

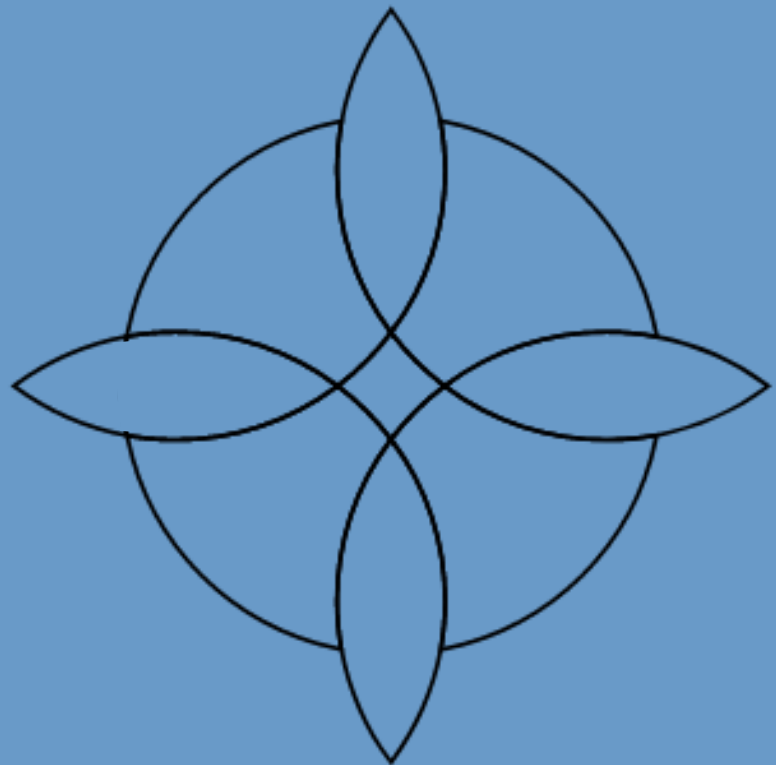
Haiku (Sciku) for COP26



UN CLIMATE
CHANGE
CONFERENCE
UK 2021
IN PARTNERSHIP WITH ITALY



A series of Haiku (Sciku)
from the CANN project



HAIKU FOR COP26

scientific syllables

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to originally tweeted

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About Scientific Syllables

What is a haiku?

A haiku is a type of Japanese poem made up of 17 syllables (morae) in three phrases (5, 7, 5). Haiku traditionally tend to be associated with nature, have a seasonal reference (kigo) and contain images of juxtaposition with a cutting word between them (a kireji).

Throughout both traditional and modern haiku these rules have all been broken (sometimes all at once).

What is a Sciku?

Sciku * is a portmanteau word for scientific haiku, the structure of haiku with science and mathematics as subjects. However, given haiku's traditional association with the natural world, it isn't an especially great leap to get to the scientific topics of sciku.

Trying to obey traditional haiku rules and convey the essence of a scientific finding is tricky. So here we have followed ideas at The Sciku Project that is our inspiration, maintaining the 17 syllables and line structure but maybe not upholding the other traditional rules.

*<https://thescikuproject.com>



The Arts have a huge role in communicating science to non-scientists and can be a valuable bridging tool in helping to interpret scientific principles.

The Haiku or Sciku is short and sweet. Anyone can write one, but trying to distil scientific principles and messages into this most concise mode of communication brings a rigorous discipline to the work that appeals to scientists. Haiku's brevity is also ideal for Twitter with its strict character count, so the CANN project decided to celebrate COP26 by tweeting a Haiku-a-day on the subject of peat's role in combating climate change in the run-up to the meeting in November 2021. A brief explanation of the science behind the haiku was also given in 180 characters or less



Bog cotton's white flag signals carbon safely caught, truce on climate change

**Thin gossamer cotton heads swaying in the
summer breeze are an archetypal plant of an
active healthy bog busy sequestering carbon**



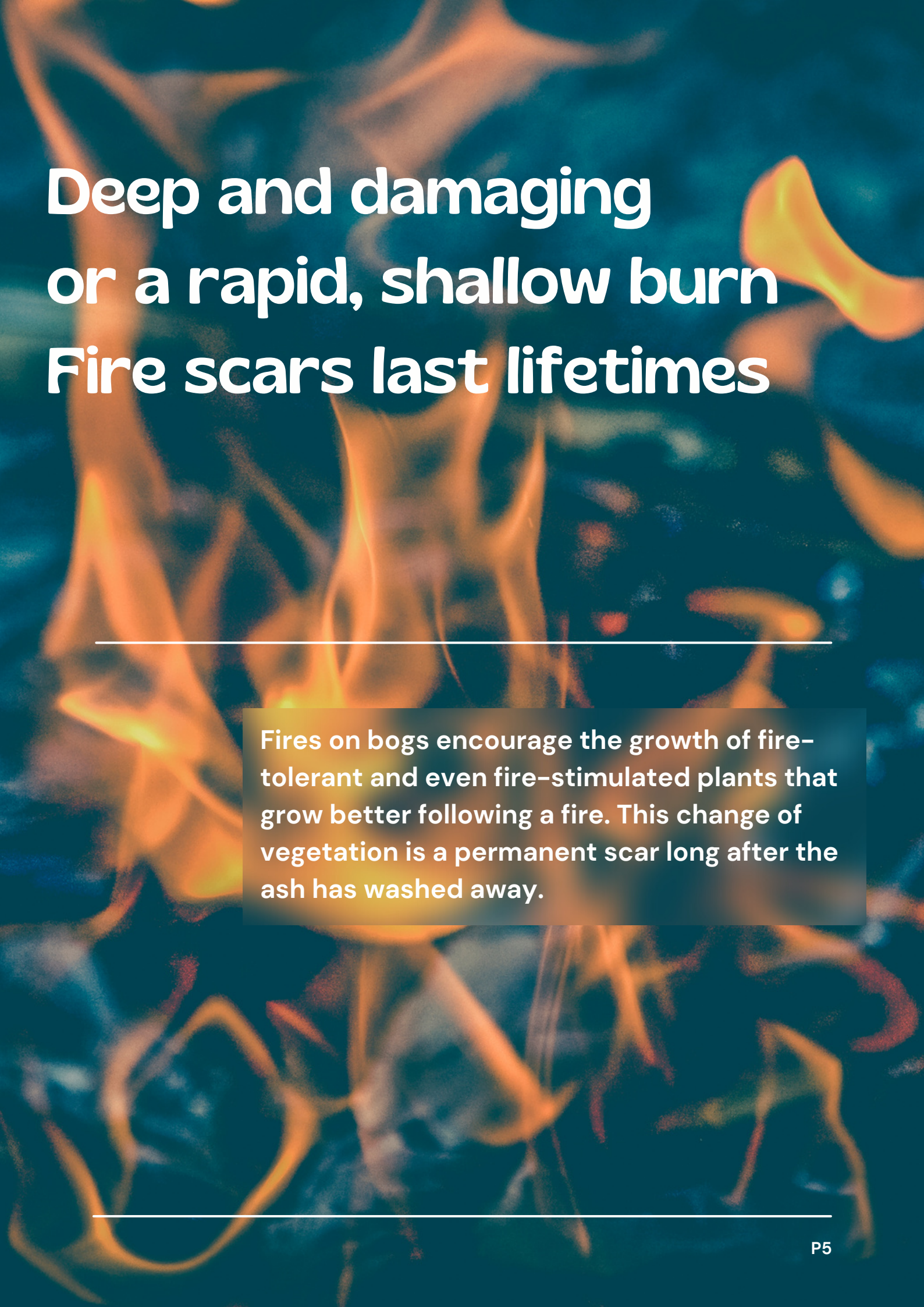
**Bogs suck up carbon
build biodiversity
simple silent strength**

Carbon storage varies by peatland but generally is 30–70kg of carbon/m³.

Although technology is developing artificial methods of removing CO₂ none of them support biodiversity at the same time

Piezo measuring the living blood of the bog Is it bleeding out?

Our piezometers measure the height of the water table on the bogs we manage and ultimately tell us how well our re-wetting is working. Water is the living heart of the bog.



