Offsetting Nature?

Habitat Banking and Biodiversity Offsets in the English Land Use Planning System

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Summary

Land use planning is a key arena for the spectacles of localism and marketisation being staged by our self-proclaimed greenest government ever. A new "presumption in favour of sustainable development" aims to encourage housebuilding and other development by simplifying and decentralising the planning system, while protecting the natural environment. This protection is in part to be achieved through a new market in off-site mitigation, supplementing existing policies which (can) require on-site mitigation of habitat degradation. The proposed system allows developers to offset deleterious impacts on biodiversity in one place by paying for improvements somewhere else, at a market rate.

The message is that this "habitat banking" system will not only aggregate small habitats into ecologically significant reserves, while facilitating the 'development' we allegedly need to escape financial crisis, but also open up new income streams for landowners and reserve managers to spend on habitat conservation. By moving mitigation somewhere else, however, it will also reinforce the message that humans and other species live in separate places, that the non-human is not present in everyday life, but inhabits a separate world, which is fragile and in need of protection. This paper argues that displacing and marketising the mitigation of habitat degradation may serve to entrench this separation, thus retarding rather than facilitating the emergence of ecologically sustainable human settlements. It examines the use of habitat banking and biodiversity offsetting in the English planning system, and situates this in an international context, before offering some brief reflections on its likely effects and broader implications.

1: Development and Biodiversity

1.1) Planning Reform: Good for Growth and Good for Biodiversity?

Reform of the planning system is said to be needed in order to 'cut red tape' and thereby facilitate the increased levels of development which will allow our economy to grow.

This is not a new claim: it has been an article of faith for the Conservative Party ever since the 1947 Town and Country Planning Act was passed. It probably reflects an instinctive opposition to the perceived socialism of the idea, inherent in land-use planning, that landowners should not be allowed to simply do whatever they like with 'their' land.

The 2012 National Policy Planning Framework (NPPF) states that

> *"At the heart of the NPPF is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking."*[1]

This rhetoric is reminiscent of the Thatcher era White Paper "Lifting the Burden", which proclaimed that "there is always a presumption in favour of development"[2]. The word 'sustainable' has been added this time around, but the message is the same: land-use planning should encourage economic growth, not restrain it. The NPPF continues

> *"The purpose of planning is to help achieve sustainable development. Sustainable means ensuring that better lives for ourselves don't mean worse lives for future generations.* ***Development means growth.*** *We must accommodate the new ways by which we will earn our living in a competitive world."*[3] *(emphasis added)*

It would, apparently, be old-fashioned to think that this growth might have damaging consequences for the environment. The 2011 Natural Environment White Paper (NEWP) leaves little room for doubt:

> *"We reject the outdated idea that environmental action is a barrier to growth, or that achieving economic development and a healthy natural environment are incompatible objectives."*[4]

Putting the planning reforms into the context of broader environmental policy, NEWP states that the new streamlined planning system will in fact "contribute to our objective of no net loss of biodiversity".[5]

1.2) Introducing Biodiversity Offsetting

This feat of 'having your cake and eating it' is in part to be achieved by biodiversity offsetting:

> *"Biodiversity offsets are conservation activities designed to deliver biodiversity benefits in compensation for losses in a measurable way. Good developments incorporate biodiversity considerations in their design but are still likely to result in some biodiversity loss. One way to compensate for this loss is by offsetting: the developer secures compensatory habitat expansion or restoration elsewhere."*[6]

These offsets will replace or supplement existing arrangements for securing mitigation through 'section 106' agreements[7] and planning conditions. The claim is that this makes things easier for all concerned, as well as producing better conservation outcomes by aggregating small pockets of green space into larger areas. Offset purchases are also being suggested as an ex-post remedy for accidental damage to biodiversity (for example due to pollution incidents), facilitating compliance with the European Environmental Liability Directive, which came into force in 2010.[8]

Voluntary pilot schemes are starting this year in six areas: Warwickshire, Coventry and Solihull; Essex; Devon; Greater Norwich; Doncaster and North Nottinghamshire.[9] The proposal is that central government will eventually set up a legally binding framework for biodiversity offsetting and banking, and mandate standard approaches to be applied to the valuation of habitats. As yet this has not happened: the current two year pilots are voluntary, and intended to inform DEFRA's subsequent development of guidance and legislation. Volunteering local authorities have some leeway in how they operate their schemes, but they are subject to 'quality assurance' provided by Natural England as regards conservation standards and verification, and are expected to follow detailed DEFRA guidance on the 'metrics' used to calculate what offsets are appropriate.

Local planning authorities (LPAs) participating in the trial will process applications "in line with the normal development management process, including avoiding and mitigating impacts on biodiversity", except that where "there is some biodiversity loss that requires compensation under planning policy, developers will be able to choose whether to meet this requirement by using the offsetting mechanism". Where developers decide to participate in the pilot, "local authorities will secure the implementation of the offset via a planning mechanism such as Section 106, or planning conditions."[10]

It is important to recall that the "normal development management process" is itself undergoing radical change, as the strongly pro-development NPPF has entered into force almost simultaneously with the beginning of these pilots, superseding the previous far more detailed policy framework. While the final document did make some concessions compared with earlier drafts, concerns remain that the NPPF will in effect reduce protection for "ordinary" rural areas which are not covered by specific designations. These are precisely the sorts of areas likely to be involved in offsetting, and guidance issued to participating LPAs makes clear that "biodiversity policies in Local Plans should be consistent with the principles and policies set out in the NPPF".[11]

1.3) Developers and Habitat Bankers

Developers "can provide an offset themselves if they are able to do so, or they can commission someone else to do it for them".[12] A key feature of the scheme is that offsets can be traded: a developer can deliver the required biodiversity offset by simply *buying credits* from landowners or reserve managers, who have accumulated these credits by undertaking to create, restore or manage habitat in line with standards set down by central and local government. By *selling credits*, these landowners gain a new income stream, which helps ensure the viability of continued habitat protection. Habitat serves as a proxy for biodiversity, as explained below.

