

The abandonment of the ideal of wilderness: Rewilding as the consequence of the Anthropocene metaphysics on restoration ecology

The Anthropocene Review

1–16

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DOI: 10.1177/20530196241270671

journals.sagepub.com/home/anr**Sergio Arias** 

Abstract

The idea of wilderness is being abandoned in restoration ecology due to metaphysical changes in the conception of nature. These changes are associated with the hybridization of nature and culture, an ontological distinction of modernity that touches its end in the Anthropocene. The notion of wilderness is falling because it was based on a static idea of nature, inherited from the modern conception of nature as passive, and this is affecting ecological restoration practices. The pursuit of wilderness has been abandoned in favor of wildness, vindicated by the so-called “rewilding philosophy.” Both restoration ecology and rewilding are based on the same corpus of ecology, but the first has historically operated in a period under the modern ontological distinction between nature and culture, while the second operates already in the hybridization of both categories. Rewilding does not pursue wilderness, no longer possible in the hybrid Anthropocene, but aims to restore the spontaneous order of the wildness.

Keywords

Anthropocene, feralization, nature conservation, restoration ecology, rewilding, wilderness, wildness

The Anthropocene changes the metaphysics that held ecological restoration practices

The ozone hole is too social and too narrated to be truly natural; the strategy of industrial firms and heads of state is too full of chemical reactions to be reduced to power and interest; the discourse of the ecosphere is too real and too social, to boil down to meaning effects. - Bruno Latour (Latour, 1993: 6)

The romantic legacy means that wilderness is more a state of mind than a fact of nature - William Cronon (Cronon, 1996b: 23).

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The hybridization of the cultural and the natural has had a great impact on the most fundamental concepts that enabled conservation and restoration ecology. The idea of Nature as all that exists (Collingwood, 2014: 43) has never been useful when it comes to restoration ecology, because it gives no guidelines of what to restore. If everything is considered Nature, then any human modification would also be considered natural. Consequently, there would be no deontology associated with the impact of humans on the environment. In any case, the idea of Nature as all that exists is an abstraction. As Bruno Latour points out “we never have immediate access to ‘nature in general,’” our contact is always historically and culturally mediated (Latour, 2004: 32–33).

Historically, ecological restoration has been understood as the recovery of the natural past. This, by definition, implies choosing a point in the past that is considered more desirable than the current state in terms of ecosystem and species conservation. For example, the International Union for Conservation of Nature (IUCN), in its Red List of Threatened Species, uses the conservation status of species as of the year 1500 as a reference (Plumptre et al., 2021: 4)—estimated from the fossil record and historical sources. However, most ecological restoration plans do not aim as far back in time, while some ecologists advocate for the restoration of earlier periods, such as proposals of Pleistocene megafauna replacement.¹ This epistemological problem has been called the “Shifting Baseline Syndrome” (see Vera, 2009: 28), which highlights the difficulty of determining an appropriate reference point from the past to restore.

At the same time ecology is nested in metaphysical conceptions regarding nature. As Lynn White said, “What we do about ecology depends on our ideas of the man-nature relationship” (White, 1967: 1206). In principle, as we see in the many positions about how to manage natural resources, which often imply moral stands, science cannot give an answer about how we should do it. There are no self-evident values in conservation, and restoration ecology as an applied science needs to act out in accordance with a particular vision or goal. If those values were self-evident, there would not be any debate: counterurbanization neo-rurals, eco-modernists, rewilders, etcetera, would not offer radically different solutions to the same problems. We may say that counterurbanization, eco-modernism, or rewilding are meta-narratives of how to manage our planet,² and that means the implicit acceptance of our control. Philosophical and scientific discussions are, in fact, intense, and they are necessary to be clear about the decisions we are going to take on that front.

The Anthropocene has had a great impact on the notions of nature and wilderness. It represents the culmination of the process of hybridization between human culture and nature, and its categorization and use imply that the dual ontology Nature-Culture, upon which modernity was founded, is coming to an end. In this hybrid scenario, the problem with nature’s conservation is the difficulty of identifying the place of wilderness among the domains of human culture. I want to explain the rise of rewilding philosophy through the dissolution of the modern ontological dualism of Nature and Culture, holding that, in fact, rewilding is nothing else than restoration ecology but it has abandoned that dual ontology. This means that rewilding has abandoned the idea of recovering the *wilderness*, which was conceived as nature as it was before human touch (Cronon, 1996b: 15). Instead, rewilding embraces the hybrid ontology of the Anthropocene, in which restoration no longer pursues “pure nature” but rather the *wildness*, defined as nature’s autonomy, spontaneity, self-organization, and absence of human control (see Corlett, 2018: 840): a notion no longer dependent on metaphysical purity.

No wilderness left in the Anthropocene

The process of convergence between human and environmental history has been increasing as human presence and activities have transformed terrestrial ecosystems up to the point of an actual coupling between social and natural systems (Arias, 2018: 16). Since the 1990s there has been a

scientific consensus that humanity has altered the thermodynamic regime of the planet (Danowski and Viveiros, 2019: 21). A convergence between human culture and the Earth that has been increasing exponentially. It is estimated that soil erosion by human activity has been greater since the beginning of the Industrial Revolution in the 1820s—especially since the beginning of the 20th century—than in all previous human history. Anthropogenic erosion today is comparable to the combined erosion caused by wind, glaciers, volcanoes, and water (McNeill, 2000: 30–44). In contrast to these spontaneous erosive forces, however, anthropogenic erosion can be consciously directed. Can a world that is no longer autonomous or spontaneous still be considered “natural”? Does our planet still contain “wilderness”? Can we consciously reverse the process of convergence between natural and human history? Should we?

