



The Oostvaardeplassen in April 2018. **Photo courtesy:** Stichting Annemieke (<https://www.facebook.com/groups/609452909390002/>).

Learning to Rewild: Examining the Failed Case of the Dutch “New Wilderness” Oostvaardersplassen

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The Dutch conservation area Oostvaardersplassen was initiated as a rewilding project within the Netherlands' protected area network. It came under the spotlight when management strategies and practices were criticized by scientists, conservation practitioners, and the public, from a number of perspectives – not all of which were compatible. This article reviews the origin, evolution, and application of the rewilding concept and examines the Oostvaardersplassen project as a case study. Our assessment demonstrates that the area was never an appropriate site for rewilding, beset by rudderless management, and led to a situation that was ecologically and ethically untenable. The case study is used to illustrate humanity's evolving role in environmental protection where advances in the understanding of ecological complexity, animal behavior, and sentience, cannot be ignored when addressing environmental protection, problem solving, and management. Finally, it lays out options for the future in the absence of the three Cs of rewilding, the Cores, Corridors, Carnivores, and introduces the concept of the fourth C, Compassion.



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Introduction

As accounted by the Millennium Ecosystem Assessment (MEA n.d.), and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report (United Nations 2019), the human-dominated era, informally termed the Anthropocene, is driving mass extinctions (Lewis and Maslin 2015). MEA and IPBES have as their objective the assessment of the consequences of ecosystem change as a scientific basis for action needed to enhance conservation. MEA and IPBES resulted in a scientific appraisal of the conditions and trends in the world's ecosystems, noting a sharp decline in biodiversity. Likewise, the International Union for Conservation of Nature (IUCN 2013, n.d.) has highlighted alarming trends in terrestrial ecosystems, notably in most industrially developed countries. Mega-fauna, the largest of terrestrial herbivores and carnivores, are experiencing severe declines (IUCN n.d.). One of the strategies proposed by the Ecosystem Management division of the IUCN (n.d.) to address this decline is that of rewilding.

Not all rewilding programs, however, are well received. For example, the Dutch nature reservation area called Oostvaardersplassen (OVP) has experienced numerous demonstrations against its management strategies. Around the area, numerous placards stating “stop rewilding” are on display. In addition, protest platforms against the OVP have been active for a number of years now, including Facebook groups (<https://www.facebook.com/antiovp>) and Twitter accounts, which have focused on animal suffering and biodiversity conservation. What went wrong?

This article addresses three overlapping issues pertaining to this complex situation. First, it examines the history and evolution of the rewilding concept (Foreman 1998; Soulé and Noss 1998) to show that the term has been diluted and transformed such that it is at risk of losing both meaning and purpose. Second, it shows that OVP was never a suitable site for rewilding, not in its original forms nor any of its subsequent evolutions. Third, following the animal welfare and animal rights movement (Singer 1977; Aaltola 2012) and the emerging field of animal rights law (Sykes 2016), this article stresses the importance of compassion in conservation (Bekoff 2013, 2014; Wallach et al. 2018). In this article we argue that we need to address both scientific evidence and ethical considerations when dealing with sentient and highly social animals.

Rewilding

The primary driver behind the rewilding concept was the awareness of environmental degradation, not only at local and species levels but also on a continental scale due to the disruption of ecological processes (Noss 1985, 2019; Soulé and Noss 1998). These processes were being threatened by large-scale habitat alteration and fragmentation due to industrial production and economic development, which externalizes the detrimental costs of perpetual growth.

There have been many competing concepts of rewilding since the 1980s, following emerging scientific insights in ecology, with ecological engineers restoring areas depleted by industrial or agricultural activity in order to “bring nature back.” David Foreman (1998) is

credited with first coining the term "rewilding" to refer to the process of restoring populations of apex predators, because they often regulate the "cascades" – ecosystem food webs. Trophic rewilding (Soulé and Noss 1998) refers to an ecological restoration strategy that aims to restore top-down trophic interactions and associated trophic cascades to promote self-regulating biodiverse ecosystems (Svenning et al. 2016). Foreman introduced the three Ws acronym – Wilderness, Wildways, and Wildeors, because the word "wilderness" incorporates philosophical and ethical components in addition to the geographical ones. Foreman (1998) had a fourth W within his acronym – Wardens, signifying the need for regulation and enforcement.

