Delivering Biodiversity and Environmental Net Gain in practice

sweep

Impact Summary

SWEEP helped to address knowledge gaps, understand social preference trade-offs and explore delivery mechanisms for Environmental Net Gain (ENG) which can deliver more than Biodiversity Net Gain (BNG) requirements under planning. The findings are intended to support **Defra, Local Planning Authorities and other organisations** developing BNG and ENG guidance, and with a practical interest in considering how to implement BNG and ENG.

Why it mattered?

Due to housing shortages and an increasing population, there is enormous pressure to build new homes. Until recently a target of building 300,000 new homes each year in England had been set by government. Whilst this target may change, the enormous pressure to build new homes remains. Despite efforts to avoid using new land, space constraints mean that about half of the new homes will be built on 'greenfield' sites that have not yet been developed. New housing built on farmland, at the edges of existing residential areas, will lead to a loss of natural environment and the wildlife species that live in these fields, illustrated in Figure 1.

Offsetting can provide opportunities for 'greenfield' site developments where environmental impact cannot be mitigated for, on the site itself. It can also deliver broader environmental and social values.

Biodiversity Net Gain (BNG) is a new approach to development that aims to leave the natural environment in a measurably better state than it was beforehand. It becomes a legal requirement at the end of 2023 (under the Environment Act 2021) and requires developers to minimise damage to the natural environment and wildlife species, restore nature lost due to the development, and deliver a minimum 10% net gain in nature. This net gain is measured in Biodiversity Metric units.

> *"(Offsetting) can allow the benefits from small developments to be aggregated around a larger restoration project with greater ecological connectivity and environmental benefits that would not otherwise be viable... resulting in environmental improvement happening closer to the communities who might benefit most... and giving communities greater access to the natural environment."* [1]
>
> **Environment Innovation Business.**

Environmental Net Gain (ENG) is a broader concept than BNG. First set out in the Government's 25 Year Environment Plan[2], it expands upon BNG approaches to include *"wider natural capital benefits, such as flood protection, recreation and improved water and air quality."* Adopting an ENG approach could enable local planning authorities to target the environmental enhancements most needed in their areas and offer developers more flexibility to provide them.

What we did

Starting in 2021, SWEEP Impact Fellows Dr Michaela Faccioli and Dr Diana Tingley, and Prof Ian Bateman (University of Exeter) have:

- Worked with a range of stakeholders in the South West to explore key issues relating to BNG and ENG implementation.

  Stakeholders included: Devon & Cornwall Planning Officers Group, Devon Landscape Character Group, Dartmoor ELMS Trial, Dartmoor National Park Authority, Devon Wildlife Trust, North Devon Council, South West Water, The Environment Bank, Westward Housing and WSP consultants (creators of the NATURE tool) and the Planning Advisory Service.

- Designed, tested, piloted, commissioned and launched a choice-based experiment and stratified survey of the general public in England (N=4,400) to explore a range of social preferences[3] and trade-offs between a range of different BNG and ENG 'offset' implementation scenarios.

  The responses provided a representative sample of the English population in terms of age, gender, regional location and by socio-economic group.

  The effect of a 'greenfield' development on nature is illustrated in Figure 1 and the range of scenario attributes considered in the survey illustrated in Figure 2. A number of other practical and technical issues, including scaling issues and cost attributes, were also explored.

- Provided project update documentation explaining the rationale for the survey, methods used and updated on progress.

- Created a SWEEP ENG information hub for the South West

Ways of Working

1 Environment Innovation Business. 2019. Delivering environmental net gain: an EIC position paper. p7. https://eic-uk.co.uk/media/eebhjdb3/delivering-environmental-net-gain-2019.pdf

2 Defra (Department for Environment, Food and Rural Affairs). 2018a. A Green Future: Our 25 Year Plan to Improve the Environment. p33. https://www.gov.uk/government/publications/25-year-environment-plan

3 Social preferences are one type of preference investigated in behavioural economics and relate to the concepts of reciprocity, altruism, inequity aversion, and fairness. Fehr, E. and Fischbacher, U., 2002. Why social preferences matter–the impact of non-selfish motives on competition, cooperation and incentives. The economic journal, 112(478), pp.C1-C33. https://doi.org/10.1111/1468-0297.00027

Looking to the future

The Esmee Fairburn Foundation have funded ongoing work to: (1) analyse survey results and combine this with other relevant datasets to examine possibilities to enhance offsetting outcomes; and (2) hold community engagement workshops in the South West to explore the results from a range of perspectives.

For more information contact sweep@exeter.ac.uk

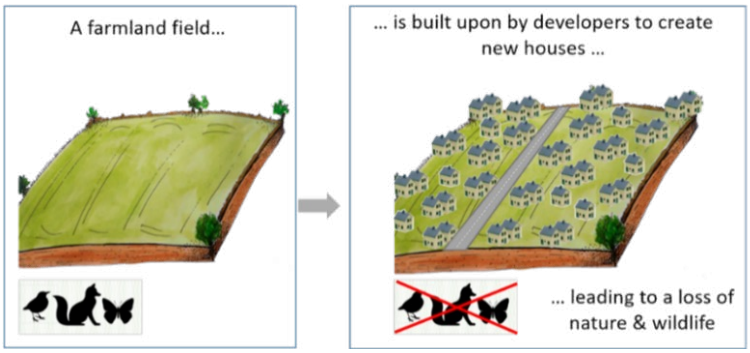


Fig. 1: Greenfield (farmland) development site - survey baseline

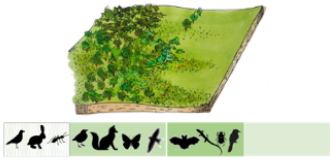
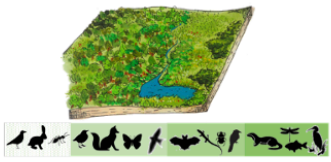
Level of Net Gain (Biodiversity Enhancement) delivered	 **Minimum Legal Requirement** (i.e. 10% BNG)	 **Moderate Enhancement** of natural environment and wildlife (ENG scenario 1)	 **High Enhancement** of natural environment and wildlife (ENG scenario 2)
Recreational access at the Net Gain site	 Public access	 No public access	
Proximity of respondent - to housing development - and Net Gain site	1, 2, 5, 10, 25, 50, 75, 100 miles A respondent's proximity to the housing development was fixed (at either 2 or 50 miles) and they were then asked to consider Net Gain schemes at differing distances.		
Neighbourhood wealth - at housing development - at Net Gain site	 **Low wealth** neighbourhood	 **Average wealth** neighbourhood	 **High wealth** neighbourhood The neighbourhood wealth of the housing development was fixed for each respondent and they were asked to consider Net Gain schemes in areas of differing neighbourhood wealth.

Fig. 2: BNG and ENG attributes explored in the survey

About SWEEP
The South West Partnership for Environmental & Economical Prosperity (SWEEP) is a partnership between the University of Exeter, the University of Plymouth, and Plymouth Marine Laboratory. Funded by the Natural Environment Research Council and stakeholders together to solve key challenges faced by those working with our natural resources. **www.sweep.ac.uk**

UKRI Natural Environment Research Council