



Caffi Ecology: Net benefits for Biodiversity

Welsh Policy Group event – 2nd March 2023

The Welsh Policy Group (WPG) hosted the inaugural event in its Caffi Ecology event series on 2nd March, at the Norwegian Church Arts Centre in Cardiff. Caffi Ecology events are opportunities for networking and knowledge exchange for people who may not often have the chance to connect. The WPG brings people together from across the research, consultancy, policy and practitioner communities to discuss a timely and important policy topic. Our first event focused on Net Benefits for Biodiversity.

In this report, we will summarise the content of the event, including the themes of the speakers' talks and topics that came up during the discussion. Discussions at these events are run under Chatham House Rules, so all contributions are anonymous.

Defining terms

Whilst these concepts are grounded in legislation and governmental strategies, government and public agencies are still working out how to implement them. Here we outline how we understand these concepts at the time of writing, but certain facets of them may change over time. These definitions were prepared using CIEEM briefing¹ and an article from The Journal of the Town and Country Planning Association².

Net Benefits for Biodiversity (NBB) – This approach has its roots in the 2016 Environment (Wales) Act, The Well-Being of Future Generations Act, and a letter that the Welsh Government's Chief Planner issued to the Heads of Planning in 2019. Section 6 of the Environment Act places a duty on all public authorities to seek to 'maintain and enhance biodiversity', and in doing so they should seek to 'promote the resilience of ecosystems'. This is similar to the Biodiversity Net Gain (BNG) approach in England but does not (yet) use a metric. Instead, it puts the emphasis on proactive consideration of biodiversity and wider ecosystem benefits within a placemaking context early in the design process. Development should contribute to and not erode biodiversity, ecosystem resilience and the ecosystem services of the site and wider ecosystem. The

¹ cieem.net/resource/cieem-briefing-welsh-governments-approach-to-net-benefits-for-biodiversity-and-the-decca-framework/

² Gardner, E., Sheppard, A. and Bullock, J., 2022. Why biodiversity net gain requires an ecological permission system. *Town and Country Planning Association Journal*, pp.391-402.

overall approach for this is that developments should deliver and demonstrate 'net benefits for biodiversity' (NBB). The finer details of how this will be implemented are still being developed but the onus on the developer will be to demonstrate how the development will both maintain and enhance biodiversity and build resilient ecological networks, including evidence of site management and the resources to do this for as long as is necessary.

DECCA – Rather than rely on a metric, ecologists are encouraged to take a whole system approach when conducting assessments of developments that include an understanding of:

- The biodiversity value of a site
- Ecosystem services or benefits provided
- Existing and potential linkages with the wider green infrastructure network
- Its ecosystem resilience using DECCA

DECCA is a framework that NRW has developed for evaluating ecosystem resilience. This is based on five attributes, which together make the acronym DECCA:

- Diversity
- Extent
- Condition
- Connectivity
- Aspects of ecosystem resilience

Biodiversity Net Gain – Biodiversity Net Gain (BNG) is the English approach, and is similar to NBB. It was introduced in the Environment Act 2021, partly by altering the Town and Country Planning Act 1990. BNG will come into law in late 2023 and will require developers to demonstrate net gains for biodiversity in planning applications. Specifically, they must demonstrate at least 10% more 'biodiversity units' according to Natural England's Biodiversity Metric. The biodiversity unit total is calculated as the habitats' distinctiveness scores multiplied by their area (plus some modifiers based on habitat condition and whether the habitats are mentioned in a local strategy). The gains in biodiversity units (the 10% required increase plus those making up for any losses due to the development), can be on the development site itself, such as woodlands or ponds created on a housing estate, off site in habitat creation projects funded by the developer, or through the purchase of biodiversity units linked to habitat creation schemes coordinated by other groups. The differences between BNG and NBB are that BNG:

- Is metric driven, and relies completely on satisfying the requirements using the Biodiversity Metric
- Focuses on individual habitats rather than the ecosystem resilience approach of NBB
- Is uniform across the country
- Explicitly incorporates offsetting and biodiversity unit markets, even though in their response to the consultation on BNG the UK Government said that it will 'continue to incentivise a preference for on-site gains over off-site gains'

Speakers

Dr Emma Gardner – UK Centre for Ecology and Hydrology

Potential pitfalls of the English BNG approach are set out in an article Emma authored³, which discusses the use of a metric to calculate net benefits for biodiversity. NBB avoids the use of metrics by an encouragingly progressive focus on ecosystem processes, landscape context and use of ecological expertise. However, effectively representing other species' interests in human decision-making processes will rely on policymakers and policy implementers remaining mindful of the vastly different requirements of other species.

In this talk, Emma analysed the terms 'habitat', 'no significant loss' and 'net benefit' and what they mean from the point of view of other species.

Habitat

A habitat is the natural home of an animal, plant or other organism but it is more than just a vegetation type. It must be inhabited and include all the things necessary for a species to survive. For example, for a heath to support adders it must have safe basking places **and** a hibernaculum. If a development leaves 90% of a heath untouched but grubs out the one tree stump that all the adders hibernate under, that's a significant loss of habitat, and this will mean the end of that adder population.

Significant loss

Just like the word 'habitat', the word 'significant' is also a matter of perspective. Common lizards spend their lives within very small areas, within ~30m of a basking site, and juveniles will disperse ~60m at most. While a development might only cause 'limited, localised minor harm' from our point of view, if it removes a mix of acid grassland and scrub then it may completely destroy the whole world from a lizard population's perspective.

Net benefit

Emma posed several questions about the use of the word 'net', and what exactly 'net benefit' looks like. For example, is it a net benefit to biodiversity if we maximise the number of species that can make use of a piece of land? Do we want to maximise the number of different types of ecological uses an area provides? If we have some woodland, some grassland and some heathland in an area, but not enough of any for a specialist to live in but enough for them to move through to get to somewhere else, does that area provide a benefit for biodiversity? Biodiversity is an abstract concept. We must keep sight of the variety of life, and lives, involved and do our best to make sure everyone's needs are being met. Above all, we must make sure that no species, or group of species, is consistently slipping through the net.

³ Gardner, E., Sheppard, A. and Bullock, J., 2022. Why biodiversity net gain requires an ecological permission system. *Town and Country Planning Association Journal*, pp.391-402

Dr Ed Shepherd (MRTPI MRICS) - School of Geography and Planning at Cardiff University

In his talk, Ed focused on how the calculative models that are used in planning can sometimes obscure underlying social and environmental realities and, in time, bend reality itself.

Logics of financial and now NBB viability require the translation of complex social and environmental relations into simple mathematical formulae and figures. These calculations are merely tools that seek to imperfectly represent a real process and guide decision making. They are not the process itself. Or are they?

It has been suggested by Prof Brett Christophers⁴ that these virtual viability calculations in a sense also create economic reality by directly influencing planning decisions that result in real material impacts on the ground. In the theory of Michel Callon⁵, this is called performativity – whereby economic actors perform and shape reality by bending it to their models, and the assumptions therein, rather than the other way around. The risk here is that there is a focus on the calculative practices required to measure the baseline and the net gain, rather than on the ecological substance itself. There is a risk, perhaps, that the model will obscure the territory and, in time, that the territory will conform with the model.

It will be essential for the emerging system in Wales, and any metric-based approach that may ultimately be adopted, to be cognisant of the risk of planning for biodiversity enhancement performing more of a market than an environmental or social function.

Sarah Simons (MCIEEM CEnv) - Amey⁶

Sarah based her talk on Amey's work on a NBB strategy for a large infrastructure project in South Wales, and the need to find a quantitative approach that fit within the Welsh Government's guidelines. For each element of DECCA, they aimed to define what 'good' looked like in the context of this project. From this process, they learned that the Welsh Government's preference for net benefit arguably offers more opportunity to be creative and flexible on approach but provides challenges on consistency. There is as yet no mechanism to secure net benefit sites in the long term and ensure management and monitoring commitments are met. This is a challenge for consultancy and impact assessment and Sarah would like to see it addressed.

