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# How Natural is Natural?
## Historical Perspectives on Wildlife and the Environment in England

PROFESSOR TOM WILLIAMSON

What is history *for*?

There are many reasons why we study the past – mainly, in truth, because we enjoy it. But perhaps the most important is that it helps us to understand our present situation, and how the things we think of as 'normal' developed out of very different pasts. Only by appreciating how present 'reality' came into existence, came to be constituted, can we decide how to act in the present, and what we need to do to maintain things as they are, or to change them in the future.

There are many forms of history: political, social, economic, cultural. I am a landscape historian. Landscape history as a subject was first developed in the 1950s by social and economic historians like Maurice Beresford and, in particular, W.G Hoskins. They sought to explain aspects of the physical environment – the layout of villages, the shapes of fields, the varying chronologies of vernacular buildings in different areas – in terms of historical processes. But they also sought to use the physical environment to contribute to wider debates in history, especially social and economic history. Such things as hedges, field patterns and settlement morphologies could be regarded as a kind of continuous above-ground archaeology. In Hoskins' words, the landscape was itself 'the richest historical record we possess'.

The subject developed through the later twentieth century in new ways. Firstly, real field archaeologists began to be involved, people like the great Christopher Taylor. The earthworks of abandoned sections of villages were now interpreted alongside their surviving, upstanding portions; aerial photography and other non-invasive forms of archaeological investigation were embraced wholesale. Beresford and Hoskins had indeed used these approaches, but there was a new emphasis and rigour, and a new – longer – timescale, with many now suggesting that the 'making of the English landscape' had begun well before the Roman Conquest, rather than in Saxon times, as Hoskins had mainly believed. In addition, the late 1970s and 80s saw the increasing involvement of historical ecologists, most notably the late Oliver Rackham. Again, an interest in ecology was not entirely new. Max Hooper's work on how hedges could supposedly be dated by counting the number of species they contain (since comprehensively refuted) had been used by Hoskins. But landscape history now expanded to embrace the study of a whole range of 'semi-natural habitats' – woods, heaths, moors, meadows and the like.

And it is such matters, and such habitats, that I would like us to think about today – and as *historians*, rather than as ecologists. Within such areas, particular forms of management, practised over long periods of time, created particular suites of species. Take, for example, meadows. These were areas of low-lying grassland managed to produce a hay crop – vital as winter feed for livestock – and were accordingly closed to sheep and cattle during the spring and early summer. As a result, plants intolerant of grazing and trampling could flourish, flower and set

seed without disturbance, many of them tall, bulky species like meadowsweet, globeflower and oxeye daisy. Over the centuries, a particular kind of management thus created a distinctive, rather beautiful, biologically diverse - but essentially unnatural environment.

Heathland is another example. Heaths are largely treeless environments associated with poor, acid soils overlying porous sands and gravels. Their vegetation features a distinctive range of dwarf shrubs, principally heather or ling, gorse or furze, and broom, together with characteristic grasses such as sheep's fescue and common bent. Such environments sustain particular kinds of fauna – reptiles like the adder, birds like the Dartford warbler. Like meadows, heaths are essentially artificial environments. Most if not all examples developed from woodland, often in remote antiquity but sometimes as late as the sixteenth century. As trees died of old age, were barked by livestock or were cut down for timber and wood, regeneration was prevented by grazing and by further exploitation for fuel, with gorse, broom, heather now being harvested for domestic firing. Conversely, most heaths which have escaped enclosure, 'improvement' or the attentions of the Forestry Commission have become colonised by secondary woodland during the last century or so, as the intensity of management has declined.

Mousehold Heath near Norwich is a good example of all this. In the eighteenth century this was a huge tract of open heather, an iconic landscape painted by John Sell Cotman and other members of the Norwich School of painters. But its name incorporates the Old English term *holt*, 'a wood', and as late as the thirteenth century it was largely tree-covered. Local people exercised rights to graze livestock and gather fuel, and by the sixteenth century the whole 6,000 acres was largely treeless. Those parts of the heath lying close to Norwich survived enclosure and reclamation in the nineteenth century but, as management declined, they were rapidly colonised by birch, oak and sycamore. When conservation bodies attempt to clear some of this woodland, to restore areas of heath, they often face stiff opposition from local people exercised by this attack on 'nature'.