This is where the idea of habitat banking

comes in. This is defined as

> *"a market where credits from actions with beneficial biodiversity outcomes can be purchased to offset the debit from environmental damage. Credits can be produced in advance of, and without ex-ante links to, the debits they compensate for, and stored over time".* [13]

Unlike the present situation, where funding for managing land for biodiversity is scarce, the vision is that offsetting requirements will stimulate substantial demand for the credits associated with habitat, making such management a commercially viable use of land. The idea is that providing habitat will become an attractive business proposition for landowners. Offset markets will incentivise them to proactively 'bank' conservation credits by investing in the creation or restoration of larger areas of habitat, calculating that their investment will be profitably repaid in the future from the sale of credits to developers. It is these banks (containing both habitat covered by credits already paid for, and habitat which is 'banked' awaiting the sale of credits) that are intended to provide the benefits of aggregating all the little bits of habitat together into larger ecologically valuable areas.

1.4) Nature Brokers and Offset Promoters

As part of this system, nature (in the guise of conservation credits) becomes a tradeable asset, giving rise to new market opportunities. Indeed, a recent report by DEFRA's 'Ecosystem Markets Task Force' ranks biodiversity offsetting as the number one new business opportunity in UK environmental markets.[14] Private sector groups want a slice of this cake, and have indeed been heavily involved in baking it. One key player is a company called the Environment Bank, established in 2009 by professional ecologists. This company received £175,000 in 2011 from the Shell Foundation to assist with the development of ecosystem service markets[15] and describes itself as having been "established to facilitate mitigation and compensation schemes associated with planned development".[16]

The Environment Bank claims that the existing system produces "pitiful, poorly executed piecemeal schemes often repositories for supermarket trolleys, rather than providing a haven for wildlife"[17]. They have been enthusiastic promoters of the idea that it would be better for everyone if planners allowed developers to use offsetting instead, by buying conservation credits and spending them with an approved provider of habitat – of nature – somewhere else. They offer to "assess the credit requirements of development sites, irrespective of intended use (i.e. residential, commercial, infrastructure etc), and source receptor sites from our registration system that can deliver the credits".[18] The company is already involved in running one of DEFRA's pilot schemes.[19] Its chairman, David Hill, is also the deputy chair of Natural England, who are in charge of "quality assurance" for these pilots. Other environmental brokerage firms in the UK, such as Climate Change Capital (now owned by US agribusiness firm Bunge), are similarly positioning themselves to act as offset brokers.[20]

The emerging conservation banking market in the UK has to a large extent been inspired by the US wetland mitigation banking and species banking markets, as well as by other conservation banking markets in countries including Germany, Australia, Brazil and South Africa.[21] Both DEFRA and the Environment Bank are represented on the advisory board of the Business and

Biodiversity Offsets Programme (BBOP), an influential international body set up to "test and develop best practice on biodiversity offsets and conservation banking worldwide".[22]

The Environment Bank has recently launched an online conservation credit trading platform[23] for England, described by Hill as "a definitive market mechanism that will give developers greater certainty from the planning process", which "will deliver truly sustainable development".[24] This website is not freestanding, but is an integrated part of the international *mmEarth.com* platform, hosted in the US by Mission Markets™, a "boutique professional services firm specializing in the impact and sustainability sectors"[25] who broker investment deals in carbon credit, wetland mitigation banking, species banking, and other similar markets. [26]

1.5) Towards a Global Biodiversity Market?

The introduction of offsetting in England is seen by actual and potential participants in the emerging global biodiversity credits market as a key step towards later expansion across the EU and beyond. In the words of a Climate Change Capital report:

> *"There is a unique opportunity to successfully render a working and effective system that can be replicated, improved and expanded across Europe and throughout the world. [...] As a centre of global finance and trade, the UK can play a pivotal role in creating market rules that are workable and possess robust environmental integrity. This will be particularly important for one of the main barriers to creating a deep and liquid biodiversity market attractive to investors: selecting an appropriate "currency" or common unit of account."*[27]

In a sobering glimpse of a possible future, a recent report by the right-wing think tank Policy Exchange explicitly recommends allowing developers in the UK to offset their activities by buying conservation credits not from UK providers but internationally, from for instance "an NGO operating a conservation scheme at an important international site". The reason they give is that this "would deliver a greater global-level biodiversity improvement for a particular sum of money".[28]

It is beyond the scope of this paper to properly discuss the many issues which could arise should such an internationalised market in biodiversity credits be successfully constructed. We do however note the parallels with global carbon markets. Recent research on forest carbon trading under REDD+ schemes has highlighted the considerable dangers of market distortion and undue influence which arise under conditions of monopsony or oligopsony (meaning a market with only one or very few buyers, as in monopoly/oligopoly which refers to one or few sellers).[29] As with forest carbon, there are very few global intermediaries with the financial and technical resources to validate, source and market conservation credits as commodities. These intermediaries may be able to leverage substantial profits in secondary financial markets from derivative products based on the commodities they are marketing, and fluctuations in these secondary markets could have large and unpredictable effects on prices and conditions in an underlying offset market.[30]

Even within national or sub-national biodiversity offset markets, it is important to note that the alleged benefits of a

competitive market are likely to be reduced if one or few players achieve positions of disproportionate influence. This could arise, for instance, if too many transactions were funnelled through a single intermediary body, or if there were undue overlap between the bodies sourcing and validating conservation credits, and the bodies connecting offset providers to the market.

