No Net Loss of Biodiversity

Liz Newman and Robert Fennelly

Month, Day, Year

No Net Loss of Biodiversity

- **Scope and Definitions**
- **Why do we need a NNL policy?**
- **NNL Policy Review**
  - International
  - European
  - Irish
- **Legal basis**
- **Introduction to a biodiversity metric (UK)**

Scope of Today's Talk

✓Measuring losses and gains in biodiversity value (species/habitats)

✖Economic value of Natural Capital (ecosystems)

✖ Economic value of Ecosystem Services
(flow of benefits from ecosystems)

Cad é sin ‘No Net Loss’ of Biodiversity?

International Definition (BBOP)

“No Net Loss” of biodiversity means biodiversity losses are balanced by a gain elsewhere. Biodiversity Offsets are a core instrument in the context of the no net loss target…

with respect to species composition, habitat structure and ecosystem services, including livelihood aspects

Environment Council of Ministers (2011)

‘Biodiversity losses in one area are balanced by a gain elsewhere provided that this principle does not entail any impairment of existing biodiversity as protected by EU nature legislation'.

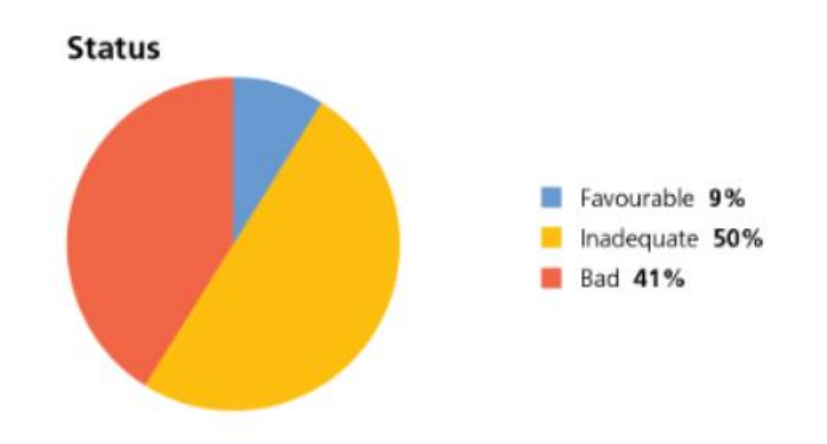
What is your knowledge of NNL?

Q1. Did you know of Ireland's "No Net Loss" policy?

Q2 Have you been involved in a No Net Loss
(or similar biodiversity metric) in Ireland or the UK?

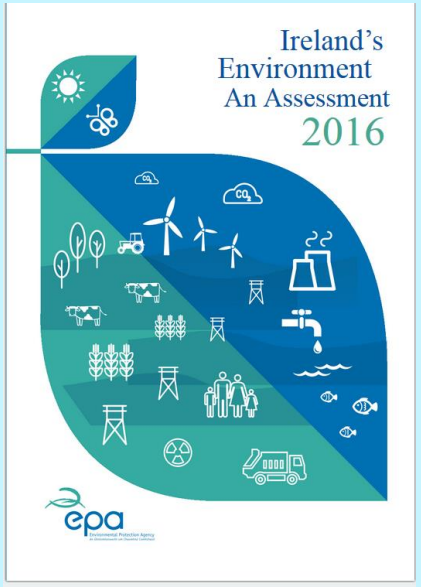
Do we need a ‘No Net Loss’ polcy in Ireland?

Status of Annex 1 Habitats in Ireland



Status of Other Habitats in Ireland

- **?**
- Few measures of non- EU habitat change in RoI
- 20% of species assessed at risk of extinction (NBDC)
- 66% Hedgerow loss in Fingal, Dublin (FCC;1966-2007)
- 11% fen/swamp loss, 12% neutral grassland loss (NICS; 1998-2007



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International Policy Basis for No Net Loss

1. Business and Biodiversity Offsets Programme (2004-2018)

– International partnership - government agencies, financial institutions, NGOs, companies

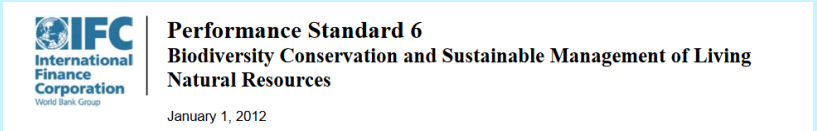
– Work reviewed in latest In Practice (June 2019)

– **BBOP Principles on Biodiversity Offsets (2009)**

- Principle 4 : Offsets should result in no net loss (and preferably a net gain) of biodiversity

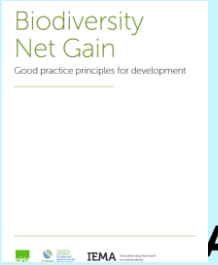
2. International Financial Standards Performance Standard 6 (2012)

– World Bank-funded development: net gain for 'Critical Habitat' and no net loss for Natural Habitat



3. Biodiversity Net Gain (CIRIA/CIEEM/IEMA, 2016)

Beyond simple NNL - although NNL still relevant for irreplaceable habitats



Policy Basis for No Net Loss

EC 2011 - EU biodiversity strategy to 2020

Develop NNL method for assessing EU-funded projects

Ensure No Net Loss through offsetting schemes

EC 2011 – NNL Working Group

Operational Principles of No Net Loss initiative (2013)

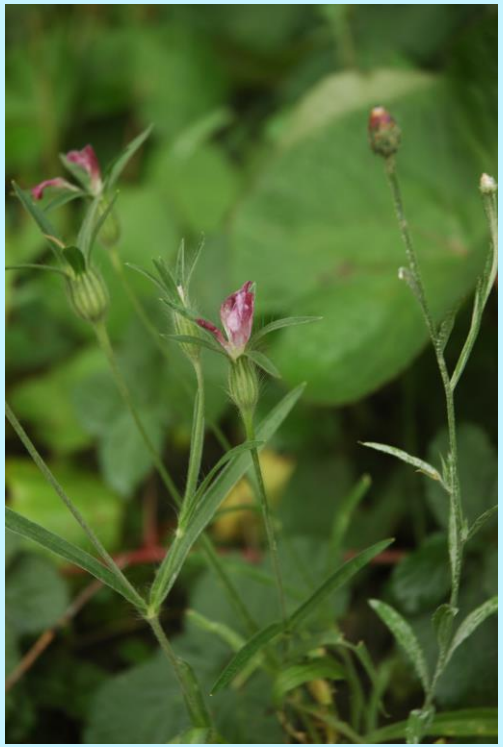
EP 2016 – Review of EU biodiversity strategy to 2020