Ancient woodland is another important 'semi-natural habitat'. By the thirteenth century 'coppice with standards' woodland was common in England. In such woods, most of the trees and shrubs were cut down to a point at or near ground level on a rotation, usually of between eight and fifteen years, to produce a regular crop of 'poles' useful for fencing, tools, fuel and a host of domestic uses. Relatively small numbers of trees were allowed to grow as 'standards', for timber, and these were usually felled at around 60 years of age, or younger. Because the regenerating coppice would be damaged by grazing, livestock were generally excluded by banks and fences for all or most of the time (unlike most heaths, medieval woods were enclosed land, part of the manorial demesne). The exclusion of stock, coupled with the recurrent cycles of light and shade resulting from coppicing, encouraged the development of a distinctive ground flora, characterised by wood anemone and other so-called 'ancient woodland indicators'.

Survey after survey from medieval and post-medieval times shows that woods were overwhelmingly dominated by standards of oak. This species was actively planted or encouraged because it provided the best structural timber. In contrast, the primeval woods of lowland England, before the advent of farming, had been dominated by small-leafed lime (*Tilia cordata*), now rather a rare species. The coppiced understorey was, and is, variously constituted but does not simply represent a managed version of the 'natural' vegetation. Numerous documentary references show that the coppices were often weeded of unwanted shrub species or even extensively re-planted with useful ones like ash, hazel or hornbeam. I used to think of ancient woods as fragments of the original 'natural' forests which once covered the country - islands of preservation. But I now know that they are more like factories for the production of wood and timber which have, for the most part, become derelict. Their flora and fauna have been shaped in critical ways by this history.

Indeed, so unnatural are woods – and the other 'semi-natural habitats' - that natural scientists, archaeologists and others now argue over what form, precisely, the landscape took before the adoption of farming from the fourth

millennia BC. Until recently it was assumed that most of north west Europe was covered with dense woodland, but this idea has been challenged by Frans Vera and others, who suggest that grazing by wild cattle, deer and other herbivores maintained a much more open environment, perhaps resembling savannah in places. The arguments marshalled in support of, and in opposition to, such views need not concern us here. What is important is that the debate itself demonstrates how far we are removed from any truly 'natural' environment, unaffected by human agency.

This is true in other important ways. Few people realise just how many of our plants and animals are introductions. We only agonise about recent ones, invasive species like Japanese knot-weed or Himalayan balsam, Muntjac, Chinese water deer, grey squirrel, sika deer, or mink. Others, longer-established, are just accepted as part of our native flora and fauna. An extraordinary range of familiar species are introductions: sycamore, sweet chestnut, the poppy (and most weeds of cereal crops), the snowdrop: even the lovely snakes-head fritillary may be an early garden escapee. The house mouse arrived in later prehistory, the black rat in Roman times and the brown rat in the 1720s (in 1777 Gilbert White considered a black rat killed at Shalden in Hampshire something of a rarity: 'the Norway rats destroy all the indigenous ones'). Many alien animals were intentional introductions, including carp, fallow deer and the rabbit. The latter was once so domesticated that it was kept in specially constructed mounds, complete with ready-made burrows. It was so important as a status symbol that warrens were, before the eighteenth century, sometimes incorporated into the gardens and designed landscapes laid out around the homes of the wealthy.

The implications of what I have said so far, put simply, is that we have a bad habit of thinking of the countryside as 'natural'. But there is nothing new in this. The tendency to conflate 'nature', and the rural, developed in England and elsewhere in western Europe from the late seventeenth century, amongst a social elite whose lifestyle was increasingly focused on urban life, and divorced from the realities of agricultural production and the practicalities of land management. 'God made the country, man made the town' – Cowper's famous adage – would make little sense to the farmer at work in the fields, still less to the agricultural labourer.

