

National Assembly for Wales
Research paper

Biodiversity Offsetting

April 2014

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Research Service
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Research paper

Biodiversity Offsetting

April 2014

Katy Orford

This research paper gives an overview of the principles of biodiversity offsetting, highlights the potential benefits and limitations of offsetting and reviews policy relating to offsetting in different parts of the UK with particular focus on the situation in England in light of the recently proposed implementation by the UK Government. It concludes by giving examples of other offsetting schemes elsewhere in Europe, the United States and Australia.

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Summary

Biodiversity offsetting is a market-based conservation tool designed to compensate for residual and unavoidable harm to existing wildlife sites caused by development activity.

With the acknowledgement that human activity is having detrimental impacts on biodiversity, governments are seeking different conservation strategies to ameliorate such impacts and several employ biodiversity offsetting.

The underlying aim of offsetting is to ensure 'no net loss' of biodiversity in the long-term following development. General principles of offsetting include that it should only be used after impacts have been avoided or minimised; with recognition that some habitats cannot be offset; that mitigation strategies should occur at the landscape scale; and that sound scientific methodology should be used to develop a quantitative measure of biodiversity 'debits' and 'credits'.

Various forms of offsetting are in place with over 20 countries having enacted laws or introduced policies enforcing offsetting. In Wales and also other parts of the UK, some compensatory conservation measures exist in planning policies and law (under the Habitats¹ and Birds² Directives) however there is no legislation enforcing offsetting. Two year pilot schemes are currently being carried out in six areas in England to assess the practicalities and implications of offsetting. In September 2013 the UK Government consulted on its proposals for an offsetting system for England, and is currently considering the responses it received. Biodiversity is a devolved matter and no formalised offsetting schemes are in place in any of the other UK countries.

This research paper gives an overview of the principles of offsetting, highlights the associated potential benefits and limitations of offsetting and reviews policy relating to offsetting with particular focus on the situation in England in light of the proposed implementation. It ends by giving examples of other offsetting schemes elsewhere in Europe, the United States and Australia.

¹ Council Directive, [92/43/EEC](#) on the Conservation of Natural Habitats and of Wild Fauna and Flora, 21 May 1992 [accessed 27 February]

² Council Directive, [79/409/EEC](#) on the Conservation of Wild Birds, 30 November 2009 [accessed 27 February 2014]

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Biodiversity Offsetting

1. Introduction

Biodiversity refers to ‘the wide variety of ecosystems and living organisms: animals, plants, their habitats and their genes’.³ Biodiversity underpins ecosystem functioning including the provision of ecosystem services, which are required for human well-being, such as pollination and pest control of crops, decomposition, carbon sequestration, flood control and water purification.

Biodiversity offsetting (hereafter offsetting) is a market-based conservation tool designed to compensate for residual and unavoidable harm to existing wildlife sites caused by development activity. The aim of offsetting is to guarantee that there is an outcome of ‘no net loss’ and preferably ‘net gain’ to biodiversity as a consequence of development.

In Wales and also in different parts of the UK, planning policy encourages local authorities to ensure compensation for development impacts on biodiversity. EU law also requires compensatory habitat creation for European protected sites under the Habitats⁴ and Birds⁵ Directives. In relation to sites of national importance, the Strategic Environmental Assessment (SEA)⁶ and Environmental Impact Assessment (EIA)⁷ process requires consultation with statutory nature bodies. However no formalized offsetting schemes currently exist in the UK. On 5 September 2013 Defra published a consultation paper which sets out proposals for introducing offsetting in England.⁸

³ IUCN, [About Biodiversity](#) [accessed 20 March 2014]

⁴ Council Directive [92/43/EEC](#) on the Conservation of Natural Habitats and of Wild Fauna and Flora, 21 May 1992 [accessed 27 February]

⁵ Council Directive, [79/409/EEC](#) on the Conservation of Wild Birds, 30 November 2009 [accessed 27 February 2014]

⁶ European Commission, [Strategic Environmental Assessment](#) [accessed 20 March 2014]

⁷ European Commission [Environmental Impact Assessment - EIA](#) [accessed 20 March 2014]

⁸ Defra, [Biodiversity Offsetting in England](#) [accessed 25 February 2014]

2. General principles of offsetting

2.1. Biodiversity markets

Biodiversity and ecosystem services are generally treated as public goods, with no price and no market. There is growing concern that these ‘externalised’ costs are leading to exploitation and degradation of natural infrastructure by developers.⁹ Biodiversity markets are increasingly being employed in an approach to incorporate the cost of nature conservation into development activities.¹⁰ The key premise is that through market-based instruments, the positive and negative impacts on biodiversity can be measured and represented as credits and debits. Offsetting schemes fit into this framework of ‘internalising’ costs associated with biodiversity loss as a consequence of development activities.

The generalised offsetting process involves buyers, sellers and in the case of habitat banking¹¹ third party intermediaries.¹² The buyers are developers requiring land for agriculture, industry, housing or other developments. Sellers are suppliers of the land to be used as an offset for the development. Third party intermediaries may include local government, NGOs, insurers, brokers, traders, and technical experts facilitating interactions between these two parties.

2.2. Key principles of the Business and Biodiversity Offsets Programme

The Business and Biodiversity Offsets Programme (BBOP) is an international partnership between companies, governments, financial institutions and conservation experts.¹³ BBOP outlines general principles, recommending that offsetting should:

- be designed and implemented to result in **no net loss**, or preferably gain, of biodiversity;
- achieve **additional conservation outcomes** above and beyond results that would have occurred anyway;

⁹ The Economics of Ecosystems and Biodiversity [Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of TEEB](#) October 2010 [accessed 28 March 2014]

¹⁰ Ecosystem Marketplace (Forest Trends) (2010) [State of Biodiversity Markets Offset and Compensation Programs Worldwide](#) [accessed 24 March 2014]

¹¹ Under this approach an offset provider undertakes habitat restoration or recreation in advance of need in the anticipation they will be able to sell the gain as an offset at a later date.