EC and Member States must improve policies to guarantee No Net Loss of biodiversity and ecosystem services

Policy Basis for No Net Loss

Some Principles from EC NNL Working Group/BBOP

Mitigation Hierarchy
- Follow hierarchy before considering offset
- Offsetting as “Last resort”
- Unlike EIA directive (2014), offsetting hierarchy includes restoration/rehabilitation before offsetting



Limitations
- Some losses cannot be offset (limestone pavement, peatlands)
- Avoidance crucial
- Exclude irreplaceable habitats from any metric

Governance and Planning
- Offsetting cannot justify infringing existing legal protections (Not “licence to trash”)
- “Equitability” - Consult local stakeholders + Integrate local land-use planning

“Additionality” (of Offsets)
- True offsets must be demonstrably new (i.e. would not occur anyway)

“Equivalence” (of Offsets)
- Offset must be “at least equal to” loss (no “trading down”)

Policy Basis for No Net Loss

Action 1.1.3

1.1.3. All Public Authorities and private sector bodies move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure

Performance Indicator

Number of Departments/Agencies articulating a no net loss target in plans and policies

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Policy Basis for No Net Loss

Progress toward NBP target of “moving toward” No Net Loss?

– ?
– Many BAPs pre-date the NBP publication date in 2017
– Some BAPs have not been updated
– Several NNL policies emerging in CDP and BAPs

Policy Basis for No Net Loss

Progress toward NBP target

Little evidence that habitat losses and gains are being accurately measured

However NNL commitments are creeping into policy

Species

– NNL of bat roosts and foraging grounds (Galway City BAP 2012-2024)

– NNL of lesser horseshoe bat habitat (Clare CDP 2017-2023)

– NNL of amphibian breeding sites (Cherrywood SDZ Biodiversity Plan)

Habitats

– NNL of Green Linkages (East Meath LAP 2014-2020 and others)

– NNL of designated sites, species, or habitats (Newbridge LAP 2013-2019; Kiltiernan/ Glenamuck Local Area Plan (2013-2019)

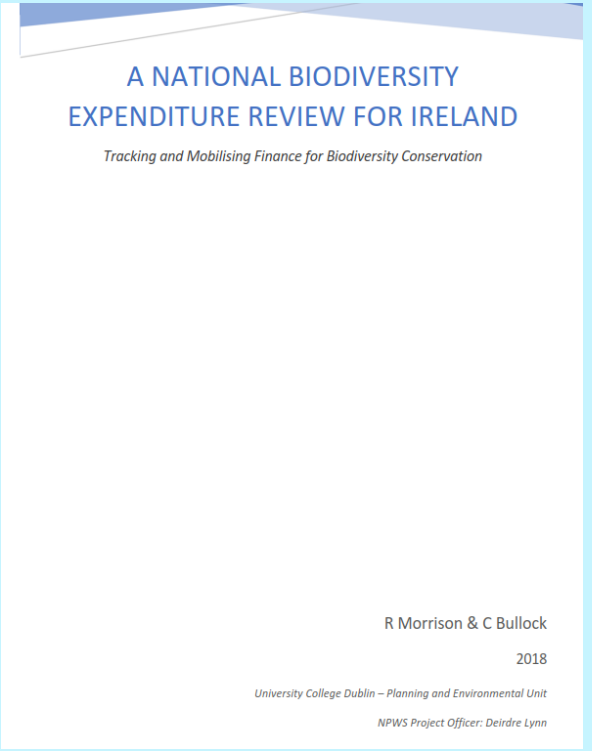
Policy Basis for No Net Loss

Action 2.1.20

2.1.20. Explore biodiversity offsets as a means to achieve no net loss of biodiversity under this Plan and as a source of revenue for biodiversity conservation and restoration

Performance Indicator

1. Review published


A NATIONAL BIODIVERSITY EXPENDITURE REVIEW FOR IRELAND

Tracking and Mobilising Finance for Biodiversity Conservation

R Morrison & C Bullock

2018

University College Dublin – Planning and Environmental Unit

NPWS Project Officer: Deirdre Lynn

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Policy Basis for No Net Loss

- No spending plans or priorities identified,
- *"Offsetting approaches are controversial, as ability to capture the multiple values of biodiversity ..is limited"*
- *Biodiversity offsetting schemes need to be designed carefully to produce beneficial outcomes for biodiversity rather than work as a licence to damage biodiversity*

could be earmarked for conservation and either go directly into a trust and be redistributed for conservation projects nationally, or alternatively linked to the NPWS National Parks or regional structure to specifically fund conservation activities and enhancement in the region in which they were collected similar existing approaches include hunting and licencing fees such as those collected by the IFI for the Salmon Conservation Fund. Similar models could be applied to other species.

8.2.3 Biodiversity Offsetting

Biodiversity offsetting is a mechanism through which development projects can achieve no net loss, or even net gains, in biodiversity by counteracting residual biodiversity losses which cannot be mitigated on-site (ten Kate and Crowe 2014).

> *"Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project"* (OECD 2010).

Offsetting mechanisms operate by using metrics to calculate the value of biodiversity lost on-site and therefore the gains needed to restore equivalent biodiversity levels elsewhere (Bull et al. 2014). In 2011, offset were estimated to have mobilised significant private finance for conservation, between $2.4-4 billion USD globally (largely in the US market).

