Rewilding the skeleton: A vision for nature's rebounding on a crowded island

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Every day as I walk around the village where I live in the UK, my ecological heart and soul are given a much-needed boost of eco-optimism by the resilience of nature. Our waterfront development is surrounded in block paving, that most unwild of habitats, yet despite the ravages of footfall and herbicide, nationally scarce plants thrive. Two in particular have colonized over the last eight years or so, well outside their natural range (and so at least partly attributable to climate change): Jersey cudweed and four-leaved allseed. And those are just the rarities. Many more plants thrive in the cracks, spreading their filigree adornment outside the confines of the harsh, straight lines that we in our 'wisdom' try to impose on the world, battering biodiversity and crushing creativity into submission. That to me spells hope, under our very feet (Figure 1).

This is but a microcosm of that which is all around us. Our countryside is parcelled, partitioned and poisoned – defiled through the arrogance of humankind. Ecological Armageddon is looming, and our insects are the new canaries in the mineshaft. All evidence points to a collapse of insect populations, in terms of both diversity and abundance, and there are knock-on impacts throughout the food chain (Goulson, 2021).

The response to this has to be an application of those well-rehearsed 'Lawton principles' to the country's spaces for nature: bigger, better and more joined up (Lawton *et al.*, 2010). And this in turn calls for rewilding – for some an anathema, for others a panacea for a whole suite of ecological problems. For me, the truth lies somewhere in the middle.

Like it or not, we are not going to see vast swathes of the UK countryside, in all regions, turned over to true rewilding any time soon. At least, if that is taken to mean a realm of 'disturbing megafauna' like bison and boar, kept in check

Figure 1. Block paving on Wivenhoe quay – a visual metaphor for 'rewilding the skeleton'.

by predators like wolves, and the natural and essential processes – unpalatable to some – of starvation and disease. Yes, we may have Knepp (1400 hectares) but the chance of contiguous Oostvaardersplassen-style and -scale rewilding (7500 hectares) is pretty limited at present over much of our lowlands (Tree, 2018; Vera, 2009), especially during what is a time of rising land demands for food security, renewable energy production and housing. While this energy production does not all need to be out in the countryside, and a significant fraction of the housing demand is not one of genuine need (relating as it does to the insatiable greed for second homes), the food security issues are undeniable. The Russian invasion of Ukraine and the self-inflicted choking of near-continental trade by Brexit have combined to expose the UK's major failings here.

So what can we realistically achieve instead, in the near term? I think that a project called B-Lines provides the basis of an excellent vision (Buglife, 2022). The B-Lines concept, launched as an aspirational map in 2021, seeks to create a network of insect pathways, connecting the best remaining wildflower-rich habitats across the country. A focus first and foremost upon connectedness, ensuring that wild creatures and plants can move to where they want and need to be, delivers resilience in the face of climate change. I see this as 'rewilding the skeleton' of an emaciated, nature-depleted landscape, one that allows the freedom of movement that is crucial to a living landscape and a healthy world. The beauty of it is that anyone anywhere can contribute: whether along a road-verge or in a field or even across a whole estate, the more connected the better. So long as a conservation initiative is good for insects (and most are), it will make a positive contribution.

Such nature networks are implicit in the EU Habitats and Species Directive (https://ec.europa.eu/environment/nature/legislation/habitatsdirective/) and are beginning to be developed across Europe, most notably the *Natuurnetwerk Nederland*, which has cross-border links from the Netherlands into other EU member states. Here, the focus is not just on insects, and it is surely no coincidence that the past decade has witnessed the spread of wolves from eastern Europe, through north Germany into the Netherlands and Belgium, and now into northern France (Lelieveld *et al.*, 2016; Rewilding Europe, 2022). The most fearsome, and most feared, predator of our continent is spreading naturally through some of the areas with highest human population density and greatest levels of nature depletion. Surely if Continental Europe can live with wolves, we in the UK can learn to live with more bees?

Without corridors and stepping stones, movement through the natural landscape becomes reliant on human (re)introduction, which itself depends upon opportunity, resources and the science or experience to understand what is needed. It can be done. And for some species – heath fritillaries, which will not move out of their coppiced woodland with cow-wheat (Warren, 1991), or large blues, which need their unique combination of microclimate, wild thyme and host ants (Thomas, 1989) – careful, expensive, politically vulnerable human intervention may be the only way. But such an approach is never going to be practical for more than a minuscule proportion of the biodiversity with which we share our islands.

We need to shift the mindset from deliverables that can easily be measured – number of hectares classed as nature restoration areas, kilometres of river improved and so on – to restoring the conditions that permit the processes upon which nature depends. In a world of unpredictable but undeniably extreme change, those key processes include migration, movement and adaptation. 'Rewilding the mind' – 'rewiring the mind' even – will help us to realize and accept that such processes are the key. Get the processes right and the tangibles – the habitat, species and vibrant ecosystems – will follow.

And we do have a precedent. When I was helping to roll out English Nature's 'Campaign for a Living Coast' 30 years ago, we recognized that many of the coastal habitats we value – the mudflats, saltmarshes, sand dunes and shingle beaches – are dynamic structures. They are reshaped and reformed all the time, often over very short timescales, by the processes of erosion, sediment transport and deposition. The 'critical natural capital' is not the habitats or species themselves, but the processes that underpin them, and the worst thing we can do is to strangle those processes. In the case of coastal habitats, this has occurred through the unyielding, suffocating straitjacket of concrete sea-defences, such as groynes, which have been designed to do just that: kill the processes.

And so back to B-Lines. You can have all the static nature reserves you want, but they are functionally dead without connectivity and natural processes. Nurture the skeleton, and as and when times and conditions allow, a new flesh will weave itself around those old bones. Whether our species is around to see it is another question.

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