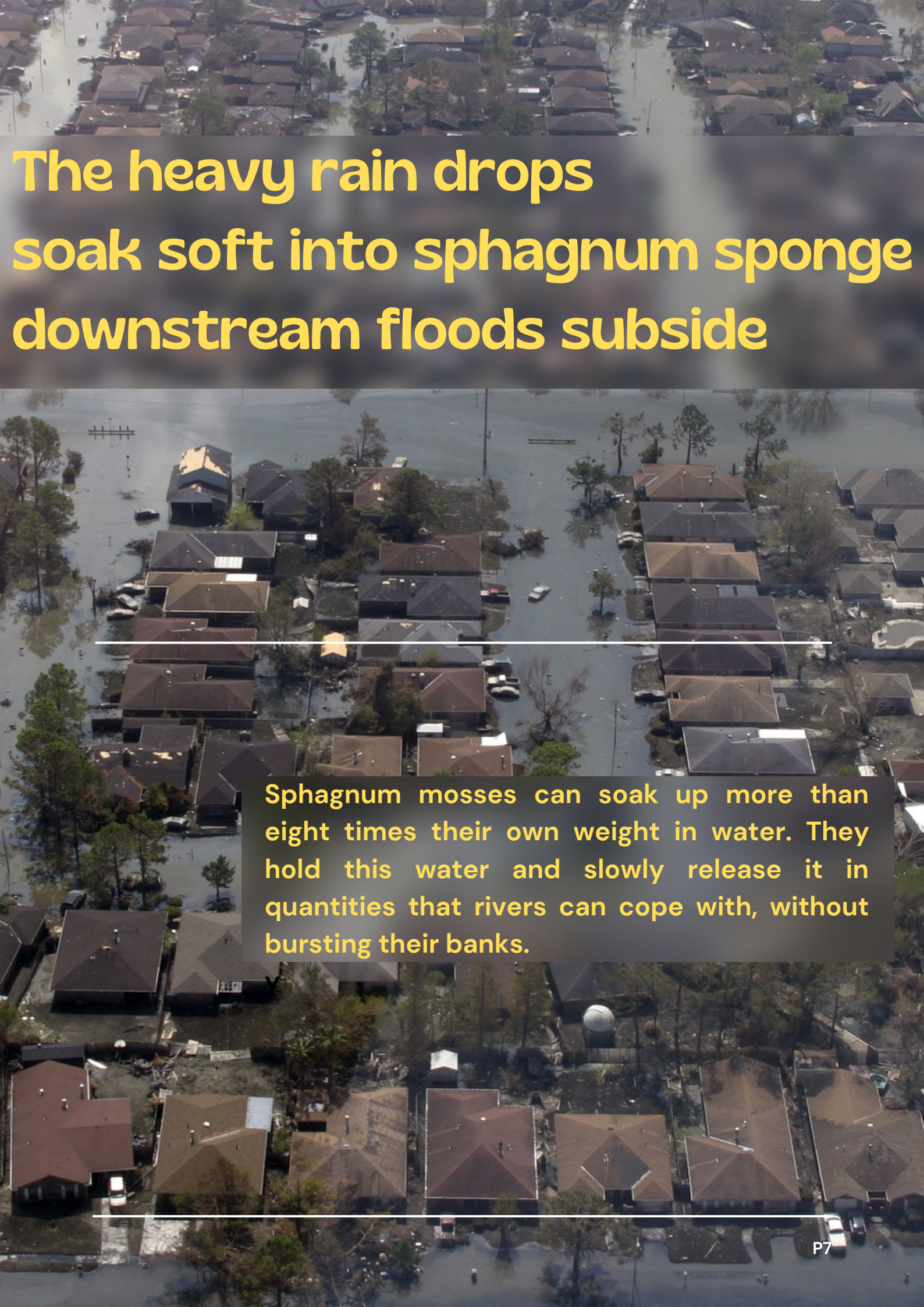
Deep and damaging or a rapid, shallow burn Fire scars last lifetimes

Fires on bogs encourage the growth of fire-tolerant and even fire-stimulated plants that grow better following a fire. This change of vegetation is a permanent scar long after the ash has washed away.



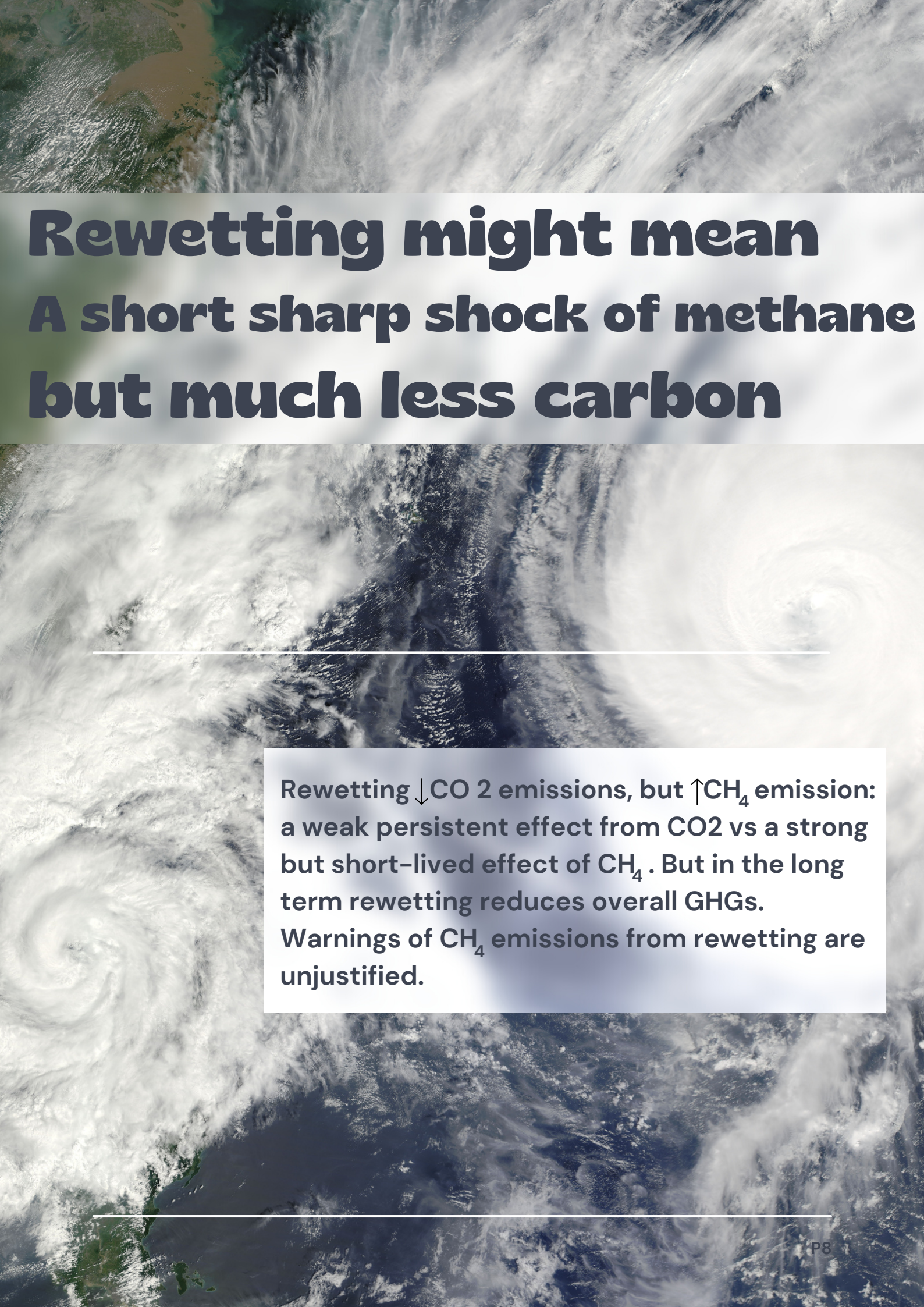
A breath of carbon locked in living sphagnum safe for centuries

Sphagnum naturally produces phenolic compounds that slow the decomposition of the plants that make up peat. Preventing peat decomposition will help keep the carbon it holds locked away.



