

The Biopolitics of (English) Rewilding

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Abstract

Even ‘hands off’ approaches to conservation such as rewilding are intimately, sometimes violently, involved in the lives and deaths of the other-than-human species they seek to protect. Foucauldian biopolitics, with its exploration of the regulation of life and death, is increasingly being used to examine the control of other-than-human species. This article extends the work of other scholars by applying the concept of biopolitics to rewilding in England. A comparative case study of two rewilding sites (the Avalon Marshes in Somerset and Wild Ennerdale in Cumbria) identified common modes of biopolitics operating at both sites. These modes were animals/species as: expendable objects, machines/human proxies, analogues, and self-determining agents, all of which ‘allowed’ different levels of agency for the species concerned. Given that field sites were purposively selected to display contrasting contexts it is possible to extrapolate from the Avalon Marshes and Wild Ennerdale and propose that these biopolitical modes are operating at other English rewilding sites.

Keywords: rewilding, biopolitics, other-than-human animals, non-human animals, England, English

INTRODUCTION

Scholars have extended the Foucauldian concept of biopolitics to the governance of other-than-human animals (OTHAs), both in conservation generally and in rewilding specifically (e.g., Biermann and Anderson 2017; Biermann and Mansfield 2014; Hodgetts 2017; Lorimer and Driessen 2013, 2016; Srinivasan 2014, 2015, 2017; Ward and Prior 2020; Wynne-Jones et al. 2020a, 2020b). Indeed, biopolitics, with its logic of managing species through “population-level interventions” (Biermann and Anderson 2017), is particularly apposite to rewilding which also approaches species at population or even assemblage level. While there is a substantial body of work on the biopolitics of conservation, the study of biopolitics in relation to rewilding is still somewhat limited. For example, Biermann and Anderson (2017) examine the biopolitics of conservation generally and

examine the biopolitics of rewilding only as a subset of this, while Clancy and Ward (2020), Lorimer and Driessen (2013, 2016), Hodgett (2017) and Ward and Prior (2020) focus on specific species involved in rewilding (cormorants, Heck cattle, squirrels and pine martens, and beaver respectively). Moreover, these scholars highlight the need for further studies of biopolitics in relation to rewilding; Biermann and Anderson (2017: 10) call the recognition of the role of biopolitics in rewilding a “starting point rather than an endpoint for research” and Lorimer and Driessen (2013: 257) assert that research has “a lot to gain from exploring biopolitics as multiple modes of living with non-human life” and “map[ping] the connections, frictions and compromises between several modes of relating.”

This article seeks to respond to these calls and to build on the work of these scholars by examining biopolitics specifically in relation to rewilding (rather than conservation more generally) while still maintaining a broad enough scope so as to be able to encompass a number of rewilding sites and a number of species. In so doing, it hopes to illuminate the way that biopolitics operates specifically in relation to rewilding, as compared to other forms of conservation, and also how it relates to rewilding as a whole rather than to specific species. Further, it seeks to mark out modes of biopolitics which encompass not only the companion animals of rewilding

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but its companion species (Haraway 2003; Tsing 2012). In order to tend to this investigation this research examined two English ‘rewilding’ sites: the Avalon Marshes in Somerset in England’s south west and Wild Ennerdale in Cumbria in England’s north west.

REWILDING

Rewilding differs from other ecological restoration approaches in that, in addition to seeking to restore ecosystem function, it places emphasis on other-than-human autonomy and a reduction of human intervention (Ward and Prior 2020; Wynne-Jones et al. 2020a). In addition, it focusses on increasing biodiversity whereas traditional conservation may seek to maintain the status quo (Sandom et al. 2018) and, also in contrast to traditional conservation, it often (although not always) aims to operate at “landscape scale” (Sandom et al. 2018). There are, however, many ways of approaching rewilding’s aims and there is not necessarily always agreement as to what can or should constitute rewilding. Indeed, rewilding is a notoriously “plastic” term (Jørgensen 2015) which can be applied to a broad spectrum of activities (Sandom et al. 2018) with understandings of the term often varying according to its location (Jørgensen 2015). For example, a distinct form of rewilding has been identified in England which, *inter alia*, admits the involvement of domestic as well as wild species (Thomas 2021). The involvement of domestic and wild species coupled with the aim of increasing other-than-human autonomy creates complex, and sometimes fraught, human-animal relationships, biopolitical modes, and “entanglement[s] of harm and care” (Srinivasan 2015) which are the focus of this article. To set this research in context, previous scholarship on the application of biopolitics to conservation and rewilding is set out in the following section.

BIOPOLITICS (OF CONSERVATION AND REWILDING)

Foucault’s (1978: 138) notion of biopolitics is concerned with the exercise of power over and regulation of living things, specifically with the administration, optimisation and multiplication of life, seeking to “exert a positive” influence that will “ensure, sustain, and multiply” it. Two concepts, in particular, emerge from biopolitics which are pertinent to conservation and rewilding; “massifying” and “making live and letting die” (Foucault 1976). Massifying refers to the way biopolitics approaches living things as a collective rather than as individuals (Foucault 1976) and is similar to ecocentrism, in that, in each case the unit of interest is the collective: value is placed on assemblages as a whole, which, in the case of ecocentrism, includes both biotic and abiotic elements (Kopnina et al. 2018). For comparison, governance of individuals (what Foucault (1990) would call anatomo-politics) is akin to biocentrism: here the unit of interest is the individual and value is placed on the (biotic) components of an (eco)system (Kopnina et al. 2018). Part of the relevance of

massifying to conservation generally and rewilding specifically is that, given their respective focus on species and ecosystems, the logics of care within their biopolitical regimes entail “a radical transition from an ethical domain of individual care to a concern for the ecological whole, where individual suffering is insignificant” (Linnartz and Meissner 2014: 6). This transition exemplifies the “massifying” of biopolitics—with respect to conservation the mass is the species and with respect to rewilding the mass is the ecosystem assemblage.

