



Episode 7: Delay to Biodiversity Net Gain, State of Nature Report & Nutrient Neutrality

## Audio file

### Transcript

Sophie

Hi everyone and welcome back to another episode of Nature in a Nutshell, the podcast which breaks down the latest ecology and environmental news. My name is Sophie and I'm the Marketing Officer at CIEEM, the Chartered Institute of Ecology and Environmental Management, and today we're switching things up as I'm joined by my 2 colleagues, Douglas and Mark, who is kindly filling in for Jason today. They will be explaining the big news items from the past month that are affecting people and nature.

Douglas

Hi, I'm Douglas. I'm CIEEM's Policy Officer.

Mark

And I'm Mark, I'm Head of Professional Practise.

Sophie

And Mark, do you want to maybe tell the listeners a little bit about you and your background and your role at CIEEM?

Mark

Sure. Thank you. Yeah, it's great to be here. So I think I'm still the new boy at CIEEM. So I joined earlier this year in February and my team here is responsible for professional standards and professional development. So basically making sure that ecologists and environmental managers have got the resources and the support that they need to be ambitious for nature and also for themselves. I did my own ecology degree in the mid to late 90s and since then I've done some research into habitat creation and soil formation, and I've written and talked on various different environmental courses, particularly in colleges and universities.

Sophie

So today we've got quite a jam packed episode thanks to recent news and developments from the government. Doug, what are we covering in today's episode?

Douglas

Yeah. So today we'll be talking about delays to Biodiversity Net Gain, the state of nature report and nutrient neutrality.

Sophie



Well, let's kick things off first with the delay to Biodiversity Net Gain, because it's all we've been talking about this week and it also follows on quite nicely from our previous episode with Dr Julia Baker.

Douglas

Yeah. So this couple of days now from when we're recording, but the UK government announced they're going to delay the implementation of Biodiversity Net Gain so that's BNG. And that was due to become a mandatory component of the planning system in England this November. So this is an England centric policy. Other countries are developing alternatives and sort of seeing how this process goes.

The outdated timetable to assess whether government now will require developers to deliver 10% BNG from January 2024. So while it's a couple of months, it's not sort of a massive shift. This is still quite impactful because obviously, developers, planners, ecologists have all been gearing up for this to be coming into place in November. So lots of things on that, how we push back down the pipeline, it also means we have another three months where nature is more on the back foot. It's not, I guess, as much of a priority as it will be when BNG comes in, so this is still really impactful, even if it only maybe a three month delay. But to try and sort of alleviate some of the uncertainties surrounding BNG following this delay, the government has committed to publishing all guidance and regulations relating to BNG by the end of November. So this includes the statutory biodiversity metric, so this is critical for calculating the correct biodiversity net gain the draft biodiversity net gain plan timetable, which will help developers prepare for what they will need to complete during the planning application stages, their habitat management and monitoring plan template. So this sets out how the improved significant on site habitats will manage for the long term, so the longevity of projects. And then a package of BNG guidance that sort of is about advice for land owners, developers, local planning authorities around what their role and responsibility is in delivering BNG.

Obviously this is good that more advice and guidance is coming out. This has been one of the big criticisms and complaints by lots of groups that you know this is due to come in place in November and they didn't have all the information which they really need to have the information. Yeah, this is it's kind of important. You know what you're doing when you're going into it. Generally the delay has not been welcomed by environmental groups in particular. And many sort of considered to be unnecessary and very damaging to the government's own ability to meet targets associated with its 25 year environment plan. And sort of the local nature recovery strategies of which BNG is a I guess a flagship component. So there is still concern that BNG would be pushed back even further, so it's, I guess the silver lining that it's still coming in place in January and it'll be starting off the new year. So yeah, really it's just sort of a watch this space situation, not many people saw this coming. This came up really quickly and sort of out of nowhere. So it really blindsided a lot of people and here's hoping it just sort of sticks to that January date and more information comes out about it really.

Sophie

Yeah, and am I right in thinking that a lot of people found out from the BBC News article?

Douglas



Yeah, absolutely. I mean, the government hadn't actually released any information. It was a, it was someone who talked to BBC and the BBC article and it wasn't until I think later that day maybe, you know, a good 12, well maybe 8 hours after that BBC article, the government finally announced something so it was a real day of uncertainty. And yeah, we were all sort of furiously emailing, saying what's going on. The BBC have got this, where have they got it from? Yeah, that seems to be a bit of a trend at the moment with the government either trying to slide things under the radar or announcing things out of the blue or, you know, Rishi Sunak not turning up to a climate conference in New York and not telling anyone he wouldn't turn up, and then just not being there. So there's yeah, there's lots of things going on.