2: Design Principles for Trading Nature

Several core design principles underpin conservation banking and associated offset markets. Here we briefly discuss five:

- the mitigation hierarchy and the circular logic of 'unavoidability'
- the legitimation of off-site mitigation
- the principle of additionality
- the construction of metrics that create apparent commensurability between places
- the key role of enabling policy and governance frameworks.

All of these are constructed as working for the overarching principle of 'no net loss of biodiversity', or even more optimistically, 'net gain', producing the somewhat unintuitive assertion that 'the environment' will benefit from the transformations associated with development activity.

2.1) The Mitigation Hierarchy and the Circular Logic of 'Unavoidability'

The widely adopted 'mitigation hierarchy' concept seeks to reduce the foreseen harm of a development intervention as far as possible, by adopting a staged approach to environmental mitigation. The first stage is to consider how harm might be ***avoided***, including whether the development should take place at all in the proposed location. Secondly, measures should be taken to ensure that any harm arising is ***minimised***. Thirdly, the ecology and landscape of a development site should be ***restored*** after the lifespan of the development, so as to rehabilitate and reinstate remaining unavoidable harm. ***Compensation***, including measures such as biodiversity offsets, is the last resort of the mitigation hierarchy. A biodiversity offset is influentially defined as

> *"a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimization and on-site rehabilitation measures have been taken according to the mitigation hierarchy."*[31]

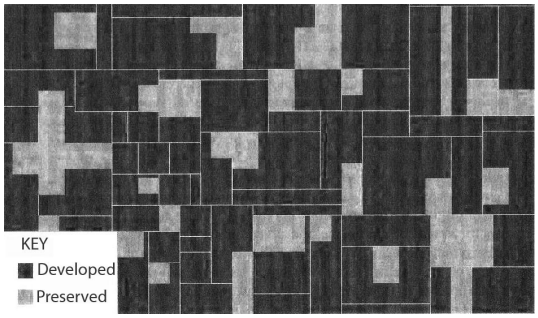
This 'last resort' stage is increasingly interpreted in such a way as to permit the creation of conservation credit markets. When environmentally damaging development, and the ensuing harm, is rationalised as *unavoidable*, this apparent unavoidability legitimises the idea of compensation, understood as off-site mitigation or offsetting. This reinterprets conservation as *development-led*, in that conservation activity now takes place because of, and funded by, development. All this, of course, can serve to obscure the key issues of who decides what development, and what environmental damage, is unavoidable where, and why.

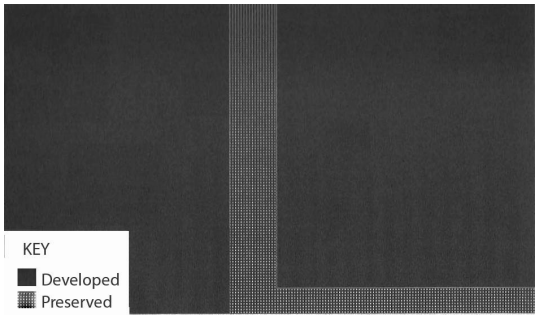
2.2) Off-site Mitigation

Advocates maintain that off-site mitigation will consolidate rather than fragment areas of ecological value, helping create and maintain resilient ecological networks (as recently recommended in the UK by the Lawton report).[32] It is also presented as desirable for developers, since it provides a "simple, streamlined and secure" route through the planning process, that limits "long-term management costs and liabilities" and will result in an "increased net developable area – because any habitat creation is done off-site".[33]

The pictures below provide a schematic representation of how such consolidation is imagined.[34] The planned development area is clearly consolidated and expanded

in the lower diagram, with conserved habitat also consolidated to a narrow linear band cutting through the centre of the development. Whether or not there is more environmental conservation value present here than in the mosaic of developed and conserved areas depicted in the so-called unplanned development of the upper diagram is, however, open to question.





2.3) Additionality

The third principle is that of 'additionality', as used in the EU Emissions Trading Scheme for carbon dioxide, and in other environmental markets such as that in sulphuric dioxide credits facilitated by the US Clean Air Act. In these structures a marketised transaction (of a unit of environmental health and harm) is permitted on the basis that this will manifest as a reduction of environmental harm that is measurably *additional* to that which would have occurred without the exchange.[35] In conservation banking markets, a conservation activity is considered additional (and hence legitimately credit-bearing) only if it would not have occurred in the absence of a payment.[36]

Payment is thus considered to have directly *caused* the measurable conservation effect, and hence to have generated conservation additionality. This can be difficult or impossible to demonstrate. At a conceptual level this is because it requires detailed counterfactual knowledge of what 'would have happened' in the absence of the payment, which can never be conclusive. In practice a further problem has been that to date many conservation banking and offsetting schemes have simply designated localities of existing relatively untransformed habitat.

