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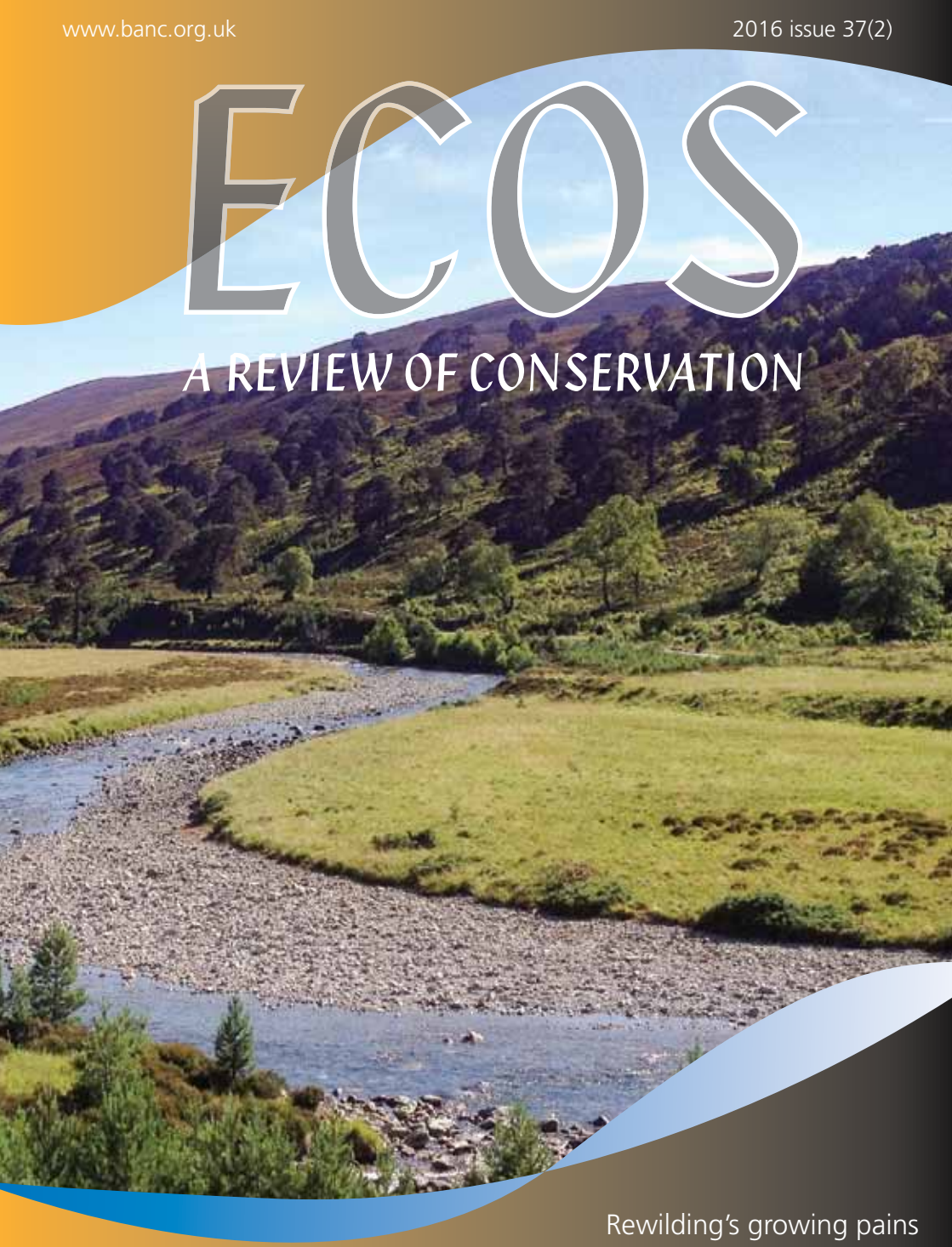

Rewilding's growing pains

Slaying the cultural landscape

Authentic rewilding - the definition problem

ECOS
A REVIEW OF CONSERVATION
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Cover photo: Forest regeneration on Glenfeshie Estate, Cairngorms. Photo: Jennifer Gooden

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BANC
CHALLENGING CONSERVATION

Editorial

Losing control

'Don't be pushy' is the message from Rob Yorke in these pages. He reports views on rewilding from a Cambridge conference hall, from Hay Festival goers, and from a community hall in deepest Monmouthshire. Ecologists at the Cambridge event liked the idea, each with their own conditions. But wanting rewilding on your own terms is a category mistake. Natural processes are just that: natural, unadulterated, uncontrolled. Setting your conditions or tight parameters cannot be rewilding. It was the Monmouthshire locals who sprang the greatest surprise to Rob Yorke. These farmers called a bluff, suggesting they might be open to variants of rewilding, if was brokered, not imposed. We need to take note.

Cue the BBC documentary, Predators in Your backyard. Available on the web at Top Documentary Films, it highlights a prime case of conservationists getting it wrong. It shows examples of bringing back predators in different parts of the globe. Included is a north Italian village where brown bears have been re-established. Numbers have risen from 3 to 60 in recent years, but there's a snag. Nobody considered the apiarists. Brown bears ravage local people's honey collections. Livelihoods are affected and the apiarists have to lump it. No support, advice or compensation was offered to these bee keepers and honey producers. This is a black mark for the brown bear advocates. People will shun wildlife projects, especially with the radical edge of rewilding, if the consequences are unreasonable, or support measures for adapting to a new situation are lacking. Yes, people exaggerate impacts of change, or of wildlife the don't welcome, but rewilding will need collaboration to happen. Vincent Wildlife Trust's re-establishment of mid-Wales pine martens, shown in these pages, is a smart case of engaging people to feel ownership of a project.

After years of slow emergence, and much scrutiny in *ECOS*, rewilding has set roots in the UK and Europe. In fact it may be transforming the fabric of its host organism - nature conservation. Rewildling questions the accountability of long-held views on the states of nature and the ecological succession that we value. Is it an existential debate for our subject? In this *ECOS* package we hear from rewilding's friends and its challengers, and we look at rewilding's gradations and definitions. There is agreement that rewilding brings excitement – but how far we dare upset the cultural landscape is a main sticking point. Some authors see rewilding as a spectrum of approaches, regardless of whether one feels 'wildness' is the ultimate state of nature and human experience.

'Losing control' is a metaphor for these turbulent political times. And as with Brexit, some people are scared, some excited, and others confused by rewilding. Perhaps the only risk is not to embrace the opportunities, but let's do so with humility.

Geoffrey Wain

Rewilding… conservation and conflict

Those with an eye to the ecological potential of the UK will probably like rewilding. Those rooted in targets and condition statements or those with purist views of cultural landscapes may find rewilding awkward. This article discusses the themes and barriers to rewilding thrown up by current conservation practice and in doing so, hopefully identifies some solutions and compromises across different conservation mindsets.[1]

STEVE CARVER

What is rewilding?

This might seem like a daft question to regular readers of *ECOS* but it's probably worth establishing some core definitions of rewilding , as below, to minimise confusion.

Rewild (verb) to restore an area of land or whole landscape to its natural uncultivated state often with reference to the reintroduction of species of wild plants or animal that have been lost or exterminated due to human action.

Rewilding (gerund or present participle) is a conservation approach aimed at restoring and protecting natural processes in core wild areas, providing connectivity between such areas, and protecting or reintroducing keystone species (which may or may not include large herbivores and/or predators). Rewilding projects may require active intervention through ecological restoration, particularly to restore connectivity between fragmented protected areas, and the reintroduction of species of plants or animals where these are no longer present.

The term rewilding was first used in print in 1990[2] and later clarified by Dave Foreman.[3] It was then refined by Michael Soulé and Reed Noss in 1998 to refer to "the scientific argument for restoring big wilderness based on the regulatory roles of large predators".[4] Their work focused on North America, recognising what were the three independent features that characterised contemporary rewilding, of "Cores, Corridors and Carnivores", and which has been adopted as the *raison d'etre* for Dave Foreman's Rewilding Institute.[5] In Europe the concept of rewilding has become distorted and diluted by geography, nature and culture. Some will say that most of Europe is too small, too heavily populated and too heavily modified to adopt such principles of continental scale rewilding initiatives that might appear threatening to cultural and political sensitivities. Or is it? May be this is just a convenient ruse perpetuated by land managers and conservation professionals to stifle a different view about the future of nature conservation in Europe?

As with many evolving ideas, we need to take a broad rather than restricted view of rewilding to appreciate its varied flavours and nuances. The following

Figure 1. **A simple classification of rewilding**

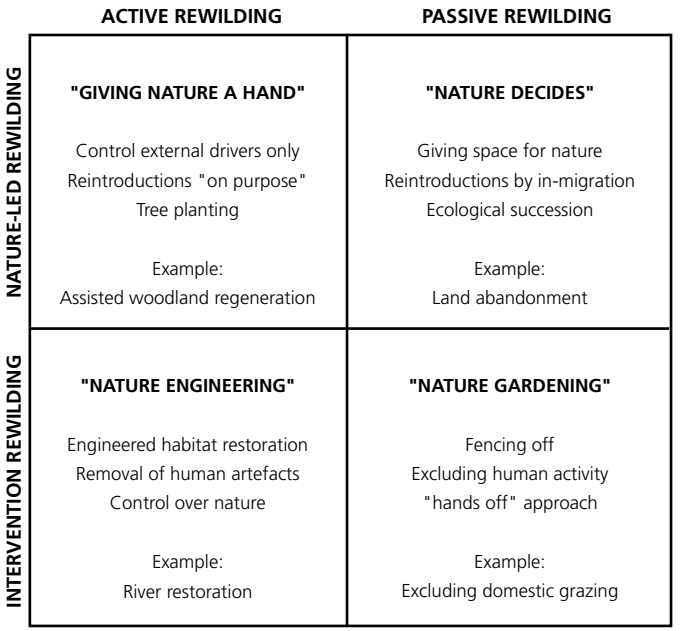


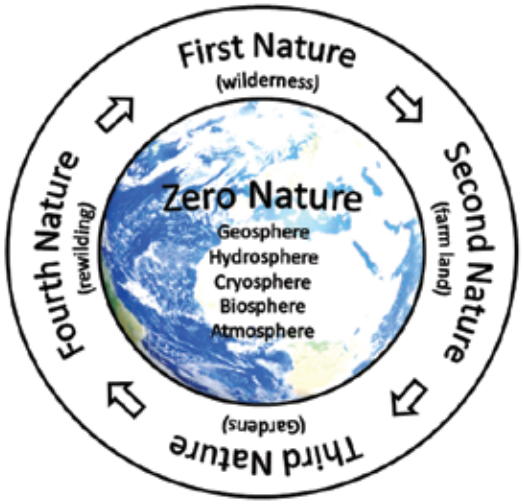
diagram categorises rewilding into active or passive and interventional or nature-led approaches.

Debate about rewilding's meanings has not been helped by the misappropriation of the term by anyone with an agenda involving some aspect of conservation that moves us towards a wilder nature, whether that is based on genuine ecological principles or not. Rewilding has become a many-flavoured thing, creating confusion, especially among the media-fed majority that restricts its coverage to red-top, headline grabbing stories about large predators and their supposed appetite for sheep and family pets. Even within the rewilding fold, the term has itself generated debate and disagreement.[6] While its origins are rooted in our ancient past and our developing relationship with nature over the centuries[7] some organisations have claimed it as their own; inventing and reinventing the basic concept several times.[8] Rewilding comes with many challenges, not least in upsetting the *status quo* of traditional conservation practice, namely keeping nature firmly in its place where it cannot inconvenience human interests.

The challenges of rewilding

As I have described previously in *ECOS*, I see the world as a series of interlinked continua and approaches.[9] Whatever flavour rewilding you choose, it can sit somewhere on the human-landscape-ecological modification spectrum as a 'process' that moves us towards a wilder and more natural ecosystem. The trajectory should always be unidirectional regardless of the means or the ends.

Figure 2. **The cycle of nature-culture (After Carver, 2013)**



Rewilding recognises that landscapes and ecosystems are dynamic and in a constant state of flux, responding to both the natural and human drivers that govern the world. Generally speaking, people don't like change and we like to assume a level of control over nature that in reality we don't have. We are also taught to believe that the nature of the recent past of a low intensity agricultural system, is the 'good' nature that we need to conserve and celebrate. Rewilding challenges that world-view by taking us beyond that 'good nature/bad nature' mindset into recognising that nature doesn't work to human rules. This inevitably results in different levels of conflict across a range of issues from human-nature relationships, cultural anxieties, political drivers and the neoliberalisation of nature. I consider each of these points below and consider their implications for rewilding.

Nature-culture

I dislike and distrust the whole 'nature as culture' thing. At best it is an academic distraction, and at worst it is a conspiracy aimed at undermining our appreciation of wilderness and wild nature. Nature itself isn't a human construct and it never was. Rather our view and understanding of it is. No amount of (re)imagining and (de)construction of nature is going to change a thing. Nature just is. Attempts by intellectuals[10], academics[11] and more latterly the eco-modernist movement[12] to discredit the notion of wilderness, of raw nature outside of human control and modification, are for me akin to heresy. As humans we have modified and shaped nature to suit our own needs but this hasn't altered the laws of nature and the natural processes that govern the natural world. Even climate change doesn't alter the fundamental ways in which nature operates, though it does have implications for future nature - the winners and losers, the patterns of wild nature and the impacts of what might be seen as "unnatural" patterns in natural processes such as extreme weather patterns and species range shifts.[13]

Culture-nature

Another aspect of rewilding that creates problems for some commentators is the notion of "cultural severance" which suggests that allowing nature space to determine its own trajectory is somehow inimical to our relationship with nature and leads to a "dereliction" of those landscapes and biodiversity dependent on traditional land management practices. This erroneously labels rewilding as the bad guy by lumping it into the myriad list of causes of degradation of nature in the British countryside.[14] Cultural severance is seen as somehow unique to the post-modern world, reacting falsely to what are seen as "bad changes" in the light of shifting baselines, whereas in reality it is just another continuum. Thus nature conservation based on yesterday's landscapes is all very well, but what about the landscapes further back in time for which we only have written or archaeological evidence? The notion of using the past as a marker, is indeed out-dated, because we should be thinking about the landscapes of tomorrow, in which rewilding can help ensure a place for new nature. While recognising the importance of some traditional and semi-natural landscapes for their cultural interest, we cannot preserve everything in aspic nor constrain wild nature to such a rose-tinted world view. Nature conservation takes place along a more extended temporal continuum and cannot be rooted in one moment no matter how appealing and bucolic the scene. The author James Mackinnon asks "How do we live in a wilder world? And what is the wildest world we can live in?".[15]

Targets vs trajectories

When I initially wrote this we were still in the EU, but I'm sorry to say that party is now over. What happens next is anyone's guess, but I do worry that nature conservation and forward thinking about new nature may not be at the top of everyone's agenda. However, despite the uncertainty, there is the promise of new opportunities to replace the perversities of the CAP and its impacts on nature conservation with something more eco-centric.[16]

