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The emergence of rewilding in Europe

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THE EMERGENCE OF REWILDING IN EUROPE

Alexandra Locquet and Steve Carver

Introduction

Despite the origins of the rewilding movement being in North America (see Chapter 3), it may be argued that the process of rewilding has a much longer history without being called as much. Wherever humans abandon land after modifying it for their own ends, nature is released and allowed to take its course. If we consider rewilding to include the process of nature reclaiming those lands abandoned by humans—for whatever reason—then rewilding has been going on for thousands of years. The history of humanity is littered with examples of civilisations that flourished and then died out, leaving the land for nature to reclaim.

There is increasing evidence to suggest that even the Amazon rainforest contains more human modification than previously realised. Archaeological investigations have revealed evidence of modified soils, regular settlements, and routeways through the jungle which lends some credence to early reports from European explorers of heavily populated and farmed areas that have since returned to rainforest (Stenborg et al., 2018; Coomes et al., 2021). The theory here is that the first European visitors brought with them diseases that virtually wiped out the indigenous people who had no natural resistance, such that when European explorers returned several decades later, the land had returned to forest giving the impression of a jungle wilderness (Pearce, 2015). Other similar examples can be found elsewhere including Easter Island and the Mayans as described by Jared Diamond in his book Collapse (2005).

In Europe, land abandonment and subsequent return of nature has long been a recurring and ongoing phenomenon driven by economics, land degradation, and other changes (Carver, 2019). Examples include the Portuguese island of Madeira and Norway. In the case of Madeira, agriculture was focused initially on grain and later sugar cane and wine for export together with fruit and vegetables. Production on the island is limited by extremes of topography and need for irrigation water, and a complex landscape of terraces and irrigation canals (known locally as ‘levadas’) was constructed to make agriculture possible. Many of these areas have since been abandoned in favour of tourism, leading to the recovery of native vegetation on former terraced fields and gardens. This is an example of circumstantial, medium scale passive rewilding following farmland abandonment. In southwest Norway out migration of rural population to the Americas during the mid to late 19th century and early 20th century has led to many sheep farms being abandoned. These have since reforested because of reductions in grazing pressure.
where there are no native herbivores to suppress tree regrowth. This is a good example of human out migration leading to land abandonment and subsequent ‘passive rewilding’ of native forest.

More recently, rewilding has gained popularity in Europe, influenced by the emergence of the rewilding movement in North America. Here we examine the history of the development of rewilding in Europe and show how, in crossing the Atlantic, rewilding has transformed into a somewhat different concept in its application to European landscapes. This is being driven by differences in geography, politics, and culture, leading to a more hands-on approach to rewilding in Europe. This ‘active rewilding’ retains human decision-making in a more central role determining project areas, species and habitats as well as desired outcomes in terms of landscape, biodiversity, ecosystem trajectories, and benefits to humans. The latter may include delivery of ecosystem goods and services but has also been extended to include fiscal and economic benefits from government support and inward investment from ecotourism and conservation.

**Early influences**

As described in Chapter 3, the word ‘rewilding’ was first coined in North America and championed by, among others, Dave Forman, Michael Soulé, and Reed Noss. A key driver of rewilding strategies developed in the United States and Canada appears to be the recovery of wilderness (Soulé & Noss, 1998), with an emphasis on the ecological feasibility of predators as keystone species. As Locquet and Héritier (2020) have shown, issues linked to wilderness and the associated concepts have been disseminated throughout the world via the ‘ecologisation’ and internationalisation of the idea of wild.1

In the European context, rewilding as a concept emerged first in some Northern European countries (Bastmeijer, 2016). In the 2000s, rewilding was promoted in debates and reflections in Europe through the work of organisations such as the NGO Wild Europe Initiative (created in 2005), which promotes and encourages strategies for the protection and restoration of wilderness areas in Europe (Wild Europe, 2010). The mobilisation of this NGO, and of around 100 organisations with various interests, including wildlife protection, environment, tourism, and government, contributed to the promotion of the concept to the European Parliament in 2008 (Locquet & Héritier, 2020), until the ultimate signing of the Wilderness Resolution (Kun, 2013). Following this phenomenon, the idea of rewilding spread throughout Europe in response to the realisation that current conservation practice and protection arrangements are insufficient to achieve conservation objectives (Lorimer et al., 2015).

