BD02 Environment Systems

Senedd Cymru | Welsh Parliament

Pwyllgor Newid Hinsawdd, yr Amgylchedd a Seilwaith | **Climate Change, Environment, and Infrastructure Committee**

Biodiversity and the nature emergency | Bioamrywiaeth a'r argyfwng natur

Ymateb gan Dr Katie Medcalf, Environment Systems| Evidence from Dr Katie Medcalf, Environment Systems

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Written Evidence to Support Climate Change, Environment, and Infrastructure Committee to shape WG domestic response to COP15 outcomes through legislation, policy updating or implementing recommendations of the Biodiversity Deep Dive.

For ease of reading, this response has been drafted around the key targets and actions of COP15 and enacted through the activities of the Biodiversity Deep Dive, Nature Recovery Action Plan and Natural Resources Policy in Wales.

Environment Systems delivers natural capital evaluations, habitat mapping, climate change analysis and environmental monitoring and our comments reflect our experience in this field. We have highlighted where we feel initiatives could be strengthened or enhanced further, and where there may be further opportunities to deliver required outcomes by thinking 'out of the box'

High level response

Wales is amongst the world's most nature-depleted nations, so whilst there is both urgency and the need for ambitious action this must be carefully targeted, with the correct place based action to support nature recovery, if we are to deliver the targets by 2030. It will require cross-sectoral buy-in and effort to embed biodiversity as a core consideration across all sectors.

There is an inextricable link between the delivery of net zero targets and nature positive action, reflecting the dual crises. If we pass the 1.5℃ threshold then retaining existing natural ecosystems that are already in poor condition, may not be possible, as their resilience to climate change is low. Action to strengthen resilience

of these vulnerable areas should be a priority, using an ecosystems approach. This will likely deliver co-benefits for reducing the impacts of pollution.

Protecting Ecosystems (at least 30% of land and 30% of the sea by 2030)
We strongly support safeguarding critical areas for biodiversity and ecosystem function.

Our environment is our life support system, maintaining it and enhancing it's biodiversity will help us meet many of the challenges of climate change through working with nature to help store water and prevent flooding, capture and store carbon, purify pollutants such as nitrates and phosphates from water and reduce noise and air pollution.
Our environment is an inherently complex system with multiple interacting processes. Understanding the landscape context of our biodiversity rich areas is key to enabling us to protect and enhance them. The 30% restoration of degraded systems should represent the areas which are most robust to change, in particular climate change, this should be areas which match the DECCA Framework:

- Where specialist ecosystems are still functioning well and there is a good and maintained diversity of habitats and species
- Larger and 'rounder' patches, which are more resistant to change (noting intrinsically smaller habitats must also be afforded protection, such as quaking bogs formed from old glacial pingo features)
- Habitat patches with good connectivity to other habitat patches,
- Include areas in good ecological condition that can buffer change
- Areas with characteristics, such as large seed banks, that make them able to recover more rapidly in a changing climate.

- The development of Biodiversity Net Benefit and the DECCA Framework will help safeguard biodiversity and the ecosystem services they provide by requiring a holistic analysis of sites targeted for development.
- Our experience is that sophisticated spatial data modelling and mapping can assist decision making to identify the most appropriate areas to protect, especially when used in conjunction with field surveys at local level to avoid omitting important restorable areas that may not be captured through strategic scale mapping and analysis.
- Action taken to address environmental issues must consider the whole landscape context of a habitat patch; it is not enough to consider just the biodiversity rich sites in isolation:
    - For example, the recovery of a degraded but species rich, nationally important valley mire complex (which is also capturing carbon and storing a great deal of water), lying directly downslope of intensive arable land, cannot flourish because upslope pollutants will reach and adversely alter the site. Therefore, the solution requires a buffer around the arable fields, set up using nature-based solutions to help intercept and remove pollutants before they reach the valley.

- As well as protection through statutory designation, there is likely to also be a role for Payments for Ecosystem Service (PES) schemes, whereby land managers undertake long-term nature-based actions (such as native woodland planting) paid for via mechanisms such as water credits, biodiversity or carbon credits. Using the data collated for delivery of the Biodiversity Deep Dive Action Plan and spatial data it would be possible to identify target areas for these types of credit and predict the benefits to the habitat and ecosystems services. The market for these mechanisms is young, but significant headway is being gained where government funding supports local project groups who deliver the necessary land management changes, monitor outcomes and collect and distribute payments. We recommend that public guidance is enhanced to include guidance for claiming biodiversity, carbon or water credits.
- At a local level larger landowners / charities might want to sign up to deliver the 30 by 30 vision on their land, so enabling actions at a local as well as a national scale will be important. We see this as very advantageous, because, communication around the significance of biodiversity and its fundamental role in our lives in the light of climate change is key, involving local people will not only help spread understanding but will also help provide people a way of engaging in local action.