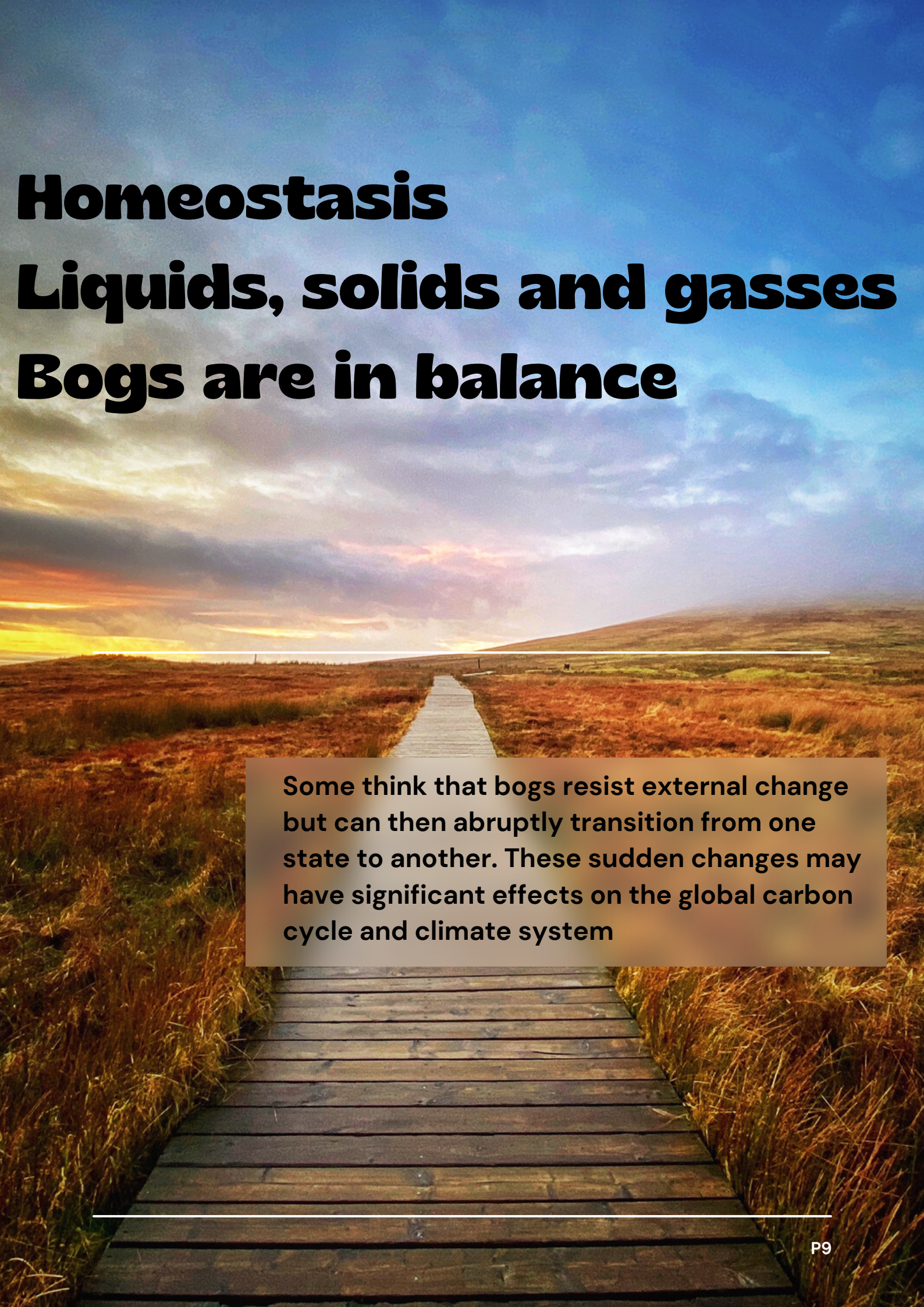
**The heavy rain drops
soak soft into sphagnum sponge
downstream floods subside**

Sphagnum mosses can soak up more than eight times their own weight in water. They hold this water and slowly release it in quantities that rivers can cope with, without bursting their banks.



Rewetting might mean A short sharp shock of methane but much less carbon

Rewetting ↓ CO₂ emissions, but ↑ CH₄ emission:
a weak persistent effect from CO₂ vs a strong
but short-lived effect of CH₄. But in the long
term rewetting reduces overall GHGs.
Warnings of CH₄ emissions from rewetting are
unjustified.


A photograph of a wooden boardwalk leading through a bog landscape at sunset. The sky is filled with colorful clouds in shades of blue, orange, and yellow. The bog is covered in tall, dry grasses and reeds. The boardwalk is made of wooden planks and leads towards a distant horizon.

Homeostasis

Liquids, solids and gasses

Bogs are in balance

Some think that bogs resist external change but can then abruptly transition from one state to another. These sudden changes may have significant effects on the global carbon cycle and climate system

An aerial photograph of a bog landscape. A large, irregular area of the bog is covered in a thick layer of black, charred peat, indicating a recent wildfire. To the right of this blackened area, there is a small, dark blue pond surrounded by green vegetation. The rest of the bog is covered in brown, dry peat.

Wildfires eat the land Bog and forest burns brightly Blackened carbon left

Wildfires not only give off GHGs but change the surface of the earth from a high albedo (heat reflecting) green to low albedo (heat absorbing) black, multiplying the global warming impact of the atmospheric CO₂

Raised bog balancing A droplet on the landscape Surface tensioned curves

A close-up photograph of a single, clear water droplet resting on a vibrant green leaf. The droplet's surface acts as a lens, reflecting a detailed image of a dandelion seed head with its characteristic white pappus and brown center. The background is a soft-focus green, suggesting a natural, outdoor setting. The text is overlaid on the left side of the image in a clean, white, sans-serif font.

A raised bog often has a water table perched higher than the surrounding land, which can be hard to understand unless you visualise it as a water droplet perched on the land. It is delicately balanced, and that balance can shift.



**If bogs can preserve
butter, boats, even bodies,
carbon is easy**

The highly acidic peat acts as a remarkable preservative, leaving the clothing and skin intact, and creating poignant and memorable images of people of the past. Carbon trapped in plants is preserved in the same way.



Positive feedback loops are truly negative drying bogs dry more

In a system, change in the outputs can loop back to the inputs. This may dampen the initial change (-ve feedback) or amplify it (+ve feedback). Human impact on bogs worryingly, is leading to a +ve climatic feedback loop