It is important to acknowledge the influence of the Dutch concept of ‘Natuurontwikkeling’ (Natural Development) and other pre-rewilding influences in the move towards rewilding in Europe. While not called ‘rewilding’ until later, conservationists principally in the UK and Netherlands began in the 1990s to question more traditional conservation practices which sought to maintain certain ecological conditions in statis through human interference and promotion and/or control of selected natural processes. This led to changes in conservation practice and rise in popularity of new theories [e.g. Frans Vera’s (2000) wood-pasture hypothesis] and the development of organisations which later adopted the term rewilding. This strand of rewilding history has been very influential in the UK and The Netherlands, led to the foundation of the organisation Rewilding Europe and an approach to rewilding that focuses more on the role of large herbivores in enclosed (fenced) areas and realising benefits to humans such as ecotourism initiatives supporting local economies. This is very different to the ‘original’ North American concept and often stops short of end goals of recreating wilderness ecosystems in favour of a more anthropocentric model based around the idea of ‘kept wild’ (Jepson et al., 2018). We return to this and these ideas later in the chapter.
The emergence of rewilding in Europe

The growth of interest in the rewilding concept at a global scale can be observed through the analysis of the evolution of the number of scientific publications on rewilding. Lorimer et al. (2015), have shown that articles and papers on rewilding around the world have not stopped growing since the 2000s. The analysis of the scientific literature carried out by Locquet and Héritier (2020) also shows that most publications relating specifically to rewilding in Europe emerged from 2005 onwards (Figure 3.1). The authors observe a net increase in scientific production relating to rewilding over the period 2010–2019 (Figure 3.2), which corresponds to the development of the handling of rewilding issues by the European organisation Rewilding Europe (Locquet, 2021).

Emerging European rewilding groups

On a global scale, there are several variations of rewilding (Jørgensen, 2015), ranging from passive management (Norgués-Bravo et al., 2016), which favours the return of natural processes without fixed objectives, through to active interventions including species reintroduction practices, sometimes utilising non-native species (Fernandez et al., 2017).

Rewilding raises questions about the reference states used in current conservation practices (Lorimer et al., 2015). On the one hand, some rewilding projects consider ancient (Pleistocene) reference states by arguing the fundamental role of megafauna on ecosystems (Du Toit, 2019). On the other hand, some stakeholders consider that rewilding is a way of ‘looking to the future’ rather than relying on the past (Locquet, 2021). Taking past ecosystems as a reference point has its limitations, as climatic and ecological conditions have changed (both because of human activities and from natural developments). This is why some stakeholders prefer to talk about

![Figure 3.1 Evolution of article publications according to the terms used on a European scale.](image-url)
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novel ecosystems, which refer to environments that have been impacted by human activities, but which are no longer subject to active management (Marris, 2011). As explained by Evers et al. (2018)), this nevertheless implies identifying what it is about these ecosystems that are new in relation to existing ecosystems (Locquet and Héritier, 2020). Therefore, as Locquet (2021), has shown, some of the stakeholders working for wilderness in Europe prefer not to use precise reference states.

Nevertheless, it is possible to observe the influence of certain models on the conceptions and representations of rewilding in Europe. The pan-European organisation Rewilding Europe principally promotes the return of large herbivores to ensure the return of natural dynamics and is recognised as a pioneer and model for rewilding in Europe (Ward, 2019). The dissemination of this vision is ensured by a strategy based on professional marketing and the constitution of a network of pilot sites throughout Europe promoting the idea of linked economic development of rural territories through rewilding projects (Locquet, 2021). This phenomenon is notably

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**Figure 3.2** Evolution of the distribution of publications between 1981 and 2019.

Number of publications per period:
- 1981–1999: n = 16
- 2000–2009: n = 56
- 2010–2019: n = 187

Source: Scopus, 2019 (adapted from Locquet and Héritier (2020), Locquet (2021)).
reinforced by the development of a ‘bank’ (Europe Wildlife Bank, ND) for the exchange of animals to constitute the herds in the various sites of the organisation throughout Europe (Rewilding Europe, 2020).