Complications can arise because the terms "wild," "wildness," and "wilderness" each have biophysical, philosophical, and political components and different interpretations (Callicott and Nelson 1998). In this regard two points should be acknowledged. The first is that while the concepts wild and wildness can be applied to individual components of a system and any geographical scale, the IUCN definition maintains that wilderness areas are usually large (Dudley et al. 2008). The IUCN, in recognizing conflicting issues associated with scale, relies on protected area planners applying the whole suite of interchangeable wildness and wilderness characteristics to determine a fitting designation (Dudley et al. 2008).

The second point is that the term "wilderness" does not receive universal acceptance across the globe (Callicott and Nelson 1998; Zealand 2007). We propose here that accep-

tance of the wilderness concept is dependent upon it shifting beyond the preservation of an idealized time-trapped landscape to instead recognizing its ecological necessity, ethical applicability, and broad cultural relevance (Cryer 2009).

Based on evidence that the efficacy of conservation was positively correlated with the size of the protected area, Soulé and Noss (1998, p. 2) emphasized the "restoration and protection of big wilderness and wide-ranging, large animals – particularly carnivores." Brown et al. (2011) define rewilding as a strategy for the conservation of complete, self-sustaining ecosystems, primarily involving the protection and, where necessary, reintroduction, of keystone species in large, connected reserve networks. These keystone species include megafauna, with their large home ranges (strictly protected core reserves), large migration routes (connectivity), and large predators (keystone species). These three Cs, the Cores, Corridors, and Carnivores (Noss and Cooperrider 1994; Soulé and Noss 1998; Fraser 2009) entail the goal of reestablishing certain ideals of "natural ecosystem processes" and reducing the need to manage landscapes. Rewilding helps "contribute to converting altered ecosystems back into their natural composition, either by letting nature take its course or by introducing missing elements – such as native species" (Promberger and Promberger 2015, p. 249). The restoration and protection of natural processes and wilderness areas involves connecting these areas to one another and reintroducing apex predators and keystone species to their original habitats (Brown et al. 2011).

While rewilding programs in Europe began to develop at the turn of the 20th century in response to the displacement of large carnivores and herbivores, the protected territories tended to be small and not well monitored or coordinated (e.g., Ceaușu et al. 2015; Jepson 2016). There have been several projects in Europe that have been identified as examples of rewilding, including parts of the European Green Belt, along east European border areas (Fraser 2009). The Rewilding Europe network stresses "even our wilderness areas need to be rewilded, because there is hardly even one large area in all of Europe, which is allowed to function naturally by itself, without detailed human 'management'" (<http://www.rewildingeurope.com>).

Paleo-Rewilding

In instances where extinction prevents the reintroduction of megafauna, ecologists consider introducing near-relatives of the extinct species. Such paleo-rewilding was the subject of a controversial essay in *Nature* (Donlan et al. 2005). As discussed by Noss (2019), Donlan et al. (2005) used the term "rewilding" to refer to the experimental introduction to North America of elephants, which represented the closest living relatives of animals that became extinct in that locale during the late Pleistocene, approximately 13,000 years ago. Such rewilding then became associated with the restoration of prehistoric landscapes; for example through the introduction of the predomesticated ancestor of the dromedary camel (*Camelus dromedarius*), which was driven into extinction from the wild 4,000 to 5,000 years ago (Root-Bernstein and Svenning 2016). Subsequently, rewilding became synonymous with Pleistocene rewilding, associated with conservation programs in which animals are bred in captivity or captured in the wild, and reintroduced to new regions.

This approach, however, was considered impractical and dangerous, due to the uncertain impacts of the introduced species (Nogués-Bravo et al. 2016). In addition to this, it creates a misperception that current conservation strategies aim to return areas of the Earth to an idealized version of an earlier and perhaps static condition, denying the dynamic nature of ecological systems, especially those associated with biodiversity/habitat loss and climate change. The appreciation of global environmental change has led to the realization that restoration to historical benchmarks or modern equivalents may no longer be a viable option (Pettorelli et al. 2018).

A shift from the use of Foreman's "wilderness" to the concept of rewilding Cores perhaps opened the door to shrinking the geographical context of rewilding and was adopted and entrenched by European importers of the concept. Clive Hambler, who defined "rewilding," independent of scale, as the "restoration towards greater naturalness" (Hamblen 2015a, p. 7), emphasizes that the central rational reason for rewilding was to reduce "extinction rates" (Hamblen 2015b, p. 23). The word "rewilding" denotes recovery, and this applies not only to corridors that receive protection between Cores, but to the Cores themselves, as they respond to the advantages of connectivity.

