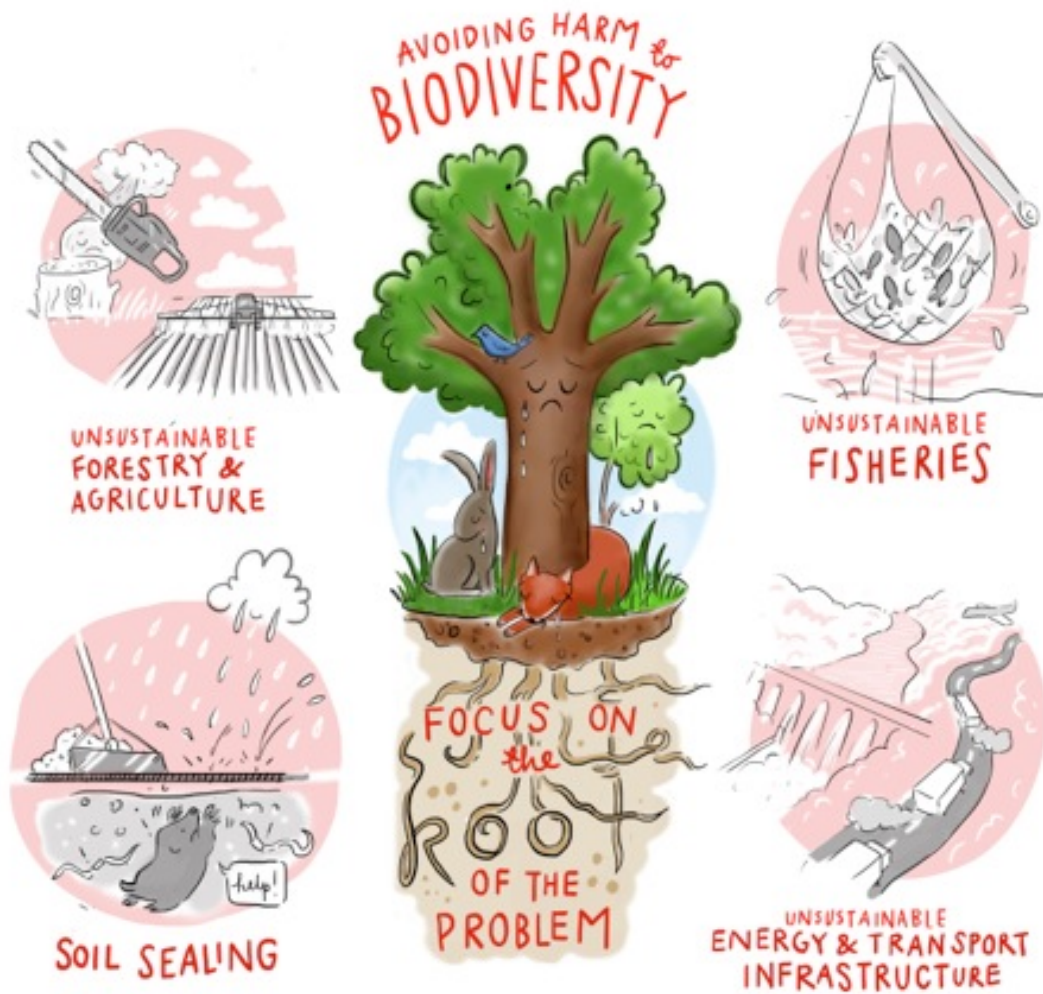


# EEB priorities for 'EU no net loss initiative'



## INTRODUCTION

As part of Target 2 of the Biodiversity Strategy and Roadmap to a Resource Efficient Europe, the European Commission (EC) has committed to develop a 'No Net Loss Initiative' (NNLi) by 2015.<sup>i</sup> In addition, both the Council of the EU and the European Parliament (EP) have in their responses to the 2020 Biodiversity Strategy called on the Commission to implement the NNL action of the Strategy.<sup>ii</sup> Given the dire situation of biodiversity in Europe, such an initiative could be an opportunity for the EU to renew and even go beyond its current commitment to protecting biodiversity.

In the preparations of the NNLi, most attention has so far gone on developing the idea of introducing biodiversity offsetting<sup>iii</sup> at the EU level.