Brexit aside, the policy directives from Europe have mirrored the ethos of UK nature conservation over the last 40 years or so, thus placing it in a continental European context. However, EU nature legislation is not without its faults and a climate of targets and condition statements has restricted some of our thinking when it comes to wild nature and natural processes. So much of current UK nature conservation policy and practice is enshrined in protecting species and habitats, the patterns of which mainly stem from traditional land management practices. Thus much of the UK's nature is present as a consequence of its ability to adapt to the ecological niches provided by farming, forestry, fisheries and other land uses. The EU Habitats Directive reinforces this approach by setting favourable conservation status on the conditions for which a site was originally designated. Thus a site designated for, say lacustrine freshwater species and habitats, would be deemed as failing under favourable conservation status (FCS) guidelines if it were to silt up (itself a natural process) and become a reed bed (itself a valued habitat type). There is little or no scope for natural ecological succession under such rulings and therefore rewilding is seen as contrary to these rules. For this reason, there have been calls for modifications to the Habitats Directive to allow natural succession to be the FCS for

selected landscapes.[17] Protection for an increasing presence of wilder land arising through non-intervention will need a readjustment in the way nature conservation is viewed, and so the WRi called for strict protection to be recognised as part of the designation system for protected areas (see box) .[18]

Fear of the unknown and the Neoliberalisation of nature

Amongst land owners and managers there is a desire to remain in control. Farmers, foresters, gamekeepers, water companies and the like all have strong reasons for

Text from A Vision for a Wilder Europe[18]

Whenever possible "non-intervention management" should be an underlying principle for nature conservation in Europe, especially for the wilderness and wild areas. Natural processes should be allowed to function unhindered, especially in the larger and wilder areas, but the potential for this in many other locations should also be explored, especially in a wider land/seascape perspective. Improved natural resource management systems with more and larger sanctuaries where human land use (e.g. fishing and hunting) is not allowed must be installed, which ultimately will benefit both nature and human users. Natural processes should be seen in the context of four basic conservation principles:

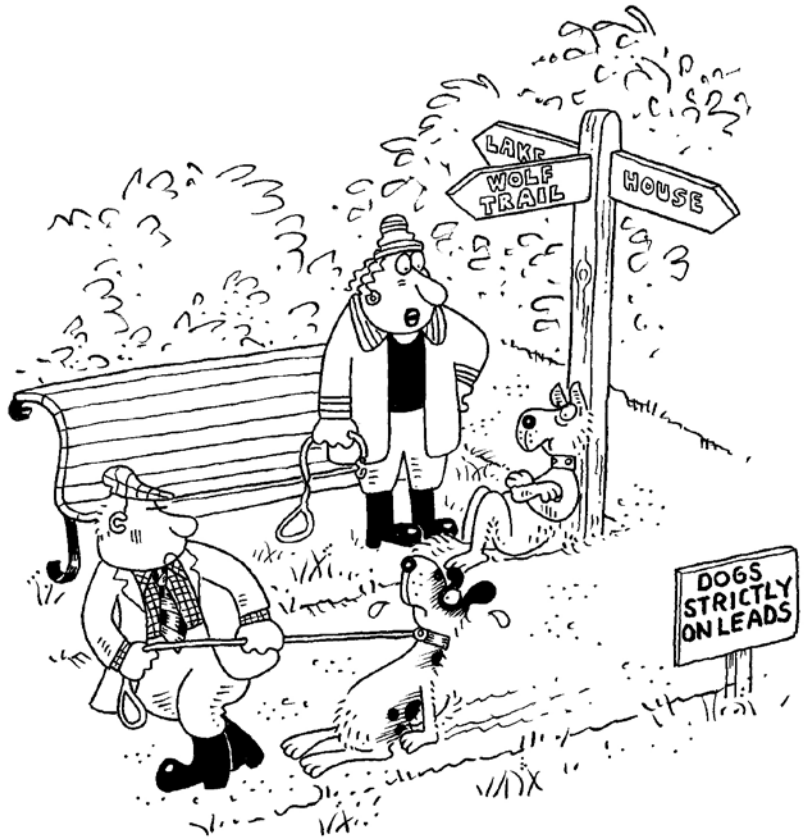
All the native ecosystems should be represented in a protected area system and conservation landscapes;

Viable populations of all native species should be maintained and allowed to fluctuate in a natural way, including dispersal through ecological corridors;

Ecological and evolutionary processes such as free-flowing rivers, wind, snow, herbivory and carnivory must be ensured; and

The conservation landscape should be designed and managed so that it is resilient to both short-term and longer-term change, such as climate fluctuations, through establishing greater ecological connectivity.

This will generate a higher-functioning and 'wilder' nature in Europe that operates far better than in 'managed areas', with more cost-effective management systems being less dependent on unpredictable shifts in the economic system, and thus create a more sustainable future for most animal and plants species. Naturally functioning ecosystems are also more robust and less vulnerable to external impact, thereby delivering better environmental services such as clean air and water, protection against flooding, sea level rise, and human caused fires, and adaptation to climate change. This approach is already possible within existing European legislation and it is more a task of making it happen, for instance, by identifying areas where natural processes can be an essential tool for achieving "favourable conservation status". The management concepts identified as part of the new "Working Definition of European Wilderness and Wild Areas" should be promoted.



NEIL BENNETT

wanting to maximise the "known knowns" and minimise the "known unknowns" (to borrow from Donald Rumsfeld). For these people the "unknown unknowns" are just downright scary, especially when it involves nature that is red in tooth and claw! For years the nation worked hard to reduce the unknowns in the effort to secure predictable supplies of food, fuel, fibre and other resources from our land. As a result, our nature has been truncated and curtailed through the systematic removal of 'pests' and 'vermin' and other species that would otherwise be deemed 'useless' to economic land use. Adding rewilding to the mix alongside climate change and economic recession, just to put these species back and relinquish hard-won control, must seem like madness to some folk. Even in the conservation sector there is a desire to remain in control of nature. There is the view that if we leave nature to its own devices it'll either fail to flourish or it'll rampage uncontrollably over our micro-managed nature sites (and adjacent farmland) doing things we don't want it to or didn't expect. Hence the belief that we must actively manage, manicure and manipulate nature for its own good, keeping it in its designated place.

The conservation agencies' work is seen as essential in maintaining ecosystem services for the benefit of the UK population. Economics has long neglected the

role of commons-type resources such as air, water, oceans, etc. and the natural processes that support, regulate and provide these services. However, recent years have seen an increase in the valuation of ecosystem services through programmes such as the Millennium Ecosystem Assessment, The Economics of Ecosystems and Biodiversity (TEEB) and the Natural Capital Committee. This emphasis on economics and a 'what's in it for us?' ethos represents a neoliberalisation of nature[19], whilst ignoring the difficult to quantify, ethical, moral and intrinsic values of wild nature.[20] I appreciate this economic justification of the importance of nature, but it is too anthropocentric and needs balancing with a symbiotic appreciation of bio-centric values.

It boils down to nature which is convenient and unchallenging versus nature that is more scary and unknown. The former is represented by current conservation policy and practice in the UK, beholden as it is to land-owning interests, while the latter is represented more by the rewilding movement.

Brave new worlds?

There is an urgent need to better integrate rewilding into mainstream conservation and avoid a head-to-head conflict. There are encouraging signs that this is already happening as rewilding gains ground and elements of the rewilding ethos find their way into policy and practice. A good example is Natural Flood Management (NFM) wherein river systems, riparian zones, floodplains and even whole catchments are being allowed to develop more naturally, either through engineered or more *laissez-faire* approaches, to benefit water quality and wildlife, and reduce downstream flooding.[21] Other examples include managed coastal retreat/realignment, rewetting of peat soils, reforestation of former grazing lands, removal of non-native conifer plantations, and in some cases, the reintroduction of locally extinct species to their former ranges. These might not be branded as rewilding, but that is what they essentially represent; a shift along the environmental modification spectrum towards a wilder, more natural ecosystem.

With much of the rewilding potential being in land of marginal agricultural value supported by production subsidies from the EU CAP, or the deep pockets of minority interests in grouse shooting or other country sports, this is a serious barrier for rewilding. A further blockage is a conservation industry that helps maintain this status quo despite the obvious negative impacts on a raft of ecosystem service values[22] and is otherwise constrained in its thinking by our statutory system of nature protection and the EU targets and directives. Finally, there is an intellectual back-lash that sees rewilding as a threat to the personal interests of individual academics such as ancient peat cuttings or wood-pasture farming, though this is largely irrelevant beyond the intellectual and philosophical discourse of paper-writing and so presents no real practical barrier.

Rewilding necessarily takes a much longer-term view that spans generations into the future, beyond the shifting baselines of living memory. It is a part of an emerging new outlook in nature conservation; one that has a more diverse set of values, and one that has better relationships with other species, land, sea and the stuff of landscapes (i.e. the zero nature of Figure 2). Views of landscape and nature as something entirely

of human creation are as unhelpful as those that see nature and humans as entirely separate entities. To this end rewilding represents a middle-ground.

Nature-led ecosystems

Perhaps the name 'rewilding' is its own worst enemy? I have always preferred 'wilding' as the 're' can signify turning the clock back to an earlier time before humans came to dominate the world's ecosystems. This is clearly impossible and not helped by maverick papers or projects promoting Jurassic Park style experiments in genetic reconstitution of extinct species. So maybe it's time for a change? A friend has suggested "nature-led ecosystems".[23] This is a highly descriptive, non-pejorative, non-threatening and easily understood term. Maybe it lacks some of the pizzazz of rewilding, but perhaps it might be easier to swallow by those resistant to rewilding ideals and frightened of something that sounds extreme?

The harnessing of nature's capacities to help us with reducing flood risk may be a breakthrough moment. It might help more people understand the short- and medium-term benefits of changing parts of existing landscapes towards being wilder in various ways. In future, landscapes that are celebrated and protected may include places that have experienced deliberate interventions towards a wider ensemble of species which are permitted to develop with minimal intervention because such ecosystem dynamics are appreciated. Fear of the wild habits of floodwater may trump fear of wilding itself, galvanising enough interests to challenge the current approach to taming rather than wilding nature. Time will tell, but the wilding genie is out of the bottle…

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Blocking agricultural drainage ditches has slowed runoff and increased floral diversity, Alladale Wilderness Reserve.
Photo: Jennifer Gooden

The red tape of rewilding

As rewilding gains traction in conservation, a host of regulations and policies makes implementation more difficult. This article summarises results of a study of regulatory barriers to rewilding in the UK and the Netherlands.

JENNIFER GOODEN

Regulatory Context

In recent years, there has been an increasing interest in restoring functioning natural ecosystems[1], a phenomenon reflected in the growing attention on rewilding. As a form of conservation, rewilding operates in the context of regulations and policies that govern biodiversity, agriculture, animal welfare, and public safety. The institutions related to these sectors specify the rules of the game,[2] encoding the values, management practices, and scientific knowledge of the time of their establishment. Yet, as a result of its departure from mainstream conservation approaches, rewilding encounters friction with governance institutions. My research used a barrier analysis approach, a method drawn from research on adoption of energy efficiency measures,[3,4] to identify the tensions between rewilding projects and the regulatory environment in which they operate in the UK and the Netherlands.

The barrier analysis involved two steps: First, identification of a range of barriers and disincentives from a literature survey, 9 site visits, and 18 semi-structured interviews with rewilding practitioners; Second, a survey based on the barriers and disincentives identified in step 1, distributed to all interviewees, in which respondents rated each identified barrier based on the extent to which it hindered his/her work (n=11; multiple respondents from a single site were weighted for equal representation by site).

Information was collected at sites considered representative of rewilding projects in the UK and Netherlands (see list below).

Study Sites

Name	Location	Landowner	Size	Established
Alladale Wilderness Reserve	Scotland	Private	8,000ha	2003
Blaeneinion	Wales	Private	30 ha	2004
Cairngorms National Park	Scotland	Various	450,000ha	2003
Cambrian Wildwood	Wales	Wales Wild Land Foundation	N/A	Organization formed
Dundreggan Estate	Scotland	Trees for Life	4,000ha	2008
Ennerdale	England	Primarily Forestry Commission National Trust, and United Utilities	4,700ha	2002
Knepp Castle Estate	England	Private	1,400ha	Rewilding activities began in 2001
Millingerwaard	Netherlands	Forestry Commission	375ha	Mid-1990s
Oostvaardersplassen	Netherlands	Forestry Commission	6,000ha	1968
	Staatsbosbeheer			

Policy barriers to rewilding

The policy barriers that emerged from the barrier analysis are set our below, placed in order from greatest to least hindrance.

Dangerous and wild animals regulations: In the UK, the Dangerous Wild Animals Act of 1976 protects the public from kept wild animals and requires that proper care be given to animals. Rewilding practitioners saw these regulations as significant barriers to rewilding, particularly requirements to keep wild animals in enclosures, to obtain permits or licenses to release formerly native animals outside enclosures or keep them inside enclosures, and to protect public safety. Some interviewees saw fencing as a necessary short-term measure to achieve long-term goals, such as forest regeneration, while others saw enclosures as antithetical to rewilding. Barriers concerning keeping and release of animals were apparent in site visits and emerged strongly in the survey, especially amongst privately owned sites.

Konik horses at the Oostvaardersplassen.
Photo Jennifer Gooden

Animal by-product regulations: To reduce the biohazard risk that decaying carcasses may pose to agriculture, the European Commission's Animal By-Products Regulation, passed in 2009, requires livestock carcasses be collected, transported, treated, and disposed of in accordance with accepted practices. Interviewees from nearly every site said that requirements to dispose of animal carcasses restricted their work by disrupting ecological processes of scavenge and decay. This impact was most pronounced in the Netherlands. Practitioners understood the origin of the regulations, given the importance of agriculture to the economy and culture, yet found that biohazards were not as great at their sites due to comparatively low stocking densities, which lessens the risk of disease spreading among animals. Although animal byproduct regulations specifically allow the feeding of animal carcasses to endangered or protected species of necrophagous birds, wild animals, and other species living in their natural habitat for the promotion of biodiversity, in practice this does not appear to occur at rewilding sites.

Energy policies. The Renewable Energy Directive of 2009 requires the EU to generate at least 20% of electricity from renewable sources by 2020, and some national governments, such as Scotland, have set more ambitious targets. Despite supporting renewable energy in principle, rewilding practitioners found that wind turbine developments and transmission lines in remote areas to be inconsistent with wild lands due to impacts on visual amenity and landscape character. In some instances land potentially available for wildlife management or rewilding schemes has been allocated to wind turbine developments instead because of the lucrative offers available. While noted only in Scotland during the interview phase, practitioners in all countries reported impacts of energy infrastructure in surveys.

Agricultural policy. Enacted in 1962, the Common Agricultural Policy is one of the oldest and most central policies of the European Union, primarily implemented through direct and indirect financial transfers to producers. Agricultural subsidy was a topic of discussion at nearly every interview, and the breadth of topics illustrated that attitudes about subsidy were complex. The most significant barrier was the distortion of the market, leading to increased land values and continued use of agriculturally marginal land that might otherwise be available for nature. This effect was felt most acutely at sites operated by NGOs.

Agricultural subsidies for specific animals and activities varied in their impact on rewilding. Subsidies for sheep grazing were most detrimental. Subsidies for cattle were seen as detrimental in England, neutral in the Netherlands and Scotland, and slightly positive in Wales. Some subsidies, such as those for heritage livestock breeds, tree planting, and deer culling, were beneficial to rewilding.

In addition, agri-environmental agreements attached to subsidies require land to be maintained in agricultural condition. Rewilding practitioners found that the UK Rural Payments Agency's interpretation of the rules on permanent and temporary 'ineligible structures', such as some trees, streams, and ponds, favor simple, unchanging vegetation structures and impede rewilding activities.

An experimental exclosure at the Oostvaardersplassen showing the impact of grazing.