Biodiversity offsetting can be used to capture residual impacts on biodiversity in the wider environment in order to try to prevent biodiversity decline through *'death by thousand cuts'*, thereby counteracting the incremental erosion and loss of unprotected biodiversity (ten Kate and Crowe,

and conservation to achieve overall win-win solutions (Maron et al. 2016). However, offsetting approaches are controversial, as both our ability to capture the multiple values of biodiversity and the equivalent gains from restored ecosystems is limited (Maron et al. 2016).

Biodiversity offsetting schemes need to be designed carefully to ensure that they operate to produce beneficial outcomes for biodiversity rather than work as a licence to damage biodiversity (Gardner et al. 2013). The primary consideration is that offsetting mechanism will only operate to benefit biodiversity if they are additional to existing environmental protection, i.e. they are designed to account for residual impacts which are not currently mitigated or protected through planning laws and legislation. There are a wide range of critical design decisions in offsetting systems to provide checks and balances that ensure offsetting does not operate as a permit for damaging activities (Maron et al. 2016; Gardner et al. 2013).

Offsets are linked to project developments or land use changes. Mostly, they have been undertaken for large projects e.g. extractive industry or residential developments. However, the same principle could also be used for agricultural land conversions or forestry creation. The use of offsets is seen as a way to achieve better outcomes from development, and ensure sustainable development. They are most suited to developments with a clear footprint on biodiversity e.g. mining, oil and gas, hydropower, wind power, road projects, railways, housing developments, tourism, agriculture, forestry. The most prolific offsetting systems, e.g. the US or Australia, have clear regulatory backing.

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So what about the Legal Basis for No Net Loss?

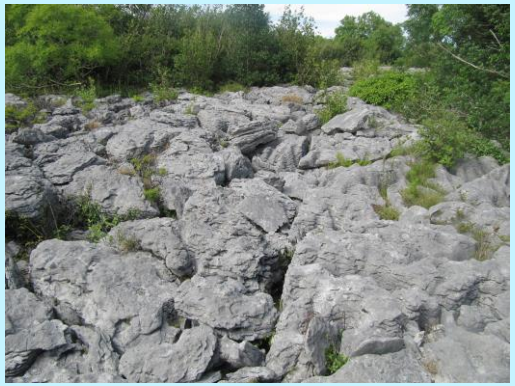
National Biodiversity Expenditure Review for Ireland (NPWS, 2018)

"The most prolific offsetting systems have clear regulatory backing"

Legal Basis for No Net Loss in RoI

No Legal Basis for NNL or offsetting in Ireland
(unlike UK*, US, Australia..)

Priority Habitats of European sites
C-258/11 (Galway City Outer Bypass)
Adverse effects if "Lasting and irreparable loss of the whole or part of a priority natural habitat type"



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Biodiversity metrics: a tool to aid the implementation of biodiversity policy

– Drivers in England
– Introduction to metrics
– Methodology
– Wider Biodiversity Net Gain approach
– The future of metrics

Previous issues with biodiversity policy in England

Biodiversity and Geological Conservation PPS9, 2005 “planning, construction, development, and regeneration should have minimal impacts on biodiversity and enhance it wherever possible ….. If .... significant harm cannot be prevented, adequately mitigated against or compensated for, then planning permission should be refused”.

Problems with the planning system

– Impacts not considered properly
– Inconsistent, ineffective application of planning policy
– Uncertainty, delay to developers
– High costs
– Compensation not secured long term
– Poor environmental outcomes

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Current biodiversity policy requirements in England

In England Local Planning Authorities (LPAs) have a duty to promote Biodiversity Net Gain through the planning system under the National Planning Policy Framework (2018)

Paragraph 175 states that

'*When determining planning application, local planning authorities should apply the following principles:*

- …opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can ***secure measurable net gains for biodiversity****.'*

How do we measure change to biodiversity?

Biodiversity metrics provide a way to:

- Quantify biodiversity value in units
- Measure losses compared to gains
- Demonstrate where no net loss or net gain is achieved
- Embed the mitigation hierarchy
- Provide transparency
- Indicate where additional mitigation/compensation is required for residual loss

Defra biodiversity metric

The Defra metric (2012) is based on habitats, it provides a 'proxy' value for the biodiversity of a given area of habitat based on its size and two key attributes:

- **Distinctiveness** – based on habitat richness, species diversity and rarity
- **Condition** – is an indication of the state of the habitat

		Habitat distinctiveness		
		Low (2)	Medium (4)	High (6)
Condition	Good (3)	6	12	18
	Moderate (2)	4	8	12
	Poor (1)	2	4	6

Matrix showing biodiversity units per ha

Calculation expressed as:

Biodiversity Value (biodiversity units) = Distinctiveness x Condition x Area

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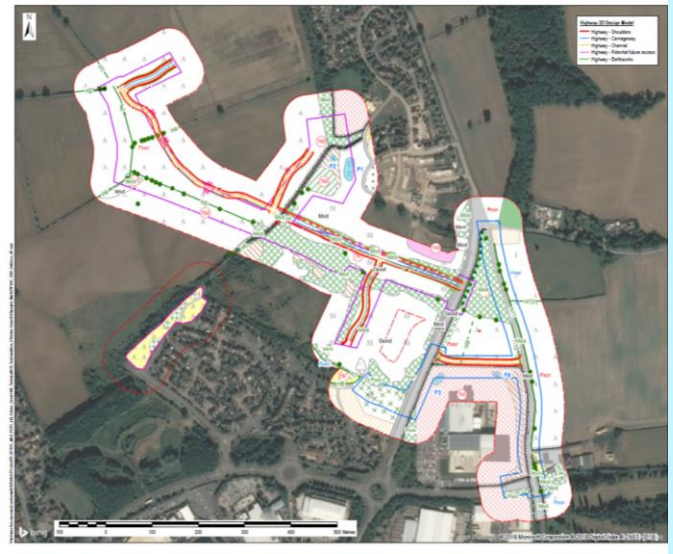
Calculating the net change in biodiversity