The concept of paleo-rewilding thus shifted between the practice of reintroducing and pro-

tecting "any" wild or domesticated species to the creation of historical landscapes. Below, two intertwined concepts will be discussed. One is the idea that scale matters in determining the necessity of intervention, and the second concept pertains to what is being restored and how it is achieved.

Scale, Intervention, and Management

In some contexts, rewilding entails the passive management (basically, human noninvolvement) of ecological succession with the goal of reestablishing natural ecosystem processes and reducing human control of landscapes (Gillson et al. 2011; Navarro and Pereira 2012). In other contexts, rewilding attempts to actively restore ecological self-regulation through the replacement of missing or dysfunctional ecological processes or components (Seddon et al. 2014).

Noninterventionists imply that biodiversity depends on ecosystems formed through natural processes and interactions in which human beings have historically played a proportionally modest role (Schenck 2015). Interventionist strategies apply in instances where natural systems are restored on a limited scale, and where natural processes are not sufficient to provide regulation and resilience (Gillson et al. 2011; Navarro and Pereira 2012; Schenck 2015). As a general principle, the larger the area the greater its capacity for self-regulation and the more resilient the ecosystem is to change (Gillson et al. 2011; Navarro and Pereira 2012; Noss 2019).

However, the size of an area alone cannot determine the appropriateness of interventionist or noninterventionist strategies, for which context is also required. We could hypothesize, for example, that in an area where fauna is characterized by rabbits, foxes, and hawks, 50,000 hectares (123,553 acres) may be sufficient for extensive self-regulation. However, a similar-sized area populated with leopards, hyenas, rhinos, and elephants would in contrast require extensive management. What happens on the fringes of a rewilded area is also significant. Under stressful conditions, animals will move away, and surroundings that are conducive to that offer additional resilience. In instances where there are species that, to protect human safety, require containment, this resilience diminishes, exacerbating debates around human/wildlife conflict (Demarais et al. 2012).

The Case of Rewilding in Oostvaardersplassen

The Netherlands is a densely populated country with a total land area of 33,720 square kilometers (13,019 sq. miles), populated by more than 17 million people, with a population density of 507 inhabitants per square kilometer (<http://www.worldometers.info/world-population/netherlands-population/>). Because of this high population, density-conservation efforts in the Netherlands occur in small and controlled or managed territories (Shoreman-Ouimet and Kopnina 2016). The prevailing view in the Netherlands was that nature was something to be managed, like a farm (Shoreman-Ouimet and Kopnina 2016), which served to justify nature organizations' funding for "project management" rather than nonintervention and allowing nature to take its course (Van Dinther 2019).

The key authority behind the creation of OVP is Frans Vera (2009), who supported "precivilized nature rewilding" or paleo-rewilding, only without considering the large scale required for this model of rewilding. Vera's work on prehistoric landscapes justified local rewilding initiatives based on the assumption that large herbivores were instrumental in maintaining a more open landscape and hence prevented the dominance of closed canopy forest (Vera 2009). However, some researchers have questioned paleoecological data that suggested a permanently open landscape (Hamblen and Canney 2013, p. 154). The counterargument is that trees used to dominate landscapes, but in an evolving way, with some open woodland giving way to more of a closed canopy later on (Whitehouse and Smith 2010, p. 551). While there would have been temporary and permanent glades, most of the land was covered with high forest (Kirby et al. 2005, p. 169). In what is now the territory of the Netherlands, its open landscapes are in fact the result of medieval agricultural activities and intensified grazing and thus "cultural" rather than "natural" landscapes (Van Dinther 2019). Despite evidence that open landscape with grazers had a predominantly cultural basis, the restoration of the prehistoric landscape in the OVP was seen as natural, according to Staatsbosbeheer (n.d.), the state forestry service and official manager of this area.