The conceptualization of the wilderness is one of the main questions environmental philosophers and historians have struggled with in recent times. The wilderness as a philosophical problem has its base on Western dualism, in which nature is opposed to culture—a binomial we don't find in other cultures (see Descola, 2013). These conceptualizations have changed across history, but many authors considered them fundamental to understanding human relationship with the environment. As the Anthropocene implies the transformation of humans into a geological force, there is a breakdown of the fundamental distinction of the modern Western episteme: the anthropological and cosmological orders, which had begun to separate in the seventeenth century, are once again indistinct. According to Bruno Latour, the intrusion of the human into Nature implies at the same time the intrusion of Nature into the human: the Earth System—*Gaia*—takes the form of a historical subject, political agent, and even juridical and moral person (Latour, 2017).³ Does this new unity imply the end of Nature and Culture? Have we entered a *postnatural* period? asks Latour (2017: 142). In *We Have Never Been Modern* (1993)—originally published in 1991—Latour pointed out that the philosophical assumptions on which modernity was based were never fulfilled and are impossible to take into practice. Among them, the ontological division between Nature and Culture takes its end with global sociobiological manifestations such as anthropogenic climate change, and now the Anthropocene. The crucial aspect related to conservation is that once the idea of Nature as an ontological realm falls apart, the idea of wilderness goes along with it, as we are about to see.

But, where are we placed after the ontological end of Nature? We were never able to leave nature behind, says Latour, because the more we have tried since modernity to advance in the process of “purification”—in Latourian terms, the pursuit of objective facts in nature, creating two separated ontological zones, the human and the non-human, the more “hybrids” we have created (Latour, 1993: 14), until we have made hybrid the whole planet, and started a new geological era. The obsession with the purity of facts in the Cartesian “nature” was as big as the potential empowered by modern science, and escalating from the laboratory to the atmosphere, the world itself has become “hybrid”—under the terms of modernity. And now, are we back, so, in the organic worldview of the premodern? Have we fully abandoned rationalism and mechanical philosophy? That is not clear to many authors. Carolyn Merchant, for instance, believes that even when ecology has challenged some of the assumptions of modern mechanical philosophy, the creation of the science of ecology is based on mechanical philosophy—we could say as to most of today's scientific disciplines. The concept of ecosystem, which by the 1950s replaced the idea of the biotic community—rejected as being too anthropomorphic, she says, is based on the mathematical modeling of nature, able to predict and rationally manage ecosystems and its resources as a whole. She somehow suggests that, from the complexification of mechanical philosophy, we have been able to reach a level of understanding of organic systems. This is why she argues that mechanical and organic philosophies of nature cannot be treated as dichotomies but as a tension of perspectives that has been present since the Scientific Revolution (Merchant, 2020: 103). Latour, in the same line, says that despite the fact goods cannot be reduced to economization, calculation, statistics,

and modeling, all of these help us to make visible the consequences of our actions in a way that no other method could (Latour, 2004: 152).

So, we should ask ourselves: does the Anthropocene represent anything new in a metaphysical sense or does it recover previous hybrid metaphysics? Is the dualism of the moderns an exceptional period we have left behind in history?

The myth of wilderness as an impediment to conservation

The notion of wilderness has changed along with that of “nature,” which contained it. The idea of nature is historically contingent and relative to culture, which does not necessarily mean that nature doesn’t exist. Across history and in most cultures of the globe, Nature has been conceptualized as both a provider and agent of chaos—as well as a feminine force (see chapters *Nature as Female & Nature as Disorder* in Merchant, 2020). The idea of “Mother Nature” is linked to the concept of nature as “provider,” while the imperative of “conquering nature” is linked to the necessity to prevent us from its chaotic potential.⁴ Anthropologist Descola (2005), in his *Beyond Nature and Culture*, points out that rationalism and Cartesian physics imposed a concept of nature “odor-free, and intangible (. . .) devoid of life” in which the “Gentle Mother Nature was forgotten, and Nature as the cruel stepmother had disappeared”—we could say Nature as an agent of chaos; “all that remained was a ventriloquist’s dummy, of which man could make himself, as it were, lord and master” (Descola, 2005: 61).⁵ The removal of “animistic, organic assumptions about the cosmos constituted the death of Nature—the most far-reaching effect of the Scientific revolution” adds Merchant (2020: 193). This inanimate Cartesian cosmos made possible the idea of “nature in general,” as Latour says, that allowed us to model and mathematize nature and implied the end of organic philosophy.

The legacy of the Romantics—which deeply influenced early environmentalism—served to recover the symbol of nature as a nurturing mother, but the emphasis on its counterpart, Nature as chaos—present before modernity and cross-cultural—seemed to have no place in the Contemporary world, as technology and science expanded our knowledge and control over it. However, Nature as chaos—the “cruel stepmother” in Descola’s terms, has just recently come back with the global warming threat, maybe for the first time as a global menace in recorded history. Cultural narratives such as “the revenge of Gaia” (see Lovelock, 2007), are a contemporary conceptualization of Nature as a threatening chaos. The hypothesis of Gaia (Lovelock and Margulis, 1974) considers the Earth as an active sociobiological system, instead of a passive receptor of human action. James Lovelock, architect of this hypothesis—together with Lynn Margulis—and renowned ecologist, considers Gaia as a “wild chaotic power (. . .) bridled by constraints which shape the goal-seeking entity that regulates itself on life’s behalf” (Lovelock, 2007: 20). Lovelock, who considers the generalization of Earth Sciences as a tacit acceptance of his hypothesis (Lovelock, 2007: 32–33)⁶—probably rejected by many scientists not because of its premises but because of its mythological and esoteric language, has brought back a metanarrative of nature that has rooted in the environmentalist movement. For Latour, this hypothesis makes the Earth—Gaia—an *actant* when treated as a “unique coordinating agent” unconsciously pursuing homeostasis, and that incorporates the active part of nature in our narratives (Latour, 2017: 94–95). “Gaia is no longer *indifferent* to our actions. (. . .) Gaia can treat us as enemies,” he says (Latour, 2017: 281). According to Latour, in fact, the hypothesis of Gaia has already hybrid metaphysics as—or would have anticipated—the Anthropocene (Latour, 2017: 85). The crucial aspect of this, concerning conservation, is that once nature becomes active through the reincorporation of “chaos,” wilderness disappears as an ideal because the metaphysics upon which it was based have disappeared, as we are about to see. Even the mere idea of “conservation” is etymologically wrong.