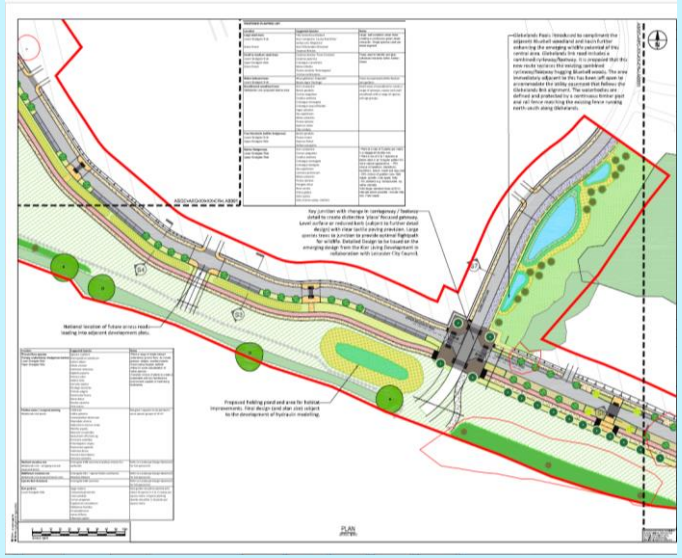
Pre-development scenario



BASELINE BIODIVERSITY UNITS =
Distinctiveness x condition x area (ha)

Obtained from field survey data and maps

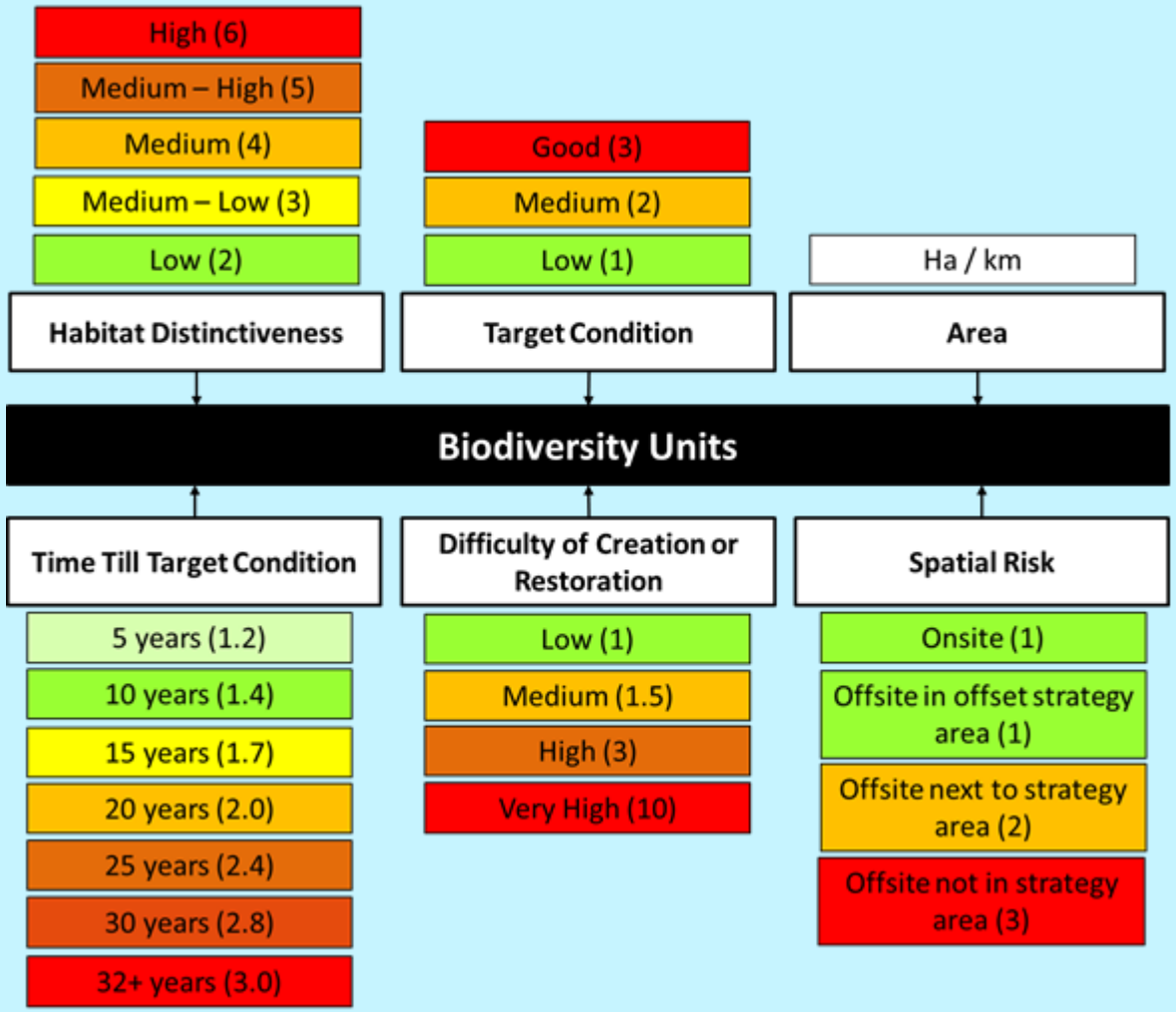
Post-development scenario



PROPOSED BIODIVERSITY UNITS =
Distinctiveness x condition x area (ha) / spatial risk x temporal risk x delivery risk

