



NATURE BASED SOLUTIONS

Using Nature-based Solutions as a funding mechanism for long-term investment in nature recovery across the Blean

NbS Mapping for the Blean landscape

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Table of Contents

NATURE-BASED SOLUTIONS BACKGROUND

Biodiversity Net Gain	2
Wilder Carbon	2
Nutrient Neutrality	2
	3

NBS POTENTIAL

Blean Biodiversity Net Gain Potential	4
Blean Wilder Carbon Potential	4
Blean Nutrient Neutrality Potential	5
Blean Overall NbS Potential	6
	8

CASE STUDY

Habitat restoration target areas	9
Target connectivity areas with BNG units	9
Cost estimates	10
	11

Background

NATURE-BASED SOLUTIONS

The IUCN defines Nature-based Solutions (NbS) as being able to leverage nature and the power of healthy ecosystems to protect people, optimise infrastructure and safeguard a stable and biodiverse future.

“Nature-based Solutions are actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively, to provide both human well-being and biodiversity benefits” (IUCN, 2016)

The Wilder Blean Initiative has been researching how NbS can help achieve the vision by enabling landholders to contribute to nature recovery, and managing their land for wildlife, by providing an alternative or additional income to traditional farming or selling land to developers.

The focus of this research is on the three main NbS opportunities currently available across the Blean landscape:

- Biodiversity Net Gain
- Wilder Carbon
- Nutrient Neutrality

Biodiversity Net Gain

Biodiversity Net Gain (BNG) is mandatory, under the Environment Act 2021, for housing and commercial development. Developers must demonstrate a measurably positive impact on biodiversity with more than a 10% net gain. If it is not feasible directly on the site of the development, biodiversity uplift is found through restoration of nature off-site, preferably through local landowners, known as offsetting.

Payments for landowners cover the costs of creating or enhancing a habitat and maintaining its condition for 30 years. Typically, BNG units sell for between £10,000 and £35,000 per unit and a landowner can expect approximately six BNG units per hectare depending on the condition and type of habitat being created or enhanced.

Wilder Carbon

Wilder Carbon has developed the mechanism for locking up additional carbon through the restoration of native habitats by reinstating natural processes in the UK. High-quality carbon units are generated from projects designed and monitored by trusted conservation experts such as Kent Wildlife Trust. These projects not only benefit wildlife and climate, but also contribute positively to society. Wilder Carbon Limited facilitates the development of projects under the Wilder Carbon Standard for Nature and Climate and matches these with approved buyers and investors, enabling scaled portfolio investment. The system facilitates large-scale investments by aggregating or standardising these projects into portfolios, making it easier for investors, companies, or individuals to fund them. This scaling could aim to amplify impact while maintaining financial and environmental accountability.

Carbon sequestration is quantified using the Carbon + Habitat Tool and latest carbon data. Estimated Issuance Units (EIUs) are calculated and are currently valued at £100 per EIU.

Nutrient Neutrality

The Blean falls within the Stour Catchment Nutrient Neutrality Zone in Kent, where all developments will have to demonstrate nutrient neutrality. The nutrients, nitrogen and phosphorous, from all surface water runoff and wastewater generated by the development must be equal to or less than the nutrients generated by the current land use.

Where this is not possible, developers must purchase off-site nutrient credits to reach nutrient neutrality. Kent Wildlife Trust is developing a nutrient mitigation approach that is both cost-effective and straightforward to implement, offering early mitigation for developments.

Unlike more engineered methods, our approach emphasises quicker delivery of nutrient credits and low construction costs. Importantly, our approach of taking land out of agricultural production, genuinely prioritises nature recovery using NbS. Kent Wildlife Trust are in communication with Natural England, Ashford Borough Council and Canterbury City Council to ensure the scheme works with the local planning authorities and is recognised by Natural England.

Natural England have provided guidance that BNG or voluntary carbon credits can potentially be stacked with nutrient neutrality. Therefore, there is potential to derive even greater benefits from the land through this stacking. BNG and carbon can not be stacked on top of each other on the same site but can be next to each other within the same site.