Photo: Jennifer Gooden

Conservation land designations: Adopted in 1979 and 1992, the Birds Directive and Habitats Directive form the cornerstone of European nature protection. The Birds Directive bans activities that directly threaten birds, places restrictions on hunting, outlaws non-selective and large-scale killing of birds, and promotes research. The Habitats Directive protects over 1,000 endangered and vulnerable species and 200 habitat types of European importance. Designated sites generally require land to be held in "favorable conservation status" for the features for which it is designated.

Practitioners from nearly every site, with most emphasis from those in the Netherlands, described European conservation designations and their national equivalents as barriers to rewilding, describing situations in which sites designated for the protection of particular species or habitats have necessitated halting ecological succession with conservation management. For example, if a site is designated an SPA under the Birds Directive for its habitat for spoonbills, management actions must be organized around the continued provision of shallow wetlands, even though rewilding prioritises ecosystem function over maintenance of specific species assemblages. In general, interviewees understood the conflict to be not with EU directives, but with the way those directives were adopted in national law.

Countryside access: In England and Wales, the Countryside and Rights of Way Act of 2000 and the Commons Act of 2006 grant public access along footpaths and rights of way on private property, as well as broad public access to areas of open land. In Scotland, the Land Reform Act of 2003 extends public access rights to most parks, open spaces, and inland water. While practitioners generally view public access to nature as positive, many sites identified tension between rewilding activities and the activities of people. This trend was strong in England and Scotland.

In some cases, conflict is due to differing underlying goals, such as concern that reintroducing native carnivores, which requires fencing, may conflict with public access legislation.

Rights of common: In the UK, the Countryside and Rights of Way Act (2000), Commons Act (2006), and Crofting Reform Act (2010) subject some privately owned land to rights of common, meaning that one or more people in addition to the property owner are entitled to utilise the land. Management of common land must take into account the interests of both landowners and commoners. Additionally, in England, land tenancies granted before 1984 carry statutory succession rights that pass to relatives upon the tenant's death or retirement. Two tenancies by succession can be granted, so it is possible for the tenant's family to work the holding for three generations with no changes to terms, despite advances in knowledge of ecology and best management practices.

Practitioners at sites subject to common rights for grazing or crofting said common rights can permit levels of grazing that prevent regeneration of vegetation and halt ecosystem succession. However, in Scotland, interviewees also noted the importance of crofting in the context of Scottish history. Its significance to culture was such that rewilding practitioners would not advocate for changes to crofters' rights but instead emphasise the importance of landowners and crofters working cooperatively.

Zoo regulations: The Zoo Directive (1999) was legislated by the European Council to protect wild fauna and preserve biodiversity. The directive defines a zoo as a permanent establishment where live animals are kept on public display for seven days per year or more. Rewilding projects seeking to reintroduce extirpated animals in enclosures can be defined as zoos and therefore be subject to Zoo Directive requirements. While member states have the discretion to exempt entities from the requirements of the directive if they do not display a significant number of animals to the public, zoo regulations were particularly strong barriers at sites under private ownership and sites with an interest in livestock de-domestication.

If a project is subjected to zoo regulations, management must keep animals in a manner that meets their needs, ensuring the preservation of different species (for example, by providing species-specific enclosures and suitable veterinary care), preventing animals from escaping, and preventing intrusion of outside pests.

Regulations may prevent herbivores and carnivores from being enclosed together; therefore, if a perimeter fence is interpreted as an enclosure, even if it is very large by zoo standards, then species may have to be segregated in a way that is counter to predator-prey interaction, which is a goal of many rewilding sites.

Animal welfare: Several legislative instruments govern animal welfare, the most significant to rewilding being the 1976 European Convention for the Protection of Animals Kept for Farming Purposes. Animal welfare standards include, among others, freedom from hunger and thirst; freedom from discomfort, pain, injury, and disease; freedom to express normal behavior; and freedom from fear and distress.

Regulations intended for farmed animals are of particular concern at sites working on de-domestication, as there is a question as to whether hardy herbivores like Heck cattle and konik horses should be treated as wildlife or livestock.

Wild land policy: The absence of a national wild lands policy emerged as a barrier in every country in the study. Scotland's National Planning Framework of 2014 states that wild land is a nationally important asset that merits strong protection, but this was not seen as sufficient to address the limitations of other policy.

Implementation: Rewilding practitioners found the greatest regulatory hindrances to be associated with the way in which government policies were implemented. The unpredictability of government agencies due to changes in ministers and parties, particularly regarding their stances on rewilding, was common across study sites in all countries. In addition, rewilding sites experienced friction with the discrepancy between timelines for government funding and the time needed to allow ecological processes to operate. These barriers are not unique to rewilding, but collectively they were more prominent than any single policy barrier, which may be symptomatic of rewilding's politicisation.

Policy implications

This research identifies regulatory barriers as a first step toward creating an institutional environment that is supportive of rewilding. In addition, while organizations such as Rewilding Europe pursue change at the EU level, this research indicates there is potential for national governments to take proactive steps toward enabling good rewilding practice.

Interviews from the study suggested the following main policy implications which predated Brexit:

The Birds Directive and the Habitats Directive could be implemented in ways that are more sympathetic to rewilding. Most interviewees reported that barriers from conservation land designations operated at the national level, due to EU legislation being implemented more rigidly and prescriptively than necessary.

Rewilding would benefit from modification to biohazard regulations concerning fallen stock. Like conservation designations, this change could be implemented at the national level, as flexibility appears to already be included in EU legislation.

Establishment of national wild land policies could facilitate rewilding. Currently, lack of such policies leaves rewilding in politically uncharted territory, subject to multiple regulatory forces. Wild land policy would not only serve the practical purpose of setting national goals and providing resources, it would also give legitimacy to the concept of rewilding.

Results of this study indicate that policy barriers originating from a variety of legislative measures present a real challenge for rewilding practitioners. Yet study

participants recognized that existing policy embeds its own history and purpose, with objectives that rewilding advocates should take into consideration as they develop a policy agenda. The most fruitful path forward will reconcile rewilding's policy aims with those of existing policy to seek mutually acceptable solutions.

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Saplings emerge through the grasses at a Trees for Life planting site.
Photo: Jennifer Gooden

Wilder visions, wilder lives, wilder nature?

Challenges for a new rewilding charity

As the new charity Rewilding Britain moves into its second year of operation, this article explores some of the challenges faced by the rewilding movement in Britain, and considers how they might be overcome.

HELEN MEECH

Britain is one of the most ecologically depleted nations on earth. We have lost all our large carnivores and most of our large herbivores. While the average European forest cover is 37%, ours is just 12%. Our ecosystems have almost ceased to function. Because of the absence of trees and loss of soil, our watersheds no longer hold back water, with rainfall flashing off the hills and causing flooding downstream. Species are declining, and space for nature is limited to small reserves that are disconnected from each other and the natural systems that should support them.

Rewilding offers a chance to reverse that: a chance to bring nature back to life and restore the living systems on which we all depend. A chance to work with communities to restore to parts of Britain the wonder and enchantment of wild nature; to allow magnificent lost creatures to live here once more; and to provide people with some of the rich and raw experiences of which we have been deprived.

About Rewilding Britain

Rewilding Britain was set up to promote the large scale restoration of ecosystems in Britain, on land and at sea. We believe it is not enough merely to try to preserve tiny fragments of our wildlife. Meaningful conservation must involve restoring natural processes and re-establishing missing species. The animals we lack, such as beavers, boar, lynx, wolves, large tuna, pelicans, cranes and storks, are not just ornaments of the ecosystem - they have a role as ecosystem engineers and are essential to an effectively functioning environment.

We want natural ecological processes and key species to return to at least one million hectares of Britain's land and 30% of our territorial waters over the next 100 years.

By 2030 we would like to see 300,000 hectares of core land areas and three marine areas established where nature is starting to take care of itself and key species are starting to become re-established.

What would a rewilded Britain look like?

Imagine wild rivers and regenerating forests creating complex, unpredictable landscapes inhabited by keystone species. Then imagine continuous wildlife corridors through productive farmland lining these places into the heart of our cities and towns.

Imagine the delight of seeing cranes feeding on the mudflats of a great estuary and pelicans flying out to their fishing grounds. Vast shoals of salmon and sea trout pushing their way up the river and otters, boar and (in remoter areas) lynx flourishing and playing their role as ecosystem engineers. Beavers are building dams in the tributaries which slow down the river flow, reducing flooding and creating rich habitats for other species. On the uplands there is a rich mosaic of forest, glade and wild pasture that is allowed to shift and change.

Nature-based tourism is flourishing and bringing income and opportunities that help young people stay in their communities. Upland farmers with diversified income through tourism and rural enterprises are being paid to be stewards of a diverse landscape that produces a range of environmental benefits for towns and cities many miles away.

Within the century everyone is living within 20 miles of an abundant, thriving living system and school children spending at least one day a month in one of these wild places.

Hopefully this sounds appealing. But how do we make it happen?

Turning the vision into reality

The traditional change model for the environment over the last few decades has been a combination of direct delivery - with large sums being raised privately to buy land to be turned into nature reserves - and policy campaigning, involving gathering evidence and public support to demand change. This has resulted in a network of protected sites for nature in public and private hands, a suite of environmental policies and a dependency on state funding for their management.

The new political realities require a new model for change. Environmental NGOs, who have been the principal advocates for change, have reduced influence over political thinking and policy formulation; there's evidence of widespread public apathy and disengagement which reduces the reach and impact of NGO-led campaigns; and the tried-and-tested tools of public spending and regulation are diminished or considered off limits.

The ambitions of Rewilding Britain require no less than a generational shift in our approach to land use and relationship with the wild, with sustained effort for a decade and beyond. This means we need to think radically about creating agency for change, with a dispersed "surround sound" strategy that seeds the campaign for change across a range of institutions and sectors.

Riparian restoration on the Upper Carron in Glen Mor, Alladale Wilderness Reserve.
Photo: Jennifer Gooden

A shared goal?

The first step in developing any new campaign is clearly defining your goal. This is a challenge for the movement because rewilding does not attempt to produce fixed outcomes. It sees dynamic ecological processes as an essential, intrinsic aspect of healthy living systems.

There has been much debate about how to define rewilding, which includes discussion of approach – should rewilding be active or passive? Should our baseline be Pleistocene or Holocene?[1] Was Britain once covered with closed canopy forest, or a more open wood pasture? There is a risk we spend too much time focusing on "getting it right" rather than just getting on with doing something which offers a wilder future. We can't go back in time. Rewilding is about going forward, and embracing a realistic, resilient ecology.

Perhaps we should acknowledge that the rewilding movement in Britain is in an innovation phase, agree a headline goal of natural process restoration, and then develop a variety of projects using a variety of approaches? This should not be seen as a weakness, but as an opportunity to test, trial, learn and evaluate – to take inspiration from the lean start up movement that has proven so successful in the digital industry[2] - and to develop approaches as we learn more about what works best, and grow more confident in allowing nature space to do its thing.

Who pays?

The second major challenge is funding rewilding. The subsidy system works against rewilding, with no consistent valuation of non-market public goods. There is a need for positive incentives for farmers, land managers and land owners to "do the right thing". We believe farm payments should evolve to incentivise ecosystem restoration, with a focus on payment in return for public goods.

Forest regeneration on Glenfeshie Estate, Cairngorms National Park.
Photo: Jennifer Gooden

The work of the Natural Capital Committee has achieved some impact by revealing the contribution of natural capital to national wealth and prosperity. This approach is increasingly aligned with the thinking of progressive companies, who are developing methodologies for calculating and capturing the value of natural capital to their business. There is potential to explore new economic models for rewilding, including wildlife tourism, rural enterprises, flood alleviation, water quality, carbon credits and landscape bonds.

But the policy and funding shifts that are required to create an enabling framework for rewilding in Britain will take time to come to fruition. Which is why in the short term we believe seed-funding is needed to catalyse rewilding projects. In a similar way that the Nature Improvement Areas (NIAs) were established through a competitive process, we hope to establish a challenge fund for rewilding. The advantage of this approach – proven so successful by the NIAs – is that it brings together a consortia of the willing, empowering communities and landowners to make a positive difference to the quality of their local natural environment.

A complementary approach to nature conservation

One frequently cited concern is that rewilding risks "throwing the baby out with the bathwater" by reducing management of nature reserves. Rewilding should not be seen as an alternative to traditional nature conservation, but as a complementary approach that allows a shift from protection to protection *and* restoration.[3] It's an extension of the "Making Space for Nature" approach of "bigger, better, more joined up" The graph opposite is borrowed from Sir John Lawton. He argues rewilding is about the process of moving conservation from the top left of this diagram towards the bottom right – about making space for nature at a larger scale, and reducing management intervention as a result.

Shifting the baseline?

Empowering communities and landowners needs to lie at the heart of any strategy to rewild Britain. Perhaps the biggest challenge is to rewild ourselves: to rediscover the visual, physical and psychological benefits of being immersed in wild nature, to increase our tolerance of other species and to create more demand for wilder places. Because the more nature we get, the more we want. And wanting more nature is important. We need to capture hearts, not just minds.

In 1995, fisheries scientist Daniel Pauly coined the phrase "shifting baseline syndrome" to describe the tendency of a generation to assume that the world it grew up in was normal, and that any conservation or restoration should be to return the world to that experienced point. It results in a collective and continual lowering of standards, imperceptibly but indefinitely.

Rewilding offers a chance to reverse that, to consider not what was, but what might be, if we give nature a chance.

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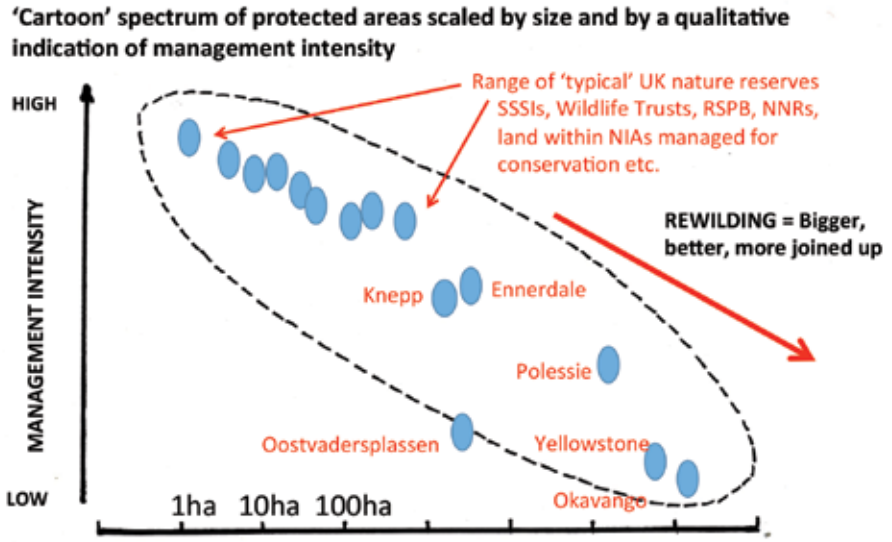

Rewilding – implications for nature conservation

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?

CHRIS SANDOM

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 Trophic[3], Pleistocene[4], or Passive[5] 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 Noss[8], 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 threatened[2], more money and resources are

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

needed to conserve them[11], 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 cerate 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

predators[15] – 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 Noss[8] 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.

These views are challenged by people who love the open landscape of the hills, and by farmers and landowners who appeal to tradition, rural economy and the needs for food production. Conservationists whose priority species may have adapted to these modified landscapes also support this status quo. Pejorative terms such as 'neglect', 'abandonment', and 'scrubbing over' are used to support the need for continued management to maintain open hills.