Biodiversity offsetting and habitat banking are the biodiversity equivalent of a derogation from environmental objectives and provide a market-based tool to achieve restoration where the destruction of a site would be allowed as an exemption from the objective of preserving a site. Offsetting and habitat banking are based on the idea that one can recreate biodiversity in one place to compensate for biodiversity loss in another.

For the NNLi to contribute to the delivery of the EU 2020 Biodiversity Strategy, particularly target 2, and support the implementation of the Nature Directives it would need to focus on avoiding further harm to biodiversity and restoring already degraded ecosystems. In its essence the NNLi should represent an action plan for reducing biodiversity loss.

## BALANCING LOSSES THROUGH NO NET LOSS

Focusing on 'net' loss signals that the policy allows interim loss as long as losses can be regained. The 'no net loss' concept is therefore based on a premise that it is possible to restore or recreate ecosystems that contain equivalent biodiversity values to those that are lost<sup>iv</sup>. A core feature of the 'no net loss' concept is thus that no net loss should occur over time and at a certain landscape level, meaning spatial distances and temporal gaps can be overcome. Restoration ecology is however a relatively young scientific discipline and its effectiveness in practice remains uncertain, with offset sites rarely replacing the same biodiversity that is lost.<sup>v</sup> Reports point both to the technical and ecological difficulties of restoring and recreating ecosystems, but also to governance realities (lack of proper monitoring and enforcement).<sup>vi</sup> As a result, even if damage to biodiversity is offset or compensated for, there will still be losses of biodiversity. For this very reason, many no net loss policies require that a 'mitigation

hierarchy' is followed, a framework composed of avoidance, minimisation/mitigation of impacts and compensation of so called 'residual impacts'.

If applied strictly and holistically, the mitigation hierarchy is an important approach to ensuring no further deterioration of biodiversity occurs. However, examples in countries with no net loss policies demonstrate that a mitigation hierarchy rarely helps to avoid damage in the first place.<sup>vii</sup> Although the requirement to consider offsetting schemes as a 'last resort' measure (i.e. following the avoidance and minimization requirement) is invoked in most legal acts, guidelines and recommendations for biodiversity offsets, the mitigation sequence proves to be largely neglected, and is often replaced simply by compensatory programs. Moreover, where it exists, national legislation in most countries in the EU currently is not strong enough to achieve a real mitigation hierarchy. If NNL policies with biodiversity offsetting schemes are implemented disregarding avoidance and minimisation/mitigation they cannot contribute to halting the loss of biodiversity<sup>viii</sup> and the degradation of ecosystem services, and restoring them where possible. This, together with the evidence that recreating and restoring ecosystems is difficult for both technical and governance reasons, means that if biodiversity offsetting is introduced as part of a no net loss policy, the policy could inadvertently lead to a further, even increased, degradation and loss of ecosystems.<sup>ix</sup>

## BIODIVERSITY OFFSETTING AND HABITAT BANKING: OPPORTUNITIES AND THREATS

Biodiversity offsetting is a market-based tool to achieve restoration whereby the destruction/damage of a site is allowed as an exemption/derogation from the objective of protecting or conserving a site. Environmental legislation serves to prevent or modify activities that negatively impact the environment. Biodiversity offsetting has to in this sense be regarded as the biodiversity equivalent to a derogation from an environmental objective. Derogations are introduced in legislation, including EU environmental legislation, to allow under more flexible conditions the achievement of the set environmental objectives established by a legal framework. It is important to note that environmental derogations cannot be introduced without first establishing a legal obligation to protect a certain aspect of the environment, in this case nature and biodiversity, from which one can then derogate. Moreover, even if derogations allow for a certain degree of flexibility they can under no conditions compromise objectives set by the legislation (this should include a consideration of a potential to misuse such derogations). EU biodiversity

objectives as set by the EU 2020 Biodiversity Strategy are at the moment not fully translated into legislation and are not comprehensive as regards territorial scope. Introducing a legal instrument that provides for derogations, i.e. biodiversity offsetting, without clear legal requirements on biodiversity protection across the whole territory of the EU (i.e. including in the wider countryside), would be a flawed approach.

