



Response to the Second National Infrastructure Assessment Baseline Report

Introduction

The following briefing paper sets out brief responses to select questions from the NIC's Baseline Report, developed in collaboration between Pollination Foundation and E3G.

[Pollination](#) is a specialist climate change investment and advisory firm, accelerating the transition to a net zero, climate resilient future. Pollination Foundation is our registered not-for-profit entity.

[E3G](#) is an independent European climate change think tank with a global outlook, which aims to translate climate politics, economics and policies into action.

The responses are accompanied by a set of supplementary information, developed as part of ongoing engagement by a coalition of partners to advocate for the new UK Infrastructure Bank (UKIB) to invest in nature. We welcome and support the NIC's analysis and advocacy for all infrastructure to deliver environmental net gain and advocate for all UK Government to be aligned with 2030 nature positive ambitions. Our feedback on the Baseline Report principally calls on the NIC to further elevate the degradation of nature as one of the key challenges for which it will set out recommendations in the second Assessment. We would welcome the opportunity to discuss our responses in greater detail, as well as the NIC's role in advancing investment in nature as a priority to deliver on the UKIB's net zero and economic growth objectives. Critically, this must be supported by the UKIB's implementing legislation.

Responses to Select Questions

Question 1: Do the nine challenges identified by the Commission cover the most pressing issues that economic infrastructure will face over the next 30 years? If not, what other challenges should the Commission consider?

While the NIC clearly sets out the decline of nature as a core challenge for the future, biodiversity and natural capital should be elevated as one of the pressing issues the Commission will prioritise in its recommendations for the second Assessment. Formally, we should ensure all infrastructure development benefits natural capital. As the NIC states in the Baseline Report in reference to *The Dasgupta Review*, "nature, and the biodiversity that underpins it, ultimately sustains the UK economy."

The severe state of environmental degradation and biodiversity decline in the UK has been urgently criticised by the House of Lords Science and Technology Select Committee¹ and the House of Commons Environmental Audit Committee.² They noted that the 2019 State of Nature Report found that 41% of monitored species have declined since the 1970s, and 15% were at risk.³ The Royal Society for the Protection of Birds and the Natural History Museum index for biodiversity destruction further ranks the UK as the 12th worst performer globally, and the worst among the G7.⁴ The UK's own Net Zero Strategy establishes that emissions

¹ House of Lords Science and Technology Select Committee. (2022). Nature-based solutions: rhetoric or reality? The potential contribution of nature-based solutions to net zero in the UK.

² House of Commons Environmental Audit Committee. (2021). Biodiversity in the UK: Bloom or Bust?

³ State of Nature Partnership. (2019) State of Nature 2019.

⁴ Royal Society for the Protection of Birds. (2019). Biodiversity Loss.



from the agriculture, forestry and other land-use sectors must fall by between 70-80% by 2030 in order to reach its domestic net-zero target by 2050, requiring extensive restoration of priority habitats.⁵ Further, recent analysis finds that the finance gap to meet targets for nature stands at between £44B and £97B over the next ten years.⁶ Significant work remains to address market failures and help crowd in private investment to bridge this gap.

While the NIC sets out that impacts on natural capital and biodiversity will be a key category of assessment for policy options, this should be a core focus in and of itself. The role of infrastructure in driving the restoration of nature would naturally build upon the recommendations made by the NIC in its *Design Principles for National Infrastructure*⁷ and *Natural Capital and Environmental Net Gain* discussion paper.

The NIC has already set about promoting environmental-net-gain for all infrastructure, and developing natural capital principles for infrastructure on how to deliver environmental net gain as next steps. Further, the restoration of nature is inextricably linked to the three strategic themes of reaching net zero, climate resilience and the environment, and supporting levelling up across infrastructure sectors. This issue must not be siloed. The NIC should advance the operationalisation of its recommendations on infrastructure and nature through the second Assessment.

Question 3: How can better design, in line with the design principles for national infrastructure, help solve any of the Commission's nine challenges for the next Assessment and what evidence is there to support this? Your response can cover any number of the Commission's challenges.

The "places" design principle, calling on infrastructure to "Provide a sense of identity and improve our environment" will be instrumental in delivering on three of the nine challenges, in particular: carbon storage, good asset management, and surface water management.