¹² Burgin (2008) [BioBanking: an environmental scientist's view of the role of biodiversity banking offsets in conservation](#) Biodiversity and Conservation, 17:807–816 [accessed 28 March 2014]

¹³ [The Business and Biodiversity Offsets Programme](#) [accessed 26 February 2014]

- be used only **after** impacts have been avoided or minimised and biodiversity restored on-site (following the **mitigation hierarchy** (Box 1));
- recognise **limits** to what can be offset (highly irreplaceable or vulnerable biodiversity is difficult or impossible to offset);
- be implemented in a **landscape context**, taking into account biological, social, and cultural values;
- **involve stakeholders** effectively in design and implementation;
- be designed and implemented in an **equitable** manner;
- be planned to secure outcomes that last at least as long as the development project's impacts, and preferably in **perpetuity**;
- be undertaken in a **transparent** and timely manner, with results communicated to the public; and
- document the appropriate use of **scientific methodology** and traditional knowledge in offset design. ¹⁴

Box 1. Mitigation Hierarchy

The mitigation hierarchy is a systematic approach embedded in several areas of environmental legislation and regulation internationally, including planning policy, to address environmental impacts and the potential compensation.

The stepwise approach first seeks to avoid impacts e.g. by relocating development, then to minimise them through the detailed design of the development and finally compensate for any residual unavoidable impacts e.g. by restoring or recreating habitat elsewhere.

Stakeholders including The Woodland Trust , Renewable UK , The Institute of Environmental Management and Assessment (IEMA) and the RSPB agree that if offsetting systems are introduced they should be considered under this hierarchy as a last resort.

¹⁴ BBOP, [Standard on Biodiversity Offsets](#), January 2012 [accessed 26 February 2014]

2.3. Metric system: biodiversity units

Commonly underpinning offsetting is a metric system which aims to quantify impacts on nature in standard biodiversity units.¹⁵ Defra states that the rationale of the metric system is to provide a framework non-experts can use to assess how different activities impact on biodiversity and whether negative impacts can be avoided or reduced in line with the mitigation hierarchy (Box 1).¹⁶ In several strategies the metric is used with an aim to calculate the compensation requirement with the offset supplying a sufficient number and type of biodiversity units to compensate the loss.¹⁷ The concept of an offsetting metric remains controversial with ecologists and conservationists arguing that biodiversity measurements cannot realistically be based on a single quantifiable unit due to the complexity of ecosystems and that the intrinsic value of nature that cannot be measured objectively.^{18,19}

2.4. Location and scale of offset sites

In theory, an offsetting system could allow an offset to be provided anywhere, including in other countries, as long as it would secure like-for-like ecological gain of the same habitat or species. Defra states that in some cases there could be ecological advantages to this, e.g. for migratory bird species improving over-wintering, resting or breeding sites along their migration route.²⁰ However removing local biodiversity sites may have a negative impact on the local community's quality of life.²¹

Defra states that limiting the location of offsets addresses this issue but also argues that this can fragment the market geographically and reduce flexibility at a national level to achieve the most coherent ecological networks.²² Lawton *et al.* (2010) propose that pooling a number of offsets required for separate smaller developers into a larger habitat block could be more beneficial for a more resilient ecological network.²³

¹⁵ Ecosystem Marketplace (Forest Trends) (2010) [*State of Biodiversity Markets Offset and Compensation Programs Worldwide*](#) [accessed 24 March 2014]

¹⁶ Defra, Green Paper, [*Biodiversity Offsetting*](#), September 2013 p3 [accessed 25 February 2014]

¹⁷ The Environment Bank, [*About the Environment Bank*](#) [accessed 25 March 2014]

¹⁸ Friends of the Earth, [*Written evidence*](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

¹⁹ NERC, [*Written evidence*](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

²⁰ Defra, Green Paper, [*Biodiversity Offsetting*](#), September 2013 p16 [accessed 25 February 2014]

²¹ RSPB, [*Written evidence*](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

²² Defra, Green Paper, [*Biodiversity Offsetting*](#), September 2013, p16 [accessed 25 February 2014]

²³ Lawton *et al.* (2000) [*Making Space For Nature: a review of England's wildlife sites and ecological network*](#), Report to Defra [accessed 27 February 2014]

2.5. Potential benefits of offsetting

Potential benefits of offsetting that have been highlighted by developers, conservation organisations and ecologists are listed below:

- offsetting could **simplify** and **speed** up the planning process making biodiversity enhancements more cost effective and reduce the bureaucratic and financial burden on the industry; ²⁴
- provides flexibility to pool offsets can create better and larger **ecological networks**; ²⁵
- **places value on nature**, introducing incentives for conservation efforts; ²⁶
- provides a consistent and rigorous but transparent, fair and accountable treatment of environmental loss; ²⁷
- provides **diversified** income streams for landowners; ²⁸
- increases **business opportunities** for support sectors (such as brokers, impact assessors, management plan experts and monitoring systems); ²⁹
- increases reliability of **long-term** conservation projects securing long-term gains for biodiversity; ³⁰ and
- the strategic choice of offset type and location could result in the replacement of lower value habitat with **higher value habitats** (higher value habitats should generally be replaced like for like). ³¹

2.6. Potential limitations of offsetting

Concerns are also expressed by developers and conservation groups and some of these are listed below:

- natural processes require very **large areas** of natural land that may be difficult to find; ³²
- if offsetting was to be delivered through the planning system concerns exist about the ability of the council planning departments to **resource** and **manage** the process; ³³

²⁴ Mineral Products Association, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

²⁵ Lawton *et al.* (2010), [Making Space For Nature: a review of England's wildlife sites and ecological network](#), Report to Defra [accessed 27 February 2014]

²⁶ The Woodland Trust, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

²⁷ The Environment bank, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

²⁸ *ibid*

²⁹ *ibid*

³⁰ The Environment bank, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

³¹ RSPB, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

³² *ibid*

- the ‘onerous’ process of offset providers preparing and having schemes accredited could lead to a **lack of supply** of offsets; ³⁴
- there are science-based issues regarding the **standard biodiversity metric**. This assumes that such units are transferable between locations and will deliver at least the same biodiversity value as the habitat lost. Transferability will increase as the metric gets more general, but will lose ecosystem specificity and potentially value (and accuracy) of the offset. A metric that captures community structure and composition makes it less likely that compensation could, in fact, occur. ³⁵
- Nature has an **intrinsic value** that cannot be measured and the complexity of ecosystems such as ecosystem service provision is not fully reflected in any of the current proposed metrics for offsetting; ³⁶
- some habitats, such as permanent grasslands and heathlands, can be **difficult to restore** with the time, expertise and equipment available. Others including ancient woodland and limestone pavements are impossible to recreate within human timescales leading to irreversible loss; ^{37,38}
- offsetting at a location far from development sites would result in communities losing benefits associated with **local biodiversity** such as health and cultural benefits and other ecosystem services; ³⁹
- there is **no convincing evidence** that offsetting is an effective way to protect and restore biodiversity; ⁴⁰
- instead of gains for biodiversity it could simply **facilitate greater destruction** of nature in areas of high development pressure in return for a promise of habitat creation where land is cheaper; ⁴¹

³³ Mineral Products Association, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

³⁴ *ibid*

³⁵ NERC, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

³⁶ Friends of the Earth, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

³⁷ *ibid*

³⁸ Woodland Trust, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

³⁹ Friends of the Earth, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

⁴⁰ *ibid*

⁴¹ *ibid*

- early offsetting schemes in England have suffered from low rates of **compliance**; ⁴² and
- a badly designed offsetting scheme could **exacerbate biodiversity declines** and contribute to the disconnection between people and nature. ⁴³

⁴² Mineral Products Association, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

⁴³ Woodland Trust, [Written evidence](#) for HoC Environmental Audit Committee Inquiry into Biodiversity Offsetting, October 2013 [accessed 24 March 2014]

3. Policy on offsetting in the UK

3.1. England

In England, mandatory offsetting is currently only required where development has significant impacts on the Natura 2000 network⁴⁴ (under the Habitats⁴⁵ and Birds⁴⁶ Directives). Planning policy encourages, but does not absolutely require, local authorities to ensure compensation for development impacts on biodiversity.

In 2008, Defra commissioned a scoping study for the design and use of biodiversity offsets and credits in an English context.⁴⁷ The study found that to be successful schemes would need to ensure the principle of ‘no net loss’, be transparent to stakeholders, be legally, institutionally and financially secure and be properly monitored and enforced. The study concluded that while there is potential for habitat banking in England further work is needed to consider whether new legislation would be required and to determine the associated costs. The study recommended that a number of pilot projects should be established to help with the gathering of further evidence.

Making Space For Nature: a review of England’s wildlife sites and ecological network (2010) (the Lawton Review), commissioned by the UK Government,⁴⁸ highlighted the potential role of offsets in enhancing and preserving resilient ecological networks and made suggestions for a number of principles required for an effective system in England. Recommendation 22 of *the Lawton Review* states that:

If a formal system of biodiversity offsets is to be introduced, pilot schemes should be established to test and refine its operation, to ensure it meets the conditions we have set out for a safe and effective system.⁴⁹

In line with this recommendation pilot schemes began in April 2012, and are due to be completed in 2014, in six areas in England (see Section 3.1.4.).

⁴⁴European Commission, [Natura 2000 network](#) [accessed 3 March 2014]

⁴⁵ Council Directive [92/43/EEC](#) on the Conservation of Natural Habitats and of Wild Fauna and Flora, 21 May 1992 [accessed 27 February]

⁴⁶ Council Directive, [79/409/EEC](#) on the Conservation of Wild Birds, 30 November 2009 [accessed 27 February 2014]

⁴⁷ DEFRA [Scoping Study for the design and use of biodiversity offsets and credits in the English context](#), May 2009 [accessed 24 March 2014]

⁴⁸ Lawton *et al.* (2010), [Making Space For Nature: a review of England’s wildlife sites and ecological network](#), Report to Defra [accessed 27 February 2014]

⁴⁹ *ibid*

In May 2013, the Secretary of State for the Environment, Food and Rural Affairs, Owen Paterson MP, held an offsetting summit which heard the views of developers, conservation bodies, planning professionals, economists and others. The Secretary of State reported there was interest in the concept stating that ‘the success, or failure, of offsetting will depend on the detail of the scheme we adopt’.⁵⁰

3.1.1. The Biodiversity Offsetting Green Paper

In late 2013 the UK Government consulted on its proposals for offsetting in England.⁵¹ The UK Government published a Biodiversity Offsetting Green Paper presenting details of the proposed offsetting scheme and conveying the UK Government’s preference for giving developers the choice to use offsetting in England.⁵² Details of the proposals outlined in the Green Paper are below.

