



TUNLEY
ENVIRONMENTAL

BIODIVERSITY NET GAIN ASSESSMENT REPORT

TRUSTED SUSTAINABILITY SCIENTISTS

BIODIVERSITY NET GAIN ASSESSMENT REPORT

FOR

**1-3 Reading Road, Eversley,
RG27 0RP**

**in collaboration with
L&T Patient and Transport Services**

Contents

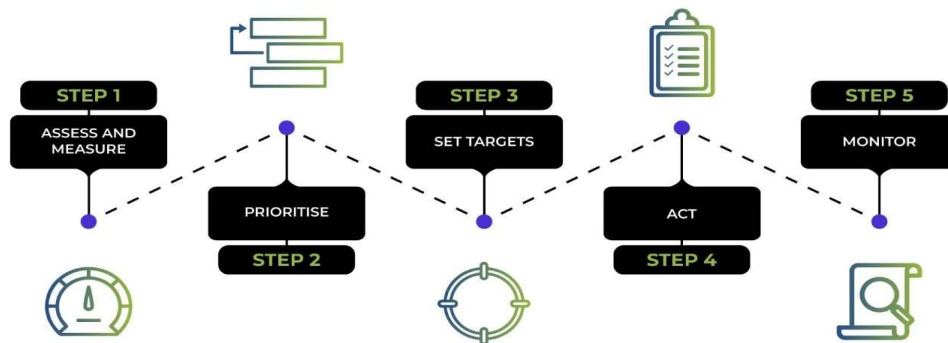
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Nomenclature

Nomenclature	Description
Baseline Assessment	Before a development project begins, a baseline assessment is conducted to determine the existing biodiversity of the project site. This assessment establishes the current state of habitats, species, and ecosystem functions.
Biodiversity	The variety of life within a defined area for example, globally or in a specific habitat which can be described by a variety of metrics including species abundance or the living plant index and which we are dependent on to provide us with food, clean water and many more essentials.
Biodiversity Loss	The reduction in the variety and abundance of species in a particular ecosystem or across the entire planet. It can result from factors such as habitat destruction, pollution, climate change, and invasive species.
Biodiversity Net Gain	A concept that aims to ensure that development projects have a positive impact on biodiversity by enhancing or creating habitats.
Biodiversity Net Gain (BNG) Assessment	The quantification of the overall positive impact on biodiversity resulting from a specific activity or project. While biodiversity gain refers to the increase in the numbers, genetic variability, and species variety in a given area, BNG goes a step further by assessing whether the difference between biodiversity losses and gains leads to a net positive impact.
Biodiversity Units	A measure to describe the level of biodiversity present on a given site.
DEFRA Statutory (Official) Biodiversity Metric	Is a tool developed by the UK Government that provides a standardised approach to quantifying changes in biodiversity resulting from development activities. It assigns values to different habitats and species based on their ecological importance, and it allows for the calculation of a numerical score that reflects the overall biodiversity impact of a development.
Habitat	The specific environment or type of ecosystem in which a particular species of organism lives. Habitats can range from forests and wetlands to grasslands and urban areas.
Habitat Condition	The state or quality of a habitat, taking into consideration factors such as biodiversity, ecological processes, and overall health. Habitat condition assessment is essential in determining the effectiveness of conservation or restoration efforts.
Habitat Distinctiveness	The unique characteristics and features that differentiate one habitat from another. Distinctiveness is often assessed based on the diversity of species, ecological functions, and physical attributes of a habitat.
Habitat Strategic Significance	The local importance of a habitat determined by assessing both its geographic location and the specific type of habitat it represents. This evaluation helps in understanding the unique value and contribution of the habitat in its surrounding ecosystem.
On-Site	Refers to activities, impacts, or features that occur within the boundaries of a specific development or project site. In the context of Biodiversity Net Gain, on-site measures may include habitat creation, enhancement, or protection within the project area.
Off-Site	Relates to actions or effects that occur outside the boundaries of the development or project site. Off-site measures in Biodiversity Net Gain may involve compensatory actions, such as creating or enhancing habitats in a different location to offset any biodiversity loss caused by the development.
Small Site	A small residential site is a development which is less than 1 hectare with less than 9 dwellings, or where the number of dwellings is unknown an area of less than 0.5 hectares. A small commercial site is a development which has created floor space of less than 1,000 m ² or with a total site area of less than 1 hectare.
Major Development	A major development is any development, either residential or non-residential, which falls out of the requirements of a small site. This means more than 9 dwellings or greater than 0.5 hectares for residential developments or greater than 1,000 m ² floor space, or over a hectare for non-residential developments.

