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Debate

The biodiversity crisis, the wild and the archaeological imagination

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Global biodiversity is decreasing at an alarming rate, and Britain is now one of the most nature-depleted countries on the planet. This matters to archaeologists as it places limitations on our personal experience of 'nature' and damages the collective archaeological imagination, diluting our capacity to envisage the richness and diversity of the past worlds we seek to understand. Here, the author argues that we must learn, from contemporary biodiversity projects, animate Indigenous worldviews and enmeshed human-nonhuman ecosystems, to rewild our minds—for the sake of the past worlds we study and the future worlds that our narratives help shape.

Keywords: Western Europe, Britain & Ireland, rewilding, landscape, environment, imagination, biodiversity

Shifting baselines and extinction of experience

> . . . thou, light-winged Dryad of the trees
> In some melodious plot
> Of beechen green, and shadows numberless,
> Singest of summer in full-throated ease.
> [. . .]
> Thou wast not born for death, immortal Bird!
> No hungry generations tread thee down . . .
>
> John Keats, *Ode to a Nightingale*, 1819

Except, in Britain, 'hungry generations' have in fact trodden down the nightingale (*Luscinia megarhynchos*). Sobering reports on biodiversity decline are regularly published: a sixth of species in Britain are threatened with extinction (Burns *et al.* 2023), and the situation is even more critical among species that need certain habitats—the number of farmland birds, for example, has more than halved since 1980, driven by the increasing

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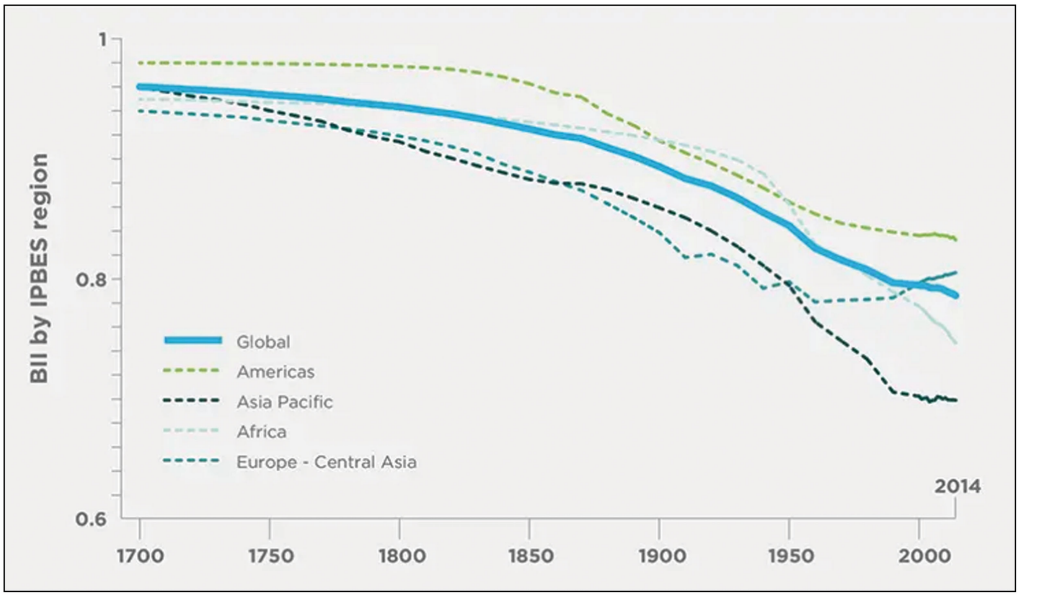

Figure 1. Biodiversity intactness indices (© Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), based on the WWF 2020 Living Planet Report).

use of agricultural pesticides (Rigal *et al.* 2023; Sharps *et al.* 2023). Open woodland butterflies have declined by over a quarter since 1976 (Fox *et al.* 2023) and upland pollinator numbers have dropped by 55 per cent since 1980 (Powney *et al.* 2019). The global picture is as bleak: a 68-per-cent decrease in population sizes of mammals, birds, amphibians, reptiles and fish between 1970 and 2016 (WWF 2020—see Figure 1).

