hinking like a mountain for midland bogs

John Feehan

What would the world be, once bereft

Of wet and of wildness? Let them be left,

O let them be left, wildness and wet;

Long live the weeds and the wilderness yet.

Gerard Manly Hopkins

I was born the same year as Bord na Móna; and our shared birthday gives me a span of years sufficient to appreciate the scale of change in the peatland landscape since the great industrial machines began to strip the bogs of their once-off harvest.

When I was young we cut our own turf in Clonoghil Bog outside Birr (the last intact raised bog to be taken into production by Bord na Móna). Back then it still had a lake at its heart, with a fringing forest of royal ferns taller than our young heads and patrolled by the first dragonflies to fire my young imagination. I remember, almost to the point of still hearing them now, the last nightjars flickering among the heather and between the pines at dusk, on turf-cutting early summer evenings. When I left Birr to make my way in the world it never crossed my mind that when I returned the nightjar would be gone: that I would never hear it again. I don't think we ever really imagined that not only would the nightjar disappear, but that the bog itself would be gone in our lifetime.

Because back then the bogs went on forever. I don't have the words to give you any real sense of the extraordinary places these bogs were before we began to exploit them on an industrial scale: the immense silence and sense of solitude, the total absence of a human presence except along the fringes where turf was cut by hand; the sheer wonder of the lives of the plants and animals that made their homes here.

Looking back on that time in later years, Professor J.J. Moore, who spent a lot of time walking the bogs in the 1950s and 60s studying their flora, remembered what it was like before systematic mechanical cutting began (This is from a talk he gave in the 1980s):

an experience which it is impossible to have anymore – the experience of being isolated in a vast brown ocean of bog, extending to the horizon on all sides, where the only landmarks were church steeples. One always needed to carry a compass in these vast areas. This experience can no longer be enjoyed since all these larger bogs of up to 10km diameter have now been cut. At present we have no undrained raised bog left which is more than 300 ha in extent.[1]

[1] *Quoted in John Feehan et al., **The Bogs of Ireland**, page 479.*

So much of the natural wonder of the bog was unseen, unheard by us then, preoccupied as we were with the exhausting exhilaration of harvesting the turf. It only began to come into focus on subsequent visits years later, when the spread-ground had taken on the abandoned feel of a school playground during the summer holidays – except that here there would never again be a return to life and laughter in September.

In the early days of Bord na Móna the end of industrial harvesting seemed so far into the future it was hardly considered. There was a fuzzy idea that we would have an area of extra productive land the size of a new county, but experimental work soon showed the productive limits of cutaway bog for farming or forestry. The ecological value of cutaway was scarcely at all appreciated in the beginning by plant or animal scientists. It was thought of as little more than a brown desert, of little value for plant and animal wildlife. When the Irish Peatland Conservation Council was set up in 1982, inspired by the surveys of Professor Moore and his students in the Department of Botany in UCD, its early focus was on the preservation of a representative sample of the few relatively intact bogs remaining.

At the time Bord na Móna began work in the late 1940s the **value** of bogs rested **exclusively** on its **productive function.** Global warming and the biodiversity crisis did not exist for us when Bord na Móna was established in 1946, nor was there any awareness of the population explosion and the challenge of feeding 10 billion in a water-challenged world. The word 'biodiversity', indeed, was only invented in the late 1980s. All of our attention was on the task of coaxing into flame the glowing embers of an economy that had very few natural resources at its disposal.

The great hope was that the large-scale industrial strip mining of the raised bogs, the one resource that we had an abundance of – an unlimited abundance as it must have seemed in the beginning – might be the start of a more prosperous age. And indeed it did transform life in the Midlands by that significant increment through the late 1940s and 50s: to the threshold of, and on into, the new era of EEC/EU prosperity we now enjoy.

A growing awareness

It was really only with the wake-up call of the UN Environment and Development Conference in Rio de Janeiro in 1992 – the forerunner of the annual COP gatherings – that we heard the first whispers of looming environmental disaster, whispers that have now, 33 years on, become the loudest of shouts for urgent and immediate action. There is scarcely a day goes by without our being reminded that the world is burning, and what the consequences for our life on this planet will be a century for now, and still all the graphs that record progress to counter the effects of climate change, biological diversity and resource depletion continue to go in the wrong direction. But most of us are now aware, in a way we never really were before, that unless we grasp the nettle of climate change, we face disaster: not you and I personally perhaps, not our adult generation, but without a shadow of doubt our children and their children into an endless future.