3.1.1.1. The offsetting metric

The Green Paper sets out the offsetting metric developed by Defra which is being used in the offsetting pilot schemes (Section 3.1.4.). The metric quantifies the value of habitats based on three criteria:

- **distinctiveness** of the habitat is assessed as low, medium or high. Distinctiveness reflects, amongst other factors, the rarity of the habitat concerned (at local, regional, national and international scales) and the degree to which it supports species rarely found in other habitats;
- the **quality** of the habitat is assessed as poor, moderate or good. This assessment is based on a standard framework. In the pilots this has been Natural England’s “Higher Level Stewardship: Farm Environment Plan (FEP) Manual”; and
- the **area** of the habitat in hectares.⁵³

⁵⁰ Defra, [Biodiversity Offsetting Green Paper](#), September 2013, p1 [accessed 27 February 2014]

⁵¹ Defra, [Biodiversity offsetting in England](#) (closed consultation) [accessed 27 February 2014]

⁵² Defra, [Biodiversity Offsetting Green Paper](#), September 2013, p5-6 [accessed 27 February 2014]

⁵³ Defra, [Biodiversity Offsetting Green Paper](#), September 2013, p10 [accessed 27 February 2014]

Having assessed the habitat against these factors, its value in ‘biodiversity units’ can be calculated using the following table:

Table 1. Calculating the offsetting metric in ‘biodiversity units’. Source: Defra⁵⁴

Value of 1 ha in ‘biodiversity units’		Habitat distinctiveness		
		Low (2)	Medium (4)	High (6)
Habitat quality	Good (3)	6	12	18
	Moderate (2)	4	8	12
	Poor (1)	2	4	6

3.1.1.2. The planning process

The UK Government highlights the need for offsetting to fit with the planning process and perceives offsetting as a way to meet the existing requirements of the National Planning Policy Framework⁵⁵ (England’s national planning policy). It argues that the current limitations in the planning process could be improved by offsetting making it quicker, cheaper, simpler and more certain.⁵⁶

The UK Government highlights options for how offsetting might be used instead of existing arrangements and highlights a number of options on how this could work:

- **Fully permissive** – developers choose if they will use the offsetting metric and how to secure compensation (i.e. through a section 106 agreement or by obtaining an offset⁵⁷);
- **Partially permissive** – developers must apply the metric but choose the compensation option (i.e. through a section 106 agreement or by obtaining an offset);
- **Uniform (mandatory)** – developers are required to offset (possibly with a threshold level that triggers offsetting); or
- **Community Infrastructure Levy⁵⁸** – offsets are funded by planning authority levies.⁵⁹

⁵⁴ *ibid*

⁵⁵ Department for Communities and Local Government, *National Planning Policy Framework*, March 2012 [accessed 3 March 2014]

⁵⁶ Defra, *Biodiversity Offsetting Green Paper*, September 2013, p5-6 [accessed 27 February 2014]

⁵⁷ Section 106 Agreements are private agreements made between local authorities and developers, under the Town and Country Planning Act 1990, and can be attached to a planning permission to make acceptable development which would otherwise be unacceptable in planning terms.

⁵⁸ The Community Infrastructure Levy is a planning charge, introduced by the Planning Act 2008 as a tool for local authorities in to help deliver infrastructure to support the development of their area.

⁵⁹ Defra, *Biodiversity Offsetting Green Paper*, September 2013, p13 [accessed 27 February 2014]

3.1.1.3. Location

The UK Government does not propose international offsetting and highlights options if national limits are introduced on the location of offsets. These options include:

- requiring offsets to provide within a certain distance of the development;
- a hybrid option where trading is restricted for habitats that are considered more distinctive under the metric, where low-distinctiveness habitats might be able to be offset anywhere, while moderate and high-distinctiveness habitat offsets might have to be in the same local authority area; or
- a model where a larger offset has to be provided if it is further away.⁶⁰

3.1.1.4. Protected species and offsetting

Certain species are protected under international and domestic laws (e.g. the *Habitats Directive*⁶¹ and *Wildlife and Countryside Act*⁶²). The UK Government intends to apply offsetting to protected species as part of any wider offsetting system complying with the existing legislation with the suggestion that the offsetting metric accommodates protected species.

3.1.1.5. Covenants, management agreements and an offset register

The UK Government suggests that conservation covenants could be entered into where the covenant would be binding on whoever owns the land so the biodiversity benefit would be maintained even if it changed hands.

An enforceable management agreement is proposed alongside the covenant agreement for the offset. This would set out the actions the offset provider would take to ensure biodiversity gains.

In addition to this an offset register may be required. This would prevent a single offset being used to provide compensation for multiple projects.⁶³

⁶⁰ Defra, *Biodiversity Offsetting Green Paper*, September 2013, p18 [accessed 27 February 2014]

⁶¹ Council Directive [92/43/EEC](#) on the Conservation of Natural Habitats and of Wild Fauna and Flora 21 May 1992 [accessed 27 February]

⁶² *Wildlife and Countryside Act 1981* (Chapter 69) [accessed 27 January 2014]

⁶³ Defra, *Biodiversity Offsetting Green Paper*, September 2013, p22 [accessed 27 February 2014]

3.1.1.6. Implementing offsetting

There is concern that implementing offsets on a voluntary basis would not generate enough interest to establish a viable biodiversity market and could be detrimental to biodiversity.⁶⁴ The UK Government suggests that primary legislation will be required along with legislation to integrate offsetting with the planning system and to amend existing legislation.⁶⁵

3.1.1.7. Status of the consultation Green Paper

The consultation closed on 7 November 2013 and the UK Government is currently analysing the feedback it has received.⁶⁶

3.1.2. The House of Commons Environmental Audit Committee inquiry into offsetting

The House of Commons (HoC) Environmental Audit Committee undertook an inquiry into the UK Government's consultation on offsetting in England in the autumn of 2013.⁶⁷ The aim of the inquiry was to contribute to a wider on-going inquiry by the Committee on well-being.