Obtained from Landscape Masterplan

Accounting for risks



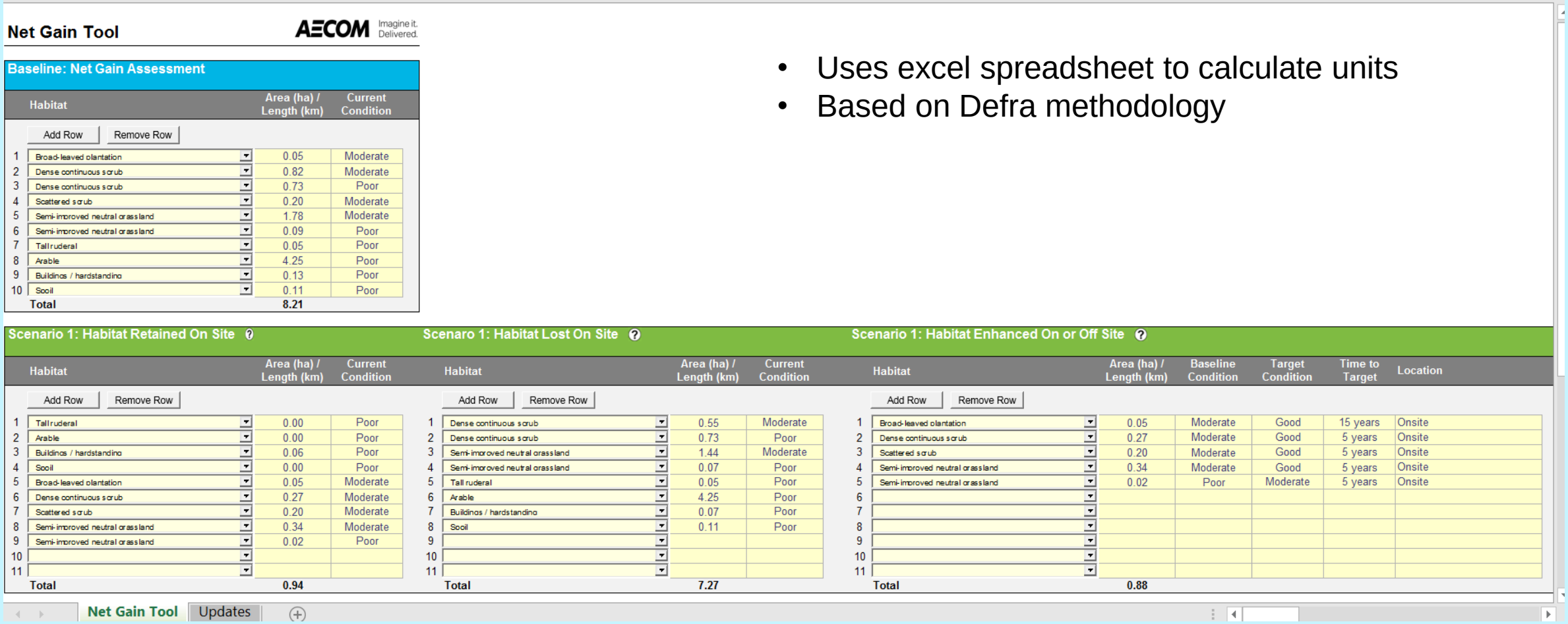
Multipliers account for risks associated with:

- Time taken for a habitat to establish to target condition
- Difficulty in creating/restoring habitat
- Spatial location

Rules

- Irreplaceable habitats should be excluded from the metric calculation
- Mitigation should result in an improvement of the extent or condition of the habitat
- Focus of habitat creation/restoration should be on priority habitats - there should not be a “trading down” of distinctiveness

AECOM biodiversity metric tool



Net Gain Tool — AECOM Imagine it. Delivered.

Baseline: Net Gain Assessment

	Habitat	Area (ha) / Length (km)	Current Condition
1	Broad-leaved plantation	0.05	Moderate
2	Dense continuous scrub	0.82	Moderate
3	Dense continuous scrub	0.73	Poor
4	Scattered scrub	0.20	Moderate
5	Semi-improved neutral grassland	1.78	Moderate
6	Semi-improved neutral grassland	0.09	Poor
7	Tall ruderal	0.05	Poor
8	Arable	4.25	Poor
9	Buildings / hardstanding	0.13	Poor
10	Soil	0.11	Poor
	Total	8.21	

Scenario 1: Habitat Retained On Site

	Habitat	Area (ha) / Length (km)	Current Condition
1	Tall ruderal	0.00	Poor
2	Arable	0.00	Poor
3	Buildings / hardstanding	0.06	Poor
4	Soil	0.00	Poor
5	Broad-leaved plantation	0.05	Moderate
6	Dense continuous scrub	0.27	Moderate
7	Scattered scrub	0.20	Moderate
8	Semi-improved neutral grassland	0.34	Moderate
9	Semi-improved neutral grassland	0.02	Poor
10			
11			
	Total	0.94	

Scenaro 1: Habitat Lost On Site

	Habitat	Area (ha) / Length (km)	Current Condition
1	Dense continuous scrub	0.55	Moderate
2	Dense continuous scrub	0.73	Poor
3	Semi-improved neutral grassland	1.44	Moderate
4	Semi-improved neutral grassland	0.07	Poor
5	Tall ruderal	0.05	Poor
6	Arable	4.25	Poor
7	Buildings / hardstanding	0.07	Poor
8	Soil	0.11	Poor
9			
10			
11			
	Total	7.27	