Nonnative grazers were introduced to a 56-square (22-sq. miles) kilometer area situated in the reclaimed land area called Flevopolder. Red deer (*Cervus elaphus*) from Scotland, Konik horses (or ponies) (*Equus ferus*) from Poland, and Heck cattle (*Bos taurus*) from

Germany were introduced because they have undergone very little selective breeding and were assumed to have many of the characteristics of their wild ancestors (Vera 2009). The Heck cattle were the result of a controversial German breeding program in which modern aurochs were selectively bred with Spanish fighting bulls to resemble the "prehistoric" European aurochs (de Bruxelles 2009; Izadi 2015). Reportedly, the farmers found the Heck cattle too aggressive (Morris 2015; Izadi 2015) as they were always "trying to kill everyone" (Crew 2015). Species included birds that had become rare, such as the kingfisher (*Alcedo atthis*), common spoonbill (*Platalea leucorodia*), Eurasian bittern (*Botaurus stellaris*), marsh harrier (*Circus aeruginosus*), bearded tit (*Panurus biarmicus*), foxes (*Vulpes vulpes*), and hares (*Lepus europaeus*). Additional species that had almost or entirely disappeared from the Netherlands now occur there, including the greylag goose (*Anser anser*), great cormorant (*Phalacrocorax carbo*), great white egret (*Ardea alba*), white-tailed eagle (*Haliaeetus albicilla*), and sanderling (*Calidris alba*) amongst others, were also introduced (Vera 2009; Lorimer and Driessen 2014). Smaller mammals such as red foxes and hares, as well as amphibians and reptiles are also found in the area (Lorimer and Driessen 2014; Shoreman-Ouimet and Kopnina 2016).

The assumption of ecosystem function was premised on the Netherlands' "historical landscape," which was presumed to be an open grazing area. When the planners of the OVP project set up a small park, the overpopulation of herbivores was inevitable, demanding an intensively managed interventionist strategy.

The herbivore overpopulation was caused directly by poor, inappropriate ecological planning and management, of which animal cruelty was the inexorable outcome.

The small size of the area was mitigated by the possibility of connectivity through the promise of potential corridors. The development of the so-called green infrastructure was announced by the Dutch government as part of the combined "nature and sustainability" vision supported by a number of political parties and ministries in 2009 (EMA 2015). The corridors, however, were never introduced and grazers remained landlocked (see Figure 1).

OVP's Development

At first, the OVP initiative was well received, not only by the Dutch nature organizations but also by the policy makers involved in local landscape restoration initiatives (Kuyl et al. 2000) and the Natura 2000 program, the EU's largest coordinated network of protected areas stretching over 18% of the EU's land area. However, a few years after its designation as a nature area, OVP started to attract skepticism. While visiting the area during the filming of the Dutch nature documentary *De Nieuwe Wildernis* (The New Wilderness), Elizabeth Kolbert reflected: "A few members of the French crew had brought along video cameras.... I wondered what they would do with the high-voltage power lines in the background. It occurred to me that, like so many post-modern projects, the Oostvaardersplassen was faintly ridiculous." More pointedly, a popular talk-show host, Lubach (2016), referred to the "OVP safari lodge" where excited disaster tourists can gorge on the sights of starving animals.

