BETWEEN THE SPECIES

Wild, but Not Too-Wild Animals: Challenging Goldilocks Standards in Rewilding

ABSTRACT

By contrast with traditional conservation emphasizing managerial stewardship, rewilding is positioned as "post"-conservation through its emphasis on unleashing the autonomy of natural processes. In this paper, however, we argue that the autonomy of nature in rewilding is more rhetoric than reality. But instead of critiquing the "managed wilderness" approach of rewilding, we examine the injustices this entails for the ecosystem engineering species involved in these projects. Reintroduction case studies demonstrate arbitrary standards for wildness are imposed on these animals as they do their assigned duty to rehabilitate ecosystems. These "Goldilocks" standards are predicated on aesthetic values that sanction interventions inconsistent with the premise of animal sovereignty. These include meeting actual autonomy of animals, championed in rewilding rhetoric, with culling, relocations and sterilizations. Drawing from Donaldson and Kymlicka's framework for political animal categories, we argue rewilding needs to re-position itself in one of two ways. Either it should align itself more closely to mainstream conservation and embrace full animal sovereignty without Goldilocks conditions, or it should commit to taking full responsibility for reintroduced animals, including supplementary feeding and care.

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Introduction

Rewilding is often presented as an alternative conservation paradigm that unleashes natural processes through the cascading effects of animal ecosystem engineers (Monbiot, 2013). It has had a remarkable influence on recent policy, particularly in large carnivore conservation (Hintz, 2007), resulting in a number of species reintroductions (Linnell et al., 2015). The philosophy has foundations in the "*cores, corridors and carnivores"* approach of the late 1960s (MacArthur and Wilson, 1967) that grew into restoration ecology, and theoretical roots in holistic restoration culture (Tomblin, 2009) from *Deep Ecology* (Naess, 1973). Today it is more popularly traced to the ideas of the Dutch conservation activist Frans Vera (2000) and American ecologist Josh Donlan (2005), following a fateful comment by the latter author published in *Nature* concerning the return of "beasts of old" to North America. Ostvaardersplasse in Holland, the Pleistocene Park in Siberia, and Yellowstone National Park in the US are commonly cited as offering successful models of rewilding praxis in Europe, North America and Asia respectively.

Several interrelated critiques have been made of rewilding in recent scholarship. It is often criticized for being a fractious movement characterized by internal disagreements. Such disagreements may be over whether to take a top-down or bottom-up approach to restoration ecology (Hilderbrand et al., 2005; Chrulew, 2011), or which era or ecosystem blueprint to use as benchmark for restoration (Martin, 2005; Hall, 2014). Or, they may be over embracing rewilding as a forward-looking or regressive endeavor (Harris et al., 2006; Elliot, 2009), or promoting the inherent value of nature as opposed to its instrumental benefits for humanity (Taylor, 2005; Navarro and Pereira, 2012). More recently, however, concerns have been raised over

the welfare of animals under rewilding schemes (Shelton, 2004; Swaisgood, 2010). Animal welfare may be profoundly jeopardized not only in more extreme de-extinction and back-breeding programs that seek to recreate extinct species, but notably in reintroductions and relocations of mammals that intensively require ad-hoc human intervention (Dickens et al., 2010). Rewilded animals are assigned the task of restoring ecosystems damaged by industrialization (Soulé and Noss, 1998; Wright and Jones, 2006; Navarro and Pereira, 2012). This designates them as ecosystem engineers in the broad sense of the term, denoting animals who manage and modify biotic habitats, or keystone species, denoting animals that have disproportionate trophic effects on the biotic community relative to their numeracy. In binding them to these tasks, they may be said to be made the proxies and agents of humanity in its ongoing effort to fulfill a moral duty to heal degraded nature.

In this paper, we address three rewilding cases that in different ways highlight the injustices of this assignment. Injustices occur when these animals no longer conform to human intention to engineer "within reason" but rather become genuinely autonomous. The cases are respectively those of rewilded beavers (*Castor fiber*) colonizing the "wrong" areas, wild boars (*Sus scrofa*) overpopulating the areas into which they are reintroduced, and wolves (*Canis lupus*) hybridizing and compromising the genetic purity of the wolf species. Our three cases of rewilded beavers, boars, and wolves raise practical and moral questions concerning the efficacy and legitimacy of coopting wild animals into human projects of rehabilitating wilderness.

In all three cases, rewilding aims at establishing a "goldilocks" condition of nature; one that is "wild but not too wild" for human purposes (von Essen et al., 2015). But rewilded ani-

mals are destined to fail in the performance of their carefully designated "goldilocks duties." Once unleashed into the wild, their natural inclinations lead them to become genuinely wild sovereigns, as opposed to proxies and agents of humanity. Indeed, assigning them a role they cannot even cognize – certainly not it its normative dimensions – is unjustifiable. Rewilded animals are treated without due regard for obligations we incur to them on the basis of fair cooperation. Despite doing important practical and moral work for us, rewilder practitioners do not conceive of any appropriate or fair reciprocation in recognition or recompense for this engineering work. Hence, we argue that expecting adherence to goldilocks standards inadvertently and unjustifiably relegates rewilded animals to a sub-sovereign category.

