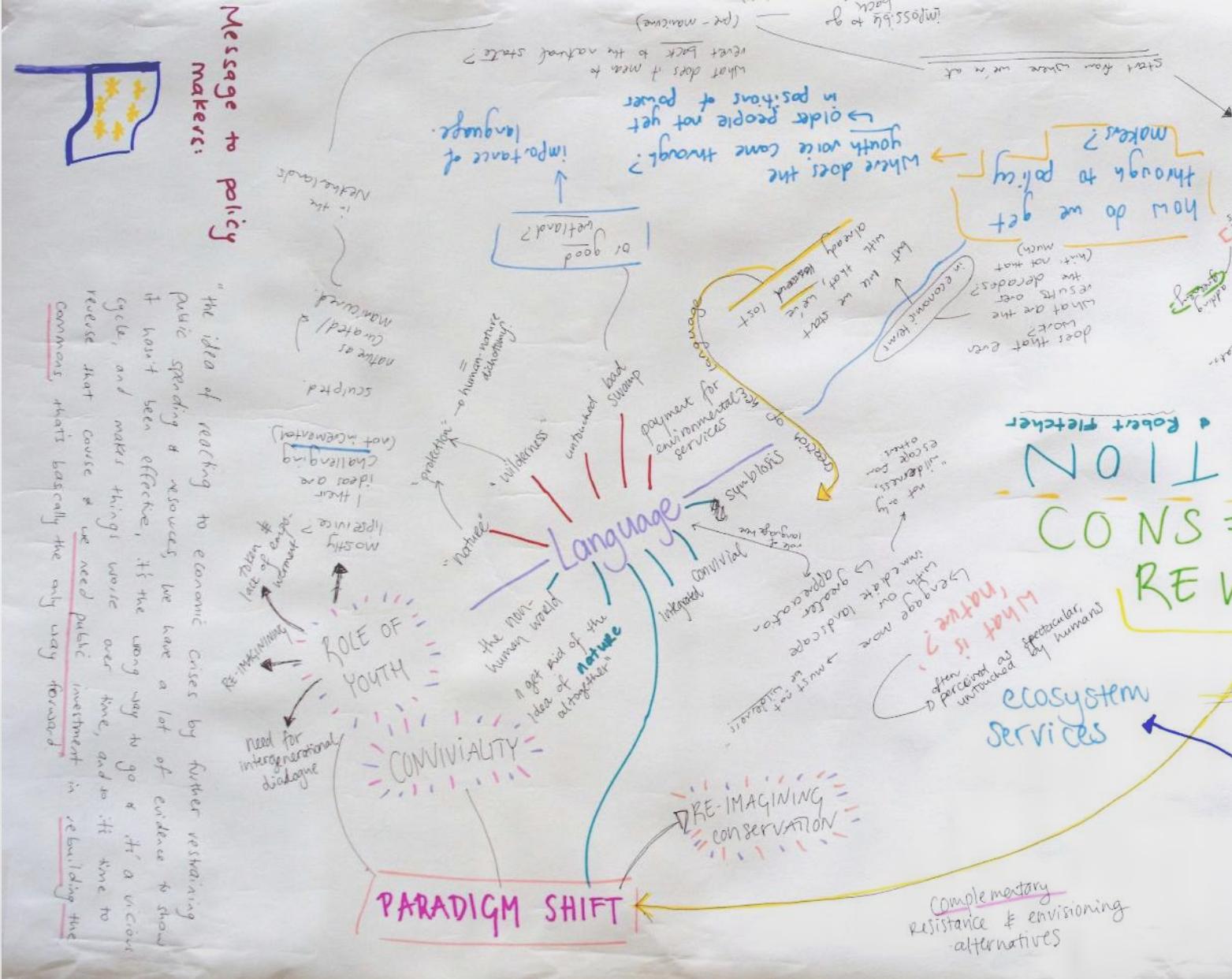
After devouring the Conservation Revolution, watching Bram Buscher's interview with Verso books and finding ourselves critically engaging in these topics in our own work, we knew we had to sit down with the authors and talk some more. Robert Fletcher joined us for a fascinating and resonating interview.

The interview was transcribed into the text below. Please note that this may have resulted in interpretations made by the authors (Bethany Copsey & Ireen van Dolderen).

We started the interview, aware that we were coming from similar perspectives. Bram and Robert refer to the changes we all deem necessary as a revolution, we talk about a paradigm shift; all of us aware that the way we talk about, deal with, interact with, and imagine the landscapes around us needs to change. Two things are notable off the bat about the way Bram and Robert are interacting with these issues.

Firstly, throughout the interview and the book, Bram and Robert go to the root of the issue, challenging long-standing and deep-seated perceptions about conservation. Secondly, they situate conservation alongside various other concepts and realities that it interacts with, for example they draw attention to the way that capitalism and conservation connect and reinforce one another. These two leading themes also connect in various ways.

An example of this is the human-nature dichotomy that is a key ingredient in the capitalist system. The way by which mainstream conservationists currently position themselves towards the non-human world is counter-productive for two main reasons. By isolating ourselves from the non-human world and putting a fence around it, the strong dichotomy between humans and nature is reinforced. This stands in the way of humans actually connecting with and being part of what is often called "nature". Secondly, there are strong capitalist assumptions that mainstream conservation is relying on. This is paradoxical, as capitalism is inherently unsustainable and actually one of the main drivers of our ecological crisis.



The poster below is a visualisation of the idea exchange that happened between RE-PEAT members Bethany Copsey and Ireen van Dolderen, and Rob Fletcher.

The radical proposal that Bram and Rob pose to redirect conservation efforts is "convivial conservation". It's an interactive way for the human and non-human world to live together. It goes beyond the strict distinction between humans and nature and requires us to have our behaviour towards nature not be driven by capitalist interest, but rather rooted in care. Bringing convivial conservation into reality requires us to critically challenge and re-imagine interactions between the human and non-human world. It should no longer be dependent on utilitarian principles that instrumentalise nature for societal "development", but transform into a symbiosis.

Who benefits from
conservation & who
pays the costs?

↳ elites must pay the costs.

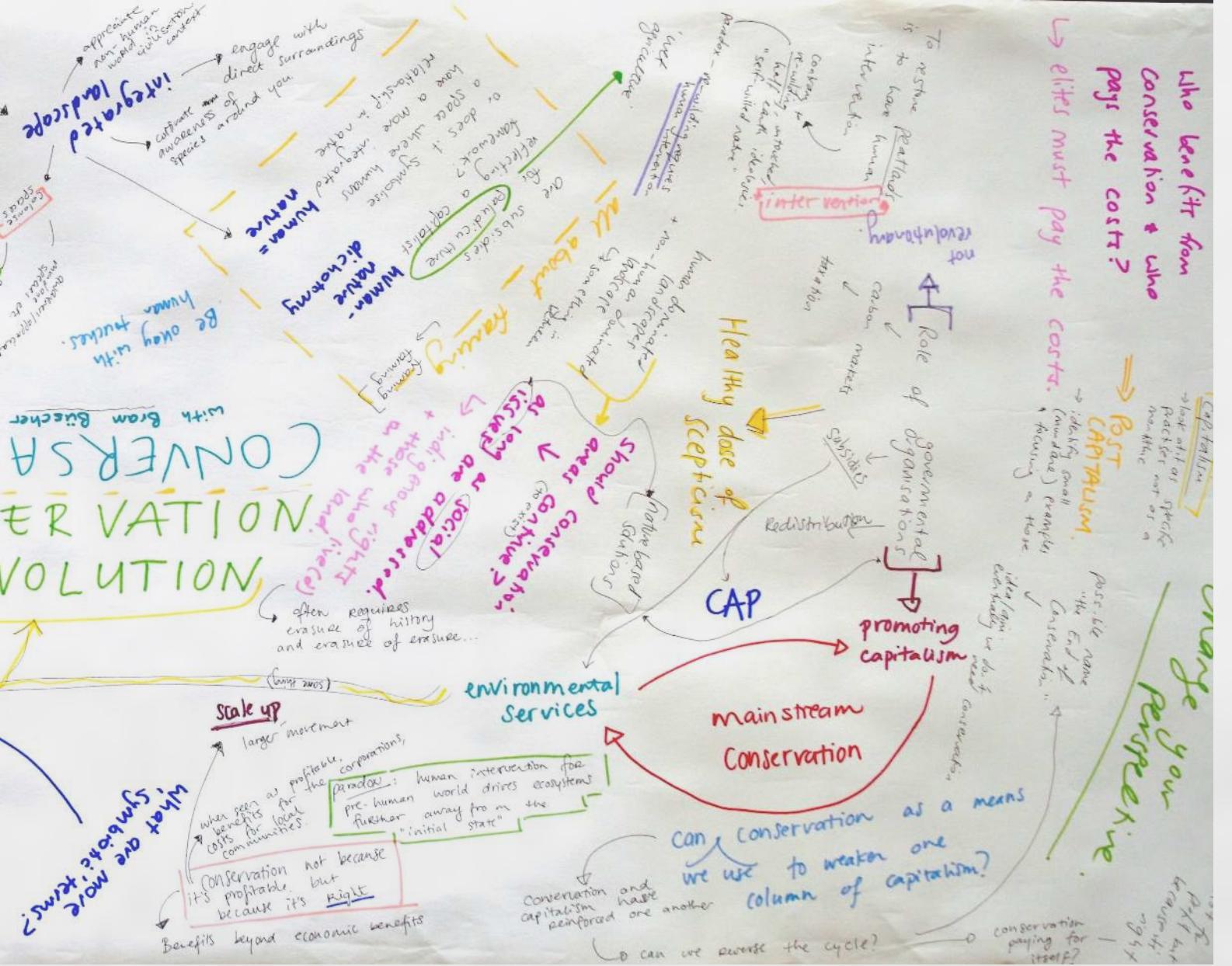
Capitalism
↳ lost art of practice
Practise not speak
no ethic no art

Post Capitalism

↳ identify small
(minimise) example
focusing on those

possible name
"the end of
Conservatism"
↳ ideas we do not
communicate

change your
perspective



While the Conservation Revolution is rooted in global theory, the ideas that we developed with RE-PEAT have emerged from observations at a smaller scale. With peatlands as a microcosm for global conservation tendencies, we have come to realise that peatlands conservation requires human involvement. Humans have a long history of interacting with peat in a large variety of ways. Through industrialisation, many of these customs have gotten lost and forgotten. We need to re-imagine our relationship to peatlands and find a way to live together. Drained peatlands must be rewetted, and agricultural forms such as paludiculture are an interesting example of the human and non-human world operating in symbiosis.

To whom it may concern

I am writing in three capacities today.

Firstly on behalf of my daughter Frances Turk who has transformed my thinking as a busy professional and active citizen over the last few years. She has become, through her choices and actions, an intelligent, thoughtful and peaceful advocate for the non-human world and for the possibility of all humans making better choices in their relationship with Nature and the ecosystems that support us.

More recently with a small group of friends and colleagues she has focused her attention on the subject of Peatbogs and Wetlands and their ecological importance to the temperate ecosystems crucial to the healthy future of the European nations. Her quiet and conscientious testimony and activism has focused my attention on this little understood subject and my consciousness and empathy has increased exponentially as a result of her teaching. I now regularly advocate (in my public as well as private life) for the appreciation and reverence of one of our most precious resources and the illogical, climate injustice of laws that allow, indeed encourage, the exploitation of these magical and vital carbon sinks for animal farming and big agriculture.

Secondly I am writing to you as the director of The House of Fairy Tales young person's arts charity. We are currently developing The Great Imagining which is a cultural education programme for schools that aims to set alight the imagination of young people and inspire them to create a better future for themselves, their communities and their planet.

We also aim to empower critical thinking to ensure that young people have access to separating fact from fiction to unpack and investigate and interrogate the belief systems of their parents, their communities and their nations to ensure that they can build their own belief systems on values that they themselves have grounded in facts and information.

The mission is to empower young people and their communities to be able to create a kinder, greener, fairer world for themselves and for future generations.

This programme is directly addressing the United Nations Sustainable Development Goal target 4.7:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

We will be covering Wetlands as part of this programme and would really love to report to the young people of the UK and Europe that in 2020 during the global pandemic the MEPs and decisionmakers of Europe made strong steps towards protecting this heritage and preventing the devastation caused by draining these ancient lands and releasing vast tonnes of carbon dioxide into the atmosphere. And that they did that by offering financial and practical incentives towards the farmers that are already getting their livelihood from these lands to change their thinking and their practice onto a sustainable and ethical path.

Finally on a personal level, I am absolutely terrified for the future as I am horrified by the profligacy of our species especially at the speed of devastation and exponential self harm being done by big business, industry and agricultural practices allowed by our international laws. As was witnessed and carefully and conscientiously backed up by the majority of the worlds climate scientists in the IPCC report of 2018 we don't have long to turn away from this suicidal pathway.

It will take a massive transformation of all our political systems as well as to capture the imaginations of the mainstream populace throughout the planet to make this happen.

Now in the midst of a global Pandemic we can get a glimpse of what might be possible if we cared as much about the future of our species as we do about the present circumstances. So with all my heart I beg you to look into this very important subject of our wetlands and hear what these young people have to say.

So that you can bring this knowledge to your colleagues and draft the laws which will protect these ancient lands which protect us as much as you are investing in the food to feed us and others are currently investing in the vaccines and the lockdown laws to protect us from a tiny virus.

I look forward to hearing good news on this subject coming back from the imminent Common Agricultural Policy conferences this year.

Yours in passion for the future of our next generation (as well as our wetlands)

Deborah Curtis

To whom this may concern,

My name is Elise Allély-Fermé and I'm from France and the US. I currently lead a network called Youth Engaged in Wetlands - an international volunteer-run youth group dedicated to the conservation and wise-use of wetlands. I have a background in Environmental Science and Integrated Water Management, and I have been interested in wetlands ever since I joined the Ramsar Convention Secretariat in 2014, and it has been my passion from that moment forward.

I am personally fascinated by peatlands; I find that there is a certain mystery around them. They have this silent power, capturing carbon from the atmosphere. They are also critically important for storing large quantities of water and hosting great biological diversity. The slow processes that take place within the peatland ecosystems allows them to capture enormous amounts of carbon over thousands of years. This great ability to trap greenhouse gases however can only be secured... if they are undisturbed. This great power can also be reversed, as peatlands are drained, exploited or converted to different land uses, releasing back to the atmosphere the greenhouse gases that they have so carefully guarded for thousands of years...

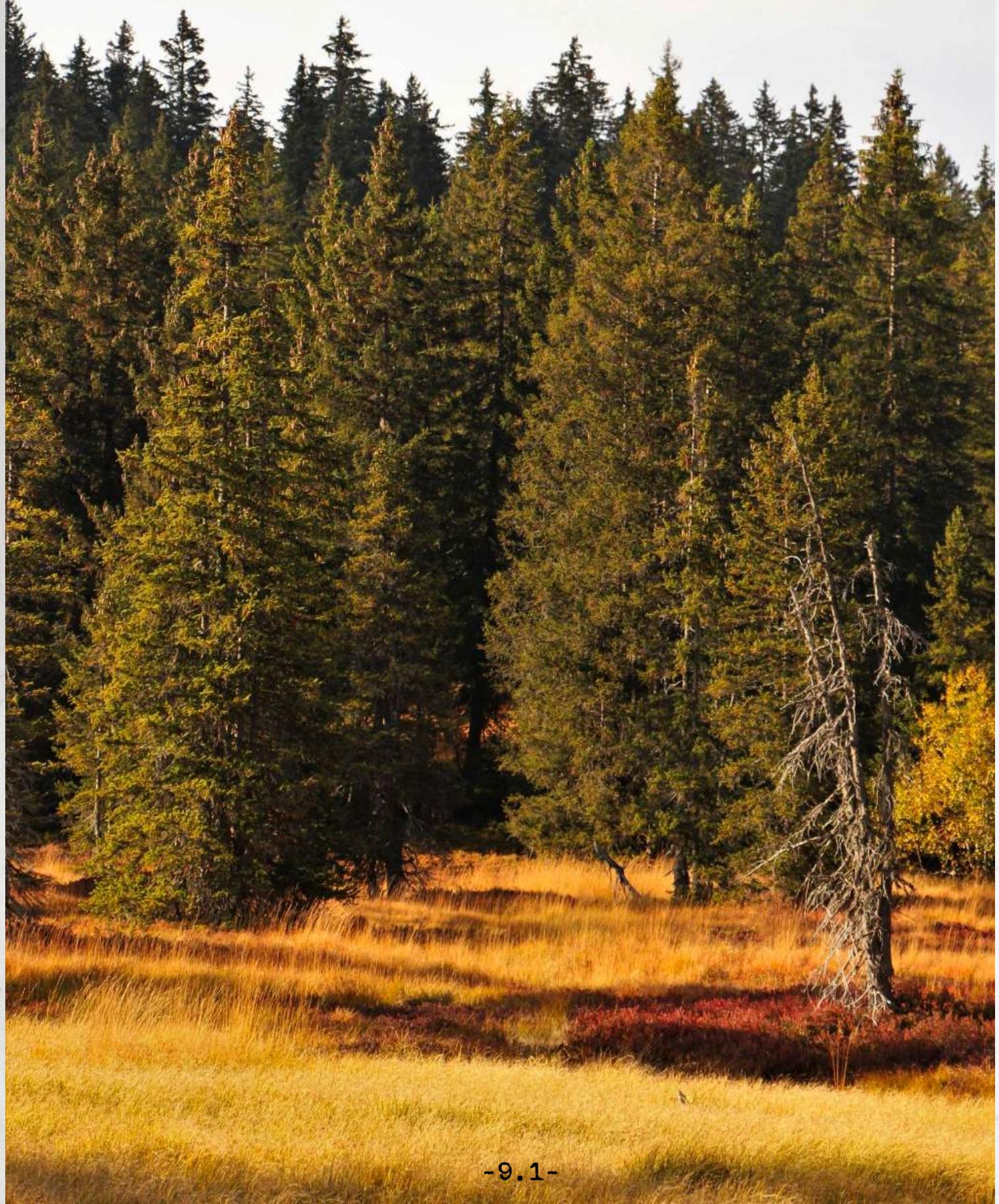
I remember the first time I visited a peatland. I travelled to the Jura Mountains in France, to the Tourbières des Saisies with some colleagues from the Ramsar Convention Secretariat. My boss, at the time, walked us around this peatland and introduced us to these amazing features. I remember seeing patches of this dark black soil, soaked in water. I had never seen anything like it. The atmosphere was so calm and peaceful. While we were walking around on the boardwalk, I could just imagine all the microscopic processes taking place below our feet, mesmerised by the fact that this beautiful and quiet landscape is one of the most powerful climate solutions that we have. And the key is to let it do its thing.

