‘Making hay’: A conditional defence on ecocentric grounds of various co-created habitats

This article begins with an argument and delimiting conditions for the place of certain traditional anthropogenic, or ‘co-created’, habitats within ecocentrically minded conservation. Next, four examples of such co-created habitats are explored: lowland meadows, heathland, coppiced woodland and old orchards. The examples are drawn from the lowlands of Great Britain but their discussion has geographically broader implications. Such habitats, it is argued, have a place within an ecosphere that elsewhere evidences a major stepping back of humans; within this wider context, they can act as ‘reservoirs’ from which biodiversity can radiate again once the time comes. In other words, they represent a means of widening the bottleneck through which life is passing. They also offer not only a liberation from the destructive nature of approaches to land management forged by industrialism but also a roadmap for a revival of forgotten skills in a future culture of simplicity and creativity.

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It was the right book at the right time. When I read *Keeping the Wild* (Wuerthner *et al.*, 2014) shortly after it was published, I was nearing the completion of a personal journey to ecocentrism.[1] This anthology brought together new and republished writings that emphatically defended the protected-areas movement against the attacks of Anthropocene boosters.[2] At the same time, it provided a deliciously radical challenge to the things I was beginning to loathe in my life in a small city set in a human-dominated landscape. I’m almost certain that I will never read a book that influences me more strongly.

In regard to Earth’s biodiversity crisis – the focus of this special issue – the message from that anthology and subsequent related pieces is a compelling one. For the sake of wildlife, wild places, and ecological processes, we need to protect all remaining intact ecosystems (*e.g.* Watson *et al.*, 2018), and we must also scale back the negative impacts of modern human society on the ecosphere (Crist, 2019), opening up opportunities for ecological rebounding. As coherent as this is, though, a dangerous caricature of ecocentrism can emerge from such a grand vision. The caricature, which, if taken seriously, will harm not just the ecocentric worldview’s credibility but wildlife too is this: *Ecocentrism calls for all land to be returned to a self-willed state, free of major human intervention, except where humans have their homes or are managing land to produce the most essential of goods, such as food.*[3] As Batavia and Nelson (2016) have noted:

> This position is characteristic of what ethicists call “natural law theory,” in which what is “natural” is right and ought to be. [This is] often used to justify a “hands-off” approach to management or nonintervention.

I reject this outlook’s inherent human–nature dualism, but in doing so I’m mindful of the potential trap that is set when humans are rolled into the concept of ‘natural’ applied here. The poisoning of a river, say, would thus become ethically acceptable. On the one hand, then, not all human interventions in a landscape can be considered good just because humans are part of nature.

On the other hand, it seems perverse from an ecological perspective to automatically judge human intervention in landscapes as necessarily bad, when examples abound of non-human species, from African elephants to yellow meadow ants, shaping

habitats and engineering ecosystems. For just as these ants – to use the example of the smaller of those creatures – build mounds with altered soil properties that provide biodiversity-enriching micro-niches (Boots and Clipson, 2013), there are well-known and cherished examples of human interventions that, in a similar way, can benefit biodiversity, at least on a local or regional scale.

Hay meadows provide one example of such an opportunity, hence the wordplay in this piece's title. Later, I will consider in detail these and several other instances of traditional anthropogenic habitats that I feel can have a place within ecocentrically minded conservation. As will be seen, changing economic circumstances mean that the human interest in these habitats has shifted away from production, opening up opportunities for an alternative focus. Before this, I will offer a tentative set of conditions to delimit my support for traditional anthropogenic habitats within the framework of ecocentrism.

"Evolution and other unguided ecological dynamic processes are ethically good in their own right, as well as being unrivalled in their creation of complexity and diversity, and we should be neither quelling nor guiding them on a grand scale."

In proposing these conditions, I must stress that I am not clearing an intellectual path towards treating the Earth as a global garden (rambunctious or otherwise). First, on a pragmatic note, ecospheric ecology is far too complex for us to hope for anything approaching universal success in determining positive, gardening-type conservation interventions, even if the vast financial resources necessary for such gardening were channelled in its direction. Secondly, on a philosophical level, evolution and other unguided ecological dynamic processes are ethically good in their own right, as well as being unrivalled in their creation of complexity and diversity, and we should be neither quelling nor guiding them on a grand scale. To do so would be to behave not as a "plain citizen and member" of the "land-community," in Aldo Leopold's indelible wording (Leopold, 1968: 204).