Our children will be here in fifty years, when oil will be too precious to burn. In the warmer world of 2050, with a world population approaching 10 billion, with biodiversity reduced as never before, at a

time we will have come to appreciate as never before the full spectrum of functions it serves in human life, cutaway bog will come to be treasured as the last place on our doorstep to which we can retreat from our frenetic world in order to experience contact with nature.

New eyes on cutaway bog

What opened our eyes regarding the biological diversity of cutaway bog was Turraun, a very deep and extensive bog in what is now the Lough Boora Parklands, situated right beside the Grand Canal, enabling fuel to be transported cheaply to Dublin. Here, in the early 1920s the visionary Sir John Purser-Griffith established one of the first machine turf operations, to show on a small scale what could be done on a much larger scale throughout the Midlands of Ireland. A few years later, in 1935, Turraun was bought by the Turf Development Board, the forerunner of Bord na Móna.[2]

Because of its early start, as the first bog to be mechanically developed in a systematic way, Purser-Griffith's Turraun was the first bog to be 'bottomed' or finish extracted by Bord na Móna. The underlying marl was reached in the early 1970s, and production was gradually phased out from about 1973, and around 120 hectares of the 570 hectare bog complex were abandoned to nature. All that remained was a variable but generally thin layer of peat overlying deep marl. The old bog drains were still there, now cutting deep into the marl, and a few higher areas of glacial gravel rose above the general level of the cutaway bog here and there.

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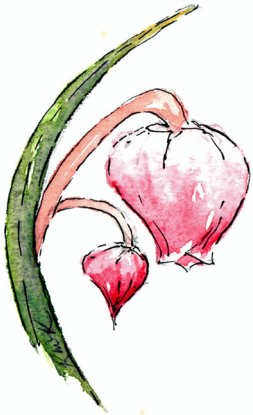
[2] *All of this is discussed in detail in the early chapters of* ***The Bogs of Ireland.***

But what nobody at that time had any experience of, was the potential of disturbed peatlands to develop a very high level of biological diversity **as a result of their inherent ecological vitality:** albeit biodiversity that is different from that of the natural habitats they replace. Once harvesting activity comes to an end – indeed, before it in many cases – natural processes of recolonisation take over on the cutaway, and in time the bare surface is replaced by a mosaic of evolving ecosystems of great ecological interest that develop on the residual peat. There will be woodland and scrub, dominated by pine, birch and willow. There will be oases and fringes of natural acid grassland, fen, marsh and small areas of bog, with considerable areas of shallow open water and the marginal habitats associated with it. And, most importantly, these spontaneously established new ecosystems are **in equilibrium with the changed conditions** which human exploitation of the original bog has brought about.[3] At Turraun itself, after less than 20 years, something like 160 species of flowering plants and ferns were recorded, and the number of bird species present was over 50, half of them breeding here, including the rare grey partridge.



[3] *John Feehan (2004).* ***A Long-lived Wilderness. The Future of the North Midlands Peatland Network.***

Cutaway and cutover bog have the potential to become a new wild place big enough for a great diversity of flowers and shrubs and trees, ferns, mosses and liverworts, birds and mammals and countless smaller animals, many of whom lived in the raised bog and its associated habitats: along with many others that would have been rare or altogether absent before the new ecosystems provided a place for them. We can now envisage a wildland mosaic reserve of National Park extent and commensurate importance and potential, as close to wilderness as anything can be.

This is a classic example of a phenomenon eloquently elucidated back in 1980 by the Nobel prizewinner René Dubos:

> "Ecosystems... undergo adaptive changes of a creative nature that transcend the mere correction of damage; the ultimate result is then the activation of certain potentialities of the ecosystem that had not been expressed before the disturbance... We can improve on nature to the extent that we can identify these unexpressed potentialities and can make them come to life by modifying environments, thus increasing the diversity of the earth and making it a more desirable place for human life."[4]

Restoration

When we talk about peatland restoration, what we mean is the restoration of biodiversity and of the lost function of carbon sequestration. We do not, save in exceptionally favourable hydrological and ecological situations, mean the restoration of raised bog. In a raised