The contemporary idea of wilderness is linked to Nature as a passive and stable realm without history, as a stamp or a still photograph, absent of dynamism, dependent on modern mechanical philosophical assumptions. Nevertheless, according to William Cronon, the first philosophers to rise up against rationalism and the mechanical worldview kept this prejudice. In Cronon's opinion, Romanticism—although a reaction against rationalism—played a pivotal role in shaping the contemporary perception of “nature” as stable, purifying, self-healing, benign and homeostatic while presented modern humanity as unstable, unbalanced, disequilibrating, self-wounding, and corrupting. These ideas inherited by romantics have denied nature's dynamism and the co-dependence between natural and human history (Cronon, 2011: 16). Pristine wilderness, endowed with these attributes, has served as a reference metric of human progress, in which wilderness is the foundational point and distancing from it constitutes human history (Benson, 2020: 7). The idea of progress, according to Cronon, would be understood as a distancing from nature. The contribution of romantics is not the recovery of the organic philosophy, nevertheless, before Romanticism, the wilderness was a place of danger and moral temptation, and after, it became sublime, and even a sacred place where God decided to show Himself (Cronon, 1996b: 10). Wilderness became a myth. A “virgin” inhabited space, the original pristine space as God created it—out of the linear history, we could say, the untouched non-human state. An ideal that made conservation efforts to remove native Americans from national parks, together with any trace of human presence (Cronon, 1996b: 15). Now, the wilderness, a sublime and sacred space, home of the divine that transcends human history, according to him, served for the romantic project of secularizing Judeo-Christian values, giving quasi-religious values to modern environmentalism (Cronon, 1996b: 16).

In any case, the sacred, untouched and pristine wilderness of romantics—the one-sided coin of Mother Nature—served for some time to create the contemporary shape of nature's conservation and was behind great advances in nature's protection under the mechanical and dual ontology of modernity. Nevertheless, as the hybrid world of the Anthropocene advanced, and less “pure” spaces remained, it started to become an impediment: if wilderness is the goal of conservation, and nothing but it is valid to be preserved, conservation is no longer possible on today's Earth. At this point, keeping alive this idea that just wilderness deserves to be protected, as Cronon highlights, is self-defeating (Cronon, 1996b: 19). It gives no space for nature's protection, and, according to him, makes the human intrinsically malign, confronting the human and the non-human (Cronon, 1996b: 19–21). Cronon does not consider hybridization—a “middle ground” he says—to be wrong, but instead, he bets for a balanced, sustainable use of nature (Cronon, 1996b: 21–22). According to him, we are part of the natural world and we need to abandon the myth of wilderness:

This will only happen, however, if we abandon the dualism that sees the tree in the garden as artificial, completely fallen and unnatural and the tree in the wilderness as natural, completely pristine and wild. (. . .) Our challenge is to stop thinking of such things according to a set of bipolar moral scales in which the human and the nonhuman, the unnatural and the natural, the fallen and the unfallen, serve as our conceptual map for understanding and valuing the world. Instead, we need to embrace the full continuum of a natural landscape that is also cultural, in which the city, the suburb, the pastoral and the wild each has its proper place, which we permit ourselves to celebrate without needlessly denigrating the other (Cronon, 1996b: 24).

In 1996, when Cronon published this influential paper, rewilding had a timid significance in academia. Frans Vera had launched his project in Oostvaardersplassen during the 1980's, which involved the deliberate feralization⁷—which I would call *induced* feralization⁸ of domestic big herbivores as part of a new conservation restoration agenda term as “nature development,” and just in the mid 1990's Dave Foreman and his team of conservation biologists coined the term “rewilding” (Jepson and Blythe, 2020: 5–7).⁹ While Cronon does not mention these initiatives and does

not use the term “rewilding,” he is going straight to the core of the philosophical transformations that are behind the metaphysical transition that, as I contend, lies between what we have called restoration ecology and rewilding.

Two decades later, in 2016, Edward O. Wilson, one of the most influential ecologists in the last decades, published his *Half-Earth: Our Planet's Fight for Life*. In this book he proposes to rewild half of Earth's surface, a proposal consistent with his professional positions throughout his life, and that has made many consider him one of the “fathers of rewilding.” Nevertheless, and despite in 2016 the term is widely known and commonly used, Wilson does not mention rewilding even a single time in over 200 pages. In this work, also as Cronon, criticizes the pessimistic view of the “lost wilderness,” that he believes can be used against conservation. On the contrary, Wilson does not celebrate the hybrids in the same way as Cronon. For him, the hybridization that characterizes the Anthropocene cannot be an excuse to forget the metaphysical ideal of nature, which has to serve as a guide for restoration. Says Wilson:

The shortfall of the conservation movement has been the focus on the new Anthropocene ideology. Its proponents claim in essence that traditional efforts to save Earth's biodiversity have failed. Pristine nature no longer exists, and true wilderness survive only as a figment of the imagination. Those who see the world through the lens of Anthropocene enthusiasts work off an entirely different worldview from that of traditional conservationists (Wilson, 2016: 74)

Wilson criticizes the self-defeating position of many conservationists who are disappointed in the realization that intact wilderness no longer exists. For him, accepting the “hybrid world” implicit in the notion of the Anthropocene has led many conservationists to abandon their pursuit. He is critical of Eileen Crist¹⁰ and Erle Ellis' position that calls to embrace a humanized planet. “Stop saving the Planet, Nature is gone. You are living on a used planet. If it bothers you, get over it. We now live in the Anthropocene” says Ellis, just to justify, according to Wilson, to give up on conservation efforts (Wilson, 2016: 75–76). Bruno Latour, in the same line as Wilson has also warned of the danger of keeping this perception of nature: “under the pretext of protecting nature, the ecology movements have also retained the conception of nature that makes their political struggle hopeless” (Latour, 2004: 19). Being defeatist because a metaphysical “purity of Nature” is no longer recoverable tells us that these environmentalists are still trapped in the Nature-Culture ontological distinction that Latour, Descola, Cronon, Merchant, Wilson, and many others, have denounced to be unfeasible.