The recommendations of the inquiry are outlined below:

- the inquiry argues that the offsetting metric described in the Green Paper is overly simplistic. It recommends that the metric for calculating environmental losses and gains must reflect the full complexity of habitats, including particular species, local habitat significance, ecosystem services provided and 'ecosystem network' connectivity;
- any introduced scheme must set out clear proposals for how the assessments must be carried out, require local planning authorities to audit and validate assessment and publish details of how the assessments are applied;
- any offsetting scheme should take account of lost public access to biodiversity. Where communities would lose the benefits of local biodiversity offsetting decisions should be considered at the lowest planning authority level possible;
- any offsetting system should emphasise the importance of the 'mitigation hierarchy' (Box 1);

⁶⁴ HoC Environmental Audit Committee - Sixth Report, *Biodiversity Offsetting*, November 2013 [accessed 3 March 2014]

⁶⁵ Defra, *Biodiversity Offsetting Green Paper* September 2013, p31 [accessed 27 February 2014]

⁶⁶ Defra *Biodiversity offsetting in England* (closed consultation) [accessed 27 February 2014]

⁶⁷ HoC Environmental Audit Committee - Sixth Report *Biodiversity Offsetting*, November 2013 [accessed 3 March 2014]

- the UK Government should task Natural England to monitor offsetting schemes to ensure a balance of habitat types are covered in the offsets, so that overall they are similar to the lost habitats and to provide resources to ensure this;
- further analysis of pilots is needed to test how uptake might be expected to vary according to the design of the schemes;
- the UK Government should develop a system where offsetting ‘risk factors’ are initially given high weightings which can only be reduced when experience of offsetting in practice provides confidence that the environment has not been harmed overall; and
- the UK Government should allow offsetting pilots to run their course and be evaluated thoroughly in an independent way.⁶⁸

3.1.3. Stakeholder’s responses to the UK Government’s proposals

Joan Walley MP, Chair of the HoC Environmental Audit Committee, stated following the inquiry that:

Many witnesses to the inquiry were concerned that the [UK] Government's proposal would allow offsetting to be applied to ancient woodland and Sites of Special Scientific Interest. There is a danger that an overly simplistic offsetting system would not protect these long-established eco-systems.⁶⁹

The Woodland Trust has campaigned against the inclusion of ancient woodlands in any offsetting scheme and rejects the suggestion that the future of these habitats should be dependent on the proposed economic benefit of developers. It has said offsetting should ‘only ever be a last resort when all other avenues have been explored to avoid loss or damage’.⁷⁰

Friends of the Earth has said that instead of putting nature ‘up for sale’, the UK Government should strengthen wildlife protection through the planning system.⁷¹

The Wildlife Trust has said that:

Biodiversity offsetting is not the only solution but the scale and nature of the problem means it is worth at least considering, with necessary caution and as part of a wider set of approaches.⁷²

⁶⁸ HoC Environmental Audit Committee - Sixth Report, *Biodiversity Offsetting*, November 2013 [accessed 3 March 2014]

⁶⁹ HoC Environmental Audit Committee, *Biodiversity Offsetting proposal too simplistic - Green Watchdog warns*, November 2013 [accessed 11 March 2014]

⁷⁰ Woodland Trust, *Wildlife compensation measures highlight precarious state of our irreplaceable habitats*, September 2013 [accessed 11 March 2014]

⁷¹ The Guardian, *Biodiversity offsetting proposals 'a licence to trash nature'*, September 2013 [accessed 11 March 2014]

⁷² The Wildlife trusts, *Thoughts on Biodiversity Offsetting*, January 2014 [accessed March 2013]

The Royal Town Planning Institute (RTPI) in response to the UK Government consultation state that:

The RTPI recognises that in times of financial austerity when there is so much pressure on public spending then a system of biodiversity offsets could help provide much-needed funding for nature conservation work. We also acknowledge that the process of managing potential development impacts on biodiversity can be challenging for both local authorities. However, unless any system of offsets is carefully thought through there is potential to actually make the process more complicated.⁷³

3.1.4. Offsetting Pilot schemes

As announced in the UK Government's Natural Environment White Paper⁷⁴ and in line with *the Lawton Review*, which called for pilot schemes to test and refine any offsetting operation, pilot schemes began in April 2012 (and are due to be completed in 2014) in six areas in England:

- Devon;
- Doncaster;
- Essex;
- Greater Norwich;
- Nottinghamshire; and
- Warwickshire, Coventry and Solihull.⁷⁵

In the pilot areas, developers that are required to provide compensation for biodiversity loss under planning policy can choose to do so through offsetting. Defra published guidance in March 2012.⁷⁶

3.1.4.1. Results of the pilots

Results from the pilots were said to feed into the UK Government's offsetting proposals in the consultation paper however publication of the Green Paper before completion of the pilots raised concerns.^{77,78,79} The Wildlife Trusts stated:

We believe the decision to publish this [the Green Paper] before the results of the pilots in 2014 are available was not the right decision. Proposals for any biodiversity offsetting scheme should be based on scientific evidence and The Wildlife Trusts will await the evidence from the pilot schemes in 2014.⁸⁰

⁷³ Royal Town Planning Institute, [Response to Consultation Paper: Offsetting the impact of development on biodiversity](#), 26 January 2014 [accessed 17 March 2014]

⁷⁴ UK Parliament, [Natural Environment White Paper](#), July 2012 [accessed 13 March 2014]

