

Rewilding – implications for nature conservation

Rewilding has fired the imaginations of many, but much misunderstanding remains around what rewilding is and how it could be put into practice. Is it being put forward as a panacea, or can it be integrated with more traditional conservation measures to create a more comprehensive approach to conservation? Might traditional nature conservationists and 'rewilders' meet in the middle to forge a more ecosystems focused approach to wildlife conservation?

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Why has rewilding emerged?

Halting the global decline in biodiversity is an enormous challenge. Numerous international and national reports have documented that, despite important successes, nature is still in alarming decline.^{1,2} In light of this, many feel there is an urgent need for innovation to develop and implement new approaches to conservation. Rewilding, which primarily seeks to restore ecological processes by reintroducing species and lessening human pressures on nature, has been suggested as such an innovative approach. Proponents of rewilding, be it Trophic³, Pleistocene⁴, or Passive⁵ rewilding, have consistently put forward the idea that the reinstatement of ecological processes, such as predation, seed dispersal and hydrology, will lead to the re-establishment of more functional ecosystems that better support all the species dependent on them.^{3,6} It is proposed that this would reduce the need for the perpetual management of species and their habitats, and so increase the sustainability and cost-effectiveness of nature conservation. How this is achieved is a different matter. A number of questions abound, such as, is rewilding a panacea that will replace species and habitat management entirely? How would a rewilding plan be drawn up and put into practice? And, will it actually help halt the decline in species richness and abundance?

Is rewilding a universal remedy?

In a recent paper that garnered considerable media attention, Nogués-Bravo et al.⁷ stated that rewilding is being put forward as a potential panacea for the conservation of biodiversity. The authors articulated a fear in the conservation sector that rewilding is being proposed as a totally alternative approach to traditional on-the-ground conservation management. While many proponents of rewilding believe all land and sea could be wilder and would like to see the restoration of large wild places in Britain and the rest of Europe (see www.RewildingEurope.com and www.RewildingBritain.org.uk), I have not seen evidence to suggest that rewilding proponents are calling for rewilding to replace conservation management wholesale or that everywhere should be turned to wilderness. On the contrary, the original rewilding paper, by Soulé and Noss⁸, is titled: 'Rewilding & Biodiversity:

Complementary goals for Continental Conservation'. The word biodiversity here refers to traditional conservation management, and Soulé and Noss go on to make the case that 'biodiversity protection plus rewilding equals conservation'. Soulé and Noss's position seems consistent across the rewilding literature with authors advocating caution when implementing rewilding, indicating that different degrees of rewilding should be applied in different circumstances, and that some management is still likely to be necessary in most situations.^{3,4,6,9}

Glossary

Trophic rewilding: "is an ecological restoration strategy that uses species introductions to restore top-down trophic interactions and associated trophic cascades to promote self-regulating biodiverse ecosystems".³

Pleistocene rewilding: is the restoration of missing ecological functions and evolutionary potential lost as a result of the Pleistocene megafauna extinction using extant conspecifics and related taxa.⁴

Passive rewilding: is where ecological processes can reassert themselves as human impacts lessen as a result of, for example, agricultural land abandonment.⁶

How could rewilding complement conservation management?

So how could rewilding complement more traditional approaches to species and habitat conservation? In broad terms, conservation management has focused on the conservation of rare and threatened species. Internationally, and in Britain, this approach has achieved important successes, preventing a host of species declining towards extinction.¹⁰ However, nature as a whole has continued to decline, meaning more and more species are becoming threatened², more money and resources are



Wild boar at the Alladale Wilderness Reserve, Caithness.
Photo: Chris Sandom

needed to conserve them¹¹, and there is an increasing risk that the capacity of ecosystems to cope will be exceeded.¹² This highlights that the conservation sector has been good at triage and emergency care, but, so far, has failed to find a long-term solution to allowing nature to recover its health. The rewilding community hopes such a sustainable conservation solution can be achieved by switching focus from managing for specific species to restoring ecological processes that allows ecosystems to care for the species depending on them. There is also evidence that more traditional conservationists also feel a change in focus is needed. In a Natural England report, Webb et al. highlighted many of these concerns with species targeted conservation, and presented a case for using conservation management to create and maintain dynamic and structurally variable conditions within broad habitat types to support a full diversity of threatened and common species.¹³ The report went on to identify the suite of conditions British Biodiversity Action Plan (BAP) species need to survive. For example, in the upland habitats, BAP bryophytes and invertebrates are strongly associated with, and we therefore surmise benefit from, permanently wet habitats, sphagnum moss, shallow pools with low vegetation cover, high water quality, and low pH. In woodland, BAP species are associated with one or more of the following structures: veteran trees within wood-pasture (41% of woodland BAP species); sheltered grassy and heathland habitats which grade into woodland (40%); a closed canopy (23%); scrub mosaics (28%); areas that have been clear-felled or coppiced (8%). In grassland habitats, BAP species are associated with a particular form of sward, such as open and short, tall/tussocks, or a combinations of sward types (59%); or early successional habitat and bare ground, often in a mosaic of other vegetation communities (43%). Webb et al. concluded that “the general tenet is that structural diversity at both small and large scales is very important [to conserve these species]”.