Our paper is arranged in the following steps. The first three sections develop three distinct cases of flagship species of the rewilding movement, showing how rewilding policy and management contradict its avowed anti-interventionist commitments. The final section discusses how this represents an injustice to rewilded animals, which may be attributed to confusion in the premises of rewilding. We appeal to Donaldson and Kymlicka's (2011) political framework for animal sovereignty to elucidate such injustice. Nonetheless, we deny that rewilders are at fault for assigning the tasks of restoration to animals, making them proxies and agents for fulfilling a moral duty of humanity. Instead, we argue the fault lies in their imposing an arbitrary set of added standards on rewilded animals as compared to animals in mainstream conservation.

The paradigm of mainstream conservation differs from rewilding by permitting a relatively interventionist stewardship of biotic communities, often in the form of micro-management

of discrete units of conservation. To this extent, it stands in marked contrast with rewilding's prescription of restoring large wilderness areas to full autonomy with the help of ecosystem engineering species. For our part, we advocate a repositioning of the relationship between rewilding and conservation, which may well jar with the former's self-identification on as "post" and "beyond" conservation (Taylor, 2005; Swales, 2014).

Wolves and Hybrids

If sheep are the enemy of rewilding scholars by representing monotone intrusions and the de facto *de-wilding* of the landscape (Monbiot, 2013), the return of wolves should please this community. Rather than fence out sheep from rewilding sites or use protective tubing to save vegetation, wolf packs emerge as a wild, natural option that possess the kind of ecological niche and agency to moderate herbivore numbers, while their predation allegedly also makes herds of herbivores fitter (Taylor, 2005). In so doing, they allow the ecosystem to regenerate some of the heavily grazed vegetation. Wolves are widely characterized as a services provider and a land manager under rewilding (Swales, 2014). An imperative today is to restore *Canis lupus* to its historical range from which it was extirpated by human hunting pressure.

Despite having become a symbolic representation of "unrestrained freedom" (Shelton, 2004), wolves constitute rewilding agents that typically require intensive human interventions both before and as part of their reintroduction (Manning et al., 2009). Particular intervention today is seen to be needed, not for improving the welfare of wolves, but rather to "correct" a perceived lapse on their part concerning an undesirably autonomous mating pattern. Wolves famously cross-breed across the *Canis* genus, resulting in hybrids out of place in the rewilding

landscape, which is predicated on an aesthetic blueprint when congeners of the Canis species were better demarcated in the landscape. Today, hybridizations occur between the gray wolf and the coyote in the US (Mech et al., 2014), the gray wolf and the eastern timber wolf (Rutledge et al., 2012), the coyote and the eastern timber wolf (Sears et al., 2003), the coyote and the red wolf (Nowak and Federoff, 1998), and the coyote and the domestic dog (Bohling and Waits, 2011). In Europe, the gray wolf hybridizes mainly with the domestic dog and certain subspecies of wolf (Klutsch et al., 2011; Trouwborst, 2014a).

Concerned about keeping wolves the right kind of wolves corresponding to their prehistoric ancestors who were not hybridized to the same extent, policy and law do not take well to the actual or perceived risk of hybrids in the wild (Haig and Allendorf, 2006). The US Endangered Species Act, the Bern Convention and the EU Habitats Directive exempt hybrids from the protection duties accorded to their endangered congeners and, in some cases, encourage active removal of hybrids from the wild (Allendorf et al., 2004; Trouwborst, 2014a; Trouwborst, 2014b). In the US, for example, the aggressive Red Wolf Management Adaptive Plan (RWAMP) euthanized hybrids and sterilized coyotes to preclude further hybridization with the rare red wolves in the late 1990s (Gese et al., 2015). In Europe, the genetic threat posed by domestic dogs to the gray wolf has resulted in *de facto* sanctioning of the elimination of hybrids to safeguard the status of wolves in the Habitats Directive (Linnell et al., 2008).

Three aspects of hybridisations are seen as particularly problematic from a perspective of rewilding. First, hybridisations threaten the genetic integrity of the more endangered taxon, where the introgression of more prevalent genes into rare

taxa may contribute to a "*a blander and less surprising world*", since one's worldview is predicated on biodiversity (Caro, 2007; Monbiot, 2013). Second, hybrids themselves represent an uneasy, unresolveable degree of wild that encompasses tameness and unpredictiability following cross-breeding with more liminal coyotes or domestic dogs (Linnell et al., 2008; Lukasik and Alexander, 2011; Monzón et al., 2014). Third, hybridisations between canids is traced to human activities disrupting, for example, natural reproductive barriers, despite ample evidence that hybridisation has constituted an integral and even beneficial part of canids' evolutionary legacy (Benson and Patterson, 2013).

The bigger issue is that rewilding has a difficult time to denounce human-mediated hybridization. Indeed, the contradiction is that rewilding appears to have no ostensive problem with hybridization as means-to-an-end in its philosophy. A number of flagship species of the movement have been meticulously cross-bred in laboratory-based hybridizations to approximate extinct species (Martinelli et al., 2014). For example, Frans Vera used heck cattle to cross-bred to recreate versions of the ancient Aurochs, hybridizing Scottish highland cattle with Hungarian steppe cattle, Spanish fighting bulls and other Mediterranean breeds in special breeding programs (Lorimer and Driessen, 2013; Jørgensen, 2014). The result, of course, is not the recreation of lost species but new recombinations that merely resemble their ancestors for morphological or ecological purposes (Martinelli et al., 2014).