Such reports demonstrate that baselines have shifted dramatically in terms of what the British countryside looks like and what biodiversity it supports. Shifting-baseline syndrome describes the lowering of accepted thresholds for environmental conditions and arises from the observation that we, the public, accept the state of biodiversity we grow up with as 'unaffected', and so view depletion as 'normal' (Soga & Gaston 2018, 2024). This is further promoted by the 'extinction of experience'; coined by Pyle (1993) and further explored by Gaston & Soga (2020), this phenomenon describes the disaffection and emotional alienation that modern humans experience as they spend less time in nature.

'Rewilding' can successfully reverse biodiversity decline in targeted areas, offering one way through the biodiversity crisis. At Knepp, in the county of West Sussex in south-east England, rewilded farmland now supports 50 singing male nightingales returning to breed (Tree 2018). Yet shifting baselines and extinction of experience pose problems for rewilding projects, which seek to radically transform the state of 'nature' towards something unseen in living memory—at least in terms of public understanding and acceptance of a wilder, or even a 'different' landscape and biodiversity envelope.

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What is wild?

Why is rewilding and the biodiversity crisis relevant to archaeology, and vice versa? First, archaeological data bring deep-time knowledge of ecology and environment. Without the longer temporal perspectives of archaeology, palaeoecology and Quaternary science, shifting-baseline syndrome and extinction of experience will continue undermining efforts to address the biodiversity crisis. Second, if we, as contemporary archaeologists, have only our own experiences of depleted biodiversity to draw on, then we, and future generations more so, are wildly impoverished in terms of appreciating the multispecies richness of past human worlds within the archaeological imagination.

Imagining more diverse, multispecies pasts requires us to move beyond the deep-seated conceptual divide between 'culture' and 'nature', which is a uniquely 'Western' and quite recent mindset (Descola 2013): an Enlightenment polarisation that cemented this opposition into the conceptualisation of humanity's 'development'. But the symbolic and structuralist binary perception of 'culture' and 'nature', 'civilised' and 'wild', permeates much discourse. It was articulated in the argument that the watershed of the Neolithic (occurring at different times around the world) was precisely the conceptual separation of 'wild' and 'tame', framed in terms of the animals we live alongside (Thomas 1991: 13; Pollard 2004: 57). For Pausanias, writing in the second century CE (*Descriptions of Greece* 10.4.1; Jones 1918), urbanity was core to being a 'proper' human (male, free, citizen). This bias towards the 'civilised' continues to be set against 'wild' nature in Classical scholarship: "in Greece, the landscape can easily be divided into fertile plains and wild mountains. In a structuralist manner [...] the plain as the civilised area of the polis [...] in opposition to the sea and the mountains" (Bremmer 2012: 27).

Even the term 'wild' implies 'civilised' as a counterpoint. There is no workable definition of 'wilderness' (Vannini & Vannini 2016: 11–15); although some suggest it is 'pristine nature' and de facto human-free, as Descola argues, this problematically supposes humanity is 'beyond nature' and marginalises Indigenous communities' relationships with land (Callicott 2008; Fletcher *et al.* 2021). 'Wilderness' is an invention, or an invitation, to define the 'civilised': a "human creation" (Cronon 1996: 7) that relates to increasing global awareness, occupation and exploitation from the Enlightenment of the late seventeenth and eighteenth centuries onwards. If 'wild' is a construct, what then does 'rewilding' offer to archaeology?

Rewilding the archaeological mind

I suggest that despite critiques of the term, 'rewilding' (rather than the less emotive 'nature recovery') retains its power as an articulation of our current state of depletion—it recalls our positionality, our biases, and invites us to reflect on our experience of biodiversity and our place within it. 'Biodiversity' is scientifically measured in many ways—species richness, abundance, turnover—and at different scales—community, assemblage, landscape (Magurran 2021). Acknowledging these multiple definitions encourages us to move towards conceptualising biodiversity as more akin to interconnected assemblages

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Figure 2. Star Carr antler frontlet on display at the British Museum, 2022 (photograph by author).