But if staying in the duality of the moderns is self-defeating, accepting a monist ontology, this is to say “all is nature,” can also be an impediment: in that case, we should not be worried about the “end of Nature” because nothing we do can end nature if everything is nature, including us. That is why rewilding proponents, still keep the natural history as a guideline for restoration projects,¹¹ even when some of their practices, such as feralization, de-extinction,¹² non-native taxon substitution (Corlett, 2016: 457–458) and novel ecosystems creation—as we will see below, attempt to that natural history. By doing that they may maintain an ideal of wilderness, but always subordinated to the final goal of the ecosystem's autonomy, spontaneity, self-organization, and the absence of human control, as Corlett (2018: 840) defines the “wildness,” which as well as it can imply breaking with natural history, operates in a hybrid ontology.¹³

The idea of wilderness does not contemplate dynamism

Wilson's *Half-Earth* proposal is not based, in principle, on romantic esthetic reasons. He believes we have to rewild the Earth because the complexity of the ecological cycles is based on a

spontaneous order, which we are disrupting, and it creates the survival conditions of our species. He accuses rationalist eco-modernists of being “free of fear as they are of facts” (Wilson, 2016: 75). He finds it delusional to believe our intelligibility can mimic the sum of all spontaneous relationships in the Earth System. Under his position, rewilding the world is not a rich country’s whim for esthetic pleasure: it is preserving the “spontaneous order” that holds the conditions of the Earth-System as we know it. At the same time, his proposal of leaving *Half-Earth* for the wild would imply State coercion, as it is not expectable that people would migrate voluntarily, and some authors have considered it “post-democratic” (see Scarso, 2019: 146).

Wilson calls to look with caution at the consequences of rationalization and simplification of ecosystems because of the unknown invisible complexity of ecological interactions. He is somehow suggesting that the arrogance of human reason cannot master reality’s complexity: it is the everlasting myth of the tower of Babel, which represents the collapse of reason’s ambitions, believing in holding a god-like power to touch the sky, to bring heaven to Earth. To prevent the spontaneous order from collapsing we don’t have to restore the “wilderness,” a romantic esthetic ideal, but the “wildness,” the material autonomy of ecosystems.¹⁴ It is a vindication of the spontaneous order, and it is maybe daring to suggest it is comparable with mythological respect for “chaos” or “fear of the underlying unknown”—usually limited by taboos and moral systems, but, in this context “mythological chaos” is not different from chaos in sciences as the unexpected outcome of complex systems nonlinear to variations in initial conditions. In fact, the fear of the underlying unknown is expressed in climatic chaos narratives and ultimately in Gaia, which are taking the dimension of metanarratives in this century.

The conceptualization of Gaia is the globalization of a phenomenon already known on a regional scale. As an epitome of the threatening chaos of nature, China’s “Smash Sparrows campaign” is one of the most well-known examples. Looking to maximize crop production Mao’s government launched an extermination program of the sparrows, a species that ate part of the annual grain harvest. But sparrows, apart from grain, also controlled insect populations. After their eradication a plague of locusts—now without sparrows as their main predators—attacked Chinese crops, being one of the main causes of the “Great Chinese famine” that cost the lives of dozens of millions of people (Steinfeld, 2018). The underlying unknown, the chaotic force of Nature, was being held by a small and common species of bird of a few grams in weight.

Lovelock and Margulis’ theory of Gaia seems from today’s perspective an expectable comeback of the Mother Earth myth in her chaotic side: in order to calm down Gaia’s anger, we have to give place to “the wild,” the spontaneous order. This is what lies behind proposals like Wilson’s *Half-Earth*, in fact. But we can indeed say that the idea of the Earth as a living being is omnipresent across history, as well as the idea of the Earth—conceptualized as a feminine force both provider and agent of chaos—taking revenge from human actions, as Carolyn Merchant masterfully explains in *The Death Of Nature* (1980). This, in the end, could be compared to many indigenous people’s taboos on their local environment which, as materialist anthropology has proven, in many cases serve for controlling population growth, long-term resource management, etc. In any case, the end of the mechanistic worldview that incarnates Gaia can be seen as a return to the organic philosophy (Merchant, 2020: 42). The Gaia hypothesis or, as Lovelock claims, the mere existence of the discipline of Earth System science, recovers the idea of the planet as an organism—a “dynamic physiological system” in his terms (Lovelock, 2007: 19), though there is no integration between the moral and natural order as there was in premodern societies.

The recipe for keeping at bay the destructive power of Nature—chaos, the stepmother, the revenge of Gaia, etc., is to respect the underlying unknown, the spontaneous order: the wildness.