I believe that the EU has an important responsibility to find ways to help farmers and landowners to preserve this natural heritage and to promote sustainable farming and integrated water management policies that protect peatlands. Protecting peatlands is a shared responsibility and farmers can't take the burden all on their own. It's already hard enough to run a farm and there should be ways to make it easier for farmers to take care of their land and their livelihoods without impairing the very ecosystems that support us. I therefore call on you as decision-makers to promote positive subsidies and incentives that don't hurt peatlands while working to take the pressure off small scale farmers.

Peatlands need your help... We need your help to make sure that these ecosystems can play a positive role in our fight against climate change, in our fight against biodiversity loss and the development of thriving sustainable communities.

Thank you.

Elise Allely



LITTLE LOSS

Sphagnum girgensohnii, Girgensohn's Bog-moss

You are mostly dead. Your colourless hyaline cells fringed by little specks of the living - small chlorophyllose cells, linked through your leaves like chainmail. Death, bordered by life; death bordered by life; repeating relentlessly through the body.

And we do hold dead things inside us. Things we have lost: people, objects; dreams that never crossed into life, or saw enough light, get carried in us everywhere we go. But your dead hyaline cells contain pores retaining water. They enable you to access your environment. They are not redundant.

So when we are told to 'move on' from loss; I do not really understand it. If we carry our losses in us, they can be spaces that link us to the places we are in. They can be conduits for things that flow to move through us: thought, warmth, laughter, song. We cannot stagnate where death is an opening.

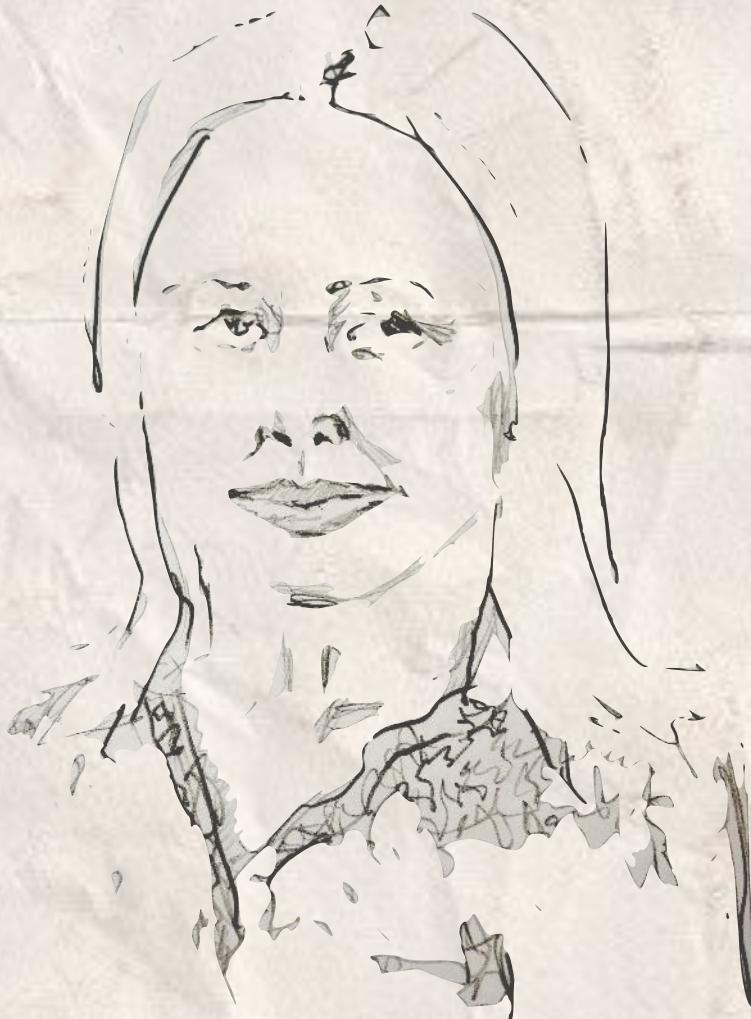
Elizabeth-Jane Burnett

LITTLE PEACH

Sphagnum palustre, Blunt-leaved Bog-moss moss

Baby's breath, lamb's bleat, little peach. Sleek of pulp and feet. Cream. Loud pealing of bells. Dream. Pillows of plants, gleam the grass together. Stitch. Branches tether leaves, no sleeves, a narrow. Taper. Candles breaking in the grass. Shrink of throat and heart won't pass. Your ditch-ripe cheeks, your pastel heat. Palustre is a marsh but if you're classed by where you come from you're the edge that meets the soften, you're the coughing of blossom giving way to wood. Woven leaves, no sleeves, a shallow. Pink is an afterthought. Peach is the leaf you brought. Your fleshy soft and outer. Your hard a nutless butter. Nothing in that isn't soft. Nothing out that isn't soft. Nothing in that isn't soft. Nothing out that isn't soft. Stitch a sunset using ditches. Stitch a life using peaches. See it grow. In the marshes no-one knows what patterns. Peek. Little quilt of heat. Fingertips dust sleep. Palustre, palustre, creeps along the marrow, weaving pinks of mallow in the flushes, butter-blushes.

Elizabeth-Jane Burnett



PART TWO

Southern Europe

	Spain	Portugal	Greece	Italy	Malta
total peatland area	35,000ha	27,100ha	10,300 ha	30,000 - 120,000	0
% of land area	~0.07%	0.30%	~0.08%	0.1-0.4%	0
state	estimated 25% - 99% loss of peatland	undisturbed peatlands very rare (complete survey not found)	almost all have strong influence & intervention from humans	almost all converted to pasture/urban areas	formerly = 289ha
usage	- drained for pasture , sanitary (reduce malaria) ~80% currently used for agriculture and horticulture	- pasture - industrial extraction (WWII) - 'domestic' peat extraction = common	- agriculture - small-scale forestry	- agriculture - malaria prevention - urbanisation - fuel - 9000ha = Cropland	drained for farming
terms	turba, tremedal, turbera de collado	turfeira, turfa	helos, telma	(deposito di) turba, svoli, turbosi, torbeira	
notes	no complete inventory, few peatlands under protection	not a conservation priority, research & mapping urgently needed	no inventories, little conservation attention	no national inventory, some restoration done	restoration & conservation not an option for foreseeable future

notes: extensive research needed!
 ↳ Could there be more peatland?

Part 2 - Southern Europe

- 11 Frankie Turk
- 12 Frouke van Wieren
- 13 Gavin Turk
- 14 Guaduneth Chico
- 15 Hans Joosten
- 16 Heather Ackroyd
- 17 Jaap Soentjens
- 18 Jan Peters
- 19 Jay Griffiths
- 20 Jeremy Purseglove

Letter	Netherlands	Youth Voice
Anecote	Netherlands	Community
Image	England	Creation
Letter	Spain	Ecology
Q + A	Netherlands	Systems Thinking
Poem	England	Contemplation
Letter	Germany	Climate Change
Letter	Germany	Vision
Anecdote	UK	History
Anecdote	England	Restoration



I want you to understand that by the time I am your age - by the time I'm old enough to be a policy maker - the world will be, in one way or another, very different. And that, right now, I am still young and I depend on you to direct that difference. I wonder if you have children of your own?

I am writing this letter because I am concerned about the peatlands in Europe. But, before I get on to that, I will tell you a little bit about myself. I was born and raised in London, a place where profit pushes people round stations in suits. A place where normal life takes place with a backdrop of glass and concrete. One day, I looked around and realised that my normal was quite literally built off abuse and destruction. It is quite an odd sensation to realise that everything you knew, everything that shaped you, is somehow structured all wrong. I would stay up at night thinking about the far away forests that are getting chopped, the skies that are getting smogged, the oceans filled with plastic, the ice caps melting, the oil mined and the wetlands drained. I would think about the people I have never met who are suffering directly and the animals I don't even know that are disappearing. That's why I started doing things like this (writing letters)... something else to keep me up at night.

I'm not sure if you realise this, but in the current EU Common Agricultural Policy farmers are incentivised to drain their peatlands - they are given subsidies if they do so. This drainage-based agriculture means that our precious peat soils are constantly eroding. The unique habitat that the peatland once offered is no longer available for their distinctive plants and rare creatures. It means that the dried peatlands are constantly emitting large amounts of CO₂, which continually warms up the planet. Did you know that the CO₂ emissions from drained peatlands is more than twice the emissions from the aviation industry? It means that the nutrient rich peat runoff pollutes local water and can kill fish through a process called eutrophication, and that drinking water needs to be treated with extra chlorine. It means increased flood risk for local communities and land subsidence. And yet the EU 'who supposedly cares so much about the environment' actively encourages drainage-based

To me, peatlands represent time itself. If you look closely at a peat core you will see thousand year old petals with the veins delicately protruding. You might find the body of your long lost ancestor. A sample of ancient peat pollen can give you a glimpse into past climates and parallel worlds. Peatlands capture moments of our earth history as well as preserve the marks of ancient human civilisations, so to lose a peatland is to somehow erase time.

It is important that you realise that the decision you make for CAP 2021 will last a long time. The future of peatlands and the earth needs to be considered because farmers cannot transition on their own. They need alternative subsidies and rewards for restoration. They need you to help them.

Thank you for reading this and I hope you take something from these words.

Yours,
Frankie Turk



Veen verhalen

Het is zondag morgen half tien. We zijn op weg naar Klazienaveen noord. Even buiten Barger-Oosterveld zien we de spitstoren van het veen kerkje. De veen kerk van Klazienaveen noord is een markant kerkje gesticht door dominee de Weerd, in de vorige eeuw.

Deze dominee had niet alleen de drang om het evangelie te verkondigen maar was ook begaan met het lot van de veen arbeiders. De mannen en de vrouwen en zelfs de kinderen die met gekromde ruggen het veen gingen delven. Tot op de dag van vandaag vind je in het veen kerkje een kleine maar betrokken gemeente, waar je nog steeds kunt merken dat deze mensen door de kerk goed pastoraal begeleid zijn. Ik vind het een voorrecht om af en toe voor te gaan in deze gemeente.

Ik heb heel veel geleerd van de historie van het veen volkje in zuid oost Drenthe.

De naburige gemeente is Barger-Compascuum, daar vindt je het veenpark, een groot openluchtmuseum met een geschiedenis van ruim honderd jaar van de veen arbeider. In de winkeltjes kun je ook nu bij de bakker. Bijv. het eigengebakken brood kopen. Ge nieten van de knippertjes en de rollegies, wat heel veel weer geeft van de hang en het zorgvuldig omgaan met het Drentse plattelands traditie. In het veenpark kun je ook een boottocht maken waar het water vochtig is. Hoe je een beeld krijgt hoe de turf eerder vervoerd is per boot.

We gaan verder naar Erica. Daar bevind zich het smalspoor museum en de turf strooisel fabriek. Op een zaterdag middag in de vroege herfst, stonden wij, een aantal artiesten en ook ik als verhalen verteller langs de spoorzijnen. Gedurende de gehele dag kwam het treintje voorbij en stopte bij de diverse deelnemers.

Zo vertelde ik naast de grote braamstruik het verhaal van de veen kabouters, Pim en Pam. Deze twee mannetjes vertrekken 's ochtends vroeg met hun harkje en schepje naar hun veen tuintje. Maar wat gebeurde er toen, alle veen bessen, bramen en aardbeien zijn weg. "Hoe kan dat nou? Roept Pim. "ik weet het wel "zegt Pam. "Nergens staan voetstappen". "Dat betekend dat de witte wieven zijn geweest". "Bestaan die dan echt?". Tot op heden is dat een groot raadsel van de zuidoost hoek van Drenthe.

We zijn bijna in Duitsland. In dit grensdorpje Weiteveen, bevind zich een buitengewoon bijzondere turf laag. Met trots vertellen de dorpsbewoners, dat deze turfsoort nog op twee andere plekken in de wereld te vinden in is. Namelijk in de delta van de Brahmapoetra en in zuid Engeland. De bewoners zijn hier zo trots op dat ze in het zomer seizoen, een veenloop organiseren waarbij de mensen kunnen genieten van het prachtige landschap.

Zuidoost Drenthe: een plek om trost op te zijn. En zeker een bezoek waard om een vakantie door te brengen.



Waist Deep in Bog by Gavin Turk

Las turberas españolas: un hábitat único

Las turberas son el mayor reservorio de carbono terrestre del mundo, y cuando su estado de conservación es natural o han sido restauradas, pueden actuar como sumideros de carbono ayudándonos a combatir el cambio climático. Sin embargo, la mayoría de las turberas en Europa están degradadas y sus perspectivas de futuro no son positivas en la mayoría de los casos. Por otra parte, estas turberas también están actuando como fuentes de carbono favoreciendo el cambio climático.

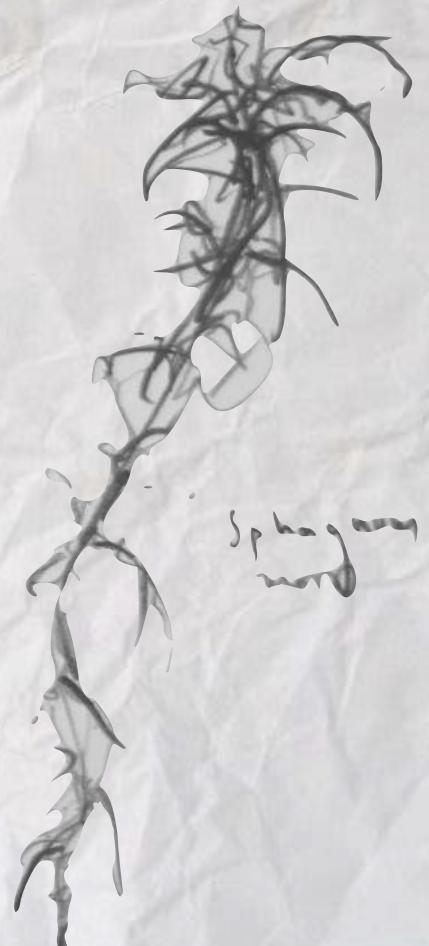
En España las turberas son escasas y solo cubren el 0.07 % de nuestro territorio añadiendo un valor especial a este hábitat raro en nuestra geografía. El desconocimiento de este hábitat ha llevado a la desaparición de muchos enclaves como, por ejemplo, la turbera de Tornos en Cantabria o Saldropo en el País Vasco debido a diversas actividades antropogénicas como la explotación de turba, la creación de pastos para ganado o más recientemente, el desarrollo de parques eólicos en diversas áreas de turberas que afectan tanto su distribución como conservación.

Debido a su escasa presencia en nuestro país, su capacidad para almacenar grandes cantidades de carbono y retenerlo es mucho menor que otros países como Reino Unido o Irlanda. Sin embargo, sus valores ambientales como la diversidad de su flora o el archivo histórico de milenios que esconde en sus capas de turba, son otros valores que deben de ser tomados en cuenta a la hora de su protección y conservación. Además, algunos tipos de turberas como la turbera cobertor, posee su límite sur en nuestro país, siendo pues un enclave esencial para entender la naturaleza del propio hábitat.

Sin duda, estos hábitats necesitan una protección especial tal y como reconoce la Directiva de Hábitats Europea 92/43/ECC y promover un desarrollo sostenible que no afecte a este hábitat y a su papel vital en el ciclo del carbono. Todas las políticas agrarias y ganaderas de la Unión Europea deben, por tanto, tener en cuenta la conservación de este hábitat y no solo por su diversidad y valor ambiental, sino que también por su potencial para servir como un método natural para combatir el cambio climático en el estado de alarma climático actual.

Guaduneth Chico

Profesor e investigador de turberas en la Universidad de Nottingham Trent (Reino Unido)



Hans Joosten is a Dutch peat scientist and environmental advocate. Originally from the southeast of the Netherlands, he has grown up alongside peatlands, and has since tailored his activism, education and career in this direction. He studied biology at Nijmegen University, Utrecht University, and Wageningen University in the Netherlands. Following his education, he worked for the Dutch State Forestry Service, Dutch Ministry of Agriculture and Nature Conservation, and the University of Utrecht, along with being critically involved as an expert negotiator on behalf of peatlands in the Ramsar convention, the IPCC, and the FAO, among others. In 2008 he began working as a professor in the department of Peatland Studies and Paleo-ecology at Greifswald Mire Centre in Greifswald, Germany, where he continues to work today.

Responses have been edited for brevity and clarity.

So it seems like you first learned about the science behind peatlands, and then moved on to being more politically active. Do you see your scientific engagement as being political in nature?

My engagement with peatlands started in 1975 and was first political, through environmental movements, and only in 1979 did I decide to devote my scientific life to peatlands. So (the science of) peatlands came a bit later.

So in a way, did you become involved in science as a way to improve your political engagement?

Well, I am also interested in science - I like to find things out. I think that science is very important for achieving things, and I think you do better politics when you know the facts. One of the reasons my environmental group is successful is that we actually combine first very good scientific knowledge, knowing the geographic area very well, but also being busy on all political levels, not only locally, but also globally and internationally. You can, of course, do things locally - and that must be done - but a lot of political processes are directed top-down, even though the push is bottom-up. If you manage to influence global conventions, then bureaucracy starts working in your favor.

Furthermore, when I was working at universities, I was always a little bit disappointed, as in universities, science tends to be "ivory tower" work; you are not able to communicate your findings with society because it is too specialized or detailed, so you are isolated. As a result, if you work in the political sector, you see that the level of knowledge and understanding of the science [behind peatlands] is rather poor and unsatisfactory.

I came to Greifswald because it was requested that I come to Germany to create a study programme called Landscape Ecology and Nature Conservation, where you have both a scientific and societal component.

That had to do with the fact that the guy who invited me to Germany was also the last secretary of state of the last transitional government of the GDR [Eastern Germany], and he was a very impressive guy; his government managed to bring 5 percent of the land area of the GDR under nature conservation in 4 months time. He was the one who decided that this study programme where we learned not only facts, but also values. So, at the Institute of Botany where I work, we have a chair in environmental economics and a chair in environmental ethics, because he was convinced that a lot of problems in the world cannot be solved by facts and by science, but have to do with values and morals. In the climate discussion, we know what we have to do, but how we will do it is an issue of morals and ethics - who is responsible, who has to take the lead? This was very attractive for me, because this was the way that I was thinking. So that's how I ended up in Greifswald; I'm very satisfied with that.

Very interesting, and I'm glad you brought up the economics and ethics of climate change and peatlands. That really segues into my next question, I'm curious why you think peatlands are important beyond the ecological and climate roles that people often bring up in discussion?

Well, peatlands are not holy; of course, I am a peatland specialist but I do not think they are far above everything else in the world. But for me they are interesting because they are very well organized and interconnected. Peatlands are the ecosystems that are the most related to organisms. Not all peatlands have that, but important types of peatlands build up self-organization and become similar to huge organisms. They react and develop mechanisms with which they can regulate their water level, so they build up independence. You can see peatlands growing like a child that is first protected by the parents, and the peatlands need their surroundings in order to protect itself, but after a few thousand years they self-regulate and then they become "adult", they become independent of the surroundings.