Sophie

Very interesting, makes for an interesting episode anyway.

Douglas

It does, yeah. It makes for an interesting and topical one.

Sophie

OK. Well, let's move on to the State of Nature report then as well.

Douglas

Yes, this is, uh, still with me. Many of us over the past week would have seen the sort of the government's decision to really roll back, I guess, what they're turning off on as the green agenda. So the UK is now pushing back the deadline for the sale of new petrol and diesel cars. And they're also approving the development of the largest untapped or for the North Sea, Rosebank. So I mean, this is really contrary, I guess, to what the government's previous credentials have been. I mean, this Conservative government has sort of claimed itself to be the greenest government ever, when Rishi Sunak came in, he pledged to make some huge sort of changes to net zero or at least continue the trend, and these changes really aren't that, you know, these are massively impactful, particularly in very different sectors.

So the sale of new petrol and diesel cars. Although seemingly well, it'll be good, you know, more sales, more money coming in. The industry has already started to move towards electronic vehicles and sort of incorporating new charging stations and all this sort of thing. And so this, they've already developed these plans. So throwing this spanner into the works, it will cost you know, millions and millions of pounds in terms of having to adapt what you're doing all these changes so this the amount of uncertainty this creates is massive.

And the Rosebank oil field has been met with huge amount of condemnation, sort of across sectors. I mean, obviously the green sector is very against it, but lots of different sectors. And it's estimated that sort of all of the production of the Rose Bank sort of oil field is massive oil field in the North Sea, which is about 300 million plus barrels of oil would be the equivalent to the annual missions around 90 countries, about 400 million people. So that's many times the population of the UK. So it's really a question of why so many places and the UK in particular are making huge strides forwards in renewable technology. And it seems very backwards to suddenly now start drilling for oil in North



Sea to start a huge project for it. It's really disheartening to see this, and it's really disheartening to see such a big project coming into it. And there's lots of arguments about how much money will actually be made from it. I mean, it's Norwegian companies so there's a lot of uncertainty, really, and almost prophetically, I guess at the same time this was all coming out and all these rollbacks were happening, the state of Nature report was released by the sort of state of Nature Partnership.

This was published for the UK and it contains some pretty sobering figures concerning our wildlife, so this is a report that uses huge amounts of available data, the most recent data and sort of stretches back about 50 years in terms of the data they're using. So back to the 1970s, they work with lots of different partnerships, things like Bat Conservation Trusts, RSP, Amphibian and Wildlife Trust. So loads of different sort of UK Trusts, but also overseas territories and Crown dependencies, and they found that in the UK, species studied have declined by an average of 19% since 1970. That nearly one in six species are threatened with extinction in Great Britain, that 151 of the sort of 10,000 species examined had already become extinct since 1500s, and that invertebrates are being found in about 30% fewer places now than in 1970. So these are some headlines, there's plenty on things like pollinating plants have reduced by about 54%. And I guess it's a bit nebulous and a bit difficult to get a handle on how significant these numbers are, I mean, 90% might not seem a lot, but it's all resulted in the UK being one of the most nature depleted countries on Earth. And this is sort of primarily caused by massive intensification of agriculture and land. So we've really seen a huge amount of changing land use, habitats have become incredibly restricted. They become incredibly fragmented and this sort of trend has continued and this is sort of along with climate change, which is causing major changes to land and sea, population range shifts, all this sort of thing.

But you know our total farming productivity has continued to increase and the sort of the volume of fertiliser peaked in the 1980s and hasn't really, has levelled off a bit, but it's still very high and in the marine world, it's fully sort of it's fishing, it's overexploitation. So the state image report lays these all out, it's a fantastic report. I absolutely say everyone go and read it. It's really well laid out. They put the causes, they've got why the decline is happening, how much decline has happened. It's an incredible piece of work and it really is quite sobering, as with a lot of these things, there is always an uptick. I think really for me, what was sort of they put some really key conservation actions and they were very, very keen to highlight that there have been some real achievements in conservation and none of these things are other than the extinctions, not reversible. You know, we can turn back the clock on these sorts of things. So a couple of those sort of nice highlights, I guess, which the things like large scale restoration projects such as the Cairngorms Connect have really helped to build and benefit many woodland dependent species, natterjack toad populations have stabilised or expanded at sites where conservation management has been well resourced so, we have the tools. We can do these things. We have the expertise, we've got the knowledge, we can make conservation work and species can thrive. But it's about getting those projects in places and getting the funding and the protection longevity. I guess a really interesting time for a report like this to be published when the current government is really rolling back, it's sort of green agenda. I think it's really important that they've announced and published it now because it really helps to sort of highlight that comparison.