In this way, any stand toward hybridization as an undesirable threat to the genetic purity of a native species is indefensible when viewed against the premises of rewilding. Shelton (2004) arrives at a similar conclusion arguing that rewilders'

disdain for "constructed" and therefore unnatural animals conflicts with the reality of their hands-on efforts to reconstruct nature. Indeed, as the wolf case study testifies, hybridization is only objected to when it is an externality that results out of our control. To this end, it seems even less defensible to sanction human, laboratory performed hybridizations while condemning those hybridizations that occur between two naturally interfertile congeners that meet in the wild and mate, and whom have an evolutionary history of interbreeding.

Beavers Out of Place

The beaver is another keystone and allogenic engineering species (Hossack et al., 2015). Although research sometimes uses keystone species and ecosystem engineer interchangeably, "keystone" is generally a consequentialist assessment of ecosystem engineers which have particularly strong impacts on the biotic environment in which they live (Wright and Jones, 2006). Indeed, all animals may be said to undertake some "engineering" through their living, but when they display disproportionate effects relative to their numeracy, they qualify as keystone species. Beavers aptly qualify for both. They "shake up" monocultures and allow the regeneration of trees in previously inhospitable environments (Monbiot, 2013). They also provide ecosystem services that restore the landscape, including drought protection, decreased erosion and the removal of pollutants from the water (Naiman et al., 1986). In fact, their damming activities are essential to the geomorphology and hydrology of ecosystems, which in turn provides improved riparian habitats for a range of species (McKinstry et al., 2001). After having been extirpated in most of their historical range, beavers were reintroduced repeatedly from 1924 and onward in Europe and enjoy particularly strong rewilding advocacy in the UK.

Two separate beaver reintroductions have occurred in the UK in the past decade that illustrate holding these animals to goldilocks standards of wildness. One reintroduction was planned at a habitat carefully pre-selected by rewilding managers. The other resulted from accidental escape or possible release of beavers from an estate near the River Tay in Perthshire. The escaped beavers came to thrive in the river catchment of their undesignated area (Monbiot, 2013). Soon their numbers and illicit presence attracted public resentment and culling measures on the accidentally rewilding beavers at River Tay began. By being released illegally and establishing themselves autonomously in a more suitable habitat, without the official rewilding stamp of approval, these beavers are now classified as "feral" animals that need to be culled or re-homed. Meanwhile, the legitimately reintroduced concurrent beavers further north, in Knapdale Forest in Argyll, have notoriously struggled to colonize their designated habitat and have required interventions by managers for years, perhaps because salmon rivers are scarce in this region. These beavers are, of course, strictly protected as part of the broader rewilding project and any culling measures are illegal.

That animals that transgress designated political or physical boundaries are regarded as varmint to be removed is neither new in wildlife conservation nor unique to beavers (Donaldson and Kymlicka, 2011). The difference between rewilding and mainstream conservation's responses to such transgressions is in the ease and frequency with which the former issues sanctions to set things right, simply because the scope of potential violations is greater under rewilding's goldilocks standards. The problem of accidentally rewilded animals – accidental inasmuch as they colonize the wrong areas at the wrong times – is prevalent in rewilding scholarship in that even herbivore

species that are unintentionally reintroduced in rewilding sites now represent controversial cases (Wilder et al., 2014). The issue with rewilding out of bounds is a paradox: lack of planned human intentionality can deprive a species of the right to exist in an area even if the animals established themselves autonomously at a site. At the same time, meticulously planned rewilding schemes where species are paternalistically placed and maintained at another location, attain more legitimacy with what appears to be *less* of the sovereignty and wildness sounded in its rhetoric (Swales, 2014).

Boars Out of Control

Wild boars represent another species whose rewilding agency lies in its untidiness or "disturbance" abilities on monocultural landscapes (Sandom et al., 2013). Once plentiful in all parts of the world, the wild boar is becoming so again after a notable absence following over-hunting and subsequent extirpation. Even in the UK, wild boars are on the increase in areas of Scotland as a vision for rewilding (Brown et al., 2011). Some suggest boars in many places have recolonized naturally (Taylor, 2005), but the literature documents the intentional release of wild boars as part of rewilding schemes in a majority of cases (Smit et al., 2015). Nevertheless, the origin of some populations are regionally contested (Hearn et al., 2014).

The wild boar is an attractive ecosystem service provider and typically functions a keystone species because of its rooting and grubbing of the undergrowth and soil, creating pools for mini-wetlands and facilitates nutrient uptake and cycling (Palacio et al., 2013; Sandom et al., 2013). Their work presents a natural alternative to the kind of mechanized ground preparation that is typically required for restoration in areas where dense ground vegetation inhibits seedling germination and tree

establishment (Hille and den Ouden, 2004; Ashmole and Ashmole, 2010; Robertson, 2011). Indeed, Macmillan et al. (1998) present wild boars as the most "cost-effective" woodland restoration agents at present.

Few will have missed, however, the tremendous controversy reintroduced wild boars have caused in recent years. The great explosion of wild boars is attributed to the boar having next-to-no predators in the wild, by being notoriously challenging for hunters to shoot, by rejuvenating multiple times per year, suffering no negative consequences of density dependency and by sometimes enjoying extensive supplementary feeding by humans in the winter (Leaper et al., 1999; Bieber and Ruf, 2005; Borowik et al., 2013). Indeed, with natural fluctuations like higher rainfall, rooting rates increase significantly and population increases spread damages over increasingly large areas (Sandom et al., 2014).