Rewilding as a philosophy

Much of the interest in rewilding, particularly in the media, has highlighted the reintroduction of large carnivores such as Eurasian lynx and the wolf. This is understandable, but in some ways regrettable, since whilst it has generated coverage and a reaction, it has focussed on the more eye-catching aspects of rewilding, rather than the fundamental philosophical shift it represents. This often fails to convey the essence of rewilding which challenges our relationship with nature that is different to the prevailing worldview.

Nature conservation in the UK is the product of a particular philosophy and of a history which has seen the creation of institutional structures, bodies of scientific understanding, discourses and narratives which become more or less convincing. They can remain convincing even against a background of changing evidence and an apparent failure to deliver their purpose - that of conserving nature.

Western culture and attitudes to nature have emerged from a largely Judaeo-Christian world view which places man (sic) somewhere below God, between the angels and the animals.[4] This view has persisted. Humankind is seen as separate and above nature and much of the way we behave is rooted in this philosophical position, at least subconsciously. It creates a sense that humans need to tame and manage nature; that human stewardship is essential for the creation of a well ordered and thriving natural world.

Rewilding as a philosophy on the other hand, sits within a largely ecocentric world view. This has its radical roots in the early conservation movement of the United States and particularly the views of deep ecologists and 'Earth First!', a radical movement advocating direct action to protect wild nature and often displaying misanthropic views. Gentler tendencies can be seen in the writing of early conservationists such as Aldo Leopold[5], who place humankind within nature rather than having dominion over it. This view leans towards nature free of human management (accepting that humankind draws needs from nature); where nature is left to its own end, untamed; it celebrates wilderness or at least a wilder world.

The fundamental basis of what constitutes an ecocentric world view – that humans are within nature – suggests a different approach to nature conservation. An ecocentric world view sees the current environmental crises not as a series of technical challenges to be overcome by our ingenuity, but as a failure to understand our impact and interconnectedness with the totality of nature. This can be seen in the conflicting approaches to issues such as climate resilience, environmental pollution, collapse of pollinators and recent episodes of flooding.

Montaña Palentina in Northern Spain – the retreat of agriculture has led to the expansion of wolves and other animals and the return of woodland cover.
Photo: Mike Townsend

Rewilding as a product – what does it look like?

For many of those who have rallied to the rewilding movement, the priority is wilderness, or at least a greater emphasis on wildness. It represents one end of the spectrum of possible outcomes and has some very particular components. This view of rewilding is about freeing-up large areas of landscape, the recovery of lost species of large herbivores, the reintroduction of top predators such as wolves and lynx and the withdrawal of human management of the landscape.

However, the idea of 'wildness' and 'wilderness' as a place untouched by human influence is something of a mirage. Even if you stand in the remotest reaches of the Polar Regions you inhale an atmosphere enriched by carbon dioxide as a result of human-caused emissions, and the waters carry microscopic plastics and other pollutants. It is impossible to escape the influence of human activity.

Given the illusiveness of true wilderness, it might seem better to think of rewilding and wildness, as people living within an environment which has varying degrees of non-human nature; one in which we accept and encourage nature for the benefits we know it brings us, but also with a greater acceptance of nature following its own path. This will be represented quite differently in the centre of a large city, or a lowland farm, or in the Cairngorms. It is more about an active acceptance of nature and natural processes than it is a clear and unambiguous state of wildness.

In the uplands of Scotland a rewilded landscape might have large tracts of forest interspersed by mires with lynx and wild boar, with river courses interrupted by the activities of beavers, and with large areas unmanaged and left to their own ends. This seems unachievable and impractical in suburbs or cities, but the core idea could still prevail.

In her book *Rambunctious Garden*[6] Emma Marris calls for a form of rewilding which is accepting of a wilder landscape in towns and cities and in everyday places; a hybrid of wild nature and human management which is neither towards wilderness, nor a bucolic past. This calls for a greater acceptance of unfettered nature close to home and to 'tread lightly' on the Earth.

Rewilding as a process – how do we do it?

Central to the idea of rewilding as a practice is that natural processes should be allowed to take their course. This includes natural succession on open habitat and fluctuations in population abundance and presence of species without deliberate intervention.

In particular the notion of trophic cascades is seen as critical to re-establishing natural processes - food webs which include all levels from plants and primary production through to top predators. By restoring trophic cascades the dynamic balance between various levels is maintained to the benefit of the diversity and resilience of the system. Because many of these ideas developed in practice in the United States, conservationists recognised that a key missing element was the absence of large carnivores which regulated the extent and behaviour of ungulate populations, which in turn impacted on the vegetation.

The reintroduction of Wolves into Yellowstone National Park[7] is a celebrated example of how replacing this missing element had wide benefits for the ecosystem as a whole. The impact of wolves on the behaviour of herbivores, particularly in the river valleys, allowed the recovery of vegetation, the return of beavers and subsequently of a wide range of fish and mammals and other wildlife.

The example is compelling, but it is worth considering the context. Yellowstone National Park is an area of wild land of 8,983km2 – roughly equivalent to Surrey, Sussex and Kent put together. The UK, with the exception of the northern half of Scotland, has high human population densities compared to most of Europe and very little and fragmented habitat.

This does not preclude the reintroduction of missing species including large carnivores such as lynx; however it does highlight the lack and the fragmented nature of forest cover and other habitats. Replacing missing parts of the functioning ecosystem need not be limited to large animals, and there may be elements that are more pertinent to many parts of the UK landscape. 'Reintroducing' trees and other species into the landscape can become part of the process of re-establishing key missing stages in developing natural processes. Mesocarnivores, such as pine martens, could herald a return of red squirrels, beavers could help create wetland habitat which has all but disappeared in many places, expanding 'scrub' could

The Brecon Beacons – whose treasured landscape? Would rewilding and a different vegetation matrix enhance it?
Photo: Mike Townsend

establish habitat for invertebrates which in turn support species of birds in decline, and so on.

Cultural wildness?

If the aim is to increase the sense of 'wildness' and have a greater acceptance of wild spaces everywhere, then the opportunities expand. Even within agricultural landscapes and urban areas there are opportunities for wild and unkempt spaces without prescribed objectives. The key is to stop thinking of nature as something just in special places and reserves, and to regard nature as everywhere and fundamental to the human ecosystem. While a total lack of human intervention in natural processes may be impractical (even in the uplands) withdrawing intervention as much as possible could be the intention. Rewilding, particularly where it extends from the centres of population to the tops of mountains, could form part of a new cultural landscape which embraces and lives within nature.

Staying true

The rewilding movement should focus attention on the main shift in thinking which the philosophy represents, to liberate natural processes. It should not be distracted by arresting or topical examples of the rewilding spectrum. For example, reintroducing large carnivores may present a challenge, but it is within the ambit of the mainstream conservation model. Large tracts turned over to nature are already part of the thinking of landscape-scale conservation, and are likely to be remote

from most people's lives. Harnessing natural processes for mitigating flood risk is already being considered as a cost effective option within the existing approach to land management. Focussing on the practice of rewilding as opposed to the philosophy runs the risk of bits being cherry-picked and absorbed into the current paradigm of land use.

The lexicon of rewilding is already drifting into use in other areas. The contribution of rewilding has been to challenge not just current practice, but foundational ideas of our relationship with the rest of the natural world. Rewilding needs to remain distinct in its worldview, and not be seduced into sacrificing the big idea for the gratification of acceptance.

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Scrub matrix at Montaña Palentina in Northern Spain – a wildlife-rich landscape emerging from the retreat of agriculture.
Photo: Mike Townsend

Purbeck – a place for future rewilding?

Is the approach of rewilding helpful or achievable in a place like Purbeck in Dorset, with a plethora of designations and a resident population of around 47,000? This article explains current conservation schemes in the area and explores if and how they could take a step toward rewilding.

ALISON TURNOCK

The recent book *Feral*[1] and the establishment of the organisation Rewilding Britain[2] reflect the emergence of rewilding as a force in the conservation sector. Ennerdale in the Lake District and Knepp Estate in Sussex are inspiring models of rewilding projects, however they are occurring in places where the majority of the land in question is owned by one individual or a small number of organisations.

Purbeck lies to the west of the Poole and Bournemouth conurbation, and has a long history of partnership working with regard to conservation through the Purbeck Heritage Committee, Dorset Area of Outstanding Beauty (AONB) Partnership and more recently through the Wild Purbeck Nature Improvement Area (NIA). This article summarises how the NIA projects have contributed towards landscape-scale conservation in Purbeck, and considers the extent to which this constitutes rewilding.

Purbeck and the Nature Improvement Area

Purbeck stretches from Poole Harbour in the east to beyond Lulworth in the west and includes the following mosaic of habitats and landscapes:

- a limestone plateau with calcareous grassland and maritime cliff and slope along the south coast;
- a clay vale along the Corfe valley with dense hedgerows and small broadleaved woodlands;
- the Purbeck ridge to the north of this with chalk grassland, woodland and historic features;
- the heathland around and to the west of Poole Harbour;
- the valleys of the rivers Frome and Piddle.

The area includes the richest 10 km square in the UK for higher plant diversity, and around a quarter of it is designated internationally (as Special Protection Area, Special Area of Conservation or Ramsar) or nationally (as Site of Special Scientific

Interest). The coast and countryside make it a popular place for visitors, with 434,000 staying and 3.7 million day visitors in 2014 bringing £236m to the local economy.[3] As well as large estates with numerous tenants, much land is owned or managed by the National Trust, Forestry Commission, Natural England and conservation organisations including RSPB and Dorset Wildlife Trust.

In the 2010 report *Making Space for Nature*, Professor Sir John Lawton undertook a review of England's wildlife sites and ecological network and proposed a step change in nature conservation which "rebuilds nature and creates a more resilient natural environment for the benefit of wildlife and ourselves". "More, bigger, better and joined" was the summary as to how this should be achieved.

The Lawton agenda was taken up by The Natural Environment White paper 2011, which created a competition for funding for 12 Nature Improvement Areas (NIAs) across England. Purbeck already had a good record of working in partnership, and the Dorset AONB took a key role in negotiating, broadening and formalising the partnership. Following several rounds of bidding, Purbeck was successful as one of 12 NIAs across England, sharing a funding pot of £7.5m. Partners included landowning organisations (Country Land and Business Association, National Farmers Union), conservation organisations (RSPB, National Trust, Dorset Wildlife Trust), statutory organisations (Forestry Commission, Natural England, Environment Agency), the private sector (Wessex Water), as well as Kingston Maurwood College, Farming and Wildlife Advisory Group (FWAG) SW, the Jurassic Coast Team and Poole Harbour Catchment Initiative. Dorset County Council was the accountable body. The Dorset AONB Team managed the partnership and coordinated delivery, ensuring projects were delivered in time, spending the £924,000 budget to deliver the business plan.

Actions of the Purbeck NIA

The varied NIA programme included research work, working with communities and land management and advisory services.[4] A landscape-scale approach has been taken, looking not just at wildlife, but also the human impacts on the landscape, past and present, including local economies and agriculture, eco-tourism, geodiversity and the health and social benefits of the environment. A programme of over 25 projects was set up under four themes: land management and advisory services; community at the centre; building resilience through strategic planning and research; and developing the green economy. Delivery of each project was led by one of the partners. Key achievements relating to land management objectives (of most relevance to rewilding) included the following, with reference to the Lawton objectives:

More: one of the aims was to ensure that overall tree cover was maintained within the NIA, so planting was included in the bid to balance the area of plantation cleared for restoration to heath. Over the three years, 108 ha of woodland (including wet woodland) was created and managed. This included a 64 ha new woodland which was planted at the northern end of the area, incorporating open access and a wildlife reserve. Dorset Wildlife Trust also created 6 ha of new wetland to add to Tadnoll nature reserve, including 9 ponds and scrapes.

Bigger: two significant land purchases took place within the NIA, expanding the size of existing reserves. The National Trust bought Slepe Heath, recently restored from conifer plantation to heathland. This 80 ha site adjoins two National Nature Reserves: Stoborough Heath and Hartland Moor, and links these to the Arne reserve owned by the RSPB. The additional land was the largest area of lowland heath the National Trust has acquired for over a decade.[5] In addition, the RSPB bought 28 ha of old clay workings that had been turned into a saline lagoon, ancient woodland and heathland. A small contribution from the NIA provided match funding for a large grant from Viridor Credits.

Better: high quality heathland creation was undertaken by the Forestry Commission. Following felling, enhanced aftercare included raking and clearance of Rhododendron. 71 ha were restored during the three years. The photos on following pages show scenes before and after this activity.

Beyond the designated sites, a key aim was to provide land management advice benefitting the environment. This was provided by the Farming and Wildlife Advisory Group (FWAG) SW to farmers and landowners. 52 farms were visited, and as a result of this, 12 new and 25 revised Higher Level Stewardship (HLS) agreements were devised, increasing low impact grazing on 380 ha unimproved land in the NIA. In addition a further 354 ha of land is in good management by buffering and linking with low input permanent grassland, and creating arable habitats, including wild bird seed mixes and nectar flower mixtures. To complement this, £5,000 per annum was made available for small capital projects that were not eligible for funding through HLS, and this was targeted at improving connectivity between habitats.

Joined: a number of the projects have enhanced connections between sites. Removal of conifers and scrub has reconnected heathland sites at several places, enabling wildlife to move more easily between sites.

Community involvement

A wide variety of local audiences who are not generally linked with conservation work or other Wild Purbeck projects were engaged in the NIA work, and landowner and public support for projects was integral to the approach. The Community Gateway, led by Dorset Wildlife Trust, worked with the area's 40 parishes, 29 of which held one or more event, and over 4,120 people (13% of the population) were engaged in debate about landscape change.

Is this rewilding?

A conference 'Rewilding Dorset – a viable conservation strategy?' organised by Bournemouth University and Dorset Wildlife Trust in May 2016 included much discussion as to what rewilding means. Emerging results from a survey given out on the day by MSc student Arne Loth show wide-ranging views on what the main focus of rewilding should be. Further debate considered whether rewilding can truly be carried out in a culturally managed, highly designated place like Dorset. There are arguments for and against, as summarised below.

Towards rewilding

1. **Rewilding focuses on the underlying ecological processes,** which is an approach we are moving towards. Many Wild Purbeck partners are managing landscapes extensively to maintain or increase the 'naturalness' of the systems, improve their resilience and reduce the overall cost of managing them, through removal of fences and establishment of large scale grazing units.

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2. **We are moving away from an approach of managing for species towards managing functioning ecosystems** which deliver a wide variety of benefits as outlined in Making Space for Nature. However, the current legislation does not always allow for that. The basis of many of our current designations are based in part on specific species or habitats.

3. **We want to encourage more nature into our cultural landscapes;** we need them to be more resilient and self-sustaining, and ecologically more complex. We may not be ready to talk about reintroducing wolves but we could – when our habitats are big enough and well enough connected – start talking about reintroducing pine marten or beaver. These are the ecosystem engineers, the species that can do some of our management for us: be that modifying watercourses so they reduce flood risk and create ponds for invertebrates, or controlling the grey squirrel populations. If our cattle roam a wider landscape they can help spread seeds and insects through that landscape; their gathering points become the next phase of bare ground habitats. The more naturalistically they graze, the more they will create the range of habitats our wildlife needs. It can still be a cultural landscape, but one in which nature, or natural processes, do more of the management for us.

4. **Buffering, connectivity and creating linkages** between areas of high quality habitat fits in well with the ethos of rewilding. In the future, river valleys may provide the best opportunity in Purbeck for rewilding.