(or ecosystems) that include the human. This re-imagining of ourselves as parts of ecosystem assemblages helps open our minds towards a fuller understanding of the relational values between human and non-human worlds.

The turn towards new materialism in archaeological theory demands that we acknowledge both non-human and multi-species agents (Haraway 2016), to help imagine more biodiverse, interconnected pasts or futures that are more awake to the multiple enmeshments of humans with the world. Overton and Hamilakis (2013: 111) argue that zooarchaeology should move beyond the "discourse of 'subsistence' [... which has] treated non-human animals merely and often exclusively as nutritional or symbolic resources for the benefit of humans", advocating instead that non-human animals be recognised as agents in the human world engaged in mutual, constitutive processes. Such a realignment means asking different questions about relationships between people, animals and plants, such as those raised by the Mesolithic (*c.* 9000 BCE) antler frontlets at Star Carr (see Figure 2): if these were masks conferring 'staghood' on the wearer (Conneller 2004), then why? How was that relationship between human and stag perceived? And what happened to the wearer; did they become the stag, did the stag inhabit them or did they become something new, encompassing both?

Similar questions about human-plant relationships can be raised in archaeobotany: certain plants favoured for their sweet taste, pleasing appearance or ability to intoxicate have, in effect, domesticated humanity itself (Pollan 2001). But recognition of plants' full lives as part of an assemblage—which other plants they grow alongside, which animals eat them, their medicinal properties, their myths—needs an animate, Indigenous plantworld, where plants are teachers (Kimmerer 2013: 43). Kimmerer describes this animacy extending to all natural phenomena, exemplified in the discussion of her realisation that a Potawatomi verb can describe 'being' a bay: "a bay is a noun only if water is dead. When bay is a noun it is defined by humans, trapped between its shores and contained by the word. But the verb wiikwegamaa—to be a bay—releases the water from bondage and lets it live" (Kimmerer 2013: 55). The English language does not permit such aliveness—our minds are tethered to the definitions of the world that our grammar demands. Indigenous worldviews work towards rewilding our minds.

Alongside animacy, Indigenous paradigms and multi-species awareness, we also require a picture of past abundance to fully understand our contemporary losses and our

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need for more richness in archaeological storytelling. Contemporary rewilding helps us recapture some of these forgotten experiences, and to recognise the value that biodiversity in all its forms adds to our narratives of the past. Nature writers from the recent past can also help us in this endeavour. Richard Jefferies, writing about Wiltshire *c.* 1880, describes an area infinitely more abundant, in number and species. Starlings are so numerous they "blacken the earth when they alight" (Jefferies 2011: 19), and when wheat is ripe, "every ten or twenty yards a cloud of sparrows and small birds rise from it, literally hiding the hawthorn bush on which they settle" (p.54). Hedges are "alive with birds: chaffinches, sparrows, and yellowhammers" (p.46), nightingales are commonplace and flocks of rooks form "a black canopy" (p.200).

Richard Mabey, in his introduction to the republication of Jefferies' work, is chastened by the abundance of bird and insect life "*unimaginable* in the modern industrial countryside" (emphasis added), expounding Jefferies' recollections as a "message in a bottle from a disappearing country" (Mabey in Jefferies 2011: 13). Just as early travellers and antiquarians offer contemporary archaeologists views into historic landscapes that have changed dramatically due to urbanisation, mechanisation and globalisation, so past nature writing highlights losses we know little of and cannot notice because they are beyond lived experience. Which of us have seen hawthorn bushes vanish beneath small birds? These are rich seams to build into our archaeological imagination, but these are limited too, as innumerable species, including the wolf, bear, aurochs, elk, beaver, lynx and wild boar had long disappeared from Britain by the mid-1800s, and the industrialisation of agriculture was underway, with hedge grubbing and fossil-fuel powered traction.