⁷⁵ UK Government, [Biodiversity offsetting pilots and schemes](#) [accessed 3 March 2014]

⁷⁶ Defra, [Biodiversity Offsetting Pilots: Guidance for developers](#), March 2012 [accessed 13 March 2014]

⁷⁷ Defra, [Biodiversity Offsetting Green Paper](#) September 2013, p7 [accessed 27 February 2014]

⁷⁸ HoC Environmental Audit Committee - Sixth Report, [Biodiversity Offsetting](#), November 2013 [accessed 3 March 2014]

⁷⁹ The Wildlife trusts, [Thoughts on Biodiversity Offsetting](#), January 2014 [accessed March 2013]

⁸⁰ *ibid*

The Chartered Institution of Water and Environmental Management (CIWEM) questioned whether the two-year timeframe of the pilots would be sufficient to give viable results ‘given the time it takes for any natural habitat to become properly established and colonised’.⁸¹

The UK Government proposes to continue the pilots so they can ‘provide further evidence that can be fed into guidance and regulations that will need to be put in place to set up an offsetting system’.⁸²

The results of the pilots have not yet been independently evaluated; a commitment made by the then Defra minister Richard Benyon⁸³, however the Green Paper reports that ‘in particular the pilots have shown that offsetting needs to achieve a critical mass to deliver an effective system’.⁸⁴ The HoC Environmental Audit Committee states in its inquiry that the poor uptake in the pilots suggests that a mandatory system would be needed.⁸⁵

3.2. *The rest of the UK*

Biodiversity is a devolved matter and there are currently no formalised offsetting schemes in any of the other UK countries. Whilst proposals to introduce offsetting are relatively advanced in England (as discussed above), there have been few focussed discussions on introducing an offsetting scheme in the other UK countries.

3.2.1. *Wales*

Like in England, Wales has national planning policies that make it possible for developers to provide appropriate biodiversity compensation. The Welsh Government’s Planning Policy Wales states that:

The planning system has an important part to play in meeting biodiversity objectives by promoting approaches to development which create new opportunities to enhance biodiversity, prevent biodiversity losses, or compensate for losses where damage is unavoidable.⁸⁶

Technical Advice Note 5 also addresses compensation for losses or impacts that could not be avoided or mitigated.⁸⁷ Furthermore, under EU law compensatory

⁸¹ HoC Environmental Audit Committee - Sixth Report, [Biodiversity Offsetting](#), para 43, November 2013 [accessed 19 March 2014]

⁸² Defra, [Biodiversity Offsetting Green Paper](#), September 2013, p7 [accessed 27 February 2014]

⁸³ HC Deb, 1 December 2011, [c1051](#) [accessed 19 March 2013]

⁸⁴ *ibid*

⁸⁵ HoC Environmental Audit Committee - Sixth Report, [Biodiversity Offsetting](#), November 2013 [accessed 3 March 2014]

⁸⁶ Welsh Government, [Planning Policy Wales: Conserving and Improving Natural Heritage and the Coast](#) February 2014 para 5.2.8. [accessed 1 April 2014]

⁸⁷ Welsh Government [Technical Advice Note 5, Nature Conservation and Planning](#) September 2009 para 4.6.1, 4.7.1, 4.7.2 [accessed 1 April 2014]

habitat creation is required for European protected sites in Wales.^{88,89} However, the Welsh Government currently has no formalised offsetting system in place.

The Sustainability Committee of the 3rd Assembly addressed offsetting in Wales in an inquiry into Biodiversity⁹⁰. The Committee received evidence from the Environment Bank Ltd⁹¹, the first habitat banking company to be established in the UK. The committee concluded in their final report that:

Whilst the Committee found the approach interesting, we believe it needs further research and development before consideration can be given to its widespread application across the UK.⁹²

In the 4th Assembly's Environment and Sustainability Committee inquiry into Sustainable Land Management offsetting was touched on in a written statement by CLA Cymru (The Country Land and Business Association). CLA states that:

CLA fully supports the desire to improve biodiversity, but policies to achieve this must recognise the need to produce food and run other land based businesses efficiently. The Welsh Government should ensure that the right balance is secured. This can be achieved by...exploring the potential for market based solutions such as biodiversity offsetting...⁹³

During the same inquiry Coed Cadw (The Woodland Trust) state that:

Direct damage to ancient trees and woodlands continues to arise from new housing and transport schemes. The wildlife that is characteristic of these habitats cannot reliably be translocated or re-established by using biodiversity offsetting to create new habitat elsewhere.⁹⁴

3.2.2. Scotland

In June 2013, the Scottish Government published its Biodiversity Strategy⁹⁵. As part of the consultation for this strategy, views were requested on offsetting. Support was varied with several respondents acknowledging the potential benefits of the approach but very few supported it outright and most recommended moving with extreme caution.⁹⁶ Following the analysis of the consultation responses the Scottish Government published a report concluding that:

⁸⁸ Council Directive, [79/409/EEC](#) on the Conservation of Wild Birds, 30 November 2009 [accessed 27 February 2014]

⁸⁹ Council Directive [92/43/EEC](#) on the Conservation of Natural Habitats and of Wild Fauna and Flora, 21 May 1992 [accessed 27 February]

⁹⁰ National Assembly for Wales Sustainability Committee, [Inquiry into Biodiversity in Wales](#) [accessed 21 March 2014]

⁹¹ National Assembly for Wales Sustainability Committee [Inquiry into Biodiversity in Wales](#), January 2011, para 110 [accessed 21 March 2014]

⁹² National Assembly for Wales Sustainability Committee [Inquiry into Biodiversity in Wales](#), January 2011, para 111 [accessed 21 March 2014]