The second relevant concept, “making live and letting die,” emerges from Foucault’s (1976) conceptualisation of the way power evolved from the sovereignty of monarchs to the biopolitics of government. Whereas a sovereign had absolute power over their subjects, a government would make more allowances for the agency of its citizens. So, while sovereignty held the power to “take life or let live,” a notion which centres on death and the ability to evoke or postpone it (Foucault 1976), the “make live and let die” of biopolitics are interpreted as “strategies for the governing of life” (Rabinow and Rose 2006: 195). Make live, let die with its focus on life and the ability to compel or deny it is, however, arguably more coercive than take life, let live (Foucault 1976). This logic of coercive control aptly encapsulates current human attitudes to other-than-human species and it, therefore, follows that this concept is highly applicable to conservation generally and rewilding specifically. Indeed scholars (e.g., Biermann and Mansfield 2014; Braverman 2016; Srinivasan 2014, 2015, 2017) have emphasised the appropriateness of applying biopolitics to conservation, since both are concerned with the governance and optimisation of life at collective levels—biopolitics with populations and conservation with species. Accordingly, biopolitics has been applied both to the science of conservation biology (e.g., Biermann and Mansfield 2014; Braverman 2016) and to the practice of conservation in the field (e.g., Braverman 2016; Srinivasan 2014, 2017; Hodgetts 2017; Ward and Prior 2020). Indeed, Biermann and Mansfield (2014: 262) identify conservation biology as being an inherently biopolitical science with its “aim to foster and protect the diversity of non-human life, taking as [its] object not individuals ... but populations, communities, and species.” Scholars have also highlighted the way that the biopolitical power of conservation rests not only with its ability to order (and therefore govern) life at species level, but in its ability to make clear distinctions between species, particularly with regard to which ones are made to live or let die (Braverman 2016; Hodgetts 2017). Making such distinctions have long been the domain of biology (with its Linnaean classification system) and conservation (which is predicated on categories and their maintenance (Milton 2000)), and Braverman (2016: 34) describes threatened species lists (a key tool for conservation science) as “a biopolitical technology par excellence.”

Despite conservation biology being concerned with species, conservation practice nevertheless deals with, and works through, individuals since collectively they constitute species (Srinivasan 2014). This leaves individuals in a difficult position however since their “lives acquire meaning only

when they advance the long-term well-being of the broader population or are essential to sustaining key biological processes” (Biermann and Mansfield 2014: 214). This results in “an entanglement of harm and care which comes about because the individual is often used as a means to an end in the pursuit of the welfare of the larger population or collective” (Srinivasan 2015: 208). Such entanglements of harm and care can be even more pronounced in rewilding than in traditional conservation since rewilding is more concerned with ecosystems and multi-species assemblages than with single species, leading to “practices that can be simultaneously caring and harmful to individuals in the name of the conserved collective” (Wynne-Jones et al. 2020a: 72). Rewilding is developing new biopolitical modes to negotiate these entanglements in which Wynne-Jones et al. (2020b: 90) see “a broad spectrum of biopolitical possibilities with differing degrees of departure from traditional conservation approaches.” It is suggested that this departure will offer new biopolitical framings which “break with old biopolitical framings and strictures” (Wynne-Jones et al. 2020b: 98); this break is centred on two elements of biopolitics and rewilding: life and agency (or subjectification).

Rewilding has a fundamentally different approach to life than traditional conservation does. Traditional conservation, with its target driven approach and its concentration on specific species and habitats, focuses very strongly on the make live, let die ethic (van Dooren 2014). For example, species which are considered desirable, and are targeted for conservation, can be ‘made’ to live by ‘forcing’ the individuals which constitute the species, to exist/continue to exist via coercive means, e.g., managed breeding programmes (van Dooren 2014). On the other hand, species that are not considered desirable², and are therefore not targeted for conservation, are excluded from such care programmes and are ‘let’ die, through sacrifice or neglect (van Dooren 2014). The sacrifice/neglect may be intentional or unintentional, deliberate or accidental, or even conscious or unconscious; individuals may be compelled to perform roles which expose them to risk of death, or entire species may be allowed to perish due to lack of intervention if conservation efforts are directed elsewhere (van Dooren 2014). Rewilding, with its open-ended approach and its avoidance of targets or goals, has no such commitment to making live. Conversely, its “hands-off approach” (Corlett 2016) aligns very strongly with the “let die” ethic of Foucault’s biopolitics. This has seen it criticised both for a lack of care for its companion species (Lorimer and Driessen 2013, 2014; Keulartz 2009), and for its uniform application of the let die approach which leads critics to fear that vulnerable species will fare less well during rewilding than under traditional conservation regimes (Sandom et al. 2018).

Therefore, the somewhat unsatisfactory mapping of rewilding onto current modes of biopolitics, given that it does not demonstrate a clear position with respect to life, indicates that rewilding is creating new biopolitical spaces and that new modes of biopolitics are therefore necessary with respect to

the companion species of rewilding. Indeed, while Biermann and Anderson (2017: 2) note, perhaps rather unsurprisingly, that “there is not a single “conservation biopolitics” but instead an entanglement of overlapping and contradictory logics and techniques,” this research would suggest that there is not even a single “rewilding biopolitics.” Rather, similarly to Biermann and Anderson’s (2017) research, the biopolitical modes identified as operating with respect to rewilding are overlapping (both of each other and of other biopolitical approaches to companion species e.g. those used in traditional conservation and/or farming) and contradictory (again of each other and of those of conservation more generally). For example, the ‘hands off’ approach in some biopolitical modes of rewilding run counter to more interventionist approaches of orthodox conservation strategies. Similarly, as will be discussed later, the biopolitical approach to cattle in a rewilding project is not immediately, ostensibly different from the treatment of cattle in an extensive farming system. Indeed, in some instances cattle simultaneously play a role in rewilding and in extensive farming systems.