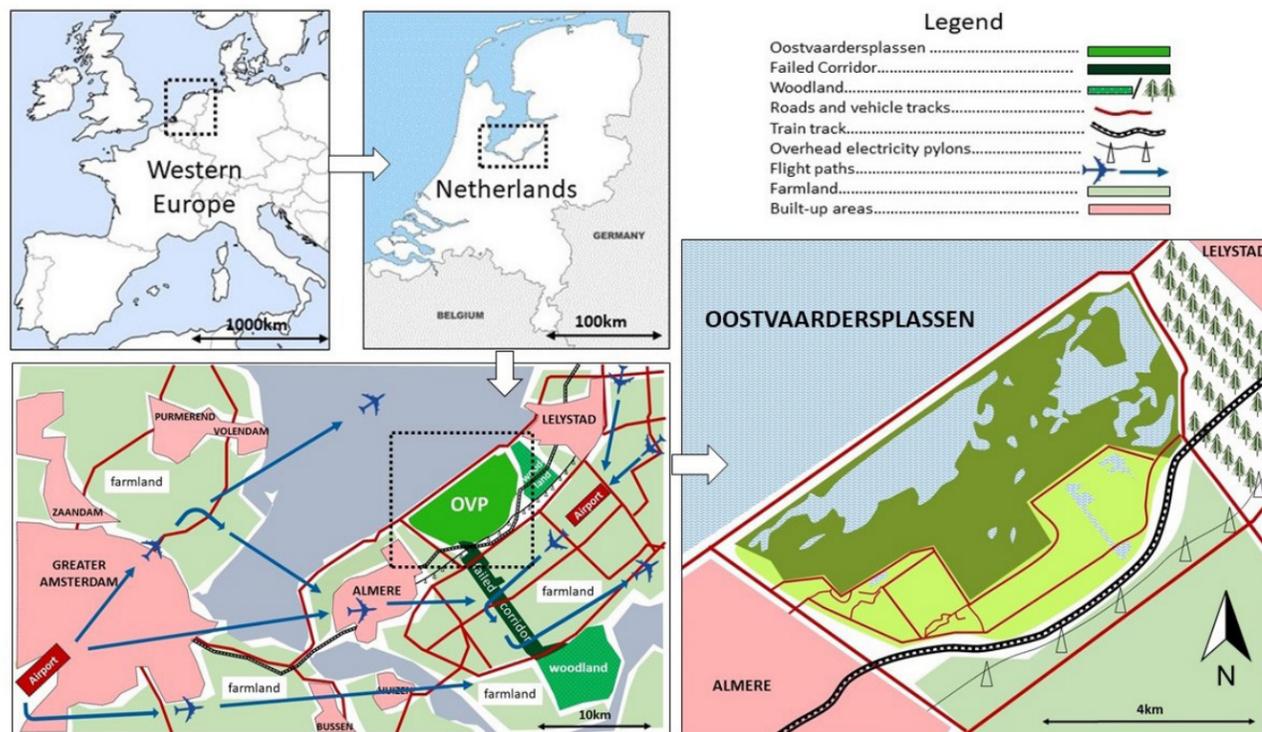


Figure 1 – Maps showing the position of OVP in western Europe as well as surrounding land uses and basic vegetation types

With its fence-limiting food availability and emigration, the OVP project had the unavoidable outcome of needing population control, either through starvation or regular culls. The introduction of megafauna in OVP was approved without the possibility of natural regulation (Shoreman-Ouimet and Koprina 2016) and the lack of any legal framework protecting (wild) animals (Koprina 2016a). Responses to this emerging situation fell into three camps: those believing that the OVP should be seen as a wild and self-regulating advocated animal starvation. Those following conventional wildlife management practices advocated culling. Many members of the public, who perceived the suffering of OVP animals as a human-constructed error, demanded that the animals should be fed and cared for.

Mass starvation, the result of too many herbivores multiplying on a small and closed territory, was inevitable and wholly predictable. In the winter of 2011–2012 the total number of dead animals stood at 941 on March 1 (Griekspoor 2018). According to the Staatsbosbeheer, more than 90% of the deaths in 2014 were animals that were shot to prevent starvation. The Staatsbosbeheer (2014), however, remained optimistic about "the natural life where nature has a say in it."

Mortality statistics varied widely when it came to how many animals were shot (according to eyewitness reports by protestors or official numbers), died of starvation, or experienced "natural deaths." By December 2017 there were nearly 5,300 red deer, Heck cattle, and Konik horses in the nature reserve, 700 more than in 2016 (Kuypers 2017). The total head count of dead animals in 2018 stood

at 1,755 on March 1. That is approximately one-third of the total population of 1,478 red deer, 26 heck cattle, and 251 Konik horses (Griekspoor 2018). Of the more than 5,200 red deer, horses, and cattle, almost 3,000 died (Pauwe 2018). The Staatsbosbeheer reported that 2,684 red deer, 75 cattle, and 467 horses died in the five months from December 2016 to April 2017 (NOS 2018). According to official reports from Staatsbosbeheer, from December 2018 to April 2019, 1,800 deer were shot (NOS 2019).



Figure 2 – This Tom Janssen cartoon first appeared in the Trouw newspaper in March 2010. Caption (translated from Dutch): "Look, free nature!"



Figure 3 – Mortality of large grazers – Oostvaardersplassen. Source: Staatsbosbeheer.

The ensuing controversy surrounding OVP reached the European Union (European Parliament 2018) when on July 20, 2018, deputy Harold Hofstra of the Province of Flevoland, and director Sylvio Thijsen of Staatsbosbeheer, signed the Van Geel Covenant to shape OVP's future development. The covenant sets out plans for the development of National Park New Land, with the aim of increasing accessibility to the area for visitors, and providing recreational opportunities and associated facilities, such as cafés and shops. In the short term, investments are proposed in the areas of creating more water habitats, increasing shelter, and reducing grazing pressure. In the long term, the number of large grazers will be maintained at a maximum of 1,500 animals, by shooting them (<https://www.staatsbosbeheer.nl/over-staatsbosbeheer/dossiers/oostvaardersplassen-beheer>). That Dutch nature organizations only receive subsidies for intervening through environmental management, a rather perverse economic stimulant, complicates matters (Berendse in Van Dinther 2019).