In the UK, wolves were persecuted and driven to extinction by the fifteenth century (Pluskowski 2010: 71–72), but their howls continue to echo in placenames: in the *ulv*-names of Ullswater, Ulpha and Ulvethwait in Cumbria and Lancashire; or in pastoral country, where wolf places are disguised as sheep: Woolacombe and Woolley in Devon, Wool Mead and Woolpack Farm in Surrey and Sussex (Aybes & Yalden 1995). The same is true of beavers—now reintroduced to Britain after two centuries—their former widespread range recognised in bones, teeth, preserved wood and placenames (Coles 2010).

Imagining a wilder past also means recognising plants in new ways. Environmental archaeology and palaeoecology deliver invaluable details of past plantscapes through pollen diagrams and maps, used for contemporary ecological restoration (Nogué *et al.* 2022). Although ancient authors' environmental descriptions can suffer from propaganda (e.g. the Caledonian pinewood, a justification of the Roman frontier: Breeze 1997), such writings offer an important additional source for visualising ecological difference in the past. According to Julius Caesar, walking through the Hercynian Forest along the Rhine and Danube took 60 days (*Bellum Gallicum* 6.25; McDevitte & Bohn 1869); a reconstruction supported by pollen-based analysis (Woodbridge *et al.* 2015). Taken together, these sources show today's archaeologists how widely forested parts of Europe were. Ancient texts also remind us that trees were not 'just trees' either. As well as groves being sacred in many contexts (in Greece, the *Homeric Hymn to Aphrodite* 265–73; Fabiano 2023; in Gaul/Britain, Tacitus's *Annals* 14: 30; Church & Brodribb 1942),

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trees were also spiritual beings, as in some contemporary Indigenous cosmological narratives, that facilitated human engagement with elements of the spirit world.

'Rewilding' Avebury

Instead of encounters with forests and now-extinct animals being the preserve of specialist publications, the presence of multiple species and conceptualisations of forests or storms or oceans as animate in the worlds of past peoples need to be part of our imaginations and interpretations. We need to work harder to shake off the perceptual divide between 'human' and 'environment'; our archaeological narratives need to better intertwine palaeoecological observations that provide the scientific underpinning of pasts with richer (or different, and dynamic) biodiversities alongside the possibilities, arising from anthropology, of profoundly alternative cosmological conceptualisations of the meanings of that biodiversity and ecology for past peoples. Navigating the disconnections between 'science' and 'imagination' is central to communicating the critical difference of the past from today in terms of species and ecosystems, and to the work of rewilding our archaeological minds.

This is even more necessary because contemporary ecosystem settings of archaeological monuments and sites are now often vastly eroded, or preserved in a way that bears little resemblance to how they might once have been. Here I use the landscape of Avebury in Wiltshire as a worked example of an archaeological re-imagining with an environmentally informed interpretation. Amidst monoculture crops and heavy grazing, contemporary Avebury draws thousands of visitors annually to the monumental Neolithic and Bronze Age (*c.* 4000–800 BCE) stone circle, henge and wider landscape of processional ways, enclosures, tombs and mounds (see Figure 3).

Archaeological data identify temporal and spatial ebbing in densities of human activity, epitomised in the general lack of Iron Age (*c.* 800 BCE–43 CE) material associated with earlier prehistoric monuments, which might imply that Avebury was 'taboo' (Cleal *et al.* 1995: 491; Gillings & Pollard 2004: 86–88; Bowden 2005; Gillings *et al.* 2008: 229). In the Roman period (*c.* 43–410 CE), although there is a fourth-century CE roadside settlement at Silbury Hill (Moorhead 2011), only a few objects suggest interactions with the monuments. Around the henge, some Roman coins were mentioned by the antiquarian William Stukeley; Alexander Keiller excavated a few sherds, two bronze rings and a bracelet in upper fills of the ditch terminal; a fibula was found 90m from the southern entrance; and Roman pottery, a spearhead and possible armour were deposited at the Longstones Cove (Gillings *et al.* 2008: 230–37).