On the subject of grand interference in evolution specifically, Christof Schenck (2015: 100) cautioned:

> Human-directed conservation is changing species in the long run. This means that even in conservation areas, set aside for nature protection, humans take a lead in evolutionary processes, with limited understanding of the results.

Responding to this warning, I proposed, with Patrick Curry, the concept of conservation "exit strategies" (Gray and Curry, 2015).[4] In short, this involves drawing up intervention plans for protected areas that still meet the short-term, often urgent, needs of wildlife (*e.g.* through placing bird boxes), while also including a longer-term vision to allow these needs to be met without human direction (by letting trees – using the same example – reach maturity and senescence so that nesting holes abound). In areas where agents of major disturbance, such as wild free-roaming bovines, have been extirpated, reintroductions of ecologically similar life forms will be necessary for conservation exit strategies to be fully realized. The empirical examples discussed later are drawn from the context of Great Britain, and so it is pertinent to mention that the aurochs – the wild ancestor of domestic cattle – was extirpated from this island, owing to habitat loss and other factors, at some point between 2000 and 3500 years ago (Wright, 2013).

By raising here the ecological importance of lost agents of disturbance, I have looped back to the subject of traditional anthropogenic habitats: human interventions, as will be discussed in the empirical examples, are of a greater significance as biodiversity-enhancing disturbance processes in light of our ancestors' extirpation of certain other habitat shapers.

An ecocentric delimitation of traditional anthropogenic habitats

Immediately below, I present four conditions that delimit my support for traditional anthropogenic habitats within ecocentrically minded conservation. The first three refer to individual sites, while the last relates to such sites *en bloc*. I offer this as an unofficial addendum to *Keeping the Wild* and a counter to the dangerous

potential caricaturing of ecocentrism that I mentioned earlier.

- **Quality:** Such sites should be more biodiverse than they might otherwise be – over a short or long time frame – if interventions ceased. The biodiversity considered in this qualitative reckoning should comprise native species and long-established non-invasive alien species. Species that are rare, especially on a global scale, should be given greater weighting in considerations.
- **Focus:** The focus of the interventions should be supporting biodiversity for biodiversity's sake. Material goods that are available and non-material instrumental values that can be derived (including spiritual pleasure and preservation of cultural heritage) should be celebrated, but they should never be key drivers.
- **Future:** Opportunities for reducing human intervention in the long term without a negative overall impact on biodiversity should be pursued if they present themselves.
- **Extent:** Taken as a whole, these sites should not dominate on a landscape scale. Rather, they should be set within a wider landscape that evidences a major stepping back of *Homo sapiens*.

This set of conditions is intended as a skeleton for future work. I will leave the philosophers to pick at the bones, but in the hope that at least something will remain, I will press on with real-life cases of what can be called *co-created habitats*.[4] When I walk in these habitats, I'm aware of the presence of human hand, but my experience is of a place overwhelmingly dominated by non-human life. This is a good balance when one considers humans as plain citizens.

The examples are all habitats that I can get to on foot from my home near the River Ver, a chalk stream that cuts a minor incision in the geologically diverse hunk of rock known as Great Britain. They are not unique, though, to my local area or this medium-sized Atlantic island. And there will be different co-created habitats in other places to which the argument I am making may apply.

Example habitats

Lowland meadows

At temperate latitudes, grassland typically occurs in places that are too dry or too far above sea level for trees to dominate (Rackham, 1994), or where there is sustained pressure from herbivores. Great Britain is mostly low lying and relatively wet and its land thus tends to a forested state. Non-anthropogenic fires play only a minimal role in the island's ecology, while the challenges to tree establishment – and prospects for grassland – presented by free-roaming grazers have lessened in recent millennia through the decline and extirpation of the aurochs (Vera, 2000), among other factors.[6] Under these conditions, humans equipped with scythes emerged as significant agents of species-rich grassland, in the form of meadows (Figure 1).