In US species banking, for example, most (107 of 123) banks were listed in June 2010 as preserving already conserved habitat.[37] As such, species banks increase the credit-bearing (and thus the financial) value of land areas under formal, usually private tenure, but do not necessarily enhance conservation additionality or ensure no net loss of species presence. The actual efficacy of these schemes seems hard to establish with impartiality or certainty. One researcher writes that "annual reports from conservation managers, easement holders and agency biologists appear to indicate that generally conservation banking is an ecologically successful method for offsetting impacts to many species", but that "detailed biological studies […] have yet to be conducted".[38] Three data based reviews of USA species banking suggest that ecological success is unclear.[39]

The additionality aspect of conservation banking may also generate counter-productive outcomes in which actions enhancing environmental health manifest *only* if they are associated with monetary payments. In economic parlance, this would constitute a perverse incentive. It risks displacing or "crowding out"[40]

environmentally caring activities done for aesthetic or moral reasons, or in acknowledgement of intrinsic values associated with nonhuman natures, by reducing such practices to a monetary value. This can create contexts in which such practices cease unless they are paid for.[41]

2.4) Ecosystem Metrics: Constructing Commensurability

Habitat banking markets require a policy framework that permits exchanges in credit-bearing conservation units to occur between different localities. This in turn requires conversion of the affected aspect of nature into a symbolic numerical measure, in order to make two different places *commensurable* with each other, and also able to assume the monetary value (price) required for a marketised exchange.

In US species banking, species credits are awarded by the Fish and Wildlife Service (FWS) for the same species that will be harmed by development, and tend to be based on relatively direct measures such as acreage of appropriate habitat conserved, created or restored, or on populations of breeding pairs. Currently these must involve land areas in relatively close proximity to the affected population. However, through application of an indirect habitat scoring methodology (as described below), habitat banking as proposed in the UK instead allows for conservation investments to involve habitats that are both different to, and geographically distant from, the habitat impacted by development. In addition, '[c]redits can be produced in advance of, and without ex-ante links to, the debits they compensate for, and stored over time'.[42] This mirrors the US wetland mitigation banking industry, in which conservation credits can be sold after sites have received their status as a conservation bank but *prior to* being able to demonstrate ecological performance compliance.[43]

As ecosystemic values are translated into numerical ones, an array of additional scoring 'multipliers' can be added into the mix to deal with varied sources of risk, although as candidly noted by DEFRA "[i]f the worst case risk is realised (i.e. if the restoration or expansion fails to deliver), a multiplier will not solve the problem".[44] Financial insurance is also proposed such that the offset provider could take out insurance against the risk of failure to deliver the right number of units.[45]

2.5) Enabling Policy and Governance Frameworks

Although the declared *raison d'être* for conservation banking is the maintenance of nature health through financial exchanges on privatised markets, government regulation and public resources remain essential for both the creation and the sustenance of these exchanges.[46] Regulation can generate demand, by establishing mechanisms that enforce development-related conservation measures. Governments are encouraged by offsetting advocates to "engender market confidence by establishing the property status of [conservation] credits through legislation".[47]

Public resources can also be used in environmental markets to create terms attractive to private sector investors and entrepreneurs, for example through tax breaks and subsidies. States can provide regulatory certainty about the value of environmental credits, thereby reducing private sector risk. Examples include the UK government's decision to set a floor price for carbon that protects investments

in ‘low-carbon’ electricity generation (including nuclear power), and the US government’s promise that credits purchased now for currently unscheduled but imperilled species will satisfy mitigation requirements for future land use activities if the species later become listed.[48]

The ways in which state support is currently provided for conservation banking varies between national contexts and specific markets. In US species banking, for example, the key supportive legislation is the 1982 amendment of the 1973 Federal Endangered Species Act, which permitted the establishment of species banks which could fund themselves at least partly through trading species credits. This enables landowners, including those seeking to offset their own harm, to apply to the FWS to establish species banks on their land, thereby converting the presence of protected species from ‘liabilities’ into economic ‘assets’. It also enables developers, public or private, to obtain a permit to destroy the habitat of threatened or endangered species, so long as they buy credits in a ‘bank’ that protects that species within the same ‘service area’.[49]

Current proposals for habitat banking and biodiversity offsets in England, while resting firmly on an enabling policy framework in which decisions to require biodiversity offsets are made by local planning authorities, seem in contrast to be oriented towards the encouragement of voluntary offset transactions, facilitated by independent consultants and brokerage firms.

3: Offsetting in England

3.1) Metrics and Proxies

Turning to how these design principles translate into the specifics of the English scheme, the first point to note is that there is no proposal to actually measure biodiversity as such, in the sense of measuring numbers or populations of specific species. DEFRA state:

> *"Biodiversity in its entirety is impossible to measure so a 'metric' is used to represent, and provide a measure of, overall biodiversity. [...] Metrics are transferable between sites and habitats, allowing an impact on one habitat type to be offset with conservation action elsewhere, or involving a different habitat type and/or quality of habitat. [...] The metric we propose for the offsetting pilot is based on habitats. Development sites need to be mapped and divided into habitat parcels. The offset requirement (and resulting compensation) can then be worked out on a habitat basis."*[50]

Both development sites and offset sites are first categorised according to the type(s) of habitat involved. Over 300 habitat types are identified in the guidance[51] but these are then grouped into just three 'distinctiveness bands' denoting low, medium and high distinctiveness. Essentially high distinctiveness covers "priority habitat", medium is "semi-natural" habitat, and low covers most other greenfield land.[52]