Sophie



Thanks, Doug. We will put a link in the show notes to the state of nature report if you want to go read it, we'll move on to our next topic then. So there's been a lot in the news recently about the government trying to weaken Environmental Protection given to rivers. So Mark, can you tell us a bit more about what's been happening.

Mark

Sure, I'm going to attempt to tackle nutrient neutrality and explain where we've got to given the recent shenanigans we're seeing in government. Perhaps it's easiest to start with the symptoms of nutrient pollution and then try and talk about the causes and what this legislation was designed to achieve. The symptoms are the unfavorable condition of our watery protected sites, such as Special Areas of Conservation and sites with internationally important Ramsar designation, places like the Norfolk Broads, Somerset Levels and the globally rare chalk streams we have here in Hampshire. Many of these places are in poor condition because of excess nutrients in freshwater, and I'm talking here particularly about nitrogen (N), and phosphorous (P). These cause changes to the relative abundance of different species, and reduce biodiversity in these types of environment. You may have heard of the word Eutrophication before, which is the excessive growth of algae and plants – they respond really strongly to those high levels of nutrients, you get a boom in their biomass, you get algal blooms being produced and when those plants and algae die and decompose, they lock up oxygen in the water through that microbial decomposition. That lowering of oxygen in the water can have knock-on effects on other species, such as invertebrates, fish, and birds, and it also affects our own wellbeing through reducing our ability to access and enjoy nature through activities like kayaking and swimming, and also increases the costs associated with water abstraction and purification.

Sophie

We hear a lot about spills of sewage around the coast and into our rivers. So is this the cause?

Mark

Partly it is, but it's not the whole cause. So sewage contains lots of substances that we're concerned about, including the bacteria that can cause harm to our own health. But of all the water quality pressures affecting our rivers and lakes, excess phosphorous is the most common cause of failure against the standards set by the Water Framework Directive in 2009. So we're talking specifically here about nutrients in very biologically active and mobile forms such as N in nitrate and P in phosphate. These are essential elements for the growth of pretty much every organism on the planet including us - our DNA contains both nitrogen and phosphorus. I think there are just a few examples of some wonderfully weird and ancient single-celled organisms such as Archaea that can swap phosphorus for arsenic in really extreme environments. But basically all life on earth needs these elements, so they are only pollutants where's too much of them in the wrong place, and I think that's a bit more difficult to explain sometimes than for example E. coli from sewage that makes us sick.

Sophie

What are the sources of these excess nutrients?



Mark

So the reason we have too much N and P in water is because of the permitted and non-permitted release of effluent from waste-water treatment works, leaks from septic tanks, runoff of fertilisers, manures used in agriculture, and industrial processes. The absolute core problem is that these substances have been so valuable to us, particularly in agriculture, that we've worked out how to add more into our natural nutrient cycles, for example through the industrial fixation of nitrogen from the atmosphere and by mining phosphorous from rock. Basically we've unbalanced our element cycles in a really big way. Globally, we think we've approximately doubled the amount of nitrogen in a biologically active form, and at the same time we're really wasteful. Some places and systems are more efficient than others but globally as much as 50 % of the nitrogen that we use in agriculture to improve the productivity of crops, never even reaches the plants. That's an expensive waste.

Sophie

It sounds like a really big issue, but you don't hear that much in the news about nutrient pollution. Do you know why that is? What do you think?

Speaker 3

I think you're right, and arguably, even though we've unbalanced the nitrogen cycle even more than we have the carbon cycle and we regionally hear about the impact of carbon, it's not talked about so much. And I think that is because it's more difficult to explain. So especially if you've got bad memories, thinking back to school and studying the nitrogen cycle and all those terms like nitrification and denitrification and ammonite. And I genuinely also think that that's a reason for some of the political tensions in that area where there's not enough basic understanding in government of the behaviour and impact of elements to make the right long term decisions. The UN are aware of this issue. They've even released a slightly questionable song in 2019, perhaps we'll put the link in the show notes to try and raise awareness of their work promoting the sustainable management of nitrogen and just to tell people that it's thing that we should be concerned about.

