



The Natural Capital Initiative

Towards no net loss, and beyond

**Addressing scientific knowledge and environmental information
challenges for biodiversity offsetting in the UK**

*A one day inter-disciplinary workshop,
organised by the [Natural Capital Initiative](#)*

BRIEFING NOTE

To be read by all participants before the event

Wednesday 29th September, 2010, 10:00 am – 17.15 pm
(registration and coffee from 9:30 am)

Charles Darwin House, 12 Roger Street
London, WC1N 2JU

Chairperson: Professor Ken Norris, University of Reading

‘Towards no net loss, and beyond’ workshop series

This series of workshops is addressing cross-cutting challenges for the potential large scale use of biodiversity offsetting in the UK by bringing together individuals representing a broad mix of expertise and perspectives.

The aim of the second workshop in the series (29th September, 2010) is to identify and assess the scientific knowledge and environmental information required to underpin the effective large scale use of biodiversity offsetting in the UK.

This follows the first workshop in the series (Workshop One), which identified practical challenges for the further implementation of biodiversity offsetting in the UK, and assessed how these may best be resolved. A summary report on discussions during Workshop One is available on the [NCI website](#).

A final workshop in the series (Workshop Three) will assess the potential for biodiversity offsetting to take into account the need to safeguard against loss of ecosystem service provision.

Detailed discussion of the themes of Workshops One and Three (22nd June and 7th December) will be avoided at the event on 29th September. The programme for Workshop Three will, however, be informed by the discussions at Workshop Two.

Workshop venue and contacts

The workshop will be held on the ground floor of Charles Darwin House, Central London (WC1N 2JU). Click [here](#) for location details. A reception desk will be visible immediately on arrival. The reception desk telephone number is 020 7685 2500.

Your principal contacts are two members of the Secretariat of the Natural Capital Initiative:

- Dr. Bruce Howard, NCI Science Policy Liaison (brwa@ceh.ac.uk, tel. 01491 692426),
- Ceri Margerison, Policy Officer, British Ecological Society (ceri@britishecologicalsociety.org, tel. 020 7685 2510).

Workshop report

Following the workshop, the Secretariat of the Natural Capital Initiative will prepare a report of 10-15 pages describing the event, the topics discussed and the key messages arising. This will record the breadth of views and perspectives expressed, as well as summarise the key messages to emerge from the discussion. The report will place emphasis on common issues raised by multiple participants.

Points made in the report on Workshop Two will not be attributed to individuals or organisations. The report may draw on illustrations or examples used in the presentations or other briefing material, with the permission of the original authors. NCI Secretariat members drafting the report will retain editorial control, aiming to provide a fair reflection of workshop discussions. The report will be written for the attention of all involved in informing the evaluation of policy options, as well as policy-makers. A draft will be sent to all participants for comment.

A list of workshop participants (name and affiliation only) will be included in the report. Anyone not wishing their name to be on this list should contact the organisers by 15th October.

Workshop format

The organisers of the workshop have designed a highly interactive and inter-disciplinary programme. All participants are expected to contribute. The presentations by individuals are intended to remind participants of the basic issues for consideration and inform the discussion groups.

Discussion groups will be held on the following topics.

1. The implications of environmental change for the longevity of offset credits
2. Opportunities and constraints of restoration ecology for the generation of credits
3. Data needs and provision
4. The contribution of offsetting towards biodiversity and landscape goals

Participants will have the opportunity to participate in discussion groups relating to two of the four discussion group themes. **Preferences must be emailed to nciintern@societyofbiology.org by 20th September.**

All participants must abide by the [Chatham House Rule](#). Following the workshop, views expressed during the day must not be attributed to anyone present at the workshop in a way that suggests that they expressed this view on 29th September. (It is acknowledged that many workshop participants publish their views and perspectives in other forums, and that it might be possible to reference these.)

During the workshop, views and ideas expressed by individual participants must not be taken to be those of their employer, unless they clearly indicate that they wish this to be the case.

Biodiversity offsetting: a brief summary

Definition and goal

Biodiversity offsetting has been defined as follows:

Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from development plans or projects after appropriate prevention and mitigation measures have been taken. Source: the [Business and Biodiversity Offsets Programme](#).

The [Defra Scoping Study](#) stated that the goal of offsetting is to “*achieve no net loss, or preferably net gain, of biodiversity with respect to species composition, habitat structure and ecosystem services.*”

Biodiversity offsetting may also be applied to compensate for accidental damage to biodiversity (i.e. after it has occurred), such as actions that may be required due to the [Environmental Liabilities Directive](#). The main mechanisms for delivering biodiversity offsets are: fees *in lieu*, habitat banks, and case-by-case offsets.