### Alleged opportunities

Offsetting as a tool to achieve the EU 2020 biodiversity targets could provide a number of potential benefits:

- **Extending EU biodiversity legislation to ‘wider landscapes’**

Potentially, if preceded by new requirements to avoid and minimise damage, biodiversity offsetting could be seen as an attempt to extend the reach of EU environmental/nature protection legislation onto currently unprotected landscapes, species and habitats. This would be welcome, since currently little of the EU’s landscapes/countryside is protected under EU biodiversity law. This would however need to be compared to the effectiveness of other EU legal instruments, as well as existing national legislation that directly addresses certain drivers of biodiversity loss.

- **Providing money for restoration**

The EU’s landscapes/wider countryside is already very degraded, particularly in the more densely populated parts of Europe. Biodiversity offsetting could therefore be seen as a way to provide money to restore some of these ecosystems. It is important to remember that in this case, restoration would take place at the expense of an ecosystem elsewhere: the gain seen in biodiversity therefore depends on a continuation of the business as usual baseline of loss of biodiversity, and on the success of restoration activities.

- **Financial deterrent for destroying high biodiversity sites**

If businesses are required to offset their damage on biodiversity and pay for the restoration of equivalent habitat, this may dissuade businesses from destroying biodiversity that is expensive to replace. This could in theory mean that high biodiversity sites receive more protection than they did before, though this might be to the detriment of other sites. This is only true if the price is a real deterrent, i.e. that it is a high price. This contravenes the objective of habitat banks that aim to provide offsets at the lowest price possible.<sup>x</sup> It also should be mentioned that high biodiversity sites should in any event already receive a high level of EU regulatory protection (via existing instruments) regardless of the market-based mechanism introduced.

### Threats and flaws

Biodiversity offsetting has proven to be a controversial approach. The main concerns with the policy are outlined below:

- **Ecological difficulties in re-creating habitats/ecosystems**

It should be acknowledged that it is hard to make a full assessment of the success of offsets, both because of the dearth of recorded monitoring of offsets, but also because offsets are as good as what you choose to measure. Biodiversity is complex and impossible to measure in its entirety. Indicators and keystone species are often used to signal what biodiversity is present and what condition the site is in, but are not exhaustive. Similarly, more comprehensive studies can be more accurate, but are expensive and time-consuming, and might also not capture biodiversity and the services it provides in its entirety. Biodiversity offsets can therefore be said to work only on their own terms and such terms are in a political context, once a policy is put in place, necessarily shifting.<sup>xi</sup>

Notwithstanding this issue, evidence from studies in the US, Australia and Germany, which all allow for offsetting, show that offsets in practice rarely achieve a similar ecological value to the site lost. Since biodiversity is dynamic, there are always risks that offsets will not achieve their intended aim (known as the ‘target condition’), meaning they are a ‘promise’ rather than a certainty. Though policy makers disagree about what is meant exactly by offsetting biodiversity,<sup>xii</sup> most often, what is being offset is a type of habitat that has the potential to gain the same biodiversity. The theory is that if you create a certain habitat, the relevant species will migrate there. This theory has however been challenged by biologists who believe that this does not properly take ecological time and space into account, and that impacts on habitat can have a disproportionate impact on species beyond that particular site.<sup>xiii xiv</sup> Another report, which looked more systematically at projects worldwide, found that when restoration was being used to help the recovery of a degraded system, between two-thirds and half of projects reviewed were un-successful. Where restoration aimed to generate new habitat, success rates were lower still.<sup>xv</sup> Ensuing, no *net* loss is seldom, if ever, achieved. The question of what is being offset is essential, since biodiversity is difficult and expensive to measure, and measuring is, at best, partial. Though biodiversity offsetting implies replacing exactly the same values, described as ‘like-for-like’, in reality, this is nearly impossible and moreover prohibitively expensive.<sup>xvi</sup> Accordingly, rules and methodologies are adapted to be practical, not accurate.

- **Alienates communities from nature**

Biodiversity offsetting usually only refers to replacing environmental values and does not take the social impact of projects and land-use change sufficiently into account. Nature encompasses a multitude of values for local communities whether for local recreation, spiritual fulfilment, cultural and community cohesion.<sup>xvii</sup> Nature also provides important ecological services such as flood mitigation, groundwater recharge, and pollination, which are impossible or prohibitively expensive to offset. The same can be argued for cultural ecosystem services (e.g. values for human health, such as outdoor recreation in different sites). Not only do communities suffer a loss, they also have to deal with the circumstances of the development. It is also possible that offsets themselves may have a negative impact if designed near communities due to restrictions in land-use that the offset may impose.