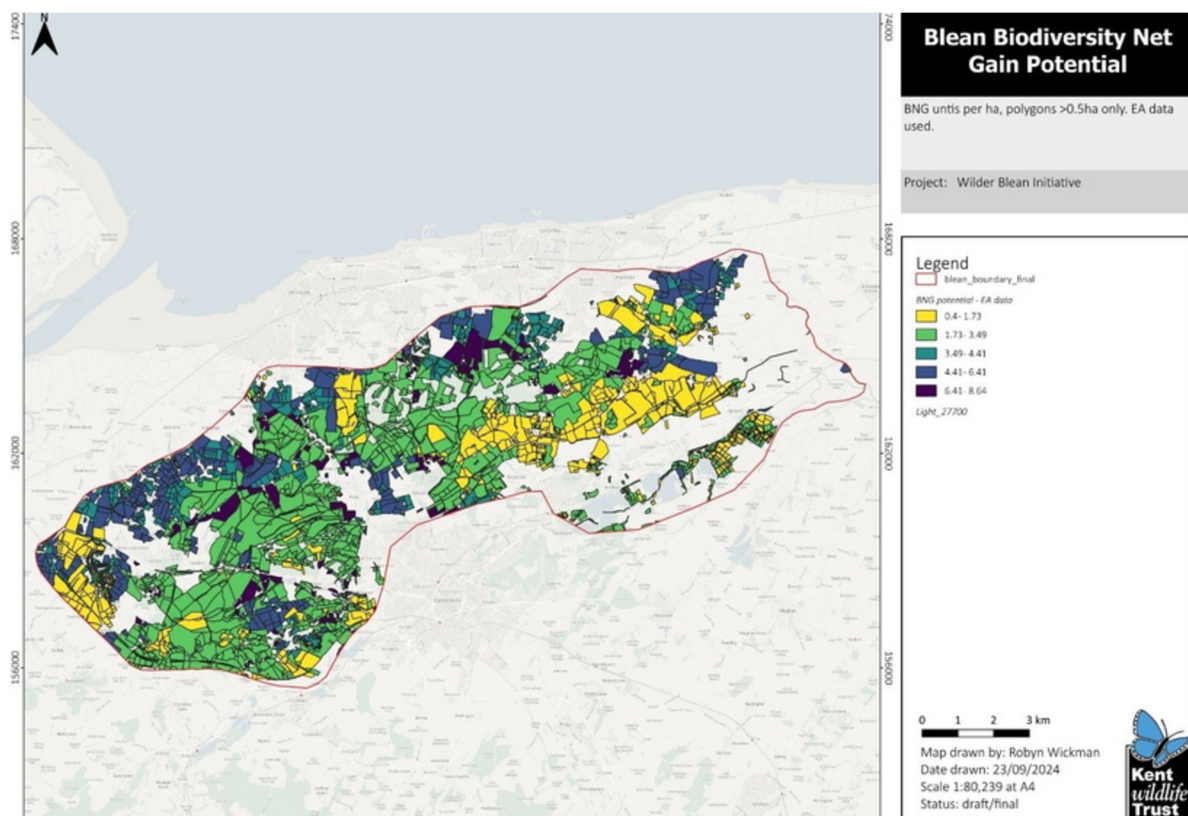


NbS Potential

BLEAN BIODIVERSITY NET GAIN POTENTIAL

The Biodiversity Net Gain map displays potential BNG units per hectare using the NbS Opportunity Areas mapping created via a partnership project between Kent Wildlife Trust Group and the Environment Agency.

Potential for BNG units may be greater or lesser, depending on the planned post intervention habitat.