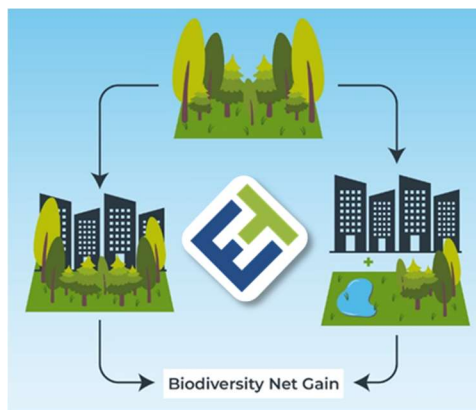
Methodology and Quantification Standards

This Biodiversity Net Gain (BNG) report has been completed using methodology consistent with the Science Based Targets for Nature (SBTN), Nature Positive Initiatives, and DEFRA Regulations.



Science-Based Targets for Nature Steps which Tunley Environmental's Biodiversity Net Gain (BNG) services aligns with to achieve reduced impact on Nature.

Biodiversity was quantified using the DEFRA (Department for Environment, Food & Rural Affairs) statutory (official) biodiversity metric as a tool to assess and measure biodiversity in the context of development projects. This metric is specifically designed to assist in quantification of the impact that development activities have on biodiversity and determine whether Biodiversity Net Gain (BNG) is achieved. Where BNG refers to the idea that the biodiversity value of a site should be enhanced due to development, ensuring a "net gain" in ecological terms. Tunley have completed all calculations within small site metric along with any required documents such as habitat condition. These additional documents will be submitted alongside this form in the excel format for LPA approval.



Tunley Environmental's conceptualisation of Biodiversity Net Gain.

Where applicable, the equivalent small site biodiversity metric was utilised for developments under the requirements for the statutory (official) biodiversity metric. The BNG assessment was further completed using methodology consistent with the international standard BS 8683:2021 (Process for designing and implementing BNG). Information on data sources and assumptions made to support this analysis are provided in Appendix A.

Executive Summary

Biodiversity is the foundation of the global economy. The World Economic Forum (WEF) estimates that over 50% of the world's GDP, equivalent to 33 trillion pounds, significantly depends on nature and the services it provides. However, biodiversity is amid a severe global crisis. Human-induced changes in land and sea use, overexploitation, invasive species, pollution, and climate change are the primary drivers of rapid biodiversity decline. Human activity threatens approximately a million species with extinction, some within decades, and species are disappearing at a rate of tens to hundreds of times faster than the natural pace.

Biodiversity net gain is a concept implemented into the *Town and Country Planning Act 1990* that aims to ensure that development projects in the UK, specifically England, have a positive impact on biodiversity by enhancing or creating habitats either on-site or off-site.

The site at 1-3 Reading Road, Eversley, RG27 0RP is a predominantly urban site with priority habitats within 500 m of the site, including deciduous woodland, coastal and floodplain grazing marsh, good quality semi-improved grassland, lowland meadows, and purple moor grass and rush pastures. There are no designated sites within 500 m of the site. The site is being developed from building with carpark and vegetated garden into an extension to carpark area. The site has a total area of 1422 m², and plans propose no site dwellings, and therefore as stated in the Town and Country Planning Act, this site is classified as a Small Site.

Tunley Environmental have conducted an independent assessment to quantify the biodiversity value of the site before and after development to assess biodiversity of the site. Using data provided by L&T Patient and Transport Services the baseline 'area habitat' biodiversity units of the site were calculated to be 0.07 units over an area of 1422 m². This is comprised of developed land; sealed surface and vegetated garden. The baseline 'hedgerow habitat' biodiversity units of the site were calculated to be 0.08 units. This is comprised of native hedgerow.

Within the proposed development there are plans to create sustainable drainage system and native hedgerow. Including the units lost from the baseline, the additional initiatives included in the proposed plans will create a total of 0.05 'area habitat' units and 0.02 'hedgerow habitat' units translating to a 28.23% net gain in 'area habitats' and 25.10% in 'hedgerow habitat' units.