**A bog-burst flows dark
a black suspension of peat
a fish-kill downstream**

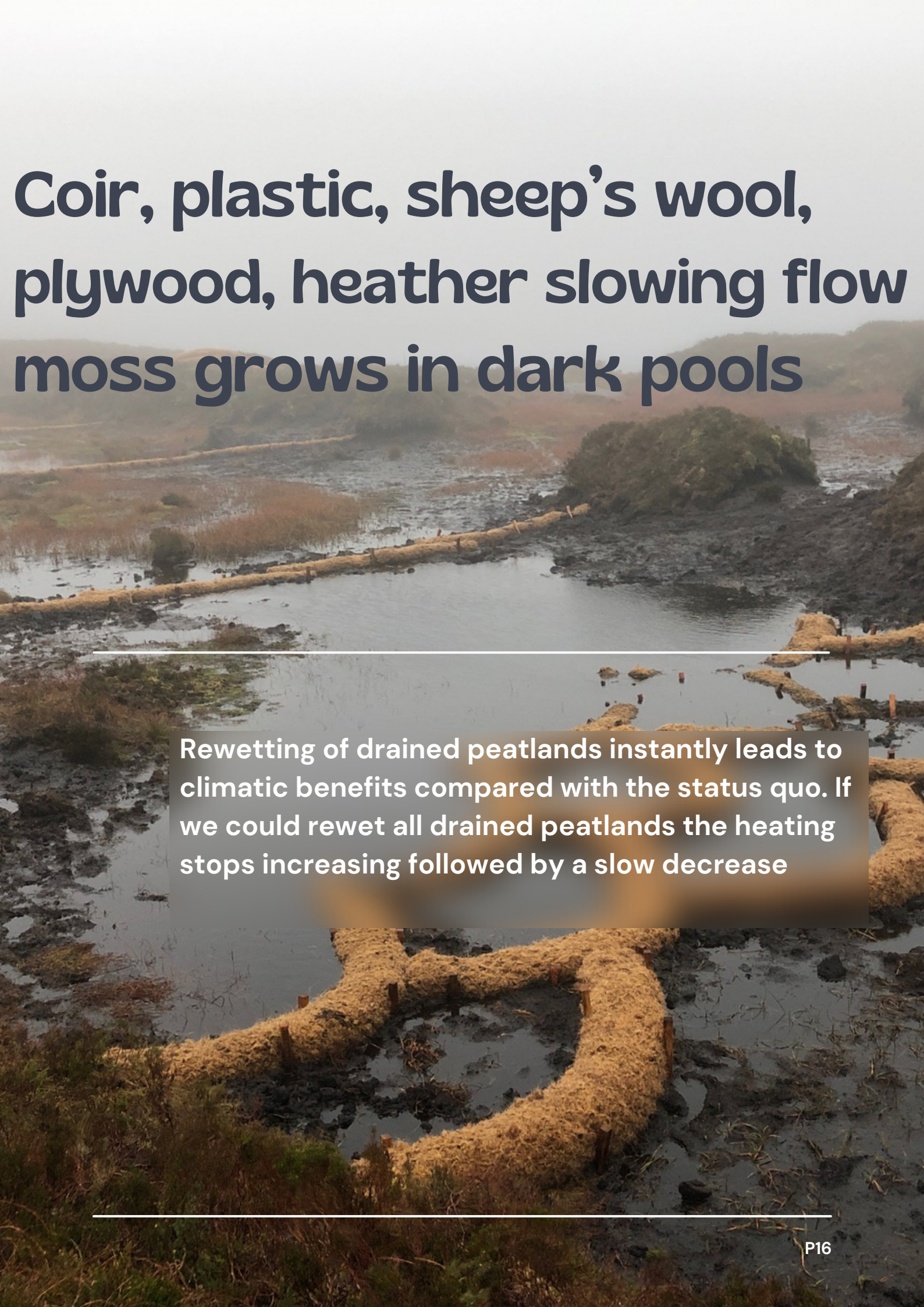
67% of Irish drinking water comes from peatland catchments. Unstable peat can collapse in a bog-burst affecting water quality and causing extensive fish-kills in nearby rivers. Peat is locally as well as globally important



Ammonia spread on land, but some gets airborne sphagnum moss can't cope



It is not just drying that threatens our bogs, and ultimately, their capacity to catch carbon. Airborne pollutants like ammonia from fertiliser damage our bogs. We are monitoring many of our bogs for ammonia which can kill sphagnum.

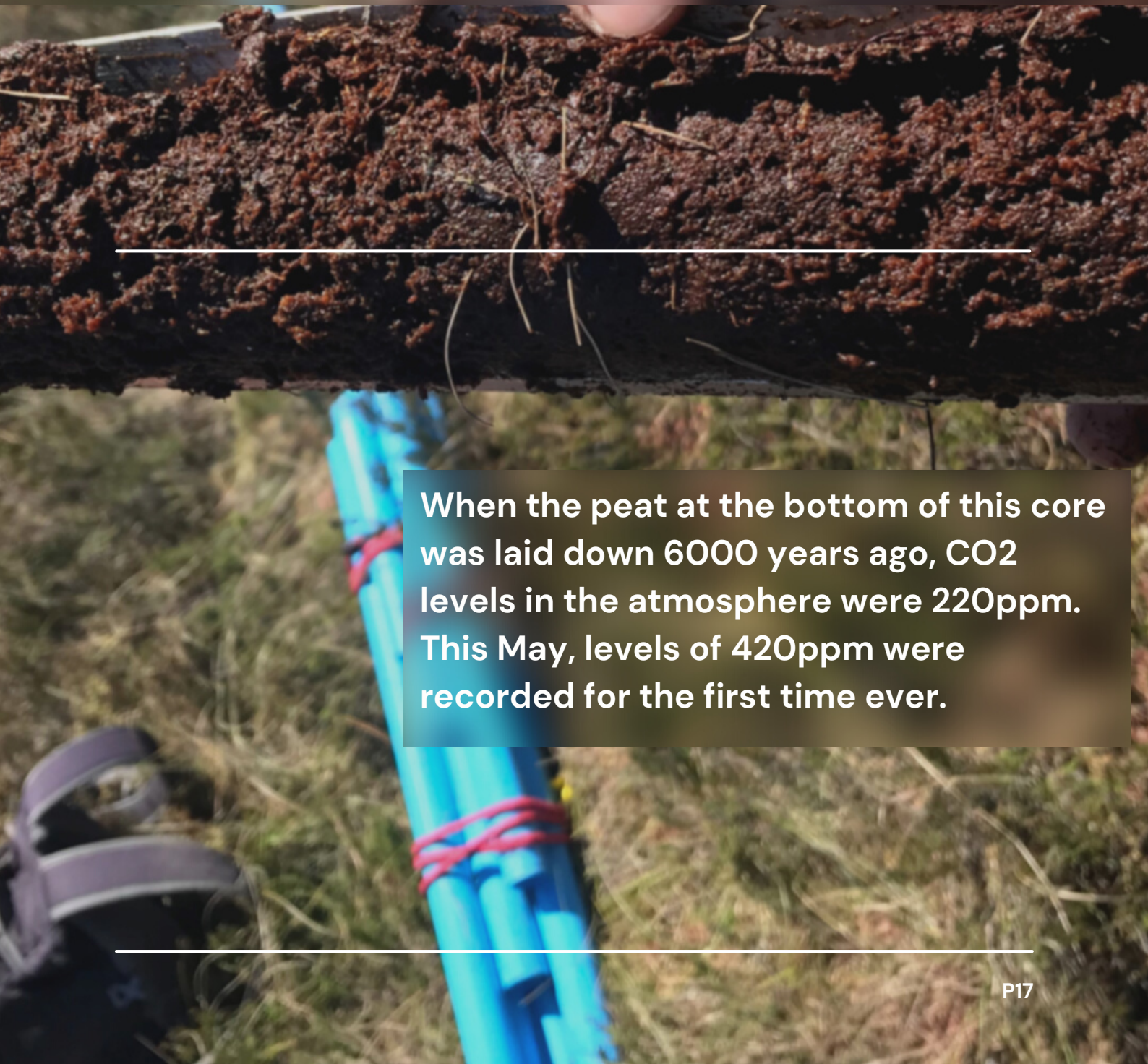
The background image shows a vast landscape of rewetted peatlands. In the foreground and middle ground, there are numerous dark, water-filled pools of varying sizes. These pools are separated by raised, light-brown peat paths or bunds. Some of these paths are made of loose peat, while others appear to be reinforced with coir or other natural materials. The vegetation is sparse, with some green moss and small plants visible along the edges of the pools. In the distance, the landscape continues with more pools and paths under a hazy, overcast sky.

Coir, plastic, sheep's wool, plywood, heather slowing flow moss grows in dark pools

Rewetting of drained peatlands instantly leads to climatic benefits compared with the status quo. If we could rewet all drained peatlands the heating stops increasing followed by a slow decrease




**Six meters of peat
two-twenty to four-twenty
In six thousand years**





Paludiculture an agri-revolution Paludifuture

We are not just farming carbon. Rewetted land can be productive. Paludiculture can save money, benefit farmers and society, as well as absorbing carbon. This could be the future.

An aerial photograph showing rows of wooden whisky barrels in a field. The barrels are arranged in neat rows, and the surrounding landscape is a mix of green grass and brown peatlands. The sky is a clear, bright blue.

Uisge* – our water trickling through Islay peatlands Makes unique Whisky

written by the ACT team

The smoky flavour of peat reek comes from chemicals in Islay Peat which is richer in phenols, guaiacol, vanillics and nitrogen but poorer in carbohydrates due to more sphagnum and less woody material than mainland bogs

* "Uisge" in
Scots Gaelic
is
pronounced
"oosh-guh"



Drained peat shrinks, land dips below surges and high tides Wet, plump land stays high

Peat is mostly water, when you remove that water through drainage, the land subsides and gets lower, making it more vulnerable to flooding This is especially important in lowland and coastal peat soils.

Carbon flows into the lungs of fen, pool and mire oxygen breathed out

An aerial photograph of a rural landscape. In the foreground, there is a large area of dry, golden-brown grass, likely a fen or mire. A small, dark, winding stream or pool cuts through this area. In the middle ground, there are patches of yellow and brown vegetation, possibly gorse or heath. The background shows rolling green hills, a small village with several houses, and a clear blue sky.