We have another bad habit: that of thinking of the countryside as 'timeless', and its various constituent elements as being older and more stable than they really are. In reality they have a history, because they are as much a part of the human world – the world studied by social and economic historians – as they are of the 'natural'. And many indigenous species have changed their habits and habitats, and their numbers, quite dramatically over recent centuries. The Act for the Preservation of Grain of 1597 allowed churchwardens to pay individuals for killing a range of specified birds and animals considered to be a threat to agriculture. The wood pigeon, somewhat surprisingly, is not on the list. This is because it was still rare, and still largely confined to woods. Its numbers rose steadily from the later seventeenth century, for it feasted on the leaves of turnips and other 'roots', and to some extent on clover, now growing in the winter fields. Gilbert White, writing about the Selbourne area in 1780, attributed its recent success to 'the vast increase in turnips'.

But let me return to the subject of 'semi-natural environments' – heaths, moors, meadows, downland, woods and the like. All of these, and other, traditionally managed environments have been in retreat for two centuries. Enclosure; the new forms of husbandry of the agricultural revolution; industrialisation and 'high farming'; modern mechanisation; have all rendered most of these forms of land management rare, redundant or both. Those examples that have survived are always in danger of losing their distinctive characteristics through neglect. Woods, no longer coppiced, grow shady and species-poor; heaths, ungrazed, revert to secondary woodland. This, indeed, has been the fate of many, perhaps most areas of common land which escaped enclosure in the eighteenth and nineteenth centuries.

Since the start of the twentieth century, most conservationists have agreed that the best way of sustaining nature in England is to try and perpetuate old, traditional methods of management, or what are *perceived* to be traditional

methods, in order to maintain examples of these key environments and thus the species associated with them. Meadows should be cut for hay, heaths and downland regularly grazed, woods coppiced. All this is done by conservation bodies, on nature reserves; or by other private landowners, in return for government subsidies. Recently, however, such approaches have been challenged by the concept of 're-wilding', that is, the creation of tracts of land in which human influence is minimised or removed altogether. This approach first emerged in the United States but has become highly influential, in a variety of forms, in Europe and the UK over recent decades. It has begun to be put into practise at Oostvaardersplassen in the Netherlands, and at Ennerdale in Cumbria and on the Knepp Castle estate in Sussex. And it reached a wide audience when popularised by George Monbiot in his book *Feral*, published in 2013. Re-wilding represents a very different approach to nature conservation. Rather than maintaining 'traditional' practices, human intervention is removed, key predators like the lynx re-introduced, and nature allowed to re-assert itself.

There are thus different ideas about the best way of ensuring a future for nature – a future for wildlife. The debate is an important one because many conservationists believe we are at something of a turning point: recent decades have seen catastrophic declines in many key species in the UK. It seems to me that historians have a great deal to contribute to these discussions, and I would, in the time that remains, like to highlight some of the ways in which an historical perspective can assist our colleagues working in ecology and natural history.

Firstly, a knowledge of the past not only gives us an awareness of how unnatural everything is. It also allows us to see current environmental threats in perspective, and in context, and thus enables us to respond to them more effectively. Ecologists are rightly gloomy about the state of the planet. There is no doubt that we face mounting problems – shortage of resources, climate change, large-scale destruction of habitats, urbanisation. But this said, built in to conservation is an inherent concern about change – even though all environments are in a constant state of change, with or without the involvement of humans. Historians in contrast work with change; they can help take a more balanced view of it and show that some aspects of the British environment may actually have improved over the last century or so.

For example, if you ask people what has happened to woodland cover in England over the last century, most will say that it has massively declined. It is widely assumed that thousands of hectares of woodland have given way to urban development, quarries or intensive agriculture. The historian's answer would be more nuanced. Government surveys leave no doubt that the area of woodland has, in fact, roughly *doubled* in England since 1895. Some of this new woodland comprises conifer plantations; rather more represents secondary woodland which has regenerated over abandoned heaths and other common land, or over derelict industrial land. We can, of course, debate the ecological value of such woodland – which, in some cases at least, is unquestionably high – but let us get the basic facts straight first. Woodland *per se* is doing just fine.