In this way, peatlands are a lot stronger than other ecosystems. Another fascinating thing about peatlands is that they conserve their history in a very special way. Of course, all ecosystems have the past in themselves. You are shaped by your parents and the experiences you've had throughout your life. Peatlands operate similarly in that, through peat formation, they lay down the testimony of all the things that have happened in the peat layers that subsequently accumulate.

They are like a history book. That type of ordering of temporal information is very specific to peatlands, and that makes them attractive for reconstructing the past. It is much more difficult to get this information from a forest - of course, you have old trees, and dead trees, and tree stumps that say a little bit about the past, and in this way you can go back maybe 500 years, but in a peatland you have information not only about the formation of the peatland, but also of the surrounding area that are stored in the layers of peat.

There are other aspects of peat that are fascinating; for example, in central Europe or Western Europe, you must imagine that humans started to influence the landscape on a large scale, for the purpose of agriculture. In the past, everything was forest, there were only a few open spots where you could see into the distance, mostly on the peatlands. You can hardly imagine how important this is for perspective. Before agriculture came to Europe, and people were living in the forest, you could only look ten meters in front of you, unless you were walking through a peatland. A peatland was the only place where you could see further in front of you. And that had an enormous impact on people in that not only can you see much further in a peatland, you also have an open connection with nature and the sky. You feel the Earth trembling below you. You walk on a substance that is wetter than milk or beer, and yet you can still walk on it. One of the most fascinating things must have been that whatever shape the peatland has, you always see the horizon as a circle, and a circle is the most complete figure that exists. This must have had an enormous impact on people.

So peatlands have a lot of specialities. They are the linkage between life and death. The bog bodies that are found there, they have often people that have been sacrificed or killed, and the peat made their transition between life and death much longer. Other ecosystems don't have these kinds of qualities, so that of course has a metaphysical influence on people.

What do you think is the biggest hurdle facing peatlands and their conservation today?

Of course, peatlands have a negative connotation. There are a lot of expressions for peatlands in the English language - swamp, bog, mire - and they all have a negative connotation. People are much more positive towards forests. In Germany, forests are almost holy, and you don't have that with peat. That is an issue.

The second thing is that peatlands are not very abundant. If you look worldwide, only three percent of the global land area consists of peatlands when forests cover 30 percent. People have the idea that small things cannot be important, so forests inspire a lot more positive feelings. And because of how limited the extent of peatlands is, people can hardly imagine how much carbon a peatland holds. A peatland has ten times more carbon per hectare than the next closest ecosystem in terms of carbon output - that is very difficult for people to imagine. This has the effect that, in the climate conventions, and in the IPCC, you notice that peatland experts, or really people that know anything about peatlands, are rare. When we had the first meeting with the IPCC to prepare the wetlands supplement to the IPCC guidelines, there were 100 people, of which 95 were foresters, 5 said they knew something about peatlands, and only two or three really knew anything about peatlands. That is the proportion, so peatlands are not well-known. And that makes it difficult to bring them into discussions, the discussions go very easily into the direction of forests simply because almost all of the people that discuss nature-based solutions and ecology at the governmental level are foresters. This is another hurdle. It has improved very much; when I started, nobody had ever heard about peatlands. But still, the consequences (of draining peatlands for agriculture) are beyond imagination.

For example, 1 kilogram of gouda cheese produced in the Groene Hart of the Netherlands contains 55 kg of CO₂ because the cows that produce the milk are grazing on drained peatlands. 1 liter of milk from the same region has the same CO₂ content as 2.4 liters of petrol. This impact is so beyond imagination, people cannot imagine that these cows are so negative. When you cut down a forest, you see immediately it is terrible, it is so obviously a negative action, but when you drain a peatland to be able to have a farm there, people see it as beneficial or as progress. That has made it difficult to give peatlands the attention they actually deserve.

I understand that, because in RE-PEAT, we often talk about shifting the public's perception like this, from thinking of a drained peatland as being beneficial because of the monetary and perceived gain from draining it to a more positive association with a healthy peatland, as being a "peatland paradigm shift". What do you think the role of policy is in shifting the "peatland paradigm" from one that encourages drainage-based agriculture to one that recognizes the climatic and inherent value of healthy peatlands?

I always say "the wall will turn the stick" - that is a Dutch expression - because there is no such thing as a sustainable drained peatland.

If you drain a peatland, you lose the peatland: either it will be drowned by the sea, or all the peat is gone, and you're left with the sand below the peat. Both are severe problems. In the Netherlands, you see the land sinking and saltwater intrusion from the North Sea into agricultural land. In Indonesia, millions of hectares are subsiding so fast that they will soon be lost to the sea. If the drained peatlands are not flooded, but you lose all the peat, that raises the question of what is below the peat - usually only the lowest-quality sand. In the Netherlands, but also in a lot of other places in Indonesia and Malaysia, peatlands have developed over mangrove soils; when the peatland is gone and you're left with acid-sulfate soils, which are incredibly acidic, they have a Ph of 2.9, and nothing can grow anymore. So the long-term vision of drainage-based peatland use is: either you drown in an uncontrolled way, or you lose your peat and are left with whatever soils are below, which are usually not useful. Both things are not attractive.

In most countries in the world, people do not recognize these problems. In many places people think the water is rising, but don't realize that surface level is actually going down instead. In Florida, people say that hurricanes are increasing in intensity and are causing more flooding, and that is true, but also in Florida where they are draining the land to grow sugar cane, they simply invite the sea to come in.

This process of subsidence is very long - people cannot imagine the scale of it. We had a meeting with people from a polder here [in the Netherlands] where we were discussing the future of the polder. I gave a presentation where I said I predicted that over the last 40 years, the polder subsided by 40cm. "No, no, no", they said "We would have noticed it". The next week we met again, and they had taken measurements, and the polder had actually subsided by 65cm. But this process is so slow that you don't notice in day-to-day life - it is a sneaking process, and takes decades to become clearly apparent. New generations have appeared and do not know how high the land once was.

Worldwide, we have three major problems with drained peatlands. The first is wildfires and subsequent haze, which is the most urgent problem in terms of sheer destruction and its impacts on human health. The haze caused by fires on drained peatlands has caused widespread health effects in Russia, in Malaysia, in Indonesia - 100,000 people in Indonesia died as the result of haze from peat fires in 2015. Even the peatland I grew up on burned, and my father's home had to be evacuated due to the severity of the smoke.

This is a very visible problem. That is a regional problem. The next major problem is the emissions. Drained peatlands are responsible for 5 percent of all anthropogenic CO₂ emissions, which is a global problem and thus more difficult to address. Finally, the third problem is of course land subsidence, which seems like a regional problem, but in the context of food security and land security issues that come from losing so much land, it becomes a global problem. People do not always see all of these problems at the same time, but they are all there...and then, of course, you have biodiversity loss, which is an entirely different issue...but I talk too much, I told you that I talk too much!

I completely understand, because peat is quite a rabbit hole to go into, not only from an environmental perspective but also from a social and philosophical perspective! They are an interesting lens through which to look at conservatism as a whole. So, given the issues surrounding peatlands that you highlighted above, what would be your recommendations to the EU policymakers in terms of the upcoming CAP decision?

Well, you know that the CAP is agricultural policy. If you look at the relation between peatlands and agriculture, only a small part of agricultural land takes place on drained peatlands. But this small part has a disproportionately large emission. In the EU, I think 3 percent of agriculture takes place on peat soils, but those peat soils are responsible for 25 percent of the total CO₂ emissions from agriculture. The new issue that has been raised by the Paris Agreement and the IPCC report that set the limit for global warming at 1.5 degrees Celsius, is that, at some point - be that 2050, 2070, 2030 - we have to go back to 0 emissions. When we were discussing the Kyoto Protocol and other past legislation, 0 emissions was never a target; we were talking about reducing emissions by 20 or 40 or 60 percent. So then you had a very interesting decision of what to reduce, and agriculture was always something that we didn't focus on reducing, because they have the argument of being necessary for food security. While climate is important on the long run, food security is important in the short-term, and we must first survive the short-term before we look at the long run. So we have never looked at agriculture as being something whose emissions we can reduce. But when we think about the future in terms of 0 emissions, everybody has to reduce. . Agriculture can no longer hide. Because if they do not reduce, we have to have significantly more negative emissions, and that is extremely difficult. It is much easier to reduce the emissions of agriculture than to have significant negative emissions elsewhere. And it is logical that if agriculture has to reduce, they first have to focus on the peat soils.

That is efficient, because you would have huge reductions in emissions while only having to address a rather small area of the land. Even if you would take this small percentage of the land out of the total agricultural area, it would not create a huge issue of productivity for Europe while still having a tremendous loss in emissions. This loss of agricultural productivity could easily compensate by increasing productivity on the remaining non-peat soils - they already do this every year. And you do not need to completely remove peat soils from agricultural use, because we can develop agricultural land use techniques that can be combined with rewetting the peat, which is certainly relevant on a global scale. Agriculture on a re-wet, healthy peatland is called paludiculture - a word I invented - on which my group has been working for 20 years. So there are alternative agricultural options that do not require drainage-based land, where you can save a lot of emissions.

The problem with the CAP is that it currently does not recognize paludiculture as proper agriculture. This means that farmers who are doing positive things for the environment by not operating using drainage-based agriculture don't get subsidies from the EU. This has to be changed, and that is one of the tasks that the CAP has to take on.

So you think that the focus should be on subsidies?

Well, you must have it that people who are doing positive things by practicing paludiculture get subsidies. In Germany, we have calculated that climatic damage caused by drainage-based agriculture costs the government 7.4 billion euros annually. And the farmers that work on these drained peatlands get 410 million euros per year in subsidies - we essentially pay for farmers to do damage. That is incredibly stupid. Ultimately, the EU can no longer incentivise damaging policies, and we need to entice people to refuse to use drainage-based agricultural methods. We have to modernize policies with the perspectives of the future, in terms of the challenges we have for the coming decades. You simply should not let it function in the way they have done in the past, they have to take the challenge to change.

And for the last question, you remain overall positive, while talking about quite a very negative subject, what gives you energy when it comes to advocacy and research?

Negative people have never brought the future closer. I think that people inherently have a positive attitude. You have to think that if negative people were dominant, humanity would have died out immediately. You notice that in daily life, you remember the good things much better than the bad things - you forget the bad things, and that is an evolutionary adaptation.

I decided personally when I was 19 that I would not think about reality anymore, and that I would live focusing on the positive things. This positive perspective is the best way to put this into the future. It is a very constructive attitude. If you go with hope into the future, you realize that it is not about what is possible, it is about what is necessary. Necessity is the mother of invention. Corona is a nice example of this; it has made everything that people thought was impossible, possible. Look at how Germany handled quarantine and the economy - restricting personal freedom for the benefit of all shows that you can do a lot.

And to change the world, you need to have a long-term perspective; you cannot be upset that big changes do not take place in a week. I had a conversation with a member of Fridays for Future once and he complained that they had been busy for one year and hadn't seen major changes. I told him that I have been active for 40 years and that I have seen tremendous changes! If everything we wanted to change did so immediately, that of course means some incredibly stupid legislation would also pass immediately. We worry, of course, that time is running out, but that does not necessarily mean that all the changes we need have to be done in one year. So don't be worried by small deviations or delays; keep your long-term goals in view. I know where I am going. Sometimes I have to take a detour, but I always notice progress.

Earth lies within my name

Beloved by bees

Sacred to the Roman and Sicilian love-goddess Venus Erycina

Immuring Osiris at Byblos where his sister Isis went to seek him

Stones heaped in a triple-cairn a womb in the hills for the ancient
ageless giantess her car drawn by elks

Her diet venison milk and eagles' breasts she hunted the mountain deer
with a pack of seventy hounds with birds names

Red and passionate

Cybele and the ecstatic self-castration of her priests a type of
emasculated of the drone by the queen-bee in the nuptial act

Venus fatally courted Anchises on a mountain to the hum of bees

Son of the North Wind, Butes the bee-master, given a hero-shrine by
the nymphs of Erycina

Ura

Earth lies within my name

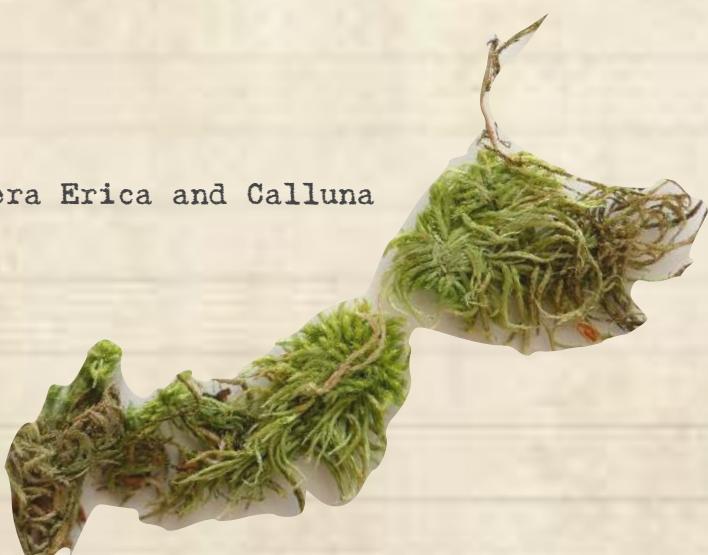
And my name lies on the heath

Hen harrier and adder

Witches and wasteland

Roots and stems of genera Erica and Calluna

Beloved by bees



Heather Ackroyd / Ackroyd & Harvey

2020

Dear CAP policy-maker,

To me, the way we treat peatlands in Germany today is one of the clearest cases of an unsustainable way of dealing with natural resources. Let me explain how I see it through a little anecdote:



120 years ago at my home place in the Bröl-valley near Bonn (Germany) the people were building big quarries for digging out precious limestone. They were building ovens and burning the stones in them to produce quicklime. Within a few decennia the forests around the area were gone and the burning of lime was made impossible. A decree had to be made to prohibit the logging of forests for the coming generation. Lime stone had to be imported from that point on.

The drainage of peatlands is just like this example of unsustainability. No, in fact, it is an even clearer one. Unlike forests, peatlands do not take 50 years to grow back, but thousands. On top of this, the ecological crisis we are facing now is not just a local phenomenon, but also a global one. Via the drainage of peatlands at one place, you cause negative effects on the entire planet. The people in my area didn't have an alternative to using wood for producing their quicklime. But there is an alternative for the inefficient cattle-based agriculture done on drained peatlands. The earlier we stop, the easier it will be. The only thing it requires is the bravery for a small change. Change with the result of direct positive feedback. Instead of the diversity-poor landscapes that are now the status quo on drained peatlands there could be natural landscapes full of plants and animals. Now we need a whole infrastructure of drainage facilities to keep the status quo. Whereas, if we left the peatland to recover to its natural state, the system would maintain itself. It seems to me that the only reason why drainage is still happening is the fear of change. What are you waiting for? It is clear that we have to stop one day, and that every day we continue makes many things worse. Thank you very much for reading!

With kind regards,

Jaap Söntjens

The future of peatlands is wet!

I grew up in a north-western German city surrounded by peatlands, but all of them drained, mostly used as grassland for cattle farming. Although many places in the countryside had the word "Moor" (German for peatland) in their names, these were meadows with cows and deep ditches in my childhood memories; nothing linked them in my imaginations to the very few and small semi-natural mires remained in protected areas of the region. There you could still find mosses, heather and nice boardwalks. I had no idea what peatlands are, that drainage actually leads to degradation, how they function and why they are so important for us (and I have the feeling, I was not the only one...)! Then I moved to Greifswald for my studies of landscape ecology and they opened up my eyes on peatlands!



Magnificent pristine mire

I learned why they are special, how they marvellously link between water, soil and vegetation, what their role in climate regulation is and how beautiful they are! Only after this, I realised what it means that we destroyed 98 % of these unique and beautiful ecosystems in Germany and other western European countries. During excursions and field trips, I got to know the fantastic natural mires still existing in the Baltic countries, Russia and elsewhere on our planet - even in Cuba and Nicaragua. In the latter countries, they are as unknown to people as they have been to me for the longest! In central Europe, we don't even know anymore how beautiful mires look like and I started to wonder how we could better protect and restore them. The facts speak for themselves: peatland store vast amounts of carbon, are important for water and nutrient retention and buffering and give habitats for endangered biodiversity.

However, we also need to develop a vision how cultural peatland landscapes could look like in the future when they wouldn't be drained anymore like in the past hundreds, thousands of years, but would be wet again. People need to find their homes in or around wet peatlands and make a living from (at least) some of the areas. The paradigm shift from dry to wet cultivation needs to be seen as a societal tasks guided by integrative strategies and policies, but also accompanied by education and awareness raising so that people know what they protect. Therefore, the new CAP and the national strategic plans need to set out an ambitious transformative pathway for peatland management, which stops subsidising destructive drainage and starts to incentivise sustainable practices like paludiculture. Of course, we cannot change land use from one day to the other but we need to have an idea how we achieve our obligations towards humankind and nature step by step and take the people along with us. Let's pave the way for a better, wetter peatland future together!

Jan Peters



Drained peatland meadows just outside the city of Greifswald – the common state of peatlands in Central Europe

I've walked the peat-world, in Scotland, Wales and the Arctic. On a remote Scottish island, the land around the old cottage where I used to stay was etched with the old marks of peat-cutting and the old people told me how they would cut the peat, dry it, and use it as a soft-burning flame through the winters. Never cut too much, never take too much, they said. Live gently for there are others coming.

It was used carefully because in the long view it wasn't really their possession: it was their responsibility. It isn't really ours now. For something so steeped in history, so significant for all, something so old that it takes thousands of years to form a metre, cannot belong to one generation.

The peatlands, muskegs, bogland and fens breathed in aeons ago. Its breath held, it stored carbon. And then, within the brief moment of modernity, it is breathing out, a breath of smoke and carbon released. So slow for peat to form. So quick for it to be destroyed.

Peat is a symbol for the Earth and its experience of global heating. Once alight, peat can smoulder, gradually burning deeper and wider and often undetected for months and years. So slow we were to notice climate change. So immediate now the responsibility. In the permafrost peatlands of the far North, ice is turning to fire, a thousand years going up in one momentary flame. Turning the eternal into the temporary. Turning the proliferation of life into death and finiteness.

Jay Griffiths

Knocking down cathedrals

I will never forget the spectacle that confronted me when I first visited the Humberhead Levels in Yorkshire in the late 1980s. Behind the shabby huts and tramlines of the peat works, as far as you could see, there extended an immense desert of totally stripped-out, black, gleaming peat, an area equivalent to that of a small city. The shifting light illuminated the great sweep of the milling fields, devoid of even a single bobtail of cotton-grass, as the diggers and cranes, looming out on the moor like space-age dinosaurs, picked over the wetland until there was nothing left. As we looked on horrified and helpless, it seemed that this extraordinary natural system, which had taken 3,000 years to evolve, would in ten years be gone, taken away bag by bag, crumb by crumb, to be scattered on people's gardens.