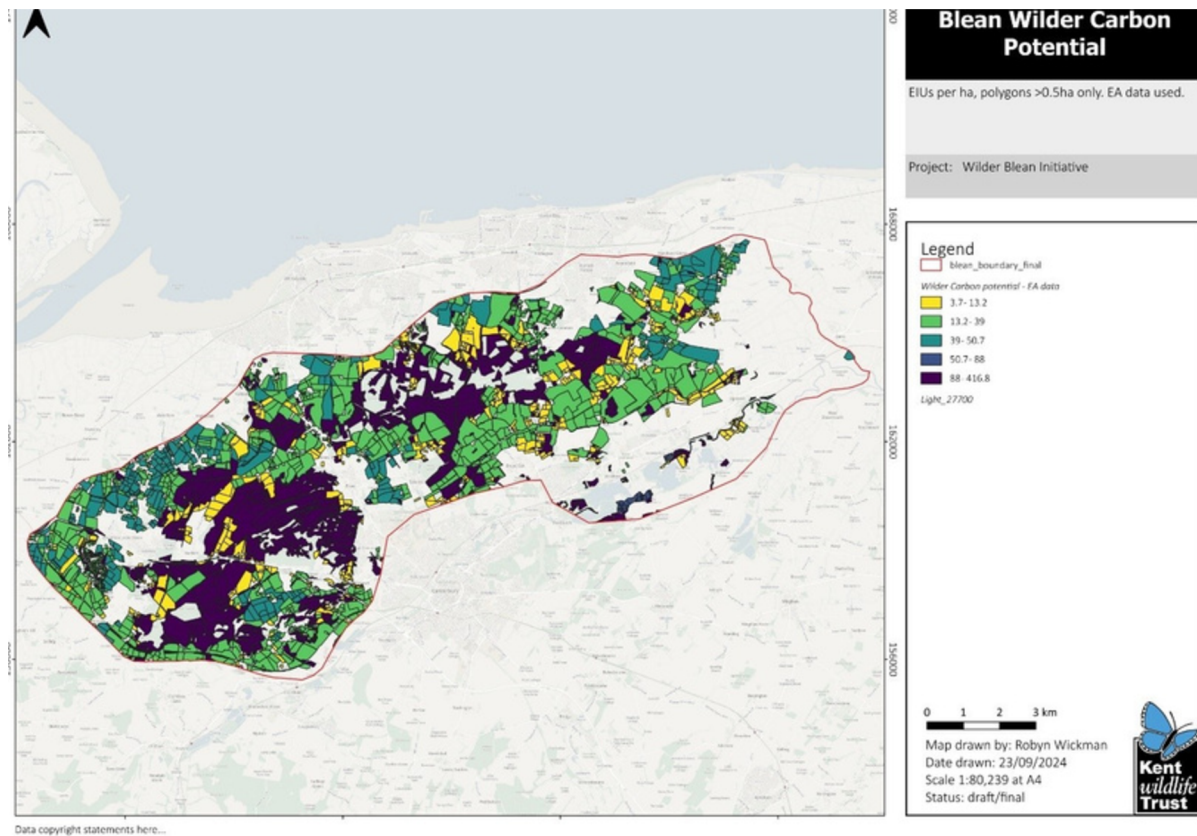


Map 1: Blean Biodiversity Net Gain potential

BLEAN WILDER CARBON POTENTIAL

The Wilder Carbon potential map displays potential EIUs per hectare using the NbS Opportunity Areas mapping created via a partnership project between Kent Wildlife Trust Group and the Environment Agency.

Potential for EIUs may be greater or lesser, depending on the planned post intervention habitat, when site specific post intervention plans are made.