As Locquet (2021), has shown, in the European context the majority of trophic rewilding projects developed are based on the return of large herbivores with the aim of recovering natural grazing and disturbance processes that have largely disappeared since the Pleistocene. These models are based on the principles of ecological management of environments through grazing of large herbivores (Lecomte and Le Neveu, 1986). The underlying idea here is that the European continent would naturally be composed of a mosaic of closed and open environments, the latter being maintained by natural disturbance of grazing pressures exerted by large herbivores (Locquet, 2021).

There are also other initiatives which, although not directly claiming to be rewilding strategies (notably for reasons of linguistic and conceptual transposition of the term), are based on the reintroduction of large herbivores. In France, several projects have been developed around the return of grazing pressures like those induced by megafauna. These actions are based either on hardy breeds such as Highland cattle or on the return of so-called wild species: European bison, moose, horses (Prjevalski horses) or ponies (Konik) (Locquet, 2021). Other initiatives focus on recovering the phenotypic and behavioural characteristics of primitive horses such as the Tarpan (Arthen) (Locquet, 2021).

A different path … how rewilding in Europe is different to its North American roots

Nature conservation in Europe has traditionally focused on protecting remnant natural ecosystems as reserves for wildlife and their habitats. Development elsewhere for human land use (i.e. settlement, agriculture, forestry, etc.) has led to a network of core nature areas embedded in a matrix of human-dominated ecosystems. While Europe’s Natura 2000 network is well-developed and among the most extensive in the world with over 27,000 sites and over three-quarters of a million square kilometres of land (and a third of a million square kilometres of marine areas) protected, many of the sites it contains are under some form of human land use. Connectivity remains a problem and many nature sites are fenced and isolated (Ceaușu et al., 2015).

Despite the return of the wolf (Canis lupus), Eurasian lynx (Lynx lynx), Iberian lynx (Lynx Pardinus) and, in some instances, the European brown bear (Ursus arctos) in small numbers to their former ranges across mainland Europe, they have not been universally welcomed and where numbers are increasing, political pressure for population control (often by lethal means) is growing. In the Scandinavian countries pressure from a strong farming and hunting lobby within the country have led to governments mandating a cull of their wolves to keep breeding pairs to low numbers to protect livestock and game (Trouwborst et al., 2017). Meanwhile, in the Pyrenees increasing brown bear populations, while welcomed by conservationists and tourism groups, have met with resistance from farmers concerned about attacks on livestock (Herrero et al., 2021). Thus, while the return of large carnivores to European countries has been aided, at least in part, by improvements in wider nature protection through policy mechanisms such as Natura 2000, the Bern Convention, and Emerald Network, it has not been without conflict with public opinion mixed and reactions from traditional land uses largely hostile (Chapron et al., 2014; Kutal et al., 2018; Franchini et al., 2021).

Much of the work on rewilding in Europe has been influenced by the Dutch school of thought focusing on the role of large herbivores in so-called ‘nature development’ (in Dutch
Here the emphasis is on the use of large herbivores as vectors of ecological disturbance through trampling, grazing, browsing, etc. to create an open mosaic of vegetation in rewilded landscapes. Much of this school of thought stems from the work of Frans Vera and the theories he set out in his PhD thesis and subsequent book *Grazing Ecology and Forest History* (Vera, 2000). European landscapes are, in the main, devoid of any significant numbers of large carnivores, such that the role of predation and disturbance and behavioural traits of herbivores created by their presence (i.e. ‘landscapes of fear’) is largely absent. The theories of Frans Vera on wood-pasture landscapes (known as ‘The Vera Hypothesis’) wherein semi-open pastures dominated the pre-human European landscape driven by large herbivore grazing and disturbance regimes, has therefore gained popularity among conservation practitioners in Europe where the regulatory role of large carnivores cannot be realised and resulting landscapes are in any case not too dissimilar to those created by traditional agricultural practices.