Status of offsetting worldwide

Much work has been done around the world regarding biodiversity offsetting. The [Business and Biodiversity Offsets Programme](#) has been involved in leading this and its [website](#) provides further details. Some key examples are:

- **Germany:** Planning system uses a biodiversity banking system for compensation
- **USA:** Well-established offsetting system for wetland development
- **Australia:** Banking systems used in Victoria and New South Wales.

Elsewhere, there is a pilot biodiversity 'credit' system in **France**, offsetting in **Sweden** for certain projects (e.g. roads), compensation regimes in **Brazil**, two systems in **South Africa** and limited use on specific projects in the **UK, Poland, Hungary, Bulgaria** and the **Czech Republic** (see recent [report to the EC on habitat banking](#), led by eftec and the Institute for European Environmental Policy).

There is also European-level interest in habitat banking as a mechanism for achieving offsetting: see the recent [report for the European Commission](#) on this topic.

Current state of offsetting within the UK

Biodiversity offsetting has been applied in the UK for a number of years on a site-specific basis, in relation to developments such as housing, quarrying and coastal realignment projects. It has been evaluated in relation to large infrastructure schemes such as the Severn Tidal Barrage. The literature on experience in the use of biodiversity offsetting is, however, very limited.

Public policy surrounding biodiversity offsetting developed by previous Governments is reviewed in the Defra [Scoping Study on the Design and Use of Biodiversity Offsets in England](#). The Conservative Party Manifesto (pre-Coalition) mentioned the introduction of 'conservation credits', perhaps referring to the implementation of a system akin to habitat banking (a mechanism of biodiversity offsetting). The 2010 Draft [Defra Structural Reform Plan](#) includes a commitment to "assess the scope for actions to offset the impact of development on biodiversity". [The Environment Bank](#) has made proposals for the implementation of habitat banking in the UK. Details are provided by [Briggs et al. \(2009\)](#).

The current status of biodiversity offsetting in the UK planning process

This subject is covered in detail by a [Government Circular](#) and a [Defra Scoping Study relating to England](#), and briefly outlined below.

Development which would have an adverse affect on Internationally Designated Sites (*cSACs, SACs, pSPAs, SPAs and Ramsar Sites*) is subject to restrictions and only allowed if "compensatory measures are taken to ensure the overall coherence of Natura 2000 is protected" (see the [Government Circular](#) mentioned above).

Under the Habitats Directive (92/43/EEC), development that cannot avoid an adverse affect on sites designated for their international conservation importance requires compensatory measures. For other sites (representing the vast majority of land development in the UK) offsetting is encouraged by public policy, but not required in law. The European SEA and EIA directives, concerning assessments in the planning process, outline that developers should "where possible offset any adverse effects on the environment". The Strategic

Environmental Impact Assessment Directive contains a similar instruction. This is also mirrored in a [Guide to Good Practice, published by Defra, the ODPM and English Nature](#).

Future policy

UK policy regarding biodiversity offsetting is likely to be informed by the outcomes of the Lawton Review into 'Making Space for Nature', the recommendations of which are expected in autumn 2010. This report may address the need for resilient networks of sites of biodiversity value.

Background to the scientific knowledge and environmental information challenges

1. The implications of environmental change for the longevity of offset credits

The challenge of ensuring that biodiversity offsets remain effective long beyond their creation was raised as an issue of concern in Workshop One. The effects of environmental change are a key part of this. Much work has been undertaken to measure, evaluate and predict the environmental changes in ecological systems resulting from climate change. This will be an important consideration in the development of schemes for biodiversity offsetting.

A summary of the impacts of climate change on biodiversity is provided in a recent [Inter-Agency Climate Change Forum report](#) (IACCF, 2010). The [MONARCH Project](#) reports contain detailed information regarding the implications of a changing climate for biodiversity. They cover the expected changes in 120 species that are currently being conserved through the [UK Biodiversity Action Plan](#). The [Biodiversity Impacts of Climate Change Observation Network](#) provides an ongoing source of information on this topic.

The [National Ecosystem Assessment](#) (UK NEA) is assessing the resilience of UK biodiversity and ecosystem services to climate change (report due for publication February 2011).

2. Opportunities and constraints of restoration ecology for the generation of credits

Habitat restoration and creation are the primary methods to deliver new habitat to compensate for the residual impacts of a wide variety of development. Identifying the successes and failures from existing experience is crucial, alongside a need more generally to identify the habitats unsuitable for offsetting and develop a system with appropriate rules. The limitations of habitat restoration and creation techniques need to be explored in order to establish which habitats are appropriate for inclusion in any schemes that increase the use of biodiversity offsetting.