5. **Rewilded land could be more valuable to the local economy than intensive agricultural management.** The core designated sites in Purbeck are extremely attractive to visitors who contribute to the local economy.

Tree removal in a core tract of Purbeck heathland.
Photo: Dorset AONB

Away from rewilding

1. **Purbeck is a cultural landscape, a living textbook and historical record of rural England,** and this is one of the special qualities underpinning its designation as an AONB.6 Designated habitats, although not truly natural, are cherished, from the fields of cowslips on the limestone grassland at Durlston to the churring of nightjars on a heathland on a summer's evening. There is no immediate prospect of ceasing the management necessary to maintain these habitats in favour of a vision of 'self willed land' that tends towards a plagioclimax with a far greater proportion of tree cover. In contrast, in areas such as the Knepp Estate, or the National Trust's Wicken Fen vision area, it has been easier to just allow natural processes to lead the way with little intervention from managers, because in those areas they were intensively farmed, ecologically impoverished sites with little wildlife to lose. In Purbeck we have the most botanically diverse 10km2 in the UK because of centuries of management, done consistently, and sensitively. Continuing to look after that should be our starting point.

2. **At present, we are not considering the introduction of top predators** such as wolf, another key tenet of rewilding. In nearby Devon, beavers have been introduced into a fenced enclosure to investigate how they attenuate water flows following heavy rainfall, and this has proved extremely successful in a 5 year timescale. However, even the reintroduction of beavers in an area like Purbeck would require considerable feasibility work and gaining acceptance from landowners and other parties before it would be possible.

3. **The involvement of local land owners, managers, communities and stakeholders is an underlying principle of our work,** and crucial for gaining and maintaining support for carrying out any major proposals.

Culturally wild?

Taking all the above into consideration, the work delivered through the Wild Purbeck NIA has delivered elements of rewilding across the landscape, particularly through an increasing focus on underlying ecological processes. However, Purbeck is essentially a cultural landscape within which two of its most valued habitats, heathland and calcareous grassland, are maintained through management systems. There is no appetite to cease this management, as it would lead to dramatic landscape and habitat change with an inevitable decline in many species of wildlife that the UK is under an obligation to protect. The partners in the Wild Purbeck partnership are committed to continuing the work they have been delivering over the last 20 years, to increasing the semi-natural habitat and achieve more extensive grazing management systems. In the future, might there be potential for some species reintroductions, following appropriate feasibility work?

Both landscape-scale conservation and rewilding represent a shift from the established approach to carrying out conservation work. I suspect that they are two points on a spectrum rather than leading towards different ends, and that where an individual project lies on this will depend on location, ownership and other geographical and economic factors. In Purbeck the next phase may be taken

A before and after scene of Purbeck heathland emerging after plantation forest removal.
Photo: Dorset AONB

forward by the National Trust. Under its 'Land, Outdoors and Nature' strategy, nature conservation is to be put at the heart of how its 3,700 ha estate here is managed. There will still be farms, there will still be visitors, and it won't turn into a wilderness; the challenge is to restore its effectiveness as part of an ecologically functioning wider landscape. Bigger, better and more joined up; not wild but wilder.

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Nature and the call of the wild

When ECOS *first appeared as a radical voice for nature conservation in winter 1980, farming subsidies were driving habitat destruction, tax incentives were luring the rich to plant Scottish peatlands with conifers, and there was little protection for and less understanding of the needs of wildlife on land and at sea. Much has changed. The agriculture and forestry regimes are less hostile to nature, some extinct wildlife has been reintroduced and rewilding offers excitement. This article considers if all this is enough to ensure a place for nature in our crowded island, and to allow BANC to leave the field of battle.*

JAMES ROBERTSON

Nature's changing fortunes

Nature has been my passion and nature conservation my vocation since before the birth of BANC in 1979. This has brought great rewards and also deep regret at the losses I have spent my life charting; but it has generally been a period of hope and steady advance. My sense has been that the position of nature in our society has been improving and the environment has ascended the political agenda.

That sense has now come to an end, the momentum lost to an uninterested media; ecology has been crushed by the powerful thrust of economy; forestry is synonymous with the business of timber and trees; and a 'feed the world' agricultural policy has been resurrected. The global context is even more sobering. It is worth keeping in mind, though, how much worse our environment, especially here in Britain, would be without the reforms and achievements over nearly four decades of governments and their departments and agencies, the NGO community and a multitude of individuals.

The fight for nature will continue, and I am optimistic that the cycle will turn and a new generation will take up the civilising cause of nature conservation with resolution and perseverance. The rewilding movement has brought a breeze of excitement to the picnic. The term is now being used to embrace large-scale land management projects which break the mould of traditional nature conservation, which is often associated with arresting succession in order to maintain a particular habitat. I doubt anyone could read about Knepp Castle estate in Kent without cheering. This rewilding 'experiment' has transformed thousands of acres from intensive livestock farming to naturalistic habitat mosaic filled with nightingale song, purple emperors floating by. The estate has shown that if you give nature opportunities, the results can be astonishing, and people will come to immerse themselves in nature in this less ordered landscape. It has made the operation pay by claiming farm payments, entering agri-environment schemes (Higher Stewardship), directly marketing its longhorn beef, Tamworth pork and fallow deer venison, and providing accommodation and safaris for the public.

The Rough matrix: ponies and cattle, together with cutting back willow and birch, have opened up a matrix of rocky heath and wet basin clearings like this.
Photo: James Robertson

Public benefit and subsidy

The economics of land management are all important when it comes to managing land for nature. Speaking on Radio 4's Farming Today in June 2016, Professor Allan Buckwell explained that farming subsidies were compensation for the withdrawal of the guaranteed prices for products which had created wine lakes and butter mountains. Now the payments have a public benefit justification. "We've discovered that farmers produce a lot more than just food. They are looking after the rural landscape, the protection of biodiversity, the storage of carbon, the prevention of floods; these are non-market ecosystem services."

Here in Anglesey I look out on a hundred acres or more of permanent pasture turned brown with glyphosate, a landscape made ugly, bereft of biodiversity, from which carbon has been released, and where the opening of drains and clearing of thick rushes is designed to speed excess water off the land, with consequences downstream, and I wonder. The farmer concerned has no reason to fear that his very large subsidy cheque will suffer. What exactly is Professor Buckwell talking about?

In the language of subsidy, payments for environmental schemes or rural development come under Pillar 2. Pillar 1, the basic farm payment, is a social subsidy. At least that is what the farmers I engage with believe, to a person. So you get it

whether you deliver the goods and services which Professor Buckwell talked about or not. Changing this, and limiting payments to those farms which truly deliver non-farming benefits, would open up new possibilities for managing land for nature.

Farming for nature with trees

Joanna and I bought a small farm 25 years ago with the intention of managing the land for nature, and have learnt a great deal about farming along the way. We also bought an additional 28 acres of meadows and rough scrub-covered land, with the aim of taking the long view, and letting nature make the running – a kind of small-scale rewilding. We have negotiated the tricky balance between non-intervention and 'gardening' little parcels of land, notably on our piece of rocky 'rough'.

Although farmed and pony-grazed for centuries, all but a few rocky outcrops and wet corners have turned into secondary woodland in the last 50 years. A host of hoverflies and moths, heathers and stonecrops, wetland plants like lesser skullcap and bog asphodel, adders and lizards, a dozen species of sedge and various heathland plants would not thrive under a dark canopy, so we have cleared trees and winter grazed with cattle and ponies over six winters, to open up the rough. The trees shield a fantastic flora of their own, with bryophytes, lichens and fungi, and there are some splendid individual trees, large boundary oaks and an enormous coppiced rowan. The aim is to meld and mix trees and mire, shrubs and rock, to increase the 'edge effect' which benefits wildlife.

The segregation of land into farmland and forestry, and their attendant subsidies, work against such matrices of trees and open areas. Farmland is not allowed to have trees on it – they lose you your farm subsidy; while trees are caught in a forestry straightjacket. I would welcome the equal treatment of land which is both grazed and wooded as a matrix of habitats. This could be achieved either by extending subsidies to such land for the public benefits it affords, or by removing all such subsidies from woodland and farmland. Overcoming the idea that trees have to be planted will not be easy. But if it were accepted that land could produce food, timber and wildlife at the same time, the opportunities for nature would be great.

In a South Wales valley, small children are planting trees on waste ground. They explain to camera that they are saving the planet. How hard not to admire the activity and the involvement of children in shaping their future, spades in hands. Yet trees are brilliant at sowing themselves into suitable ground and beginning the race to become landscape shapers. Such irrepressible natural vitality makes me astonished at the profusion of tree planting schemes. The National Trust, Woodland Trust and so on, are all at it. The problem is not a lack of natural regeneration. In Snowdonia, a thousand acres of former plantation, considered too dangerous to replant because of munitions left over from its military training history, have turned into a fabulous natural forest full of light and space, in which a profusion of heathers and wild berries, sedges and lichens are thriving at present. I hope rewilding does not allow itself to become a disguise for tree-planting. Planting trees has little to do with nature conservation. Given time - very little in nature's timescales and in some situations very little even in short human ones - trees will plant themselves.

A network of ponds and shallow scrapes has added diversity at the Rough, cattle being particularly fond of standing in water while eating Bulrush.
Photo: James Robertson

Bringing in the beasts

And so to reintroductions. My friends in England and Scotland are thrilled to see red kites in the skies above them, and to suggest that the release of Spanish or Swedish red kites all over the place was not really nature conservation goes down badly with them. But genuine native Welsh red kites had started expanding and turning up east of Offa's Dyke before they were met with waves of introduced birds moving west, and would undoubtedly have colonised England and Scotland, given time. Nature requires time, humans are impatient and want to make things happen.

Some excellent early re-introductions such as that of the large blue butterfly became flagships, bringing attention to extraordinary lifecycles and difficult management issues. Perhaps this will be true of the chequered skipper reintroduction to Rockingham Forest, even if it is from continental, rather than Scottish stock. Beavers, natural river engineers, offer the promise of ecological spin-offs. But the emphasis on reintroductions reminds me of those enthusiastic acclimatisation societies which brought in so many exotics. Choughs were to be reintroduced to Cornwall before the birds pre-empted the plan by doing it naturally themselves. Cranes have also turned up naturally, all by themselves, but this hasn't stopped the absurd crane re-introduction project, where celebs dress up as mummy cranes to shows the babies how to feed. All very media-friendly, but little to do with nature conservation.

Freeing-up ecosystems

Nature and natural processes, the services ecosystems provide, are powerful allies in creating a flood-free, carbon neutral environment but have yet to be properly recognised in the financial mechanisms which are such an influence on farming and forestry. Then NGOs might be able to acquire more land, and allow nature to play its part in shaping inspiring places to live, work and visit. There is still so much to do and to change.

So there is still a need for critical debate, and a cause to be passionate about. Our collective feet press down on the throttle of development, numbers multiplied by expectations, even when we call it nature conservation. Now more than ever, with the framework of environmental protection crumbling in the wake on the EU exit vote, people need to stand up for nature. Even in this crowded isle we can find room for nature, allowing trees to plant themselves, and big beasts to graze and browse in a landscape Repton might recognise. The door is ajar, but radical organisations like BANC need to keep pushing at it.

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Woodland regeneration at the community-based project Carrifran in Scotland's Southern Uplands.
Photo: Steve Carver

Rewilding versus re-creating and re-homing Lessons from a PAWS woodland

This article discusses lessons for rewilding from pursuing complementary management objectives to halt and reverse species' declines in a PAWS woodland.

SIMON LEADBEATER

Combining rewilding with countryside biogeography

My wife, Toni, and I own Priors Wood, a 54-acre woodland located near Ayot St. Lawrence in Hertfordshire. We also own a pasture of nearly five acres. Our woodland is a PAWS – a Plantation on an Ancient Woodland Site. Some landowners consider their woods in terms of what they want from them: for harvesting timber and woodfuel, for foraging and hunting, for recreation, for revenue generation, and combinations of all of these. The perspective presented in this short article is rather different. I look at my woodland and think, in what way has its treatment in the past contributed locally to the Sixth Extinction, and how can I ensure the wood's future management militates against species' declines and extinctions going forward?

To achieve this first I have tried to imagine improvements to the woodland's internal structure, so that moving inwards the wood's gradient becomes increasingly 'lovely, dark and deep,' from regular human activity in the shape of coppicing along ride sides to minimal intervention in the middle, to shorter shrubs along woodland edges to the tallest maiden trees in the centre. This way I can restore and enhance the woodland as a holistic habitat by slowly implementing a twin-pronged approach. The first strand of this entails 'rewilding' the centre of the woodland, which Clive Hambler defines as the "restoration towards greater naturalness"[1] and which Thomas Merckx has said should "cater for all kinds of biodiversity, i.e. for rare, range-restricted and ubiquitous species, for generalists and specialists, for currently threatened and least-concern species, for species operating at all kinds of spatial scales".[2] Second, along the woodland edges I aim to restore the site's relict features (ancient hedgerows and coppice), and to re-create some key environments in part by re-homing wild plants whose longer term *in situ* survival is doubtful, in a process which I will term 'countryside biogeography'. I learned this phrase from Ceballos et al. and it refers to making "areas heavily impacted by humanity, especially agricultural areas, more hospitable to other organisms".[3] The Hertfordshire countryside surrounding Priors Wood has most certainly been heavily impacted by humanity.

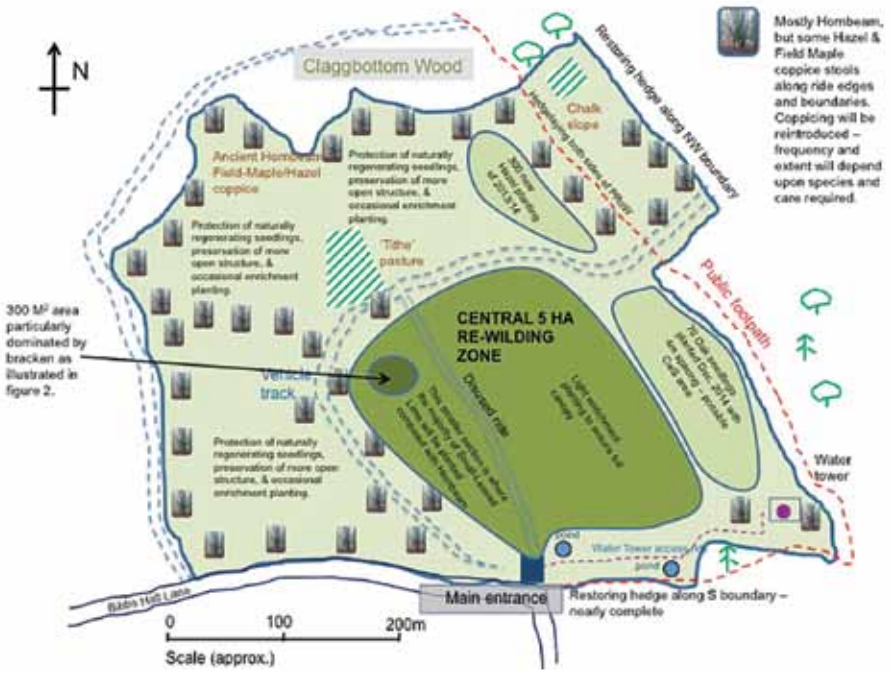
Rewilding Priors Wood's heart

My rewilding aspirations have been set out in my article 'Reaching Forward to the Past'[4] and focus on rewilding a central section of my PAWS woodland, as indicated in the opposite map. By rewilding I aim to encourage natural succession to create a climax woodland habitat, characterised by high volumes of dead wood and mature trees. A key feature of my approach is planting small-leaved lime saplings where in effect I have a greenfield site, or at least a bracken dominated area with poor regeneration. This summer I will begin controlling the bracken to allow greater natural regeneration and in the winter of 2016-17 aim to plant between 50 and 100 lime. The immediate task thereafter will be to ensure the survival of the lime, no easy task with a high fallow deer population and the ubiquitous muntjacs. Nevertheless, I think this will be relatively straight forward compared to the other ambitions I have, and in particular bringing the different elements of my twin-pronged programme into a complementary and cohesive whole.