Carbon is locked up effectively in other habitats too. Lowland fens and mires are significant sinks too and are under even greater threat from damage as they are often surrounded by valuable arable land

The background of the entire page is a photograph of a bog. On the right side, there is a waterfall cascading down a peat bank. The peat is dark brown and textured, with some roots visible. The water is white and frothy as it falls.

Probing the dark depths carbon and secrets held fast A bog's life story

written by the ACT team

The pollen grains of every plant are unique and their walls of sporopollenin are tough and can last thousands of years in peat. We can tell which plants grew when and map past climate change in peat.



Ancient crumbling sod Made of death to save us from a carbon winter

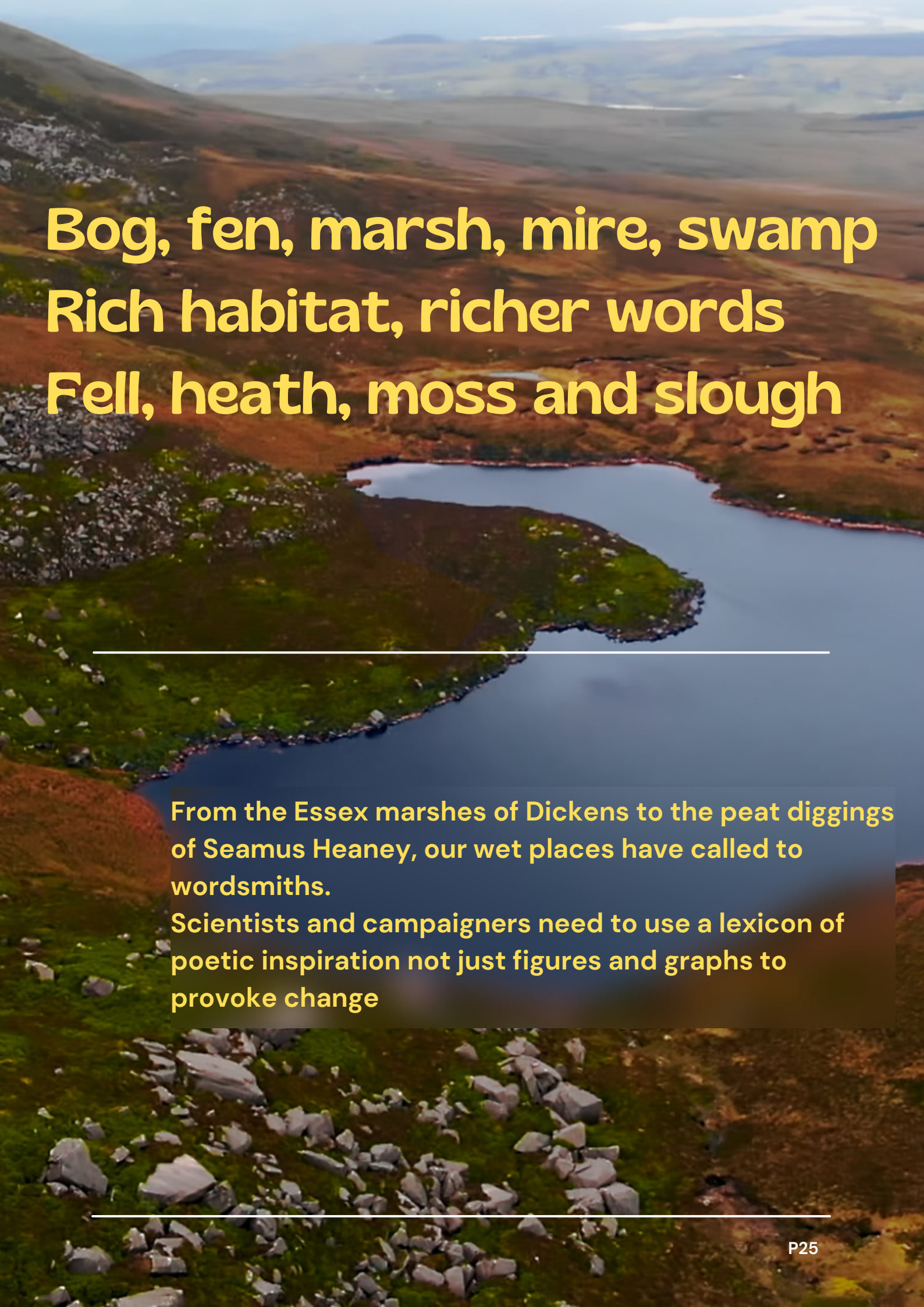
written by The ACT team

'Global warming' is too gentle a phrase, the change in temperatures could disrupt ocean currents, triggering abrupt cooling, a "carbon winter" in Europe. No amount of burning turf will keep us warm then. Keep the carbon locked up

A person wearing a red jacket, white hat, and white gloves is working in a bog. They are using a blue tool to manage sphagnum moss. The background is a dense, brown, peaty bog floor.

Water table kept just below the surface soil for eleven months

To keep our bog-building, carbon-catching sphagnum growing actively, water levels must be kept within 10cm of the surface for at least 90% of the year.

A landscape photograph showing a bog or marsh. In the foreground, there's a small, irregularly shaped pond with calm, blue water. The surrounding land is covered in green moss and brown peat. In the background, there are rolling hills under a hazy sky. The text is overlaid on the top half of the image.

Bog, fen, marsh, mire, swamp
Rich habitat, richer words
Fell, heath, moss and slough

From the Essex marshes of Dickens to the peat diggings of Seamus Heaney, our wet places have called to wordsmiths.

Scientists and campaigners need to use a lexicon of poetic inspiration not just figures and graphs to provoke change



A cool moss compress A blanket on the patient Calming Earth's fever

Across the world, peat covers just 3% of the land's surface, but stores one-third of the Earth's soil carbon, not just a sticking plaster, but potentially a cure for what ails us. If we care for it, it will care for us

Wetland medicine

Nature's future pharmacy? an unfolding cure

People have used wetland plants for medicinal purposes for thousands of years. Today globally we use 50,000 to 70,000 species of higher plants medicinally. If we care for them, our wetlands could be our future pharmacopeia.

A.Vogel


Drosinula®

Bronchial-Sirup
Sirop bronchique



Traditional breeds GPS-mapped meanders High tech meets old style

Light-weight, agile and tough, flourishing on coarse grasses, Dexter cows are one of the traditional rare breeds using for conservation grazing of upland blanket bogs. Support for farmers to sustainably graze their land is vital.



Bog Shinrin Yoku

nurture nature, and yourself

ecotherapy


Shinrin Yoku is the Japanese art of relaxing forest bathing. Being outdoors, whether in forest or bog, is good for mind, body and soul. Being in nature reduces anger, fear, stress and the cortisone hormones that go with these emotions

A helicopter is shown in the upper right quadrant, suspended by a cable. It is dropping a large, rectangular block of peat. The peat block is brown and has a white plastic sheet covering one side. Below the peat block, a person wearing an orange safety vest and dark clothing is standing on a grassy field, looking up at the falling block. The background is a cloudy sky.

Helicopter drops heavy digger-blade cuts deep carbon balancing

A study showed that one year following re-vegetation, the magnitude of the avoided loss of carbon from areas of bare peat will be 37 times that of the GHG emissions produced through undertaking the work, including use of helicopters.

Cut turf warms three times: Digging, burning and climate Keep it in the ground



Peat has played an historic role in Ireland's economy and culture, but this highly carbon-inefficient fuel has no role in the future if we want to lower our 13T per head annual GHG output

Are Sci-ku for you? poetry and science melds to change hearts and minds

This is the last of our madcap tour through our peaty Sci-ku (Haiku for Scientists) in the run up to the UN Climate Change Conference. We hope you enjoyed their slight twist on peatland science and climate messages

A photograph of a lone curlew standing in a field of tall, dry grass. The bird has a long, straight, reddish-brown bill and mottled brown and blue feathers. The background is a soft-focus landscape of green and brown grass.