Let us imagine what happens to the Avebury landscape as people seep out of the ecosystem at the end of the Bronze Age (whether because they moved on or were forbidden from returning) as they forget meanings of monuments and hills, cut off from stories, locations, knowledge of place and their places within it. What was once farmland at Knepp (Figure 4) allows us to see scrub and trees, alive with nightingales, prickling the once-crisp burial mounds, rain filling ditches with slumping soil, animals moving freely among the stones. Faunal records indicate the presence of aurochs, wild boar, pine marten, beaver, otter and wolf in southern Britain during the Neolithic–Bronze Age

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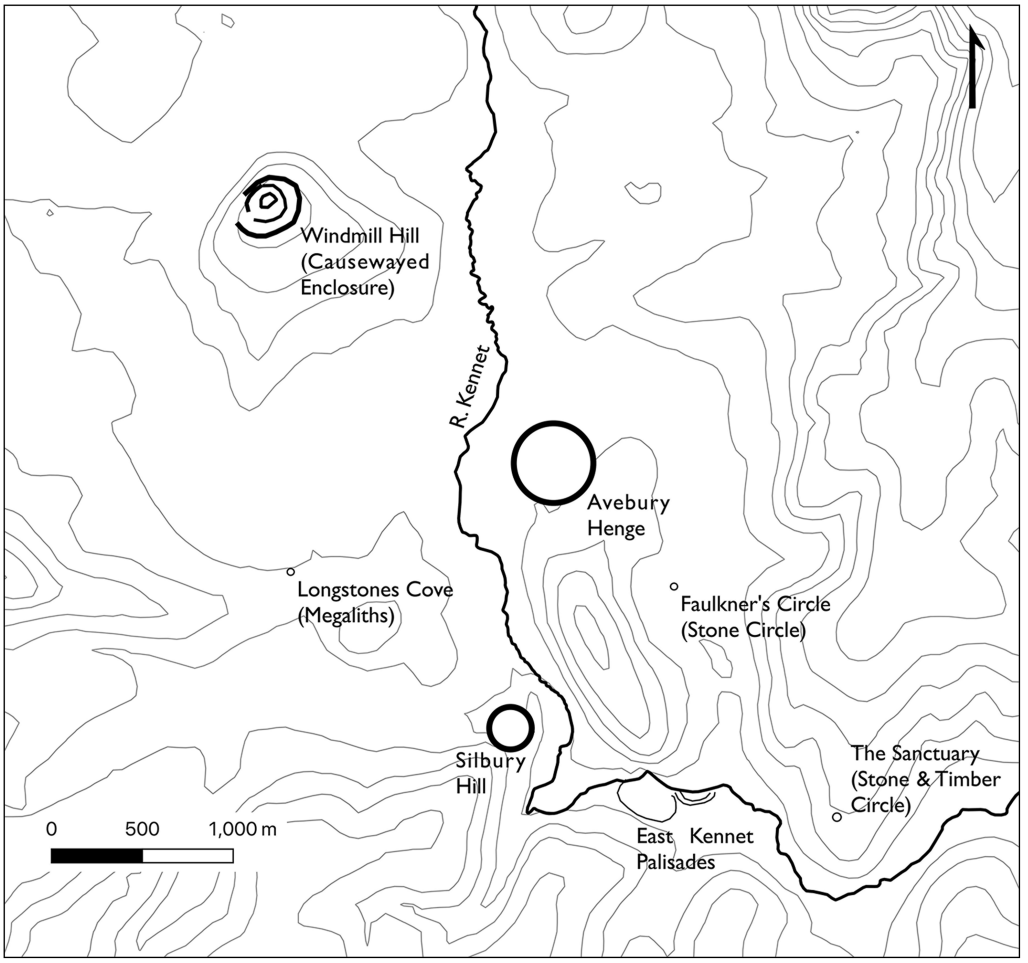

Figure 3. Map of Neolithic sites in the Avebury landscape (figure by author).