Now, nature has returned to the Humberhead Levels. There are curlews, snipe and even breeding cranes while harriers and short eared owls patrol the expanses of dancing cotton-grass. In 2004 the peat producers departed. Since then between 2014 and the summer of 2018, the European Union's LIFE+ Project has extended the peat bog area under active restoration and ensured that across 2887 hectares the peat is now wet enough for sundews and wild cranberry and all the specialised birdlife of nightjar and hobby which accompany them. Best of all only sixteen years since the Humberhead Levels were a scoured industrial wasteland, the mosses are growing again, spilling out over the edges of the trackways and, like the corals of a reef, rebuilding the raised mires as they have done for over three millennia. It is a reversal of fortune and a rebirth, which I had never thought I would live to see.

But this EU success in Yorkshire is undermined by a far greater failure in relation to peatland management throughout Europe. If you go to the Humberhead Levels today you will find that the old peat works are still there in the middle of the restored nature reserve and appear to be as busy as ever.

There are plenty of peat bales, although they are no longer scoured from the now protected wetlands. This peat, that is being packaged up and sent round the UK, has been shipped in across the North Sea via the nearby port of Goole from the magnificent and unprotected raised mires of Estonia in the Baltic. Similar wreckage is taking place to the lowland mires of Finland, which is also in the EU.

Meanwhile all over Europe the CAP is contributing to the continued ploughing of peat for intensive agriculture, which increases carbon in the atmosphere and eliminates the potential of restoring such land to wetland habitat. In Norfolk, the Saint Germans pumping station controls the hub of the main waterways which flow into the North Sea. This pumping station facilitates intensive grant-aided farming on the immediately surrounding fenland so that the peat, which dries and wastes away as it is cultivated, emits carbon dioxide into the atmosphere equivalent to 0.3 per cent of the UK's annual industrial emissions, or that of a small city. The destruction of Europe's peatlands hastens climate change and is the ecological equivalent of knocking down a cathedral and using the dust to line the garden path.

Jeremy Purseglove, 2020

PART THREE

Northern Europe

	Finland	Norway	Denmark	Iceland	Sweden
total peatland area	1mln ha	4 47 mln ha	<202 900ha	577 700ha	6-5mln ha
% of land area	~26%	~18%	~5%	~5-6%	~14-5%
state	70% used	~30% of original is used	all raised bogs disturbed	63% drained	20% of wetland intact
usage	forestry construction agriculture	forestry agriculture	fuel horticulture	agriculture forestry flooded for hydroelectricity	drained for pasture + agriculture fuel horticulture
terms	suo, neva letto, räme	myr, torv, torvmark, lungmose	törvse-mose, højmoser, Kær	hallamýri, flóði, flæðimýri	myr, torvmark, fukthed
notes	1960s - first conservation plans (1.2mln ha protected) 1970s - 300,000 ha drained annually	drainage for forestry forbidden since 2009 extraction for fuel started 1000 yrs ago 1969 - national plan for more conservation	1800s - 17% of primary energy came from peat 1829 = first protected sites many areas only protected from intensive farming	since 1971 - 22 protected areas restoration considered of national importance	conservation began 200y ago subsidies for forestry drainage stopped in 1990's

What about agriculture?

Part 3 - Northern Europe



21	Jessi	Anecdote	Germany	Peat Sheep
22	John Lind	Passage	Sweden	Archeology
23	Kate Foster	Letter	Netherlands	Contemplation
24	Katrien Wijns	Anecdote	Belgium	Appreciation
25	Laimi Truus	Passage	Estonia	Responsability
26	Lilian Cooper	Anecdote	Spain	Soil
27	Mari-Liis Kotsar	Letter	Estonia	Vision
28	Musa Taal	Poem	Phillipines	Contemplation
29	Myrte Rischen	Letter	Netherlands	Agriculture
30	Niall O Brochain	Letter	Ireland	Innovation

*please note that the submissions in this section are not correlated to this part of Europe
(see section "How to read the Peat Anthology")

Peat-Sheep

My father's farm is closed for decades now, but there are four old sheep ladies grazing the meadows around the old house, carrying many stories untold. Our sheep belong to the breed of White Polled Heath, or in original language "Moorschnucken". Moorschnucken are a breed originated in the moor land of Lower Saxony but almost died entirely with the ongoing drainage of peatlands in Germany. With wool too coarse and their muscle flesh too thin they did not seem profitable for the agricultural business; rearing meat sheep breeds instead. It makes sense, that in a society without respect for the peatlands, peat-sheep are left behind as well. After being listed as an endangered domestic breed and through the efforts of nature conservationists and breeders, the number of Moorschnucken sheep in Germany has risen to 5,000 of its kind. But many of them live, just like our sheep ladies, separated from their natural habitat: the moor.

But once you pay attention to these sheep, you will discover a bunch of qualities that resulted from their centuries lasting, intimate relationship with their natural habitat, the peatlands.

Jessi



Hidden peat-abilities:

- Walk knee-deep water
- Get themselves out of bog holes
- Light and delicate, can walk the peatland without sinking
- Eats wild plants such as purple moor grass, mosses, sedge,... (can survive on nutrient poor diet)

Their contribution to the wetlands:

- Grazing groves and plants, protect the poor from forestation
- Rejuvenating the heather



John Lind

Perhaps the most amazing thing about Homo Sapiens is her adaptability. Earth has seen steppe people, forest people, mountain people, tundra people, bog people, sea people and desert people. The Neolithic revolution, roughly 10 000 years ago, was the starting point that eventually would render sedentary agricultural society dominant - it was mainly the cultures that adopted agriculture that went on to form cities and states as we recognise them today. The relative inaccessability of other landscapes bought them an aura of mystery and danger, and could act as a refuge for the persecuted. Our folk tales tell us of the forest-dwelling Robin Hood and seafaring pirates. Bogs were once a place for eerie sacrifices, and the ancient Chinese epic Outlaws of the Marshlands speaks for itself.

Why is this relevant now?

This process is not just confined to the nerdy business of archaeology and history students like me, but a process that is still continuing today. As different landscapes carry different preconditions for living, they also became harborers of different cultures. They sometimes got along peacefully, sometimes not. The raids of the Huns and Mongols from the steppes on agricultural communities are perhaps among the most famous examples. The ever-ongoing deforestation of the Amazon for agricultural land is a more recent example.

Europe does not have a tropical rainforest like the Amazon, but we do have wetlands which hold an astounding biodiversity of species valuable both to humans and in their own right. They hold peat which keep the atmosphere safe from immense amounts of CO₂ and slows erosion by trapping sediments, purifies water by trapping pollutants, retains water that can mitigate floods as well as droughts and stop wildfires in its tracks - all afflictions predicted to increase in the nearby future.

Even history itself rests in the bogs.

Without the natural and cultural archives granted by its anaerobic conditions the knowledge of ourselves and Earth would be significantly poorer. I do not believe that either tales or history have a deterministic influence on our minds and actions, but the cultural history of landscapes help explain why wetlands and their inhabitants acquired such an undeservedly bad reputation. Perhaps the biases it generated help explain why Northern Europe, where I grew up, often finds no better use for peatlands than to burn them. The strife they underpin may help explain why land unsuitable for agriculture due to high groundwater gets diagnosed as vattensjuk (eng. water-sick) and drained, while paludiculture is ignored. But as students of history should know, and the European Union itself is a remarkably successful example of: strife should be followed by reconciliation and restoration.

It has become time to think about landscapes the same way, not only in the cases where it might be useful for respecting the diversity of cultures but also from a purely scientific view as it is becoming abundantly clear that all of Earth's ecosystems are interconnected and codependent. The economic importance of any one landscape type is thus not an argument against, but in favour of the preservation of other landscapes, given that the Earth System science is properly recognised. Besides, restoring our wetlands does not need to be the creation of some no-touch museum enclosure. We can live from and with these lands as well. Does it sound weird? That's just because we have a few millennia of peer pressure to kick. Wetlands play a fundamental role in maintaining hospitable planetary conditions and the truth is that we have been living thanks to them all along, even when we have not noticed it. Let's notice it now.

Dear Agricultural Policy Maker

I can imagine you have a lot of technical reports on Peatlands to read, plus you've got to work out policy options for the climate crisis. And then there's RE-PEAT's fantastic Global Peat Fest to catch up on too!

I thought I would offer some images to help keep peatland points in mind.

I'm an artist who started a project to support people who are working to restore peatlands in Scotland. The banner at the top was part of a peatbog workshop where families joined in with peatland restoration. The idea that 'Something as small as a wish can take root and breathe the peatbog alive' comes from the poet, Jos Smith.

Here is a photo of one the best preserved peatbogs in South West Scotland, Silver Flowe in Galloway. Have you been on healthy 'squelchy' wet peatlands? They rock when you jump.

Here's an impression of different Bog Mosses under a microscope. Sphagnum mosses absorb rain and can be more than 90% water.

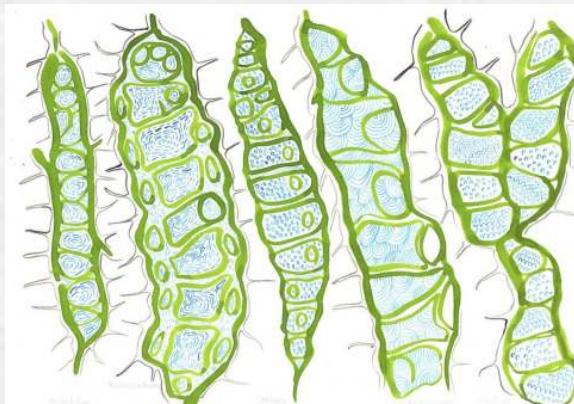


Image: Bog mosses absorb rainwater and create peat over millennia.



Image: Please put peatlands in the picture!

I'm doing a project in The Netherlands and am learning how this country has been claimed from peatlands over the centuries. An unimaginable amount of peat has disappeared into the atmosphere and water ways.

When I started in January, there was a small Cactus on my desk.

Sadly, it hasn't really thrived. I think it would be better off in a desert. The brown earth under the white pebbles looks like peat, typical of wetlands.

As I read about cultural history of peatlands, an uncomfortable question surfaced. Where did the cactus' peat come from?

During Covid lockdown, people turned to gardening. A pile of peat-based compost bags arrived next door.



Image: A Cactus trying to grow on peat moss



Image: Peat in garden compost causes damage to wetlands.

That's why there is growing support for the Peat-ition. It has to be wrong that peat is extracted from other countries where large peatbogs still exist, to be used for horticulture in other places. When peatlands are demolished, histories and sustainable futures disappear.

So I drew a Cactus to symbolise growing the wrong plants on peat.

Don't get me wrong, I like Cacti - but they don't need peatbogs.

Almost all brands of compost contain peat. I began to collect the bags from my neighbours. They too wanted to know where the peat comes from. Nobody likes the idea that their own gardening might damage other places.

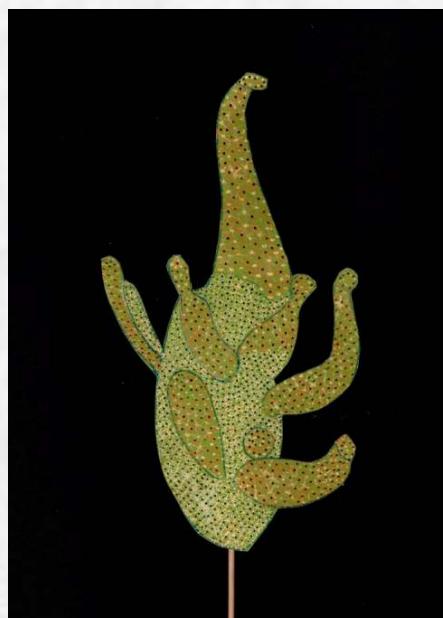


Image: A Cactus really shouldn't be grown in peat.



Image: A Water Table. We need to level up.

The next drawing is a Water Table. The legs are different lengths because people don't agree about the ideal height. Right now, things seem to keep slipping off the Water Table. It's urgent, for the climate and other reasons, to stop peatlands drying out. Wetland species are finding it hard to hang on.

Please get round the table at the Common Agricultural Policy talks!

Please stop wetland drainage altogether.

Please support new methods of nurturing peatlands.

Thank you.

Kate Foster

PS. Excuse me writing in English. I wonder what is a 'Water Table' in other languages? I know in Dutch it is Waterpeil or Waterspiegel (a level or a mirror).

"Wherever you're drawn, there's magic to be found in the landscape around you."

From a young age I developed a strong admiration for mountainous landscapes, it made me feel grounded and connected with myself and the natural world around me. One of the places I have travelled to a few times is Bieszczady National Park in Poland, initially driven by my love for the vastness of its mountains. *minuten* *Diagita* Wandering through the park I came across some stunning raised bog areas, such as the "Tarnawa" nature reserve. I was immediately attracted to the mystery and magnificence of this small reserve, - with only a total area of 5,25 ha, it consists of two peatbogs divided by a stream. The larger bog is beautifully covered with peat mosses (Sphagnum) that have been there, slowly growing, for thousands of years. Though what struck me the most was the fairy tale impression of the swamp forest. As I walked on the wooden trail in the warm glow of a setting sun, I was surrounded by the silver coloured birches and fluffy white cottongrass flowerheads in the undergrowth, reflecting the last rays of sunlight. I remember this moment as one of the first times I had a close encounter with the intense beauty of a well-developed bog. Slowly my love and fascination for these wet landscapes grew. Also I started to realise that even in Belgium, the country I live in, there are remains of these delicate habitats. Unfortunately these are too often in a degraded state and we are facing many challenges to protect and restore them. In Europe approximately 95% of its peatlands are degraded - releasing their stored carbon and losing their value for biodiversity conservation and water resource management at an alarming rate. This can only be changed by acting today.

I am very grateful to take part in this change, every day, by working for the nature conservation organisation Natuurpunt (ngo) who is, among other, restoring peatlands on a local scale. And also putting this in a broader European context in the project Interreg Care-Peat, together with different European nature organisations, knowledge institutes and private landowners. Because we can't let these unique and magic landscapes disappear.

Katrien Wijns

Global importance of mires

Mires of different types are part of landscapes in the whole Earth, but depending on the temperature and precipitation, their properties, area and age varies a lot. The oldest mires occur in tropics but by the area they prevail in the Nordic countries. The boreal zone mires are younger, as they began to develop after the end of the last Ice Age - all that used to be earlier, was swept away by glaciers and ice meltwater.

Despite the different ages of the mires, these ancient landscapes have developed for a long time without the influence of human activities. From the earliest days of agriculture, fires in mires have been more frequent than before, indicating a significant human impact on mires.

However, this is not comparable to the impact that began a few centuries ago, when more and more energy was needed to keep industries running. The powerful machines created in the course of industrial development once again enabled the agricultural revolution, during which mires were drained and used in agriculture. Later, the mires were also drained for forestry. E.g. today, about 60 percent of mires in Europe are drained.

How does the drainage of mires affect the Earth's climate? The global impact of drainage is that natural mires that bind atmospheric carbon in the peat deposit has changed to drained peatlands, which, in the contrary are important carbon emitters increasing content of greenhouse gas in the atmosphere. What is the most important reason of nowadays climate change?

Today, discussions about the anthropogenic causes of CO₂ emissions is an important topic of political debate. To solve the problem, tree planting is proposed as one important tool for reducing CO₂ emissions. As the trees grow, they bind in a large amount of carbon in their biomass. It seems likely a good solution. But what if a tree dies of old age, competing with others, or destroyed by fire? By growing trees, a large amount of carbon can be captured in a short time, but it is again released into the atmosphere about as fast as it was taken away.

It would be partially preserved if the tree trunks are buried in peat (in a mire with natural hydrological conditions, of course).

Solving climate problems in the hope of afforestation is also not justified by the fact that in today's overcrowded world, forests tend to burn. Forest fires are especially common if trees are planted on drained peatlands, where both trees and peat burn. Let us recall, for example, the major fires of 1997 and 2005 in Indonesia, in 2010 in Russia near Moscow. In Estonia, too, forest fires occur mainly in forest stands established on drained peatlands. Forests planted on mineral land are also burning extensively - in Australia, in America, in Spain and Portugal, in Siberia. Satellite photos show that the Siberian forest fires will subside when they reach mires - to natural, wet bogs.

Thus the most important reason why mires should be kept is the climate regulation.

What I want to emphasize with the examples above is:

First, we must have great respect for the nature that has evolved here on Earth long before humanity began to transform it;

Second, it is our inevitability that we must preserve that part of the natural peatlands that has not yet been degraded by human activity and return to nature those we have benefited from - in a state from which nature itself can begin to heal itself. It means restoration or reclamation before leaving peatlands behind. We do not manage large-scale disasters caused by human activity. We must ask nature for help and we must help nature to help us. We have no choice.

With the respect,

Laimi Truus

Expert of the EU project Life Peat Restore

I was recently artist in residence in Joya AIR in Southern Spain, in the Parque Natural Sierra María Los Vélez, Andalucia. I was surrounded by almond groves. From the day I arrived I was fascinated by the soil texture and the deep tilled furrows on the terraced fields. I also found myself wondering why this landscape looked like it did.

The roads were hard because of constant travel, they were compacted soil. The clay content of the soils in the area is extremely high. My drawing shows a path made by heavy farming machinery. My present Soil project focuses on this, compaction caused by heavy machinery. The FAO has determined this to be the most costly and serious problem caused by conventional agriculture.

The results of compaction are many, firstly causing puddling on the soil. The soil is actually too wet with insufficient air to allow plants to grow properly. Their growth is reduced or stunted, the crop yield is dramatically decreased and the quality of the crop too. Reversing surface compaction is an extremely difficult process and the most severe form of compaction leads to the formation of "pans" deeper in the soil. At present there is no means to reverse this.

Lilian Cooper



Soil:
Tracks
divided

Dear All who hold the power to make a change,

I grew up in Estonia, surrounded by thousands of hectares of peatlands, but never learned about their value until leaving and it was first in Austria, where I learned about the importance of peatlands and how badly they have been treated in the past (and still are!). This is the gap in the society that deserves to be filled, if we really want to make a change, peatlands in all their shapes and sizes have to be included into the discussion of nature protection and conservation, rising carbon emissions, changing agricultural practices, land conversion and fighting climate change in general.