Though there are suggestions that offsets should be as local as possible, this is difficult since appropriate sites can often not be found locally or are too expensive. As one scientist comments: *‘The whole point of wetland mitigation banking—what makes its economic incentives work—is that developers get to wipe out wetland patches in the higher-priced land markets and bankers get to establish wetland banks in the less-pricey land markets.’*<sup>xviii</sup> This is also a conclusion of the report commissioned by the European Commission on exploring potential demand for and supply of habitat banking in the EU.<sup>xix</sup>

- **Could amount to deregulation in favour of development projects**

Many biodiversity offset methodologies say that offsetting should only ever be considered if impacts on the environment are first avoided and reduced where possible. This is called the ‘mitigation hierarchy’ (avoid, minimise, restore and offset), and a strong mitigation hierarchy is said to ensure that offsets do more good than harm. However, there is evidence that offsetting is used to speed up planning applications, with little consideration in practice for avoidance and mitigation.<sup>xx</sup> In respect of Natura 2000 sites, there is already a strict in-built mitigation hierarchy via Article 6 of the Habitats Directive. That is, where a plan or project may adversely impact the integrity of a Natura 2000 site, the plan or project can only legally proceed where there are no alternatives, where there are imperative reasons of overriding public interest, and where compensatory measures are adopted. Under no circumstances should a system of biodiversity offsetting be allowed to operate in place of the existing mitigation hierarchy under Article 6. In other words, any system of offsetting should be *in addition* to existing EU legal obligations, and should operate only outside Natura 2000 areas. To provide for biodiversity offsetting within Natura 2000 sites would effectively amount to

bypassing the “no alternatives” and “imperative reasons of overriding public interests” parts of Article 6(4) of the Habitats Directive, skipping straight to compensation for damage. This would undermine the Nature Directives and would be totally unacceptable.

- **Governance**

Biodiversity offsetting requires strong governance in order to ensure rules are being adhered to. Implementation always poses challenges for all environmental law, so it is important to develop laws that foresee implementation difficulties. If poorly implemented, biodiversity offsetting could do more harm than good, since it may lead to the approval of developments with large environmental impacts without proper mitigation. Monitoring, reporting and verification (MRV) are essential to assess compliance with the offsetting system. In practice, however, despite being fundamental to biodiversity offsetting, MRV is often insufficient or inadequate (e.g. non submission of monitoring reports; not carrying out onsite inspections; required self-monitoring; completed only in a certain percentage of cases; insufficient or lack of capacity to perform site-assessment audits).<sup>xxi</sup> In addition, a strong and effective enforcement system is also required to ensure compliance. Similarly as with MRV, a lack of compliance has been identified in several biodiversity offset programmes (e.g. Netherlands, the USA, and Canada).<sup>xxii</sup>

- **Linking finance to offsets could lead to perverse incentives to destroy nature**

One of the claimed strengths of biodiversity offsetting is that it provides innovative finance for funding conservation and restoration. However, for such a system to deliver it would depend on constant effective loss of biodiversity.<sup>xxiii</sup>

The recent IEEP report on Policy Options for an EU No Net Loss Initiative,<sup>xxiv</sup> commissioned by the EC, also identified similar risks. Given the systematic weaknesses in governance and enforcement of EU environmental policy, the introduction of a scheme that would facilitate offsetting could therefore only replicate past mistakes and be counter-productive to achieving the EU’s biodiversity target.

We therefore conclude that an EU No Net Loss policy that requires offsetting would carry an unacceptably high risk of leading to a further, even increased, degradation and loss of biodiversity, and would risk undermining existing nature protection standards by introducing a ‘license to trash’ that would make it easier for developers to by-pass the ‘mitigation hierarchy’ and more difficult to reach the objectives of the EU Biodiversity Strategy and EU nature protection legislation, such as favourable conservation status for species and habitats as well as good water status at national levels.