[4] *René Dubos (1980),* ***The Wooing of Earth.***

bog, the living zone of active peat formation – what hydrologists call the **acrotelm** – disappears very early on, and conditions are rarely adequate to its subsequent re-establishment. If peat removal ceases at some intermediate stage, the result is usually the development of a type of dry heath of limited ecological value and with limited biodiversity.[5] The general public is often misled into thinking all that is needed to get the bog back to a pristine state is to block drains. This may be possible at an early stage in development, but once the water table has been lowered and the acrotelm removed it becomes impossible to **restore** to active raised bog, or at least prohibitively and unrealistically expensive.

The most significant long-term ecological opportunities for cutaway bog do not relate to raised bog **restoration,** but to the development of a carbon sequestering wild-land of enormous biological diversity: not that of the vanished bog, but of comparable ecological value. A moderate level of engineering **intervention** (e.g. to block outflow) will often facilitate development of the diverse mosaic of habitats that will naturally develop over time. A case-by-case approach is important. There are scores of degraded bogs, of all shapes and sizes, in the midlands. Most are circled with birchwood on the old turf-ground, all with much in common, but each with its distinctive features also, and all of them calling for community care and management. Together they can constitute a network of biodiversity reserves – large and small – many of them linked through ribbons of less intensively-managed farmland, and potentially enhanced through this connection.

[5] *It's not like a forest that you can re-plant and it will grow back if you wait long enough. The late-glacial topographic and drainage regime that provided the templates for the formation of raised bog are gone and – especially critically – climate change is taking us in the precisely the wrong direction. It will require direct intervention in the decades and centuries ahead to prevent the small area of relatively intact raised bog we still have from being colonized by pine and becoming something else. It's not like 100 years ago when you might come across what they used to call Sassenach's Cuts deep in a bog that had simply gone back to being a bog once the attempt to drain it had been abandoned.*

Succession

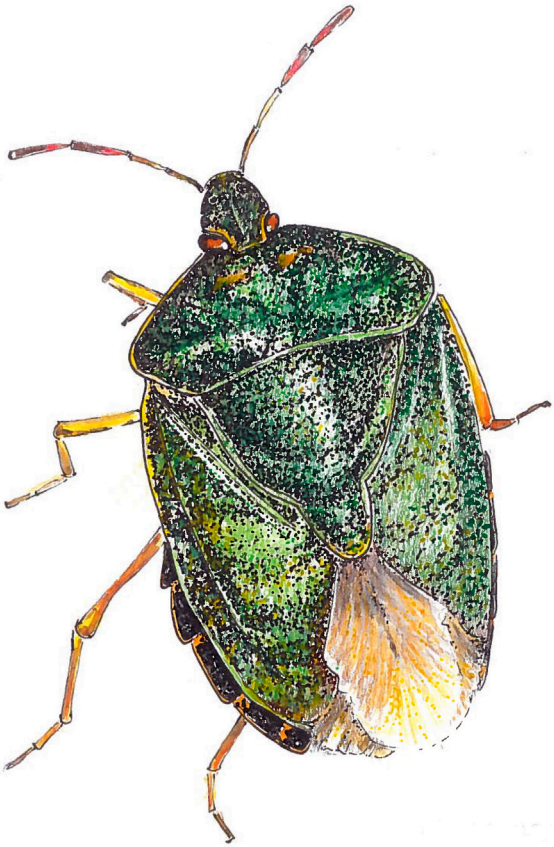
From the earliest days in the development of the modern discipline of ecology little more than a century ago there was great emphasis on the key concept of **ecological succession:** that the ecosystem evolves through a series of balanced transitional communities known as seres towards a natural climax community.

But the climax community towards which ecologically degraded peatlands are naturally evolving is not reached in ten or twenty years, but over centuries: and when attained it will endure for centuries beyond, without our help: in a world where these restored areas of natural habitat will be the great surviving reservoirs of natural diversity in this part of Ireland. But that recovery is not easily hurried, and our understanding of the ecological processes that underpin it is very limited. It is tempting to intervene in a way that shows we are doing something – and gives results that can be seen and applauded in a few years, but in many cases that is more likely than not to delay – or derail – the natural progression towards the optimal outcome of a stable climax vegetation, and optimal biodiversity.