Sarah Ayling – Natural Resources Wales

Sarah spoke about how Wales currently measures biodiversity gains, how this might be improved, and how NRW is working with Ofwat to explore options for this. The need to improve the ability to measure biodiversity benefit across a wide range of sectors in Wales is being driven by:

⁴ Christophers, B. 2014. Wild Dragons in the City: Urban Political Economy, Affordable Housing Development and the Performative World-making of Economic Models. *International Journal of Urban and Regional Research*, 38(1): 79-97.

⁵ Callon, M., 2010. Performativity, misfires and politics. *Journal of cultural economy*, 3(2), pp.163-169.

⁶ Amey is an infrastructure services and engineering company. As part of the company, Amey Consulting provides ecological consultancy services.

- transformational targets such as those set out in the COP15 Global Biodiversity Framework
- nature recovery targets that will be set out in future Welsh legislation
- the increasing drive for business to disclose and manage its nature-related dependencies and risks
- high integrity private nature positive investment opportunities

Sarah emphasised that the main difference between NBB and BNG is how quantification is approached and what weight is given to it in comparison to qualitative considerations. Can Wales learn from the application of the BNG metric in England?

Ofwat's Price Review 24 provided an opportunity to start exploring potential answers to this question. Ofwat's metric approach in Wales differs to that in England in four ways:

- A strengthened geospatial approach, requiring Water Companies to define their own areas of Strategic Significance, the expectation being that metric-based activity will predominantly take place within these areas
- It requires all baseline data to initially be collected using the Phase 1, rather than the UKHabs, classification system
- It requires water companies to follow NRW's technical advice on the interpretation of the metric's condition and distinctiveness multipliers
- All water companies operating in Wales will need to submit an annual 'net benefits for biodiversity report' in addition to their metric calculations

Discussion

The second half of the event centred around three questions. In this section, we present the main themes that arose from the conversations between delegates. The opinions here do not necessarily reflect the positions of the BES.

Overall, the discussion highlighted that there are still many issues to be resolved in the application of NBB to ensure that it can help Wales to meet its climate change and biodiversity targets. This is why many of the points that arose were questions. These are questions that attendees believed are yet to be answered in the implementation of this policy in the real world. The key points that attendees stated need to be addressed to make NBB work were:

- What does the success of NBB look like and how will compliance be enforced?
- Who will take on the potential higher costs of development, and who pays for monitoring?
- How can the capacity of local authorities be increased to help them implement NBB?

1. Will we ever know whether NBB succeeds?

As mentioned by the speakers, there is a trade-off between the holistic approach that Wales is taking, and the ability to measure benefits and successes. NBB will not solve the biodiversity crisis alone. Biodiversity change is much more driven by broader spatial land uses (such as farming) than just development and NBB must form part of a holistic policy programme.

Baselines, targets and endpoints

- Many delegates stated that we will only know if NBB succeeds if we first define what success looks like. Is there a definable endpoint? This will be difficult to agree because different interest groups will have different definitions that they want recognised.
- We do not currently have good biodiversity data for lots of areas and species, so how can we gauge benefits without these?
- There must be a mechanism in place for safeguarding benefits so that enhanced or created habitats be maintained.
- There also must be a mechanism in place for enforcement if failure can be demonstrated. What action will be taken if the monitoring shows NBB hasn't been met, especially further down the line? What action will be taken should the necessary maintenance not be carried out by the responsible party?
- There will likely be a lag between implementation and ecosystem effects.

National vs local

- Variation in local, site-specific and developer-specific measuring and objectives might make it difficult to determine if NBB has succeeded nationally.
- Can there be a national measure of success or will it always be site-specific?

Measurable targets

- We need multiple measurable metrics.
- These metrics cannot be too complex, difficult or expensive to measure.
- There may be a trade-off between eliminating loopholes whilst retaining flexibility for locations.