Right now, peatlands are undervalued, harmed and not in focus. A well-known peatland researcher Prof. Lindsay illustrates it in a perfect way as "habitat which is almost invisible within the national consciousness." He furthermore compares peatlands to the Cinderella - they do all the work, but get almost no credit and majority are not even aware of their existence and the vital services they provide. (R. Lindsay, 2019; R. A. Lindsay, 1992)

It is evident that in order to preserve natural capital, ecosystems must be strongly tied with economic principles and ultimately conservation comes down to politics. Conflicts regarding natural resources and following environmental degradation are the consequences of political and institutional shortcomings and incompetence in dealing with those issues within policies and legislation. Conservation can therefore not be objective but has to include social and even emotional issues to have a holistic approach. (R. A. Lindsay, 1992; Mollinga et al., 2007)

Environmental problems do not only reflect failures of policies and markets but are an expression of political and economic forces displaying development of capitalism in the last centuries and the following extensive natural resources extraction for economic growth. Social policies and institutional linkages governing the natural resource management (NRM) are complex and well acknowledged. Thus, NRM is not independent from physical and socio-political context and studying these issues has to include determining different stakeholders and institutions, moreover the strategies and norms, relations and politics within society in wider context to understand that decision-making processes in NRM entails many different levels and is pluralistic in nature. (Narayanan & Venot, 2009)

In 2017, there was 26 100 kilotons (kt) of CO₂ equivalent net emissions in Estonia mainly from the energy section. Wetlands were estimated to emit 750.1 kilotons (~3%), of which majority originate from extraction of peat and to some extent also from unmanaged wetlands. This is 2.3-2.7 times higher than it would be when the local bogs and mires would be still intact. (Ramst & Orru, 2009, Ministry of the Environment, 2019; Salm et al., 2012)

In the period of 1950-1980 the primary cause for loss of wetlands in Estonia was drainage for agricultural purposes. Although these practices have been discontinued, the degradation of wetlands is still ongoing due to those past activities. Forceful institutional support is surely crucial to ensure sustainable development both on environmental and social level. It is thus, that peatlands and the utilization of peat has to be considered more thoroughly for the new agricultural policy that unfortunately still supports the drainage of one of the most valuable ecosystems on earth that conserve more carbon than any other terrestrial ecosystem. (Kimmel et al., 2010; Narayanan & Venot, 2009).

Where do we go from here? How can we change the mentality of society, if the governance lacks attention towards the issue? It is surely challenging to evaluate the variety of values wetlands provide and include the economic interests and both direct and indirect factors within. Nevertheless, it is time to take action, to change the perspective of the citizens, to appreciate these national treasures and the policymakers to start paying attention to a more comprehensive approach regarding natural resource management.

Thank You for reading. Aitäh, et lõpuni lugesid.

Mari-Liis Kotsar

Student of MSc Environmental Sciences

References

- Kimmel, K., Kull, A., Salm, J. O., & Mander, Ü. (2010). The status, conservation and sustainable use of Estonian wetlands. *Wetlands Ecology and Management*, 18(4), 375–395. <https://doi.org/10.1007/s11273-008-9129-z>
- Lindsay, R. (2019). *Carbon farming: how agriculture can both feed people and fight climate change*. <https://theconversation.com/carbon-farming-how-agriculture-can-both-feed-people-and-fight-climate-change-111593>
- Lindsay, R. A. (1992). Peatland conservation: the cinderella syndrome. In *Peatlands ecosystems and man: an impact assessment*.
- Ministry of the Environment. (2019). *GHG Emissions in Estonia 1990-2017. National Inventory Report (NIR)* . https://www.envir.ee/sites/default/files/content-editors/Kliima/nir_est_1990-2017_15.01.2019.pdf
- Mollinga, P. P., Meinzen-Dick, R. S., & Merrey, D. J. (2007). Politics, Plurality and Problemsheds: A Strategic Approach for Reform of Agricultural Water Resources Management. *Development Policy Review*, 25(6), 699–719. <https://doi.org/10.1111/j.1467-7679.2007.00393.x>
- Narayanan, N. C., & Venot, J. (2009). *Drivers of change in fragile environments: Challenges to governance in Indian wetlands*. 33, 320–333.
- Salm, J. O., Maddison, M., Tammik, S., Soosaar, K., Truu, J., & Mander, Ü. (2012). Emissions of CO₂, CH₄ and N₂O from undisturbed, drained and mined peatlands in Estonia. *Hydrobiologia*, 692(1), 41–55. <https://doi.org/10.1007/s10750-011-0934-7>

Pagbati mula sa Pilipinas!

I've been to the super typhoon-stricken Eastern Visayas to hear stories of resiliency. Typhoon Haiyan had caused us thousands of lives and left a scar on our collective memory as a nation. Latest science says that we get used to experiencing an average of 20 storms and prolonged dry season annually which intensifies the fragility of the already vulnerable communities. Six years after the tragedy, I've revisited the region and found initiatives in conserving peatlands and mangrove forests. We've started to revisit our relationships with these ecosystems.

The climate emergency is a global agenda. Don't worry, we're also telling, if not yelling, this urgency to our government. As a resident of a nation that dances with the fatal verses of the climate crisis, I pray that nations privileged with advanced sciences, of available technologies, and had displayed strong policy traditions to act in the name of global community well-being.

Let us rise to this crisis, we can't afford another Haiyan.

Sa Ngalan ng Lawa,
Jord Earving Gadingan

The Swamps

It greeted me
with a sure and snobbish smile
drowning its presence yet its very there
or it's here, feet over its connected
enormity this ancient miry land
had been laughing silently
on our ways but shy aways
from our roads for centuries
it vomits on our lowest points
in history, if it could just slap
us with its old vines, it keeps burrying
its unstable face under
the god-knows-what-lives-in-holes,
hides with those cold-blooded
honor the sacred shyness, its secrets
defog not, unflood never
befriend
the unsure
#

The Great Push

Life has been here
far earlier than our most sepia rustic records
figured out about a dust of its mountains
of puzzling mysteries though lushious lands
unearthed in the name of progress,
in a race for growth;
probably

We have
pushed our ciggs to the little egret's crop
caged the ever-free black-naped orioles
netted more than a full year of feasts
buried benthic communities
a heron cried it was
leashed

We reasoned out
of course, intelligence put us at the apex
it was a complex ignorance webbing
to subdue the earth is to exploit
it was necessary for growth
power tripping since
genesis

If it ain't for survival
nicks and bug won't take part of the filthy blood
seasnakes in cold crevices hide their faces
though venomous, prefer to touch us not
grebes swim swiftly and far away in
fear or most likely in
disgust

Faith in fear;
labeling which are invasive, which are endangered
calls for consideration and fairness for pushing
boundaries, disturbing forbidden waters
compromise is a best-selling brand
managing trade offs

indeed we are

fearsome

As a tower of lightning fires:

Oo nga pala, been here just in a while, all our toils
whether honest,

green or in defiled ways can travel quick as the tangerine
sunsets

lands degraded are blessed to fertility once again

Earth is redesigning; cycles of energy

that must go through somewhere

and we happened to be there

Intervention

A reset button

hand of god said the religious, retribution claimed the
superstitious

pushed away from its circle, but it's calm and meek to
preach

too powerless even to say its name

from ashes we will rise again

to reclaim and those were

the hands of small gods:

unlearned

#

Musa Taal

Dear policy makers,

I have lived in cities almost my whole life. I grew up in Rotterdam and later I moved to Amsterdam for my studies. During my bachelor's in Future Planet Studies, I started to be more and more interested in the topic of land use and forests.

This made me decide to move to Stockholm to do my Masters (Globalization, Environment, and Social Change), because I was attracted to the idea of living in a forest in Sweden.

Throughout my studies, my interest gradually changed from forests and land use to agriculture. I came to realise that through agriculture we, as humans, have the biggest impact on the planet, and that now this impact is quite negative. However, what I also realised during these years of studying is that I had learnt all about global issues related to land use and climate change, but at the same time, I didn't know anything about the natural environment in the Netherlands. The environment where I grew up, around the corner from home. So, I moved back to the Netherlands with the urge of wanting to know my personal environment better. What is that piece of land around the corner? What is the type of tree in my backyard? I had no idea! I have travelled to many places around the world but I didn't even know the wetlands of Amsterdam!

Then I found out about Wijland, a Dutch company that is restoring ecosystems, and I thought, "wow! It's actually possible to create life from a desert and make it green again!". I decided that I wanted to get my hands into the field of ecosystems restoration. However, I knew that if I wanted to work in this area, I could not only learn about it in books, I had to experience it. So I started to work on a farm; to learn from the farmers and to be in the 'landscape'.

That's how I ended up at the farm De Groene Griffioen, near Weesp, and that's how I met Marten who had started MOMA. When

I told him about this urge of mine to learn about my local environment, he said "well, let's do it! and let's take other people along with us on this journey". That is how the campaign Het Grond Verbond began. It was the idea that consumers should have an opportunity to have a voice in the debate about how the agricultural system and the landscape looks. We should be able to have conversations with farmers and local producers, on how to shape the future landscape, and make decisions collectively. We put a third of the profits from MOMA aside and let the collective decide which restoration process to implement in the area.

MOMA
is a dairy producer
that connects
farmers, country
and city dwellers to
work together
towards a healthier
landscape and
better food system.
They process and
deliver local,
organic dairy
products from the
Amsterdam area
directly to the city
and bring
conversations and
ideas back to the
country
www.moma.amsterdam

Our ultimate goal is to restore the landscape, which also means to restore the peatlands. But restoring the land not just in the physical sense, but it is also about restoring our personal connection to it: as consumers, citizens, and creatures. This personal connection starts by knowing our natural environment. I didn't know what peat was until two years ago, when I started working on this farm, and I know that most people in Amsterdam or the Netherlands also don't know much about the land they were born on. That's what we try to get across by bringing small blocks of peat to people in the city and making them hold it into their hands. With this we want to share the message that "hey, this peat is our soil. This is what we live on. We should take care of it!".

The money that we set aside with De Grond Verbond is quite limited and it could have so much more impact if we would get subsidies from the government or from the European Union.

That's why I am writing to you, policy makers, because I would like to ask you to pay more attention to the topic of peatlands and landscape restoration, and to create more subsidies to support restoration practices and initiatives. I believe that governments have the responsibility to listen to science. To that same science, telling us that our land is sinking because of peatlands' drainage, that sea levels keep rising, and that emissions coming from drained peatlands are heavily impacting our climate. This science is also telling us about the power of certain lands, like peatlands, to be natural protective barriers against climate change. Therefore, protecting and restoring the land also means protecting and restoring our future on this planet. It doesn't matter whether you are from the city or from the countryside, whether you grew up in a house next to a beautiful peatland or on the seventh floor of a high concrete building in Den Haag. We are all directly or indirectly connected to our landscape. Our landscape is our past, our present, and our future. We live on the land and we depend on it. Knowing and restoring our land(scape) is like knowing and restoring ourselves.

So once again, make more subsidies for land restoration practices and make long term decisions about the land(scape) based on science. After all, it's a responsibility of governments to protect their citizens and their future. Our peatlands are sinking, and so are we. There's no time to waste. What are you waiting for?

Kind wishes, Myrte Rischen

Dear CAP Policy Maker,

As a young boy I remember the Irish bogs so well. My father converted an old canal barge into a semi liveable house boat and my family spent a number of summers travelling up and down the Grand Canal through the Irish midlands as we watched countless shoals of perch, bream and rudd swim ahead of us and watched as bright blue kingfishers tried to get away from the boat by flying in front of it until they realised that they had to let us pass. The pristine water of the Grand Canal originating in Pollardstown fen near Robertstown had once been used to make Guinness in Dublin. These journeys through the midlands allowed me to see the work of Bord na Mona, the Irish Peat Board at first hand in a way that few others did in those days as there were very few roads through our midland bogs.

We marvelled at the lifting rail bridges over the old canal, I remember the great excitement of finding a bee orchid beside one of them as we waited for a lifting bridge to open. The extensive light rail system operated by Bord na Mona allowed industrially excavated peat to be transported to power stations at far flung places like Lanesborough and Shannonbridge along the river Shannon. I remember seeing an old peat briquette factory by the side of the canal, at Ticknevin I think. What Bord na Mona did as part of a fledgling Irish state in the middle of the twentieth century was quite remarkable. They provided innovative industry in areas which might otherwise have been left behind in dire poverty. They developed machinery to excavate peat on a scale not previously imagined. Initially the peat burning power stations were a significant part of the Irish electricity grid. However, the environmental cost was not understood or considered.

Thousands of years of hard work by our natural peatlands as carbon was taken from the atmosphere and stored in our bogs went up in smoke in decades for some horribly inefficient electricity generation which has ended up being heavily subsidised. Millions of tonnes of carbon sent up into the sky partly to power our washing machines, our ovens, our kettles and our toasters. Innovative perhaps but only if we completely ignore the environmental costs and the mind-blowing unsustainability of such a venture. While the power stations are being closed and other peatland exploitation activities are slowly coming to an end, degraded and drained peatlands in Ireland are still emitting millions of tonnes of Carbon each year and this includes marginal land which has also been drained for farming. In fact, about 20 tonnes of carbon is emitted into the atmosphere every minute from degraded peatlands in Ireland equivalent to the weight of four African bull elephants from what should be the most efficient ecological carbon store on the planet.

What we know now, we didn't know then. Now we have to turn things around and live our lives in a more sustainable way. There is no reason why we can't again be inventive and innovative based on today's knowledge, by rewetting and restoring our peatlands in a way that provides an income to local people. In terms of farmland, wetland farming (paludiculture) is one option. Carbon farming is another. We can end emissions and move back to carbon sequestration as we develop new methods of payment for capturing carbon and providing other ecosystems services as well.

One fifth of Ireland is peatland. It should be seen for what it is, a hugely valuable, oft beautiful resource. It can help us to reach net zero carbon if we simply learn to value it for what it is.

Yours sincerely,

Niall Ó Brocháin

Niall Ó Brocháin

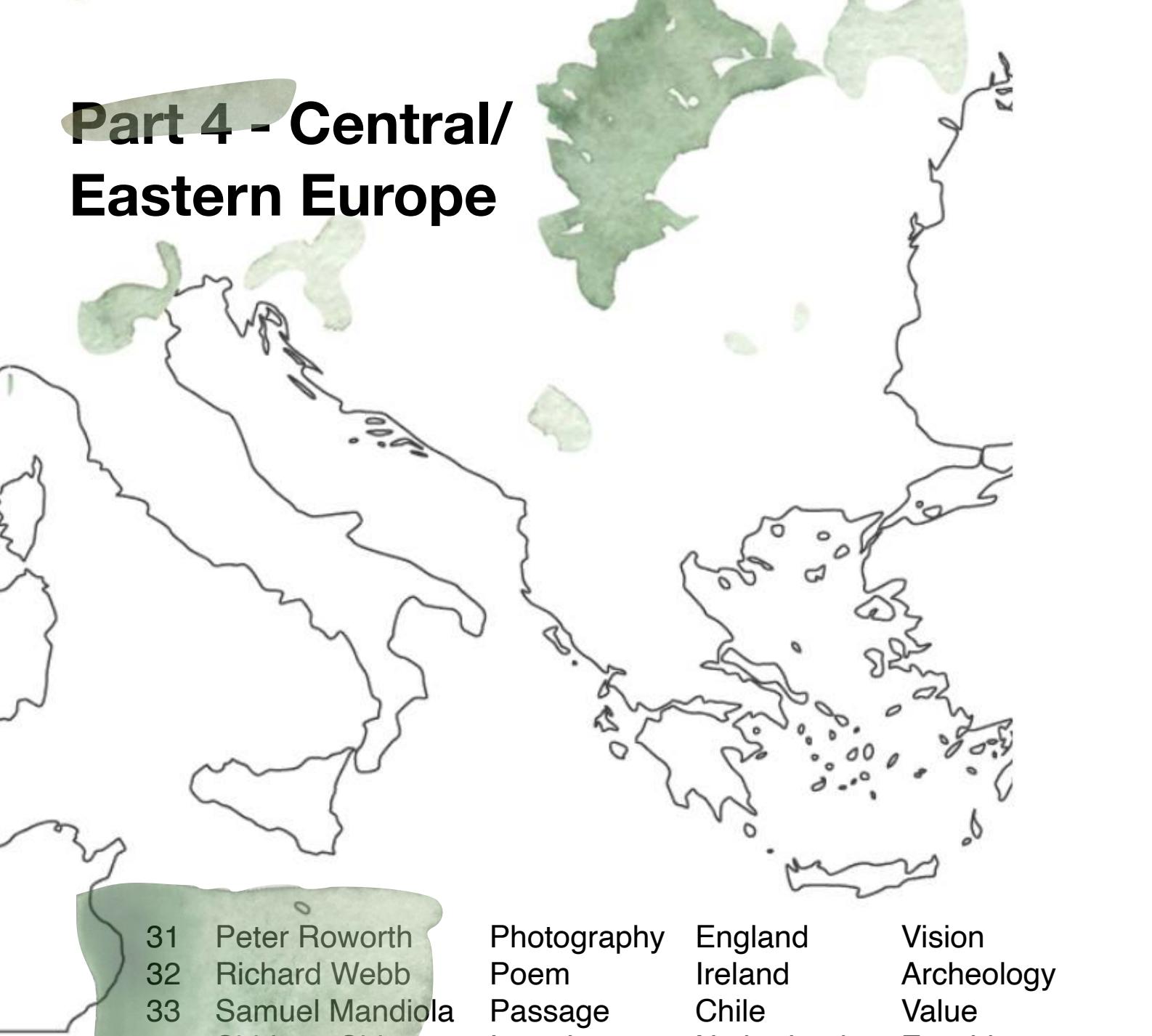
PART FOUR

Central / Eastern Europe

	Germany	Austria	Hungary	Estonia	Poland
total peatland area	1.28 mln ha	unknown (possibly >120,000 ha)	~30,000ha	915,000ha	~1.5mln ha
% of land area	~3.6% (Previously = 5%)	~1.4%	<1%	20-23%	~5%
State	current data is not precise, many peatlands have grass cover	original mire area likely 80% lost, lack of reliable data	highly vulnerable with high risk of fragmentation	~65% destroyed 120,000ha in near natural state	~30% drained, no national reliable data
usage	medieval times - grazing without drainage • Small scale peat cutting extraction • agriculture	agriculture forestry small scale extraction for pharmaceutical use • small scale drainage	more than 90% drained for agriculture horticulture	fuel drained for agriculture	agriculture peat extraction drainage
terms	moor, turf, hochmoor, niedermoor	moos, torf, niedérmoore, übergangs-moore, deckenmoore	tózeg	sog, soomaar, turbasoo, turbamää	mokradlo, torfowisko
notes	mires among first conservation sites int'l policies not commonly implemented on national level	20th C - first conservation activity more action required	long term monitoring since 1980's & restoration by NGOs part of Natura 2000 network very important for protected plants & animals	mid 19th C - conservation projects (LIFE+) 10,000 ha under protection	national & int'l funded conservation ~1531 areas special protected sites ~421 = Natura 2000

conservation exists → what about other sectors though?
(changes to current practices)

