How to value biodiversity and the mutable thing called nature, in the context of biodiversity loss in the UK and elsewhere, is a question that has been vexing biologists, conservation groups, environmental lawyers and indigenous groups. The question is posed in the context of that modestly named ‘sixth mass extinction event’, the Holocene Event, and a number of recent publications that have highlighted the UK’s declining ecosystem services and fragmented nature spaces.

In June 2011, the UK government agency Defra produced the first White Paper on the environment in twenty years, entitled The Natural Choice: Securing the Value of Nature. Not to be confused with the holistic dog food of the same name, The Natural Choice was in part a response to the publication of the UK National Ecosystem Assessment (NEA) and Making Space for Nature, both of which attempted to assess the social and economic value of benefits that are accrued from the natural environment, and to analyse the future risks to this procurement of natural capital. The strapline that was extrapolated from these in-depth reports was that the benefits we have procured from nature have declined by 30 per cent over the last sixty years, and that this loss is due to an insufficient valuation of nature. The research basis of the NEA was thorough, and it wisely sought not to ascribe a direct value for the services of nature per se. Instead, it used scenario-based approaches to assess likely outcomes under different socio-economic conditions, thus removing the problem of having to set an arbitrary value on the ‘thing’ itself. ‘How to value nature(s)?’, ‘What kind of naturecultures are being called into question?’ and ‘Whose values are being invoked in the process of valuation?’ are all thorny questions that have no easy answers. However, the causal logic that underpins the proposition that ecological decline is due to a deficit of valuation structurally organizes its resolution in advance, in ways that set the scene for a narrow interpretation of value. In short, this new political scene of ecosystem service economies represents a new ontology of biotic subjects – be they plant, animal, microbe or fungi – in which their value as entities is inscribed into capitalist modes of production as the defining characteristic of their life’s work. Rather than standing reserve for the transformative work of human labour, nature is now framed as a participative labour resource. Therefore, the reasoning goes, nature must be securitized, lest it should resist such singular definition by becoming unruly in its entanglements or lapsing into a state of dead matter before its work is done.

The White Paper was born in true Big Society fashion. Defra invited a consultation on the environment, which was met with the biggest response in its history from the many interested professional and lay groups. On every page the report speaks to the concerns and values of these consultative groups, expressed through various forms of expertise, care, science, attention, community organization, collaboration. Yet it utterly
fails to substantiate any of these values in concrete terms through legislation or policy directives, save in the realm of the financialization of ecosystem services. The general vagueness is such that the report could enable any scenario, suggest any direction (as long as it involves volunteerism), and justify just about any course of action (as long as it rebounds to the call of economic value). There are two broad ideological strands to this White Paper: (1) nature as standing stock is no longer productive enough; it must be mobile, able to circulate, be exchanged, accrue value through trade – it must, in short, be made to work harder; (2) simultaneously, publics must also work harder in making and maintaining spaces for nature, in lieu of proper legislation, and in the face of the privatization of common resources. In terms of new expenditures, there is a commitment of £7.5 million to fund twelve Nature Improvement Areas (that’s £625,000 apiece – think how much space for nature that would buy you in London) and £1 million to fund New Local Nature Partnerships for biodiversity recording in the voluntary sector. This is far short of the ‘more, bigger, better’ £600 million–£1.1 billion response that the Lawton review suggested was needed to provide a coherent and resilient network of nature spaces that would be able to ‘respond’ to climate change.3