The transitional communities through which the habitat evolves are shaped by the nature of the soil and allied factors: and the ecology of this soil is as complex as anything we see above ground but poorly understood by comparison – in part simply because it is out of sight and so, as so often happens, out of mind. This is why the nature and extent of our intervention needs to be so carefully considered in advance.

Keeping all this in mind then, it is deeply instructive to see what

has happened along the temporal trajectory of degraded bog restoration in the areas where natural ecological succession is more advanced – although still less than a century old: in the peripheral aureole of old turbary that encircles all raised bogs, where turf was harvested for generations by hand. Here we get to see something of that fourth ecological dimension of time, and catch a glimpse of how limited our ability to predict the course of ecological succession is: we simply don't know a fraction of enough about what is going on in the web of ecological transactions below ground. These areas have a critical and under-appreciated role to play in the future evolution of the bogs.



Our Once and Future Forest

In no more than a few decades an initial grassland seral stage is replaced by woodland, in which a preliminary ecological survey will report a modest level of plant and animal diversity. Birch is the primary coloniser in most of these areas, but birch is old at 100, and is now approaching old age in many areas. But over the century of its presence the soil has been transformed in a way most immediately (albeit superficially) evident to our usually less than observant eyes in the diversity and profusion of the mycorrhizal fungi that peep briefly above ground in the autumn.

This transformed soil provides an ideal seed bed for longer-lived forest trees. Already pine, oak and yew are beginning to establish an early foothold: an astonishing glimpse of the future these woods are moving towards, all the more so when you consider how restricted local seed sources for oak and yew are at present. And their longevity is the time frame against which we need to envision and work towards that Once and Future Forest of a century, three centuries, five centuries, hence: when our children will still be here, looking back with incredulous eyes that we should have been so blind: when these will be the only places where the true wilderness remains.

This successional trajectory is something no ecologist would have expected or predicted back in the 1970s, and it underlines the importance of always being conscious of the informal Third Law of Ecology elucidated by Barry Commoner back in 1971: ‘Nature knows best. Any major man-made change in a natural system is likely to be detrimental to that system.’ And when we do intervene, we need to know not only what the

effects of our intervention are going to be, but what the effects of the effects will be.[6]

The first of these longer-lived woodland trees to appear is the native European pine that has been living quietly at the edge of the bog down all the centuries, descendants of the great trees whose stumps were so regularly encountered by the great machines of Bord na Mona as they reached ever further back into the buried past centuries of the raised bog's growth.

Many of these are magnificent trees of immense beauty and presence, completely different from the stands of Scots pine cultivars sometimes planted on cutaway or cutover bog. And we have the assurance from recent research on European pine genetics (from our own Colin Kelleher and his colleagues across Europe) that these are to be regarded as native trees. One intervention therefore that should be more carefully evaluated is the possibility of collecting the seeds and transplanting the seedlings of these trees, especially in suitable areas of industrial cutaway.

The future is in our hands

The cutaway bogs present us, as a community, all together, with a unique and once-off opportunity at this most appropriate of timings **to act ourselves** to bring about a truly significant act of ecological restoration. This is – or has the potential to become – our rain forest. This is the one corner of the world's biodiversity we can save with our own hands and hearts, and in doing so preserve the values and functions it represents

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[6] *Barry Commoner (1971).* ***The Closing Circle. Nature, Man and Technology.***

in our lives: putting into **practice** our determination that there should be biodiverse wild places for future generations not just in theory from a concerned global perspective, but that there will be THIS wild place forever on our community doorstep, for which we are directly responsible.

The development and care of these newly and truly rewilded places is a **trust** to which everybody is called to contribute. Tochar provides the communities of the midlands who live and work in the lands around the bogs with the opportunity to engage directly with one of the greatest challenges facing us today, in the only corner of the world in which we can do this through direct, personal action: in the process raising our own awareness of the issues involved, and kindling opportunities for further engagement as well as school curricular development.

This vision of the rewilded bogs is not a project for a year or for fifty years, but for centuries, becoming ever richer as time goes by and nature re-establishes its green hold across the bog. Over that time our awareness and appreciation of what this place enfolds and embodies for us, may grow in a way that makes the legacy ever more valuable. This is how we can best contribute, at individual and community level, to the healing of the natural world, responding to the challenges set out in our National Biodiversity Action Plan.