Restoring key elements of Priors Wood

Another way of trying to understand rewilding is to emphasise what it is not; rewilding is the antithesis of coppicing, hedgelaying, and meadow management, all of which are wholly manmade artifices which casual observers of the countryside mistake for natural features. Priors Wood was a very unwild not untypical Hertfordshire hornbeam coppice-with-oak-standards woodland before most of the oak was clear-felled and replaced with a combination of conifers and oak saplings in the late 1970s. The conifers were removed ten years ago and naturally we as owners have considered to what extent we would like to return the woodland to the way it was. There are a number of considerations here. The first is that I take the view that the woodland has probably been exploited unsympathetically for centuries, and very likely introducing coppicing and favouring hornbeam formed part of a local extinction event, and at the time may have been every bit as violent a process as clear-felling the majority of the older oaks more recently. That said, both old growth and early succession woodland environments provide valuable habitats. Moreover, as we now live in the woodland and aim to benefit from it sustainably and harmlessly, naturally we hope to use firewood obtained through coppicing. It is a question of where and to what extent.

Unfortunately most of the surviving relict coppice stools which could be brought back into a coppice cycle are on the extremities of the woodland (allowed to survive in order to screen the PAWS effect on the woodland interior) and are very inaccessible. Having witnessed the clear-felling of our conifers using forwarders and other large-scale equipment, with the resultant severe rutting, it is not our intention to ever again allow large-scale equipment into the woodland; while horse-logging is very attractive it is also expensive especially when the end product is firewood for home consumption. For these reasons, with the exception of some very old hazel stools growing on what appear to be medieval terraces, the stored coppice on the woodland fringes will mostly be allowed to return to high forest. Where we will reintroduce coppicing is along the ride edges because of the ease of access for harvesting and then after-care, and also as we hope to create a dense thicket of coppice regrowth to buffer the woodland's rewilded heart. The limitations created



by access difficulties impede my vision for high forest to the centre with coppicing along the woodland's edges, but we have to achieve a structure which can be maintained sustainably and operate in a way which minimises harm.

The woodland is also surrounded by an ancient boundary hedge, made up mostly of hornbeam, but also some huge beech stools. Where appropriate, parts of this hedge have been alternatively laid, pollarded and coppiced, with some 'gapping-up' still required, and here my vision of managing the woodland edges will slowly be realised especially along the southern boundary. Finally, an important component of my restoration project concerns wildflowers. Priors Wood is haunted by intimations of the woodland's past, in the shape of pockets of wildflowers hidden away in corners and along edges where the forwarders failed to reach.

Re-creating…

It is difficult to know what the woodland would have been in years gone by, but clues reside in archaeological features (such as woodbanks), evidence of past management, other local woods and from contemporary observations. Crab apples, for example, no longer 'abound in the hedgerows,' as Flora Thompson reported in *Lark Rise to Candleford* writing of the late 19th century.[5] Crab apple trees are excellent for pollinators and add colour; they flower just as the cherries wane – so I have planted approximately 20. Equally I had no wild service trees, but the owners of a non-PAWS Hertfordshire woodland to the east of Priors has them growing naturally, and they very kindly gave me three which are all growing well.[6]

Palladian church – This meadow in front of Ayot St. Lawrence's Palladian Church is to the immediate southeast of Priors and could provide a source of seeds for the creation of the area's new meadows.

I am also re-creating what once may have been wood meadows. We already have a chalk slope, but near the middle of the woodland we have re-created what was almost certainly once wood pasture or a deer lawn. An 1837 tithe map shows a clearing in the woodland, where there was an area of pure conifers (without any nursed oaks) and laurel. We have cleared some of the laurel and did not replant the conifer area, to re-create wood pasture. However, we are trying to manage this area as a meadow, and plan to establish a pollinator corridor leading from the chalk slope in the northeast to the larger 'tithe pasture' near the centre of the wood. The location of these glades is also shown in Figure 1.

Re-homing…

While I am trying to improve the ecological value of the woodland, elsewhere wildlife homes are being degraded and species' declines are continuing. One particular habitat I am familiar with is my parents' garden in Harpenden, Hertfordshire. My parents' house was built in the 1950s on what was clearly a meadow, based both on the richness of the floral species mix together with the ancient hedge surrounding it and decrepit estate fencing lost within. Further down their lane is a much older property that used to be the washer house for the estate of Sir John Lawes, who with Sir Joseph Gilbert founded what is now known as Rothamsted Research. This washer house was left to a local policeman who saved the life of the owner; not satisfied with one home he built several houses on the once extensive gardens. This has led to the suburbanisation of what was once a country lane. This process of inexorable transition is no doubt typical of what is happening across much of the country, particularly in the South-East.

Belatedly I have started transplanting plugs and collecting seeds from the family home's lawn-cum-meadow and re-homing them to where I now live, Priors Wood. Here I hope the grassland habitats will be continuously enriched in coming decades in place of one that will inevitably suffer when my parents' home is one day sold.

Striving to achieve a balance and improving the local landscape

Hambler and Speight's 'Science Replacing Tradition'[7] cautions against too much 'biodiversity' and there may be a strong case for rewilding all of Prior's Wood. Rewilding the whole wood would be by far the easiest option but instead I am being guided by the woodland's historical features, and what we can achieve sustainably, which is why we are reintroducing coppicing in the main along ride-edges as here woodfuel can be harvested much more easily and the rest of the woodland is spared access by machinery. I am also mindful of Fuller and Warren's 'balanced' approach[8] and have also been influenced by those who have helped me to restore Priors Wood, perhaps particularly Dr Richard Bromilow, who sadly died in May 2016. Richard supported me in many ways over the last decade not least by creating a plant inventory,[9] which suggested that excluding the 5-acre meadow there are c.220 different species of plants. Were I to rewild the whole woodland I believe this plant diversity would decrease, as clearly some wildflowers prefer the light conditions associated with how the woodland was managed in a coppice rotation as an early succession habitat, and indeed some benefit from the woodland's open areas.

I also try to envision our land's longer term potential in its landscape context. We care

Richard Bromilow – Richard in better days helping to rake up all the grass arisings from our then newly planted orchard.

for nearly 60 acres, which includes the 5-acre field adjoining our wood. Here we have created a small orchard, which will accompany those on our neighbours' properties, and this field abuts a meadow to the immediate south, and is close to another one to the southeast in front of the village's 1778 Palladian Church, creating perhaps 15 acres of grassland in total. In short, by managing our grasslands sympathetically we contribute to a landscape-scale meadow habitat. The alternative would be to rewild our field, which in practice would mean allowing natural regeneration create an extension of Priors Wood. The field is a natural asset and a choice had to be made. We have chosen to embark on the more onerous journey of converting semi-improved grass into a species-rich sward to accompany two extant meadows.

Nature's timescales

Re-creating and re-homing the many plant species lost to the woodland will be challenging, a process where I hope to make an impactful start but need to find some means of progressing beyond my lifetime, as with restoring the woodland's relict features, such as the ancient boundary hedgerows and reintroducing coppicing on a sustainable scale. While rewilding is an important component in my woodland's management, this is based on a site-specific assessment and the opportunity which owning a PAWS woodland affords, and rewilding in the context of Priors Wood is being balanced by a number of equally important management objectives.

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Rewilding in the UK – hidden meanings, real emotions

The word rewilding has become common currency in nature conservation narratives, but it rarely features in wider discussions on land use. The very mention of the word – especially without context or meaning – stirs up reactions that can equally engage or enrage people. This article reflects on discussions about rewilding at some events in Spring 2016.

ROB YORKE

Where I live in South Wales, the landscape is changing in front of my eyes. Due to reducing human and sheep populations, the Black Mountains are undergoing their own rewilding. Century old ash trees sprout from moribund farmsteads, stone walls crumble in 60-year old conifer forests as nature emerges from human structures. Nature envelopes our home – field voles sneak through doors, tawny owls hoot from chimney pots, hornets hum in bedrooms, stoats drag rabbits into the loft, masonry bees drill into walls, slow worms slither over floors, ox-eye daisies push through paving slabs and spiders weave webs over still warm teacups.

No wonder, 30 years on from the Chernobyl disaster, the official exclusion zone and other human-devoid areas demonstrate how nature reclaims territory on a grand scale.

Here in the UK, over our 243,000 km2, we are anything but free of humans. 65 million British people are concentrated into 10% of the land surface of urban and suburban areas, much of it in south-east England, surrounded by 75% countryside with 13% afforested, all subject to shifting baseline perceptions of how the land should both look and be utilised.[1] This shifting syndrome of how we view changes in landscapes - from when the first agriculturalists cleared land 10,000 years ago to new hedges planted on arable farms last winter - influences our view of rewilding.

Baseline tensions

Conflicts over land use are advancing to the fore as society becomes more attuned to the pressures on the environment from an increasingly consumerist society, divorced from where food comes from, yet seeking succour from experiencing nature and getting rewards from leisure. While there are various takes on rewilding, some based on single issue proposals, the range of public benefits can be contested in this process-led conservation. Rewilding is still sometimes used as a challenge against existing land use (forest and woodland before sheep, trees over grouse moor), rather than as a tool for conservation, such as less prescriptive habitat management plans.

A piece in *British Wildlife* (June 2016) lauds rewilding as nature "allowed it's head…animals (including livestock) behaving naturally, crashing through thickets,

rooting up turf".[2] One person's scrub is another's land abandonment, just as long as it's not our front lawns. The very excitement around rewilding usurps existing conservation practices and land-use norms. But these norms are merely part of the shifting baseline syndrome as to what we perceive as normal. To confront some of these norms, let us garner a range of views as to why society is still very much deconstructed around what it wants from rewilding.

'Hey, what's your take on rewilding?'

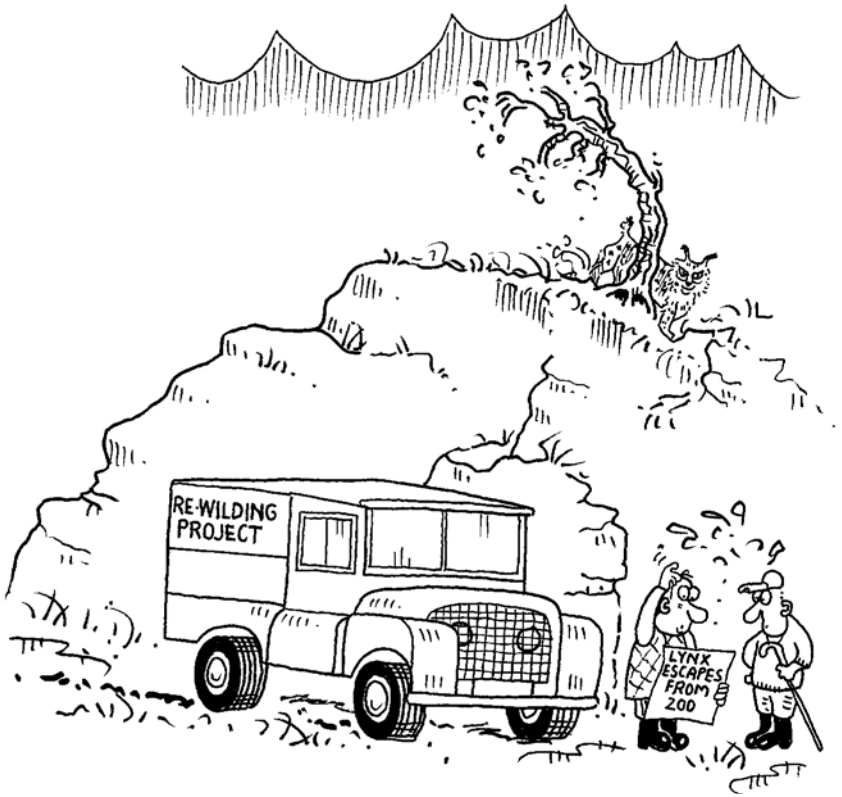
From a random selection of those attending an April 2016 BES symposium with the Cambridge Conservation Initiative on conservation policy (mainly ecological scientists), I asked the simple question "what's your take on rewilding?" A student opened with the gambit that rewilders "do not have much time for agriculture", with another adding that "farmers just take the subsidy, they don't provide anything" (a view adopted via a polemicist's talk). Many liked the idea of rewilding but felt the need to be honest: "it's an experiment and it should be controlled", whereas a National Trust employee was ready to leave areas, however big or small, "for nature to do what it wants to do". Whether mink or marten, rhododendron or rowan, there was to be no intervention.

Another participant, interested in carnivores, wanted to go further. To win the war against human domination over land management. Putting aside his confusion of how farm subsidies were paid to landowners, there was to be no compromise, no consensus because it was time landowning interests were overturned because "we are all looking in the same direction, no one daring to look elsewhere".

"The famous wolf must replace the famous grouse whisky in Scotland"
Participant at BES conference

A senior RSPB scientist was a 'big fan' of rewilding as an idea, but had concerns over scale to make it really work and "where humans would still have to intervene". A politician said that conservationists should be more open, honest about the whole picture: "it's not just about new habitats but also manmade pylons and oil refineries" so that we find it "easier to handle the whole picture of modern ecosystems – wild and unwild". A social scientist, a rare breed in a natural science environment, was "really intrigued by it" but conflicted by whether rewilding railed against conservation control or was in fact "the most incredibly hubristic type of control you can image as to what goes into any ecosystem".

Others were more emphatic. A senior Birdlife official thought it was a "fantastic thing - bringing back iconic wildlife that we'd wiped out, to return habitats that have been human-modified to something more natural". A National Park ecologist mooted that the "country needs to debate with landowners, whether conservation, a very established industry, should be part of something exciting – something not seen that often in the countryside". An ecologist working in Africa liked the idea that "it got people talking about new approaches but was concerned that we often didn't understand it from landowners' point of view".



NEIL BENNETT

Excitement rules

The overriding word applied to rewilding is 'exciting'. When I've hosted debates on rewilding, whether with farmers or non-farmers, I've always sought to frame rewilding between passive -'humans stepping back, allowing nature to determine what happens next' and active - 'reintroducing absent wildlife'. You can guess which one of these, especially the media, find the most exciting.

Part of my introduction on rewilding is scripted like this: "Disciples of rewilding love its unstable, incoherent, radical raucous joy in breaking up a staid conservation industry. To its disbelievers, rewilding risks destabilising rare species, allowing invasive ones in, upsetting management of nature reserves, a threat to farming practices". To date, I've found much of the running is from 'disciples', who, starting off on the wrong foot, find themselves wading through treacle when engaging with the various land-use stakeholders and local interests. They are knocked back by disbelievers, partly a knee-jerk reaction, as we fail to frame the whole context for rewilding and the scope of issues it can embrace.