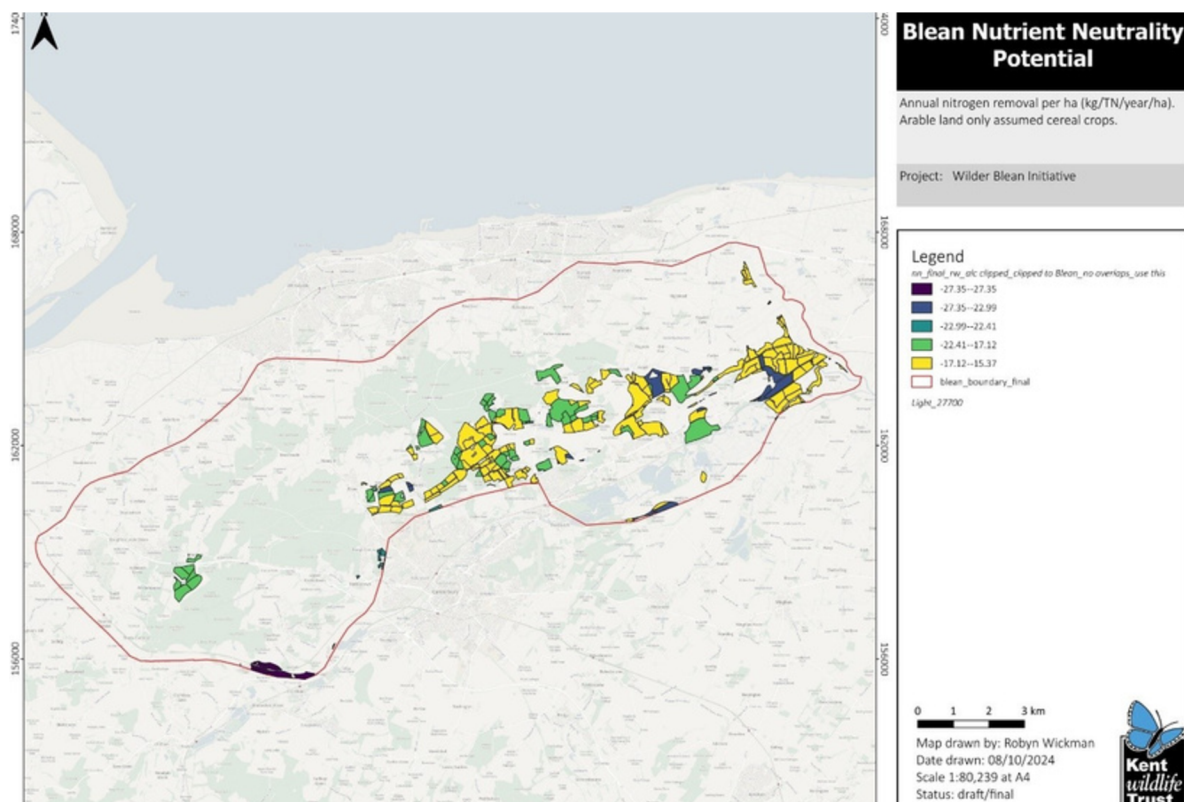
Map 2: Blean Wilder Carbon potential

BLEAN NUTRIENT NEUTRALITY POTENTIAL

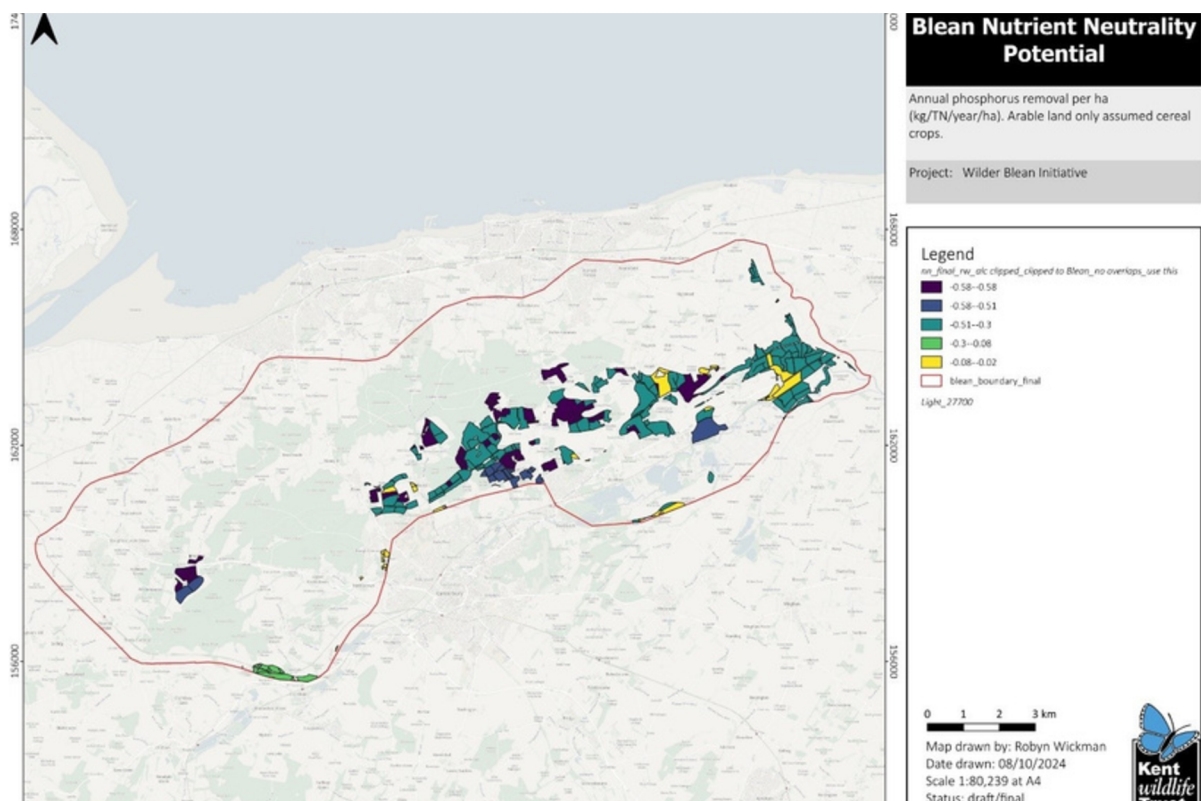
Two maps presenting annual phosphorus and nitrogen removal per hectare on arable land. For this mapping, it has been assumed that the arable land is cereal crops. If the arable land is not cereal crops, horticulture for example, the nutrient removal potential will be lower.

There will be some potential for Nutrient Neutrality on grassland areas with inputs for example grazing, however this has not been included at this stage due to some changes in the mapping that need to be made and the high levels of assumption that there are inputs on this grassland.