The other key difference between the biopolitics of traditional conservation and the (potential) new biopolitical regimes of rewilding is that “the unruly agency of the more-than-humans in question identif[ies] them as subject-objects (rather than the static objects) of rewilding” (Wynne-Jones et al. 2020a: 72) so that rewilding becomes a relational achievement between human and OTHAs in contrast to traditional conservation where species are the object rather than the subject of conservation. For example, animals can be enrolled through techniques of “‘self-government’ that shape their mobilities to achieve wider ecosystem goals... for the ultimate benefit of human societies” (Hodgetts 2017: 24). Hodgetts (2017: 24) notes that rewilding “utilise[s] animal species to enact specific ecological functions. In so doing, such schemes ‘subjectify’ specific animals ... they are politically rendered as self-governing subjects, but simultaneously rendered as objects with ambiguous political status.” It is this ambiguous political status which this paper explores since the more-than-human agency identified by Wynne-Jones et al. (2020a) is what rewilding relies upon given its aim of increasing non-human autonomy. The “unruly” nature of this agency means that it is “constantly escap[ing] control” such that “to promote and protect life [especially in rewilding projects] means to acknowledge the dynamism and inherent unpredictability of biological processes” (Biermann and Mansfield 2014: 263). This presents a paradox which lies at the root of rewilding (Biermann and Mansfield 2014): “the need for control” but also “the need for an absence of control” (Hinchliffe and Bingham 2008). This paradox gives rise to contradictory logics within the biopolitics of rewilding which Ward and Prior (2020) describe as “managed autonomy” and which von Essen and Allen (2016) describe as “wild but not too wild” where the “wild sovereignty” of OTHAs is curtailed by (sometimes ad hoc) human interventions. The logics of the new biopolitical modes that are emerging within rewilding are described in section ‘Results And Discussion: Biopolitical Modes Of Rewilding’ in this article.

METHODS

The data on which this article is based was obtained as part a comparative case study of two rewilding sites (the Avalon Marshes and Wild Ennerdale) investigating the landscapes of rewilding and the way they were negotiated. Central to this was the negotiation between the humans and OTHAs that participate in rewilding at each site and the biopolitical modes which emerge. Data to inform this was drawn from semi-structured interviews with practitioners and stakeholders of rewilding at each site (Avalon Marshes n=19, Wild Ennerdale n=18). Where possible these interviews were walking interviews since this method provided unique and privileged insight into the landscape of the field sites (Evans and Jones 2011). Interviews were recorded, transcribed and then coded thematically using Nvivo 12 to identify common themes (Gibbs 2012).

The Avalon Marshes are a 1,500 ha network of wetland reserves in Somerset in the south west of England and Wild Ennerdale comprises 4,300 ha of the Ennerdale Valley within the Lake District National Park in Cumbria in England's north west. The Avalon Marshes exist on land which was previously intensively farmed or from which peat was extracted at an industrial scale. Their creation thus involved significant ecosystem restoration and increases in biodiversity (two of the key tenets of rewilding) (Thomas 2021). Once this habitat was established several species recolonised the area in acts of auto-rewilding (Clancy and Ward 2020) demonstrating the other-than-human agency involved and illustrating an increase in natural autonomy (another key tenet of rewilding) (Thomas 2021). Wild Ennerdale is situated in the Ennerdale Valley, an area previously used for hill-sheep farming and commercial Sitka spruce forestry. This land-use is transitioning to extensive cattle grazing and native deciduous woodland. This demonstrates ecological restoration and biodiversity increase together with a reduction of human intervention since the farming and forestry practices are now lower input than previously. While neither site explicitly titles themselves as rewilding both are described as such by those external to the projects and Wild Ennerdale is a member of the European Rewilding Network, proclaiming the fact on its website. Although both sites seek to reduce human intervention and increase natural autonomy practitioners at the Avalon Marshes undertake considerably more management than do practitioners at Wild Ennerdale and there is, subsequently a corresponding difference in other-than-human autonomy between the sites. The two sites, selected via purposive sampling, therefore provided contrasting contexts of rewilding in England: southern versus northern locations, lowland versus upland geographies, avoidance versus (partial) use of the term rewilding and different levels of human intervention.

In relation to these levels of human intervention, and corresponding levels of other-than-human agency, a typology was developed to assist in the categorisation of rewilding initiatives which also informed case selection, with cases being chosen to illustrate different categories in the typology (Figure 1). The typology classifies rewilding depending on

the location of agency, i.e., whether it rests with humans or other-than-humans, and the level of human intervention in the landscape, i.e., the extent to which landscape can be considered 'natural' as opposed to being the product of human intervention and, therefore, in some way 'cultural'. It should be acknowledged that the question as to whether landscapes are 'natural' or 'cultural' is a highly complex one; Cronon (1996) points out that "landscape" and "wilderness" used to be synonymous and that landscape was, therefore, romanticised as that which was "pristine" i.e., with no human artefacts—indeed it was seen not only as the opposite of civilisation but as a kind of prelapsarian Eden. Meanwhile other views recognise the role of humans in landscapes and regard them as "the product of interactions between sets of natural conditions ... and sets of cultural practices" (Wylie 2007: 9). This latter view is particularly relevant to England with its long history of human habitation and extensive human modification of the land (Linnell et al. 2015). This makes a consideration of 'natural' and 'cultural' landscapes particularly problematic in England but also particularly important since the English perception of a 'wild' landscape is often very different from what would be considered 'wild' in other parts of the world, and even English landscapes which look ostensibly 'natural' have in fact been shaped by human actions (Deary and Warren 2019).

The intersection of these two factors determines where on the rewilding spectrum a project falls (low to high) and dictates the extent to which nature or culture are active or passive within the project and also whether they are entirely dominating or only leading a project. According to the typology, the Avalon Marshes are a case of 'culture-led, active nature rewilding', and Wild Ennerdale is a case of 'nature-led, active culture rewilding' i.e., the Avalon Marshes are lower on the rewilding spectrum than Wild Ennerdale given the difference in human intervention between the sites. It is important to note, however, that although Wild Ennerdale could be considered higher on a rewilding scale than the Avalon Marshes it is still lower on the spectrum than some rewilding projects outside England. In fact, given that Wild Ennerdale can be considered one of the more advanced rewilding projects in England, this research suggests that no English rewilding sites could be said to lie towards the upper end of the rewilding spectrum, certainly as compared to rewilding in other countries. Indeed, rewilding as a concept and a practice is being "domesticated" in England as compared to other regions (Thomas 2021). Modifications to rewilding's size (smaller scale in England as compared to other places), compromises regarding species reintroductions (i.e., curtailed ambitions to reintroduce large carnivores), increased requirement for ongoing human intervention (partially due to incomplete trophic webs), reduced scope for increase in other-than-human autonomy (attendant to the ongoing human intervention), and somewhat restricted increase in ecological functioning/resumption of natural processes given the aforementioned limitations, mean that rewilding in England as a whole is more moderate than forms of rewilding in other countries. According to the typology then, no rewilding