This is what Aldo Leopold's famous 'Thinking like a mountain' means in the Irish Midlands context.[7]

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[7] *'Thinking like a Mountain' is a very short – but profoundly influential – essay in Aldo Leopold's **A Sand County Almanac and Sketches Here and There** (OUP, 1949, 129-133). 'Thinking like a Mountain' means adopting a holistic view: having a complete appreciation of how each of the elements within an ecosystem is connected to, and affects, everything else: and considering the long-term consequences of our actions on nature, and not only their immediate effects. The essay can easily be downloaded from the Internet.*

Conclusion

Often, as we reflect on the enormous challenges we face in our time, it is easy to feel helpless, that there is little we can do apart from using the influence of our voice and vote to get those who represent us politically to echo all our voices on the national and international stage. But we are often reminded of the importance of connecting what is a global challenge back down to our local environment.

The first step is to bring these areas within the embrace of the community living around the bog, whatever the measures we take to facilitate their progress towards the future of optimal biodiversity to which their ecological succession is taking them. In many cases little or nothing needs to be done in the short term, and in all cases never without careful study of that fourth dimension in ecology, deeply conscious of the time-frame across which the natural succession to that optimum is achieved.

And this is where the role of Tóchar is so timely, critical and central to making this dimension of a true just transition possible: in ecological terms in most cases not a return to raised bog but to a forested wetland richer in plant and animal life and in its ability to sequester carbon. And we should be clear in our minds at the outset that the over-arching aims are the restoration and enhancement of optimal biodiversity and carbon sequestration function, other aims being important but secondary: giving very careful thought at the start as to how these aims can best be achieved and balanced.

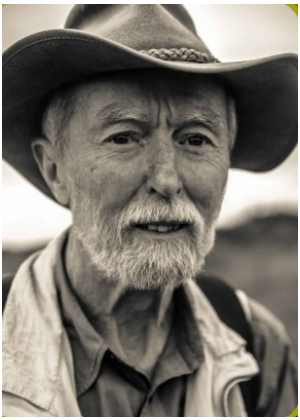
This is why I find the choice of the word Tóchar for the

organisation charged with enabling community effort in taking on this challenge so appropriate a metaphor. There is a path to be followed towards our goal, but it is beneath the surface of the bog, and requires careful attention to decipher its course, and to follow that course ...

Can I conclude with a little anecdote from the life of St Cainneach – who lived in the 6th century. We are told that the saint used to head into the woods of Clonbrone on the edge of the bog in Killaun on the edge of Birr from time to time to sort himself out, when he needed to clear his head: and that on one occasion he lost track of time to such an extent that it was three days before he came home instead of the few hours he had agreed with his monks. I'm not sure this is what the author of the Life of Cainneach meant us to take from this, but isn't it wonderful to think that on our doorstep there can be a place so wild and remote – and yet close to home – that we can lose ourselves in contemplation and our search for a deeper meaning to the world around us! The great 19th century pioneer of environmental awareness, John Muir, knew what he was talking about when the wrote that 'the clearest way into the universe is through a forest wilderness.' If I may conclude with another quotation from René Dubos:

> "Human beings need primeval nature to re-establish contact now and then with their biological origins; a sense of continuity with the past and with the rest of creation is probably essential to the long-range sanity of the human species."[8]

[8] *René Dubos (1976),* ***Science*** *Volume 193.*



Professor John Feehan
Irish Geologist, Botanist, Author, and Broadcaster

John Feehan has spent a lifetime studying the midland bogs. He is the author of the definitive study of the natural, cultural and industrial heritage of the Bogs of Ireland as well as numerous other publications on bogs, and until his retirement delivered the Peatlands Management module in the School of Agriculture and Food Science at UCD.
He has been described by Michael Viney as “one of Ireland’s top ecologists and communicators of nature”. John is a Member of the Royal Irish Academy, and last year was awarded an Honorary Doctorate in Science by Trinity College Dublin.

John Feehan presented this essay as his keynote address at the **Tóchar: A Path from the Past, A Future for Wetlands** conference held in Abbeyleix, County Laois on the 22nd May 2025.

Tóchar

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Midlands Wetland Restoration

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