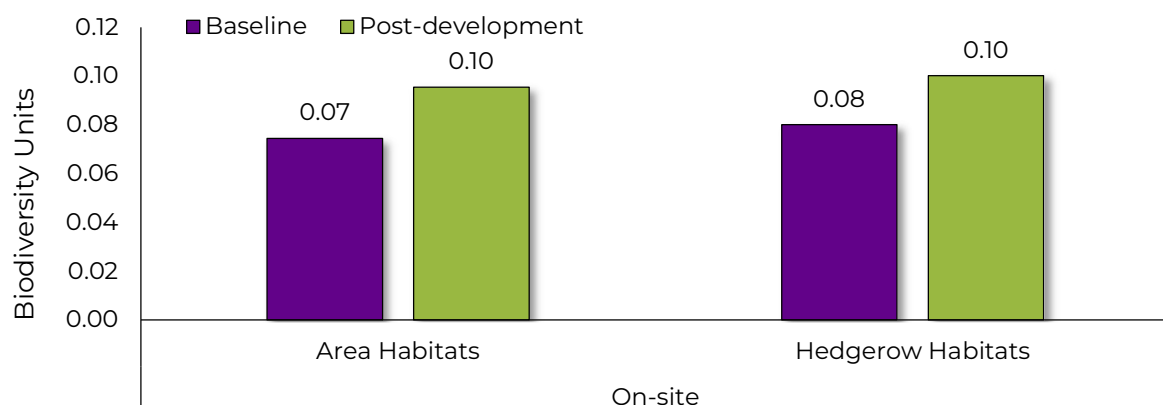


Figure 1. Total biodiversity units of the site, before and after development by L&T Patient and Transport Services

Introduction

Biodiversity is the foundation of the global economy. The World Economic Forum (WEF) estimates that over 50% of the world's GDP, equivalent to 33 trillion pounds, significantly depends on nature and the services it provides. However, biodiversity is amid a severe global crisis. Human-induced changes in land and sea use, overexploitation, invasive species, pollution, and climate change are the primary drivers of rapid biodiversity decline. Human activity threatens approximately a million species with extinction, some within decades, and species are disappearing at a rate of tens to hundreds of times faster than the natural pace. Between 1970 and 2016, populations of mammals, birds, amphibians, reptiles, and fish have, on average, decreased by 68%. Human activity has dramatically altered 75% of the land surface, significantly impacted 66% of the ocean, and led to the loss of 85% of wetlands.

Recognising the severity of this crisis, the integration of Biodiversity Net Gain (BNG) and ecosystem restoration emerges as a crucial strategy for mitigating the adverse effects of human activities on biodiversity. BNG aims to ensure that development projects not only avoid causing harm to ecosystems but actively contribute to a net positive impact on biodiversity. By implementing measures such as habitat creation, restoration, and protection, BNG seeks to counterbalance the negative ecological footprint of development.

The particular site in question, which is Commercial building with carpark and vegetated garden, to be Extension to carpark area, is situated in Wokingham Borough Council. L&T Patient and Transport Services are consulting on this matter and have been asked to provide a biodiversity net gain assessment alongside the application.

According to the UK government a major development is defined as a residential development where the number of dwellings is greater than 9 or the area is greater than a hectare, or if an unknown number of dwellings, the site area is more than 0.5 hectares. For a commercial development, a small site is where floor space created is less than 1,000 square metres or the total site area is less than 1 hectare. The site is 1422 m² and plans propose an extension to the carpark area, therefore, this site is classified as a Small Site.

Tunley Environmental has conducted an independent Small Site Biodiversity Net Gain (BNG) assessment to identify and quantify the biodiversity of the site before and after the development. This BNG assessment calculates the biodiversity value of the land by evaluating the number of habitats present, the habitat types, size, condition, and location. These data inputs are utilised within the small site's statutory metric, due to the development size, to quantify the biodiversity units present before development. This is the baseline habitats and gives a value for baseline biodiversity units.

Below shows the most recent aerial image of the site at 1-3 Reading Road (Figure 2).