Part 4 - Central/ Eastern Europe



31	Peter Roworth	Photography	England	Vision
32	Richard Webb	Poem	Ireland	Archeology
33	Samuel Mandiola	Passage	Chile	Value
34	Shirleen Chin	Interview	Netherlands	Ecocide
35	Tanya Lippmann	Letter	Australia	Personal
36	Tim Holt-Wilson	Article	England	Education
37	Wouter Veening	Letter	Netherlands	Crisis
38	Tim Kisner	Article	Netherlands	Agriculture
39	Wij.land	Article	Netherlands	Vision
40	Veronica Sekules	Letter	UK	Education
41	Willie Towers	Article	Scotland	Personal
42	Deirdre Lane	Letter	Ireland	Landscape
43	Mai Shalaby	Images	UAE	Education
44	Tina Claffey	Photography	Ireland	Ecology
45	Derek Gladwin	Letter	USA	Education

*please note that the submissions in this section are not correlated to this part of Europe
(see section "How to read the Peat Anthology")

"The beauty of peatland plants as seen through the eyes of photographer Peter Roworth"



Frost on sphagnum moss

"For these precious species to survive, they need a healthy peat bog. However, the whole peatland ecosystem is lost if rainwater is not held within it. Because, without water, the function of a peatland to continue producing sphagnum moss is lost. This moss can retain rainwater, reduce flooding and store carbon"



Hare's-tail cottongrass



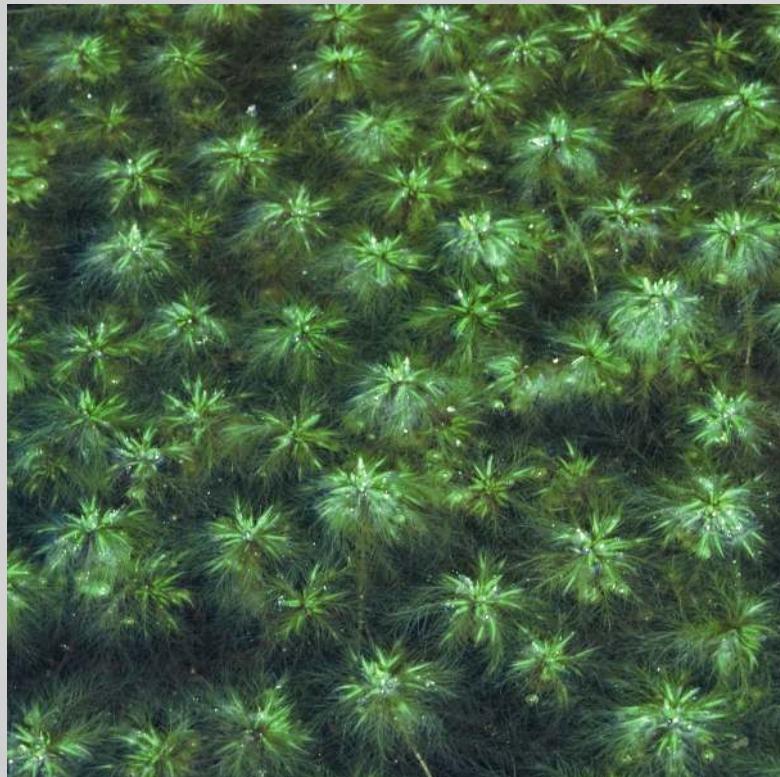
Hare's-tail cottongrass



Cross-leaved heath



Bog Rosemary



Sphagnum moss



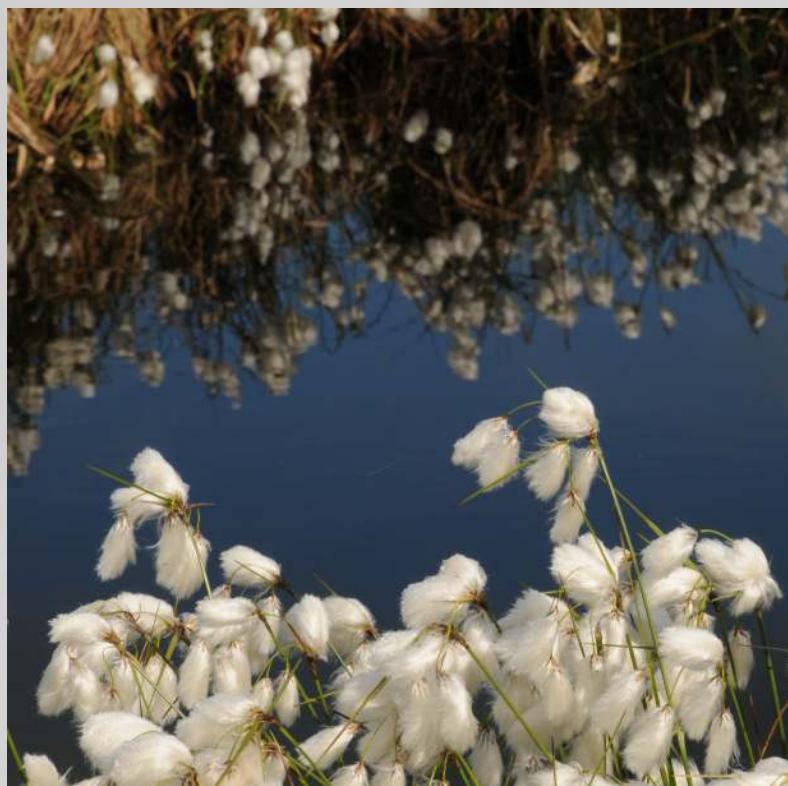
Round-leaved sundew and cranberries



Round-leaved sundew



Common cottongrass



Common cottongrass

I

The surface of the bog is bright
With red sundews and asphodels.
Pillows of moss in red and green
Form hummocks among deep pools.
Such small and delicate plants.
But deep down there are giants.

Mighty oaks and pines and yew
on a drier surface grew
millennia ago. Wetter times
caused moss to grow and swamp
the trees beneath the bog, where
acid waters pickled the logs.

II

Stumps and trunks of ancient trees
ripped from deep peat by turf machines.
All piled high in the craftsman's yard.
In air soft wood turns iron hard.
Working alone in his workshop
He gently handles fragile wood.

Wire brushing away loose outer flakes.
His practiced craftsman's eye finds shapes.
Grain of wood reveals its form.
With dust mask on he sands the oak.
A polish reveals its inky glow.
Bog pine a golden yellow shows.

Flying birds and abstract lines
Transform the beauty of rare wood.
Skilled hands carve faces from past myth
In stumps retrieved from 'neath the peat.
Their black remains and severed roots
Rare remnants of a vanished world.

Richard Webb

6.8.2020

"This poem is about an overlooked aspect of our Irish peat bogs, namely the records of the evidence that they contain of past changes in the climate and the unexpected treasures that can be found in the bogs themselves, particularly the wood of ancient trees preserved in the peat. 'Bog Oak Man' highlights the work of the craftsman in revealing the beauty of this rare wood. The poem was inspired by the work of a master carver on the edge of the Bog of Allen in Co. Kildare, whom I met several years ago.

I have been an environmental consultant for many years and I value the cultural importance of peat bogs in Ireland as well as their biodiversity value and their role in capturing carbon and preventing flooding by controlling water flow."

Richard Webb

Peatlands in Chile

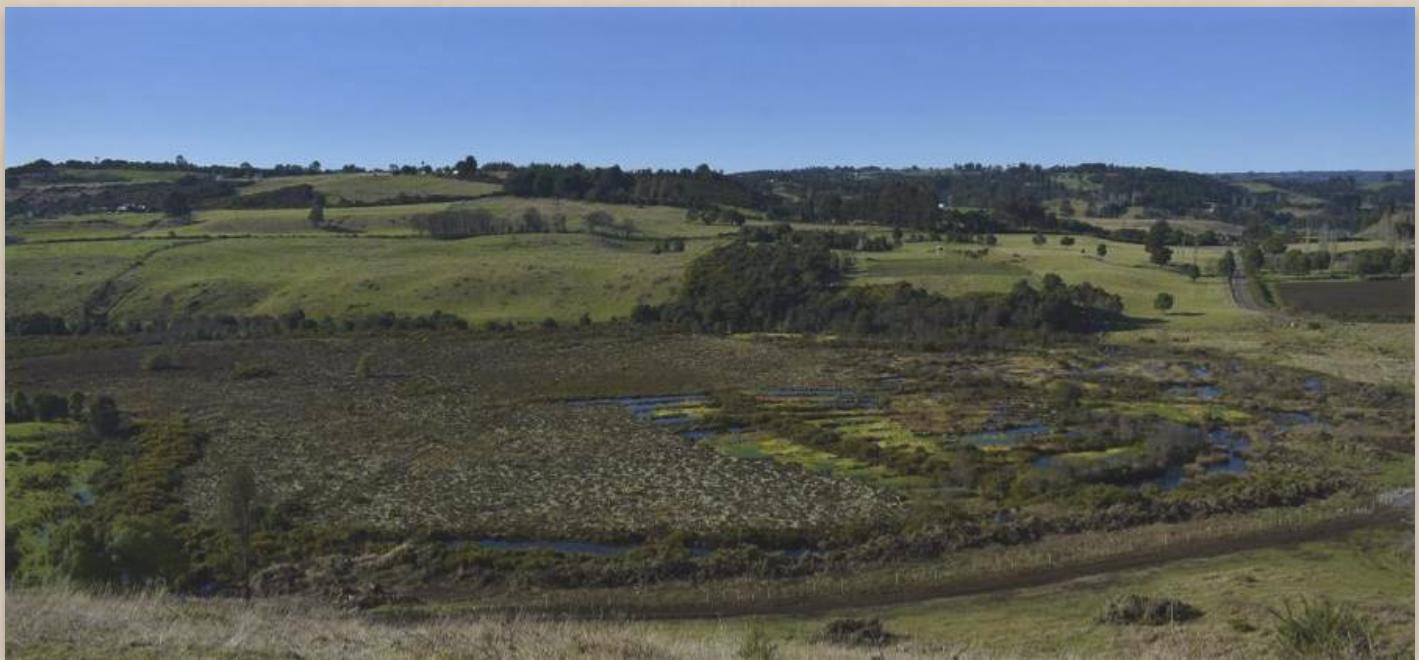
4% of global Peatland are located in South America, mainly located in Chilean and Argentinian Patagonia. These peatlands belong to the Magellanic Tundra type, and are dominated by different species of Sphagnum mosses. Particularly, Chilean Patagonian peatlands cover 3.1 million hectares and contain approximately 4800 million tons of carbon accumulated over 18.000 years. This is 4.7 times more carbon than the aboveground biomass of forests in Chile. Over here, peat is considered a mineral and its exploitation is under the Mining Law.

As said before, Chilean peatlands are dominated by mosses, and there are approximately 16 endemic Sphagnum species, where *Sphagnum magellanicum* is one of the most abundant, and also the most exploited. Actually, Chile is one of the main exporters of this moss, with more than half of the global market, selling it mainly to Taiwan, China and South Korea. And still, there is no regulation being applied to its extraction. But even worse, locals do not know peatlands at all, and do not value wetlands nor Sphagnum mosses at all. They are just "worthless swamps", except for the Sphagnum moss which is extracted in an unsustainable manner in order to get some pennies, but with a huge cost for the environment and the drinking water in many places.

After this short story of peatlands in Chile, I must say that fortunately, most of Patagonian peatlands are still pristine and intact, not because they are valued or protected, but because they are still inaccessible. Is true, some changes in laws are being made, but not in the pace they have to be done, because the destruction of these ecosystems, can be more catastrophic and expensive than we can imagine. And that is something that can be seen in northern Europe and Canada, where such big areas of peatlands have already been destroyed.

Finally, I would like to say, that there are still a lot of pristine peatlands in the world, but they are threatened, all the time, because there are still buyers in the developed world which are demanding this precious natural resource, and therefore it is seen as gold for some eyes, that won't hesitate to go out there and dig until the very last gold nugget.

Europe is looked upon by many countries around the world as an example. It would be nice if, through their decision in the upcoming CAP, the European Union would show the rest of the world that they value peatlands.



Quilquico Peatland:

Glacial peatland, thousands of years old, where extraction took place a couple of years ago, now Sphagnum mosses are filling up once again (light green filling up the flooded ponds at the right). Chiloé Island, Patagonia, Chile

Shirleen Chin

Could you give a short introduction to yourself and the organization Stop Ecocide?

My name is Shirleen and I'm the Head of Advocacy & Strategic Partnerships for Stop Ecocide Foundation, which runs the Stop Ecocide: Change the Law campaign. The late Polly Higgins was the one who started this campaign to make ecocide a fifth atrocity crime at the International Criminal Court (ICC). I started collaborating with Polly on the campaign in 2012, helping her with advancing the discourse on ecocide and giving her access to the annual Assembly of States Parties of the ICC where we would have yearly side events on ecocide. Since Polly passed in April 2019, I've formalized my position with the Foundation and my work revolves around advocacy and strategic planning for our legal and diplomatic work.

What has your experience working within legal and governmental systems with Stop Ecocide been like? Why do you feel that this is a valuable path towards radical change in the protection and preservation of the environment?

It's been rewarding and at times challenging. However, I'm confident that slow and easy does it, albeit with a great perception for practical haste since we all know the urgency of the matter. Resorting to international criminal law is a great way to protect our common home and common heritage once and for all. It will fill the gaps found in various multilateral environmental agreements and advance the recognition of protecting the environment as a peremptory norm - a norm from which no derogation is allowed. It is a signal that the international community will no longer tolerate assaults on/harm to the environment.

A lot of Stop Ecocide's work has been with the International Criminal Court. Do you see potential in legal protections at the EU Parliamentary level to prevent ecological destruction?

Our mission is to make ecocide a crime at the international level. I certainly see value in the EU Parliament's participation in such a campaign at the EU level. This has been done before in 2012 where a European Citizens' Initiative was launched to urge the European Commission to adopt legislation to prohibit, prevent and pre-empt Ecocide. However, the campaign we ran did not manage to collect the one million signatures required for the EC to consider such a proposal. The timing in 2012 may not have been ideal but fast forward to 2020, I believe the appetite might be there.

At the EU level, there is a legislative basis to ensure adequate protection of our ecosystems, including peatlands. See for instance the 1992 Habitats Directive where the EU, aiming to promote the maintenance of biodiversity, calls for their preservation, protection and improvement in recognition of continued deterioration of natural habitats and of wild flora and fauna. The Habitats Directive is also supplemented by the 2008 Environmental Crime Directive where effective, proportionate and dissuasive criminal penalties are called for - at Member States' discretion.

Do you think this could be an effective method for specific landscapes, such as peatlands?

In an ideal world, we do not need laws to dictate how we should value nature but they can definitely play a part in establishing a minimum standard. In a democratic society like the EU, the people are entitled to use their voices to get heard on important matters like the protection of ecosystems. In reality, societal values can differ but the protection of our environment is a no-brainer. Safeguarding the environment is crucial in an economy that is dependent on it.

What message would you like to pass along to the MEPs who will eventually read your contribution?

I wish every MEP would leave behind an environmental legacy. It is long-termism at its best. It is truly doing the people they represent a favour in leaving the environment either intact or better than they found it, not worse. Using the "economic development" excuse should no longer be valid in the 21st century if sustainability is to be achieved. Globalisation made way for economic development but it went out of hand; the global South is no better today and the impact on our environment has only been negative. Economic activities that value the environment and society should be called "economic enhancement" instead - give a man a potato and you feed him for a day; teach him how to grow potatoes and you feed him for a lifetime (quote adjusted for our vegan friends from "give a man a fish and you feed him for a day; teach him how to fish and you feed him for a lifetime"). Also, "we do not inherit the earth from our ancestors; we borrow it from our children". In short, all MEPs should champion for a legislative change locally and regionally to introduce a crime of ecocide.

Dear Peat,

Can I just say that it was so great to meet you back in Tassy in 2013?! Who would have known that me accidentally trampling on the mossy head of a 1cm tall, 10 year old Sphagnum plant was the moment that began our life-long relationship?! I've often wondered how you felt that day. I wonder how often you get trampled upon and the trampler doesn't even notice?

I would like to tell you more often how much I truly appreciate you being in the world. I really appreciate that you find a place and a way to store 644 gigatons of carbon (Leifeld & Menichetti, 2018)!!! This is a lot of carbon, Peat. 1 gigatonne is 1 billion metric tons and a metric ton is exactly 1000 kilograms! That's 644 billion tons and you stash it away without anyone even noticing! I know that I don't say it enough so I'm saying it now, it really means a lot to me that you've kept this carbon out of the atmosphere. If we were to release all of this into the atmosphere, my back of envelope calculation says this would result in at least ten degrees of warming which is a lot more than what the climate models currently expect in the worst case scenario (6.4 degrees of warming under future IPCC scenario RCP8.5). I can't even imagine what my life would look like and actually, I really really really don't want to.

I remember when we met on K'gari (Fraser Island) back in 2018. I arrived by boat with Berni and Martin. And you were there too! You were there because the pooled rainwater formed indentations on the island's surface where the dead plant matter in these anoxic pools did not properly decompose. This dead plant matter amalgamated and compacted at the bottom of what became lakes. Now people come from all over the world to see these brilliant uniquely coloured lakes. You did such a beautiful job colouring these lakes! This is actually the most beautiful landscape that I have ever seen. And it's all because of you, Peat!!!

You really are an underground star! I've seen you on so many Fraser Island postcards but no one even knows your name. Do you ever get sick of people posing and taking selfies with you without your permission? Well, I really want to take the time to say, thank you. Thank you for a magical holiday, a beautiful landscape, storing billions of tons of carbon, and helping to maintain a safe temperature on this planet.

Speaking of people doing things without your permission... I wonder if it's not too painful to ask about the forced removal of so many peatlands during the last thousand years? How are you feeling about that now? I know that in many areas of the North Western European continent, peatlands were extracted for use as fuel. In the Netherlands, they removed 19.8km³ of you, Peat(Erkens, van der Meulen, & Middelkoop, 2016)! This fuel availability enabled an expanding population. Do you know that in the Netherlands people designed a special shoe so that could walk around easily with you? It's called a 'klomp' or a clog. Personally, I love their chuckiness but I wonder if the wood cuts into the bones of the foot. I've never tried them. I wonder why they aren't called a peat-shoe. In my head, I call them veen-schoenen.

How did you feel when they began to dig ditches to drain you of water? Did it feel good to dry out a bit? Or you were you already happy the way that you were, wading through the freshwater? What about when the ditches were full and people began to build windmills to transfer the water to the sea? Did you appreciate having new structures in your life? How did you feel about the cows arriving? You are so soft, Peat. You are so soft that it's actually quite difficult to drive over your surface with heavy machinery. Are the cows kind to you? Do you enjoy hanging out with them? Is it fun? I'm lactose intolerant so I don't eat cheese but it is so popular here in the Netherlands; it's become an unofficial national icon. And it's all because of you, Peat!!

You are so modest, so mysterious, so underground, that many people - even here in the Netherlands - don't know that you exist!! Though, I do see that they go out to visit you sometimes. Often by bike, and often when the sun is out. Do you enjoy hosting these visitors?