While the primary setting for dissatisfaction with boar damage started as farmers whose crops were at risk, rewilding scholars like Hodder et al. (2009) now caution overpopulation of boars do damage to roots and bark as well, rendering trees more susceptible to disease. On Santa Cruz Island, an aggressive nature restoration policy is similarly sanctioning the removal (killing) of wild boars to maintain the ecosystem the right degree of wild (Shelton, 2004). At the time, managers claimed "*We are interested in restoring an island. Unfortunately, the pigs are in the way*" (Kelly, 2002). As the boar does its natural "duty" of grubbing and rooting, its political status vacillates between game and pest species (Taylor, 2005). The boars are said to violate goldilocks standards of wildness in two additional ways similar to beavers and wolves. Like the former, they are constructed as invasive because of allega-

tions of unplanned or illegal releases (Hearn et al., 2014). Like wolves, charges of hybridisations with domestic pigs point to a new fearlessness and unpredictability in the wildness of new boars compared to their native ancestors (Scandura et al., 2011). These charges motivate and justify increasingly violent culling measures.

Rewilded Animals as Proxies and Agents of Humanity

"Goldilocks" denotes a state of wildness that is predicated on arbitrary standards that have been acquired only recently. Animals are required to conform to notions of wildness that encompass past authenticity and the ability to regulate ecosystems toward greater biodiversity, where this is understood in terms of an ancient and therein natural species composition. Hence, goldilocks may be said to capture what other authors have criticized as restoration ecologists' preoccupation with landscape correctness, and along with it an extreme fidelity to what has gone before (Prior and Brady, 2015). Such fidelity is not misguided when undergirded by a robust ethic, such as Leopold's land ethic, where ecological, ethical *and* aesthetical standards provide basis for action. But, in rewilding, the land ethic's avowed "stability" and "integrity", referring to ecological and ethical dimensions, are frozen states localized as a particular moment in time with a particular species composition. This departs from Leopold's originally more dynamic concepts by which ecosystems may be permitted to gravitate toward a status quo with moderate human involvement.

Leopold would likely argue that the (over-)rooting and grubbing activity of the wild boar outlined above does not undermine the integrity or beauty of the ecosystem, but rather violates human preferences for what are considered beautiful

states in biotic communities (King, 1991). Indeed, goldilocks is so potent in the aesthetics of rewilding that some also observe ecological restoration has become more akin to an artistic practice than science (Jordan III, 2003). Undesirable wildness, moreover, is a behavior that does not correspond with these aesthetics: for example, by making landscapes more monotonous (excesses of wild boars), by making the Canis species less authentic (hybridizing wolves) or by simply colonizing and engineering the wrong habitat (beavers in Scotland). These externalities of rewilding recast these animals as "pests", "feral" and "impure".

The limits to animal wildness through the imposition of arbitrary goldilocks standards can best be elucidated using Donaldson & Kymlicka's political framework. Here, animal categories in a "Zoopolis", a shared interspecies community, correspond with rights and obligations depending on their political relation to humans. In this framework, domestic animals are co-citizens to whom full rights are owed; liminal animals are accorded a migrant type of rights in a category of denizenship; and wild animals constitute sovereigns with autonomy and negative rights of non-interference. In the case of rewilded animals, however, the expectation that they should adhere to goldilocks standards and simultaneously be sovereign is especially problematic. This is because the act of binding animals to duties necessarily entails integrating them further into the Zoopolis, as one would for working animals and pets to whom obligations are owed in return for the benefits they provide us. But rhetorically, at least, rewilding rejects integrating animals further into society. Indeed, its rhetoric demands the opposite: outward toward sovereignty. Here, rewilders purport to "unleash" rewilded animals so that they may pursue a "self-willed" and "autonomous" existence (Monbiot, 2013; Cohen, 2014).

We have contested the rewilding rhetoric of sovereignty by showing how managers still steer nature along narrowly predetermined trajectories; thereby depriving rewilded animals of their capacity to be genuinely self-willed and autonomous. But we acknowledge this is not a new critique of rewilding. The implicit hand-of-man has even become a topic of internal criticism among rewilders (Monbiot, 2013). The great paradox of rewilding, according to Shelton (2004), is that the ideology of the wild that emphatically rejects anthropogenic changes simultaneously depends on human will and technology to reconstruct landscapes. In another apt critique, Hajer (2003, p. 90) observes that a frequent reality in rewilding practice is to commit to a "let nature decide" approach by means of a paradoxical hands-on *"...slow motion ballet mechanique of draglines and bulldozers, excavators and trucks*."

This ballet underlies the issue that concerns us the most in our paper. Indeed, this is the way in which rewilded animals are effectively turned into proxies for humanity, making them the agents for fulfilling the latter's moral duty to restore and heal damaged nature by tasking them with the restoration of ecosystems ravaged by modernity and industrialization. Such a healing duty is properly ours, and not theirs. To be sure, assigning animals tasks that make them human proxy is not necessarily problematic. Not, at any rate, if these tasks are consistent with their natural inclinations and interests. For instance, we make guide-dogs for the blind into our proxies as the agents of fulfilling our moral duty of care for sightless humans. But this does not result in *de facto* harms to the dogs as our domestic co-citizens, whose interests and norms of behavior are intermingled with ours. After all, we recognize and recompense the dogs for the work they do for us by protecting and caring for them, sharing with them our households.