Areas with the highest potential for Phosphorus removal (largest negative number for these maps) will likely be the best for a nutrient neutrality project as this is what Natural England require at this stage. This may change in the future.



Map 3: Blean Nutrient Neutrality – Nitrogen – potential



Map 4: Blean Nutrient Neutrality – Phosphorus – potential

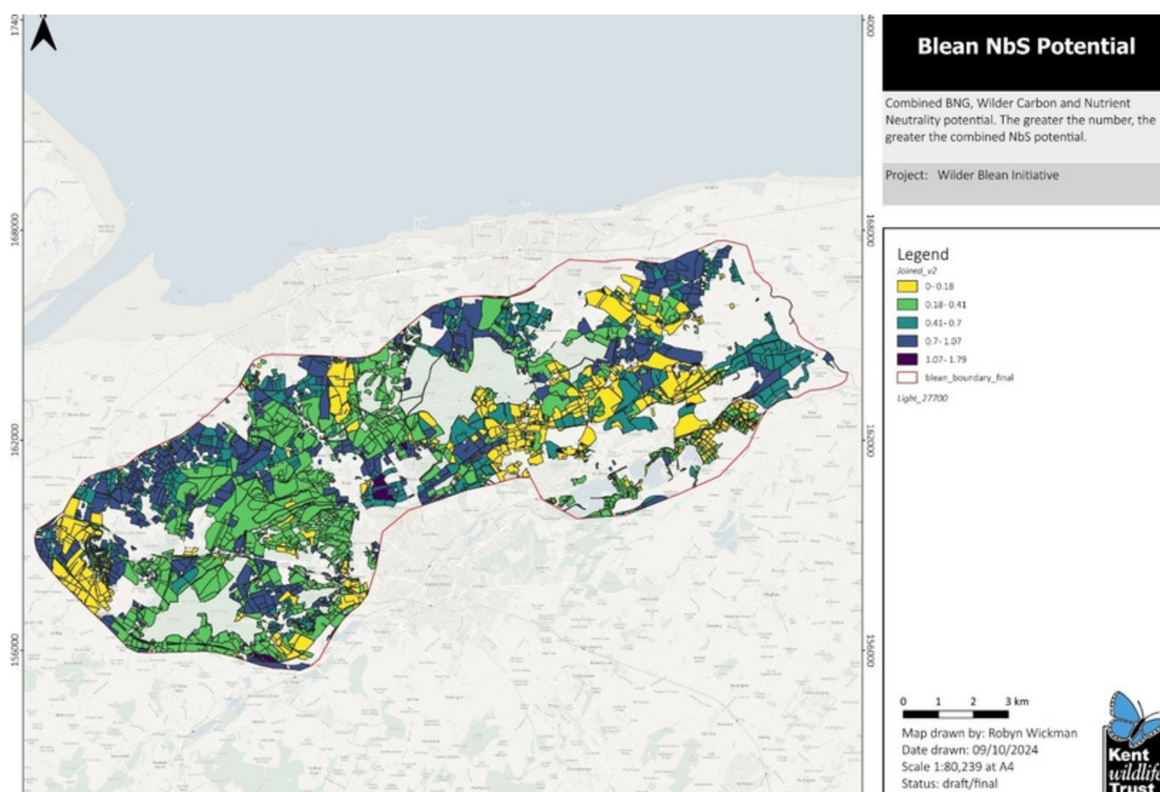
BLEAN COMBINED NBS POTENTIAL

Combined BNG, Wilder Carbon and Nutrient Neutrality potential. The greater the number, the greater the combined NbS potential.

This gives an indication of areas to focus on, however does not correlate to the potential NbS income being greatest as it is a combination of the potential per ha, rather than potential income associated with these units.

Areas within the Nutrient Neutrality area, that are lowest value baseline for example arable crops, will likely have the highest combined NbS potential. This is because all three schemes could potentially be used on this site and arable land has the biggest uplift potential for BNG and Wilder Carbon.

For the largest potential income, a combination of schemes could be used. Therefore, focus on the Nutrient Neutrality areas first and then develop a post intervention plan that also allows for income through BNG or Wilder Carbon. For example, scrub grassland mosaic and woodland regeneration.