Critically, as the NIC has already set out in its *Design Principles*, "well-designed infrastructure supports the natural and built environment...Good design supports local ecology, which is essential to protect and enhance biodiversity. Projects should make interventions to enrich our ecosystems. They should seek to deliver a net biodiversity gain, contributing to the restoration of wildlife on a large scale while protecting irreplaceable natural assets and habitats."

Embedding nature in the design of infrastructure will both prevent negative impacts on the local environment and support the development of green infrastructure solutions, such as natural flood mitigation, well suited to a changing climate. The interactions between these three challenges and the restoration of biodiversity and the natural environment are addressed in response to Question 4.

⁵ BEIS. (2021). Net Zero Strategy: Build Back Greener.

⁶ GFI, eftec, and Rayment Consulting Services. (2021). The Finance Gap for UK Nature.

⁷ Infrastructure projects should make interventions to enrich our ecosystems, seek to deliver biodiversity net gain, contribute to the restoration of wildlife on a large scale, and protect irreplaceable habitats.

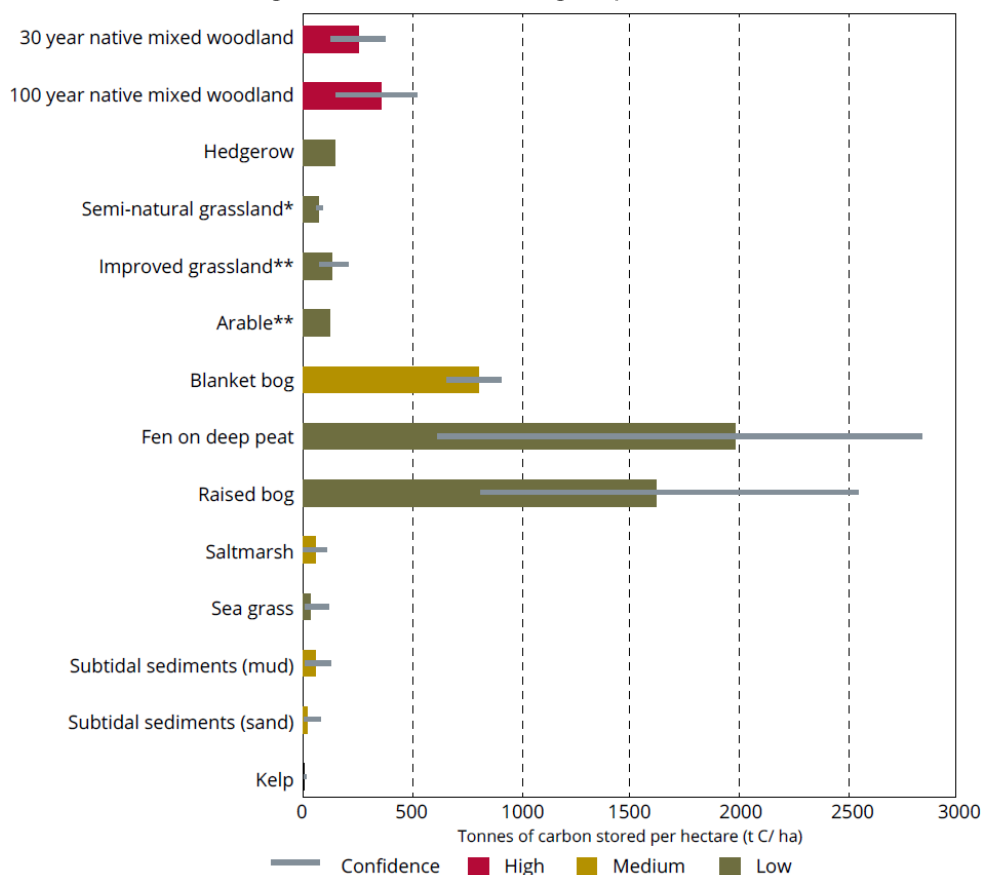
Question 4: What interactions exist between addressing the Commission’s nine challenges for the next Assessment and the government’s target to halt biodiversity loss by 2030 and implement biodiversity net gain? Your response can cover any number of the Commission’s challenges.

The Government’s ability to halt biodiversity loss by 2030, as well as implement biodiversity net gain, will be directly impacted by its infrastructure investments, which will shape the UK’s landscapes for decades. Yet the conservation and restoration of local biodiversity can also enhance the performance of infrastructure by delivering carbon storage, providing resilience in a changing climate, and improving surface water management.