The situation is, however, is quite different when the animals are not our domestic co-citizens, but rather wild sovereigns. Not only are their natural inclinations and interests at odds with the tasks we have assigned to them as our proxies and agents. But also wolves, beavers, and wild boars lack the rudimentary understanding of the normativity of their relationship to us that we routinely attribute to domestics. Indeed, it is not that they are *incapable* of acting as our proxies and agents, fulfilling our duty to rehabilitate ecosystems. As so-called keystone species or "highly interactive species" (Soulé, 1985), they exert a disproportionate impact on the ecosystem relative to their numeracy (Foreman, 2004) that is at once bottom-up and top-down through cascade effects (Müller et al., 2010; Navarro and Pereira, 2012; Smit et al., 2015). It should not be thought, however, that they suffer from cognitive pressure in performing the tasks we give to them, given their lack of cognizance of their normative dimensions and expectations. Instead, our unjust treatment of them is a result of their also *going beyond* these human-assigned tasks to behave in ways that are genuinely wild and sovereign, pursuing their own agendas rather than ours as self-willed and autonomous.

After all, if envisioned as sovereigns, it follows they have *"... the right to make their own decisions about the nature of their communal life [...] this includes the right to make mistakes, and to follow paths that outsiders might see as misguided*" (Donaldson & Kymlicka, 2011, p. 171). Yet, as we have shown in the preceding sections, the consequences of rewilded animals departing from preconceived trajectories of ecosystem engineering, such as through violations of genetic purity, spatial distribution and our aesthetic atavistic ideas about landscape gardening, are frequently grave. Shelton (2004) observes that rewilders deplore when spontaneous nature takes its course

away from managers' preconceived concepts of wilderness and nature which we have recently come to valorize.

The theoretical implication of this is that rewilded animals are not, in the end, treated as full sovereigns. They occupy instead a problematic sub-category with truncated rights. In practice, at the same time, they are typically denied special obligations one might extend to animals as co-citizens contributing to common societal goals, like guide dogs. For example, in Oostvaardersplasse in Holland, supplementary food during winter is not provided for the rewilding animals as per an anti-interventionist stance, resulting in the starvation of domesticated Konic ponies and Heck cattle (Prior and Brady, 2015). As Lorimer and Driessen (2014) show, interventions designed to instill wildness in reserves are currently exempted from the anti-interventionist stance of rewilding. But responsibility for providing care, rather than "correctives" to wrong degrees of wildness, is purportedly absolved in rewilding practice by virtue of the sovereignty of rewilded animals and the absence of a property relationship.

All in all, then, our principal claim is that this sub-category of sovereignty results from imposing what we have called arbitrary "goldilocks" standards on rewilded animals. Here, we stress that these arbitrary standards for being "wild but not too wild" are not imposed on the same animals in mainstream conservation. Rewilding scholars show disdain for the latter and use the rhetoric of autonomy to distinguish themselves from the suppressing and disciplining effect of conservation (Taylor, 2005; Harris et al., 2006). Indeed, non-rewilding conservation is held to manifest a "peculiar fear of letting go" (Monbiot, 2013). If rewilding is presented as a radical alternative to conservation, then, the grounds on which it is differentiated are

currently mischaracterized. As our practical cases illustrate, rewilding is not radically different to mainstream conservation insofar as it involves equally hands-on management to achieve a goldilocks wildness. Nor is it different in terms of the substantive sanctions used to keep populations in check; indeed, the same types of culling, relocation and sterilization feature. Rather it differs from mainstream conservation by subjecting animals to far more arbitrary demands and judging their viability in terms how well they conform to human ideas for the trajectory of rewilding and ecological authenticity. In so doing, it has missed honoring in full the integrity and ethics of Leopold's land ethic, subscribing only to aestheticism.

That said, we now present two ways out of the "catch-22" of rewilded animals and into a political category that ensures expectations correspond to rights. The first is that rewilding permits these animals to enter into full sovereignty. This means the rescinding of dependency-inducing supplementary care and feeding, which is normatively inappropriate for sovereigns (Donaldson and Kymlicka, 2011). It also means that as genuine wild sovereigns, these animals cannot be arbitrarily subject to culling, relocations or sterilization based on goldilocks standards. In other words, we cannot punish ecosystem engineers for failing to conform to our aesthetic conceptions of ecological authenticity. If we permit them to be wild, we must treat them in accordance with Donaldson & Kymlicka's demand of respect for sovereignty, accommodating their self-expressions of autonomy, whether they take the form of cross-breeding with each other or preferring a non-designated area to a pre-established rewilding reserve.

Although forced relocations and sterilizations are normatively inappropriate for sovereigns, as they are for Donaldson

and Kymlicka (2011, p. 169), we note that culling of problematic cases where sovereigns infringe on human rights must be considered. This is consistent with the treatment of sovereigns in mainstream conservation projects. Never a foregone conclusion, decisions to cull sovereigns must be defended in a rigorous public deliberative process, scrutinizing the values and rationales behind this approach. In this respect, controversial decisions to cull or not to cull should be based on defensible argumentation (von Essen and Allen, 2015) and not arbitrary goldilocks standards. Indeed, such critical public deliberation is doubly important for rewilding projects. This is because rewilded animals were reintroduced by our initiative, and rewilding, as we contend, comes with a set of aesthetic premises that can easily result, for wild animals, in unjust, arbitrary and unattainable standards. Hence, this first way out of the catch-22 would potentially re-legitimate rewilding those animals considered in our case studies, insofar as the sovereignty touted in rewilding rhetoric would be matched in practice. Nonetheless, we re-envision the "duties" of rewilded animals as voluntary natural behaviors consistent with their subjective interests and lifestyles, and cease to see them as our proxies fulfilling *our* duty to restore nature.