Monitoring

- Monitoring will be key but who does that and who pays for it? Should it be local authorities or developers? Will the developer outsource monitoring, paid for by the occupiers or residents? If developers do it then who will audit their work or reports?
- NBB will require significant resources, and probably both public and private funds. Developers certainly need to invest in bigger pre and post instigation monitoring.
- Should there be brokers like the Environment Bank to implement and broker strategic habitat creation and management initiatives?
- We should ensure that we develop capacity for an adaptive approach so that measurable outcomes and objectives are kept under review and amended appropriately.
- A high quantity monitoring would more outdoor ecology jobs. It will also create a lot of data that should be made widely available and combined into cohesive databases.

Question 2 - Will NBB drive up the costs of development, and therefore housing, energy, and industrial property?

- NBB will drive up the costs of development, but that is not necessarily a bad thing
- If we take a systems view, without policies like this there will be other, and much greater, costs in the longer term. These include environmental degradation and worse human health and well-being. These long term costs would be much higher than the costs of implementing NBB.

Proper valuation of ecosystem services may offset costs

- Economic cost is not the only consideration, we also need to take social and ecological benefits into account. Can these, especially improvements to ecosystem services, be factored into potential reductions in costs in other sectors? They may offset the increased costs if they are properly valued and included in economic calculations.
- The consequences of not having regard to biodiversity could also be calculated in economic terms.

Increased developer costs do not have to be passed on to residents and communities

- Profit does not have to, and should not, come at the expense of individuals. Society needs to make a sensible decision about who bears the costs. We should strive for penalties and incentives that reward transition to fairer society. Cost should not automatically trickle down to residents as housing is already unaffordable for many. Corporate developments may be more appropriate to take on higher costs. Social reforms will be necessary to achieve this.
- 'Additional' development costs are in theory passed on to the landowner via paying less for the land. So, according to the viability model, land values will come down. In reality, without government intervention the distribution of these costs will be taken on by the developer, landowner and the local community. Costs should be shared fairly and transparently between government, developers and individuals.
- House prices are unlikely to go up as a result as too many factors influence them, but there could be other losers in the 'planning balance'.

There are ways to limit the increases in costs

- Technology.
- We may need to consider different approaches for small scales developers vs large scale corporate developments.
- Timing is crucial, the earlier NBB plans are incorporated into plans the better.
- Communication amongst all disciplines, including engineers, ecologists and planners, is vital.

It may favour better developers

- Will this favour 'better developers', those that are already offsetting their impacts or delivering biodiversity benefits, drive changes in the market and raise performance overall?

- There may be some variance between sectors and developers with better existing ecological ethic less impacted.
- Could premiums be paid for 'greener' developments?

We must limit loopholes and avoidance

- Lawyers and policy makers should be employed to tighten rules.
- Legislation should be used to enforce the development of sustainable housing.

Question 3 - Do local authorities have the capacity to adequately assess NBB assessments?

The answer to this question was an almost unanimous no, as local authorities are already overstretched on basic functions. The discussions then moved on to why this is the case, how specific capacity gaps can be identified, and how these can be rectified. References were made to the responses to question 1, which asked about who funds monitoring, with suggestions that developers should take on a significant proportion of these.

Despite the lack of resources, local authorities will and should always have a role. The main solution to this is better funding. As part of the launch of their BNG consultation in 2022, the UK Government announced a 'funding pot of over £4 million to help Local Planning Authorities and other local authorities with planning oversight prepare for Biodiversity Net Gain. The funding will help Local Planning Authorities expand ecologist resource and upskill ecologist teams, increasing their capacity to work with developers and communities to provide biodiversity gains by helping restore wildlife, plants and landscapes after building work has taken place.'⁷. There were suggestions that this is nowhere near sufficient, but that Wales needs similar, but better funded schemes.

⁷ <https://deframedia.blog.gov.uk/2022/01/11/coverage-of-the-biodiversity-net-gain-consultation-launch/>