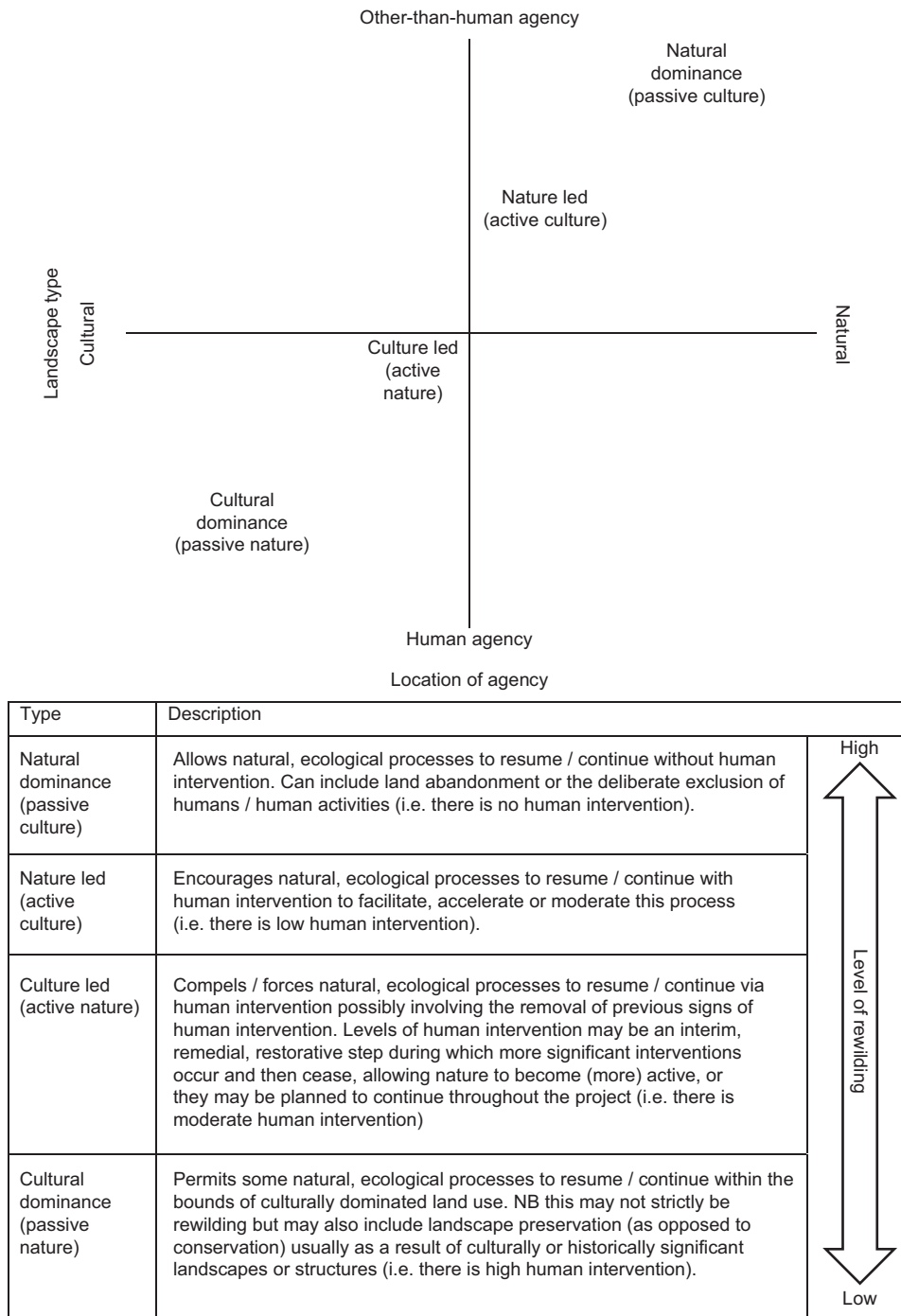


Figure 1
Typology of rewilding


initiatives in England fall into the natural dominance, passive culture category and this affects the biopolitical modes which are created and how they operate.

RESULTS AND DISCUSSION: BIOPOLITICAL MODES OF REWILDING

From the interview data, four biopolitical modes specific to rewilding were identified. These modes position OTHAs as

human proxies, analogue species, expendable objects, and self-determining agents. Each of these modes are discussed in the following sections and the logics of life and death applied to each mode are summarised in Table 1. It is important to note that while the examples given are all OTHAs, the typology could be applied equally well to all other-than-human species; the OTHAs have been selected for illustrative purposes due to their presence and visibility in the Avalon Marshes and Wild Ennerdale. It should also be noted that the ‘boundaries’

Table 1
Typology of the biopolitical modes of the companion species of rewilding (after Lorimer and Driessen, 2013)