Social subtleties in communication are often missed. How the matter is presented is key, especially when proposing a conversation with (not a 'talk at') a roomful of –

those 'locals' making a living from the land most affected by change of use. Hosting a talk on rewilding at Cwmyoy village hall, in deepest Monmouthshire, attracting 15 hill farmers within a crowd of 50 was no easy feat. Replacing and rephrasing the potentially inflammatory flyer on rural notice boards, I rung round key farmers to urge them to hear and engage in conversations that involved them and their livelihoods.

Problem is, there is no conservation psychology text book; it's not what you say, it's sometimes who you are labelled as, and how you say it. Not to mention what you've said, or are perceived to have said, on other matters. As *Countryfile Magazine* reported, the majority of farmers at Cwmyoy were "surprisingly pragmatic and open to it". Perhaps not hearing it for the first time from one or other's point of view helped. There is room for more independent expression, less partisan posturing, in bringing along those, conservationists all, that may "resent having change forced upon them and want to be involved in decisions – even if rewilding is a consequence of a lack of farming".

The hundred-odd audience at the discussion I chaired on 'Elements of rewilding - perceptions and prejudices' at the May 2016 Hay Literary Festival opened up a wide range of topics in a short hour, with roving microphones enabling audience input. The all-female panel comprised the National Farmers Union (Batters), Foundation for Common Land (Aglionby) and Wales Wild Wood (Wynne-Jones). Discussion ranged over whether we needed a strict definition of rewilding (no), splitting agriculture in the uplands into 'agri' and 'culture' (resisted by some), slowing the flow (yes), tree planting (overhyped), deer control, tourism (not every farmer's cut out for B&B), lynx (insignificant at the event, this arguably spurious remark caused excitement), badgers (predators prefer easier meat), cultural landscapes (who's?) to shouldn't we look after red squirrels first?...

"One theme that kept being emphasised was the desirability of avoiding conflict and trying to find consensus, rather than the sometimes stronger language that you see."
Audience blog on The Hay Festival

Defensive positions were voiced at Hay, new concerns mooted, consensus found on working together and agreement that rewilding means different things to different people. There was a sense that early stages of rewilding would require some form of management – from dealing with invasive species to pragmatic operations around species reintroduction. As one of the panellists said, food production and the environment have a shared ambition. In my view, it is well-nigh impossible to discuss changes in land use without acknowledging its impacts in providing us with affordable food.

Farm and funk

Tensions with farming and with other land uses such as forestry and fieldsports, are rarely engaged on in detail by those interested in rewilding. A lack of nuanced inquisition as to how land is used, bypassing historical context of why farmers do what they do (for example the post-war push for food production from marginal

A mid-Wales pine marten observed as part of the Vincent Wildlife Trust's Pine Marten Recovery Project.
Photo: http://www.toonphoto.com/

land and livestock 'headage' payments), misses the opportunity to find common ground between different land users.

Idealists venture out into the countryside, thinking the zeitgeist is with them, armed with novel 'funky' ideas to rescue a sheep-shagged countryside. Farmers, themselves as conservationists upset by how they've had to change practices to stay afloat (losing beloved lapwings as a result of 1950s government-led rudimentary agricultural intensification), fall back to entrenched mentalities forged in challenges around producing food.

Meanwhile next generation sustainable intensification, such as the world of hydroponics and robotic precision farming, uses less resources and less land. This might free up areas to rewild and needs to be explored further but involves paradigm shifts in how we perceive farming, forestry and aquaculture, primary industries on which we depend.

"Let us move forward together, not back to rewilding."
Farmer in the Black Mountains

Discussions, often on single issues, can polarise opinions and muddy productive debate. Let's be more honest in the discussion. What do we want? Seeking change for the sake of change? Disruption is a fashionable term in the ways that rewilding has shaken up conservation, but it may lay false trails of win-wins that don't exist. Ecosystem services can clash against each other, for example the tradeoffs between tourism and capercaillie, blanket scrub and wildfire risk. Well planned vigorous conifer woodland is required in the uplands as much as any stunted native woodland. We should be thinking holistically, and plan ahead with trees more resilient to environmental change than some of our existing species.

"The UK public is overwhelmingly in favour of beaver reintroduction. In a democracy that should be decisive"
A beaver enthusiast

Are we ready for 'red in tooth and claw' elements of ecosystems, unravelling as they see fit, not how we anticipated? One outcome may be iconic rare species eating charismatic endangered species. Troublesome apex predators, coexisting with Transylvanian shepherds for generations, are shot in Romania, while the Dutch lowland rewilding of Oostvaardersplassen has not been without its controversy over herbivores dying on the roadside. Our quest to experience wildlife conservation first-hand may even compromise the welfare of reintroduced animals (two lynx released in Germany had to be recaptured for being too tame) but most are likely desperate to get away from humans and lethal roads. Those who release mammals unauthorised into the countryside may be signing their death warrant; as witnessed by the beavers in Tayside.

Fear not?

The pine marten recovery project in Mid Wales (existing native ones are hanging on) is an exemplar in several ways. In remote and sparsely populated areas, with careful communication, and not allowing rewilding to be perceived as a threat, the Vincent Wildlife Trust has worked with local communities, gamekeepers and landowners to find ways for martens to coexist with existing land users while petitioning government agencies to control rogue pine martens once established.

It is ironic that our fear of the loaded word 'rewilding' can disengage some people from debating the topic without prejudice and perception. Impatient with negotiations and trade-offs, many fear change in the landscape and whereas others push for 'societal debate on conceptions of nature that should be incorporated into conservation policy'.[3] Perhaps we fear shifting our own baseline expectations.

Is rewilding for us or for wildlife? Let us accept that an over-ambitious zeal to chase public opinion might be better tempered by realistic opportunities to deliver public benefits. Perhaps there is no shortcut from how we live our own lives: look closer to home, take smaller steps in rewilding, locate where common ground lies, enable

The Ennerdale rewilding project has allowed the river Liza to keep a dynamic course which in turn has helped flood resilience and water quality in the Ennerdale Valley.
Photo: Jennifer Gooden

'top-down' policy to stimulate 'bottom-up' co-operation and don't fear harnessing tensions. Perhaps these are priorities before trumpeting overly challenging large carnivore projects that risk conflict stalling the excitement around rewilding before it's even got off the ground. The plaque on the wall of Cwmyoy village hall in the partially abandoned Black Mountains speaks volumes: "By agreement small things grow, by discord the greatest go to pieces."

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Reintroductions and releases on the Isle of Man

Lessons from recent retreats

Recent proposals for the release of white-tailed sea eagles and red squirrels on the Isle of Man received very different treatment, perhaps reflecting public perception of the animals and the public profile of the proponents, but also the political landscape of the island.

NICK PINDER

The Manx legal context

The Isle of Man is a Crown dependency outside the EU but inside a common customs union with the United Kingdom. The Island can request that Westminster's laws are extended to it but usually the Island passes its own laws which it promulgates at the annual Tynwald ceremony. Since it has a special relationship with the European Union, under Protocol 3, EU legislation covering agricultural and other trade is usually translated into Manx law, as is UK law affecting customs controls. The 1980 Endangered Species Act was therefore swiftly adopted in the Isle of Man but the Wildlife and Countryside Act of the same year was not.

When I arrived on the Isle of Man in 1987, the only wildlife legislation was a dated Protection of Birds Act (1932-1975) but the newly formed Department of Agriculture had just been persuaded to take on responsibility for a yet to be drafted Wildlife Act. The then Attorney General told me that the Manx Museum had earlier declined to take on the additional responsibility for the Act and so it had languished for a few years. He also said that the naming of the Isle of Man as one of the few places in Europe not to protect bats, by Bob Stebbings[1], and an account of the extermination of a huge colony of Natterer's bats, gave impetus to the adoption of wildlife legislation and the Wildlife Act was eventually passed in 1990, giving responsibility for wildlife protection to the Department of Agriculture, Fisheries and Forestry (DAFF).

The draft legislation drew heavily on the UK's Wildlife and Countryside Act, to the extent that we had to fight to have the schedules list Manx species, and the release of non-native species was included as an offence in its own right, in addition to the ban on importation of certain listed species under other pest and animal health legislation. Thus the importation of deer was banned, to the chagrin of certain farmers at a time when deer farming was taking off in the UK, but also common hamsters - although the lack of taxonomic understanding by government led to the seizure of at least one golden hamster and a taxi journey home for another from the check-in desk at Heathrow.

Point of Ayre: The Ayres is a large area of coastal heath and dune grassland in the north of the Isle of Mann island and location of the only National Nature Reserve.
Photo: Nick Pinder

A test for the legislation came in the early 1990s when some fox carcases turned up. One was allegedly run over and then someone came forward having shot two adults at a den site and dug up several cubs. These were taken over by the Wildlife Park and reared by a volunteer eventually to be released on the estate of Miriam Rothschild in Northamptonshire. Although there was, apparently, a history of boxed foxes being brought over for sport, the perpetrator was never found. WildCRU from Oxford was contracted to investigate the situation and although its conclusion that the Island might end up with 400 foxes was widely misconstrued and ridiculed, fewer foxes were reported from then on. From the import of perhaps five animals the vixens had been shot and run over leaving a few dog foxes ranging around the Island until they died of natural causes.

The legislation was used to support a general policy on introductions, based on the then criteria of the International Union for the Conservation of Nature (IUCN), which was adopted by DAFF at the recommendation of the Wildlife Committee in 1992. This policy was frequently referred to in subsequent years in proposals for the Isle of Man to "rescue" the red squirrel by providing a haven free of grey squirrels. The latest such proposal came in spring of 2016 (see later).

Interest in re-introductions and genesis of an idea

In 1997 my role with the Wildlife Act came to an end, leaving others to develop and implement the Wildlife Act while I focused on the Wildlife Park, now under

the Department of Tourism. I had commenced my working life in zoos and had an abiding interest in reintroduction as a conservation tool.

About 10 years ago I came across a reference to white-tailed eagles having been native to the Isle of Man which began to spark thoughts, reinforced when the report from the RSPB[2], on how much sea eagles were worth to tourism and the economy of Mull, began to make the news. I worked for the Dept of Tourism and broached the idea with Roy Dennis of the Highland Foundation for Wildlife and brought it up at a meeting of the Conservation Committee of the Manx Wildlife Trust. Other committee members were worried about the effects of sea eagles on chough and the remnant population of Manx shearwaters on the Calf of Man. In 2009 after a visit to the Isle of Man, Roy Dennis reported that the island might be able to support five or six pairs of sea eagles.

Shortly after my retirement I realised there would never be a perfect time to put forward my proposal for sea eagle reintroductions; this or that a potentially sympathetic politician might not ever be in place or wildlife ever given more serious consideration. Wildlife tourism is woefully weak in the Isle of Man, despite the famous basking sharks. Birdwatching tours were tried in the 1990s but did not last and even now the only wildlife guide on the island can only operate part-time. Yet there are spectacular species to see (choughs, hen harriers, terns, peregrines, sea bird colonies) and they are, by and large, more easier to see than in the UK.

It seemed to me that wildlife tourism in the Isle of Man needed an iconic species to grab the attention and raise its profile. I also thought that the tourism sector would be interested in the sorts of sums being generated by sea eagles in Mull. My ideas were sent to all the politicians and the Manx Nature Conservation Forum which acts as a sounding board and arena for wildlife issues.

Assessment of the sea eagles proposal

My recollection is mainly of a negative reception from bodies I had presumed to be in favour. The Manx Ornithological Society committee were divided on whether the introduction would be beneficial and Manx Birdlife recommending that a feasibility study was carried out, while the Manx Wildlife Trust feared that all biodiversity funding in the island would be swallowed up by the project. Nevertheless, it was agreed to set up a working group to consider the proposal and report back through the Department of Environment, Food and Agriculture (DEFA, the successor body to DAFF).

The self-styled Sea Eagle Feasibility Assessment Group first met in February 2015 to consider my paper for the Forum. The Wildlife Trust was mainly concerned whether sea eagles might threaten the Manx shearwater recovery project on the Calf of Man, in which they, MNH, MB and others, had invested a huge amount eradicating brown rats. MNH felt that an assessment was needed of what risk sea eagles posed to other species while a number of FWAG members were wary. The MNFU said that sheep farmers already have issues with gulls and corvids, so a further predator of lambs would be unwelcome. A compensation scheme would not affect this

A winter scene at Snaefell: The Manx hill lands are largely owned by Government and are accessible for walking.
Photo: Nick Pinder

view because it wouldn't ameliorate the distress and a scheme would be difficult to implement fairly. MNH noted that top predators can be a rebalancing force, reducing other issues by their effects on populations of other species which are causing issues but the MNFU wondered how pet owners might perceive the arrival of sea eagles.

The question of what the sea eagles might eat was obviously going to be crucial, reinforced on receipt of a submission from the Manx Game Preservation Society which felt that these birds would undoubtedly turn their attention to live quarry putting many of the species they held dear in jeopardy, in particular both species of hare, red grouse and grey partridge (the first three of those being introduced species). Accordingly, I produced the risk assessment requested by MNH and obtained the paper on sea eagle diet[3] referred to on the sea eagle website http://www.white-tailed-sea-eagle.co.uk/on-the-menu/ .This in turn led to a paper on the impact of sea eagles on sheep farming on Mull which revealed the happy coincidence that at the time of these studies the population on Mull was about what the Isle of Man was expected to support (from comments by Roy Dennis).

Risk assessment

Using published figures for the daily requirements of breeding, non-breeding and fledgling sea eagles, the list of prey species and their percentages and average weights of those prey species, I predicted how much of what species an established population on the Isle of Man would consume in a year. Population figures for those species were available in the Manx Bird Atlas[4] so I was able to show that annual consumption of any bird species would be less than 10 per cent of their population, and as high as 7% for only three prey species. Lamb consumption would equate to less than 2% and direct predation only 0.3%. These approximate figures put the putative presence of sea eagles in an ecological context.

The Assessment Group next met in August having been given my paper on the potential impact of sea eagles on Manx fauna, and the calculations leading to my conclusions. FWAG had several concerns starting with whether or not the released birds would settle and stay, to overall costs and the realism of the projected financial return to tourism, let alone the potential effects on agriculture. The Museum was interested in the potential effect on meso-predators, benefiting other species, but the Wildlife Trust was still concerned at the effects on seabird colonies, hen harriers and choughs.

The MNFU noted the Scottish Farmer's Union Action Plan based on a survey of its members in Scotland. The representative was adamant that the MNFU and the Flockmasters would fight the proposal "all the way", going to court if necessary. The Chair said that this project, if it went ahead, may need a consultation to provide for the full consideration of social issues, following IUCN guidelines, but for now DEFA want to know whether it added up economically.

Business case

We were in a classic chicken and egg situation, unable to demonstrate the economic benefits to tourism without the funds to undertake a study to generate the business case to attract the funds. The RSPB's latest report on the economic benefits to Mull[5] showed 4,300 people visited Mull in 2010 primarily to watch sea eagles, from an average distance of 250 miles. 3,671,000 people live within 250 miles of Mull, of which 97,171 might be expected to be members of the RSPB/WT, based on RSPB/WT membership being 2.3% of the UK population. That is, 4.42% of the RSPB/WT membership within travelling distance visited Mull to watch sea eagles, whereas 1 million members of the RSPB/WT membership live within 250 miles of the Isle of Man. At the same visitation rate the Isle of Man might expect 44,200 visitors each year, primarily visiting to watch sea eagles, which closely matches the numbers visiting for the TT races in which the IoM Government invests so heavily. I presented this as a best-case scenario along with a worst case scenario of 10,000 visitors a year if travel costs proved a deterrent, but which still gave the return of 5:1 on the investment.