⁹³ CLA Cymru [Consultation Response](#) for Environment and Sustainability Committee Inquiry into Sustainable Land Management, October 2013

⁹⁴ Coed Cadw [Consultation Response](#) for Environment and Sustainability Committee Inquiry into Sustainable Land Management, October 2013

⁹⁵ Scottish Government, [2020 Challenge for Scotland's Biodiversity- A Strategy for the conservation and enhancement of biodiversity in Scotland](#), June 2013 [accessed 4 March 2014]

⁹⁶ ECCI, [Biodiversity Offsetting and Habitat Banking for Scotland: Notes from the workshop](#), October 2013 [accessed 4 March 2014]

A variety of concerns were raised about the potential for biodiversity offsetting, given the range of concerns raised, the Scottish Government does not plan to consider biodiversity offsetting further at this time but recognises that Scottish planning authorities have used primary agreements to secure biodiversity actions to offset damage to a site caused by developments in particular cases.⁹⁷

A report published in October 2013, following an ECCI (Edinburgh Centre for Carbon Innovation) workshop for key stakeholders to express their views on offsetting, highlighted that offsetting has already taken place in several councils in Scotland without a mandatory system being in place.⁹⁸

3.2.3. Northern Ireland

In Northern Ireland biodiversity compensation is included within the planning framework. The Northern Area Plan 2016 Strategic Plan Framework: Environment and Conservation Biodiversity states that:

A Planning Agreement may be required with the developer in order to reduce, offset or compensate for any of the effects of the development by the provision of new or enhanced habitats or features and their improved management.⁹⁹

At the time of writing there have been no discussions in Northern Ireland regarding implementation of formalised offsetting schemes.

⁹⁷ Scottish Government, *The 2020 Challenge for Scotland's Biodiversity Consultation Report*, June 2013 [accessed 4 March 2014]

⁹⁸ ECCI, *Biodiversity Offsetting and Habitat Banking for Scotland: Notes from the workshop*, October 2013 [accessed 4 March 2014]

⁹⁹ DOE, *The Northern Area Plan 2016 Strategic Plan Framework: Environment and Conservation Biodiversity* [accessed 3 March 2014]

4. International case studies of offsetting

4.1. Europe

Under EU legislation all Member States are required to provide compensatory habitat for any protected habitat or species damaged by development activities under the Birds¹⁰⁰ and Habitats¹⁰¹ Directives.¹⁰² Member States vary in the extent to which they have developed specific offset laws independent of requirements under these two Directives.

The largest European ecological compensation programme is Germany's Impact Mitigation Regulation (IMR) (*Eingriffsregelung*) which was introduced in 1976.¹⁰³ The main legal basis is the *Federal Nature Conservation Act*.¹⁰⁴ In the case of unavoidable impacts, the project developer has to implement appropriate measures of nature conservation or landscape management to compensate. IMR has a broad field of application to the entire ecosystem and its capacity and natural scenery. This extends requirements for ecological compensation to biodiversity in the wider countryside, rather than having a focus purely on designated sites and protected species. The IMR is regulated by public (state) nature conservation agencies.

At present, the control of the compensation process via the state means it is not a fully functioning market, and as a result the volume of the market is unknown. However, data from the state register in Bavaria (accounting for 20% of the land area) identify over 1,000 new sites in the six months before September 2009 resulting from the IMR.¹⁰⁵ Compensation sites in Bavaria conserve an average of about 2,600 hectares per year.¹⁰⁶ A review of the strategy by Darbi and Yausch (2010) published in *Forest Trends*¹⁰⁷ states that:

¹⁰⁰ Council Directive, [79/409/EEC](#) on the Conservation of Wild Birds, 30 November 2009 [accessed 27 February 2014]

¹⁰¹ Council Directive, [92/43/EEC](#) on the Conservation of Natural Habitats and of Wild Fauna and Flora 21 May 1992 [accessed 27 February]

¹⁰² It is important to note that development on protected sites is prohibited under the Birds and Habitats Directive unless a case can be made of Overriding Public Interest.

¹⁰³ Ecosystem Marketplace (Forest Trends) (2010) [State of Biodiversity Markets Offset and Compensation Programs Worldwide](#) [accessed 24 March 2014]

¹⁰⁴ [Federal Nature Conservation Act](#) [accessed 28 March 2014]

¹⁰⁵ Ecosystem Marketplace (Forest Trends) (2010) [State of Biodiversity Markets Offset and Compensation Programs Worldwide](#) [accessed 24 March 2014]

¹⁰⁶ *ibid*

¹⁰⁷ Darbi, M., Ohlenburg, H. (2010) [Loss-Gain calculations in German Impact Mitigation Regulation](#) *Forest Trends* [accessed 25 March 2014]

As a result of more than 30 years practice German IMR is a compensation approach which is outstanding due to its comprehensive character and the broad scientific base and discussion. One of the core issues of this discussion has - since the beginning - been the debate on appropriate balancing and evaluation methods to put into relation impact and offset.¹⁰⁸

Some of the criticisms of the approach highlighted in the review include that there is no commonly accepted classification of evaluation and evaluation methods are not well defined, that there is negligence of abiotic components such as soil, water and landscape scenery and no consideration of cumulative effects.¹⁰⁹

4.2. *United States*

In the United States, offsetting was initially incorporated into compensatory mitigation law for wetlands in the 1970s under the *Clean Water Act*¹¹⁰. Today market-based schemes built around ‘mitigation banks’¹¹¹ are used for a range of habitats and threatened species. Guidance from US Fish and Wildlife Service (FWS) in 1983 supported the establishment of the first banks. By 2001, 23 states had either statutes or regulations in place that authorized the use of mitigation banks and an additional eight states had issued guidelines to govern the use of mitigation banks. Banks may be privately or publically owned and involve a bank operator who can sell habitat or species credits to developers who must satisfy legal offsetting requirements for compensation.¹¹² The US offsetting strategy is divided into wetlands and endangered species programmes, and schemes are controlled by federal policy.¹¹³