What to preserve and how to restore

More than a century after the creation of the first National Parks, we are confronted with new ideas about what restoration ecology is and what its objectives are. This happens because ecology has changed deeply in the last decades due to methodological and metaphysical changes, as we are seeing. The Society for Ecological Restoration (SER) has capitalized on the task of defining what restoration ecology is and what its mission is (SER, 2004), but when this organization was created, in 1988, the ideas of Nature and wilderness were undergoing deep transformations. At the time, the idea of ecosystems as internally regulated, in equilibrium with climate, and static when undisturbed by humans, was being replaced by the idea of nature in flux (Pickett et al., 1992: 65–88). The classical paradigm in ecology or the “equilibrium paradigm” was giving place to the contemporary paradigm in ecology or the “non-equilibrium paradigm,” and that was also mirrored by major changes in perspective in other sciences at the same time.¹⁵ The non-equilibrium paradigm emphasizes the process rather than the endpoint. For instance, in the pure form of Clementsian succession,¹⁶ the ecological climax was taken, essentially, as an Aristotelian final cause. In the recent “nonequilibrium model,” natural systems are dynamic; subject to continual disturbance, open; influenced by processes outside their boundaries, and capable of reaching equilibrium states in “patch dynamics” or “shifting mosaics,” subject to a variety of successional pathways (Pickett et al., 1992: 71–72). Was the tacit assumption of a final cause of the ecosystem, in the “equilibrium paradigm,” a cornerstone in the wilderness, or was the wilderness as a fixed ideal, a cornerstone of the equilibrium? Could that suggest that, in fact, as the contemporary ideal of wilderness is older than ecology as a science, were the metaphysical assumptions of wilderness the ones preventing us from seeing the dynamics in ecosystems, and not the opposite? Thus, did abandoning the “equilibrium” meant abandoning the wilderness? Are we talking about the same if we say “equilibrium paradigm” and “wilderness paradigm”?

The recent “nonequilibrium paradigm”—we may say, the “new organic philosophy”—has taken place in ecology, but this does not mean metaphysical, methodological, ethical, and other kinds of problems are solved. According to Jackson et al., in both paradigms modern humans are seen as a disruptive agent while the aboriginals are considered “natural.” But while in the first view modern humans are outside of nature, in the second are part of it, though their disruption is also considered natural, as part of the intrinsic dynamism of ecosystems (Jackson et al., 1995: 71–72). The question at hand, if human disruption is natural and transformations are intrinsic to nature, is: why do we have to preserve or restore nature and what exact state should we restore in the ever-changing distribution of equilibriums? If the ecological climax is not a “final cause” of the ecosystem, what does conservation biology have to conserve? Is it not “conserving” against the always dynamic condition of ecosystems?¹⁷

All these transformations in the corpus of ecology were taking place at the same time as the modern idea of nature was undergoing a profound critique in the humanities, if not to say that they are two sides of the same coin. The modern division of Nature and Culture as separated ontological realms was proclaimed to be ended.¹⁸ So, while the idea of ecosystems as static—a prejudice inherited from the modern idea of nature as passive (Merchant, 2020: Preface, xxv)—was disappearing, the idea of Nature was under a deep revision. On top of that, environmental preoccupations were becoming pivotal in the public sphere, and problems such as ozone depletion and climate change had become main social concerns. Ecological restoration had gained wide public legitimation but there was no consensus on how to perform it—and there is not still. Conservation biology and restoration ecology offered themselves as a “crisis discipline” to solve environmental disruption problems (Fiedler and Jain, 1992: prolog, xxiv), at the same time, we have to question if they were “disciplines in crisis.”

Environmentalism was recently rooted in Western society and conservation biology was a new discipline. Many considered conservation biology to be a mere continuation of long-term resource management, nevertheless, the belief in integrity and intrinsic value of all living things as a professional ethic as well as a source of scientific inspiration—though present across history, can be considered different from a view of long-term exploitation of resources (Fiedler and Jain, 1992: prolog, xxi). Conservation biology has implied not just different values, but also different practices. My thesis is that restoration ecology has historically tried to recover the wilderness—nature as it was before human touch—which is nested in the Nature-Culture dualism, in which nature is stable and culture is dynamic. Rewilding, on the other hand, operates in a different metaphysical scenario, in which nature is dynamic as culture. That is why it seeks to promote wildness, which is more related to the dualism Chaos–Order. This is a more essential duality, present across sciences, but chaos and order are not antithetic dimensions—as nature and culture have been considered, but quite the opposite, the unpredictable processes in complex systems—chaos—create an order which is comparable to any simple system (Escotado, 1999: 119). Leaving space for the wildness is, from my point of view, accepting that the order that spontaneous complex systems create is integral to the dynamism of nature. As nature is no longer fixed, recovering nature is, thus, recovering the autonomy of its spontaneous order. In this way, rewilding is a natural evolution of restoration ecology in the same line as the evolution other disciplines have experimented in the last century, and, on top of that, a metaphysical evolution aligned with the condition of the hybrid world of the Anthropocene.

Rewilding: the doctrine of feralization in the “wildness paradigm.” The “exemplum” of the takhi

Jackson et al. (1995) offered a definition of ecological restoration as “the process of repairing damage caused by humans to the diversity and dynamics of indigenous ecosystems.” But in 2004, because of the problems with its definition associated with the difficulties of defining what constitutes an indigenous ecosystem, as we are debating, the Society for Ecology Restoration (SER) encouraged a stricter use of the term. They published a document that clarifies what constitutes a restored ecosystem based on nine attributes, as well as defines the best practice for ecological restoration, and lists the actions required to follow the implementation and monitoring of ecological restoration projects. Among those nine attributes, some are usually ascribed to rewilding—for those who believe they are different things—in contrast with restoration ecology. These are, for instance, the emphasis on functionality, resilience and autonomy (attributes 5, 8, and 9 in Section 3; SER, 2004: 3–4). But it is 2004, and still rewilding is considered an eccentricity and it is not mentioned in the document. Ecology, after all, still had a short life as a mature science and incorporating a new term was viewed, and still is, with reluctance.