Description	Species as self-determining agents	Species as analogues	Species as proxies for humans	Species as expendable objects
Aim	Species act autonomously.	Species act as analogues for extinct/ extirpated species, filling an ecological niche.	Species perform tasks/fulfil roles on behalf of humans often acting as tools or machines.	Species are human subjects.
Location of agency	Interspecies or species level	Interspecies or species level	Species or individual level	Species or individual level
Life	Let live logic: life is valued as part of a functioning ecosystem.	Make live logic: life is valued for what it replaces rather than for its own sake. The species as a whole is valued more highly than the individual.	Make live logic: life is valued from an instrumental perspective for the role that these species play. Individuals and even species are not necessarily valuable if other individuals or species exist which could perform the same role.	Make live logic: life is not valued, these species are considered disposable.
Death	Let die logic: death is undesirable at a species level but acceptable at an individual level. When death occurs at individual level it is 'natural' and bodies are left in situ.	Let die logic: death of the species is to be avoided, as is the death of individuals if possible, although individual deaths are not necessarily considered important, especially if the species is not threatened.	Let die logic: death of the individual and species are to be avoided if possible but it is not necessarily critical to do so.	Let die logic: death (or presence) is irrelevant. These species as dispensable.
Example	Freshwater pearl mussels in the River Ehen.	Black Galloways performing naturalistic grazing in Wild Ennerdale ³ .	Red Devons performing conservation grazing in the Avalon Marshes.	Exmoor ponies performing conservation grazing in the Avalon Marshes.
Illustrative quotes from interviews	'We're trying to recover a population that's on the brink of extinction' (participant, Wild Ennerdale) i.e., they are important at species level.	'As soon as we put them [the Galloways] in, everything changed in terms of the nature of the sward, we got much more regeneration, we got much richer swards coming through, we've got dung beetles in their cow-pats' (participant, Wild Ennerdale) i.e., they are filling an ecological niche.	'We have livestock grazing here, which is a management tool' (participant, Avalon Marshes) i.e., they are performing a task.	'They're seasonal and they'll get taken out. We have contracts with people who bring them in' (participant, Avalon Marshes) i.e., they are dispensable.
Level of autonomy	Unconstrained ability to express agency			Ability to express agency is constrained

between the modes are not fixed. While each mode is discussed separately for clarity there is overlap between them: species can move between modes and can be subject to more than one mode at any one time, rendering their governance highly complex. While the modes identified aim to make clear distinctions between conceptual approaches and to provide an analytical framework, when applied to disordered reality and unruly life the boundaries between them become considerably blurred. Therefore, while all of the biopolitical modes were present at both the Avalon Marshes and Wild Ennerdale their application was “situated” (sensu DeSilvey and Bartolini 2018 and Ward and Prior 2020) and was contingent upon species, location and time.

Self-determining agents

This biopolitical mode recognises and values species as self-determining agents, particularly as part of a functioning ecosystem. This is illustrated by birds at the Avalon Marshes and by birds, trees, pine marten, Freshwater pearl mussels *Margaritifera margaritifera*, and to some extent, cattle in Wild Ennerdale. This mode is notably distinct from other modes identified (and from classic biopolitical modes) in that species are let live rather than made live in recognition of and respect for their other-than-human autonomy. Meanwhile, although death, particularly of the species as a whole, is undesirable, the ‘let die’ logic remains. Indeed, human intervention is so restrained with regard to species that are treated as self-determining agents that when death occurs, bodies are left in situ, something which is contrary to many other modes of biopolitics, e.g., those relating to pastoral farming.

This mode was evident in responses from participants which highlighted the way species displayed agency independently of humans. At the Avalon Marshes, participants spoke of species doing things of “their own accord”: “things are coming in of their own accord” and “a lot of wildlife, birds came there [the Avalon Marshes] on their own accord” and very similar comments were made by participants at Wild Ennerdale: “all we can do I think is try and make the habitat the highest quality that it can be so maybe they’ll [golden eagles] come over of their own accord one day” and “we were looking at pine marten reintroduction, but we took advice from the Vincent Wildlife Trust and ... they didn’t want us to do that because they wanted it to happen naturally.” These participants are referring to the agency of companion species in performing “auto-rewilding” (Tsing 2017), demonstrating their autonomy via self-reintroduction and also, certainly in the case of pine marten at Wild Ennerdale, exhibiting rewilding’s preference for changes to occur as a result of natural processes rather than human intervention.

Similarly, illustrating that agency can be attributed to other-than-human species as well as OTHAs and that the modes of biopolitics identified here are equally as applicable to species generally as animals specifically, participants at Wild Ennerdale emphasised the processes involved in the regeneration of woodland and the agency of woodland in regenerating itself:

“We’ve done a whole load of planting in that upper end [of the valley], hundreds of thousands of trees, not to create a wood, but to create a seed source, because actually we’re interested in the process, not the outcome. So the process is to say “right here’s a load of seeds we’re throwing into the system, away you go woodland, regenerate yourself” (participant, Wild Ennerdale).”

Indeed, participants from Wild Ennerdale attributed considerable agency and self-determination to trees—one described Sidewood (an ancient birch-oak woodland on the southern side of the Ennerdale Valley) as “marching up the hill” while another said that they were “seeing the non-indigenous conifer trees slowly marching up the hillside.”

A similar expression of autonomy was evident, though to a lesser extent, in relation to the cattle in Wild Ennerdale. While, as will be discussed later in the article, participants acknowledged that humans could enrol (as tools or machines) or permanently curtail bovine agency they also alluded to elements of autonomy in the cattle’s existence in that they are, as “a domesticated animal, given a lot different parameters, and a lot different area to do what [they] want[...], rather than to do what [their] keeper decides.” Participants discussed the way that cattle exerted their agency within these new, somewhat “de-domesticated” (Lorimer and Driessen 2013) parameters, with one participant emphasising their freedom to roam the Ennerdale Valley: “they could roam, they could do their own thing, whether it be under trees, whether it be in the water, in the river, and in the lake, up high on the fells” and “they go into the forest in times of heavy rainfall, for shelter, and they’ll go higher up on the slopes in times of hot weather, to try and get away from the flies, and get a bit more air, wind.” Another participant also emphasised the cattle’s liberty to go where they liked and that the result of them being able to express their preferences was beneficial for the landscape: “there’s routes that the cattle go, totally favour, and areas they just ignore entirely so you end up with this mosaic of structure.” The language used by participants here was different from other comments (discussed later) where the cattle were described as being ‘let’ or ‘allowed’ to behave in a certain way. In these examples the cattle are free to express their agency without needing permission from humans, illustrating their status as self-determining agents. Allowing other-than-humans to be self-determining agents could be seen to be the aim of rewilding given its aspirations to increase non-human autonomy (Navarro and Pereira 2012; Lorimer et al. 2015; Tanasescu 2017; Gammon 2018; Pettorelli et al. 2018) and this mode demonstrates some of the radical tolerance for human dwelling with other species which scholars have identified rewilding as having the potential to offer (Campbell 2006; Lorimer and Driessen 2013).