Even though carnivores are often not involved, rewilding projects can be a source of conflict as the case of the Oostvadersplassen experiment shows (Kopnina et al., 2019). Here, tensions relating to ethical issues have emerged following the development of the project. The project planned to intervene very little on the reserve, which implied not feeding the animals. But the closed nature of the site (it is enclosed by stock-proof fencing) and the absence of predators has meant that the regulation of the herbivore population was wholly dependent on the amount of food resources available and on disease (Carver and Convery, 2021). In 2005 and 2018, particularly harsh winters led to the death of many animals from starvation resulting in widespread public concern and an acrimonious debate in the conservation community (Theunissen, 2019; Barkham, 2018). As a result, preventive culling of individuals that might not survive the winters, as well as winter feeding of the animals, has been implemented after government intervention (Theunissen, 2019; ICMO2, 2010).

The concept of rewilding can thus be seen to have several limitations relevant to its European setting when compared to North America. Firstly, in its very understanding, just as the concept of ‘wilderness’ is neither translatable nor transposable across many languages and cultures (Locquet, 2021), the term ‘rewilding’ is also a source of some tension and debate. It is associated with a complex and constraining concept (Tree, 2018; Lorimer, 2015), and as such, some stakeholders refuse to use this term, since it is considered too controversial (Locquet, 2021). The term rewilding is often associated, rightly or wrongly, with the reintroduction of predators or with a change in local uses induced by exclusion or abandonment of agricultural land.

The notion of rewilding, and more broadly the reintroduction projects of large herbivores, are confronted with legal limitations regarding the status of the animals. Indeed, most of the animals reintroduced in rewilding projects are domestic or semi-domestic animals (Locquet, 2021) except for the so-called ‘non-domestic’ European Bison and are usually constrained by fences. As these animals are ‘captive’ they are not necessarily perceived as being truly wild, but as ‘kept wild’. In Europe, only the herbivores in the Oostvadersplassen reserve have the status of wild animals, although their movements are still limited by the surrounding fence (Locquet, 2021; Carver & Convery, 2021). While limiting the mobility of these groups of animals may have consequences for population dynamics (reproduction, genetic mixing, etc.), this serves to further highlight the lack of ecological connectivity between the various projects involving such animals and thus questions the relevance and possibility of large-scale programmes in heavily modified landscapes such as that found in Europe due to the severe constraints created by human land use pressures. Thus, the captivity of the ‘kept wild’ animals used in many rewilding projects raises significant ecological and ethical issues (Locquet, 2021).

Funding of rewilding project in Europe can also be an issue. Here the rewilding projects that have been developed are mainly led by the stakeholders involved or are the result of private or
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Indeed, as Locquet (2021) has shown, issues relating to the protection of the wilderness or rewilding in Europe are rarely dealt with exclusively by public bodies but are rather the preserve of NGOs. These organisations mainly rely on donations or private funding from the economic activities developed by the stakeholders as part of the implementation of their projects (Locquet, 2021) leading to possible conflicts of interest.

Most of the rewilding initiatives developed in Europe are promoted to ensure local economic development. These projects would thus generate income mainly from the tourism that emerges around the rewilding areas, either directly through job creation and wildlife observation opportunities, or indirectly through development of accommodation and catering facilities, etc. (Locquet, 2021). Organisations such as the Knepp Estate (UK) and the Mont d’Azur reserve (France) offer accommodation and catering services as well as ‘wildlife safari’ activities (Locquet, 2021). In this way, ‘the wilderness and the labels promoting the wilderness character of an area are presented as guarantees of quality and attraction for a territory’ (Locquet, 2021), particularly in the context of agricultural decline. This leads us to question whether these initiatives are really rewilding or whether the term has simply been appropriated in Europe and used as a marketing tool and so may be seen as lacking in the ecological/philosophical integrity of its North American roots.

Conclusions: The mainstreaming of rewilding in Europe

While rewilding in Europe has geographical, ecological, philosophical, socio-political, and cultural limitations, it has perhaps gained more support and traction than in North America where it is seen by many as more of a sub-discipline of ecological restoration (Hayward et al., 2019). The fact that much of Europe, with perhaps the exception of northern Scandinavia, has lost
much of its wilderness over thousands of years of human history and landscape modification (principally deforestation for agriculture), means that rewilding has found fertile ground within a conservation movement that hitherto has been playing a rear-guard action against rapid development and agricultural intensification.