Challenge 4: New networks will be needed for hydrogen and carbon capture and storage

As written, the NIC has limited this challenge to engineered greenhouse gas removals. Yet nature-based carbon removals and reductions in emissions from marine and terrestrial sources, such as peatlands, should be delivered as infrastructure alongside engineered approaches. A breadth of potential nature-based removals have significant potential to deliver greenhouse gas capture and storage, as demonstrated in Figure 1:

Figure 1: Carbon Storage by Habitat



Source: House of Lords Science and Technology Select Committee. (2022). *Nature-based solutions: rhetoric or reality? The potential contribution of nature-based solutions to net zero in the UK*. Figure adapted from Natural England. (2021). *Carbon Storage and Sequestration By Habitat: A Review of the Evidence*.



However, large-scale restoration initiatives to deliver emissions reductions (as for peatlands, which are currently a net source of emissions) and removals must also support or enhance biodiversity, or risk causing unintended ecological harm.⁸

Challenge 5: Good asset management will be crucial as the effects of climate change increase

The restoration of nature will further prove critical to ensure new infrastructure is fit for purpose in a changing climate. Deploying natural infrastructure in place of, or alongside, traditional engineered approaches has the potential to provide greater adaptability, in turn reducing infrastructure costs. Habitat restoration and creation to deliver infrastructure services will contribute to the protection of biodiversity, whose degradation is primarily driven by land use change causing habitat loss.⁹ Further, four of the eight top climate risks facing the UK, as identified by the Climate Change Committee,¹⁰ are threats to its natural systems, which highlights the importance of investments to fortify the resilience of the natural environment. This challenge will also be explored under Question 13.

Challenge 6: Action is needed to improve surface water management as flood risk increases

As already highlighted in the Baseline Report, the use of nature-based solutions, such as sustainable drainage systems, blue-green infrastructure, and natural flood management will be critical to improving surface water management. We are very supportive of the NIC's forthcoming study on effective surface water management in England and its inclusion of the role of nature-based solutions. Restoration of riparian and coastal habitats to support water quality and quantity improvement targets will help deliver biodiversity and carbon sequestration co-benefits. This type of intervention will be critical to the first two themes of England's Landscape Recover component under E.L.M.: recovering and restoring England's threatened native species, and restoring England's rivers and streams. It will further be critical that engineered water management interventions benefit aquatic ecosystems.

Question 13: In what ways will current asset management practice need to improve to support better infrastructure resilience? Your response can cover any number of the Commission's sectors.

Nature-based interventions can help provide resilience at a lower cost than might be possible solely through engineered approaches. For example, a study found that coastal wetlands in the north-eastern United States prevented over \$625M in direct property damage during Hurricane Sandy alone. Wetlands protected key infrastructure, including coastal roads, by reducing flood heights.¹¹ Alternative interventions to harden shorelines or raise roads delivering the same benefit would likely have proven prohibitively expensive. Additional examples from the US context are provided in Annexe 2. Investment in nature should form a core part of the UK's approach to building climate-resilient infrastructure. Further, all asset

⁸ Seddon, Nathalie, et al. (2021). Getting the Message Right on Nature-Based Solutions to Climate Change.

⁹ State of Nature Partnership. (2019) State of Nature 2019.

¹⁰ Climate Change Committee. (2021). Independent Assessment of UK Climate Risk: Advice to Government for the UK's Third Climate Change Risk Assessment (CCRA3).

¹¹ Narayan, Siddharth, et al. (2017). The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA.



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management should have a baseline requirement to enhance natural capital. For example, new engineered infrastructure should meet minimum requirements to qualify as nature positive. It would be impactful for the NIC to advance these recommendations in the second Assessment.



Annexe Documents

1. **Coalition-Backed Letter Calling for a Nature Mandate for the UKIB:** This letter was developed by a coalition of partners and sent to senior UKIB leaders in the autumn of 2021, to make the case for the new UKIB to invest in nature.
2. **Materials Prepared for HM Treasury Making the Case for UKIB Investment into Nature:** These documents represent the evidence developed for Treasury officials to elaborate upon the recommendations made in the letter sent to UKIB senior leadership.
3. **Briefing Note Prepared for Defra Providing Recommendations for the UKIB:** Similarly, this note sets out recommendations for the UKIB, and indicates how UK infrastructure investment can provide global leadership on delivering on a nature positive target.