An international study that assesses the contribution of ecological restoration projects is [UNEP's Rapid Response Assessment on biodiversity and ecosystem restoration](#). A review of 89 restoration projects worldwide by [Rey-Benayas et al. \(2009\)](#) found the provision of ecosystem services and biodiversity increased on restored sites by 25% and 44% respectively. A useful source of information on restoration ecology is the Society for Restoration Ecology's [website](#). It has been suggested that a wide variety of habitats are applicable for restoration; Briggs *et al.* (2009) found some types of grassland, saltmarsh, freshwater reedbeds and mudflats are easiest to create in the shortest time, whilst woodland and heathland have more varied

success rates. On the other hand, Morris *et al.* (2006) highlight the challenges and limitations of creating compensatory habitat, especially habitat types that require long time periods to become established and fully functional, and require careful management.

3. Data needs and provision

One of the key messages arising from discussions at Workshop One was the importance of good-quality biodiversity information to underpin offsetting design and delivery. In particular there is a need to ensure that data are available, up-to-date and collected and reported in a scientifically rigorous way. The diversity of methods used to assess habitats currently cause challenges for the effective exchange and use of data between conservation groups, researchers and public agencies.

Sources of scientific and environmental information on biodiversity in the UK include the national [Biological Records Centre](#) and the network of [local environmental record centres](#), and the [National Biodiversity Network](#) (NBN). The [NBN Gateway](#) is a key tool for communicating and sharing validated data via the internet. Various reporting schemes are available, including the [Biodiversity Action Reporting Scheme](#). Additionally, the [Integrated Habitat Scheme](#) has been established to provide an integrated approach to the collection, management and analysis of habitat data in the UK.

The [Defra Scoping Study](#) (Treweek *et al.*, 2009) highlighted the importance of meeting data needs for an offsetting system to operate. It recommended a system based on the [UK Biodiversity Action Plan](#) species and habitats, whereby stringent requirements for priority habitats/species are combined with a simpler approach for locally important ones. To attain this approach, a key data need is the accurate assessment of reference sites, and monitoring of restored sites to assess biodiversity losses and gains.

Methods to measure the biodiversity impact of development and to plan the necessary compensation include the 'eco-scores' approach, which is used in Germany ([REMEDE, 2008](#)). This is based on criteria such as vulnerability, likeliness of remediation, similarity to the ideal habitat, and disturbance. The [Defra Scoping Study](#) (Treweek *et al.*, 2009) describes the 'Habitat Hectares' method, which maps land into habitat parcels, allocating each parcel a single habitat category and a single condition or quality measure. The habitat parcels are defined according to their inherent properties (i.e. rarity, species composition, species richness) and also in terms of their condition or conservation status.

4 The contribution of offsetting towards biodiversity and landscape goals

Schemes that encourage the greater use of biodiversity offsetting will require careful co-ordination so that their contribution to national, regional and local biodiversity goals can be assessed. An example goal is the delivery of the [UK Biodiversity Action Plan](#). It is also important that individual biodiversity sites, as well as offsetting schemes, compliment the delivery of healthy landscapes that are treated as integrated systems.

One of the advantages put forward for habitat banking is that it provides an opportunity for the consolidation of ecological restoration into areas of higher overall nature conservation value (Briggs *et al.*, 2009). In addition, it is important to recognise that sites of biodiversity value do not function in isolation, but rather as part of ecological networks. The Lawton Review is addressing this topic.

In developing measures to increase biodiversity offsetting in the UK, practical tools will be needed to help a range of stakeholders assess the biodiversity value of development sites, as well as sites available for use as offsets, within their local and regional contexts. An example of how the spatial targeting of conservation measures is achieved is provided by Bailey *et al.* (2006).

Bibliography and references

A larger bibliography of literature relating to biodiversity offsetting in the UK is available on the [NCI website](#).

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- Carroll, N.; Fox, J. and Bayon, R. (eds) (2007) *Conservation and Biodiversity Banking. A Guide to Setting Up and Running Biodiversity Credit Trading Systems*. Earthscan: London. 320p.
- Defra (2010) [Draft Structural Reform Plan](#). Published 16th July 2010.
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- Levitt, T. (2010) [What is biodiversity offsetting and how would it work?](#) *The Ecologist* online. 9th June. (Accessed 10th June 2010).
- Morris, R.K.A.; Alonso, I.; Jefferson, R.G. and Kirby, K.J. (2006) The creation of compensatory habitat—Can it secure sustainable development? *Journal for Nature Conservation*, **14**: 106-116.
- REMEDE (2008) [Compensation in the form of Habitat Banking](#). Short Case Study Report. Resource Equivalency Methods for Assessing Environmental Damage. Sponsored by the EU Sixth Framework Programme.
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