So-called ‘fortress conservation’ has worked to prevent the complete extinction of many wilderness-dependent European species, while others have found niches within human dominated landscapes, most notably traditional agricultural and forestry practices. As agriculture and forestry has intensified over the decades since the end of the Second World War, even these are coming under increased pressure from habitat loss and pollution. The result has been that many open and semi-open traditional agricultural landscapes have been incorporated into the Natura 2000 network as a means of protecting extensively managed landscapes and the species and habitats assemblages that have managed to thrive there.

Rewilding provides an alternative view of future nature in this crowded continent. As the world faces the joint crises of climate changes and biodiversity loss, rewilding provides a more positive and proactive approach to nature conservation that should—at least in theory—allow nature both the space and time to slow and even reverse biodiversity declines. This relies heavily on the Three C’s model of Cores, Corridors and Carnivores, just as developed in North America, with perhaps the exception that in Europe, the keystone species are largely restricted to large herbivores despite the natural recolonisation of some carnivores back into their former ranges. This concentration on the cores and to some extent the corridors can give the impression of rewilding in Europe being something of a three-legged stool but with, in this case, a shorter third leg (the carnivores) which inevitably gives rise to certain imbalances that must be propped up by human intervention. The classic example here is the need for fencing in rewilding projects, both to keep large ‘wild’ herbivores in (to prevent damage to surrounding croplands) and to keep livestock out (to prevent overgrazing of recovering natural habitats). As such, this can be viewed as a somewhat watered-down version of the original idea as envisaged by the rewilding pioneers in North America where the focus is on continental scale recovery and connections between extant wilderness that allows freedom of movement of keystone species (including large carnivores) in response to climate change and seasons. In Europe, cores are smaller, less connected, often fenced, and lacking keystone predator species.

Some of this nature recovery vision is being ‘sold’ on the back of economic models of Natural Capital accounting and ecotourism via some very glossy marketing and carbon credit trading. This involves new forms of finance from the private commercial sector wishing to offset their standard operations by buying in to carbon and biodiversity offsetting schemes. Whilst this can be a new and much needed source of revenue for conservation NGOs it risks becoming a form of ‘greenwashing’ that shifts the impacts from ‘Business as Usual’ modes of operation in one place by offsetting in another. This is not helped in some instances through a reliance on digital accounting methods underpinned by energy-thirsty computational models and distributed encrypted digital ledgers such as the Blockchain. Nevertheless, policy focus on Nature-based Solution (NbS) and ecosystem service models that incorporate elements of Natural Capital accounting and human agency into the rewilding portfolio are perhaps essential elements of rewilding’s appeal and success in a European setting. Anything that improves the lot of wild nature and provides benefits for both wildlife and humans must be a good thing, provided it doesn’t simply displace resource demands elsewhere in the already significant environmental and economic footprint of Europeans.
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Notes

1 This process has resulted in the progressive inclusion of wilderness in international debates and documents, and more particularly in the creation of the IUCN category Ib wilderness areas in 1984 (Bastmeijer, 2016).

2 The methodology used to establish this analysis and produce these graphs is explained in the article published by Locquet and Héritier (2020) and in the PhD manuscript of (Locquet 2021).

3 Of all the 63 stakeholders working in favour of wilderness or rewilding in Europe within the framework of Locquet’s PhD thesis, only 13% indicated that they relied on data relating to disappeared environments and landscapes. While 33% of the stakeholders interviewed said they did not use a reference state (Locquet, 2021).

4 Translated from French: « de regarder vers le futur plutôt que de s’appuyer sur le passé » (Locquet, 2021).

5 Because of their domestic status, these animals must be kept in captivity and under sanitary care (each individual must be identified, vaccinated and treated with an antiparasitic). Sanitary care and treatment involve the manipulation of individuals and leads to the disappearance of certain natural dynamics—such as the regulation of populations by disease, or the disappearance of the microfauna attached to these herbivores (Locquet, 2021).


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