## THE ROLE OF NNL INITIATIVE IN EU TARGET OF HALTING THE LOSS OF BIODIVERSITY AND THE DEGRADATION OF ECOSYSTEM SERVICES

All actions enshrined in the EU 2020 Biodiversity Strategy, including the action on NNLI need to be regarded as actions to achieve the overall aim of the strategy, which is to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020. If the EU NNL initiative followed a narrow pattern of 'regaining losses' it could potentially lead to further, even increased, loss of ecosystems in the EU, and as such serve to undermine the overall EU 2020 Biodiversity Strategy which aims to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020.

It should also be noted that the overall aim of Target 2 clearly stresses maintenance, enhancement and restoration of ecosystems and their services, and does not mention anything specific about balancing losses. Moreover, other actions of Target 2 clearly emphasise the importance of using green solutions instead of grey to tackle environmental impacts (i.e. promotion of green infrastructure) and the need to restore already degraded ecosystems (15% restoration target should not be linked to ecosystems that will in future become degraded). It is worth noting as well that while referring to NNLI the Council (MS) in its Conclusions from June 2011 stressed the importance of *ensuring no further loss or degradation of ecosystems and their services*. This coupled with the fact that NNL policies as currently implemented and envisioned rely heavily on offsetting and compensation, which lead to degradation and loss of biodiversity, would mean that the Commission in its proposal would need to look beyond NNL in a strict sense (i.e. balancing the losses); it would need to look at ways of avoiding further degradation/loss of biodiversity.

Links also need to be made with other Targets of the Biodiversity Strategy, including Target 1 calling for a full implementation of the Birds and Habitats Directives (BHDs) *to halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status*, as well as targets addressing impacts of agriculture and forestry (Target 3), fisheries (Target 4) and invasive alien species (Target 5), which are all focused on avoiding additional damage to biodiversity. Introducing a policy at the EU level which would be predominately based on offsetting and not on avoiding future and restoring past damage could thus be seen as contradicting other targets and actions of the Biodiversity Strategy and potentially undermine the

achievement of the 2020 headline target of *halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible*.

NNL policies often assume a business-as-usual (BAU) scenario where loss would have occurred anyway (as was the case in Australia for example). Although no one would disagree that even if one avoids and/or mitigates impacts, there will always be some 'residual impact', which should be compensated for, the desire to achieve no net loss should not drive policies that may potentially undermine the overall biodiversity target. To achieve the overall biodiversity target, significant changes must be made to the main policies impacting biodiversity, such as agriculture, as well as stepping up environmental protection and restoration. We are concerned that the focus on achieving no net loss of biodiversity, which is rooted in the concept of offsetting, provides a distraction from tackling the real, underlying causes of biodiversity loss (e.g. reducing the impacts of unsustainable agriculture, forestry and fisheries practices, and energy and transport infrastructure development). Improved integration of biodiversity in these policies and improved implementation and enforcement of existing EU legislation (eg BHDs, WFD, MSFD) is a preferable option. The EU should explore where gaps remain and how are they to be filled without causing more damage or risk of damage to biodiversity.

*Scope of application of the NNLI is supposed to be limited to areas outside of the jurisdiction of BHDs.* The Council Conclusions adopted in 2011<sup>xxv</sup> and the resolution of the European Parliament<sup>xxvi</sup>, which call on the Commission to present the NNL initiative emphasise that the NNL initiative should relate to areas and species not covered by existing EU legislation and that the use of offsetting may not 'entail any impairment of existing biodiversity as protected by EU nature legislation'. The aim of the NNLI appears therefore to be to try to extend the reach of EU nature law beyond existing protected areas. This is a good initiative, but the focus should be on reducing harm to biodiversity, not on the introduction of further derogations to environmental objectives through 'no net loss' policy based on offsetting schemes. Moreover, when considering options for further elaboration of NNLI it is important to consider and explore also the effectiveness of conservation and land use legislation applicable in 'areas not covered by existing EU nature legislation', which currently exists in various Member States. The biodiversity objectives should be achieved by actions both at the EU and Member States levels.

## CONCLUSION

### NNLi: AN ACTION PLAN TO AVOID HARM TO BIODIVERSITY

Introducing biodiversity offsetting, which is questionable from the point of delivering on biodiversity conservation objectives, as part of the EU NNLi presents real risks of leading to further biodiversity loss in the EU as well as potentially undermining a strong existing EU framework on nature protection established by the Birds and Habitats Directives.