Sophie

So what is the nutrient neutrality approach?

Mark

There are several areas of policy and initiatives to try and promote more sustainable use of nutrients and to minimise their impacts on the environment. So in agriculture, for example, we have Nitrate Vulnerable Zones. But new development such as housing, especially in catchments that are already stressed, puts extra pressure on already vulnerable habitats. The approach taken in England is called Nutrient Neutrality – in a nutshell, if you're a developer in one of the 27 catchments identified as being particularly at risk, then to get planning permission you need to demonstrate that your development is not going to put additional N or P (and many catchments are affected by both) into the water. Inevitably, because we poo and wee and use detergents that contain phosphates, any new development has the potential to send extra nutrients to rivers either directly or through already stressed waste water treatment plants. So the first step is to try to quantify the potential



inputs, and local authorities in affected areas provide nutrient calculators that can be used to do this, based on the number of new houses and residents. Then, the developer working with ecologists and specialists will need to satisfy the local authority that they have taken steps to prevent nutrients reaching water, for example through activities onsite, like sustainable drainage systems, and where extra nutrients are unavoidable they need to propose mitigation to ensure there's no net increase in nutrients in the catchment. The type of mitigation includes short and long term actions such as the creation of wetlands and woodlands, use of artificial constructed wetlands, and the planting of riparian buffer strips. It's also possible for developers to purchase nutrient credits that fund mitigation measures elsewhere but within the same catchment. Natural England and other organisations such as the Wildlife Trusts, and land agents and owners, have been looking to acquire sites that can be used for habitat creation to reduce nutrient inputs elsewhere in the same catchment, and sell credits to developers.

Sophie

OK, well that sounds a little bit confusing and I'm sure I'm not the only one. Can you give us an example of this?

Mark

Sure, so to get planning permission a developer needs to work out how much extra nitrogen and or phosphorous their development is going to be putting into the catchment and propose avoidance and mitigation. They may not have the space to do this within the footprint of their development, especially in urban areas, as for example it can take around half a hectare of new woodland to mop-up the P produced by two houses, and it also takes time for habitats to become established. So instead, developers can buy nutrient credits. One nitrogen credit under Natural England's scheme for the Tees catchment costs £1,825, so to mitigate 3 kg of N, it would cost just under £5,500. That money funds the creation of habitat that can absorb nutrients as it develops, and can be managed to meet multiple objectives relating to biodiversity, carbon and wellbeing, which provides one funding model to support restoration.

Sophie

Why did the government try to ditch nutrient neutrality then?

Mark

The main problem is that it takes time to identify and establish sites for mitigation, which have to be in the affected catchment, and demand for nutrient credits where these are needed has been outstripping supply. The government argues that this has slowed the building of new homes, and at the end of August proposed amendments to the Levelling Up and Regeneration Bill (the LURB) and I quote 'to no longer require the consideration of nutrient flows from urban wastewater as part of Habitats Regulations Assessments'. The government said that housebuilding is being held back by 'defective EU laws' and that the new approach is a 'Brexit bonus'. Basically the amendment would require Local Authorities, when making planning decisions, to assume that developments won't damage protected sites – despite their better judgement and own knowledge. Local Authorities would even be obliged to ignore any evidence that suggests otherwise (including, evidence from the





Government's own advisors in Natural England). It was a really disappointing announcement, especially given how much effort local authorities and others have put into researching and implementing mitigation measures. As members of Wildlife and Countryside Link we joined many other organisations in expressing concern that this is carving away at the Habitats Regulations, and also places a burden on taxpayers rather than enforcing the polluter pays principle.

An influential voice also expressing concern was the government's own watchdog, the Office for Environmental Protection, who's Chair wrote to the Secretaries of State for Levelling Up, Housing and Communities, and for Environment, Food and Rural affairs, saying that the proposed changes will reduce the level of environmental protection and amount to a regression. The OEP said that the government hadn't adequately explained how, alongside this weakening of environmental law, new policies will ensure that we still meet our objectives for water quality and the condition of protected sites. It's been a bit of a rollercoaster as, undoubtedly influenced by the OEP and by the widespread outcry from environmental groups, Labour led a rebellion in the House of Lords and voted down the proposed amendment. Shadow minister Nick Thomas-Symonds said the government had put forward "an entirely bogus dilemma" and not to 'pretend it's a choice between looking after our environment and building more houses, because it isn't'.