Lone curlew wailing Future generation's loss Restoration calls

by Marc Ruddock

A photograph of an evening snipe standing in a wet, marshy area. The bird has a long, straight, dark bill and mottled brown and white feathers. The background is a soft-focus landscape of green and brown grass.

Evening snipe drumming Optimistic sounds of dusk music of repair

by Marc Ruddock



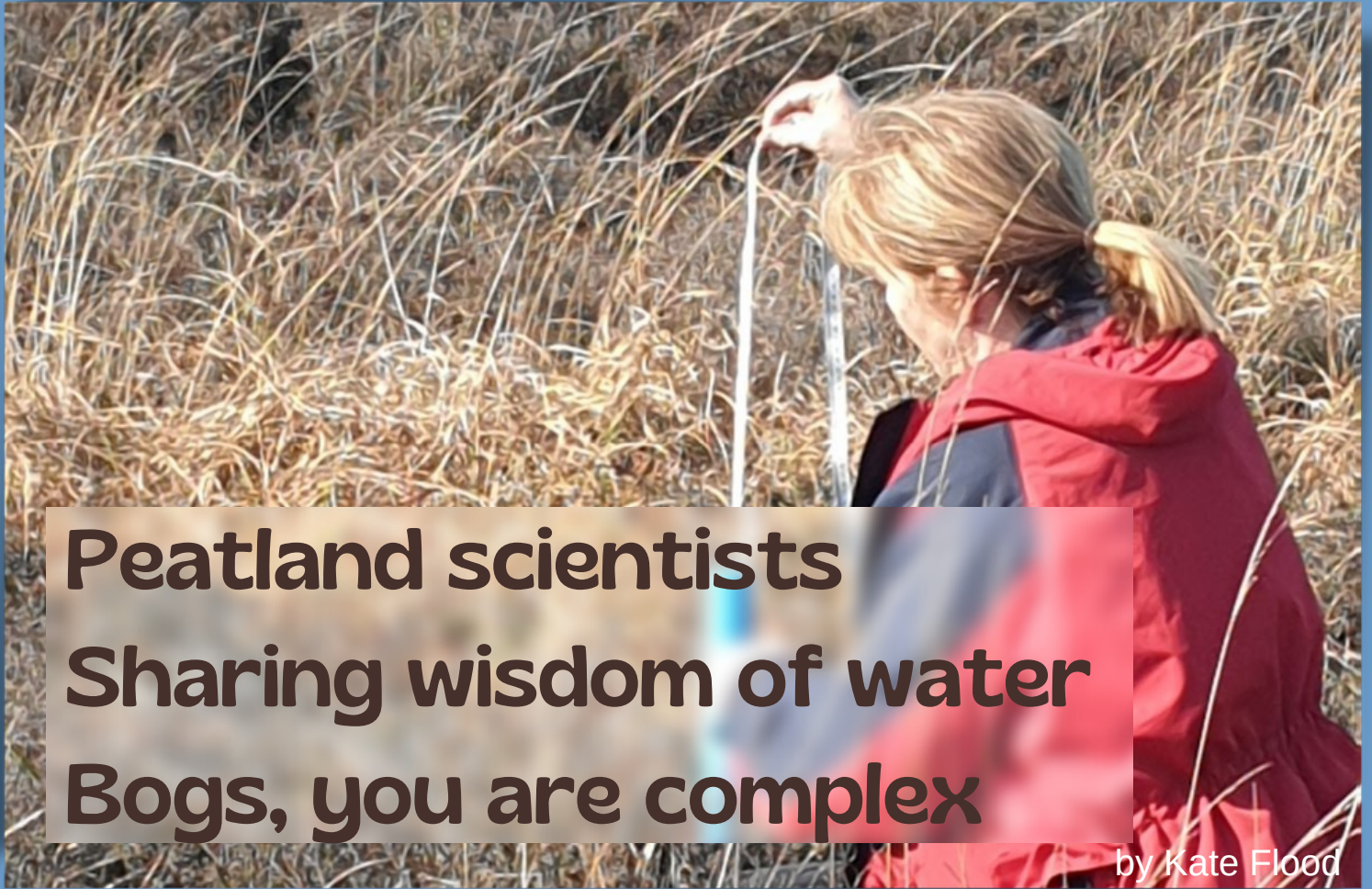
**Diving and rising
Hen harriers sky-dancing
Signifying spring**

by Marc Ruddock



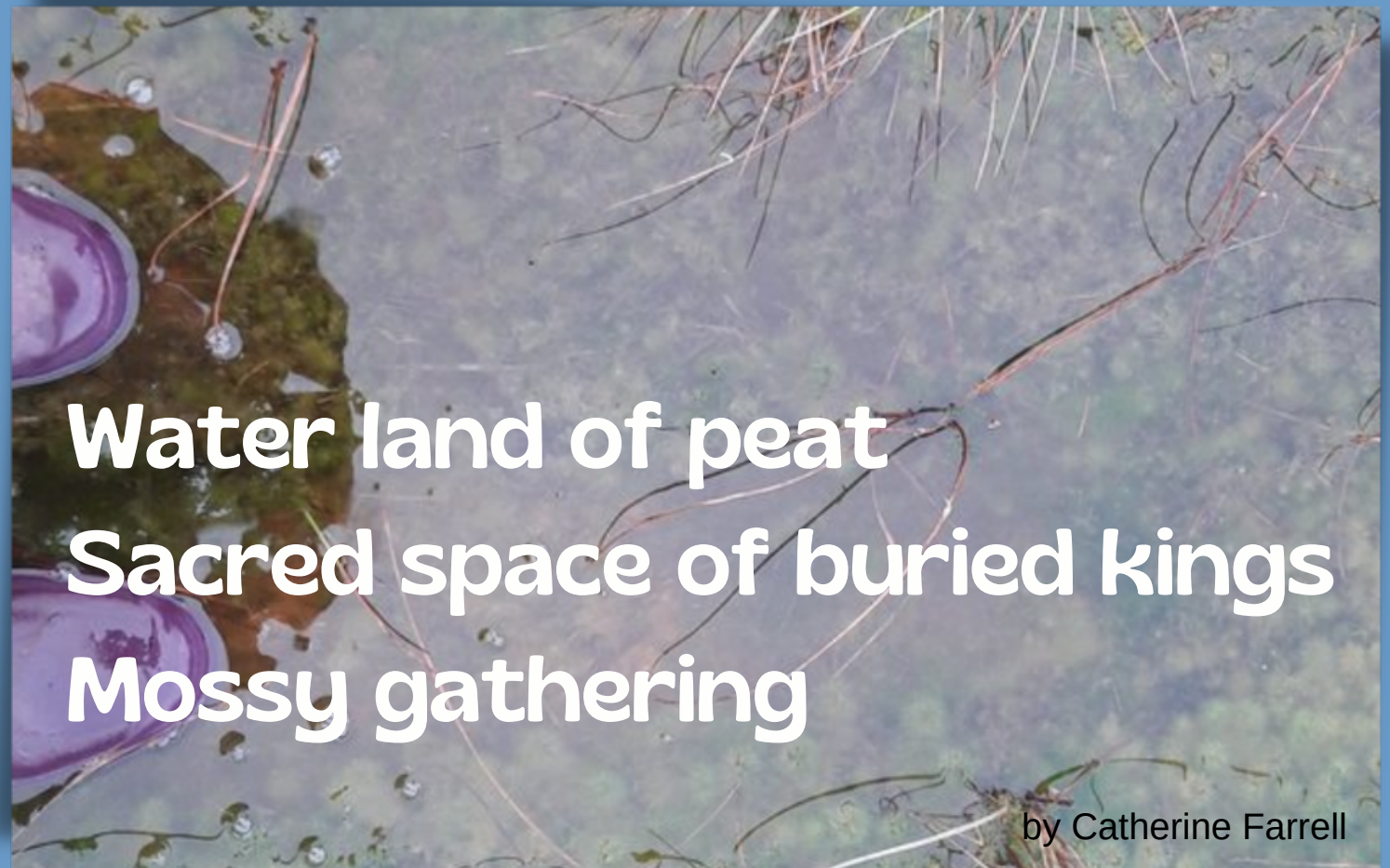
**Vigilant mosses,
Sensitive to changed climate.
Rewet and restore.**