The shift to prioritizing recreational opportunities in OVP signals the relinquishment of any rewilding principles, even under the most diluted forms of the term. Increased human activity within a very restricted area can only ever negatively affect wildlife (Hambler and Canney 2013, pp. 83–84; Bötsch et al. 2018), as increasing numbers of studies are discovering the "negative effects of recreation on animals" (Larson et al. 2016). Simply put, wild areas "will not remain natural if too many people have access" (Peterken and Mountford 2017, p. 378).

Discussion

While rewilding can be seen as scientific, biological, or even technocratic action to support ecological sustainability, it also has ethical implications. Ethically, ecocentric supporters of rewilding emphasize that wild ecosystems with intact food webs, including apex predators, have intrinsic value, and humanity has a moral obligation to restore such ecosystems wherever possible (Noss 2019). The inclusion of intrinsic value to reflect ecological complexity makes rewilding and ecocentricity inseparable (Kopnina 2016a, 2016b; Cafaro et al. 2017; Kopnina et al. 2018; Piccolo et al. 2018). But it is important to note that the semantic migration of rewilding has diluted it conceptually such that some of its originally implicit aspects, including ethics and scale, require specification or clarification. Without undermining the advantage and applicability of the Cores, Carnivores, and Corridors (not to mention Compassion) concepts to European rewilding in general and OVP in particular, the use of the word "wilderness" is either a stretch or a dilution of the concept.

In sum, according to Noss (2019), rewilding must begin with two fundamental actions: (1) enlargement by adding areas to small nature reserves and restoring native vegetation assemblages, and (2) restoration of functional connectivity among patches. Restoring connectivity can create a whole greater than the sum of its parts, in that small reserves by themselves cannot maintain viable populations of area-demanding species, but a network of connected sites might provide enough habitat to support metapopulation or viable populations (Noss 2019).

Both the Foreman concept, and Soulé and Noss's (1998), refer to geography on a continental scale. More subtly, the differences between the original Foreman concept and that of Soulé and Noss (1998) are significant (Rewilding Institute, 2018). To Foreman, rewilding was an ethical conservation plan that made use of science. Perhaps to accelerate gaining traction, Noss and Soulé defined it as a scientific conservation plan, which was subject to ethical scrutiny. Within Foreman's interpretation, ecocentricity was implicit, along with the concept of respect and compassion for nonhuman community members by human community members. This is critical in determining a fundamental question in rewilding: Should a fourth C be added to "Cores, Corridors, Carnivores," that of Compassion?

To address this question, the rewilding term was reevaluated by Marc Bekoff (2013; 2014), who added a moral dimension to the purpose of rewilding. To Bekoff, our modern relationship with the Earth has suffered a disconnect through a series of social, agricultural, and economic revolutions that deluded humanity into believing it now occupies an elevated position within the greater Earth community. Our relationship with nature is consequently characterized by alienation and fragmentation, unnatural to a consciousness that includes kindness and empathy in addition to greed and self-interest. Bekoff points out that the initiating force is interspecific compassion, care, and empathy directed at individual community members, plants, and animals. Bekoff proposes that solution-seeking must be more than a purely cerebral process, one that validates both head and heart (Bekoff 2014,

p. 5). In this view, rewilding extends beyond the biophysical and carries the alleviation of suffering as an inherent component.

This addition to the rewilding concept has a number of ramifications. Bekoff's interpretation adds depth to the inclusion of Compassion as the fourth C. His emphasis on the individual is more akin to the thinking behind the compassionate conservation movement (Baker 2013; Wallach et al. 2018). This movement seeks to acknowledge and incorporate individual animals within the purview of conservation decision-making. This is in direct contrast to approaches that focus on attaining healthy ecological systems, and which consider the fate of individuals or groups of animals of little consequence so long as they contribute to the health of the ecosystem (Wallach et al. 2018). Within this discussion it is necessary to differentiate between suffering in natural systems (e.g., predation, starvation, disease) and "terminal (or artificial) suffering" caused by habitat loss or other anthropogenic drivers of extinction. This has particular significance within the OVP case study, which demonstrates that neither the imperatives of animal ethics, nor practical requirements of biological conservation, are met in a proper manner.

