**WETLANDS, NUTRIENT NEUTRALITY AND THE FAILURE OF MARKET ECONOMICS**

**As markets seek to reconceptualise wetlands, do we risk losing a glorious opportunity to stem their degradation and loss? Robert McInnes and Mark Everard report**

Biodiversity is in crisis. Climate change is wreaking social and environmental havoc around the world. Globally, we have lost almost 90 per cent of our wetlands since the early 1700s.

Today, freshwater biodiversity is declining at a faster rate than any other ecosystem. We have recognised this for decades, but the penny has finally dropped that these trends are inextricably linked with humanitarian, climatic and security threats. If ever there was a time to stem wetland degradation and loss, that time is now.

But how can we be squandering our wetlands? Our knowledge of the benefits that human society reaps from wetlands is vast, embedded in our collective environmental psyche. Haven’t we all been taught that wetlands are the kidneys of the land, selflessly processing and removing contaminants from polluted waters?

Haven’t we all marvelled how wetlands store carbon to mitigate climate change? Haven’t we all breathed a sigh of relief as our benevolent wetlands prevent floodwaters violating our homes? Haven’t we all been spellbound by the beauty of wetlands in paintings by Turner, Monet and Constable? And we’ve not even mentioned the wildlife.

**Status**

Historically, we have protected a few select wetlands, reflecting a narrow framing of their value. These wetlands are often designated for nature conservation as a special protection area, special area of conservation or Ramsar site, recognising that they support a limited selection of animal or plant life deemed to have value to society.

Though welcome, such protective measures have left remnant wetlands that are fragmented – hydrologically, ecologically, functionally and psychologically – within wider, denuded landscapes.

Outside the designated boundary, wetland decimation continues unabated. There is scant evidence that we are honouring in any concerted manner our commitments under the Ramsar Convention to promote wise use of all wetlands, in the UK or elsewhere. Recognition of the wider costs to society and erosion of intergenerational equity from wetland loss is conspicuous by its absence.

Today, we have distorted the language we use to talk about wetlands and other ecosystems, rebranding them as utilitarian solutions to fragmented problems.

We talk about natural infrastructure, nature-based solutions, blue carbon and natural flood management. Each of these can be a valuable outcome of multifunctional ecosystems, but the operational reality is that they are implemented as narrowly framed techno-fixes.

And so, each rebranding points – by implication – to historic failures as we try to convince ourselves that progress is afoot.

These new terms and slogans attempt to capture a new audience, market or funding stream, yet continue to overlook the multifunctionality of wetlands and the cumulative potential societal values that come from restoring or creating them. Meanwhile, our wetland wealth continues to be lost or degraded.

Our damning rates of wetland degradation and loss reflect failures of successive government policies and economic systems to recognise and internalise the diverse benefits that wetlands provide.

The diversity of wetland values occupies a space outside – or hard to integrate into – a neoliberal market economy. Markets have traditionally rewarded converting these so-called wastelands into land for financially accountable farmed produce, real estate or other civil infrastructure.

They have silently neglected other values, including natural beauty, nursery areas for fisheries, boosting people’s mental and physical wellbeing, pest and disease control, our relational connections, and a host of further substantial yet unaccounted values.

Decisionmakers’ failure to consider these wetland externalities has led to chronic and invidious undervaluation of nature.

**Window of opportunity**

There are few genuine opportunities to confront the challenges that wetlands face, despite everything we know about how they can address multiple pressing societal challenges. To mix our metaphors: first, we looked the gift horse in the mouth; then, we left the stable door wide open. Has the horse bolted? Unfortunately, this is our trajectory, unless we take urgent and decisive action to use wetlands to achieve nutrient neutrality.

In 2018, the European Court of Justice ruled that any new plans or projects could not increase nutrient loads to internationally important nature conservation sites, *see box*. The Dutch N case effectively means that local authorities across England must protect Natura 2000 and Ramsar sites, such as the Somerset Levels and Moors or the Solent Estuary.

The ruling establishes that proposed developments must demonstrate that they will be nutrient-neutral – that their surface-water runoff and wastewater will be less than or equal to the catchment’s existing nutrient levels.

One consequence has been development paralysis across swathes of England, planning authorities advised not to grant planning permission without assessing proposed developments to ensure they have neutral or positive nutrient impacts on internationally important sites.

This has left developers, consultancies, landowners and other interested parties scrambling around for solutions, quick fixes and quack remedies. Wetlands top the list of solutions for mitigating unwanted nutrients.

Is this the opportunity wetlands have been seeking? Aren’t wetlands the purifying kidneys of our landscape?

Some parties present wetlands as a panacea to the furore about nutrient neutrality. Regrettably, this positions wetlands as a reductionist, end-of-pipe solution or a simple land-swap. This myopia serves only to perpetuate the blinkered mindset of the past, the unfortunate consequence of which has been to reduce wetlands to reeds in a box.