By contrast, the second way out of the catch-22 is for rewilding to embrace increased responsibility for these animals. In designating them as service providers and proxies held to normative standards imposed by human will, much like guide-dogs or beasts of burden, rewilded animals are brought further into the Zoopolis in terms of their political membership. As such, they can no longer be conceived as sovereign for moral purposes, because they take on roles that contribute to the common societal project. Sterilization and forced relocations of animals that stray from the trajectory we have envisioned for

them indicate we see them as being closer to "pets" than sovereigns. We ourselves hesitate to embrace this approach. Nonetheless, we acknowledge it must be permitted that if we bring them further into the Zoopolis in this way, then it is incumbent upon us to provide for their welfare as we would for our co-citizens. Moreover, if we sanction interventions like forced relocations, it stands to reason we must also allow interventions like supplementary feeding. Taking this approach would also re-legitimate rewilding in terms of consistency. But if this approach is to be taken, rewilding needs to abandon much of its rhetoric. Indeed, it can no longer champion the unleashing of nature to full autonomy, but must ultimately concede that its reserves are more like large zoos than wilderness areas.

Conclusion

In this paper, we have focused on three cases of rewilding which we believe highlight the injustice of assigning animals the tasks of restoring nature ravaged through our agency. We have argued that the injustice of present rewilding practice is primarily a function of the arbitrary character of goldilocks duties, unrealistically expecting these animals to be wild but not too wild. In this way, it is a holistic ecosystem ethic which has overemphasized aesthetics to the detriment of the integrity and welfare of the biotic community. Indeed, we have advocated reconsidering the relationship between rewilding and mainstream conservation, recommending that rewilders either more fully embrace sovereignty or increased responsibility for animals unleashed into the wild. While having expressed more sympathy for the first of these two options, we insist that rewilders must embrace one or other of these options as a requirement of justice for the animals they have assigned goldilocks duties. Either way, they have to acknowledge that their rhetoric and practice do not match and that some appropriate adjust-

ment in their treatment of these animals is imperative for the legitimacy of their programs.

References

Allendorf, Fred, Robb Leary, Nathaniel Hitt, Kathy Knudsen, Laura Lundquist, and Paul Spruell. 2004. Intercrosses and the U.S. Endangered Species Act: Should Hybridized Populations be Included as Westslope Cutthroat Trout? *Conservation Biology*. 18 (5):1203-1213

Ashmole, Philip, and Myrtle Ashmole. 2010. The Carrifran wildwood story: ecological restoration from the grass roots. Jedburgh: Borders Forest Trust.

Benson, John, and Brent Patterson. 2013. Moose (Alces alces) predation by eastern coyotes (Canis latrans) and eastern coyote × eastern wolf (Canis latrans × Canis lycaon) hybrids. *Canadian Journal of Zoology*. 91 (11):837-841

Bieber, Claudia, and Thomas Ruf. 2005. Population dynamics in wild boar Sus scrofa: ecology, elasticity of growth rate and implications for the management of pulsed resource consumers. *Journal of Applied Ecology*. 42 (6):1203-1213

Bohling, J.H., and L.P. Waits. 2011. Assessing the prevalence of hybridization between sympatric Canis species surrounding the red wolf (Canis rufus) recovery area in North Carolina. *Mol Ecol*. 20 (10):2142-56

Borowik, Tomasz, Thomas Cornulier, and Bogumiła Jędrzejewska. 2013. Environmental factors shaping ungulate abundances in Poland. *Acta Theriologica*. 58 (4):403-413

Brown, Calum, Robert McMorran, and Martin Price. 2011. Rewilding – A New Paradigm for Nature Conservation in Scotland? *Scottish Geographical Journal*. 127 (4):288-314

Caro, Tim. 2007. The Pleistocene re-wilding gambit. *Trends in Ecology & Evolution*. 22 (6):281-283

Chrulew, Matthew. 2011. Reversing Extinction: Restoration and Resurrection in the Pleistocene Rewilding Projects. *Humanimalia*. 2 (2):4-27

Cohen, Schlomo. 2014. The Ethics of De-Extinction. *NanoEthics*. 8 (2):165-178

Dickens, Molly, David Delehanty, and Michael Romero. 2010. Stress: An inevitable component of animal translocation. *Biological Conservation*. 143 (6):1329-1341

Donaldson, Sue, and Will Kymlicka. 2011. *Zoopolis* Oxford: Oxford University Press.

Donlan, Josh. 2005. Re-wilding North America. *Nature*. 436 (7053):913-914

Elliot, Robert. 2009. "Faking Nature." In *Readings in the Philosophy of Technology*, edited by D.M. Kaplan, 381-389. Lanham: Rowman and Littlefield.

Foreman, Dave. 2004. *Rewilding North America. A vision for Conservation in the 21st Century*. Washington: Island Press.

Gese, Eric, Frederik Knowlton, Jennifer Adams, Karen Beck, and Todd Fuller. 2015. Managing hybridization of a recovering endangered species: The red wolf Canis rufus as a case study. *Current Zoology*. 61 (1):191-205

Haig, Susan., and Fred Allendorf. 2006. Hybrids and Policy. Lincoln, Nebraska: University of Nebraska.