Analogue species

In this mode animals/species serve as analogues for other animals/species, particularly those that have been extirpated

locally or are extinct globally. This is particularly well illustrated by cattle at both the Avalon Marshes and Wild Ennerdale. The cattle's individual lives are not intrinsically valuable since they are "made live"⁴ to represent another species and individuals can therefore be "let die" although the continuation of the species is important, especially if it is the only one capable of filling a particular ecological niche. It was in acting as disturbance factors and dynamic forces within the Avalon Marshes and Wild Ennerdale ecosystems that cattle were discussed by participants as performing the role of analogue for missing species. This was made either more or less explicit with participants sometimes referring to the extinct Aurochs *Bos primigenius*, sometimes to large herbivores, and sometimes only to the cattle as filling an ecological or trophic niche within the ecosystem. In particular, this was referenced in relation to the size of the cattle and their grazing habits, as compared to sheep, and the benefits that they thereby offered. The size of cattle was considered important since their physical bulk could be exploited in the cause of ecological restoration. One participant highlighted how cattle "create regeneration niches, because they're a bit heavier [than sheep] so their footprints become regeneration niches, they don't compact the soil" and another explained how the "poaching" of the ground created by the cattle's hooves is "the disturbance the [Wild Ennerdale] partnership looks for, pushing seeds into the ground, helping them germinate." In relation to grazing, participants highlighted that cattle are "a native grazer in that they're descended from Aurochs" (participant, Wild Ennerdale) implying that cattle can therefore act as an analogue for the Aurochs and emphasising their native status as compared to sheep, which participants described as non-native. The specific manner in which cattle graze was seen as particularly important, with participants emphasising that their grazing habits differ from that of sheep: "the fundamental difference between the nibblers, the sheep ... and the cattle is in the way that they eat. Cattle wrap their tongues round and rip, so you get these areas where there can be regen[eration]" (participant, Wild Ennerdale) and "they don't selectively graze, they just rip out everything with their tongues and their mouths and they take coarse stuff as well as fine stuff" (participant, Wild Ennerdale). This activity was seen as valuable since not only was it a "different way" of grazing (participant, Wild Ennerdale) but because it was a "different trophic level of grazing ... to replicate what would've been there before" (participant, Wild Ennerdale). The comment from this participant focuses on two important and distinct, though very closely related, roles for the cattle: first occupying a specific "trophic level" and second being analogues for "what would've been there before" e.g., Aurochs. This employment of species, particularly cattle, as analogues for their extinct or extirpated ancestors is widely discussed in the literature on rewilding (e.g., Lorimer and Driessen 2013, 2016; Jørgensen 2015; Lorimer et al. 2015; Jepson et al. 2018), and the Avalon Marshes and Wild Ennerdale can therefore be seen as aligned with this approach to the companion species of rewilding.

Animal machines, human proxies

In this biopolitical mode other-than-humans are used as 'machines' and serve as 'proxies' for humans i.e., they act on behalf of humans in performing ecological restoration (von Essen and Allen 2016): again this mode is exemplified by cattle at both sites, the Avalon Marshes and Wild Ennerdale, with the cattle deployed as proxies for humans, performing tasks on their behalf and playing a role in ecosystem restoration. The cattle are "made live" but their life is not seen as valuable in and of itself, rather it is the role that these animals/species play which is valuable. Therefore, the individual and even the species is not valued if there is another individual/species which can perform the same function, hence the "let die" logic is applied to them—while their death is to be avoided if possible, these species can be allowed or permitted to die. The tool or machine-like status of the cattle was overtly acknowledged in the Avalon Marshes: one participant stated that livestock grazing was a "management tool," another highlighted the way in which 'labour' by cattle is replacing machinery, "we do grazing with livestock whereas it would be done with machinery maybe," while another participant acknowledged that labour saying "they [the cattle] do a good job for us." These comments exemplify the way that cattle are being recruited to act on behalf of humans, often performing roles in "difficult parts of the site" that would otherwise be hard to manage (participant, Avalon Marshes). This proxy status was also evident in the way that Wild Ennerdale participants discussed the cattle, describing them as "doing the things that the management group wanted the cattle to do ... achieving the goals" (participant, Wild Ennerdale) and as "useful in their little heavy-footed way" (participant, Wild Ennerdale). These comments clearly illustrate how the cattle are being enrolled to serve as proxies for humans by performing ecological restoration on their behalf (von Essen and Allen 2016).

The emphasis on cattle in the discussion of this biopolitical mode is justified by the fact that cattle appear to be the rewilding 'tool' of choice in the Avalon Marshes and Wild Ennerdale rather than horses or deer for example which are used more widely in other rewilding projects: horses are present in the Avalon Marshes but play a much smaller role than cattle, similarly deer are present in both the Avalon Marshes and Wild Ennerdale but are not actively included in the rewilding projects. Indeed, while in theory this mode of 'animal machines, human proxies' could be applied equally well to horses and deer (or other species) these species do not appear to be employed in rewilding in England as commonly as cattle are. This choice is illustrative of how rewilding is negotiating its boundaries—enrolling cattle allows them to be simultaneously part of a rewilding project and an extensive farming system, thereby facilitating rewilding's negotiation of its boundaries with farming. This also assists in some of the complex ethical questions raised by rewilding with respect to animals "that are neither domesticated nor wild" (Jepson 2016). For example, cattle numbers can be controlled by slaughter as part of routine farming rather than rewilding practitioners having to engage

in culling or allowing animals to die of ‘natural’ causes (e.g., starvation, disease or injury) both of which can cause public concern regarding animal welfare (Keulartz 2009; Lorimer and Driessen 2013, 2014). Cattle also have a far less complicated “association with categories of wildness and domestication” than horses (see DeSilvey and Bartolini 2018) or deer (see Linnell et al. 2015): while, in the UK at least, cattle can be positioned relatively firmly within the category of domestic, horses and deer cross the boundary between the wild and the domestic. DeSilvey and Bartolini (2018: 9) suggest that the terms “wild” and “domestic” do not adequately describe the characteristics of the ongoing relationship between people and horses” while, with respect to deer, Linnell et al. (2015: 981) point out that it is often “difficult to say under which contexts animals are wild and under which they are domestic.” The deployment of cattle as human proxies, therefore, avoids the potentially more problematic negotiation with species which would occupy more complex places and roles within rewilding, especially since current biopolitical modes (including those identified during this research) still tend to adhere to the wild/domestic dichotomy noted by Keulartz (2009) despite the fact that the companion species of rewilding do not fit neatly within these categories (Jepson 2016).