Where the report does make solid commitments is by ‘capturing and improving the value of nature’ through setting up a Natural Capital Committee quango, which will report to the Chancellor of the Exchequer. It will produce an annual statement of green accounts for UK Plc, ‘showing where our economy has withdrawn from the value of nature’s bank balance, and where we have invested in it’. There will be a new business-led Task Force to be chaired by Kingfisher Group chief executive officer Ian Cheshire, ‘to expand the UK business opportunities from new products and services which are good for the economy and nature alike’.4 Finally, the paper’s major contribution to the financialization of nature is through the creation of a pilot scheme for biodiversity offsetting. Floating natural capital through biodiversity offsetting will give developers the right to trade spaces by offsetting the impacts of development in one place through remediation in another. What is of concern is that the option to offset is voluntary, so while not legally binding it nonetheless provides the necessary lubricant to smooth the way for development of previously undeveloped land that might be deemed ecologically sensitive. While compensatory habitat is already supported in existing Biodiversity Action Plans (BAPs), in which new habitats are created in compensation for impacts to existing habitats that are developed, this only applies to limited species and habitats. Compensation is thus restricted to the limits of the list, which requires the entity (species and habitats) to be both endangered and have communities of care mobilized around its presence. Outside of this list (where valuation is conferred through scarcity) there is no legal framework for the majority of biodiversity to be accounted for, nor for developers to engage in any form of mitigation. As the White Paper acknowledges, BAPs are clearly not working in the attempt to stop the homogenization and loss of biotic life. However, it is possible that this White Paper will set the scene and conditions for biodiversity to be more marginalized in decision-making rather than less, because despite the thorough evidential base that informed the paper, the emphasis is on ecosystems as mobile and tradable commodities/
services that are divorced from the specific material conditions of their co-emergence. The proposed offsetting is a form of bio-capitalization of the nonhuman world in which one life or one space is equally substitutable for another, where discrete entities are being produced for exchange. Yet the entire evidential base of the White Paper points to the very entangled nature of our (and other, nonhuman) attachments to particular places, things and processes. These geographies of nature are places in which value, identities and relations are formed for us and beyond us through situated interrelated exchanges.

**Economies of value**

In the designation of ecosystem services, value is derived from the utility of relations and from nonhuman things as service providers. The impetus behind this exercise of valuation of biodiversity and nature as ‘natural capital’ was to incorporate the environmental ‘services’ that absorb, sink, digest, produce and carry the effects of capital growth, but are currently external to the process of economic valuation. Rather than assume that these services are given for free as standing stock for capital production, the hope has been that the lively relationalities of ecosystems may be accounted for and thus be less open to parasitism through capital relations. The formation of the concept of ecosystem services seeks to articulate nature as process rather than material base. In this understanding of mutability and change there is the recognition that interactions between matter and biotic entities are important (and are productive), but to frame biotic subjects as service providers elides a full conceptualization of those subjects that so serve. In the designation of natural capital, biodiversity loss is a statement of negative equity that inhibits production between entities and thus affects the possibilities for living well. But, if we are attentive to how entities emerge through ‘intra-actions’, it becomes incumbent upon us to recognize how biotic subjects are disclosed through processes of valuation and what the consequences of these disclosures are. It is easy to see that the value placed on scarcity gives rise to the biotic subjects recognized in BAPs or Red Lists, which become defined in the polity through their marginalization or ‘at risk’ categorization. In the history of biodiversity loss, attention, on the whole, has not been a good thing. The more attention species receive, the more likely they are to be on the ‘Edge’. Terminal decline from habitat destruction, pollution and targeted violence is a means by which things come to attention and around which their identities are formed. In this sense, these appearances are potentially spectral.

Representational capacity, whether configured in relation to the polity or the ecosystem service industry, tends to correlate with precarity. Each act of recognition involves the production of a new being whose capacities and capabilities have come to attention, broken out of the green blur, because they have failed in some way, as a service-provider, a sovereign being or a biotic agent. However, to replace this problematic of accounting for ecological precarity with an even less effective but potentially more damaging set of mechanisms that only accounts to a singular economy of valuation is not a corrective to this trend. Rather than expanding the modes of apprehension, reciprocity and regard for nonhuman entities, and acknowledging our being-for-and-with-others through specific material interrelations, ecosystem services define relations solely in terms of the potential and capacities for economic growth. There are considerable dangers involved in the conceptualization of value through the lens of a loss–gain dynamic, because it has the same issues with incommensurability and indeterminacy that has hampered the absence–presence dynamic in conservation practices. Presence is an unreliable form of accounting, which is hampered by all kinds of reticence on the part of biotic subjects and the indeterminacy of their relational interactions (who does what to whom?). These indeterminacies (from being present at the right time to the irreducible indeterminacies involved in knowing other lifeworlds) do not point towards a simplified system of value determined by exchange and circulation. Instead they point
to uncertainties around what biodiversity actually is, who is involved, how they participate, and what it means to add new things to these collectives and to take things away that may have been critical in holding environments together.