A hectare of habitat can be 'worth' between 2 and 18 'biodiversity units' depending on its condition and its 'distinctiveness':[53]

	Low Distinct-iveness (2)	Medium Distinct-iveness (4)	High Distinct-iveness (6)
Good condition (3)	6	12	18
Moderate condition (2)	4	8	12
Poor condition (1)	2	4	6

There is also a requirement to "trade up", meaning that the offset site cannot be of lower distinctiveness than the development site. Low distinctiveness land must be offset by the creation or restoration of at least medium distinctiveness land, and development on high distinctiveness land can be offset (if at all) only by habitat of the same type. Both the development site and the offset site are assessed on this matrix, allowing for instance a development involving the loss of 6 hectares of low distinctiveness land in poor condition (ie 12 biodiversity units) to be offset elsewhere by the restoration of 2 hectares of high distinctiveness land from moderate to good condition.[54]

This is a key stage in achieving the objective of making different habitats commensurable. The development site and the offset site may be very different, but by first using habitat as a proxy for biodiversity, and then secondly applying numerical formulae, the approach achieves the apparent equivalence required to make offsetting appear meaningful and legitimate. This is portrayed as an attempt to move beyond simply measuring area, and towards reflecting the complex differences between different sites. Ironically though, in practice its function is to *eradicate* such differences, and thereby present real places as interchangeable, rather than as unique and irreplaceable.

3.2) Multipliers and Incentives

On the offset side of the equation, three

further formulae are applied to this 'baseline' figure, before arriving at the final number of biodiversity units which a given offset project, involving habitat creation or restoration, can deliver. These 'multipliers' aim to adjust the number of units delivered by factoring in the project's location, the time taken for it to come to fruition, and the risks of it failing to deliver the 'target' habitat.

The methodology and assumptions of these multipliers raise a number of issues, the full details of which are beyond the scope of this paper. In summary however, the multipliers reduce the number of saleable units delivered per hectare, in proportion to

> a) the assessed risk of failure to deliver the target habitat in the target condition;
> b) the number of years taken to deliver the target habitat in the target condition; and
> c) how well the project's location fits the local authority's wider biodiversity strategy.

On the face of it, the effect of all this is to encourage offset projects to be well conceived and realistic, and to be located where they will form part of a wider network of connected habitats. It also incentivises projects which deliver the target habitat swiftly, or ideally have already done so. In fact the clear and acknowledged intent is to incentivise habitat banking, since only a habitat bank can deliver the risk-free "ready-made" habitat required to get the maximum possible biodiversity units from its available hectares, avoiding any multiplier penalties.

This is because, due to the requirement for offsets to provide 'additional benefits', *existing* habitat cannot be counted as an offset except under very specific conditions. It must be shown that it would *not* have existed (or would have existed only in a poorer condition) were it not for measures taken specifically to develop an offset for later sale. This cannot be shown retrospectively, as the initial condition of the site must be formally assessed and logged in order to later "prove that something additional has been delivered".[55]

3.3) Shopping for Offsets

One of DEFRA's worked examples of the system in operation reads as follows.

> *"A housing development is proposed which will result in the loss of 6 hectares of arable field. The grassland is of low distinctiveness so the habitat score is 8x6 = 48 units. The developer finds that there are 2 local possibilities for offsetting:*
>
> *Option 1: A habitat bank has 6 hectares of lowland meadows, created specifically for offsetting. Their establishment has been very good. The risk of failure is low, so each hectare is worth 8 units. The 6 ha area is therefore worth 48 units, and would meet the developer's need.*
>
> *Option 2: In response to the enquiry from the developer a local offset provider has said he is able to initiate a lowland meadow recreation scheme. Because of inherent uncertainties in the creation of this Biodiversity Action Plan habitat, associated with seed establishment and soil nutrients, there is a small delivery risk. It is therefore agreed that they should apply a multiplier of 2, in order to be confident that they will be able to deliver 48 biodiversity units. So*

> *they will be recreating the grassland over a 12 ha area.*
>
> *Both options are worth the same number of units. The developer can select their preferred option, based on price."*[56]

Although no indication is given, it seems likely that the pre-established 6 hectare offset might end up as the cheaper option, and hence the one likely to be "selected based on price". If so, stripping out the terminology of offsetting, what happens may simply be that the developer pays some money to the habitat bank owner (perhaps a local wildlife trust), who use it to pay for some additional management activities on their existing land, thus meeting existing conservation goals.

In return, as the Environment Bank put it, not only is the developer's "liability for compensation delivery discharged once [planning] permission is received", but they may also get "increased net developable area", as the offset reduces the area required for on-site mitigation measures.[57] In the case of housebuilding this may well mean more houses can be built on the site, potentially making the development more profitable.

3.4) Winners and Losers

Clearly, offsetting will be good for developers, as it is intended to make it easier to gain permission for development, and to contribute to a net increase in land developed. It will therefore not be good for local biodiversity on the land which hosts this increased and more intensive development.

Biodiversity offsetting could be good for habitat bank owners, such as green-leaning landowners or those (including wildlife trusts and certain NGOs) who manage existing reserves, as it potentially opens up a new income stream to fund the restoration or creation of more habitat. To this extent it may be good for local biodiversity on the land which hosts the new offsets.