I passed the business case on to the Chair for consideration within DEFA and took it to the tourism section of DED to attempt to secure the minimal funding for a visitor survey which I was confident would prove my case. However, the civil servant was insistent there was no spare money and the politician (also a member of DEFA) felt that reactionary elements meant that government could not associate itself with a survey linked to sea eagle reintroduction. In January 2016 DEFA reported that the Department was committed to other projects and would not be taking forward the sea eagle re-introduction. Since I had always viewed it as a government project, for a number of reasons, I had to concede that without government support the proposal could not progress.

Red squirrel consultation

We did not have to wait long to find out what at least one of these other projects was that DEFA was committed to. In mid-March the Minister announced a consultation on the introduction of red squirrels. The Minister was aware that the legislation would need amending to permit the release of a non-native animal but said that as a Minister he always wanted to challenge accepted areas of opinion. He felt that there was strong affection for red squirrels and providing a refuge for them, on an island free of greys, would show that the island plays its part in international conservation where the Isle of Man already punches above its weight. Furthermore, with numbers of red squirrels declining in the UK, they could be an added draw for visitors.

The consultation paper[6] pointed out the existing presumption on the introduction of non-native species but adding that to provide a conservation justification, interest should therefore be focused on the supposed British subspecies. This point was amplified in a companion briefing paper[7], drafted in 2010 in response to political interest from a previous member of DEFA. The briefing paper was much more detailed and also addressed the issues that would arise if DEFA were to receive an application for a license to release red squirrels. An application could only be entertained if there was a conservation justification and that would only arise if a "British" sub-species could be identified and sourced. It also noted that an expensive project such as an introduction could not be funded from government wildlife conservation funds whilst native species are under severe threat but the consultation document itself made clear that funding is mainly expected to come from private or charitable sources.

The consultation sparked numerous media articles and letters in the press. It concluded in mid-April and DEFA announced the outcome on June 8 2016. The consultation attracted 107 responses, many individuals favouring the idea. Indeed, in response to the simple question "Should red squirrels be introduced to the Isle of Man?" 54% answered Yes and 35% No. However, DEFA advised that the consultation was not just a numbers game and particular weight was accorded those with specialist knowledge. However, after studying all the views submitted, and given the strong opinions of the scientific organisations and groups who responded, DEFA concluded that it would be detrimental to the countryside to introduce them. UK experts stated that the red squirrel isn't in danger of extinction in the UK and see no scientific basis for creating a refuge for it. They therefore didn't support its introduction to the Island.

Consultation responses

The full content of consultation responses, published by DEFA on its website[8], makes for interesting reading. Three local authorities wrote in, one in full support observing that our woods are a disappointing, seemingly dead, region of nothingness but two (both with the same clerk) considering the whole exercise to be a waste of money. I'm not sure how to interpret the comments of one lady, writing in support of the proposal, who labelled me "ever grim" but I'll interpret it to mean pessimistic. Although the identity of the charitable source of funding (the Countryside Restoration Trust) was disclosed during the actual consultation, the responses reveal the identity of the private source of funding to be a prominent businessman in the finance sector. In support of the proposal the Marketing Communications Manager in the Dept of Economic Development had the effrontery to quote the tourism benefit to Mull of sea eagles. Six island politicians responded, three positively in favour and three conditionally so.

In contrast, six wildlife organisations were all opposed, including the UK Mammal Society which responded with a letter signed by a number of mammalogists (13 actually, including the Chair) with very many years work in this field and on squirrels in particular. Their response was therefore seen to be of particular value and showed the views of professionals based in the UK and involved with the conservation work there. Their final comment, that there are no scientific grounds or conservation value in introducing red squirrels to the Isle of Man was echoed in DEFA's press announcement accompanying the decision.[9] Richard Ronan MHK, Minister for Environment, Food and Agriculture, said: "The introduction of red squirrels was popular with many, including me, but many also pointed out pitfalls. As there was no justification on conservation grounds, we have decided not to proceed at present. I am pleased that we have gone through this consultation as my Department is now well informed about the pros and cons of red squirrels' introduction to the Manx countryside and much better placed to make a decision in future should their conservation become an issue."

Nature and economy – choices and priorities

The Department has always been fairly well informed about the pros and cons of red squirrel introduction. It had a robust policy in place from the early 1990s but still staged a consultation exercise, preparing documentation and analysing a large response when the nature of the feedback was largely predictable. Perhaps DEFA elected not to put the proposal before its own Nature Conservation Forum in the hope that overwhelming public sentiment could outweigh the scientific judgement. DEFA was prepared to go against established policy and yet a proposal with the potential to boost the economy by millions of pounds and that accorded with several areas of government wildlife policy (the recently adopted Biodiversity Strategy, the Bonn and Bern Conventions) was rejected without full consideration in the one forum set up to consider such issues.

One contributor to a radio phone-in after the announcement noted, perhaps cynically, that this is an election year. Most elected politicians in the Isle of Man are independents; there are only two political parties, one with one Member of the House of Keys and the other three. Consequently, policy, although much talked about in the executive arm of Government, is little discussed at elections where personalities count for much more and policy seems to be decided on the hoof once the elections are over and Ministers in power. Against that, serious discussion of meso-predator release and trophic cascades can have little traction and re-wilding as a concept is as alien as any of the species in Sch 8 of the Wildlife Act. The irony is that the Isle of Man is so well placed to embark on landscape-scale wildlife conservation, given that government controls over ten per cent of the land, mostly hill land let out to shooting and grazing tenants. However, current government focus on minimising expenditure and maximising income leaves little room for bold wildlife initiatives especially ones which sound as threatening as "Re-wilding" to the average Manx landowner. The Manx political landscape, which in theory could enable proactive policy-making (and arguably does in economic policy), will probably continue to mean that wildlife policies remain merely reactive.

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The Isle of Man hills - still awaiting reintroductions or rewilding...
Photo: Nick Pinder

The wildness delusion

A defence of shared-willed land

Many conservationists need shaking out of lazy assumptions. But we should beware replacing those assumptions with another overconfident creed – particularly one that risks creating more divisions than connections.

GAVIN SAUNDERS

I long for scenes where man hath never trod
A place where woman never smiled or wept
There to abide with my Creator, God,
And sleep as I in childhood sweetly slept,
Untroubling and untroubled where I lie
The grass below—above the vaulted sky.

John Clare, 'I Am' (1845)

The conflicts which affect our wild places are not between people and nature, but between different groups of people. Sometimes we love nature just because it isn't human. Sometimes we see ourselves as champions of nature, in a battle which is actually all amongst ourselves. Rewildling is the latest in a long line of standards behind which battle lines are drawn.

Professional conservation has been around long enough as a career for people to have developed some complacent certainties about what is good for nature, and when and where management helps or hinders nature's ability to flower. And like any profession, it needs to be grabbed by the shoulders and shaken up a bit, every so often. Now is one of those times, because the current approach largely isn't working, and following the Brexit decision we are entering a watershed period when everything is up for grabs.

The rewilding community sees its role, in part, to be to provide the arms to do that shaking up. But are rewilding's own certainties any healthier? In politics right now (and for politics read everyday relations between people across this whole teetering country), it should be pretty clear to anyone with good sense that the priority is to build bridges, find commonality, nurture the ingredients of trust. Does the approach being taken by advocates of rewilding do that? Does it heal, or does it massage old divisions and create new ones? While professing a language of goodness for people and nature, does it pave a way towards that goodness, or harbour misanthropic attitudes which will do harm in the longer term?

Since it quietly began life in the pages of *ECOS*, and latterly since it became the rhetorical cause célèbre of more high profile exponents, the rewilding community in Britain has become more noticed and more confident in stating a new case – or

perhaps an old case, in a new way – for reversing the decline of wild habitats and species in this country. Central in its doctrine are three notions: that we should restore wildness to large areas of our landscape by standing back and letting nature take its course; that we should assist the process by moving towards the reintroduction of missing top predators and other keystone species; and that the uplands in particular are ripe for releasing from the grip of subsistence agriculture and being allowed to find a new, more diverse ecological balance.

I have no issue with the application of these ideas in themselves. Conservation land management is rife with stale assumptions about the true value of arrested successions like heathland, and a less hands-on, more adventurous attitude to large-scale conservation land management would be a refreshing change. The spread of beavers and the return of wolves, if it could be achieved, would be a deeply poignant and wonderful moment for our islands' starved ecosystems. And livestock grazing for the sake of it, artificially supported by subsidy, seems perverse in some parts of the uplands.

But despite expecting to want to throw my hat into the rewilding ring with gusto, I find myself troubled by the form it has taken, and reluctant to clamber onto the bandwagon. I've wrestled with this for months now, trying to work out why I feel such ambivalence, and though I'm far from clear what the full reasons may be, I'm pretty sure they include what follows.

Human or natural?

At a core, philosophical level, the central tenets of rewilding rely on the assumptions that human beings are not 'natural', and things are generally better if humans aren't involved. The vision of nature-in-the-absence-of-humankind has a joyful, liberated honesty about it, which I fully understand (given the chance, I always gravitate to the wildest landscapes I can find). To stand back and let nature act freely - and then to be able viscerally to experience the fruits of that freedom as a human being, going back into a reasserted and unconstrained wilderness, has a recapturing-Eden quality to it. It resonates deeply with us as children of the post-industrial age, whose outlook is still strongly influenced by nineteenth century Romanticism. We see ourselves as latter day Wordsworths, longing to stride out across untamed and somehow fearful landscapes, thrilled by the knowledge that the wolves are watching us once again.

But the majestic wildness we voyeuristically hanker for in nature, can in equal measure become the wildness we consequently deny in ourselves. To wish for nature to be 'free' of human influence is to assume that to be influenced by humanity is to be imprisoned, somehow. Is that how we should see our puny lives? Are we part of this land, or not? Are we ashamed of our footprints? Surely we need a relationship with nature that affirms our legitimacy as part of it, rather than confirming our incongruity and our degeneracy.

If we put wild nature on a pedestal because it isn't human, we perpetuate the humans-are-not-natural dichotomy which is at the root of much of what has gone

wrong for our species. And it's defeatist, somehow: 'Humans only make things worse - leave nature alone and everything will work out alright'. No, for heaven's sake! We shouldn't see presence or absence of human influence as the arbiter of what is good: it's the *quality* and *kind* of influence that matters.

There is a strand of thinking in rewilding that sees the release of land from human management as constituting some sort of atonement for the wrongs we have committed on it in the past. It smacks of the Fall, of a basic assumption that we are sinful creatures and that wherever we lay our hands, we spoil. I used to think that, when I was 15. I hoped humanity would perish, because of the damage it had done. But I was a misanthropic adolescent, then. I want to see self-willed land expressing that will, but I think I've worked out, all these years later, that the 'self' within the land is no different from the 'self' in me.

Them and us

I've attended a couple of rewilding discussions which lapse into the metropolitan bloodsport of demonising farmers as a race, directing ill-educated ire at upland farmers who are actually the most low-input land managers of any. Yes, the sheep farming industry is too ubiquitous and far-reaching, sustained by subsidy and often making little sense in economic or environmental terms. But it has a place, and a history, and a culture, and a case. To imply that it is expendable because it happens to occupy the urban dwellers' playground is simply to invite the dismissive conclusion that Rewilding is a distorted view seen only from the urban end of a very long telescope.

More importantly, it forgets that human joy in nature is not just a voyeuristic spectator experience requiring Goretex and binoculars, but is also experienced through physical engagement with dirt, with wood and with flesh. It is about using our hands – turning the soil, tending livestock, harvesting, making things. That's where so much human wisdom, culture, sense of self, and scope for continuing well-being, stems from.

The 'sheepwrecked' argument, despite its legitimate essence, risks being used with such rhetorical exaggeration that it polarizes the upland/lowland divide even further, emphasising different world views, and implying that the uplands should become essentially just a playground for nature lovers, albeit with the economic dividends which might flow from that, for some. It also plays perfectly into the hands of those who advocate a 'Land Spare' approach which corrals nature into the uneconomic uplands, while the lowlands, where most of us live, remain a food factory, only even more so.

Moral high ground

I'm not arguing that conservation can avoid conflict. Bad practices and policies need to be confronted: grouse moors, badger culls, and yes, sheepwrecking. But confrontation which creates no more than antagonism on one side, and a sense of camaraderie amongst the righteous on the other, may feel good but gets us nowhere. It feels good to be part of a movement, but as witnessed by some parts

NEIL BENNETT

of our current political parties, the reality of whether or not you're likely to succeed can all too easily become less important than remaining true to the group's purist doctrine. There's a darker side in here too, a zealotry coming from a position of fierce conviction of speaking up for nature's real best interests. Yet the rewilding idea is actually just another phase in the cultural evolution of western attitudes to nature. For all its romantic notions of championing the release of nature from its shackles, rewilding is in truth another land management choice, just as much as any other intervention.

The Rewilding Britain website quotes the famous aphorism of Aldo Leopold: "When we see land as a community to which we belong, we may begin to use it with love and respect". That statement has been a lodestone for me throughout my working life. But I feel it is being misused in this context, because the rewilding movement is not properly acknowledging the place of people in the community of the land. When human beings pursue their needs and express their will on the land, they do so in a spectrum of ways between the peaceful and the violent, between the constructive and the destructive - between that which builds, and that which takes away. But what we do is not inherently artificial. It isn't inherently better if we aren't there. To think otherwise is to deny our humanity, and our nature too.

Shared-willed land

In a blink of geological time we have gone from being hunter-gatherers, through shifting agriculturalists, to settled villagers, to post-industrial urban dwellers. Reading the arguments around the subject of rewilding, from its early appearances in *ECOS* through to the present, it's very clear just how confused we are as a species, given the rapidity of that change. The urban dweller dreams of the simplicity of tilling the soil in peaceful contemplation. The rewilder dreams of rediscovering the visceral fear of wilderness breathing down our necks. Neither knows what nature really is any more, and neither can grasp the natural self. Both are nostalgic, both are often fanciful, and both risk fiddling while Eden burns.

Rewilders condemn 'mainstream' conservationists for seeking to control nature and fit it into preconceived bucolic templates, refusing to let it get out of hand. There's plenty of that attitude around, and plenty of effort and money wasted trying to hold back tides of scrub, prevent things from growing where they supposedly shouldn't, and routing offending invasives. But that doesn't mean that conservation managers are simply short-sighted control freaks. It shows that, while triyng to do the best for wildlife in the diminishing places where it thrives, they are sometimes too heavy-handed, sometimes too wedded to management plans, and sometimes get misled. But they do at least have the virtue of displaying those frailties while actually getting their hands dirty.

I fully acknowledge that some well-regarded initiatives which would class themselves as representing rewilding in practice, do indeed break their backs and scar their hands in the cause of their vision. But I sense that rather too much of the most energetic talk about rewilding lacks that real-world grounded-ness, and the humility – towards people as well as nature - that comes with it.

The decades of land management experience built up since conservation bodies first began acquiring nature reserves, itself built on centuries of traditional knowledge, at least has the quality of being honed in reality, rather than developed through some sort of rhetorical distillation of true doctrine. It has many faults, and it badly needs new vision and new energy, but it still represents our best attempts yet at creating what I would like to think of as Shared-Willed Land. There are generations-worth of learning yet needed before we might feel we are doing that sharing properly, and any wise practical conservation manager knows that. But in the meantime, nature reserve wardens and other low-intensity land managers tend not to turn into tub-thumping zealots, for a reason: they've got jobs to do, and they're tired when they get home.

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