The EU NNLi should, instead of narrowly focusing on balancing losses, comprise a bundle of complementary measures that address the root causes of biodiversity loss, including in unprotected landscapes. An action for halting biodiversity loss, as required by the EU 2020 Biodiversity Strategy, must start by ensuring the improved integration of biodiversity in policies primarily responsible for biodiversity loss. Unsustainable agriculture, forestry and fisheries practices, and energy and transport infrastructure development should therefore be the focus of the NNLi and NNLi should comprise the following elements:

- Build on the improved implementation and enforcement of existing EU legislation, such as the Birds and Habitats Directives, the Water Framework Directive, and Marine Strategy Framework Directive. The NNLi should for example:

- > ensure a strategic use of the second sentence of Article 4.4 of the Birds Directive requiring Member States to strive to avoid pollution or deterioration of habitats outside protected areas. This obligation has proven specific enough to be enforceable against Member States;<sup>xxvii</sup> and

- > include a commitment from the Commission to enforce the full cost recovery provisions of the Water Framework Directive and prevent misuse and abuse of derogations.

- Encourage MS to adopt, in line with the Treaty on the Functioning of the European Union (TFEU), rules that are more stringent than those laid down in the current EU legal framework for the protection of the environment (e.g. air and water quality standards,

EIA and SEA requirements), with a view to halting biodiversity loss.

- Introduce new initiatives to complement existing measures and tackle problems that the existing directives cannot easily address, such as the degradation of agricultural soils, land sealing and atmospheric nitrogen deposition. NNLi could therefore usefully propose to extend the scope of the Environmental Liability Directive (ELD) to cover more activities and reach beyond the species and habitats protected by the Birds and Habitats Directives. NNLi could also usefully propose amending the ELD to clarify the phrase “environmental damage” insofar as it relates to protected species and habitats. The current definition is “any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or species”. The problem is a lack of clarity regarding geographic scale: if favourable conservation status is assessed at the national level (as is typically the case), ELD obligations in respect of protected species and habitats will almost never be triggered (i.e. because even an incident that wipes out (say) an entire Natura 2000 site’s population of a protected species may not impact on reaching or maintaining the favourable conservation status of that species at the national level). The NNLi should also include a commitment to introduce legal provisions which would prevent additional soil sealing or mitigate its effects; reduce nutrient depositions as well as propose measures to tackle impacts of intensive arable farming; and should propose a new legal instrument on environmental inspections and new legislation requiring Member States to develop high level spatial plans that favour nature.

The Commission, as the guardian of the Treaties, should ensure that, in proposing and following through any new and improved tools in environmental or other fields, existing EU legislative measures are protected and are not undermined. The starting point must always be to raise the level of existing requirements to conserve biodiversity and avoid damage.

<sup>i</sup> Action 7 of Target 2 of EU 2020 Biodiversity Strategy states: “Ensure no net loss of biodiversity and ecosystems services. This will require 7a) developing methodology for assessing the impact of EU-funded projects, plans and programmes on biodiversity and 7b) by 2015, propose an initiative to ensure that there is no net loss of ecosystems and their services (e.g. through biodiversity offsetting).” Moreover, in its Communication on Roadmap to a Resource Efficient Europe the Commission committed to ‘put forward proposals to foster investments in natural capital, to seize the full growth and innovation potential of Green Infrastructure and the ‘restoration economy’, through a Communication on Green Infrastructure (in 2012), and a “No Net Loss” initiative (in 2015).

<sup>ii</sup> In its response to the Strategy the Council in its Conclusions from 2011 stressed ‘the importance of further work to operationalise the ‘no net loss’ objective of the Strategy for areas and species not covered by existing EU nature legislation and of ensuring no further loss or degradation of ecosystems and their services’ (Council Conclusions 11978/11). In addition it also agreed ‘that a common approach is needed for the implementation in the EU of the “no net loss” principle’ and invited ‘the Commission to address this as part of the preparation of its planned initiative on ‘no net loss’ by 2015’ (Council Conclusions 18862/11). The EP also responded to the Strategy in its resolution adopted on 20 April 2012, urging the Commission to ‘develop an effective regulatory framework based on the ‘No Net Loss’ initiative, taking into account the past experience of the Member States while also utilising the standards applied by the Business and Biodiversity Offsets Programme’; it also noted ‘in this connection, the importance of applying such an approach to all EU habitats and species not covered by EU legislation’ (paragraph 53, P7\_TA-PROV(2012)0146).