There is, however, a substantial risk that this new privatised funding stream may come to legitimise the reduction of other conservation funding, particularly from the public purse. As a recent parliamentary briefing paper observes:

> *"Biodiversity markets are being increasingly employed as a means of incorporating the cost of nature conservation into development activities."*[58]

Whether the potential positive biodiversity impact of increased conservation funding can adequately compensate for the actual negative biodiversity impact of increased development is, of course, the key question. If the overall frame of reference is accepted, this arguably becomes an issue of detail and implementation.

4: Reflections and Conclusions

4.1) Relationship and Polarisation

We consider it at best unproven that offsetting can help build resilient ecological networks, or achieve 'no net loss of biodiversity'. But there are more fundamental problems with all this than whether or not it will 'work' on its own terms. In the bigger picture, it is also important to ask what the idea of biodiversity offsetting says about dominant understandings of relationships between humans and non-human worlds.

Offsetting cannot, by definition, recognise or preserve the value of *specific* relationships between human individuals and communities, their local landscapes, and their real non-human neighbours. Indeed by placing fungibility at the core of biodiversity policy it further downgrades such relationships, and encourages us all to think that one bit of nature is much like another. This is clearly not serving the broader cause of conservation, and risks undermining the work of the many organisations, both public and private, who strive to (re)build caring and attentive connections between people and their local environments.

A key message of offsetting, in fact, is that human habitat is best separated from non-human habitat, and that nature is best preserved by separating it from our daily life and safely enclosing it elsewhere. To an extent this problematic message is already conveyed by many more traditional conservation activities in which land is set aside for biodiversity to the exclusion of human habitation. It is also deeply embedded in existing planning policy, as evidenced by the difficulty of gaining permission for new dwellings associated with small-scale land-based lifestyles.[59] The new offsets paradigm explicitly entrenches the idea that nature can and should be concentrated away from humans, and also legitimises the creation of human places from which nature is ever more absent. Reinforcing such polarisation distracts from the urgent need to (re)discover ways of living which integrate human and non-human habitat.

It is no coincidence that this human/non-human polarisation is reminiscent of other polarisations resulting from neoliberal economic policy, such as the global trend toward increasing inequality of wealth. Just as low-income families are increasingly being rehoused away from desirable parts of cities like London, so nature is to be 'rehoused' out of the way of lucrative development.[60]

4.2) Transferring Significance: What is Conserved?

Is this conservation? It is presented as such, so it should perhaps be judged as such. Commissioned by a statutory conservation body to reflect on the ethics of conservation, environmental philosophers Kate Rawles and Alan Holland came up with the following influential, if initially surprising definition:

> *"[C]onservation has as much to do with conserving the future as with conserving the past. It is not, however, simply about preserving the potential for future exuberance, but about preserving the future as a realisation of the potential of the past. [...]* ***Conservation is about negotiating the transition from past to future in such a way as to secure the transfer of maximum significance.****" (emphasis added)*[61]

Biodiversity offsetting renders it acceptable for the ecological and biodiversity "potential of the past" inherent in a development site to be simply lost. The *place* which disappears under a new development has not been conserved.

The real plants and animals that existed there have gone, along with the place's history, and whatever else might have previously been valued about it. In Holland and Rawles's terms, this means that none of the significance of the place is transferred to the future. On this basis, no conservation has happened. What has been conserved is an abstraction: a net amount of habitat, which serves as a proxy for a net amount of biodiversity, both of which are located elsewhere.

What is conserved is, at best, a net amount of nonspecific 'biodiversity credit', entirely decontextualised and transformed into numbers. This new fictitious commodity[62] is divorced from both time and space – it exists outside history and has no place. It has been made liquid and become 'natural capital', which can be moved from one bank account to another. This shows the real focus of the new 'green economy' ideology: it is explicitly about the conservation and accumulation of capital, not of nature.