The controversies around rewilding are still around, though the term is already in common use. In 2019 a team of 37 researchers from all disciplines led by philosopher Matt W. Hayward published a paper to close the debate. In *Reintroducing rewilding to restoration—Rejecting the search for novelty* (Hayward et al., 2019) authors suggest that “rewilding as a term is obsolete, and hence recommend scientists and practitioners use ‘restoration’” instead (Hayward et al., 2019: 256). They consider that the definition offered in 2004 by the SER is “clearly sufficiently broad to encompass virtually all existing rewilding definitions” (Hayward et al., 2019: 257). They also remark (Hayward et al., 2019) that the same institution offered a more concrete definition of restoration ecology in 2016 as “any activity whose aim it is to ultimately achieve ecosystem recovery, insofar as possible and relative to an appropriate local native model—termed here a reference ecosystem, regardless of the period of time required to achieve the recovery outcome” (McDonald et al., 2016: 9), in a document that

implicitly answers to the definition controversies that rewilding was causing but does not mention the word “rewilding.” Finally, Hayward and his team considered talking about the “wild” as a flawed term in science, that forgets the continuum of the wildness and the cultural, and the proposal of leaving land without human use force a wrong dichotomy that challenges the notion of humans as an intrinsic part of natural wild social-ecological systems (McDonald et al., 2016: 256).

In conclusion, the authors argue there is no difference in the explicit ecology or practice of rewilding and restoration, as restoration ecology also looks for nature-based solutions. But they considered the main difference to be in the acceptance of humans as active participants in the social-ecological system while rewilding pursues excluding human intervention from the resulting state of restoration “thus not recognising human agency as a legitimate part of the resulting ‘rewilded’ system” (Hayward et al., 2019: 258). In this paper, authors are implicitly responding to many accusations classical restoration is nowadays under. The so-called rewilders vindicate nature-based solutions because they believe classical restoration ecology is based on a rationalistic approach in which human planning, linear thinking, and prejudices about the “should be” of the landscape—see the *shifting baseline syndrome*—are preponderant over the recovery of the spontaneity of the natural system (see chapter *Wild Nature—Cascades, spaces, networks and engineers* in Jepson and Blythe, 2020: 70–85). It is true, as we are debating, that rewilding implies a change in values, yet, it is difficult to affirm that rewilding is a different “science” or discipline. Jepson and Blythe (2020) in their *Rewilding: The Radical New Science of Ecological Recovery* answered Hayward’s paper by saying that “rewilding is a form of restoration ecology, but not all restoration ecology is rewilding” (Jepson and Blythe, 2020: 82). But if not all restoration ecology is rewilding, both terms, by the non-contradiction principle, cannot be the same, or rewilding, even if it appeared more recently, is a wider concept than restoration ecology. This controversy was answered 1 year later, in 2021, by a team of 59 rewilding experts. Briefly entitled “Guiding principles for rewilding,” the paper features historical figures in conservation such as Dave Foreman and Michael Soulé among others (Carver et al., 2021), and it enumerates 10 principles to close the debate about the legitimacy or not of rewilding. The principles included both methodological or practical goals as well as philosophical or metaphysical, recognizing that rewilding is, above all, an “empowering narrative” based on ecocentrism—principle 9—and coexistence—principle 10 (Carver et al., 2021: 1891), which, in my opinion, cannot explain the multiplicity of the rewilding phenomena. Authors highlight that rewilding pursues the wilderness (Carver et al., 2021: 1887), but unless we redefine the concept of wilderness, which, as we have discussed, contains an associated metaphysic, this is not accurate. Though, at the same time, they say rewilding is “a response to larger questions of how wildness can persist and recover in a human-dominated world” (Carver et al., 2021: 1890), which can tell us that they are not discriminating between both terms.

There are many proposals and classifications that are supposed to define rewilding, in contrast to restoration ecology, for instance, Jørgensen (2015) identifies six kinds of rewilding (1) cores, corridors, carnivores; (2) Pleistocene megafauna replacement; (3) island taxon replacement; (4) landscape through species reintroduction; (5) productive land abandonment; and (6) releasing captive-bred animals into the wild. Other authors consider rewilding to be a *form of* restoration ecology, or simply an extreme form of ecological restoration (Perring et al., 2015: 11). None of them proclaim that it substitutes or annuls the corpus of restoration ecology. They give different interpretations and, sometimes have implied a change in the hierarchy of priorities,¹⁹ and there is no doubt that practices and results are different, but all these changes can be considered a normal evolution of restoration ecology as a discipline. Especially if we look at how much physics, biology, geology, neurosciences, etc., have changed over the last 100 years. In fact, Carver et al. agree with Hayward et al. and in saying that rewilding has not implied a substitution of the corpus of ecology—see Carver et al., 2021: 1886.

My thesis is that the abandonment of the Nature-Culture dualism has implied, in many aspects, that the notion of nature turns back to the organic philosophy of premodern times, those that Latour considers never accomplished its goal of “purifying” (Latour, 1991). The consequence of accepting this hybridization has had metaphysical, ontological and epistemological impacts in ecology as well as many other sciences. Concerning restoration ecology, it has made practitioners leave aside the idea of wilderness—static, cultural, orderly, to pursue the wildness—dynamic, non-cultural, chaotic.²⁰ I state the corpus and practices of restoration ecology have not been annulled—or that those transformations are common in any discipline, but there has been a metaphysical change. For instance, releasing feral domestic species in the ecosystems would have never been considered restoration in the *wilderness paradigm*, when the metaphysical purity of nature as a different ontological realm had to be preserved. A feral horse or a feral cow, in that scenario, was something “corrupted,” not belonging to “nature” anymore. This idea of a corrupted element of nature, a deformed being neither natural nor cultural, has been discussed by many authors in many ways and terminologies. See for example Latour’s *hybrids* or “quasi-objects” (Latour, 1993: 51), Cronon’s (1996a) use of the notion of *second nature*,²¹ Nicole Karafyllis’ *biofacts* (Karafyllis, 2006), and more recently Diogo, Câmara, and Scarso’s proposal of *lumpennature* (Diogo et al., 2022), among other proposals for the Nature-Culture hybrids.