Sometimes people laugh at me when I say you are the focus of my PhD project. Maybe they think you are boring and weird because you only exist underground and in such a compacted format. I don't care what they say! I know that you provide a home for billions and trillions of microscopic organisms (Iversen et al., 2015; Krumholz, Hollenback, Roskes, & Ringelberg, 1995; Metje & Frenzel, 2007; Yvon-Durocher et al., 2014). Wow! What a service you do! What a household to maintain! I grew up with six sisters. I know that in a couple of square centimetres of your household, there are more microbes than there are people in my family, at the university, in this country, actually there are more microbes in a couple of square centimetres of your household than there are humans on this planet! Wow, Peat, you really do so much.

Microbial organisms are incredibly important for regulating the dominant greenhouse gases, carbon dioxide and methane (Ciais et al., 2013; Conrad, 1996; Kai, Tyler, Randerson, & Blake, 2011). Without microbial organisms, the greenhouse gas concentration of the atmosphere would be very different and our soils would be depleted of nutrients and incapable of growing foods for humans. Thank you, Peat! Thank you for a magical holiday, a beautiful landscape, storing billions of tons of carbon, helping to maintain a safe temperature on this planet, bringing wealth and prosperity to the Netherlands, providing a home to trillions of microscopic organisms, and continuing to assist maintaining a safe greenhouse gas balance in the Earth's atmosphere. Peat, thank you!

Maybe people don't approve of the relationship because of the age gap. I don't care what they say! I look for you everywhere I go: I look for you out the window of the Amsterdam metro, hiking through the Bogong High Plains, in the valleys of the Alps, in the Finnish forests, the restored areas of Overijssel, or the untouched lakes of K'gari, or along the slopes of Cradle Mountain.

Sometimes when I find you near the surface you are only twice my age. However, the deeper we get, the older you become. Sometimes you are three times my age or ten times my age. Sometimes 1000 times my age! Apparently in some places, you're even 30,000 times my age. I guess 99, 969 years is a large age gap.... but I don't care what anyone says. I love and appreciate all the things you do for this world. I love all of the things that you do for me. I love you, Peat. Peat, I love you. I love you, Peat! I LOVE you! I love YOU!! I LOVE YOU!

Tanya Juliette Rebecca Lippmann
PhD candidate
Vrije Universiteit Amsterdam

Special thanks to Virginia Virvaldi and all those contributing to the RE-PEAT Collective.

References

- Ciais, P., Sabine, C., Bala, G., Bopp, L., Brovkin, V., Canadell, J., ... Thornton, P. (2013). Carbon and Other Biogeochemical cycles Supplementary Material. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 465–570. <https://doi.org/10.1017/CBO9781107415324.015>
- Conrad, R. (1996). Soil microorganisms as controllers of atmospheric trace gases (H₂, CO, CH₄, OCS, N₂O, and NO). *Microbiological Reviews*, 60(4), 609–640. <https://doi.org/10.1128/mmbr.60.4.609-640.1996>
- Erkens, G., van der Meulen, M. J., & Middelkoop, H. (2016). Double trouble: subsidence and CO₂ respiration due to 1,000 years of Dutch coastal peatlands cultivation. *Hydrogeology Journal*, 24(3), 551–568. <https://doi.org/10.1007/s10040-016-1380-4>
- Iversen, C. M., Sloan, V. L., Sullivan, P. F., Euskirchen, E. S., McGuire, A. D., Norby, R. J., ... Wullschleger, S. D. (2015). The unseen iceberg: Plant roots in arctic tundra. *New Phytologist*, 205(1), 34–58. <https://doi.org/10.1111/nph.13003>
- Kai, F. M., Tyler, S. C., Randerson, J. T., & Blake, D. R. (2011). Reduced methane growth rate explained by decreased Northern Hemisphere microbial sources. *Nature*, 476(7359), 194–197. <https://doi.org/10.1038/nature10259>
- Krumholz, L. R., Hollenback, J. L., Roskes, S. J., & Ringelberg, D. B. (1995). Methanogenesis and methanotrophy within a Sphagnum peatland. *FEMS Microbiology Ecology*, 18(3), 215–224. [https://doi.org/10.1016/0168-6496\(95\)00061-4](https://doi.org/10.1016/0168-6496(95)00061-4)
- Leifeld, J., & Menichetti, L. (2018). The underappreciated potential of peatlands in global climate change mitigation strategies /704/47/4113 /704/106/47 article. *Nature Communications*, 9(1). <https://doi.org/10.1038/s41467-018-03406-6>
- Metje, M., & Frenzel, P. (2007). Methanogenesis and methanogenic pathways in a peat from subarctic permafrost. *Environmental Microbiology*, 9(4), 954–964. <https://doi.org/10.1111/j.1462-2920.2006.01217.x>
- Yvon-Durocher, G., Allen, A. P., Bastviken, D., Conrad, R., Gudasz, C., St-Pierre, A., ... del Giorgio, P. a. (2014). Methane fluxes show consistent temperature dependence across microbial to ecosystem scales. *Nature*, 507(7493), 488–491. <https://doi.org/10.1038/nature13164>

PALAEOPEAT

Tim Holt-Wilson

I picked up a speed-camera ticket on my way to Hatfield Moors - though I did not discover that until I got home. The place of my downfall was a hamlet called Sandtoft in the levels of North Lincolnshire. The road was long and straight, crossing a dreary, flat landscape which was once the bed of a glacial meltwater lake, some 15,000 years ago. In later millennia it was a wetland soused by the River Don and had expanses of raised bog. This watery situation persisted until the 17th century when drainage work began to reclaim much of the land for farming. Some primal wilderness did survive into the 20th century on the Hatfield and Thorne Moors, including areas of raised bog.



Hatfield Moors
a landscape recovering from industrial peat extraction.

Raised bogs are places where sphagnum moss and other plants have lived and died to produce a mass of water-retentive peat. It may form a giant dome raised several metres above the surrounding countryside. However these features are vulnerable: once you start cutting into them in a big way their waters will gradually drain away and they start subsiding like a pricked balloon. The layers of wet peat dry out and then oxidise, so speeding up the collapse of the bog.

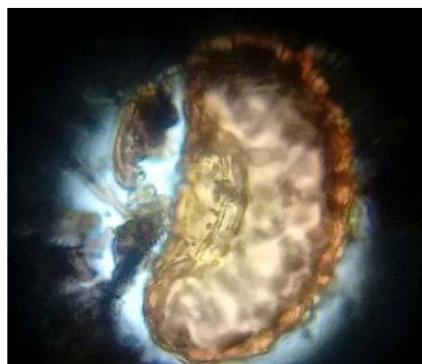
This is what happened on the Moors in the later 20th century, when they were dug up by a peat extraction company. Many thousands of tons of peat were removed for horticultural use, but at the same time the special peatland wildlife became threatened. Today the extraction has ceased and efforts are being made to restore the land as part of the Humberhead Peatlands National Nature Reserve - <https://thmcf.org/>.

What brought me to Hatfield Moors? An introductory training course on fossil pollen run by Project Wildscape - <https://projectwilscape.wordpress.com/> - which aims to investigate the environmental history of the Moors. The peat beds are a fossilised archive of thousands of years of rotting vegetation including microscopic pollen. The aim was to learn to identify the various types and then present the results. Preparing fossil pollen is not an easy process. Advanced laboratory facilities are required along with dangerous chemicals. Luckily all the prep work had been done in advance by Wildscape staff using samples extracted by hand-coring of peat at a site called Messic Mere, near Epworth. My fellow students and I were able to use high-powered microscopes set up at a nearby Natural England depot. A magnification of 400x was needed to see the grains, many of which were distorted and so a bit of a challenge to identify.

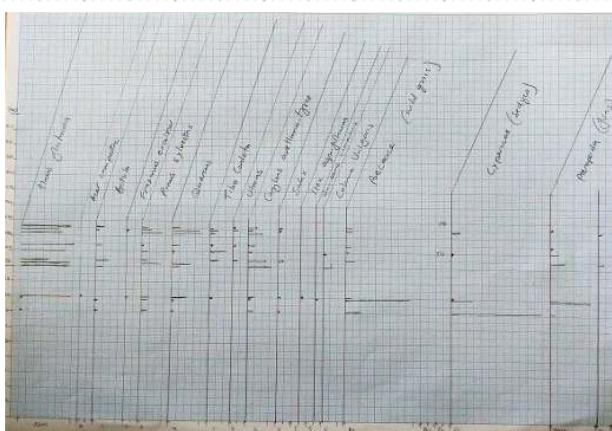


Images courtesy
Dr Suzi Richer.

My first identified grain was alder (*Alnus glutinosa*), followed by pine (*Pinus sylvestris*) and oak (*Quercus sp.*) - see pictures. They were components of the high forest covering drier parts of the Moors in mid-Holocene times. Once the pollen had been counted - a very laborious task! - and the various percentages of plant types calculated they could be represented in a pollen diagram.



Pollen diagrams are read from the bottom upwards, charting the percentages of plant taxa present at successive levels in the peat bog. They can be linked with information from sediment samples to present a vertical profile of environmental changes over time. We can read from them, for example, a transition from a lake environment to a reed swamp, or a bog to a carr woodland. This can be compared with what we know of human settlement or data from other sites in the local area or further afield.



Pollen diagram for specimens taken from peat at 7.7 to 8.3 m depth from the Messic Mere site.

Peat contains a fascinating archive of information - provided it is kept wet. If it is allowed to dry out, air can reach the plant remains and bacteria and fungi soon set to work decomposing them, destroying the uppermost layers of peat from the top downwards. This process is known as oxidation and leads to wastage of the peat, as the layers decay and shrink, and to release of carbon stored in the form of carbon dioxide gas. The land surface is lowered, and a precious archive of information is lost, and the atmosphere is further flooded with carbon dioxide.

The decay of the peat in Thorne and Hatfield Moors is now being arrested, thanks to conservation efforts in the Humberhead Peatlands National Nature Reserve. We now know that over 4,000 years' worth of peat is preserved here and that the Moors are home to a richly diverse flora and fauna. In fact Thorne Moors is the richest peatland site for invertebrates in Britain. I like to think that my pollen diagram for 60 centimetres of peat from old Messic Mere has contributed some useful information to our understanding of the history of this important nature conservation site.

Tim Holt-Wilson



Using a Russian corer to recover a demo sample of peat. The peat rests on sandy layers at about 1.5 m down - either the proglacial lake beds or a river channel.

Dear Members of European Parliament,

In the defense of the planet against the climate crisis, the loss of biodiversity and the declining availability of clean water, the preservation of wetlands plays a vital role.

When it comes to the climate, they sequester and store CO2 from the atmosphere and thus contribute directly to global cooling.

All efforts to reduce emissions TO the atmosphere, essential as they are, will not solve the climate problem which is determined by the concentration of CO2 and other greenhouse gases IN the atmosphere.

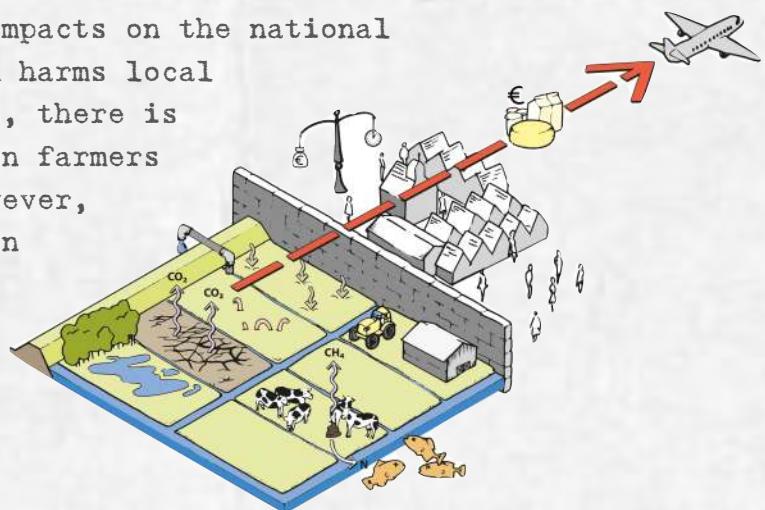
As CO2 stays for hundreds of years in the atmosphere and will thus perpetuate the climate crisis, EVEN IF ALL EMISSIONS WOULD BE ZERO TODAY, it is of the greatest importance to lower the concentration.

Again, that is what wetlands do and without them there is no chance we can win the fight against the life-threatening impacts of climate change.

Peatlands are one of the categories of wetlands which are of the essence in the process of global cooling and here the EU as the largest trading bloc in the world has a major responsibility.

Wouter Veening
Chairman / President
Institute for Environmental Security
HQ The Hague
Netherlands
www.envirosecurity.org

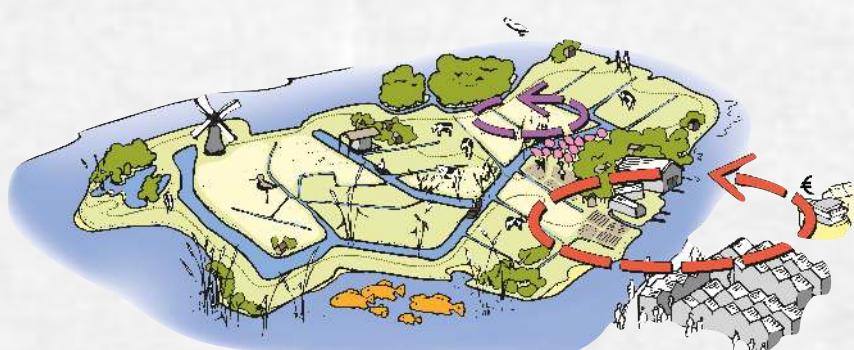
Currently, the majority of the agricultural production in Dutch peat areas is very linear, using monoculture systems that mostly produce dairy. In order to keep this system in place, the soil must be drained, causing desiccation of the soil, and thus soil subsidence. This has major impacts on the national and global CO₂ emissions and harms local ecosystems. In these systems, there is hardly any connection between farmers and the people. Farmers, however, find themselves trapped in an agricultural system that continues to scale up and is very dependent on global food prices.



Therefore, it is time to instead move towards circular production systems, creating resilient ecosystems that can contribute to the climate goals. This can be achieved by moving towards regenerative production methods and diversifying what farms produce. Restoring the ecosystem, a shift from monoculture production to a combination of dairy production, funding for nature conservation, recreation, tours, consultancy, workshops, etc. becomes possible. This will not only benefit the ecosystem and reduce emissions, but can also allow for more public involvement on the farm, restoring people's connection to farms and their food. The diversification of farming incomes will make farms more resilient and less dependent on global food prices and upscaling.

Tim Kisner

H+N+S Landscape
Architects



wij.land

The peat meadow landscape is one of the most valuable and characteristic landscapes of The Netherlands. The open polder landscape with the narrow lots is typical of peat meadow areas. Cultural-historical elements and structures, like windmills, have been well preserved. Dairy cattle have been kept in the polder for centuries. However, the intensification of farming activities, systemic drainage and dewatering have put the landscape under threat. Wij.land wants to turn this around, creating a landscape that is becoming healthier each day. With the knowledge and ecological quality of before, but with the techniques of the future. With balanced soils; meadows and water bodies full of life; extensive grazing; new types of land-use; and happy farmers.

*The mission of our time was successful.
We are not hungry anymore.
We load our shopping carts for little money,
but secretly we pay a different price.
We no longer feel a connection
with the landscape that surrounds us
...
We peered across the country
A half-heavy Van Nelle dangled
from the bird connoisseur's lower lip.
We saw lapwings,
we saw a hare on high stiff legs
challenging a buzzard
that had probably landed too close to it young.
We discovered everything and I was thrilled
I didn't watch Planet Earth on television,
I watched the countryside with someone
who sighed „machtich moai“ all the time.
We were first rank in a Dutch agricultural
cultural landscape
that vibrated with life.*

*Written by Jantien de Boer (2017)
In the book „landschapspijn“
translated Wij.land*



Protecting Peat Space

Peat has always been known for its wonderful and versatile properties. During the middle ages in the Fenlands of Lincolnshire it was cut for fuel. Not just everyday fuel, as it was prized and expensive. It was notoriously exploited and its price was regulated mainly by the Fenland monasteries. For example, in the 15th century the Abbot of Crowland issued strict regulations for the cutting, carting and selling of peat. One of its major uses was for firing pottery kilns in a thriving local industry. That was because it could build up and maintain a steady and reliable heat. Apart from fuel, the rich peaty Fenlands supported a combination of marshland, grazing, and pastoral farming and abundant watery harvests of fish, fowl, reeds, rushes and sedge.

Conversely, peat's ability to absorb water was often troublesome. So from an early date there were already diversions, dykes and cut off channels for the rivers, to enable the development of arable farming. In spite of drainage, the river Witham was constantly flooding, such that in the 1320s there was widespread local famine. Crops could not survive the inundation and water-logging and agricultural land was lost. Bigger changes began in the mid-17th century and continued into the 19th Century. In the face of much local opposition and protest, groups of investors were given incentives to clear and drain the land. So, that is when Dutch engineer Cornelius Vermuyden was employed to devise a series of reservoirs, sluices, channels, dykes and wind-pumps, to drain the land systematically. The value of drained peat as a fertile agricultural resource was increasingly monetised. He was followed two centuries later by British engineer John Rennie and his successor's networks of more cut-off channels, locks, dams, embankments and pumping stations, 286 of them over 1500 square miles. Now, the role of the Environment Agency and the Internal Drainage Board is to maintain and improve on all of this historic legacy to continue to protect agricultural land and homes.

However, this land needs much more than maintenance. It needs an entire change of attitude, away from commodification and towards regeneration. A capitalist economy does not suit this fragile terrain. While the drained Fenland peat has made a fertile and profitable arable growing medium, we now know so much more about the real costs to the environment. Views are beginning to change and need to change much more. Drained peat is easily washed or blown away, especially as the Fenland fields have almost no boundary hedges. The consequent danger of soil run-off and increasing soil impoverishment and desertification has been known about and criticised at least since the 1970s. The leaching of oil and agrochemicals into the extensive network of water channels has had a devastating effect on aquatic life, and on wildlife in general. As we head towards increasing effects of climate-change, this is only now becoming widely recognised as a huge problem. But one of the most enormous problems peat causes in its dry state, is that it is a major source of greenhouse gas. As a result of the extent of local arable farming on drained peat, the Borough Council of King's Lynn and West Norfolk has some of the highest carbon emissions in the country

We now know that properly managed, this can be reversed. Wet peat can be a valuable asset as a carbon store, better than forests. Even as the Fenlands produce 33% of Britain's food, many farmers now recognise that practices need to change. Agriculture has to adapt in order that peat-lands can be regenerated to something like their natural state, absorbing water once again. Some farmers are now even saying that they are no longer prepared to sacrifice the environment to profit. Creative thinking, innovation and technology can help. Research programmes and field trials under the auspices of long-term projects like the Great Fen, are under way to find solutions. Communities, like the Ouse Washes Landscape Partnership are actively looking for ways in which they can work in sympathy with the land, rather than continuing to fight its natural properties. The EU has to promote this attitude and support these innovations, and find more

Protecting Green Space is widely recognised as an environmental goal. Protecting Peat Space has to go alongside that

Dr Veronica Sekules

GroundWork Gallery - the gallery for art + environment
King's Lynn, Norfolk, UK



Let me introduce myself, I'm Pete from the North of Scotland and well named as I am peat, an organic soil. I am about 55% organic carbon in my natural state, and about 90% water.