As some activist groups, and more recently European legislators, have stressed, the shift in OVP's management strategy from creating a nature reserve to prioritizing recreation, where heavy management turns the area into a free-range farm, cannot go unmarked. It is another occurrence where, in spite of the global need for biodiversity conservation and the allocation of protected areas, the Netherlands is choosing to convert an area intended for biodiversity pro-

tection into an area demarcated for people to have enjoyment in a "historical landscape" fantasy. OVP's mismanagement can be viewed from a number of differing and valid perspectives: flaws in ecological thinking, the inhumane treatment of animals, and the poor application of interventionist or noninterventionist strategies. From our point of view, the underlying idea is not whether precivilization landscapes can be re-created, apart from the questionable applicability of paleo-rewilding relevant to OVP, but whether the planning of OVP can be ethically and pragmatically justified.



Figure 4 – The Oostvaardeplassen desertland. Courtesy of Stichting Annemieke: <https://www.facebook.com/groups/609452909390002/>.



Figure 6 – The Oostvaardeplassen: Truck with Antlers. Courtesy of Stichting Annemieke <https://www.facebook.com/groups/609452909390002/>.

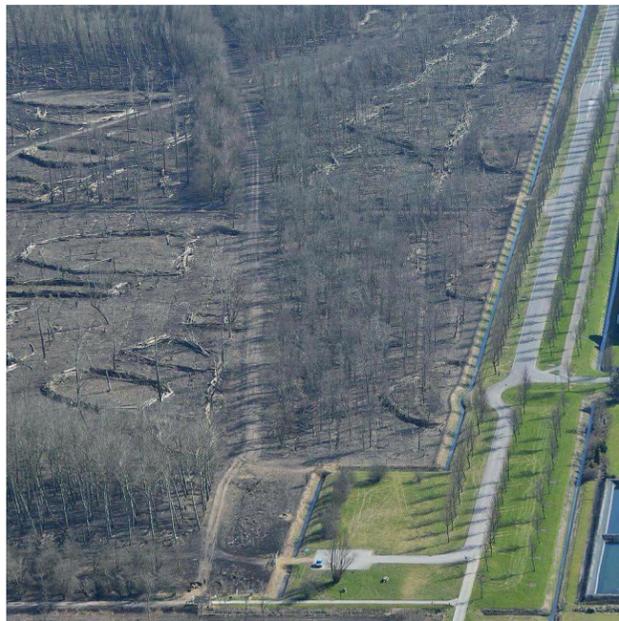


Figure 5 – The Oostvaardeplassen as viewed from a helicopter. Courtesy of Shutterstock – (free images).

Future Direction of OVP

OVP's management authority has abandoned use of the term "rewilding" and seamlessly transitioned the reserve into a meat-producing recreational area. While relinquishing the rewilding concept may be appropriate, the lack of accountability for the egregious mismanagement of a protected area and its introduced large herbivores is not. The scientific community and conservation managers must define and articulate this accountability, if only to prevent its recurrence. As OVP has been used as a template for at least one other rewilding project (Tree 2018), the potential for history to repeat itself is real.

In light of this accountability, these options were or are available to current decision makers:

- The Staatsbosbeier authorities could recognize the ecological and humanitarian blunder and move the large animals to more suitable areas. This could be conducted purely to reduce numbers, or it could be deployed to intentionally breed animals for other areas within a coordinated metapopulation strategy.
- They could explore contraception (Cohn and Kirkpatrick 2015) to maintain populations once they were reduced to ecologically acceptable levels.
- The numbers of large mammals within OVP could, as proposed, be controlled by regular culling, utilizing the meat for human consumption.

None of these options offer a "hands-off" management model that might actually be preferred in natural systems, and none are without controversy. They each highlight the reality of managing a small area and the choices that are made determine the commitment of the decision makers to the environment and animal welfare. The authorities seem to have taken the cheapest option in correcting the high numbers of large herbivores: culling animals and selling the meat. Yet, if the authorities are worried about the costs involved in live removals compared to the fallout of international condemnation, they are being shortsighted.

The proposed management revisions of the OVP conservation area continue to rely on simplistic conservation management rather than developing the necessary understanding of complex ecological interactions, and appear to be driven by expediency rather than ethical concerns. The revised vision for OVP does not include consideration of the biodiversity value of large mammals, the densities set for these animals, and the manner in which those numbers are to be maintained in the future. Effectively this means that OVP will become a recreational area characterized by some novelty viewing and meat production. Its remaining value to small mammals, birds, and other fauna would require scrutiny, but its contribution to the local or European protected area network would certainly be less than the planners of the original conservation area envisioned.