Dead wood is perhaps a more straightforward example. This is a really important resource, especially for forms of fungi and invertebrates. And there is unquestionably far *more* of it in the environment today than in the past, when it was gathered on a massive scale for fuel by the local poor – who were regularly prosecuted for stealing it even from hedges.

Many aspects of environmental change have their positive as well as their negative aspects. We might lament the scale at which farmland is currently giving way to suburbia. I certainly do, because I was bought up in Watford in the 1960s, and now live in rural Norfolk! But my training as a historian means that I know I have to be careful in assuming that this necessarily equates to a loss of biodiversity, because I know that both the countryside, and the town, are highly unnatural environments. Countryside does not equal nature; the countryside is not necessarily biodiverse. A study begun in the 1970s, by Jennifer Owen, of a small suburban garden in Leicester recorded - over a thirty-year period - no less than 2,673 species of flora and fauna, including 54% of Britain's ladybird species,

23% of its bees and 48% of its harvestmen. And this was not a garden specially designed for wildlife. There are dangers with 'shifting baselines' and relativism: and let me say again, and unequivocally, at a global scale thing are certainly getting worse in environmental terms. But an historical perspective is essential if we are to see the real character of change, and its real consequences.

A second and more important contribution which an historical perspective can make is to make us more aware of the true nature of environmental threats, and the particular circumstances which increases our vulnerability to them. Take the mounting concern about threats to tree health in Britain. Dutch elm disease first arrived in the UK in the 1920s, but a more virulent strain appeared in the late 1960s, and within a decade had effectively wiped out elm as a tree. A series of epidemics has followed, including *Phytophthora ramorum,* leaf minor and canker in horse chestnut and, more recently, ash chalara (*Hymenoscyphus fraxineus*). All are caused by invasive organisms – fungi, bacteria, or insects – and have thus been seen as a consequence of globalisation, of the long-distance transport of timber and live plant materials, perhaps compounded by climate change. In addition, there are worries that tree health in England is suffering a more general deterioration, with recognition of such complex and diffuse conditions as "oak decline", manifested in progressive thinning of the crown and general ill-health, leading to gradual death. Many of our hedgerow trees simply look ill.

We at the University of East Anglia were approached a few years ago by DEFRA to look into the question of whether this was all new or whether, conversely, our trees have always endured waves of epidemic disease. They also asked us to examine whether there have been any changes in the character of our trees, or the ways that we manage them, that might be making them more susceptible to illness. Our answer to the first question was, very simply, 'no'. Before the start of the twentieth century trees often got ill – sometimes in large numbers – but never on the scale we have seen over the last half-century or so. We concluded that it was not so much the scale of movements, of timber and plant materials, which were key – both had been imported into Britain for centuries – but rather the *speed* of movement. By the 1880s the development of the screw propeller, the compound engine and the triple-expansion engine, made trans-oceanic shipping of bulk cargoes by steam economically feasible. The first large-scale epidemics followed soon after.

But what of the character of our tree populations: how has this changed, and has it increased their susceptibility to disease? We examined a mass of documents – maps, correspondence, timber surveys – from the period after c.1600, and made some interesting observations. The lowland landscape has, at least since the sixteenth century, been overwhelmingly dominated by oak, ash and – until living memory – elm. But just as the species found in woods were the consequence of selection and management, rather than being 'natural', the same is true of trees outside woods. Many kinds of tree could have been planted, or been allowed to grow, in hedges or pastures – and many were, but in very small numbers. In different regions, trees like hornbeam, maple, black poplar or aspen occur, in various combinations, alongside the three key species, although seldom accounting for more than 15 per cent of the total and often much less. Oak, ash and elm dominated almost everywhere because of their catholic habits, good growth rate and usefulness as wood and timber.