Those are deformed beings under the *wilderness paradigm* and, because of that, they had to be excluded. As Latour says, modern dualism made the quasi-objects clandestine (Latour, 1993: 134), and it is true because feral animals cannot recover the purity that the wilderness paradigm demands—which is submitted to modern dualism, yet, they have proven to be capable of living wild. In the *wildness paradigm* of rewilding, by contrast, the “metaphysical purity” of the animal is not taken into account, but its capability of performing an ecological role and occupying a niche. “Induced feralization”—a wider definition than breeding back I propose here—of domestic species is, in fact, one of the most fundamental practices of rewilding (see “Types of herbivores” in Tree and Burrell, 2003: 226–287), and it implies integrating in conservation—to legitimize their existence in the space, as we are administrators—the *quasi-objects*, the *biofacts*, the *lumpennature*, the outlaws in the wilderness paradigm: and it goes against the idea that rewilding pursues “ontological purity,” as some authors have held (see Gammon, 2018: 344–345). I dare to say that rewilding—or we may say current restoration ecology—is a doctrine of deliberate feralization of spaces and species—it includes both the feral species and the *novel ecosystems*²² based on the persecution of wildness in a new metaphysical scenario, represented by the Anthropocene, in which the ontological distinction of nature and culture has disappeared. It is important to remark that, as a practice, releasing a feral cow is not distinguishable from releasing a captive-bred red deer apart from the metaphysical and phenomenological aspects. A wild cow has suffered an artificial selection that the deer, in principle, hasn’t, but the mere notion of artificiality is metaphysical, as it implies the human to be intrinsically different from the natural—and not a mere symbiotic relationship, as well as the idea that those “artifacts” cannot be in the ecosystems. If humans are part of nature, domestication has been a symbiotic or parasitic relationship, but never an unnatural process. The ferality of a domestic animal is not determined by any other aspect that could not be analyzed in a wild animal. Its adaptability and impact is what matters, not a supposed metaphysical corruption that has no translation on the ecosystem.

As a paradigmatic *exemplum* of this—in Kuhnian terms, we have the takhi (*Equus ferus przewalskii*). For long time considered the last race of horse ever domesticated,²³ in 2018 *Science* published a famous paper between ecologists, “Ancient genomes revisit the ancestry of domestic and Przewalski’s horses,” in which it was concluded the takhis were feral horses that escaped from the Botai people around 5000 years ago (Gaunitz et al., 2018). Did takhis turn to be wild and feral, but never again part of real wilderness? It is risky to affirm that this paper had a phenomenological

impact on the animal; this means, if it “lost value” in the eyes of conservation or the general public for not being “pure” anymore. In any case, 3 years later, in 2021, *Nature* answered against the Botai’s theory in another paper, giving wilderness again to the takhi (Taylor and Barrón Ortiz, 2021). The debate is still in the air, but did the takhi recover “metaphysical pureness” after *Nature*’s paper or the gap between 2018 and 2021 was not enough time for these transformations to occur? Had the takhi the same “right” to be included in restoration ecology projects while being “feral” than while being “natural”?

There is a suspicion that there is something intrinsically different between rewilding and restoration ecology, but it is not because of a change in the practice of ecology but from a bigger change in our interpretation of reality. Restoration ecology and rewilding are, in fact, the same thing. But the first has historically operated in a period under the modern ontological distinction between nature and culture, while the other operates already in the hybridization of both categories.

Conclusion: Wildness as the salvation of nature

Nature’s independence is its meaning: without it there is nothing but us. - McKibben, Bill, *The End of Nature* (1989/2003)

In wildness is the preservation of the World. - Henry David Thoreau - *Walking* (1851/2008)

Relevant thinkers and ecologists have been making several proposals around restoring the wildness to face ecological crisis. Latour, in order to reanimate Nature—Gaia, prescribes a “demodernization” (Latour, 2017: 282). In the same line, Merchant says that the discoveries in the science of ecology have made us reach a similar worldview as the premodern organic philosophy (Merchant, 2020: 103). Lovelock’s Gaia, as it is implicit in Wilson’s *Half-Earth* rewilding proposal, warns of the chain of unexpected outcomes of trying to rationalize and simplify complex systems and ecological cycles. Thus, the defense of Nature’s autonomy—wildness—is based on the belief that nonlinear systems, such as ecosystems, should not be controlled rationally because their complexity cannot be fully comprehended and any modification can have unpredictable consequences. Rewilding aims to restore dynamism and recover the spontaneous order, standing in opposition to the further rationalization of spaces—challenging both technoscientific optimists and eco-modernists.

As discussed, rewilding started to take root as a concept during the 90s, but controversies persist. The arguments outlined in this paper clearly support the conclusion that the fundamental differences between “rewilding” and traditional restoration ecology are metaphysical. In front of traditional restoration ecology, that kept the modern ontological distinctions of Nature and Culture, the axis of rewilding is no longer a metaphysical purity of nature—expressed in the idea of “wilderness”, but instead, the capability of self-regulation and autonomy from human practices, its “wildness.” Once we have realized the hybrid condition of the world, modern metaphysics fall, but it also opens a new door for nature conservation; if wilderness is no longer possible, self-willed and autonomous ecosystems are. Wildness has become the new goal of restoration ecology, and that is rewilding.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work is funded by national funds through the FCT – Fundação para a Ciência e a

Tecnologia, I.P. (Portugal), within the scope of the doctoral grant PRT/BD/153573/2021, under the Collaboration Protocol for the Financing of the Multi-Annual Plan for Research Grants for Doctoral Students, established between the FCT and the C oa Parque Foundation. Beneficiary of the B-On2022 agreement.