(Sarjeantson 2011), and, excepting aurochs, which were hunted to extinction around 3500 years ago (Legge 2010), these animals would have remained in later periods. Palaeoenvironmental analyses (French *et al.* 2024) show Avebury was wetter in the past—clouds of wetland birds would have lived around the meandering waterway that flooded seasonally past the henge before twisting east along the valley. In the Iron Age, and even the apparently 'tamed' Roman world, the 'wild' was close: we could imagine bitterns booming among the reeds, wolves in darkness beyond the inn walls.

Pollard and Reynolds (2002: 29) encourage us to imagine Avebury as "a landscape not only invested with myths, meanings and histories, but one perceived as a potent and animate realm inhabited by spirits and diverse non-human agents". Further environmental work will ascertain the extent of Iron Age/Roman-period 'rewilding' and what species were present in this landscape, building knowledge of past biodiversity as living non-human agents. Within this enchanted, possibly frightening, 'rewilded' place

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Figure 4. The rewilded landscape at Knepp, Sussex (image © Sam Rose).

(De Vroey 2024), the low density of archaeological finds does not suggest "debris from casual visits" (Gillings *et al.* 2008: 236) or that "the Avebury complex formed some kind of tourist attraction during the Roman period" (Pollard & Reynolds 2002: 152). Within a rewilded Avebury, where animals, plants and monuments assemble, disassemble and complicate each other within multiple agential worlds, these objects are instead deliberate offerings, perhaps to the ghosts or spirits of this potent, animate realm.

Towards a wilder archaeological future

Archaeologists are not farmers, foresters or fishers. We need to work with people who know life on land and sea intimately, and extend conversations into contemporary farming, conservation and rewilding. This has begun: the 'Rewilding Later Prehistory' project works with Knepp to learn from land managers experimenting with 'wilder', less controlled natures (Cooper & Roushannafas, in press); and environmental archaeologists are working with ecologists via PAGES (Past Global Changes) to use understanding of past ecological changes to improve future climate/environment projections and inform contemporary situations (Gillson *et al.* 2022). But there is space for more interdisciplinary dialogue. In turn, archaeology offers data and lessons about human impact on landscapes, dynamics in biodiversity and socio-ecological systems (Mace 2014), and subverts contemporary human-environmental narratives. Although many—perhaps all—landscapes are anthropogenic to a degree, they do not have to be retained as industrialised,

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overgrazed, treeless, biodiversity deserts. We can challenge universalising pictures, argue for wilder land and different ecological perceptions of archaeological monuments, and support careful reintroduction of species (e.g. beaver) as enriching today's ecosystems and our imaginings of past worlds.

Such a project requires our own sensory re-education in 'the songs of the world'; seeking opportunities to let biodiversity return and flourish, making a concerted effort to overturn the 'extinction of experience' for ourselves and future generations, and reconnecting with the land and its many inhabitants as beloved neighbours (Kimmerer 2013). Many of us can identify some charismatic mammals, birds, trees or hedgerow plants—but do we know their songs, or how plants, animals and soils form assemblages together? I suggest that, alongside building deeper curiosity and knowledge, re-education through love for the messiness and multiplicity of whole-ecosystem biodiversity offers us freedom. The freedom to reconstruct pasts richer than we currently have the imagination to conceive and the chance to envisage a different future. In the words of my father, conservation biologist Nigel Collar, "[e]xtinction is the negation of the possible; it creates poverty in the mind. Our capacity to experience, to imagine, to contemplate, erodes with the erosion of nature, and with it we forfeit piecemeal—landscape by landscape, site by site, species by species—the freedom of mind which yet we cherish as ultimately the greatest feature of our human identity" (2003: 269). More archaeologists must step into a new, radical role—building common ground with farming, conservation and rewilding—to represent wilder pasts and advocate for wilder futures, before those possible futures—and with them, our own love of the nightingale's song—are extinguished.

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