Value, then, is a means of producing differentiation that is always interested, in the sense of how value designates what matters, to whom, and where (ontologically and geographically). Through these differentiated processes of valuation, radically different biotic entities emerge. If relation defies subject status (entities come into being through their relations, rather than pre-existing things that then form relations), and the one is because of and indebted to the many (we are indebted in all sorts of cultural and corporeal ways to ‘others’ that enable our living well, from stomach bacteria to animal test subjects that bear the burden of disease so that we might not have to), then biodiversifying can be thought as becoming: the active ground of evolution. The kind of subject that emerges through ecosystem services is one that denies this social (and ethical) dimension of intra-action. In ecosystem services entities are described in ways that acknowledge their processual operations but only in so far as they attend to human needs, rather than their own. Identities are formed within and constrained by the valuation of services. By prioritizing the economic basis of biodiversity relations in the exchange and provisioning of services and goods, ecosystem services attack the core of the interdependent relation, which Haraway calls ‘becoming with’. Furthermore, this exclusionary logic privileges a mobile, fully representative/representable biotic world over the inherent uncertainties that mark such projects of disclosure. According to the logic of this ‘natural capital’, the nature that does not provide and service us has no place in the world.

**Offsetting**

Ecosystem services have emerged as an operative unit because of the scene of ecological precarity, but if we think about the modes of exclusion that biodiversity loss as ecosystem services enacts, what is lost to the concept of biodiversity in this usage of the term becomes apparent. *The Natural Choice* materializes and sustains ways of thinking about natures as interchangeable autonomous units, divorcing things from their places and their intra-actions. It addresses spaces as containers, not as exuberant knots of relations. This action of cutting apart separates both thing and concept at once; it is the lonely spectre of the biotic subject divorced from its lifeworld. The danger of thinking and enacting the kinds of disaggregation that equivalence proposes are evident if we look at what has been done in the name of offsetting carbon. Biodiversity, like carbon – the trading of which was designed to alleviate climate change impacts – enters the political scene because of the impacts of capital growth and inequity. The incorporation of these phenomena – biodiversity loss and climate change – into capitalism through the atomization of carbon and the ecosystem service providers, while seemingly offering a way to ‘deal’ with these eco-economic problems, is nothing more than a material enfolding to create new market economies rather than a recognition of the socio-material marginalization of the space of the commons. As carbon markets have adequately demonstrated, the potential of these markets is not geared towards a reduction in emissions, because there has been none, but towards the creation of new spaces of speculation. As such, the carbon market relies on there not being a decrease in carbon prices by the lowering of emissions. A reduction in emissions is less critical than the accrual of capital gains by large industrial polluters, market speculators and a whole compendium of carbon industries.

The new material economy of Nature Inc. is characterized by the prioritization of capital as a mode of differentiation in biodiversity loss. This form of valuation is in contradistinction to the kinds of understanding of value that permeate the language of the NEA and are more broadly iterated in the depth of public engagement with nature and wildlife. Rather than focusing on the ongoing differentiation between biotic subjects
and the necessity of spaces for these collective equations and experiments to take place in, the White Paper has set the scene for these services to be extrapolated out of place. This marketplace approach to biodiversity is happening at the very same time that the UK government, as part of a red-tape-cutting exercise, is targeting legislation – the Wildlife and Countryside Act and the National Parks and Access to the Countryside Act – that governs the protection of some of the most biodiverse spaces. Within the proposed agenda of *The Natural Choice*, only the most productive biotic subjects will earn their space in the world, or, rather, recognition will only be given on the basis of services tendered. If phenomena, as Karen Barad argues, are the product of the ‘ontological inseparability of intra-acting agencies’, such economic equivalences are not only a simplification too far, but *put at risk* all that is invoked as valuable in biodiversity.