Nobody thought much of me for many decades, centuries or even millennia although I was a useful and sustainable fuel source for the local population. I was of little use for agriculture.

Then around the middle of the 20th century, there was an incentive scheme to drain me so I would be more productive for agriculture. Many pretty patterns of drains appeared on my surface and some people even tried to grow grass on me. Both were to little avail and I continued to be the butt of jokes and derision of many farmers and crofters.

Around this time, I was also considered a very useful fuel source and I was literally taken away and burnt to produce electricity. However I was grateful that I live a long way from the centres of population, and as I am very expensive to dry and transport, this didn't really take off, certainly not to the extent of my relatives further south.

Shortly after this, a number of tree species from overseas, notably North America, started to appear in the UK and it was thought that they didn't bother that I was wet, acidic and with a low level of nutrients. I honestly thought planting trees on me was quite a good idea at the time, it would create jobs for the local population and stop me being the butt of so many jokes. A lot of it was funded through a craftily assembled tax regime and I even had famous singers and snooker players throwing money at me. I was flat, stone free and a plough could go through me easily. The sky was the limit!

Alas! Being planted with trees created a number of problems for Internationally important bird species and large areas of habitat were replaced by large areas of non-native trees. After much debate and squabbling, tree planting was banned over large areas of me, especially if I was over a metre deep and was covered by large areas of Sphagnum. This pleased a large number of people, interestingly most of whom lived at some distance from where I live. I found this odd.

But it was also starting to emerge that our climate is changing by too much of certain gases being pumped into our atmosphere. And some of it was coming from me! All these trees and drainage had dried me out and I was spewing out carbon dioxide, something had to be done, I had to start getting that carbon back in. It was also becoming apparent that the trees were not growing very well, very misshapen and slow growing. So blow me down, folk came along, took the trees away and started to block all the drains. I am now recovering but it will take some time for me to get fully back to strength.

So, you will see I have had quite an interesting life. Wind turbines are starting to appear but this is probably on the whole a good thing, they are appearing mostly on areas where I have already been damaged. Renewable is a good word, in the same way as being renewed in order to get my carbon back.

It is now being suggested that I become a UNESCO World Heritage Site, so that should mean I should be immune from all these activities that I describe above. I just want to be a peat bog again, holding my carbon, providing a valuable habitat, a record of past climates and vegetation and providing an overwhelming sense of space and peace. I think at this time people need a lot more of these.

by Willie Towers, Soil Scientist

Dear MEPs

The Bog of Allen is an immense raised bog covering an area nearly 1000 square kilometres in size I am privileged to be minding and regenerating a parcel of this bog where once seat of the hunter-warrior Fionn mac Cumhaill and the Fianna. Fionn rests in wait of Ireland's call. He lies in the bog of Allen where a Spanish resin haired ritually slaughter, perhaps Kings, who now residents in the National museum, once cavorted. A tortured bog body fell twisted in your blanket for centuries. His resin perfect hair now red, his skin tannin brown match the colour of drains blood leaching from your glacial sponge to our rivers and taking with it the life of the bog.

We watch fires scorch swathes of the globe killing habitats and their guests and polluting our lungs as the lungs of the planet wither and burn, as too do the wetlands, our bogs of Ireland.

I walk to my bog woodland and guide friends to discover the ice age timeline that gifted us the bog and life to all who dwell in her. I mourn for the corn crake that fled our bog, and cries of curlews. I rejoice at the cuckoos return, swell with delight when my father reports swallows sightings. Their roost await them but for how long?

As I pass bog elderflowers am thankful for my Champagne de Fee source. The purple elderberries full of flue stopping remedies. A red cap belches fumes in the air and is cocooned by a traffic cone found in a bog drain. 3 cuckoos visit each summer hunting new friends as wood cocks reply, same but different. Mairead McGuiness walked our bog and climbed the Hill that once whoosed with glacial water to form Mouds bog and surveyed the land special, not that special according to NPWL, area of conservation. She said she would revert and never did. They said don't worry we will flood the bogs, yet produce no plans, despite the asks. The concerns that the life that plays and preys on the bog, the very sundews awaiting bait too will drown and it too dies. The hares, the pinemartin, the froglets will survive if let. It is home to two bounties of bog butter to the delight of global TV audiences and well predating today's use by dates norm. Garlic butter too was a thing, back then, thousands of years ago.

The bog where locals still call the dump once soiled by local factories and chucked military junk now flourishes with homes to the sundew and curlew, Venus fly traps, precious surprises like the red puffing mushrooms, 11 o'Clock ladies and most of my family.

Aged 11 my Father went in search of a field to feed his growing family and it came with the Bog of Allen attached that and stewardship of that land. Our family now live in and near that bog, savour the air, the freedom, the turf, a vast space to celebrate our Bogapalooza birthdays parties, the odd cry of the curlew, the arrival of the swallows, the call of the cuckoos, the joys the bog unearths. Boogalpolusa met with musicians and artists dancing on bouncy earth savoring its mid summer abundance who knew what lay beneath? Its past lies below a future ahead of us.

A retrofitting pilot for state workers to stop burning the least efficient fossil fuels dug by them to heat their homes happened can we implement more of these? If our homes are hot then no need to cut our own turf.

Might the implementation of the steps to save our bogs and keep peat in the ground together with buried legends and tones of Carbon be accelerated?

Might collaborations with grass roots meet with the stupidity of grass top state logic of cut, slash and burn, and work soonest to save our carbon sinks?

An Irish MEP once walked the bog with us and swore she would return with solutions. She did not. Will you?

As a custodian of bog in the land Of Fionn and the Fianna I hope so
Le meas

Deirdre Lane

@ShamrockSpring

Deirdre Lane

Founder of ShamrockSpring

Forest soil versus desert soil

Forest soil profile



Forest soil profile

- The soil profile in image 1 is an example of how forest soil would look like.
- There are 5 distinct horizons with healthy topsoil formed from the organic matter deposited in the O horizon breaking down to form the humus layer or A horizon.
- This is significantly different from the image on the right.

Desert soil profile



Desert soil profile

- The soil profile in image 2 is an example of how desert soil looks like.
- This soil profile was extracted from the ICBA campus after a decade of rehabilitating the soil by adding various organic amendments to it.
- There appears to be 2 layers in this profile, however, they are both from the same horizon C.
- The top layer is an artificial layer darkened due to the enrichment of the soil.

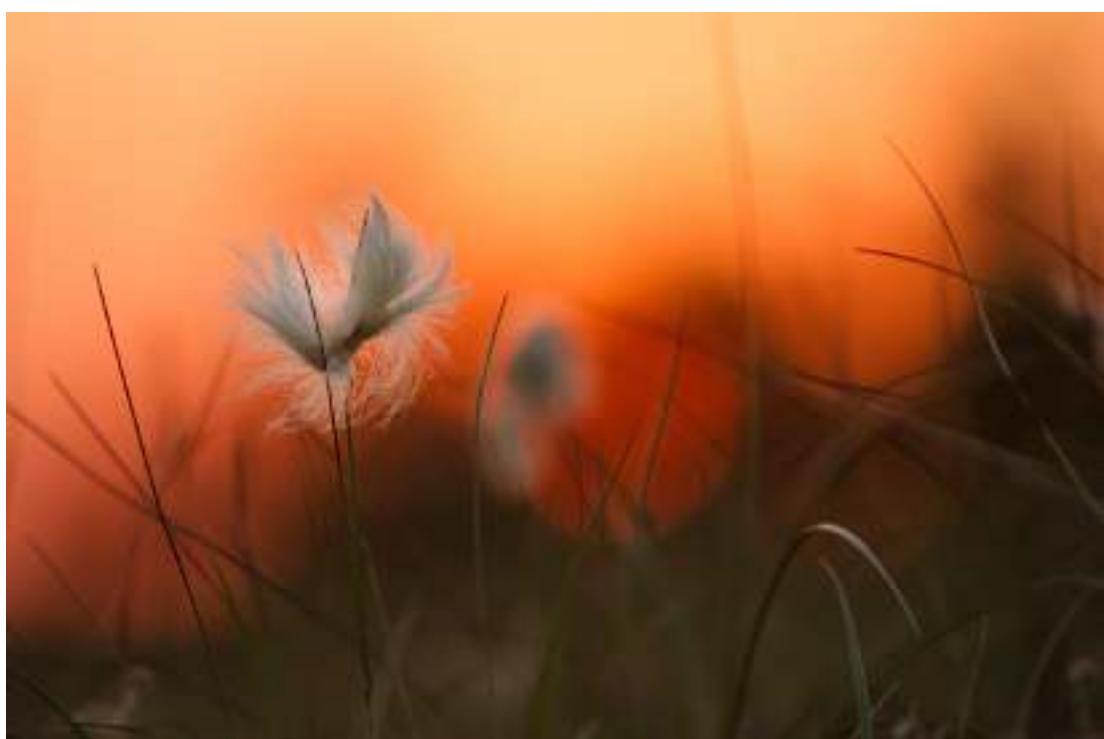
Tina Claffey



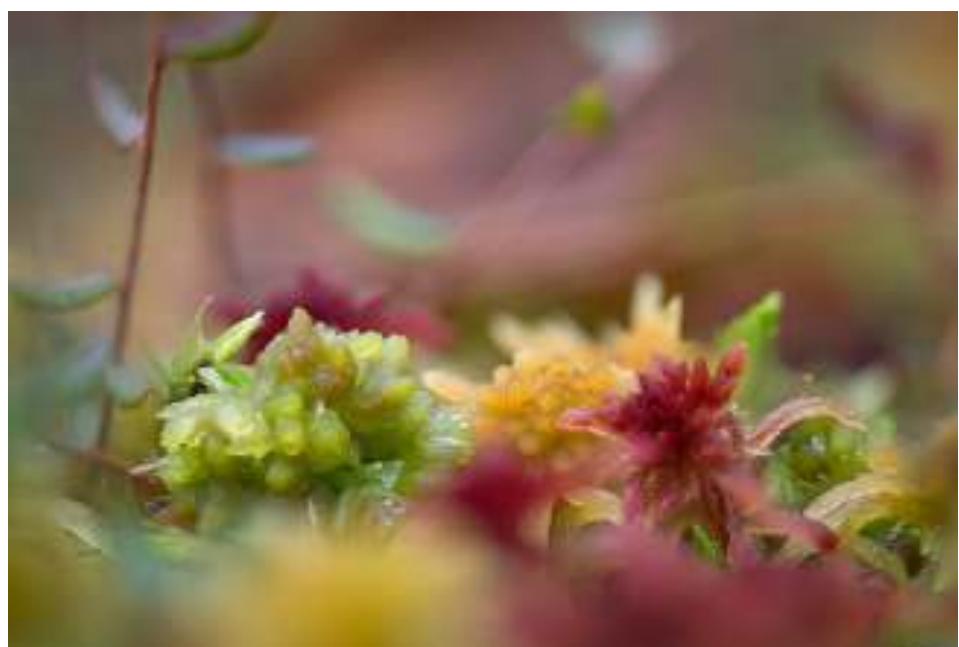
Sundew Goddess
(© Tina Claffey)



Round Leaved Sundew
(© Tina Claffey)



Bog Cotton
(© Tina Claffey)



Sphagnum Moss Bouquet
(© Tina Claffey)



Hairy Shieldbugs
(© Tina Claffey)



Foxmouth Caterpillar
(© Tina Claffey)



Devil's Matchstick
(© Tina Claffey)

What are the ecological and educational futures of peatlands?

Dr Derek Gladwin, University of British Columbia

I write to you as an educator and researcher of environmental literacy and sustainability education at the University of British Columbia in Canada. My initial aim here is to briefly overview how peatland education is essential to building sustainable futures around the world and how these futures are more urgent than ever. The second goal is to emphasize how important European policy decisions about peatlands are for the rest of the world, particularly when envisioning sustainable futures.

Peatlands are vital wetland ecosystems around the planet. Covering approximately 400-500 million hectares of the world's surface (about 8%), though largely found in northern latitudes such as Europe and North America, peatlands are as significant to the Earth's landmass as are tropical forests or deserts in terms of surface area.

Peatlands are a particularly important issue at the moment because of their capacity to reduce global climate change. They act as carbon sequestration units (or sinks) - which are places where carbon dioxide is captured from the atmosphere. In fact, 20% of the world's terrestrial carbon is captured and stored in peatlands located in the northern hemisphere. This is why the destruction of peatlands - through mismanagement, urban development, agricultural expansion, or peat extraction for fuel - accelerates global climate change. Removing peatlands not only reduces the landmasses where carbon can be captured and stored, but it also releases stored carbon for several millennia back into the atmosphere. It's an exponential problem related to the Earth's ecological future.

If peatlands widely benefit all species and organisms on the Earth, including but not limited to humans, then why are they continually neglected or relegated for development or reclamation? In Europe, for example, 90% of wetlands (mostly consisting of peatland) have been destroyed. Much like the rapidly melting glaciers on the poles of the Earth, peatlands are a barometer for a healthy planet both past and future.

Changing the ecological futures of peatlands directly relates to altering the ways in which people perceive and value them. Understanding and addressing this issue is an interdisciplinary and intercultural process, unifying a range of frameworks beyond limited disciplinary or cultural perspectives. Imagining and then acting on peatland futures is collective and multifaceted and remains a significant issue of education and literacy. But a significant outcome of promoting interdisciplinary education about peatlands comes from governments and how laws and policies are constructed and then implemented.

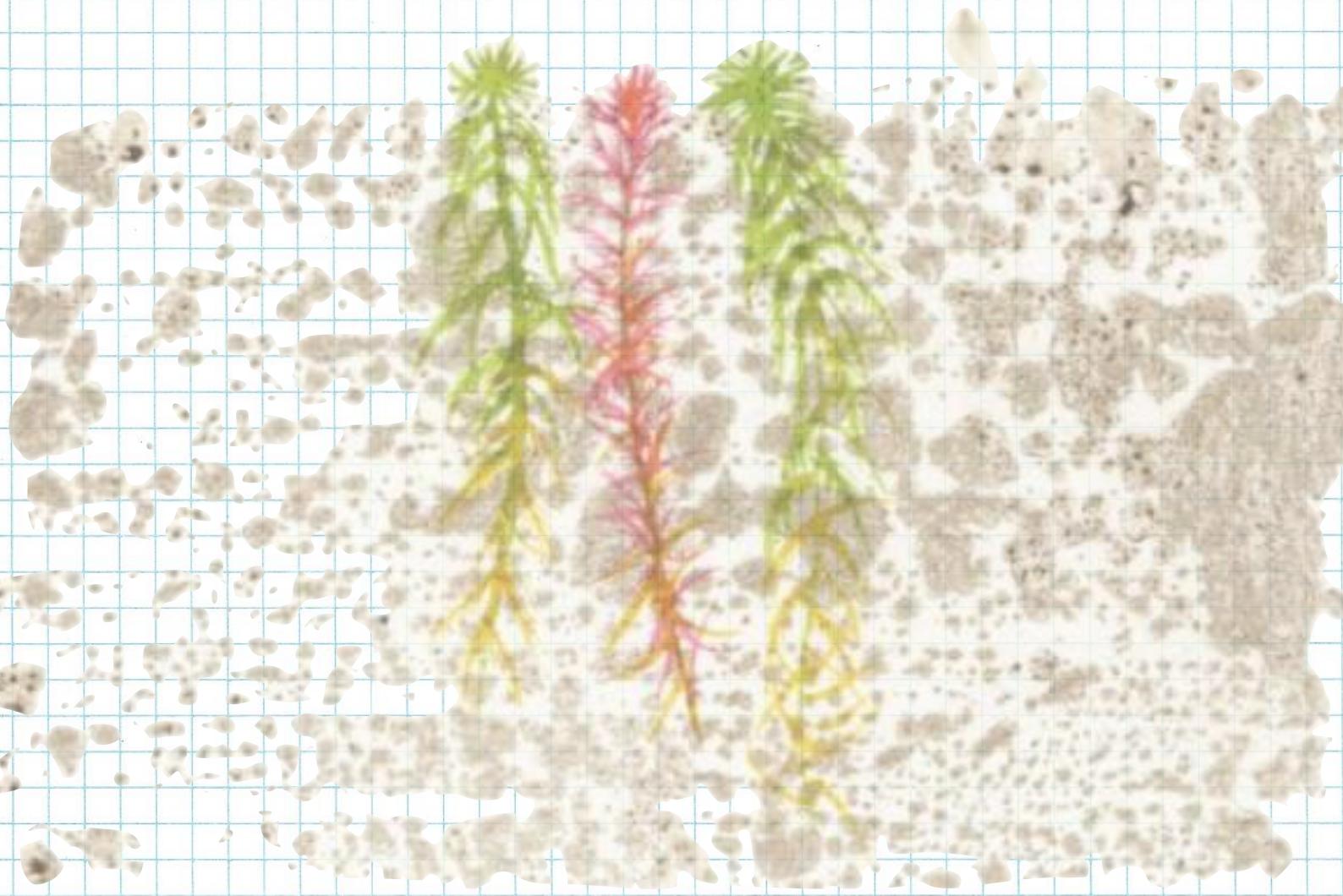
This is why I am contributing to this anthology aimed at the Members of European Parliament before the upcoming Common Agricultural Policy meetings. Expanding peatland literacy is much more than an educational enterprise. It also propels public discourse and action about the Earth's ecological futures, which directly relate to the decisions we make as a global collective about peatlands.

Mobilising change and motivating behavioural shifts emerge from socio-political influence. In order to reduce climate change, we must first address cultural and social change. A huge part of that change involves demonstrating what we value throughout making policy decisions that reflect collective and sustainable values. In other words, the ecological futures of peatlands coincide with our socio-political futures.

The American environmental activist and best-selling author Bill McKibben argues, 'The real fight - all real fights - are over the zeitgeist. They're about who controls the vision of the future.' How will Europe decide the future of peatlands and how will this vision coincide with values and attitudes that support building sustainable futures?

A big thank you from the bottom of our peat-obsessed hearts to everyone who contributed to the Peat Anthology EU edition.

Thank you to Swantje Furtak for the layout and design, as well as Kate Foster and Swantje Furtak for the illustration.



Sphagnum Moss © Kate Foster

If you missed the chance, follow our work and look out for the UK edition coming up. If you have collaboration ideas for this project or any other projects, send us through a message at info@re-peat.earth.