For the two millennia between their "pre-Roman origins and post-Medieval demise," meadows were "a key component of traditional farming and were often more valued than any other land" (Peterken, 2013: 119). They allowed farmers to exploit – typically on soils that were neither strongly acidic nor strongly calcareous – the flush of growth that comes in spring and summer in order to remove plant material that could be prepared and stored, as hay, to provide winter fodder for domestic animals. Farmers would have been well aware that the scything prevented the encroachment of scrub and the establishment of mature

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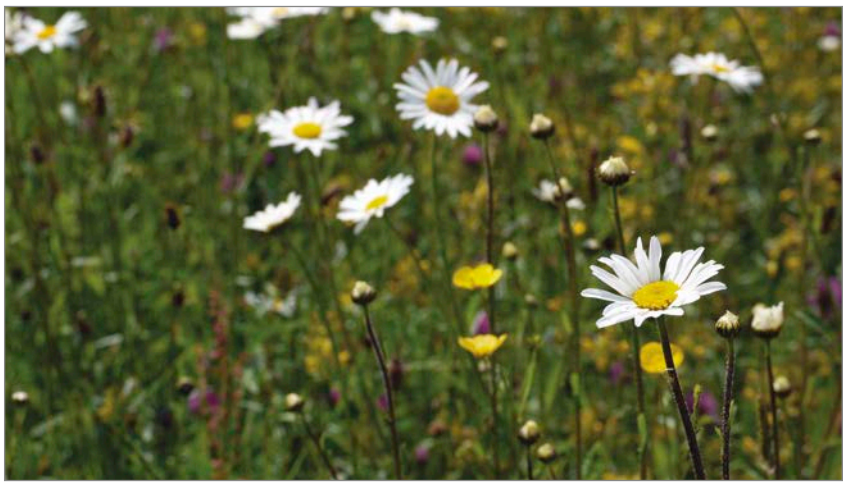

Figure 1. Wild flowers and grasses in a lowland meadow.

> "The outcry against the plummeting of meadows was slow in coming."

trees, a development that would have been very difficult for them to reverse in a time with no chainsaws or heavy machinery. What they would not have known, though, is that this removal of matter counteracted the deposition of nutrients from the excreta of winter-grazing domestic animals and from the atmosphere, keeping fertility at a 'Goldilocks level' that gave many plant species a chance to thrive and stopped runaway species from dominating. This, in turn, supported a richness and abundance of insects and other life forms.

In modern agriculture, farmers have tended towards specialization, external inputs and monoculture, and more profitable land uses than meadows have emerged (with some combination of drainage, ploughing, re-seeding, herbicides and nutrient applications being used to adopt them). Under these conditions, the total area of species-rich meadows in Great Britain has declined by 97% since the 1930s (Plantlife, 2018); a major contributor to the steep downward trend was the need, during the Second World War, to bring more land under the plough for growing cereals on a suddenly isolated, and densely populated, island. Despite the scale of the loss of this habitat, it went relatively unnoticed for a long time. As Trevor Dines, Botanical Specialist at the charity Plantlife, observed (Plantlife, 2018):

> People tie themselves to trees as the chainsaws arrive, but nobody lies down amongst meadow buttercups in protest at the ploughing up of ancient meadows.

The outcry against the plummeting of meadows was slow in coming: calls for their conservation only began to mount in the late 1960s (Peterken, 2013). While losses continued, the efforts of the early advocates and their followers has helped some meadows to emerge through the bottleneck as nature reserves, and hobbyist purchases have also played a role in stemming the decline. The finances have changed to such an extent from those of traditional agriculture, however, that removing hay is now something that can cost money, or rely on the goodwill of volunteer scythers, rather than generating income (Peterken, 2013). In other words, hay as a product is not the primary purpose. This means that the focus for humans in this example of co-creation can be on supporting favourable conditions for a range of wild grasses and flowers and the other life that they sustain, rather than on maximizing yield or palatability of hay.

There seem to be as many theories for what the best practice is in meadow conservation as there are people with a view on the subject, and efforts to synthesize scientific evidence have not given clear answers (Tälle *et al.*, 2018). A broadly supported overall approach would be a single late annual hay cut, allowing plants to set seed and insects to complete their life cycles, and avoiding disturbance of ground-nesting birds (Peterken, 2013). This would preferably be performed not with a mechanical mower but by a team of scythers (see Kingsnorth [2012]), as this is less destructive to the life of the meadow. The fodder will be of very poor quality – formerly, late-cut hay would have been used as bedding for animals. As mentioned above, though, this is not a major issue in a conservation context, and the material still has potential uses within an ecological culture and economy, such as in insulating the walls of eco-friendly buildings. There are, however, a couple of more significant caveats. The first applies to a restoration context, in which earlier and more frequent hay cutting may be needed over a number of years in order to counteract the legacy of nutrient applications and the resulting species-poor grassland. The second is that a major change from existing practices may make conditions unfavourable for the species that a meadow currently supports (Buglife, 2019b), and the plants and other life forms for which the altered meadow might be suitable may be slow to colonize it or never find it (*e.g.* Woodcock et al., 2012). As Aldo Leopold wrote in his journal: "To keep every cog and wheel is the first precaution of intelligent tinkering" (Leopold, 1993: 146). A compromise might be to adopt a more heterogeneous approach, in which existing practices are maintained