Protecting Species

- Some species are indicators of habitat health, ensuring they thrive by adequate protection and monitoring is essential. They can provide an early warning system for more action to be taken.
- Some species act as keystone species when they are lost the whole ecosystem degrades, action still needs to be targeted at their maintenance and health.
- We feel there is still a place for measurable outcomes for species recovery

Heading 3: Tackling Pollution

- The use of nature-based solutions to help tackle pollutants is advantageous to both industry and biodiversity and should be encouraged. Opportunity also lies in innovation within industry, but this requires support - for example, the injection of Farm Yard Manure has multiple benefits and significantly reduces pollution, yet the machinery required is beyond the reach of many dairy farmers. Supporting dairy farmers to access this machinery would significantly reduce pollution events especially in the streams and rivers in Wales.

Heading 4: Implementation and Domestic Targets

- The Biodiversity Deep Dive and other environmental policy has gone a long way to set the scene for Wales to successfully implement the COP15 targets.
- Applying innovation, for example using remote sensing and complex modelling to show ecosystem services enables us to have an increased

understanding of our environment. If undertaken, these can be integrated into Local Development Plans to highlight areas for protection. Additionally, at the Design Stage of Development, this approach can highlight areas that should be actively considered as assets to a development scheme, ultimately resulting in an enhanced scheme.

- Biodiversity Net Benefit, the DECCA Framework, Nature Recovery Action Plan and Natural Resources Policy position planners well to help large infrastructure projects to change their attitudes and behaviours towards the natural environment. Formerly, biodiversity was something to mitigate against, rather than something that could be worked with to achieve positive outcomes for the development.
- In relation to Biodiversity Net benefit and DECCA, we strongly recommend that plans should be requested to show not only mitigation and enhancement requirements, but also how the wider environment is being considered in the planning Design Stage of a development.
- In order for this to be fully realised as described in the policy, further funding is required for policy teams to engage at an early stage with developers (to attend early meetings and help develop the best outcomes) well ahead of plans being submitted for consideration by planning departments. Although this is already part of their jobs, workload pressure on a scarce resource means it is not always realisable.

Heading 5: Funding Conservation

- We fully support the need to consider biodiversity impact in budgetary planning across policy areas. Understanding more fully, how the environment is beneficial (e.g. mature trees for urban cooling and the wildlife they host). This type of holistic thinking is not lacking in policy, but technological advances in system thinking as well as an increasing understanding of the importance of our environment and the danger of climate change may provide a pathway to integration.

Heading 6: Additional Aspects

The importance of monitoring

- Monitoring and measurement is essential to ensure actions are having the desired effect, designation of sites alone will not be enough. The effects on biodiversity arising from continuing with current land management practices in a changing climate change is not well understood. Management may well have to be altered to ensure biodiversity stays healthy. Monitoring target species is useful for tracking wider biodiversity health.
- New techniques of monitoring including eDNA tracking and in situ sensors and the use of other remote sensing technology are cost-effective options for monitoring programmes.

- Funding for on-site field surveys is also essential to identify environmental issues (new colonisations by invasive species, pollution events etc) that may not be visible using remote monitoring, are identified at an early stage. Mitigation will become far more difficult if problems are not identified and addressed early because of the pressure on sites already occurring as a result of climate change.

Climate Change

- Because of the impacts of climate change in the future, the next ten years is critical in building resilience for biodiversity in Wales and careful planning and targeted action will be needed to maximise the likelihood of success in achieving the 30 x30 target. In about ten years, we can expect to experience the effects of potential tipping points that are likely to severely stress or alter our natural systems, affecting species survival and habitat viability.
- The biophysical requirements of climate vulnerable habitats and species may no longer be met in their current locations. Nature recovery planning needs to build in knowledge of the vulnerability of habitats and key species, how this varies within Wales and how action will increase climate resilience. This can be assisted using spatial data analysis and modelling.
- Rapid progress and sustained support over multiple parliamentary terms, is essential.