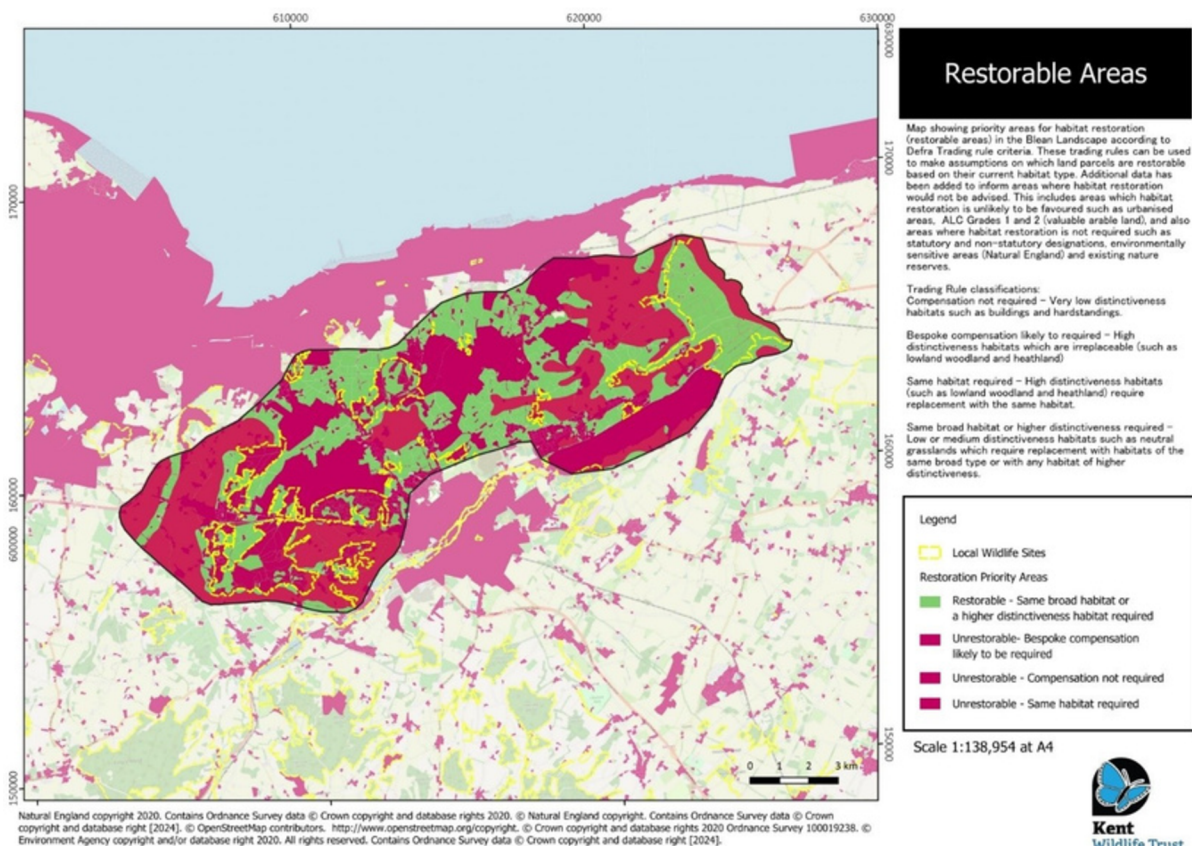


Map 5: Combined Blean NbS potential

CASE STUDY: TARGET CONNECTIVITY AREAS WITH BNG POTENTIAL

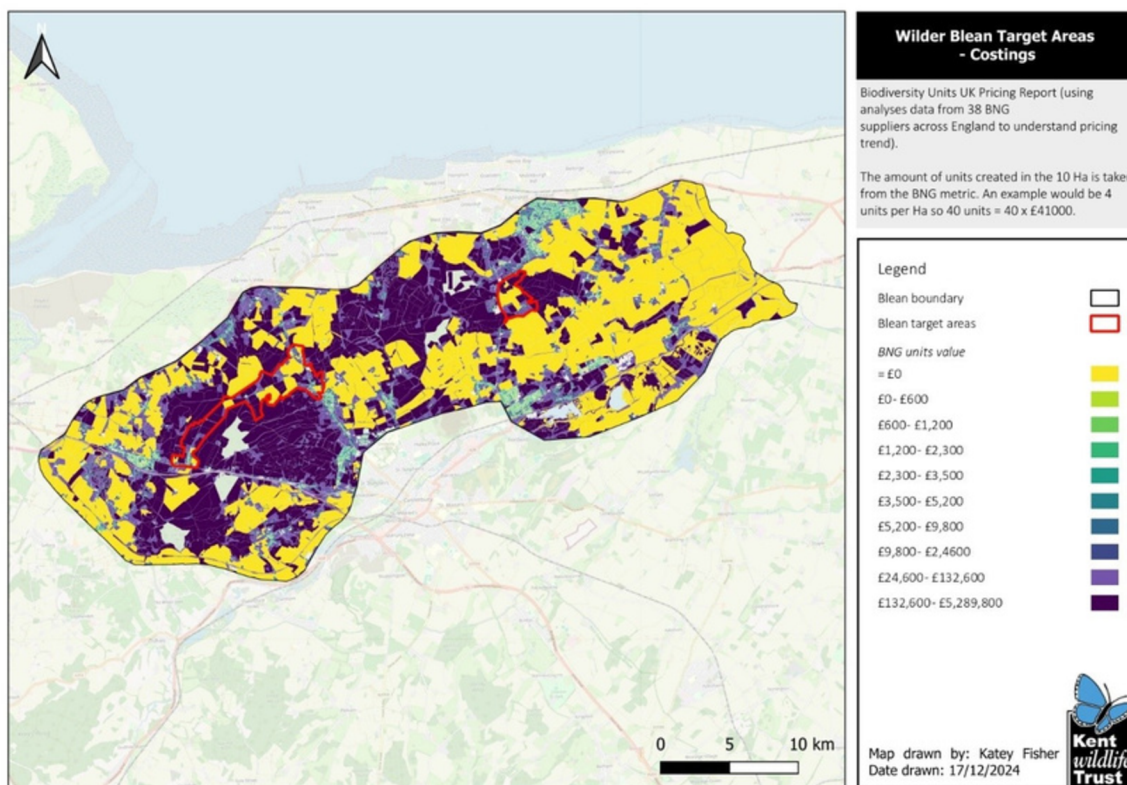
Defragmentation of the Blean landscape is the priority goal for the Wilder Blean Initiative and to achieve this land use changes are required. Currently, over 65% of the Blean landscape is arable, horticultural and improved grassland. By 2050, the vision for the Blean is to establish 500ha of new natural habitat areas for nature.

Using data from Defra there are clear target connectivity areas that can be considered to increase connectivity. As a case study these areas have been considered for NbS opportunities more closely.