<sup>iii</sup> According to BBOP, biodiversity offsets are defined as ‘measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken’ (BBOP, Standards on Biodiversity Offsets, Business and Biodiversity Programme, 2012: 13). There are three different types of biodiversity offsets: 1. In-Lieu Fee (ILF) (when permittee pays a fee into a compensation fund program in lieu of creating its own offset or buying a credit); 2. Conservation banking (which is a parcel of land managed for its conservation values. In exchange for permanently protecting the land, the bank owner is allowed to sell credits to parties who need to satisfy legal requirements for compensating environmental impacts of development projects); and 3. The developer can be in charge of implementing the offset (a ‘Permittee-Responsible Mitigation’ or One-off offset) (Madsen, B. et al. (2010) ‘State of Biodiversity Markets Report: Offset and Compensation Programs Worldwide’, *Forest Trends & Ecosystem Marketplace*, Available at: <http://www.ecosystemmarketplace.com/documents/acrobat/sbdlmr.pdf>).

<sup>iv</sup> Burgin, S. (2008) ‘Biobanking: An Environmental Scientist’s View of the Role of Biodiversity Banking Offsets in Conservation’, *Biodiversity Conservation* 17: 807-816.

<sup>v</sup> At the moment there is not enough evidence to show that ‘residual’ impact can be offset from an ecological as well as ethical/social points of view. Given the complexity and variability of natural systems, the ecological community is increasingly recognizing that recreating or restoring ecosystems to some specified former state is often unlikely to be feasible, especially within reasonable time-frames (Hobbs, R.J. et al. (2011) ‘Intervention ecology: applying ecological science in the twenty-first century’, *Bioscience* 61: 442–450; Brownlie, S. et al. (2013) ‘Biodiversity tradeoffs and offsets in impact assessment and decision-making: can we stop the loss?’, *Impact Assessment and Project Appraisal* 31(1): 24-33).

<sup>vi</sup> Hobbs, R. J. et al. op. cit.; Zedler, J. B. (1996) ‘Ecological Issues in wetland mitigation: an introduction to the forum’, *Ecological Applications* 6(1): 33-37; Moreno-Mateos, D., Power, M. E., Comín, F. A., Yockteng, R. (2012) ‘Structural and Functional Loss in Restored Wetland Ecosystems’, *PLoS Biol* 10(1): e1001247; Hilderbrand, R. H., Watts, A. C., and Randle, A. M. (2005) ‘The myths of restoration ecology’, *Ecology and Society* 10(1): 19; Robertson, M. (2006) ‘The nature that capital can see: science, state, and market in the commodification of ecosystem services’, *Environment and Planning D: Society and Space* 24(3): 367 – 387.

<sup>vii</sup> The concept of ‘No Net Loss’ was for example introduced by the Bush administration in 1989 as a national goal to deal with the continued degradation and loss of wetlands. It is widely acknowledged that the no net loss goal led to an overreliance on compensation schemes to the detriment of avoidance and minimization (Hough, P., Robertson, M. (2009) ‘Mitigation under Section 404 of the Clean Water Act: where it comes from, what it means’, *Wetland Ecology and Management* 17(1): 15-33). In practice, it led in the 1990’s to the dramatic development of ‘permittee-responsible’ type of offsetting (‘one-off-approach, i.e. once (predicted adverse impacts has been evaluated, the biodiversity offset is carried out by the developer or by a subcontractor (which can be an NGO); developer assumes financial and legal responsibility). See also: Clare, S., Krogman, N., Foote, L., Lemphers, N. (2011) ‘Where is the avoidance in the implementation of wetland law and policy?’, *Wetlands Ecology and Management*, 19(2): 165-182; Walker, S., Brower, A., Stephens, T., Lee, W. (2009) ‘Why Bartering Biodiversity fails’, *Conservation Letters* 2(4): 149-157.