Scenario 1: Habitat Enhanced On or Off Site

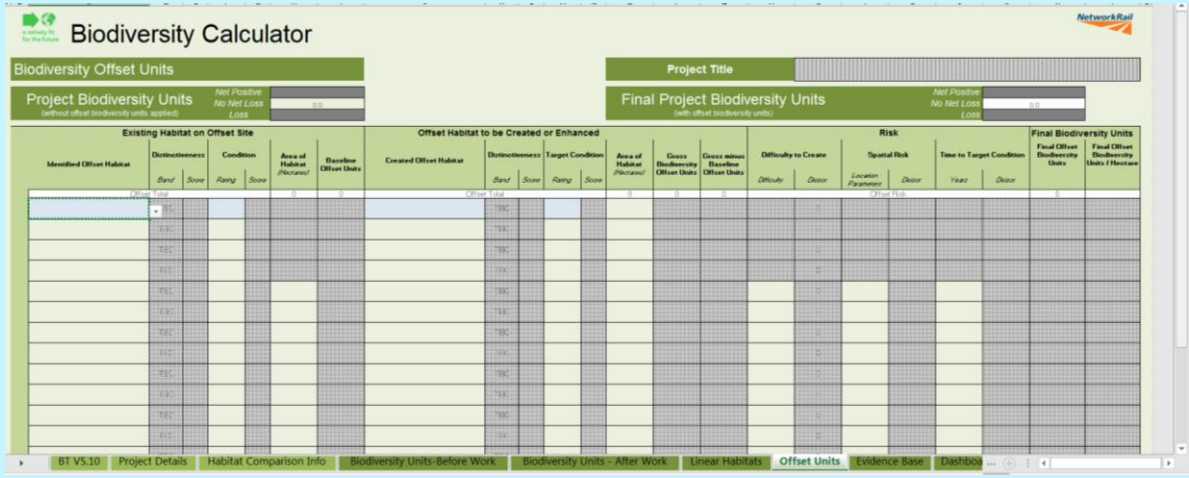
	Habitat	Area (ha) / Length (km)	Baseline Condition	Target Condition	Time to Target	Location
1	Broad-leaved plantation	0.05	Moderate	Good	15 years	Onsite
2	Dense continuous scrub	0.27	Moderate	Good	5 years	Onsite
3	Scattered scrub	0.20	Moderate	Good	5 years	Onsite
4	Semi-improved neutral grassland	0.34	Moderate	Good	5 years	Onsite
5	Semi-improved neutral grassland	0.02	Poor	Moderate	5 years	Onsite
6						
7						
8						
9						
10						
11						
	Total	0.88				

Net Gain Tool | Updates

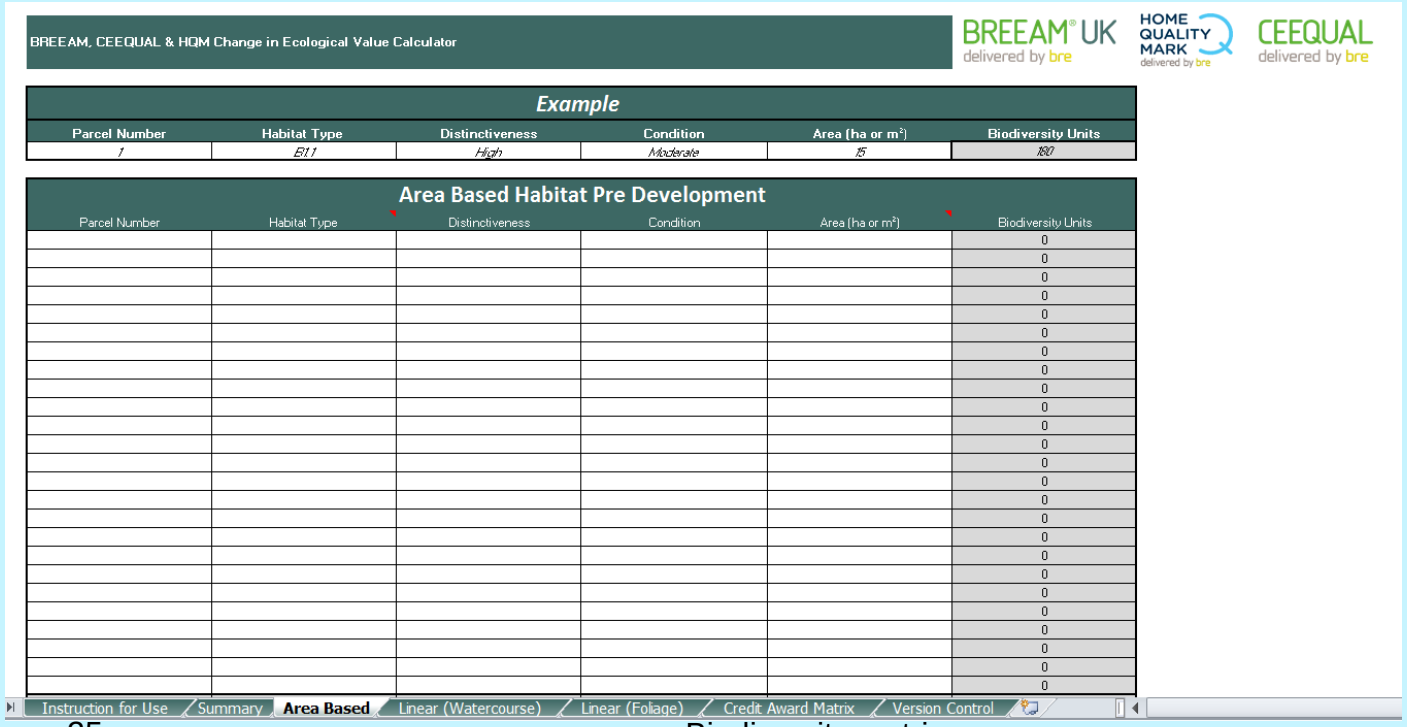
- Uses excel spreadsheet to calculate units
- Based on Defra methodology