Endnotes

[1] National Planning Policy Framework (NPPF) (DCLG, 2012), p4. www.communities.gov.uk/publications/planningandbuilding/nppf
[2] "Lifting the Burden", White Paper on Deregulation (DoE, 1985), para. 3.5. Available online at http://legacy.library.ucsf.edu/tid/noz86a99/pdf
[3] NPPF p(i)
[4] "The Natural Choice; Securing the Value of Nature" Natural Environment White Paper (NEWP) (DEFRA 2011), para. 1.17. www.defra.gov.uk/environment/natural/whitepaper/
[5] NEWP para. 2.35
[6] NEWP 'Definition of biodiversity offsets' box, p22
[7] Section 106 of the Town and Country Planning Act 1990 allows a local planning authority to enter into a legally-binding agreement or 'planning obligation' with a landowner in association with the granting of planning permission. Since the entry into force (in 2010) of the relevant provisions of the 2008 Planning Act, local authorities also have the option to raise funds for local infrastructure (which can include conservation activities) by imposing a Community Infrastructure Levy (CIL) on all new development.
[8] "The use of market-based instruments for biodiversity protection – the case of habitat banking – Technical Report" (eftec, IEEP *et al* 2010), p4. Report produced for the European Commission, DG Environment. http://ec.europa.eu/environment/enveco/index.htm
[9] Details of the pilots are available at www.defra.gov.uk/environment/natural/biodiversity/uk/offsetting/pilots/
[10] "Testing Biodiversity Offsetting" (DEFRA 2011) pp3-4. This document was published by DEFRA in July 2011, but has been superseded and is no longer online.
[11] "Biodiversity Offsetting Pilots : Information note for Local Authorities" (DEFRA March 2012), p3. www.defra.gov.uk/publications/2012/04/02/pb13744-bio-offset-local-auth/
[12] "Biodiversity Offsetting Pilots : Guidance for developers" (DEFRA March 2012), p3. www.defra.gov.uk/publications/2012/04/02/pb13743-bio-offset-developers/
[13] eftec, IEEP *et al* 2010 (as note 8 above), p62
[14] http://www.defra.gov.uk/ecosystem-markets/2012/06/27/vnn-report-published270612/
[15] http://iale.org.uk/%5Bnode%3Avocab%3A5%3Aterm-raw%5D/news/354
[16] http://www.environmentbank.com/index.html
[17] Environment Bank Press Release, 2010: www.environmentbank.com/docs/TCPA_HBplusCov.pdf
[18] http://www.environmentbank.com/conservation-credits.html
[19] http://www.essex.gov.uk/Environment%20Planning/Environmental-Issues/local-environment/Wildlife-and-Biodiversity/Documents/EBOP_Information_Sheet_2.pdf
[20] "Habitat banking: scaling up private investment in the protection and restoration of our natural world" (Climate Change Capital/eftec 2011) www.climatechangecapital.com/media/3696/Habitat%20Banking.pdf
[21] "Costing potential actions to offset the impact of development on biodiversity " (DEFRA/GHK/eftec, 2011), p3. http://archive.defra.gov.uk/environment/biodiversity/offsetting/documents/110714offsetting-technical-costing-potential.pdf
[22] http://bbop.forest-trends.org/pages/about_bbop
[23] The trading platform can be accessed at https://environmentbank.mmearth.com
[24] Environment Bank Press Release, 2012: www.environmentbank.com/docs/Environment%20Bank-Mission%20markets%20release%20feb2012.pdf
[25] *ibid.*, p3
[26] http://mmearth.com/
[27] Climate Change Capital/eftec 2011 (as note 20 above), p12
[28] http://www.policyexchange.org.uk/publications/category/item/nurturing-nature This report does also contain much useful analysis and information, including an up to date overview of biodiversity offsetting activities both in the UK and globally.
[29] See "REDD and Forest Carbon: Market-Based Critique and Recommendations." (The Munden Project, 2011) www.mundenproject.com/forestcarbonreport2.pdf . REDD+ is part of the UN programme Reduction of Emissions from Deforestation and Forest Degradation in Developing Countries: www.un-redd.org/

[30] See Sullivan, S. (2012), "Banking Nature? The Spectacular Financialisation of Environmental Conservation" *Antipode 45 (1)* (*DOI:10.1111/j.1467-8330.2012.00989.x)* http://tinyurl.com/sullivan-banking-nature and Sullivan, S. (2012) *Financialisation, Biodiversity Conservation and Equity: Some Currents and Concerns. Environment and Development Series 16*, Third World Network, Penang, Malaysia. http://www.twnside.org.sg/publications_end.htm

[31]This definition, dating from 2008, is from the Biodiversity and Business Offsets Programme (BBOP) Principles on Biodiversity Offsets. These principles are reproduced on page 15 of BBOP's "Biodiversity Offset Design Handbook" . http://www.forest-trends.org/publication_details.php?publicationID=3126

[32] "Making Space for Nature: A review of England's Wildlife Sites and Ecological Network " Report submitted to DEFRA by Prof. Sir John Lawton, 2010. http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf

[33] "Biodiversity Offsetting : Guidelines For Developers " (The Environment Bank, 2012), p1. http://www.environmentbank.com/docs/4_Developer_info_sheet.pdf

[34] These diagrams are reproduced from White, W. "The Advantages and Opportunities" in Carroll, N., Fox, J., & Bayon, R. *Conservation and Biodiversity Banking* (Earthscan 2008), pp 35-36.

[35] There is considerable debate whether carbon markets do (or even can) actually reduce CO_2 emissions, which are of course still increasing apace despite the growth of these markets. See for instance Hoffmann, U. 2011 "Some reflections on climate change, green growth illusions and development space" *UNCTAD Discussion Paper 205* http://unctad.org/en/PublicationsLibrary/osgdp2011d5_en.pdf

[36] The concept of additionality is analysed in Bennett, K. (2010) "Additionality: The Next Steps for Ecosystem Service Markets" *Duke Environmental Law & Policy Forum* 20, 417-438 http://scholarship.law.duke.edu/delpf/vol20/iss2/6 . A detailed comparison between habitat banking and the EU-ETS carbon trading scheme is offered in eftec, IEEP *et al*. 2010 (as note 8 above), pp96-97.

[37] See Pawliczek, J. & Sullivan, S, "Conservation and concealment in SpeciesBanking.com, US: an analysis of performance in the species offsetting service industry" Environmental Conservation 38 (4), 2011 http://tinyurl.com/sullivan-pawliczek and Sullivan, S. (2012) "Banking Nature?" (as note 30 above).