by David Wilson



Peatland scientists Sharing wisdom of water Bogs, you are complex

by Kate Flood

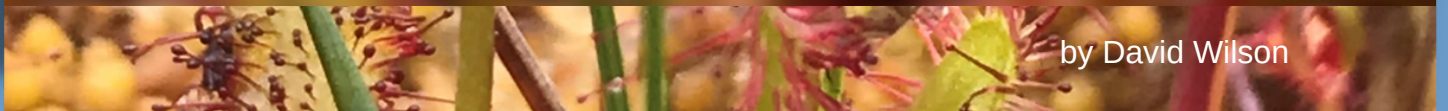


Water land of peat Sacred space of buried kings Mossy gathering

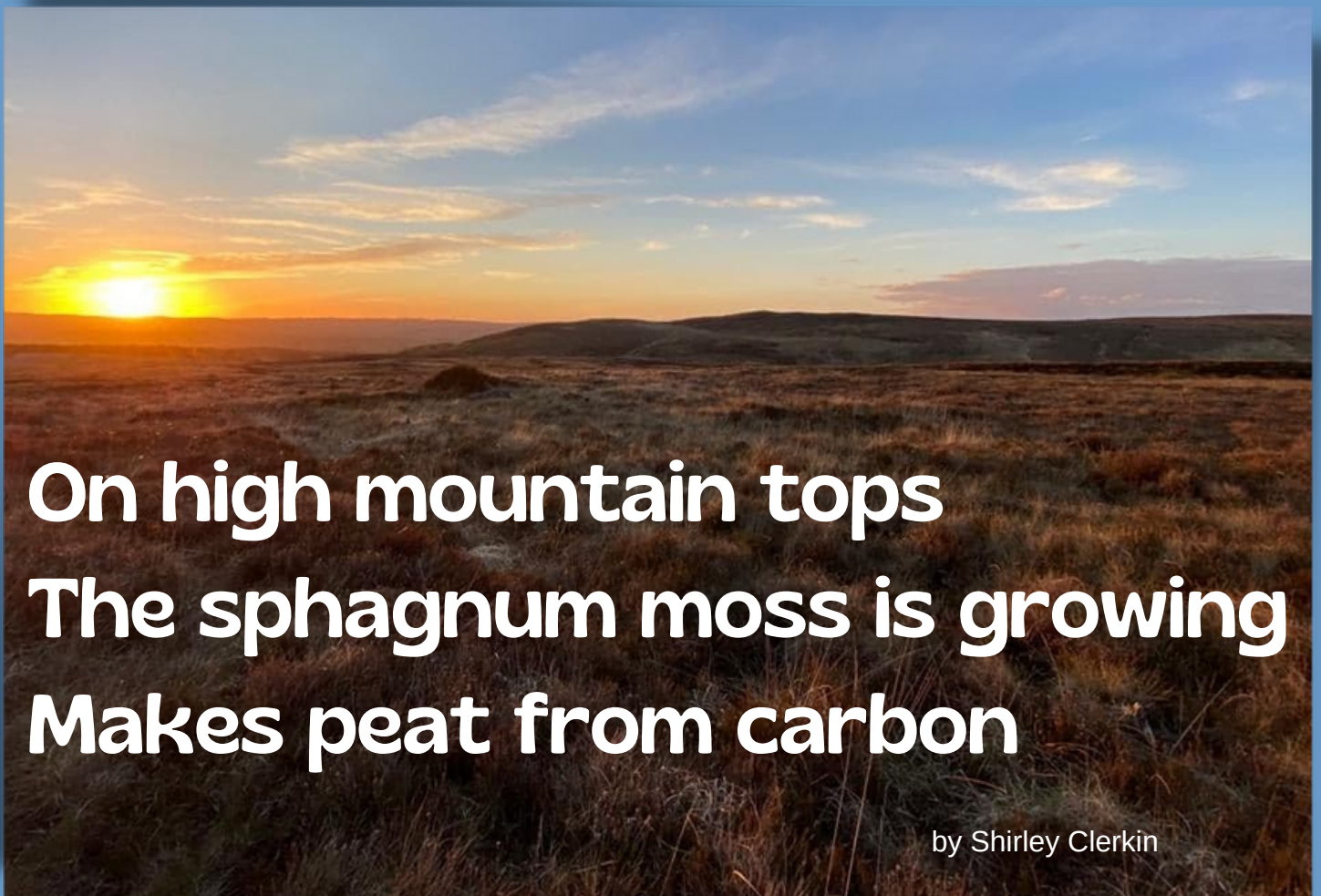
by Catherine Farrell



**Methane bubbling up.
Yet carbon sequestered deep.
Climate-cooling balm.**

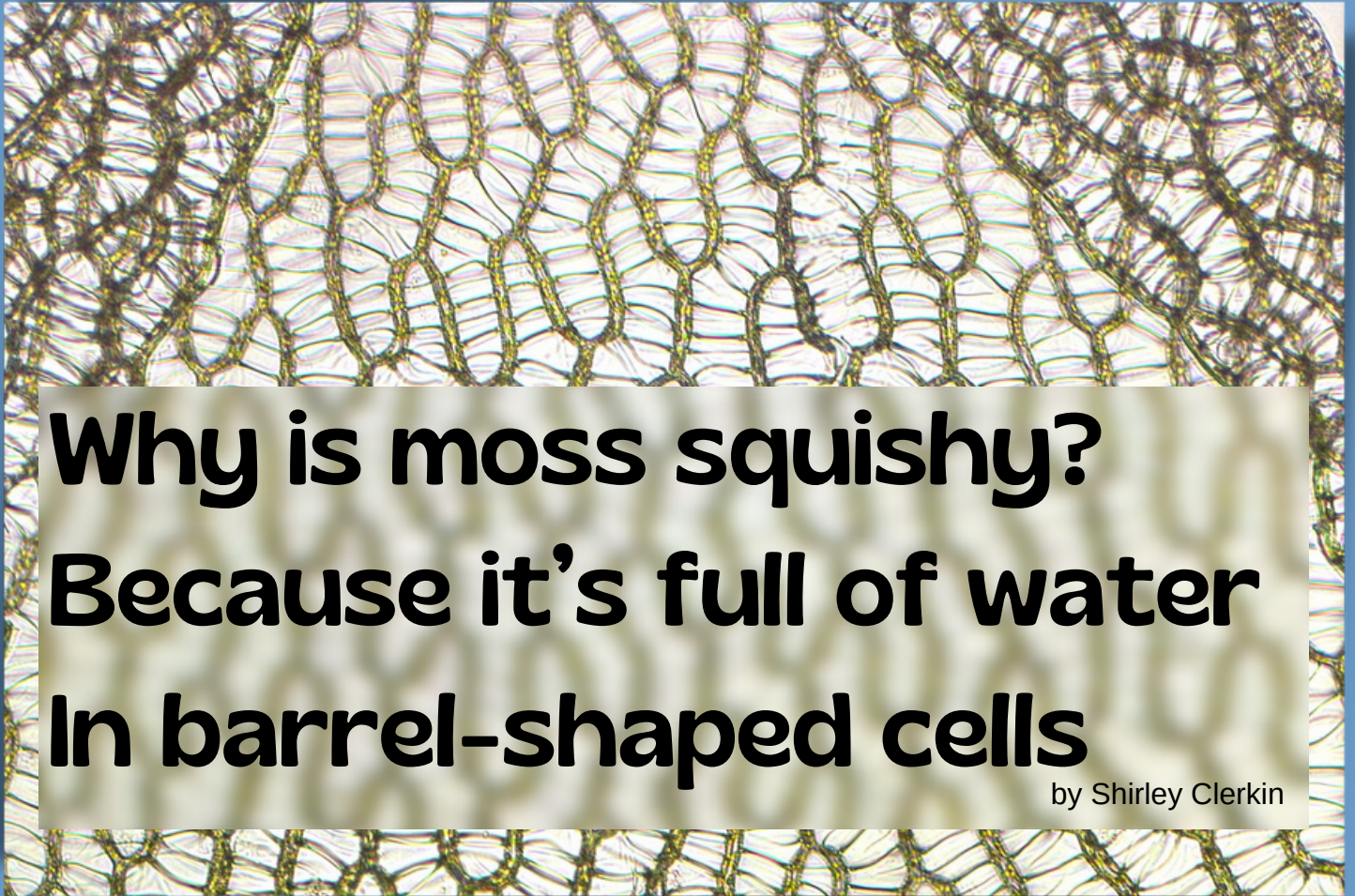


by David Wilson



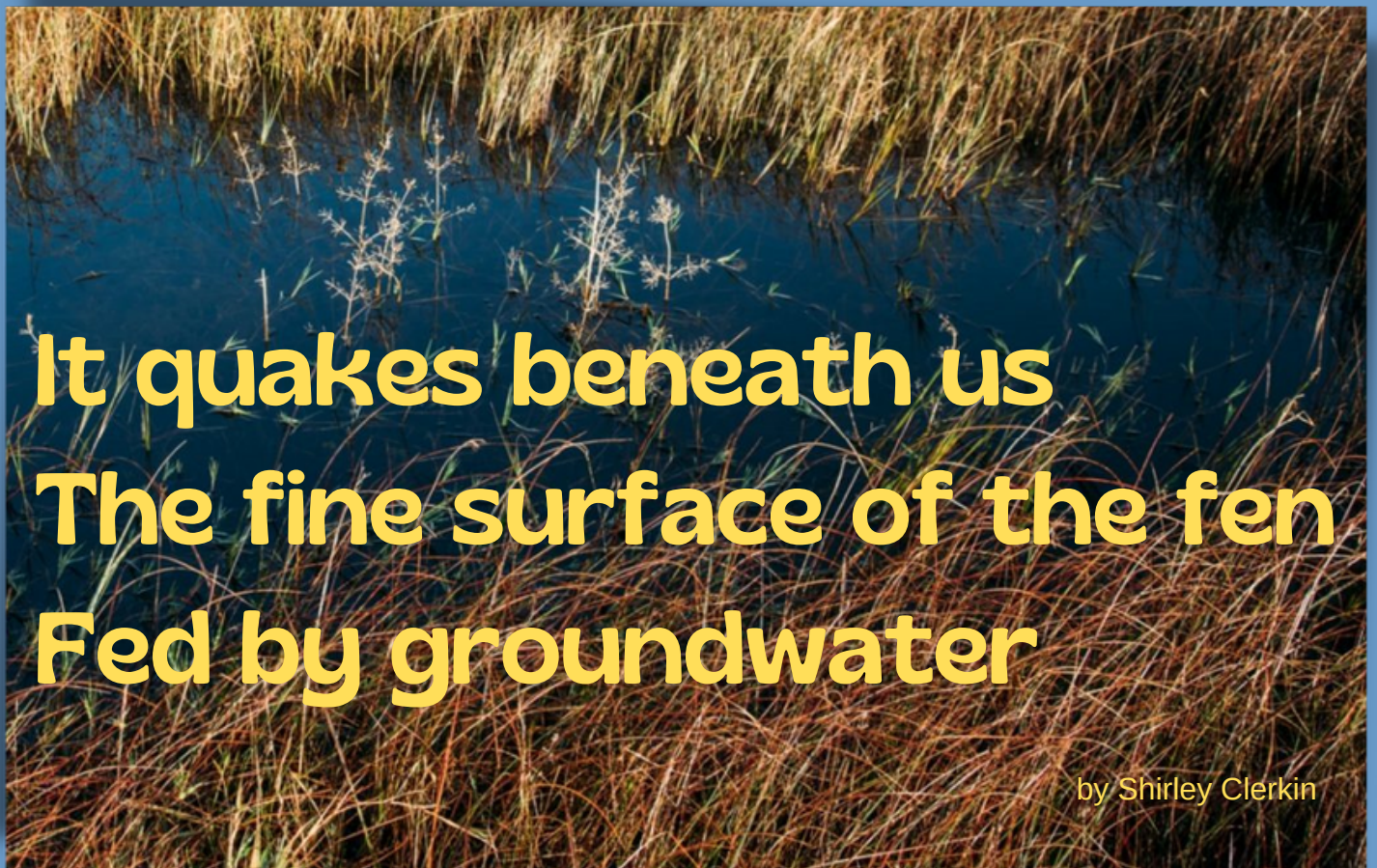
**On high mountain tops
The sphagnum moss is growing
Makes peat from carbon**

by Shirley Clerkin



Why is moss squishy?
Because it's full of water
In barrel-shaped cells

by Shirley Clerkin



It quakes beneath us
The fine surface of the fen
Fed by groundwater

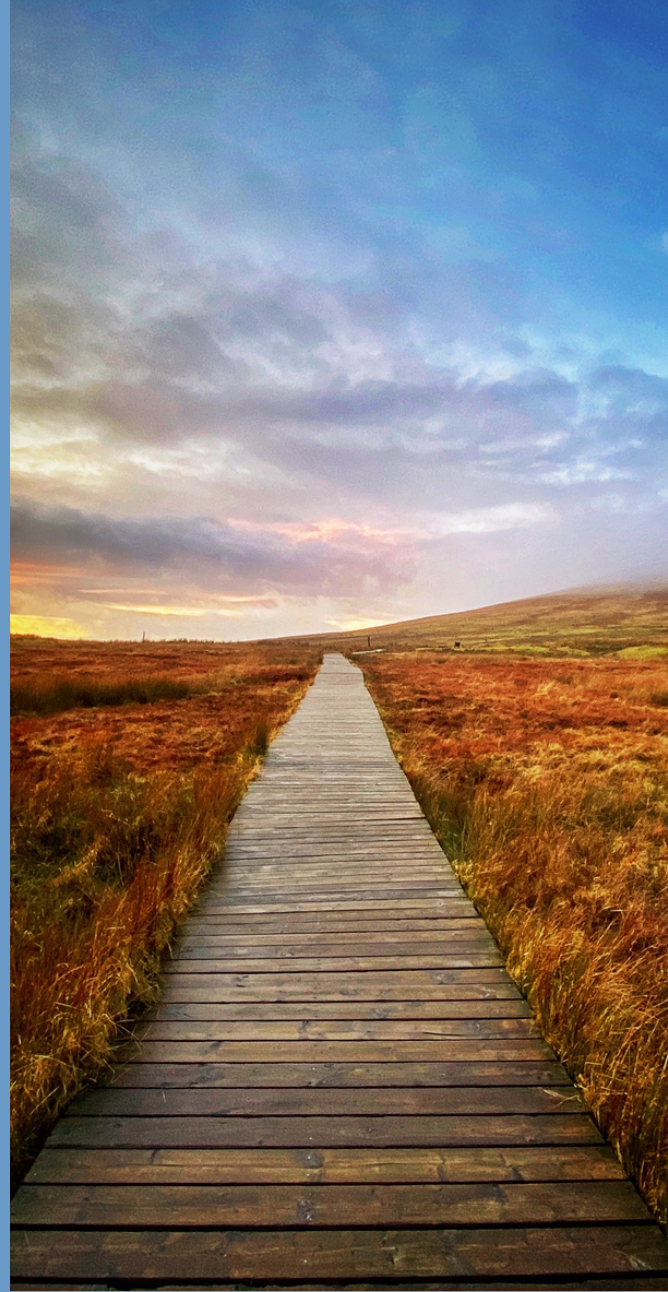
by Shirley Clerkin

What is The CANN Project

The CANN project is a cross-border environment project which aims to improve the condition of protected habitats and to support priority species found within Northern Ireland, the Border Region of Ireland and Scotland, allowing the region to meet key EU biodiversity targets and ensuring the future of these internationally important habitats and species.

With €9.4 million of funding from the INTERREG VA programme the CANN project team will produce Conservation Action Plans for a range of sites across the jurisdictions which are designated as Special Areas of Conservation (SACs) and accumulatively account for over 25,000 hectares of land. Direct conservation actions will be carried out on 3,650 hectares of these SACs, all with an aim to help and guide the habitats and species found at these sites towards a favourable conservation status.

Made up of leading government departments, local authorities, research institutions and charities from across the three jurisdictions, the CANN project team works together with local communities and stakeholders towards a common goal of improving the environmental condition of these SACs. This includes delivering educational and outreach programmes and raising awareness of the significance of the habitats and species found on the sites, with the aspiration of safeguarding the conservation of these key sites and ensuring their sustainability beyond 2022 and the lifespan of the CANN project.



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