In March 2008, the US Environmental Protection Agency (EPA) and the US Army Corps of Engineers announced new standards to promote ‘no net loss’ of wetlands by improving wetland restoration and protection policies, increasing the effective use of wetland mitigation banks and strengthening the requirements for the use of in-lieu fee mitigation.¹¹⁴ Approximately 283,280 hectares had been restored or protected through US programmes by 2010.¹¹⁵ As of August 2013, there were approximately 1,800 bank sites loaded into the RIBITS (Regulatory In-

¹⁰⁸ *ibid*

¹⁰⁹ *ibid*

¹¹⁰ United States Environmental Protection Agency, [Summary of the Clean Water Act](#) [accessed 13 March 2014]

¹¹¹ An area of land that has been protected, restored or enhanced for the purpose of providing compensation for unavoidable impacts on another area and is usually established by a government agency, business, non-profit organization, or other entity under a formal agreement with a regulatory agency.

¹¹² Final Report to Defra (Contract NE 0801), [Scoping study for the design and use of biodiversity offsets in an English Context](#), April 2009 [accessed 17 March 2014]

¹¹³ Ecosystem Marketplace (Forest Trends) (2010) [State of Biodiversity Markets Offset and Compensation Programs Worldwide](#) [accessed 24 March 2014]

¹¹⁴ Environmental Protection Agency, [Mitigation Banking Factsheet](#), Website, [accessed 29 October 2010]

¹¹⁵ Ecosystem Marketplace (Forest Trends) (2010) [State of Biodiversity Markets Offset and Compensation Programs Worldwide](#) [accessed 24 March 2014]

lieu fee and Bank Information Tracking System) database.¹¹⁶ A review by Burguin (2010) in *Wetland Ecology and Management*¹¹⁷ of mitigation banks concludes that:

... although the concept has merit, even in the USA where the processes have been evolving for over 30 years, the outcomes frequently fall short of the target of a 'like for like' swap of habitat. While the outcome for wetland mitigation may not be an 'unmitigated disaster' it is, at best, apparently only modestly successful.¹¹⁸

4.3. Australia

In Australia, offsetting frameworks are encouraged at the federal level under the *Environmental Protection and Biodiversity Conservation Act 1999*¹¹⁹ and reinforced by planning and conservation laws in a number of states and territories.

In 2006 the Government of Victoria introduced 'BushBroker', which provides a mechanism for 'sourcing, generating and allocating native vegetation credits.'¹²⁰ Under this framework, landowners register their interest in being credit providers and developers approach BushBroker when they require an offset. BushBroker registers all transactions and creates the initial credits by recruiting landowners and conservation bank investors on payment agreement or land surrender schemes.

In New South Wales the Biodiversity Banking and Offsets Scheme (BioBanking) was established by the Department of Environment and Climate Change¹²¹, and commenced in 2008 allowing developers to voluntarily buy credits to offset the adverse ecological impacts of their development. Landowners sell conservation credits in exchange for signing a long-term conservation management plan with the Government for the relevant parts of their land.¹²² Developers are only able to buy like-for-like credits. The Government is responsible for auditing and accrediting landowners.

¹¹⁶ Environmental Protection Agency, *Mitigation Banking Factsheet*, Website, [accessed 29 October 2010]

¹¹⁷ S. Burgin (2010) '*Mitigation banks' for wetland conservation: a major success or an unmitigated disaster?* Wetlands Ecology and Management, Volume 18, p49-55 [accessed 25 March 2014]

¹¹⁸ Environmental Protection Agency, *Mitigation Banking Factsheet*, Website, [accessed 29 October 2010]

¹¹⁹ *Environment Protection and Biodiversity Conservation Act 1999* [accessed 13 March 2014]

¹²⁰ The State of Victoria Department of Environment and Primary Industries, *Introduction to BushBroker* October 2013 [accessed 13 March 2014]

¹²¹ Department of the Environment and Climate Change New South Wales, *BioBanking*, November 2007 [accessed 13 March 2014]

¹²² New South Wales Government, *BioBanking*, Website, [accessed 14 March 2014]

A review of the BioBanking Scheme¹²³ undertaken by the NSW Government in 2012 acknowledges that uptake of the scheme so far has been slow, attributing this to a range of factors including infancy of the scheme, a lack of information and understanding about the scheme, perceptions as to the availability of credits and preferences for other methods.¹²⁴ At the time of the review it was too early to meaningfully assess cost effectiveness and biodiversity improvements on individual sites.

¹²³ NSW Government [Review of the BioBanking Scheme](#) [accessed 25 March 2014]

¹²⁴ NSW Government, Office of Environment and Heritage, [BioBanking review: Discussion paper](#), May 2012 [accessed 25 March 2014]

5. *Further reading*

- Defra, [Offsetting the impact of development on biodiversity](#)
- [The Business and Biodiversity Offsets Programme](#)
- Defra, [Biodiversity Offsetting Green Paper](#)
- Defra, [Biodiversity Offsetting Pilots, Technical Paper: the metric for the biodiversity offsetting pilot in England](#)
- Defra, [Offsetting the Impact of Development on Biodiversity](#)
- Ecosystem Marketplace, [State of Biodiversity Markets Offset and Compensation Programs Worldwide](#)
- [Environmental Audit Committee Inquiry into Biodiversity Offsetting](#)