The Webb et al. report highlights that to conserve species, habitat management cannot be generic and static; it cannot manage landscapes to conform to a perceived ideal stable structure, but must be dynamic in creating a mosaic of conditions that vary in both space and time. Habitat management should, therefore, create these dynamic and structurally diverse conditions. For example, dams can be created and maintained to create permanently wet habitats; selective scrub clearance policies can create wood-pasture or open areas that grade into woodland; areas with no management will allow succession and later successional communities, such as closed canopy woodland, to establish; and clear-fell and coppicing can be used on a micro scale to create a diversity of woodland conditions; spatially varied mowing or controlled grazing can create diverse sward heights at micro scales; and labour or machinery cannot be used to create new patches of bare ground.

Alternatively, from a rewilding perspective, ecological processes could be restored that would create and maintain these structurally diverse conditions. For example, beavers dam watercourses, creating permanently wet habitats, with shallow pools and higher water quality.¹⁴ Grazing and browsing by a diverse community of spatially dynamic herbivores can create variable sward heights and prevent trees establishing in some places, while in other regions succession can advance because the herbivores can not reach those places or are too fearful to go there because of



Wild boar rooting signs amongst the Caledonian forest.
Photo: Chris Sandom

predators¹⁵ – providing those predators are present, of course. Wild boar are the rotavators of the natural world: they can create tens of meters squared of bare ground every week in the uplands.¹⁶ Megaherbivores, such as elephants, that were present on all the continents except Antarctica until the Holocene (including being present in Britain), push over and trample trees, in effect coppicing them or creating open areas.^{17,18}

Putting a complementary approach into practice

The above are a small set of examples where the needs of threatened species could be provided for by management or, if plant and animal communities could be restored and left unmolested, by ecological processes. But where can or should fully intact communities be restored and protected? As Soulé and Noss⁸ also pointed out, the theory of island biogeography means that if nature is to be conserved by wild ecosystems alone, enormous (perhaps even continental) areas are required. Natural variation in smaller and more isolated ecosystems increases the likelihood of certain conditions being absent at any particular time, threatening the species dependent on those conditions. Smaller areas also mean the large species that require large spaces cannot be reintroduced, or if they are released they interact too strongly to create diverse conditions. Past species extinctions, particularly the loss of the megafauna, means that species that have provided important processes in the past cannot be reintroduced today. Under these circumstances only an incomplete set of ecological processes can be restored. If the aim is to prevent the loss of biodiversity, then species and habitat management, implemented to replicate dynamic and variable ecological processes and to preserve species pushed to the brink, is likely to be an essential and complementary approach to rewilding.

It should be the role of ecologists, practitioners, and policy-makers to decide which ecological processes are possible, practical, and desirable to restore where. Factors

such as the size of the site, local social and economic circumstances, the condition of the ecosystem and much more besides will influence the decision making. Where species can be reintroduced or management relaxed, the ecosystem will be a little wilder; where they cannot, conservation management will help maintain the diversity and abundance of nature. Much work still remains to be done to tease out all the overlap between habitat management and rewilding, and I am seeking to work with NGOs to achieve this. But the examples presented here already suggest it is worth exploring where species can be reintroduced and where management can be relaxed to allow nature to manage itself a little more.

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Rewilding – keeping the brand integrity

Rewilding offers an exciting opportunity to reconsider our attitudes and approach to nature. Embracing the idea of self-willed nature offers a challenge to agriculture and forestry, as well to mainstream nature conservation.

But there is a risk that as rewilding gains prominence the core ideals are dissipated as the lexicon of rewilding practice is absorbed into the mainstream. The language of the wild and rewilding seems to have more intuitive public appeal than biodiversity and habitat action plans, and it won't be long before it is purloined by others, but without the essence of what it once was.

The fascination for tracts of wilderness and the reintroduction of large carnivores should be part of a wider examination of our relationship with nature, not just in distant hills, but near to where most of us live.

MIKE TOWNSEND

Challenging the norm

The emergence of rewilding as part of a new approach to nature conservation is founded on a challenge to human domination of land, both within agriculture and forestry, but also within nature conservation. For example, rewilding confronts the idea that uplands managed for farming represents the right and proper use of those areas in support of their landscape and wildlife interest.^{1, 2}

In relation to statutory and voluntary conservation interests, rewilding questions the site-based approach to wildlife protection, founded on the management of habitat for prescribed, often narrow species-based outcomes; a system seen as deeply anthropocentric with species selected on the basis of human preferences.

Treasured landscapes or barren spaces?

One of rewilding's key challenges has been towards the 'treasured' status of many of our iconic protected landscapes, such as National Parks. What has been coined by some as the 'cultural hegemony'³ of historical land use, particularly by landowning interests – whether it is upland sheep farming, grouse shooting or deer stalking.

Many of these landscapes, without the direct influence of humankind, might be forest covered and rich with wildlife, instead of which they are often overgrazed, with monocultures of bracken and stripped of their soils by erosion. Our rural designation systems and institutions celebrate these landscapes, rather than imagining the different and perhaps richer array of wildlife and outdoor experiences if nature was released or liberated from current management regimes.