In addition, up until the early nineteenth century there were generally very high densities of trees, in enclosed districts at least: commonly upwards of 25 trees per hectare. Moreover, a very high proportion of these (usually over 80 per cent in southern Britain) were managed as pollards, or aerial coppices, to produce a regular crop of poles, suitable for fencing, hedge stakes and above all firewood. Individual pollarded trees were, in many cases, replaced after two centuries or so of cropping because their vitality declined and, as in woods, timber trees were generally felled before they were sixty years old. For centuries the countryside was thus characterised by very dense populations of young or regenerating trees, mainly of just three species.

From the end of the eighteenth century improvements in transport infrastructure led to the spread of coal use and pollarding rapidly declined. Pollards were removed so that hedges lost a high proportion of their trees. Timber trees remained, but became less intensively managed, as landowners concentrated their forestry activities in woods and plantations and as a new attitude to trees in the wider countryside developed, with a more general upsurge of conservationist enthusiasm. By the end of the nineteenth century the felling of prominent timber was being seen by many as a desecration of nature's beauties, rather than as good husbandry. Raymond Unwin famously boasted that only a single tree had been felled during the construction of Letchworth Garden City in north Hertfordshire in the first decades of the twentieth century. Such essentially sentimental views were widely shared.

All this means that the countryside now contains far more old trees than it did a century or so ago: and it now appears that some 'illnesses' may not really be diseases at all. 'Oak decline', in particular, only affects middle-aged or old trees. Few of these existed in the period before the twentieth century. Moreover, when farmland trees were intensively managed they were usually taken down quickly if they fell ill and sold for timber before they lost value – and thus before they could pass on their infections. Today diseased trees are more likely to be left standing, either through neglect or to provide dead wood for wildlife. In other words, Intensively-managed tree populations are much healthier than those left to their own devices; tree populations in the past were healthier than those of today.

Of course, none of this can have any relevance to diseases like ash chalara, which mainly affect younger trees. But here, too, an historical perspective is informative. The species composition of our rural tree populations has little to do with nature – it was shaped by human choices, made for practical and economic reasons. We can now make different choices, for different reasons, and one obvious one would be to diversify our planting to reduce vulnerability; to increase the number of the local 'minority' trees, like hornbeam or wild service or small-leafed lime, to ensure a greater degree of resilience in the face of future epidemics.

To understand 'nature' in Britain, we need to know about the past – about the management systems that shaped the rural landscape. The more we know, the more effectively can we manage for the future. Let us return to a moment to heathland. I noted earlier how heaths were shaped and maintained by grazing and to an extent by fuel cutting, but there was much variation in the balance between these two uses, and there were several other ways in which they were exploited. The precise combination of uses varied from place to place because heaths were integrated into local economies and farming systems, so that not all heaths were the same. My colleague, the ecologist Paul Dolman, carried out a 'biodiversity audit' of the area called Breckland in East Anglia, still noted for its heaths. He noted that a number of important species, largely restricted to this region, had declined significantly over recent decades. Most of the surviving heaths in the area are maintained by light sheep grazing. But these key species in fact depend on the juxtaposition of areas of stable heather, and areas of regular *disturbance*. To a historian this is unsurprising – until the nineteenth century the region was characterised by extensive rabbit farms, with much disturbed ground, and large areas of heath were sporadically cultivated as outfield 'brecks'. It was thus an area in which, for centuries, stable heathland indeed existed beside areas of regular disturbance. In other words, 'traditional' management needs to be historically informed: we need to know precisely how habitats were managed and thus shaped in the past if we are to manage them effectively into the future.