Other metrics tools

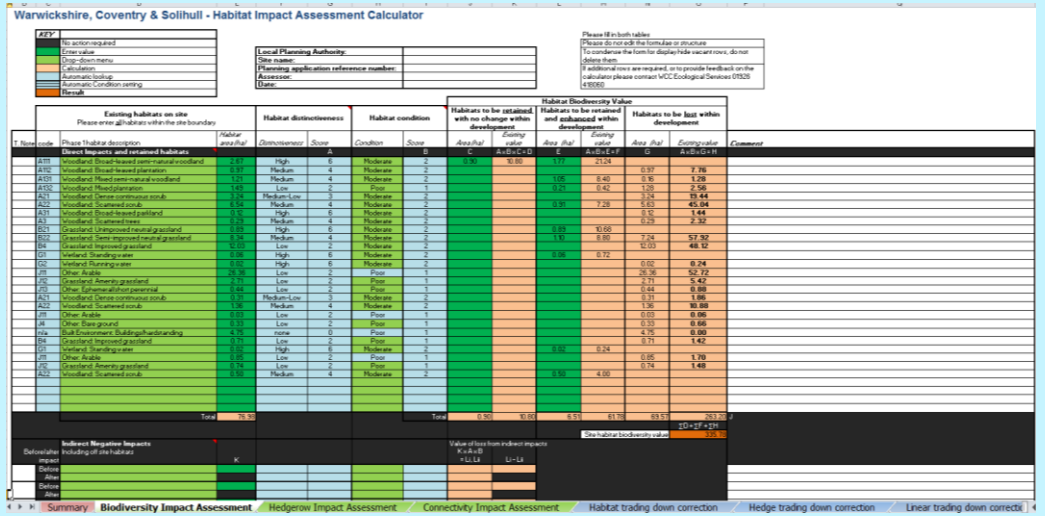
Network Rail Biodiversity calculator



BREEAM 2018 calculator tool



Warwickshire, Coventry & Solihull – Habitat Impact Assessment tool



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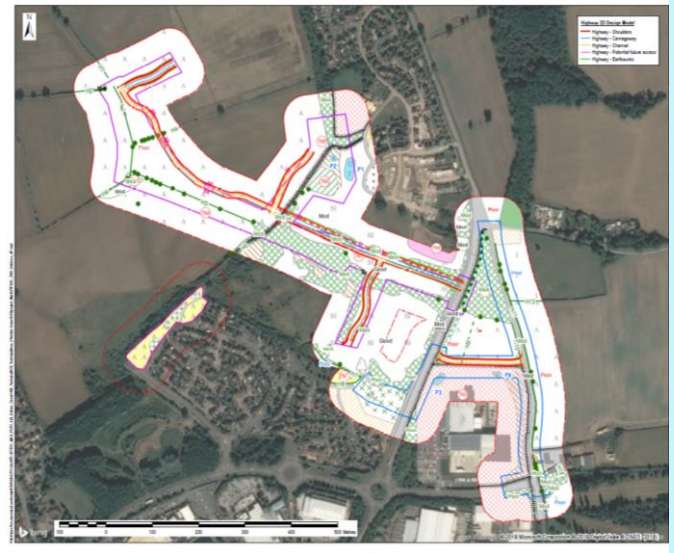
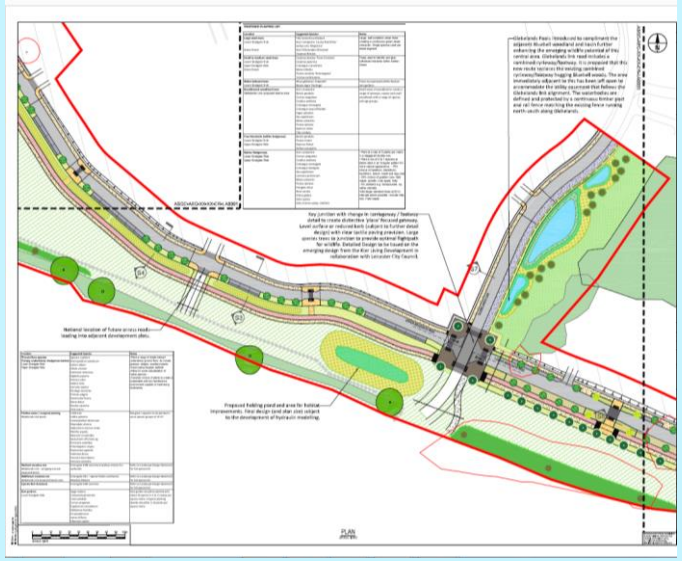
Example: metric calculation output

Pre-development scenario



Post-development scenario



	Loss	Gain	Impact
Woodland Habitat	5.49	2.60	-2.89
Grassland Habitat	11.80	8.91	-2.89
Wetland Habitat	0.00	0.97	0.97
Other Habitat (including Built Environment)	8.87	0.00	-8.87
Total	26.16	12.48	-13.68
		Trading down	0.00
			-13.68

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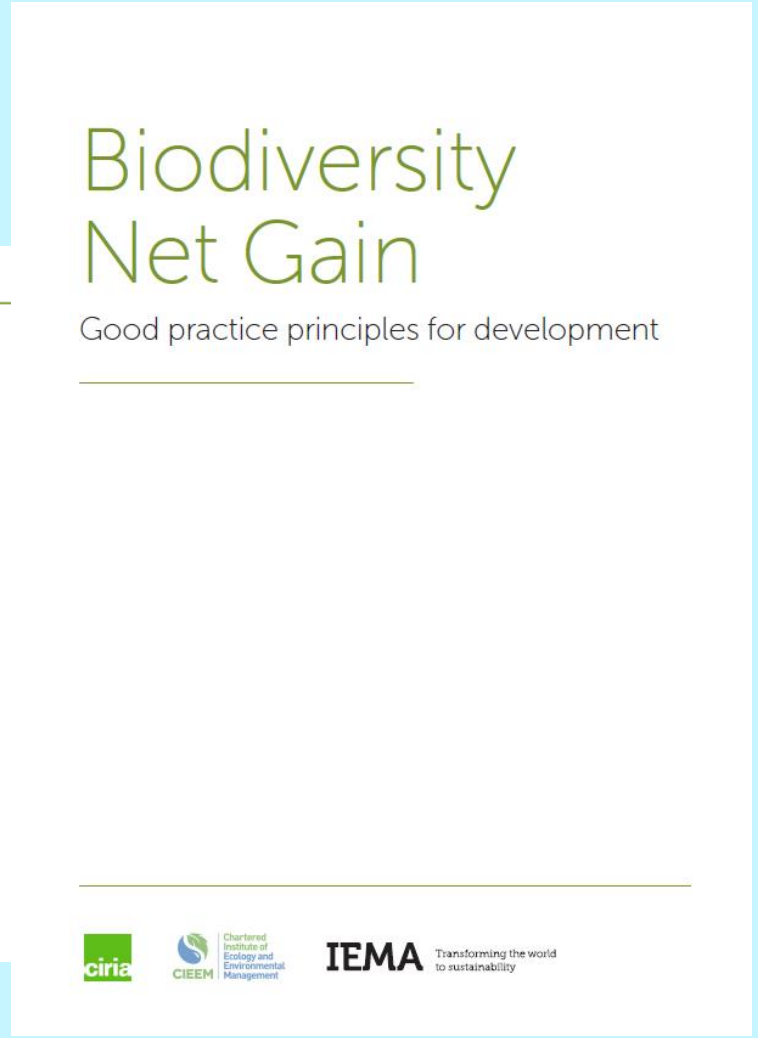
What is Biodiversity Net Gain (BNG)