in only a part of the meadow (personal communication with Ian Carle). Further heterogeneity will result from so-called aftermath grazing, in which domestic animals feed on the meadow in winter. In a conservation context, this can be done with a low density of grazing animals, very high welfare standards and a prudent approach to medication; the dung alone can support many species (Laurence, 1954).[7]

The role of lowland meadows in supporting biodiversity

As George Peterken (2013: 219) has noted: "Meadows are paradoxical. They are amazingly diverse at a small scale, but [they] contribute little to regional diversity, because their constituent species have been drawn from various habitats, and most still inhabit versions of those habitats or scraps of meadow-like vegetation." In other words, their role is not so much in helping save threatened species as it is in supporting an ethic of bio-proportionality, in which both diversity and abundance matter deeply (Mathews, 2016). Just as the leaf litter of mature woodland teems with springtails and other invertebrates, one only need examine a handful of flowers or a few grass seed-heads to get a sense of the tremendous abundance of life that is to be found in meadows (Figure 2).

Heathland

Heathland is unploughed, open or semi-open land on which plants in the group called heaths grow, the most common of which is ling (also known as heather). Beyond heaths, the characteristic flora of this habitat includes bracken, as well as shrubs such as gorse (Figure 3). As Oliver Rackham summarized – slightly underestimating, perhaps, the openness of a landscape in which aurochs roamed (Vera, 2000) – heathlands are "composed entirely of wild plants, yet they would hardly exist without past and continuing human activities" (Rackham, 1994: 130). This is the essence of a co-created habitat.

Heathland soil is typically acidic, sandy and nutrient poor and was unsuitable for traditional farming. In the Middle Ages,

Figure 2. The grass-bug *Megaloceroea recticornis*, one of many insects that can be very abundant in meadows (photographed at Chorleywood Common, UK).

Figure 3. A gorse shieldbug on gorse, a typical heathland shrub.

Figure 4. Wild-roaming ponies contribute to the open areas of acid grassland in the New Forest, UK.

heathlands were nevertheless used for many purposes. Gorse was removed for fuel as it produced an efficient hot blaze for ovens and home-heating fires. Ling served as both a fuel and a low-grade thatch. And bracken was used as a fuel, as litter for livestock, as thatch, as an ingredient in potash (for glassmaking, soaps and detergents), and also for a range of minor functions from contraception to rain-making. Traditional heathland products fell out of common usage in the 19th century – although there is potential for a revival of some uses within an ecological culture and economy. Furthermore, farming technology that arose in the agricultural revolution made it possible to cultivate previously uneconomic land such as heathlands (Rackham, 1994). In the 20th century, the decline was exacerbated by the timber industry's fad for planting non-native conifers and the intervention of developers. All told, around 85% of Great Britain's heathland has been lost over a span of 150 years (Wildlife Trusts, 2019).

As with meadows, many surviving examples of heathland are now nature reserves, where a chief concern is that the habitat will quickly scrub over and develop into secondary woodland without removal of some plant growth. As is the case with open grassland, discussed in the previous and following sections, a relevant factor here is the extirpation of the aurochs and the resulting shift in ecological dynamics to favour closed-canopy conditions. In the New Forest National Park – a large matrix of woodland, bog and heathland – the grazing of wild-roaming ponies (Figure 4) and other mammals keeps significant areas open, but other heathlands generally receive less attention from grazers. Some combination of rotational cutting, scraping of the

soil surface and controlled burning may be undertaken on heathlands to offer a heterogeneous habitat with a multitude of niches (Buglife, 2019a). An important goal for conservationists in removing plant material is to prevent a build-up of nitrogen from atmospheric deposition, which would work against an established plant community that thrives in nutrient-poor conditions. As with meadows, there are many different viewpoints on what the optimum approach might be.