So what of re-wilding, an approach to conservation which is fast becoming a popular movement in natural history circles? What is the historian's take on this? The idea of removing/minimising human interference over areas of land in order to encourage nature and enhance biodiversity is – as should by now be clear - the complete antithesis of wildlife conservation based on traditional management systems. But it is important to emphasise that little research has been carried out to demonstrate the superiority of 're-wilding' over other approaches to conservation. Indeed, much of the enthusiasm for re-wilding has been based more on emotion – the 'call of the wild' - than on any careful assessment of what it actually achieves. In fact, it is arguable that the conversion of the 'natural'

landscape – whatever its precise character – to farmland *increased* rather than lessened biodiversity, and that agricultural landscapes, managed on 'traditional' lines, provide a greater diversity of habitats and niches, at a range of spatial scales, than would be afforded by the secondary grazed woodland of re-wilded reserves. They certainly sustained the particular species which we *think* of as part of our common 'natural' inheritance, and which have become culturally important to us – many of which, like those characteristics of meadows, may have been rare in the pre-agricultural landscape.

Living in a small and crowded island, we need to remember that the highest levels of species diversity are to be found in fine-grained habitat mosaics, with an abundance of edges and juxtapositions, each endlessly disturbed and never reaching equilibrium: the kinds of habitats generated by traditional management systems. And it is also important to note that, in a small and crowded island, re-wilded reserves, complete with reintroduced alpha-predators, would tend to be placed in more marginal areas, agriculturally and spatially. Re-wilding will certainly have its place in future conservation policies. But most people experience nature in more domestic settings – in the countryside or on the urban fringe – and this is where most conservation energy should continue to be concentrated. Moreover, the more we emphasise the 'natural' credentials of re-wilded reserves, the more we might be encouraging a situation – developing across much of the globe anyway – in which the landscape comprises three sharply contrasting types of habitat: urban areas; intensively farmed countryside; and 'wilderness', often by definition remote from human habitation.

Perhaps more importantly, as historians we should emphasise that re-wilded landscapes do not, and cannot, closely resemble the natural landscape, in the sense of the grazed woodlands which existed in remote prehistory, before the advent of farming. To use George Peterken's terms, 'future nature' would of necessity be radically different from 'past nature'. Re-wilded reserves would contain a range of animals which were not naturally present in this country, including (as we have seen) bothspecies of rat, the rabbit, the grey squirrel, fallow deer, muntjac, sika deer, and Chinese water deer. They would boast a flora featuring an even greater range of naturalised species, such as sycamore and rhododendron – especially the latter, given that many areas targeted for large-scale re-wilding are in upland districts, where this plant has become seriously invasive. Indeed, in an important sense re-wilded reserves would still be *cultural* landscapes, for the motley array of plants and creatures living within them would represent a dim memory of specifically human actions and desires, ranging from medieval hunting fashions to Victorian gardening fads. They would still have a history. But this in turn raises the question of how far even the landscapes of the Mesolithic period – post-glacial, but pre-farming - were really 'natural', in the sense of being unshaped by human activities, given the sheer scale of the impact made by hunter-gathers on the environment recorded by ethnographers elsewhere in the world, together with the accumulating evidence for such an impact in Britain itself. Since the ice retreated, this country may always have had an ecology which was extensively, fundamentally, shaped by man.

We might also note that the creation of extensive re-wilded reserves would inevitably involve the wholesale disappearance of many elements of the historic landscape – hedges, traditionally managed woodland, field patterns, landscape parks. What, one wonders, would Hoskins make of it all? I am sure that even the most vociferous re-wilders would not want to re-wild Howarth Moors, inspiration for Bronte's *Wuthering Heights*; or Dedham Vale, the subject of so many of John Constable's paintings. Many would hopefully avoid the better preserved examples of the work of Capability Brown or Humphry Repton. But in many other contexts the erasure of all signs of the human past appears to be actively welcomed, precisely because it serves to foster the 'experience' of wilderness. All this marks a significant and worrying shift in the relationship between ecology and history, for in the twentieth century a succession of conservationists and historical ecologists, most notably Oliver Rackham, saw the landscape as something which embodies both natural *and* human history, the two interacting in complex ways.

Perhaps the really interesting question for the historian is why all this is happening now: why many conservationists should, at this point in history, wish to downgrade those approaches to conservation which emphasise the role of man, and which simultaneously value landscapes for both their cultural *and* their biological characteristics. But that, as they say, is another story, and a more complex one, which time will not permit me to address here.