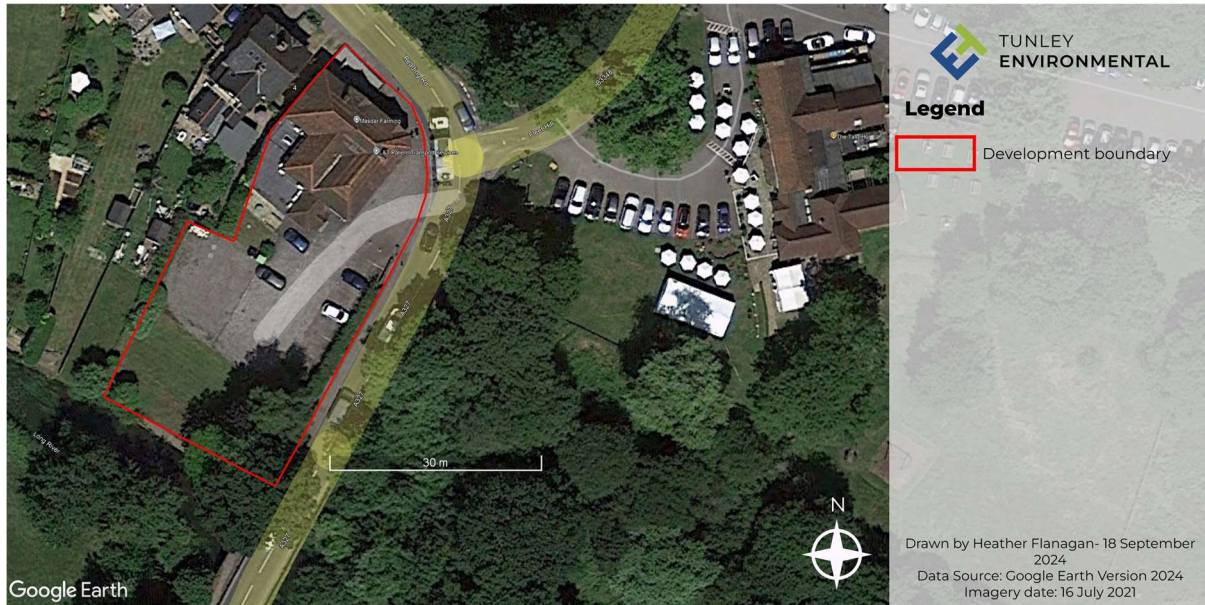


Figure 2. Aerial image of the site at 1-3 Reading Road

Baseline Results (Pre-development)

Prior to analysing the biodiversity units post development we must conduct a baseline assessment on the site pre-development. This baseline assessment is conducted to determine the existing biodiversity on the project site. This assessment establishes the current state of habitats, species, and ecosystem functions.

The baseline assessment for the site at 1-3 Reading Road was conducted by analysing site photos to distinguish habitat types as well as implementing Google Earth to accurately analyse site plans alongside dimensions to yield overall meters of the project site by habitat type. Some example images are shown in **Figure 3**.



Figure 3. Example images provided to Tunley by L&T Patient and Transport Services of the site.

A map of the habitats identified from these images is overlaid into the aerial image above in **Figure 4**.



Figure 4. Aerial view separated by different habitat types identified on site pre-development.

For the proposed site for development, ‘area habitats’ and ‘hedgerow habitats’ biodiversity units were identified pre-development (Figure 4 and Table 1). The [UK habitat classification \(UKHab\)](#) system is utilised to define habitats inputted within the metric. The different ‘habitat types’ identified on-site for this project included developed land; sealed surface and vegetated garden, with 1050 m² of developed land; sealed surface contributing the greatest area.

Table 1. Explanation of baseline habitat types, habitat characteristics, and habitat area/length.

Habitat Type	Habitat Characteristics	Habitat Area	Unit	Condition	Biodiversity Units
Developed land; sealed surface	Areas where the surface has been sealed by materials such as concrete, tarmac, or buildings.	1,050.00	m ²	N/A - Other	0.00
Vegetated garden	Gardens that support a variety of plants.	372.00	m ²	Condition Assessment N/A	0.07
Native hedgerow	A hedgerow with >80% canopy cover of UK native or archaeophyte woody species.	20.00	m	Moderate	0.08

Biodiversity Net Gain Results

The site at 1-3 Reading Road aims to consider biodiversity impact by implementing habitat enhancement and habitat creation to account for any biodiversity net loss due to construction, as well as to improve the site for the users of this site whilst still contributing to BNG goals.

The plan below (Figure 5) shows the proposed site landscape developed and designed by L&T Patient and Transport Services which retains 1268 m² of its 1422 m² area habitats and includes the design and implementation of sustainable drainage system and native hedgerow.

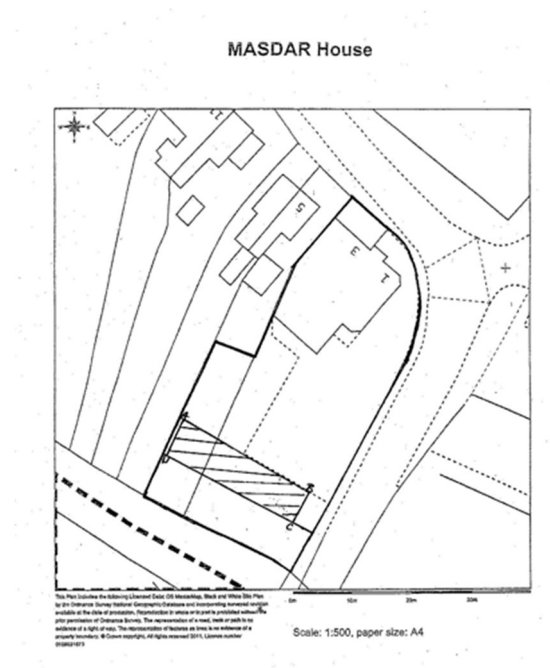


Figure 5. Proposed plan for the site.