The role of heathland in supporting biodiversity

Heathlands, while providing a home for many common species, also support a number of threatened species. These include birds like nightjars, stone-curlews and Dartford warblers (Figure 5), reptiles such as smooth snakes (Figure 6), and many rare invertebrates (Rackham, 1994; Buglife;

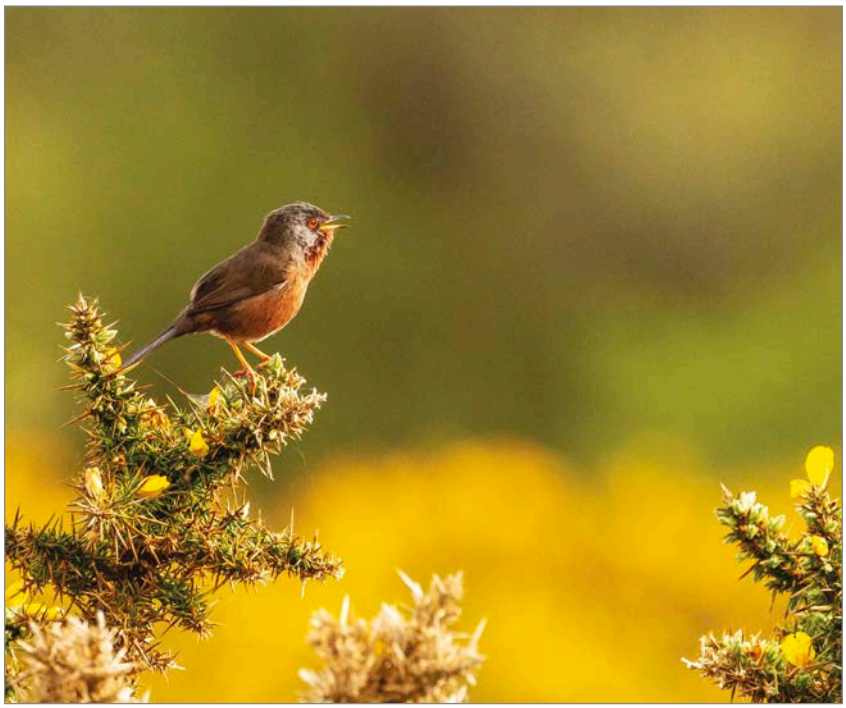

Figure 5. A Dartford warbler on heathland (photo: James West [CC BY-NC-ND 2.0; https://creativecommons.org/licenses/by-nc-nd/2.0/]).

Figure 6. A smooth snake on heathland (photo: Paul Ritchie [CC BY-NC-ND 2.0; https://creativecommons.org/licenses/by-nc-nd/2.0/]).

Figure 7. A sandy bank on Oxshott Heath, UK, which is used by many species of solitary bees and wasps for nest construction.

> 2019a). Regarding the last of these, the hard-packed sandy banks that can be found on heathlands (Figure 7) are invaluable for the nest construction of many solitary bees and wasps (Buglife; 2019a). And, more broadly, as Oliver Rackham (1994: 146) cautioned, heathland is a "special responsibility" of Great Britain, since "the Dutch, Danes and Swedes have been even more single-minded in destroying their heaths, and most of what is left in Europe is ours."

Figure 8. Regrowth after coppicing in Stanmer Park Great Wood, UK (photo: Dominic Alves [CC BY 2.0; https://creativecommons.org/licenses/by/2.0/]).

Coppiced woodland

Coppiced woodland comprises a co-created series of compartments felled in different years to create a heterogeneous patchwork of growth stages; there are also typically present some large trees with single trunks that are not cut as part of the cycle. In the long-established practice of coppicing, trees are cut to their base, or stool, and new growth sprouts from dormant buds.[8] Coppicing and regrowth (Figure 8), which probably evolved as a response to damage by large herbivores, also greatly extends the longevity of individual trees – in the case of common ash from, perhaps, two centuries to eight (Rackham, 2012).