"***development that leaves biodiversity than in a better state than before***"

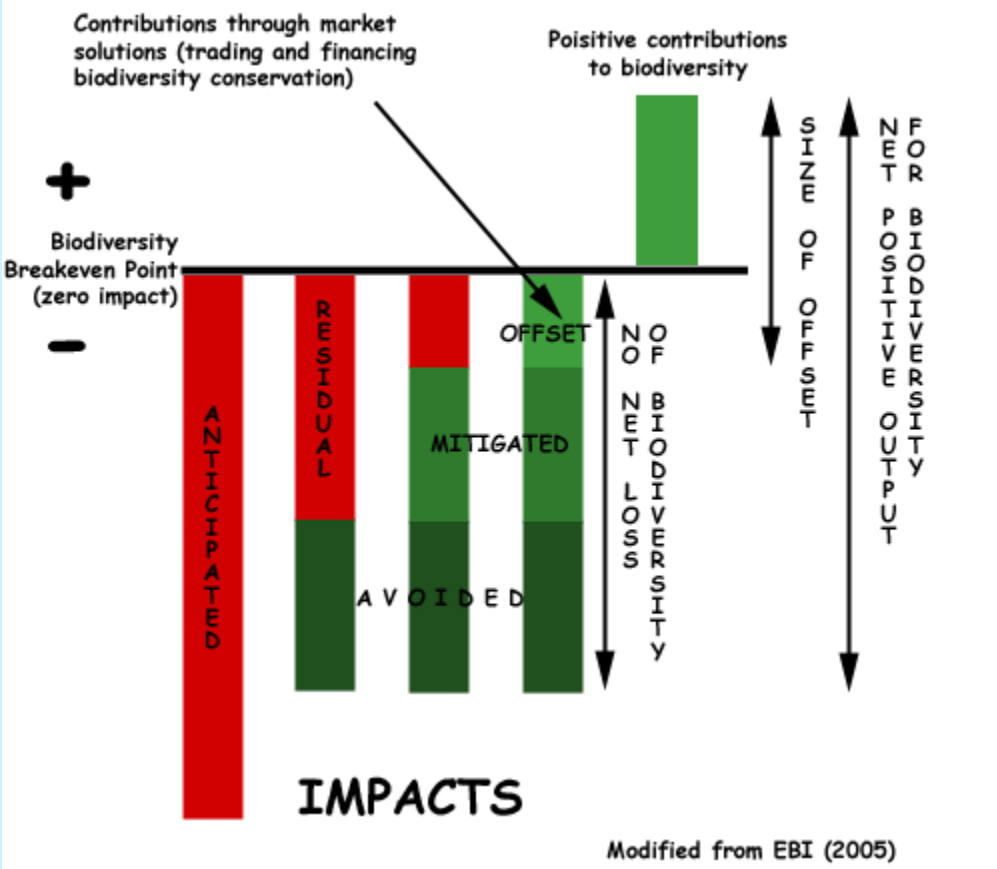
Principles for defining BNG

Biodiversity Net Gain - Good practice principles for development

Principle 1. Apply the Mitigation Hierarchy
Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere
Principle 3. Be inclusive and equitable
Principle 4. Address risks
Principle 5. Make a measurable Net Gain contribution
Principle 6. Achieve the best outcomes for biodiversity
Principle 7. Be additional
Principle 8. Create a Net Gain legacy
Principle 9. Optimise sustainability
Principle 10. Be transparent



Achieving biodiversity net gain



Qualitative assessment is still as important as the quantitative assessment to understand effects.

Development schemes should be designed to:

- Apply the mitigation hierarchy to avoid/reduce impacts

- Maximise the ecological value of the proposed mitigation through:
  - ✓ **Restoration/improvement of existing habitats**
  - ✓ **Creation of new habitats** (on or off site)

- Design schemes to contribute to wider ecological conservation priorities to create coherent, resilient ecological networks

- Identify enhancement areas (offsets) to deliver additional biodiversity units (Securing land for habitat creation on / off site through **legal agreements**)

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Embedding net gain in plans and projects

Current approach encourages:

- Developers to voluntarily adopt a net gain approach
- The use of ‘metrics’ to measure biodiversity losses and gains.
- LPAs to adopt a strategic approach; linking net gain policies to ecological enhancement/GI plans to deliver significant gains
- Incorporation of best practice principles for net gain – mitigation hierarchy, stakeholder engagement, long term management and monitoring etc

Casestudy: Litchfield District Council

“*All development in Litchfield is required to deliver a net gain for biodiversity. The net gains will have to be demonstrated when a planning application is submitted….Any* ***replacement habitat should be of the same or greater biodiversity value*** *and be guided by the* ***Litchfield Biodiversity Opportunity Map***.”

Biodiversity and Development Supplementary Planning Document (SPD), 2016

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Future developments to metric

– Defra Metric V2 is due to be released this year
– Larger range of habitat types to include green infrastructure for the urban environment
– More guidance on difficulty and time to target condition for each habitat type
– Prepopulated with distinctiveness, time to target condition and difficulty scores
– New distinctiveness scores (0-8) to include very high and very low
– New condition scores (0,1,1.5,2,2.5,3)
– Two new elements ‘Connectivity’ and ‘Strategic Significance’
– Eco-metric to assess the wider ecosystem services benefits

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