[38] Mead, D.L. (2008) "History and theory: the origin and evolution of conservation banking" in Carroll et al. 2008 (as note 34 above). See also Robertson, M. & Hayden, N. (2008) "Evaluation of a market in wetland credits: entrepreneurial wetland banking in Chicago." *Conservation Biology* 22(3): 636–646

[39] Wilcove, D. & Lee, J. (2004) "Using economic and regulatory incentives to restore endangered species: lessons learned from three new programs." *Conservation Biology* 18(3): 639–645. Fox, J. & Nino-Murcia, A. (2005) "Status of species conservation banking in the United States." *Conservation Biology* 19(4): 996–1007. Madsen, B., Carroll, N. & Moore Brands, K. (2010) "State of biodiversity markets report: offset and compensation programs worldwide" www.ecosystemmarketplace.com/documents/acrobat/sbdmr.pdf

[40] As discussed in eg Frey, B. & and Jegen, R. "Motivation Crowding Theory", *Journal Of Economic Surveys* 15 (5), (2001) http://webs.wofford.edu/pechwj/Motivation%20Crowding%20Theory.pdf and also in Andrew Dobson's Green House paper "Sustainability Citizenship" (2011) http://www.greenhousethinktank.org/files/greenhouse/private/Sustainability_Citizenship_inside.pdf

[41] On the issues of incommensurability that are in the background here, see eg John O'Neill's *Ecology, Policy and Politics* (Routledge 1993), Patrick Curry's *Ecological Ethics* (2nd edn) (Polity Press 2011), or more concisely, Clive Spash's "Terrible Economics, Ecosystems and Banking" (2011) *Environmental Values* 20 (2) http://www.clivespash.org/Spash_TEEB_2011_EV_v20_no2_final.pdf

[42] eftec, IEEP *et al*. 2010 (as note 8 above), p9

[43] For analysis of problems caused by this see Robertson, M. & Hayden, N. (2008), "Evaluation of a Market in Wetland Credits: Entrepreneurial Wetland Banking in Chicago" *Conservation Biology* 22: 636–646

[44] "Biodiversity Offsetting Pilots Technical Paper: the metric for the biodiversity offsetting pilot in England" (DEFRA March 2012), p12. http://www.defra.gov.uk/publications/2012/04/02/pb13745-bio-tech-paper/

[45] *ibid.*, p13. Other issues are also raised by the discussion of multipliers in this document, not least regarding the approach taken to time discounting rates.

[46] See Foucault M (2008 [1979]) *The Birth of Biopolitics: Lectures at the Collège de France 1978–1979* Basingstoke: Palgrave Macmillan

[47] Crowe, M. and ten Kate, K. (2010), *Biodiversity Offsets: Policy Options for Governments.* (p4)

Washington: BBOP Secretariat http://www.cbd.int/financial/doc/bbop-innovative-financial-mechanisms-2011-en.pdf

[48] See http://www.hm-treasury.gov.uk/consult_carbon_price_support.htm and Gartner, T., Donlan, J. and Mulligan, J. (2012), "Candidate Species Marketplace Can Help Protect Gopher Tortoise Habitat" (World Resources Institute) http://insights.wri.org/news/2012/02/candidate-species-marketplace-can-help-protect-gopher-tortoise-habitat

[49] Fox, J. & Nino-Murcia, A. (2005) "Status of species conservation banking in the United States." Conservation Biology 19(4): 996-1007 p997; (discussed in Pawliczek and Sullivan 2011, as note 37 above)

[50] DEFRA 2012 (as note 43 above), pp2 & 4

[51] "Appendix 1 to the Guidance for Offset Providers and Developers - Distinctiveness Bands for the Biodiversity Offsetting Pilot " (DEFRA March 2012) http://archive.defra.gov.uk/environment/biodiversity/offsetting/documents/1204-bio-offset-pilot-appendix.pdf

[52] *ibid.*, p5. The meanings of "priority habitat" and "semi-natural habitat" here are as defined in section 41 of the Natural Environment and Rural Communities Act, 2006.

[53] *ibid.*, p7. The weightings referred to in this matrix also appear in various other DEFRA guidance documents.

[54] It should be noted that this contravenes the BBOP principles, which recommends that the ratio of development area to offset area should not fall below 1:1, ie that the offset area should never be smaller than the area developed. DEFRA's argument that BBOP guidance "may be [...] not applicable to England" can be found at para 43ff of their "Technical Paper" (as note 44 above).

[55] Biodiversity Offsetting Pilots : Guidance for offset providers (DEFRA March 2012), paras 31-32, 57. http://www.defra.gov.uk/publications/2012/04/02/pb13742-bio-offset-providers/

[56] "How might we calculate what offsets are required?" (DEFRA 2010) http://archive.defra.gov.uk/environment/biodiversity/offsetting/documents/calculate-offsets.pdf . This example also appears in a promotional article from Property Week magazine (21/01/2011) called "Biodiversity offsetting could help protect Britain's wildlife". http://www.environmentbank.com/docs/biodiversity-offsetting.pdf

[57] Environment Bank "Guidelines for Developers", as note 32 above.

[58] "Biodiversity Offsetting " POSTNOTE Number 369 , Parliamentary Office of Science and Technology, January 2011, p2. http://www.parliament.uk/business/publications/research/briefing-papers/POST-PN-369

[59] See Hannis, M. (2011) "Land-use planning, permaculture and the transitivity of 'development'." *International Journal of Green Economics* 5 (3): 269-284. A short version of this paper is online at http://www.thelandmagazine.org.uk./articles/what-development

[60] See eg http://www.guardian.co.uk/uk/2012/apr/24/london-exporting-council-tenants

[61] Holland, A. and K. Rawles. 1996. *The Ethics of Conservation.* (Report for the Countryside Council of Wales) www.lancs.ac.uk/depts/philosophy/awaymave/onlineresources/ethics%20of%20conservation%20_holland,%20rawles_.pdf

[62] The concept of fictitious commodities, and their central role in market economies, derives from Polanyi, K. 1994 *The Great Transformation: The Political and Economic Origins of Our Time* Boston: Beacon Press. See particularly chapter 6.