Sophie

What do the government want to do next? So will nutrient neutrality continue in its current form?

Mark

Because of the late stage at which the government tried to introduce the change, it can't try again in the House of Commons now it has been defeated in the Lords and ministers will need to bring any new proposal forward in a new bill. The government have responded though by saying that 'nutrient neutrality, the delays it is causing to housing delivery, and the wider need to restore waterways remains a government priority, and the government will make further announcement about next steps in due course.'

So it's one to watch, and the government are right on one point - nutrient neutrality is not the full solution. We have to wean ourselves off an over-reliance on these nutrients and use them less wastefully. Just like net zero approaches for carbon, we need mitigation right now, but we also have to stop inputs at source. Given our precipitous decline in biodiversity highlighted in the State of Nature report, I just don't trust that the promised investment in wastewater treatment by 2030 is going to be effective enough to negate the need to act now, they're complementary approaches and it's not one or the other. We also have a real opportunity through nutrient neutrality to help fund nature recovery, particularly through identifying opportunities for wetland and woodland creation, and also to drive and force the more widespread adoption of sustainable nutrient management practices. Just like with BNG, any significant changes or delays are really frustrating, not just to us as ecologists and environmental managers, but also to the developers and landowners who have been embracing this as an opportunity to innovate and do the right thing for nature.

Sophie

Is there anything that we can be doing at home to help?





Mark

We need to keep the pressure on. You can help a bit to reduce surface runoff by protecting soils, by keeping plants in the ground and avoiding using paving and other impermeable surfaces in the garden. You can also take steps to reduce the amount of nitrogen and phosphorous that your activities are causing to be added to the environment. For example by choosing a more plant-based diet that's more nutrient efficient, buying organic food (where it's more likely that nutrients used in production will have been recycled), and by swapping to eco-friendly detergents that are lower in phosphates. But, there's an impact of some of those choices on your wallet and you shouldn't necessarily have to make all these decisions in a cost of living crisis – manufacturers of dishwasher tablets for example must know the impact of their products on the environment and should be changing their formulae rather than relying on improved water treatment downstream. We need to do what we can as individuals, and for us as a professional body, to be vigilant for any future attempts at weakening environmental legislation for political gain. And there are some positives through this whole experience, particularly seeing the strength of people's reactions, and hopefully also a general increase in awareness of some of the issues relating to nutrient imbalances.

Sophie

Thank you so much, Mark. That was such a big, deep dive into nutrient neutrality. I'm sure we're all experts now!

So as always, we are going to end on our positive news segment. So I was delighted to hear that the Golden Eagle numbers in southern Scotland have soared to their highest in centuries, thanks to the pioneering conservation efforts of the South of Scotland Golden Eagle project. So five years ago, only three breeding pairs remained in the area when the project began. But now numbers have risen to 46, so that's amazing. And this is a particularly exciting bit of news for CIEEM as well as the South of Scotland Golden Eagle project won the 2022 CIEEM Best Practise Stakeholder Engagement award and the Tony Bradshaw Best Practise award at our annual awards last year. It's great to see them continuing their brilliant work with this project and congratulations to all of them who were involved in this project. Mark, do you want to share your positive news story?

Mark

I spotted one that's a bit further afield in Brazil, but this is news of the rediscovery of a species that had been thought extinct for 186 years or 186 years ago was the last time it had been seen as part of an initiative to try and rediscover missing species. So this is a species of small holly tree called 'Ilex sapiiformis' which is also known as the Pernambuco holly. It was feared to have been extinct, but thanks to the efforts of researchers in an urban city area, exploring through the region, it's been spotted, the research has spotted its tiny white flowers. And although it's in an urban area now, it used to be rainforest and a member of the expedition said that it was like finding a long lost and long-awaited relatives that you only know by old portraits, so that's fantastic news and the hope now is to perhaps find some more individuals and establish a breeding programme to resurrect its chance.

Sophie



Thanks for listening to another episode or from Nature in a Nutshell. Please don't forget to go ahead and rate and review the podcast and we'll see you next month. Bye!