Expendable objects

This mode sees the companion species of rewilding treated as objects which are fungible and therefore not valued as either individuals or species. This is illustrated by cattle in Wild Ennerdale and cattle and ponies in the Avalon Marshes. While the OTHAs are “made live” for as long as is convenient/necessary, they are then “let die” without any real concern. This mode perhaps most clearly illustrates that the biopolitics of rewilding is not yet consistently providing the enlightened attitude to dwelling with other species which it has offered (Campbell 2006; Lorimer and Driessen 2013). Despite all the benefits and ‘services’ that companion species of rewilding were seen to offer, they were, at times, considered to be expendable in the rewilding projects, either in terms of their presence not being required on a permanent basis, or more seriously, in terms of their lives being treated as dispensable. While no participant stated this latter position outright in relation to life and death decisions (though one did speak of animals being moved to another area indicating that their presence was not only no longer required but was actually undesirable), several participants spoke of the risks that they were prepared to expose companion species to (e.g., harsh conditions, disease) (again, this was particularly the case with regard to cattle) and only one spoke of any attempt to mitigate these risks (with careful monitoring).

Given the experimental nature of rewilding, risks were often unknown, something which is recognised in the discourse on rewilding (e.g., Nogués-Bravo et al. 2016). This was stated clearly in relation to Wild Ennerdale where cattle had not been present for approximately 70 years, with one participant explaining that when the introduction of cattle was proposed

“everyone said we were crazy, because we didn’t know what disease there may be, or animal health problems, on land that’s never been farmed for a long time ... it was said that we would have trouble with Redwater, with ticks.” Other participants made similar comments about the experimental nature of (re)introducing cattle to Wild Ennerdale and the negative consequences that were predicted e.g., “all the other farmers, said they’d [the cattle] be dead, belly-up in the lake within weeks” and “all of the other farming community around him [farmer reintroducing cattle] said that won’t work, you can’t do it, the animals will be dead, they’ll be floating in the lake.” Participants went on to explain that, for the most part, these dire predictions had not been borne out but only one participant spoke of the care that had been taken to ensure that this was the case saying that they intended to “keep a good eye on them [the cattle]” and “if things were going wrong, we could hopefully spot it and right it.” This indicates that, for the other participants at least, these cattle are considered somewhat disposable⁵ and are wittingly exposed to unfavourable conditions which, as was acknowledged by participants, would be too harsh for less hardy breeds e.g., “some of the more commercial animals, if you tried them on this land they wouldn’t do so well” (participant, Avalon Marshes). Indeed, one participant noted that Forestry England had specifically wanted a “hardy breed” of cattle for Wild Ennerdale for this reason.

This disposable status was also evident, albeit in a less serious form, in the way in which cattle (and other grazers) were only temporary members of the Avalon Marshes ecosystem, with participants explaining that the cattle are “not a complete part of the process within our site ... they come and go.” This point was reinforced and extended by another participant who explained that (in this case) the ponies “are seasonal and they’ll get taken out, we have contracts with people who bring them in ... they just get used on different sites and ... [they get taken out] when the gorse isn’t growing to an extent and they’ve done their bit”. This comment illustrates the utility, in controlling gorse, and the expendability of the ponies, in that once the ponies have “done their bit” their presence is no longer required or even desired. These comments show the very real sense in which the animals governed by this mode of biopolitics are rendered fungible—they are not valuable as individuals, or even necessarily as a species except for the role(s) they perform within an ecosystem. If the role could be performed by another individual or species then this would be entirely acceptable to the rewilding project, making the life and death of these OTHAs of little concern to rewilding practitioners.

CONCLUSION

As discussed above, Lorimer and Driessen (2013, 2016) have suggested that rewilding requires new modes of biopolitics for its interactions between companion species and, as this research has demonstrated, new modes are certainly in evidence in the Avalon Marshes and Wild Ennerdale. While these new modes include OTHAs in “multispecies landscapes” of rewilding

(Tsing 2012) there is as yet, with the exception of the mode relating to species as self-determining agents, little evidence of the “radical tolerance” of other species (Campbell 2006) or the “shift from a biopolitics as a *control over life* to a biopolitics of *living with*” (Lorimer and Driessen 2013, emphasis added) which rewilding calls for. Whereas the mode of biopolitics with regard to self-determining agents can be described, to adapt Foucault (1976), as “let live and let die” the other biopolitical modes (proxies, analogues, expendable objects) are the classic Foucauldian “make live and let die” (Foucault 1976). While these modes are ideologically different from those that operate in farming or traditional conservation, in practice, they operated in very similar ways. In these modes, the negotiation with rewilding’s companion species is much more controlling than it is in the mode of species as self-determining agents and much more aligned to the classic Foucauldian logics of life and death, potentially making these modes open to criticism for their coercive, exploitative approach to other-than-human species. The interesting difference with regard to species as self-determining agents is that in this mode species are let live as well as let die—something which displays rewilding’s ambitions for an increase in natural autonomy (Navarro and Pereira 2012; Lorimer et al. 2015; Tanasescu 2017; Gammon 2018; Pettorelli et al. 2018). Thus, this mode of biopolitics is not coercive in the sense of “make live, let die” (Foucault 1976) since other-than-humans are not made, or forced, to live but let live, in that they are allowed, or even enabled to live, perhaps more in line with a sense of other-than-human “flourishing” (Haraway 2003; Tsing 2012).