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Notes

1. Some of these initiatives fall under the so-called “Pleistocene rewilding,” which aims to restore the ecological potential of ecosystems lost through the demise of megafauna 10,000–15,000 years ago. To achieve this, they propose introducing relatives or functional equivalents of extinct species. (see Jepson and Blythe, 2020: 57–60 and 68).
2. Rewilding experts, above methodological and practical definitions, define rewilding as a narrative (see Carver et al., 2021: 1891).
3. Latour extends his renowned Actor-Network Theory to elements of the natural environment. He explains why we must consider the Earth as an “actant” insofar as, by understanding its functioning, we must establish beneficial patterns of interaction with it in the long term as these will define the behavior of ecosystems and thus our future situation (Latour, 2017: 54–57).
4. Merchant assesses how techno-scientific utopias across modernity such as Bacon’s *New Atlantis* are based on preventing the human from nature’s disorder, and they prescribe nature’s dominion (Merchant, 2020: 192).
5. This is a reference of Descartes’s Discourse of the Method: “and thereby make ourselves, as it were, the lords and masters of nature.”
6. He refers to the 2001 Amsterdam Declaration on Earth System Science by the International Geosphere-Biosphere Program (1987–2015) in which it is implicit that the Earth is a self-regulating entity. See more in the IGBP website: <http://www.igbp.net/about/history/2001amsterdamdeclarationonearthsystemscienc.e.4.1b8ae20512db692f2a680001312.html>.
7. Feralization is a complex process that occurs when a domestic population is returned to the wild (see Henriksen, Gering and Wright, 2018: 183–195). Historically it has been involuntary, when a species population survived after escape or abandonment, rewilding, nevertheless consciously induces feralization in animals that can occupy a particular ecological niche. For example, as aurochs are extinct, bull—domestic descendants of aurochs—can be feralize to perform their niche (see Tree and Burrell, 2023: 236–237).
8. I use “induced feralization” as a wider concept than “breeding back” because it can be done without pursuing the similarity to the agriotype—the ancestral wild form of the domestic species—(see about breeding back in Novak, 2018). Breeding back is an older practice, and already in 1920’s the brothers Heinz and Lutz Heck started a breeding back program with cattle and horses in order to recreate the aurochs and the tarpan. This initiative was tainted for some time because later in the 1930’s the Nazis funded Heck’s project due to their essentialist vision of landscape: the true German wilderness, they believed, had to be inhabited by those animals that had disappeared and were part of the original landscape (see Uokoetter, 2006: 72, 103–105).
9. During 1980’s, the term “wilderness recovery” was starting to point out what would be rewilding (Carver et al., 2021: 1883–1884).
10. Wilson is against ecomodernist stands such as the one held by Crist (2019) in *Abundant Earth: Toward an Ecological Civilization*.
11. Referred in many ways, such as the already mentioned “baseline” or, for example, “ecological reference,” according to rewilding experts (see “Principle 3” in Carver et al., 2021: 1889.)
12. The first de-extinction in history occurred in Spain in 2003. They cloned the bucardo, an extinct species of ibex from the Pyrenees mountains, that came back to life as a species for 7 minutes (Novak, 2018). Their ultimate goal was reintroduction. At present, there are other de-extinction projects such as those planned by the start-up *Colossal*. See more: <https://colossal.com/de-extinction/>.

13. We could launch another question for further metaphysical reflection: does hybrid ontology become monist when dualism becomes impossible?
14. New proposals like Cantrell et al. (2017) suggest that artificial intelligence can help us to rationalize and comprehend the wildness, thereby facilitating its creation, which does not imply, by any means, that we can materially replace non-human spontaneous interactions across the Earth.
15. Such as the introduction of probability and indeterminacy in physics through quantum mechanics, the “punctuated equilibrium model” in evolutionary biology, debates around gradualism and catastrophism in geology, and so on (Pickett et al., 1992: 65–88 in Fiedler and Jain, 1992).
16. Clements (1916) profoundly influenced ecology in the “equilibrium paradigm” with the publication of crucial textbooks in the history of the discipline such as *Plant Succession: An Analysis Of The Development Of Vegetation*.
17. Jackson et al. briefly discuss other terms, historically used, related to restoration such as “reclamation,” “rehabilitation,” “creation,” or “mitigation” (Jackson et al., 1995: 75).
18. See for example *The Death of Nature: Women, Ecology, and the Scientific Revolution* (Merchant, 1980/2020), *A Cyborg Manifesto* (Haraway, 1985/1991), *The End of Nature* (McKibben, 1989/2003), *The Natural Contract* (Serres, 1990/1995), and *We have never been modern* (Latour, 1991), *Beyond Nature and Culture* (Descola, 2005), etc.
19. For instance, emphasizing the systemic view over the linear (Jepson and Blythe: 82–83), the keystone species over the number of species, the top-down vision (Plumptre et al., 2021: 2–3), the abandonment of the baseline, etc.
20. In fact, there is a vast previous literature that refers to the term “wilding” (Carver et al., 2021: 1885).
21. A concept that Cronon takes from Pollan (1991).
22. Non-native taxon substitution and other rewilding practices in the pursuit of ecosystems’ autonomy imply the deliberate creation of novel ecosystems (see Hobbs et al., 2013: 40).
23. An idea that many have questioned, as the contemporary populations of wild takhi were recovered in a long process of *in-situ* breeding to prevent endogamy, and submitted to a human selection process of what should be a takhi (see Forrest, 2020: 139–158). At the same time, if the takhi is considered domestic based on that, maybe other species such as the European bison (*Bison bonasus*), the Iberian lynx (*Lynx pardinus*), or the black-footed ferret (*Mustela nigripes*), among others that have passed through similar processes should be also considered domestic.

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