Hajer, Marten. 2003. "A Frame in the Fields: Policymaking and the Reinvention of Politics." In *Deliberative Policy Analysis*, edited by M. Hajer and H. Wagenaar, 88-110. Cambridge: Cambridge University Press.

Hall, Marcus. 2014. "Extracting Culture or Injecting Nature? Rewilding in Transatlantic Perspective." In *Old World and New World Perspectives in Environmental Philosophy*, edited by D. Drenthen and J. Keulartz. Springer.

Harris, James, Richard Hobbs, Eric Higgs, and James Aronson. 2006. Ecological Restoration and Global Climate Change. *Restoration Ecology*. 14 (2):170-176

Hearn, Robert, Charles Watkins, and Robert Balzaretti. 2014. The cultural and land use implications of the reappearance of the wild boar in North West Italy: A case study of the Val di Vara. *Journal of Rural Studies*. 36:52-63

Hilderbrand, Robert, Adam Watts, and April Randle. 2005. The myths of restoration ecology. *Ecology and Society*. 10 (1):19

Hille, Marco, and Jan den Ouden. 2004. Improved recruitment and early growth of Scots pine (Pinus sylvestris L.) seed-

lings after fire and soil scarification. *European Journal of Forest Research*. 123 (3):213-218

Hintz, John. 2007. Some Political Problems for Rewilding Nature. *Ethics, Place & Environment*. 10 (2):177-216

Hodder, Kathy, Paul Buckland, Keith Kirby, and James Bullock. 2009. Can the pre-Neolithic provide suitable models for re-wilding the landscape in Britain. *British Wildlife*. June 2009:1-14

Hossack, B.R., W.R. Gould, D.A. Patla, E. Muths, R. Daley, K. Legg, and P.S. Corn. 2015. Trends in Rocky Mountain amphibians and the role of beaver as a keystone species. *Biological Conservation*. 187:260-269

Jordan III, William Jordan. 2003. *The Sunflower Forest: Ecological Restoration adn the New Communion with Nature*. Berkeley: University of California Press.

Jørgensen, Dolly. 2014. Rethinking rewilding. *Geoforum*

Kelly, David. 2002. Fences Go Up as Pig Eradication Plan Begins. *Los Angeles Times*, November 9.

King, Roger. 1991. Environmental Ethics and the Case for Hunting. *Environmental Ethics*. 13 (1):59-85

Klutsch, C.F., E.H. Seppala, T. Fall, M. Uhlen, A. Hedhammar, H. Lohi, and P. Savolainen. 2011. Regional occurrence, high frequency but low diversity of mitochondrial DNA haplogroup d1 suggests a recent dog-wolf hybridization in Scandinavia. *Anim Genet*. 42 (1):100-3

Leaper, R., G. Massei, M.L. Gorman, and R Aspinall. 1999. The feasibility of reintroducing Wild Boar (Sus scrofa) to Scotland. *Mammal Review*. 29 (4):239-258

Linnell, John, Valeria Salvatori, and Luigi Boitani. 2008. Guidelines for population level management plans for large carnivores in Europe. A Large Carnivore Initiative for Europe report prepared for the European Commission.

Linnell, John, Petra Kaczensky, Ulrich Wotschikowsky, Nicolas Lescureux, and Luigi Boitani. 2015. Framing the relationship between people and nature in the context of European conservation. *Conservation Biology*. 29 (4):978-985

Lorimer, Jamie, and Clemens Driessen. 2013. Bovine biopolitics and the promise of monsters in the rewilding of Heck cattle. *Geoforum*. 48:249-259

–––––2014. Wild experiments at the Oostvaardersplassen: rethinking environmentalism in the Anthropocene. *Transactions of the Institute of British Geographers*. 39 (2):169-181

Lukasik, Victoria, and Shelly Alexander. 2011. Human-Coyote Interactions in Calgary, Alberta. *Human Dimensions of Wildlife*. 16 (2):114-127

MacArthur, Robert, and Edward Wilson. 1967. *The Theory of Island Biogeography*. Princeton, New Jersey: Princeton University Press.

Macmillan, Douglas, David Harley, and Ruth Morrison. 1998. Cost-effectiveness analysis of woodland ecosystem restoration. *Ecological Economics*. 27 (3):313-324

Manning, Adrian, Ian Gordon,, and William Ripple. 2009. Restoring landscapes of fear with wolves in the Scottish Highlands. *Biological Conservation*. 142 (10):2314-2321

Martin, Paul. 2005. *Twilight of the Mammoths: Ice Age Extinction and the Rewilding of America*: University of California Press.

Martinelli, Lucia, M. Oksanen, and Helena Siipi. 2014. De-extinction: a novel and remarkable case of bio-objectification. *Croat Med J.* 55 (4):423-7

McKinstry, Mark, Paul Caffrey, and Stanley Anderson. 2001. The Importance Of Beaver To Wetland Habitats And Waterfowl In Wyoming1. *Jawra Journal of the American Water Resources Association*. 37 (6):1571-1577

Mech, David, Bruce Christensen, Sheryl Asa,, Margaret Callahan, and Julie Young. 2014. Production of Hybrids between Western Gray Wolves and Western Coyotes. *PLoS ONE*. 9 (2):e88861

Monbiot, George. 2013. *Feral: Searching for Enchantment on the Frontiers of Rewilding*: Allen Lane.