Given the commonalities between the biopolitical modes operating in the Avalon Marshes and Wild Ennerdale, despite the sites being purposively selected to display different contexts of rewilding, it is reasonable to conclude that the biopolitical modes outlined in this article are likely to be present in other English rewilding sites. Given the rapidly changing landscapes of rewilding, it is also reasonable to conclude that as rewilding progresses these biopolitical modes will evolve as we develop new ways of living with companion species and dwelling in (wilder) landscapes with them. In particular, it is extremely important to note that the “let live, let die” approach to self-determining agents is likely to be evident only because no large carnivores are involved in rewilding at the Avalon Marshes or Wild Ennerdale (or, at least at present, in England). The absence of large carnivores allows for a relatively permissive mode of biopolitics in relation to species as self-determining agents and it is probable that if large carnivores were to become involved in rewilding in England, the biopolitical approach to self-determining agents would be significantly revised.

Similarly, given that rewilding in England is conducted in the low- to mid-range of the rewilding spectrum, rewilding initiatives are very cautious about which species they assign to the biopolitical mode of self-determining agent. Only certain OTHAs are assigned to this mode and, at present, this appears to be limited to those species which are considered ‘wild’ as opposed to ‘domestic.’ This is not necessarily the case in rewilding initiatives in other countries with the Oostvaardersplassen providing a good example. There cattle,

horses and deer are treated as self-determining agents and therefore have been ‘let’ (in the sense of “let die” (Foucault 1976)) starve to death, causing outrage in animal welfare communities. While, for example, the Freshwater pearl mussels of Wild Ennerdale act as self-determining agents their status as wild, and also as “non-charismatic” (Ducarme et al. 2013), means that they are not afforded the same level of concern by the public as domestic or “charismatic” species: rewilding’s negotiation with them is therefore not subject to considerations of public sentiment. Lambert (2002) has called such situations, where conservation decisions are affected by public sentiment, as “the trial of wildlife management by public opinion” and suggests that it “is here to stay”—something which is clearly highly relevant to rewilding with its novel, radical and often controversial decisions in its negotiations with OTHAs and the new modes of biopolitics that it creates. The boundary of what is publicly acceptable in relation to the treatment of OTHAs within all the biopolitical modes identified by this research is therefore something which rewilding must negotiate. This has the potential to become further complicated in the future since the biopolitical modes identified here still adhere to the wild/domestic dichotomy noted by Keulartz (2009) despite the fact that the companion species of rewilding are increasingly resisting such neat categorisation (Jepson 2016).

This research’s exploration of the biopolitics of rewilding has revealed the new modes of biopolitics which rewilding is creating and the way in which ethical decisions (and related decisions with respect to care) are made in rewilding projects. The biopolitics proposed here contribute to understanding the new modes of human-animal relating which rewilding is creating and could inform human-animal relations in existing or future rewilding projects. This understanding could be enhanced by further research to assess the extent to which the typology developed here might apply to other (English) rewilding sites. This is especially relevant since at its most fundamental level rewilding seeks to reduce human intervention and restore other-than-human autonomy, at a practical level, however, it often finds itself having to curtail those ambitions in the interest of human and other-than-human coexistence, largely due to the highly anthropogenic environment and cultural landscapes within which it operates (Thomas 2021). As a result, rewilding is domesticated (Thomas 2021), tamed (Martin et al. 2021), and adapted to fit alongside other land uses (especially agriculture) (Gordon et al. 2021); while the case sites discussed here are in England, it is likely that rewilding in other countries will face similar constraints with regard to their practices, and, therefore, in the biopolitical modes involved. The nature of these biopolitical modes is inherently fraught as humans and OTHAs negotiate new relationships within the novel ecosystems that rewilding produces while still being informed, and sometimes constrained, by existing biopolitical modes present in agriculture or traditional conservation. This research therefore sheds light on the nascent biopolitical landscape of rewilding as it is developing in England and as it may develop in other countries, and the ethics and logics of care involved.

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This research was approved by the University of Exeter's College of Social Science and International Studies Ethics Committee: ethics approval document number 201819-058.

Data availability

The data used in this research are not accessible due to privacy restrictions.

NOTES

1. Quotation marks are used here to acknowledge that neither site explicitly self-identifies as rewilding. Indeed, finding sites in England which did explicitly self-identify as rewilding was something of a challenge when the field work for this research was conducted in 2018. Nonetheless, both of these sites have been identified as examples of rewilding by others and Wild Ennerdale is a member of the European Rewilding Network.
2. It should be noted that not being considered desirable is very different in conservation terms from being considered undesirable. Species which are specifically considered undesirable are often subject to targeted persecution rather than simply (benign) neglect.
3. Naturalistic grazing is a rewilding strategy in which herbivores are enrolled as stochastic disturbance factors within an ecosystem with the emphasis on (re)instating grazing as a natural process and as an end in itself rather than a means to an end (Hodder et al. 2005). By comparison, conservation grazing which is a conventional conservation technique, although it is also employed in rewilding projects, uses grazing as a means to an end with herbivores deployed to maintain habitat in a particular condition (Hodder et al. 2005).
4. This is particularly so in the case of species which are specifically bred or engineered to replace/replicate another species e.g., the Tauros which is being bred as a "functional analogue" for the Aurochs (Jepson et al. 2018).
5. It would also be possible to argue that the cattle are viewed as 'consumable' given that in both, the Avalon Marshes and Wild

Ennerdale, they are part of a working farm systems and therefore liable to be slaughtered for human consumption.

6. While this comment was made in relation to the Exmoor ponies at the Avalon Marshes it applies equally to the Highland cattle present there.
7. Charisma is a poorly defined concept in conservation biology although the traits of being "large" (cf Hird's (2009) "big like us"), "exotic", "terrestrial" and "mammalian" have all been identified as contributing to it (Albert et al. 2018). While the cattle, horses and deer of the Oostvaardersplassen may not be regarded, certainly by western standards, as 'exotic' they, do possess the other traits, and horses also often fall into the category of companion animal (certainly in the UK where they are not considered a food animal). This adds another layer of complexity to the way that horses are viewed by humans and therefore to the way they are regarded in relation to rewilding projects and the level of care that should be extended to them.

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