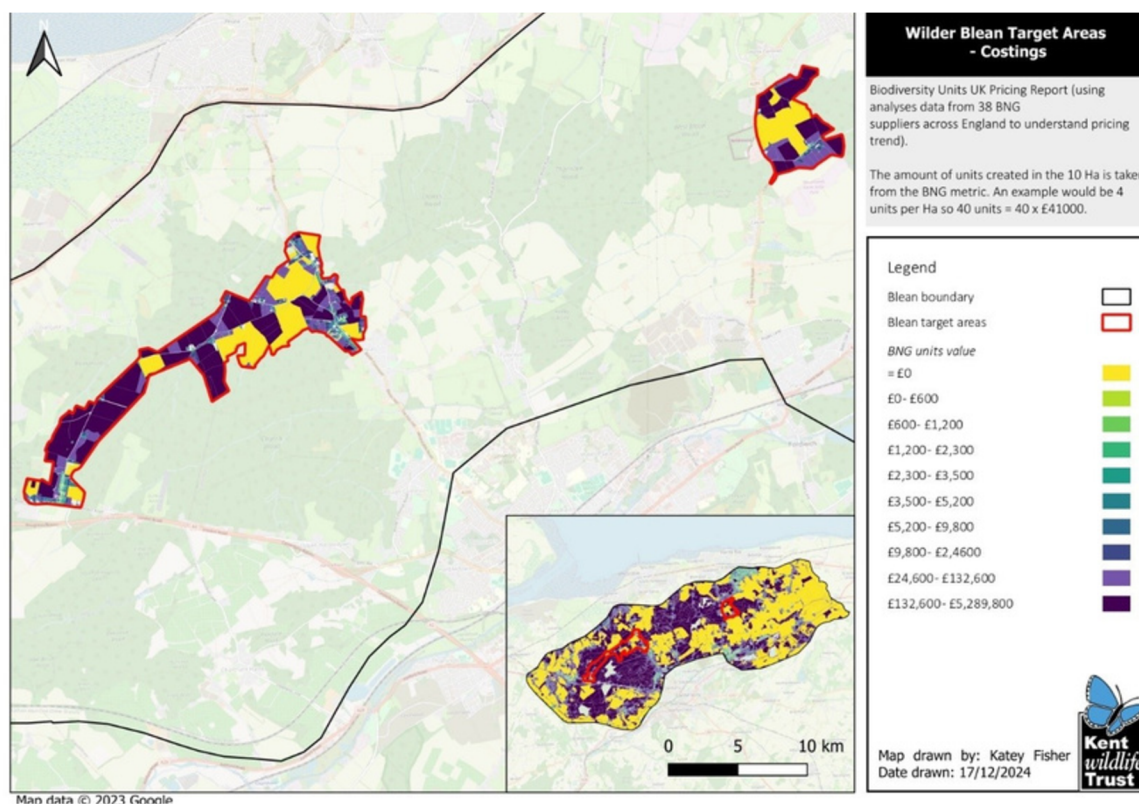


Map 6: Habitat restoration target areas

Map 7 highlights two target areas that, if focused on, could increase connectivity across the Blean landscape significantly and aid in defragmentation. They are adjacent to existing designated sites and therefore are also considered as buffers to these important areas.



Map 7: Target connectivity areas with BNG units



Map 8: Target connectivity areas with BNG units with BNG units

Across these two target areas, if the landowner was interested in either converting some less productive land to make more space for nature, or was hoping to retire, this could be an economical way to do it that doesn't affect livelihoods.

For example, 10ha has been selected for broadleaved woodland creation, with each hectare having 4 BNG units, resulting in 40 units at £48,300/unit. This gives an indicative value of over £1.9m, which would be linked to the landowner and spread over the 30year lifespan of the BNG agreement.

This has the potential to provide long-term, sustainable financial investment in defragmentation of the Blean landscape.

kwtd	habitat_master	Total area (ha)	Total BNG units	BNG units (per ha)	Total % BNG units	Total % area	Proportional Contribution	In LPA / NCA Price / Total LPA / NCA	
								(per BNG unit)	Price for land cover
1	Acid Grassland	5.49	43.92	8	0.13	0.04	2.98	£0	£0
2	Neutral Grassland	327.84	1311.36	4	3.84	2.57	1.49	£28,875	£37,865,520
3	Fen, Marsh And Swamp	58.52	468.16	8	1.37	0.46	2.98	£0	£0
4	Bracken	0.5	1	2	0	0	0.75	£31,500	£31,500
5	Open Mosaic Habitats On Previously Developed Land	20.38	122.28	6	0.36	0.16	2.24	£0	£0
6	Improved Grassland	3117.82	6235.64	2	18.25	24.48	0.75	£28,875	£180,054,105
7	Reedbeds	117.14	702.84	6	2.06	0.92	2.24	£0	£0
8	Suburban	0.03	0	0	0	0	0	£0	£0
9	Littoral Sediment	0.24	1.44	6	0	0	2.24	£0	£0
10	Coniferous Woodland	451.85	903.7	2	2.65	3.55	0.75	£33,075	£29,889,878
11	Broadleaved Woodland	3036.54	12146.16	4	35.55	23.84	1.49	£48,300	£586,659,528
12	Standing Open Water And Canals	218.57	874.28	4	2.56	1.72	1.49	£65,625	£57,374,625
13	Inland Rock	3.54	21.24	6	0.06	0.03	2.24	£0	£0
14	European Dry Heaths	8.85	35.4	4	0.1	0.07	1.49	£31,500	£1,115,100
15	Lowland meadows	12.09	96.72	8	0.28	0.09	2.98	£39,375	£3,808,350
16	Coastal And Floodplain Grazing Marsh	31.19	249.52	8	0.73	0.24	2.98	£0	£0
17	Arable And Horticulture	5264.26	10528.52	2	30.82	41.33	0.75	£0	£0
18	Traditional Orchard	35.72	214.32	6	0.63	0.28	2.24	£42,425	£9,092,525
19	Lowland Fens	25.94	207.52	8	0.61	0.2	2.98	£0	£0

Total BNG (BNG units)	Number of BNG units with in Habitat
BNG units (ha)	BNG units x Area (ha)
Total BNG units (%)	Quantifying BNG units for each habitat type and value per hectare
Total Area (%)	Area of habitats to total BNG units/ Total number of BNG units in Kent
BNG Proportional Contribution	Area of habitats/Total area of Kent
	Proportional Contribution to BNG Units vs. Area: Compare the percentage of total BNG units each habitat contributes to its percentage of total area. Metric: % of Total BNG Units/ % of Total Area. A value greater than 1.0 indicates the habitat contributes more BNG units relative to its area.

Table 1: Cost estimates for the entire Blean area, based on Biodiversity Units, UK2



kwtg.uk/blean-wildscape