These changes in habitats were taken into account through the calculation of their areas, provided by L&T Patient and Transport Services and verified with an aerial view map, as seen in Figure 6.



Figure 6. Aerial view of the site of post-development.

Of the 154 m² area 'habitats' that will be lost during development, the plan creates a variety of different area 'habitats' in its stead (Table 2).

Table 2. Explanation of habitat type, habitat characteristics, and habitat area of all habitats to be created post-development.

Habitat Type	Habitat Characteristics	Habitat Area	Unit	Condition	Biodiversity Units
Sustainable drainage system	Engineered structures designed to manage stormwater and reduce surface runoff.	154.00	m ²	Good	0.05
Native hedgerow	A hedgerow with >80% canopy cover of UK native or archaeophyte woody species.	6.00	m	Moderate	0.02

The incorporation of these new habitats creates 0.05 biodiversity units, which brings the site to a total of 0.10 biodiversity units post-development, translating to 28.23% net gain in biodiversity. These habitats therefore ensure that the 10% net gain target for biodiversity will be met (see Table 3).

Table 3. Detailed losses and gains of biodiversity 'area habitat' units resulting from development.

Description of modifications	Losses & Gains of Biodiversity units
Total on-site baseline biodiversity area habitat units	0.07
On-site retention of baseline biodiversity 'area habitat' units	
- 1050 m ² of developed land; sealed surface in n/a - other condition	0.04
- 218 m ² of vegetated garden in condition assessment n/a condition	
On-site loss of baseline biodiversity 'area habitat' units	
- 0 m ² of developed land; sealed surface in n/a - other condition	-0.03
- 154 m ² of vegetated garden in condition assessment n/a condition	
On-site creation of area habitats (all low strategic significance):	
- 154 m ² of sustainable drainage system in good condition	+0.05
On-site enhancement of area habitats (all low strategic significance):	+0.00
Total on-site post-development biodiversity 'habitat' units	0.10
Total net gain in biodiversity 'habitat' units	+0.02
Overall percentage net change in biodiversity 'habitat' units	+28.23%

Within 'hedges and lines of trees' habitats, 0.02 units are created in the development plans, which bring the site to a total of 0.10 biodiversity units post-development, translating to a 25.10% net gain in hedgerow biodiversity. These habitats therefore ensure that the 10% net gain target for biodiversity will be met (Table 4).

Table 4. Detailed losses and gains of biodiversity 'hedges and lines of trees' units resulting from development.

Description of modifications	Losses & Gains of Biodiversity units
Total on-site baseline biodiversity 'hedgerow' units	0.08
On-site retention of baseline biodiversity 'hedgerow' units	0.08
- 20 m of native hedgerow in moderate condition	
On-site loss of baseline biodiversity 'hedgerow' units	-0.00
- 0 m of native hedgerow in moderate condition	
On-site creation of 'hedgerow' units	+0.02
- 6 m of native hedgerow in moderate condition	
On-site enhancement of 'hedgerow' units	+0.00
Total on-site post-development biodiversity 'hedgerow' units	0.10
Total net gain in biodiversity 'hedgerow' units	+0.02
Overall percentage net change in biodiversity 'hedgerow' units	+25.10%

Conclusion

The BNG assessment by Tunley Environmental have confirmed the site at 1-3 Reading Road, Eversley, RG27 0RP will reach the national standard of 10% biodiversity net gain by achieving a **28.23% net gain** for 'habitats' and **25.10% net gain** for 'hedges and lines of trees'.

BNG approaches offer a pathway to not only safeguard the intricate web of life on Earth but also to preserve the essential ecosystem services that underpin the global economy and human prosperity. As the urgency of addressing biodiversity loss intensifies, a comprehensive strategy that integrates conservation, sustainable development, and restoration efforts is essential to ensure a resilient and biodiverse future for the planet.

Approval

Author:	Heather Flanagan, BSc (hons), MRes, PhD pending
Position:	Sustainability Scientist
Written Date:	18 th September 2024
Peer-reviewed by:	Dr Nathan Wood, MChem, MRSC
Position:	Senior Scientist
Reviewed Date:	18 th September 2024
QA approved by:	☒ Approved ☐ Revision: N/A Dr Luan Ho, MEnvSc, BEng
Position:	Quality Assurance Manager
Approval date:	19 th September 2024
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