An active coppicing cycle involves stools being re-coppiced before the stems have become too difficult for a woodcutter to chop using a simple hand tool. Coppiced stems can be used for fuel, including as charcoal, and also in traditional craft-making; they could be a welcome item in a future ecological culture and economy. Indeed, for traditional woodcutters, the coppicing cycle gave a steady supply of essential materials. As an accidental consequence, it also kept glades as shifting but ever-present features of woods, supporting a range of heat-loving animals and light-loving plants. The animals track the shifting openness, while the plants thrive periodically within each compartment for a period of two or three years (Rackham, 2012), before bramble and coppice regrowth shade them out.

A changing economy and new technology saw traditional woodland practices generally either replaced by modern commercial forestry operations or abandoned, so that between 1900 and 1970 there was an estimated ten-fold decline in the area of actively coppiced woodland in Great Britain (Fuller and Warren, 1993). Coppicing does continue, though, on many nature reserves and in some woods owned by hobbyists or individuals striving for green self-sufficiency.

The role of coppiced woodland in supporting biodiversity

Woodland openings, such as those that occur with coppicing, can be hotspots

for a range of flora and fauna. They are generally sheltered, may have dead wood present, offer a great nectar resource, and typically have soils that have not been subjected to fertilizers. These openings are especially important for rare wild flowers like wood vetch, crested cow-wheat and oxlip (Figure 9), as well as insects such as woodland-dwelling fritillary butterflies (Fuller and Warren, 1993). Nightingales are among the threatened birds that may benefit from the dense understory that develops after the open phase of the cycle. The hazel dormouse (Figure 10), another threatened species, also benefits from the structure of coppiced woodland, and its decline has been linked to the reduction in coppicing (Mammal Society, 2019).

Figure 9. Oxlip in Hayley Wood, UK, a woodland where coppicing is practised.

Old orchards

Many of the considerations raised in the section on lowland meadows apply to old orchards, because they can be a haven for wild grasses and flowers, but there is also something distinct about them from the three habitat types discussed above:

Figure 10. A hazel dormouse, a species that can benefit from the structure of coppiced woodland (photo: Frank Vassen [CC BY 2.0; https://creativecommons.org/licenses/by/2.0/]).

Figure 11. Old apple trees in an orchard in Highfield Park, UK.

domesticated species – namely, fruit trees – form a significant portion of the biomass (Figure 11). Importantly, many decades of nurturing the fruit trees of old orchards has seen them live through maturity to develop senescent features such as decaying branches and rot holes, which are essential to the life cycle of many invertebrates. These, in turn, provide food for bats and other wildlife.

As with the habitat types discussed above, changing technologies and economic circumstances have driven a steep decline in orchards, and many surviving examples are now nature reserves. The fruit picked each year may be eaten fresh or used for making juices, alcoholic beverages and food products. These items represent a bounty that can be enjoyed by local residents in harmony with the needs of other species and, like products from coppiced stems, should be an essential component of a future ecological culture and economy. In addition, the abundant windfall apples that are left on the ground provide sustenance for birds and other life forms. Moreover, since yield is not a concern on nature reserves, there is no motivation to use insecticides and life-destroying 'tree washes'.

Figure 12. A noble chafer, a beetle associated with old orchards (photo: gailhampshire [CC BY 2.0; https://creativecommons.org/licenses/by/2.0/]).

The role of old orchards in supporting biodiversity

Old orchards abound in common species, and are thus refuges for abundance, but they also support certain threatened invertebrates, such as the noble chafer (People's Trust for Endangered Species, 2019; Figure 12). The larval stage of this beetle feeds on rotting heartwood within live trunks and branches, favouring mature fruit trees. Another threatened species that depends on rotting heartwood and is associated with this habitat is the orchard tooth fungus, while the old bark of the fruit trees provides a substrate for a plethora of lichens and bryophytes (People's Trust for Endangered Species, 2019).

Role within a future ecological culture and economy

A recurring theme in the examples of co-created habitats has been their potential role in a future ecological culture and economy. Significantly, each has cultural heritage predating the watershed of the industrial revolution. Each was thus born in an era of simple tools, such as handsaws, scythes and rakes, rather than great machines. And each offers not only a liberation from the destructive nature of approaches to land management forged by industrialism but also a roadmap for the "revival" of "forgotten skills" that Victor Postnikov (2018: 148) has called for in his vision for a culture of simplicity and creativity. Similarly, the co-created

habitats discussed represent pieces in the puzzle for John Michael Greer's (2009) vision of an 'ecotechnic' future.