<sup>viii</sup> Brownlie, S. et al. op. cit. (2013).

<sup>ix</sup> <http://theconversation.com/biodiversity-offsets-could-be-locking-in-species-decline-14177>.

<sup>x</sup> The EU Emissions Trading Schemes for example, which aimed to put a price on carbon to prevent increase in CO2 emissions, have been ineffective in influencing business behaviour so far due to the low price of carbon credits.

<sup>xi</sup> Robertson, M. op. cit. (2006); Walker, S. et al. op. cit. (2009).

<sup>xii</sup> Hilderbrand, R. H., et al. op. cit. (2005).

<sup>xiii</sup> Hilderbrand, R. H., et al. op. cit. (2005).

<sup>xiv</sup> Study of a river watershed in Ohio, USA found that 67 per cent of projects that restored or created wetlands were not successful in meeting ‘the target condition’, i.e. the condition of the original ecosystem that was destroyed (Kettlewell, C., Bouchard, V., Porej, D., Micacchion, M., Mack, J. J., White, D., and Fay, L. (2008) ‘An assessment of wetland impacts and compensatory mitigation in the Cuyahoga River Watershed, Ohio, USA’, *Wetlands* 28(1): 57-67). In another study, checked against stringent scientific criteria, only three habitat banks scored in the ‘successful category,’ while five passed in some areas and failed in others. The remaining four failed nearly every assessment, functioning more like shallow dead pools than wetlands. More disturbing, none of the government agencies charged with an oversight were taking the bank managers to task (Mack, J. J., and Micacchion, M. (2006) ‘An ecological assessment of Ohio mitigation banks: vegetation, amphibians, hydrology, and soils’, *Ohio EPA Technical Report WET/2006-1, Ohio Environmental Protection Agency, Division of Surface Water, Wetland Ecology Group, Columbus, Ohio*).

<sup>xv</sup> Suding, K. N. (2011) ‘Toward an era of restoration in ecology: successes, failures and opportunities ahead’, *Annual Review of Ecology, Evolution, and Systematics* 42: 465–487.

<sup>xvi</sup> Walker, S. et al. op. cit. (2009).

<sup>xvii</sup> See presentation made by woodland manager Sarah Walters about biodiversity offsetting in the U.K. Available at: <http://saveourwoods.co.uk/biodiversity-offsetting-2/why-biodiversity-offsetting-is-a-flawed-concept/>.

<sup>xviii</sup> See evidence that in the USA, wetland mitigation banking has resulted in the displacement of wetland from urban areas to rural areas: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=878331](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=878331).

<sup>xix</sup> Conway, M. et al. (2013) ‘Exploring potential demand for and supply of habitat banking in the EU and appropriate design elements for a habitat banking scheme’, Final Report submitted to DG Environment, ICF GHK Consulting Ltd in association with BIO Intelligence Service.

<sup>xx</sup> For more information on this, see endnote viii. Recent cases in the UK show that offsetting has been used to permit projects that otherwise would not have gone ahead, to go ahead. See <http://www.fern.org/naturenot4sale> for collection of case studies.

<sup>xxi</sup> OECD (2013) *Scaling-up Finance Mechanisms for Biodiversity*, OECD Publishing, p. 80-81. Consult also OECD ‘Biodiversity Offsets: Effective Design and Implementation’ (forthcoming).

<sup>xxii</sup> *Ibid.*, 81-82.

<sup>xxiii</sup> In Australia, there are reports that biodiversity offsetting is locking in species decline because money for their protection is dependent on their destruction: <http://theconversation.com/biodiversity-offsets-could-be-locking-in-species-decline-14177>.

<sup>xxiv</sup> Tucker, G., Allen, B., Conway, M., Dickie, I., Hart, K., Rayment, M., Schulp, C., van Teeffelen, A. (2013) ‘Policy Options for an EU No Net Loss Initiative’, Report to the European Commission, Institute for European Environmental Policy, London.

<sup>xxv</sup> Council Conclusions 11978/11 and 18862/11.

<sup>xxvi</sup> P7\_TA-PROV(2012)0146.

<sup>xxvii</sup> See the judgment of the CJEU against Ireland in Case C-418/04, at paragraphs 176-193.