As discussed, the concept of rewilding (with the component parts of the term, "re" and "wild" having their own meanings) has evolved and changed as it has been applied to different circum-

stances. And as stated in our Introduction, in relation to the concept of wilderness, no part of OVP fits within a wilderness designation; to apply the term inappropriately will only undermine efforts in larger areas by deeming high levels of human impact acceptable. The replacement of Foreman's four Ws – Wilderness, Wildways, Wildeors, and Wardens with the three Cs – Cores, Corridors, and Carnivores, opened the door for rewilding to evolve rapidly without the inherent constraints of size or the ecocentric land ethic. Without the expanse of wilderness, small rewilding projects required increased management intervention, and without the ecocentric land ethic, those increased interventions could become ethically nihilistic.

The addition of the fourth C, Compassion, is an example of an ethic being re-added to the rewilding concept after being stripped of it through the evolution of the term. Does the inclusion of Compassion restore the meaning of rewilding to its original form? Perhaps. Within the range of ecocentric outlooks, the wilderness land ethic acknowledges the well-being of the collective and the members who make up the collective as a radically interconnected whole. Proponents of compassionate conservation react against mechanistic ecological strategies in which ecosystem integrity must be maintained even at the calculated expense of individual animals (Bekoff 2013). It is not that compassionate conservationists ignore ecosystem maintenance, nor do they shy away from the hard decisions associated with ecosystem management. But they do apply the well-being of all components of an ecosystem (individual animals) as well as the whole, within their decision-making (Bekoff 2013). For interventions to be ethically justifiable, compassion, for individuals and species, must be inherent within management decision making (Wallach et al. 2018).

Conclusion

We have argued that there are limitations in the currently applied system of land management at OVP, which have become evident with advances in science and ethics. As our analysis has indicated, in many ways OVP's inappropriate application of rewilding illustrates how the project has failed to keep pace with developments in science and ethics. The term "rewilding" (including selected parts of its original definition and processes) has been useful to smaller initiatives in Europe, right down to the scale of rewilding previously farmed land. But in order to do this effectively, the term "rewilding" had to be reworked to deal with the management issues of small areas. In doing this, the term came to include aspects of planning and intervention that the original term was designed to specifically circumvent – namely, high human impact and management intervention. Compensatory mechanisms and alternative strategies are debated to the point that, without details, context, and clarification, they render the term "rewilding" meaningless.

Perhaps it is time to define the term “rewilding” from a strategic perspective: to ensure the components of rewilding (either the Ws of Wilderness, Wildways, Wildeors, and Wardens or the Cs of Cores, Carnivores, Corridors and Compassion) become adopted at an international governance level.

Perhaps it is time to define the term "rewilding" from a strategic perspective: to ensure the components of rewilding (either the Ws of Wilderness, Wildways, Wildeors, and Wardens, or the Cs of Cores, Carnivores, Corridors, and Compassion) become adopted at an international governance level. The greatest goal of rewilding is to protect and link large tracts of land where the opportunity remains. If the controlled or gentle rewilding of small areas, as advocated for example by Lorimer (2014), undermines the rewilding of vast landscapes, then the time has come to separate the terminology in order to recognize different scales, so as not to marginalize small "rewilding" sites or dilute the principles associated with large ones. With even the most lenient delineations of size, OVP was too small for a rewilding project on its own, and the promised and necessary connectivity never materialized.

As this article has demonstrated, the protected area design of OVP negated any option for a noninterventionist strategy. In terms of the feasibility of conservation action, the application of rewilding at the OVP demonstrates the shortcomings of applying biodiversity conservation principles without appreciating the critical dimensions of scale and interspecies interdependence (Shoreman-Quimet and Kopnina 2016). In the absence of a large territory where animals can migrate in times of food shortage, and without predators, the herbivores were left to starve. Not unlike confined animals within a large zoo cage, the animals were left there by humans but without human care. Artificially simulating a condition of "terminal suffering" through containment is the antithesis of what any concept or practice of rewilding is purported to be about, namely of saving species from extinction, or the reintroduction of species through unrestricted access to increased natural habitat.

As an alternative for OVP, we suggest here that the herbivores have suffered enough through attempts at "management" and should be allocated a larger territory through the same Dutch and international conservation funding that enabled OVP to be established to begin with. A noninterventionist approach would be more successful if OVP was left to smaller animals and birds, granting great cormorants, egrets, common spoonbills, and white-tailed eagles a large human-free refuge within the human-dominated landscape.

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