In addition to the benefits of co-created habitats for non-humans and humans that have been described above, it should be mentioned that these places also offer great scope for fostering connections with nature – through immersion, learning, working, participating and simply breathing – including in people who may not have been lucky enough to have previously had such 'nature exposure' in their lives.[9] These connections are essential, I believe, if an ecological culture is to become widely established.

The wider landscape context

As I note in the 'Extent' condition of my delimitation, traditional anthropogenic habitats should be set within an ecosphere that evidences a major stepping back of humans. As part of this stepping back, our agricultural practices must be re-shaped to support and mesh harmoniously with non-human life, rather than obliterating it, and we must greatly reduce our plundering of aquatic life. Extractivism must be superseded by a circular material economy. And independently of reforestation efforts – for which only a 'one-time carbon win' is available in any honest accounting system (Rackham, 2012) – we must dramatically reduce our release of gases contributing to climate breakdown.

At this wider scale, then, traditional human-shaped habitats – like human settlements and ecological agriculture – should form relatively small patches within a greater rewilded landscape. But this does mean that their role is insignificant. First, co-created habitats are unique and thus complement the variety within a wider rewilded landscape. Secondly, they can serve as 'reservoirs' from which biodiversity can radiate again once the time comes. Thirdly, they are an insurance policy. On this last point, I believe that ecocentrically minded conservationists must be realistic about the chances of achieving large-scale rewilding and keep options open for biodiversity in a landscape that retains a strong human presence during a protracted collapse.

Closing remark

At a time when the conservation movement is struggling for traction on a greased slope, I believe that we should see the types of co-created habitat that I have discussed – tempered by my proposed delimiting conditions – as a gift. We know that they can offer broad benefits for non-human life, especially when they are not being driven by narrowly focused human needs, and, along with protected wild areas, they represent an additional effective means of widening the bottleneck through which life is passing. ■

Acknowledgement

I am very grateful to Eileen Crist and Chris Gibson for their constructive comments on this article.

Notes

1 I describe this mental journey in Gray (2017).

2 In this piece, I have side-stepped the term 'wilderness' and the ongoing debate on its reality and relevance. To properly dissect the various arguments would require an article in its own right, and: (a) I doubt I'd do the task justice; (b) there is already an excellent examination of the topic from an ecocentric perspective in Crist (2019: 113–36).

3 This caricature is propagated by conservationists who seek to discredit all intervention-based conservation, as Christof Schenck (2015) seems to do in *Protecting the Wild*, the generally stellar follow-up volume to *Keeping the Wild*.

4 Up till this point, I have used somewhat technical language in order to help set the ideas within the broader literature, and I have drawn terms from the lexicons of conservation and wildlife ecology, which have been shaped by human–nature dualism and anthropocentrism. A word I have used particularly often is 'intervention', favouring it over more domineering alternatives such as 'management' and 'stewardship'. The term 'intervention' fails, though, to erode that dualism and fully support ecocentrism. I am thus grateful to Eileen Crist, co-editor of the present special issue, for suggesting an alternative: *co-creation*.

5 A lighter alternative to conservation 'exit strategies' has been proposed by Shefferson *et al.* (2018): "Conservation biologists should incorporate evolutionary prediction into management planning to prevent the evolutionary domestication of the species that they are trying to protect."

"Co-created habitats can serve as 'reservoirs' from which biodiversity can radiate again once the time comes."

"At a time when the conservation movement is struggling for traction on a greased slope, I believe that we should see the types of co-created habitat that I have discussed as a gift."

6 The extinction of the wild boar and local extirpations of red deer would also have been significant for ecological dynamics. Countering this somewhat in recent decades has been the increasing populations of several species of wild deer.

7 For readers who are against the idea of using domestic animals, it should be noted that scything alone is adequate for humans to fulfil their part in co-creation.

8 I am aware that some readers will be against the idea of repeatedly cutting trees back to their stools, but I would challenge them to offer greener alternatives to the materials that are taken from the wood and also stress that some wood removal is needed, in any case, in order for the shifting glades to persist. Additionally, I would refer these readers to my set of conditions that delimit such habitats within ecocentrically minded conservation.

9 Conversely, there is a need to guard against excessive recreational pressure on such habitats. Horse riding and motorcycle use can be very detrimental to heathlands, to give one examples (Buglife, 2019a).

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