What is mobilized through the apparatus of capital in ecosystem services is a range of entities and service providers that can be traded, floated, ‘derivative-ized’, securitized, have their futures exchanged and crashed, seemingly as autonomous entities. There is a slippage in *The Natural Choice* between nature and capital through the concept of exchange. In this sense, ecosystem services propose an expansion of biopolitics through capital without any expansion of the biopolitical registers (because of their potentially destabilizing effect). While the marginalized and targeted subjects of the bios are brought into capitalistic machinations as entities in their own right, rather than as raw materials or ‘free services’, their inclusion does not in any way redirect the project of growth that is the basis of their marginalization. This speaks to the betrayal of the proxy. It also speaks to the betrayal of the non/in/human commons that we inhabit and share, spaces that are *for* natures, independent, integral and adjacent to ours. What is actually in play, in the play of the biodiverse world, is the ongoing collective production of the world, in which conditions of emergence set the scene for the possibilities of living well. The danger of desegregating ecosystem services and biotic subjects from the indeterminate yet specific material spatialities from which they emerge becomes all too apparent when we consider offsetting: a dyke for a ditch, a pond for a puddle, a badger for a baboon. We might ask, what exactly is biodiversity *loss now*? Conceived within the economy of ecosystem services, such losses might be offset against equivalent gains made elsewhere (but to whom and where?). By failing to recognize the impossibilities of strict substitutability within biodiversity, *The Natural Choice* highlights the incomprehension of what biodiversity *might be*. Equivalence is a bizarre proposition within biodiversity, no otter for an otter, no microbe for another, because each ongoing intra-action is specific to its locale and community. What we risk losing in this equation of equivalences is the very modes of differentiation that make such diversity possible in the first place.

Valuing biodiversity and bringing biotic entities into the polity involves not just an extension of the polity, but a resurrection at the level of politics. Recognizing the value of biodiversity involves not just thinking with others and marvelling at nature-as-a-service-economy, but a transformation at the level of being. This transformation would involve recognizing a debt to the material-ecological conditions of our emergence and the necessity of these beings for our (and their) continued survival, ecological and otherwise. It prompts a call for imagination in how biotic subjects are formed, enacted, practised, legalized, conducted, regulated and sustained as entities in the cohabitation of the earth. As Derrida understood the notion of ‘eating well’ to entail a socio-material form of consumption that was infinitely indebted and relational (one never eats entirely on one’s own), *living well* with nonhuman others requires an urgent reassessment of how we cohabit the earth; both for the possibilities of the future and through the corporeal inheritance of a thousand biotic configurations that have borne us into and through the world. Concentrating on the service economy of the biotic world speaks to a limited imagination of what it means to co-inhabit such configurations.
Notes

Thanks to Jennifer Gabrys, Wyn Jones and Richard Bardgett for conversing on this theme.


6. The White Paper does not address the issue of transnational or what could be called ‘transnatural’ capital – that is, the outsourcing of biomass and biodiversity loss. For example, 66 per cent of water demand in the UK is met by overseas resources – embedded virtual water (UNEP–WCMC, *UK National Ecosystem Assessment*, p. 35) – while biodiversity has declined 60 per cent in tropical countries over the last forty years (World Wildlife Foundation, *Living Planet Report 2010: Biodiversity, Biocapacity and Development*, Gland, Switzerland, 2010). So while the report employs the conceptual language of securitizing natural capital, it fails to acknowledge responsibility for, and expose the excluded dimension of, these losses.


8. EDGE (Evolutionarily Distinct and Globally Endangered) is a conservation group that highlights on-of-a-kind species that are on the edge of existence; www.edgeofexistence.org.