This narrow framing presents wetlands as single-discipline solutions, a commodity to offset nutrients, so that the market economy can continue unfettered.

Simplistically, nutrient neutrality opens a market opportunity to convert farmland to wetlands to generate income. Wetlands remove the nutrients, landowners bank the cash, developers secure their permissions. Everyone goes home happy.

When people hear about the need for nutrient neutrality and the potential to create wetlands, we wonder how many see this a great business opportunity, rather than as a genuine chance to develop wetlands wisely in ways that benefit society as a whole?

**A price-tag on nature**

Commodifying wetlands under the buzzword of nutrient neutrality is single-outcome myopia in a new, synthetic market. This approach perpetuates well-trodden failures that undervalue wetlands. Some readers may be howling at this point.

Sometimes, commodification expands to include carbon storage, biodiversity net gain and/or flood risk mitigation. But even this perpetuates a reductionist view that fails to recognise – let alone embrace – the diversity of values that wetlands can provide beyond these new perceived outcomes and associated income streams.

Similarly, attempts are rarely made to identify the diversity of beneficiaries, upon whom wider wetland values are conferred, or else eradicated.

The great Romantic poet, artist and aesthete William Blake said: “To the eyes of a miser, a guinea is far more beautiful than the Sun. Some see nature all ridicule and deformity, and by these, I shall not regulate my proportions; and some scarce see nature at all. But to the eyes of the man of imagination, nature is imagination itself.”

Beneath that glorious prose lies a hard economic fact; our collective myopia and lack of imagination overlook the natural functions and values on which everyone’s security, enrichment and sustainability depends.

The tragedy is, a blinkered, technocentric and neoliberal trajectory that sees wetlands only as a means to nutrient neutrality ultimately devalues wetlands.

Nutrient neutrality could be a wake-up call to recognise and safeguard the multiple benefits that wetlands provide. Instead, wetlands are being appropriated within a market economy so that development can march on as the opportunists gather to await the profits.

Commodifying wetlands misses an important opportunity to broaden the discourse, to recognise and embrace their systemic nature and multiple values. Shouldn’t we harness our pursuit of nutrient neutrality as an anchor service, easing the impacts from nitrogen and phosphorus on the aquatic environment, beyond which we can also optimise myriad interconnected values that wetlands provide?

In our haste to maximise one narrowly framed value, we perpetuate our reductionist view of wetlands. Unless we reflect on and redress our myopic trajectory, we will hasten the degradation and losses of wetlands beyond their tradable boundaries.

The most vocal stakeholders’ dominant mindset is to pursue anachronistic, siloed market economics and one-dimensional regulatory conformity. Instead, we should focus on broader, more integrated and plural constructions of wetland value to build more resilient catchments that protect our communities today and for future generations.

We need to use our individual and collective imagination to recognise wetlands’ long-term, multifaceted benefits for all in society. If we fail to seize this glorious window of opportunity, if we cannot change the prevailing mindset, we will fail, collectively, to halt the decline of our remaining wetland remnants – on whose wealth our mutual futures depend.

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FIGURE: WETLANDSgerman\_c\_RJ McInnes

*A constructed wetland in northern Germany: “Do not enter the planted treatment system” © RJ McInnes*

FIGURE: WETLANDSIngoldisthorpe,Norfolk\_c\_RJ McInnes

*An integrated constructed wetland at Ingoldisthorpe, Norfolk provides multiple benefits while cleaning treated effluent © RJ McInnes*

**BOX: THE DUTCH N CASE**

In November 2018, the European Court of Justice passed judgement on the joined cases C-293/17 and C-294/17 Coöperatie Mobilisation for the Environment UA and others v College van Gedeputeerde Staten van Limburg and Others.

Known colloquially as the Dutch N case, this ruling has required greater scrutiny of the effects of plans or projects that, either directly or indirectly, increase nutrient loads to internationally important nature conservation sites where a reason for unfavourable condition is an excess of a specific pollutant.

That is when the term ‘nutrient neutrality’entered our lexicon.

**BOX: ARE REEDS IN A BOX REALLY WETLANDS?**

Constructed wetlands – more accurately, reedbeds for polishing treated wastewater – have gained some traction in the water industry.

Yet, in practice, these constructed wetlands have been reduced to reeds-in-a-box solutions that aim to achieve a single outcome such as reducing organic loads, wetland vegetation acting as little more than a green add-on to narrow engineered norms.

This approach fails to recognise the natural hydrological, physicochemical, ecological and social functions and benefits that wetlands could provide were they integrated into landscapes beyond chain-link fences.

Stakeholders’ knowledge and perception must evolve, to see that the engineered reeds-in-a-box view of wetlands is anachronistic. Today’s solutions require more integrated, natural wetland systems that fit seamlessly within our landscapes to deliver suites of interconnected benefits.