Monzón, Javier, Roland Kays, and Daniel Dykhuizen. 2014. Assessment of coyote–wolf–dog admixture using ancestry-informative diagnostic SNPs. *Molecular Ecology*. 23 (1):182-197

Müller, Jörg, Reed Noss, Heinz Bussler, and Roland Brandl. 2010. Learning from a "benign neglect strategy" in a national park: Response of saproxylic beetles to dead wood accumulation. *Biological Conservation*. 143 (11):2559-2569

Naess, Arne. 1973. The shallow and the deep, long-range ecology movement. A summary. *Inquiry.* 16 (1-4):95 – 100

Naiman, Robert., Jeryy Melillo, and John Hobbie. 1986. Ecosystem Alteration of Boreal Forest Streams by Beaver (Castor Canadensis). *Ecology.* 67 (5):1254-1269

Navarro, Laetitia., and Henrique Pereira. 2012. Rewilding Abandoned Landscapes in Europe. *Ecosystems*. 15 (6):900-912

Nowak, Robert, and N.E. Federoff. 1998. Validity of the Red Wolf: Response to Roy et al. *Conservation Biology.* 12 (3):722-725

Palacio, S., C.G. Bueno, J. Azorín, M. Maestro, and D. Gómez-García. 2013. Wild-boar disturbance increases nutrient and C stores of geophytes in subalpine grasslands. *American Journal of Botany.* 100 (9):1790-1799

Prior, Jonathan, and Emily Brady. 2015. Environmental aesthetics and rewilding. *Environmental Values* (Accepted Post-Print Version)

Robertson, David. 2011. The Carrifran Wildwood Story Myrtle and Philip Ashmole, with members of the Wildwood Group. 2009. Jedburgh, Scotland, UK: Borders Forest

Trust. Paper, £15. ISBN 978-0-9534346-4-0. 224 pages. *Ecological Restoration*. 29 (1-2):199-201

Rutledge, Linda. White, Bradley., Row, Jeffrey, and Patterson, Brent. 2012. Intense harvesting of eastern wolves facilitated hybridization with coyotes. *Ecology and Evolution*. 2 (1):19-33

Sandom, Christoper, Rasmus Ejrnæs, Mårten Hansen, and Jens-Christian Svenning. 2014. High herbivore density associated with vegetation diversity in interglacial ecosystems. *Proceedings of the National Academy of Sciences*. 111 (11):4162-4167

Sandom, Christopher, Jolene Hughes, and David Macdonald. 2013. Rooting for Rewilding: Quantifying Wild Boar"s Sus scrofa Rooting Rate in the Scottish Highlands. *Restoration Ecology*. 21 (3):329-335

Scandura, M., L. Iacolina, and M Apollonio. 2011. Genetic diversity in the European wild boar Sus scrofa: phylogeography, population structure and wild x domestic hybridization. *Mammal Review*. 41 (2):125-137

Sears, Hilary, John Theberge, Mary Theberge, Ian Thornton, and Douglas Campbell. 2003. Landscape Influence on Canis Morphological and Ecological Variation in a Coyote-Wolf C. lupus × latrans Hybrid Zone, Southeastern Ontario. *The Canadian Field-Naturalist* 117 (4):589-600

Shelton, Jo-Anne. 2004. Killing Animals that Don"t Fit In: Moral Dimensions of Habitat Restoration. *Between The Species*

Smit, Cristian, Jasper Ruifrok, Roel van Klink, and Han Olff. 2015. Rewilding with large herbivores: The importance of grazing refuges for sapling establishment and wood-pasture formation. *Biological Conservation*. 182:134-142

Soulé, Michael. 1985. What is Conservation Biology? A new synthetic discipline addresses the dynamics and problems of preturbed species, communities, and ecosystems. *Bio-science*. 35 (11):727-734

Soulé, Michael. and Reed Noss. 1998. "Complementary goals for continental conservation." In *Rewilding and Biodiver-sity*, edited by M.E. Soulé and R. Noss, 19–28.

Swaisgood, Ronald. 2010. The conservation-welfare nexus in reintroduction programmes: a role for sensory ecology. *Animal Welfare*. 19 (2):125-137

Swales, Melanie. 2014. *Is rewilding "post-conservation"? Ex-ploring the role and positioning of humans in rewilding discourse and practice*, Faculty of Social Sciences, De-partment of Human Geography, Stockholm University, Stockholm.

Taylor, Peter. 2005. *Beyond Conservation: A Wildland Strat-egy*: Routledge

Tomblin, David. 2009. The Ecological Restoration Movement: Diverse Cultures of Practice and Place. *Organization & Environment*

Trouwborst, Arie. 2014a. Applying the Bern Convention on the Conservation of European Wildlife and Natural Habitats to the Problem of Hybridization between Wolves (Canis

Lupus) and Domestic Dogs: An Analysis and a Proposal for a Standing Committee"s Recommendation. Bern Convention on the Conservation of European Wildlife and Natural Habitats.

––––– 2014b. Exploring the Legal Status of Wolf-Dog Hybrids and Other Dubious Animals: International and EU Law and the Wildlife Conservation Problem of Hybridization with Domestic and Alien Species. *Review of European, Comparative & International Environmental Law.* 23 (1):111-124

Wilder, B.T., J.L. Betancourt, C.W. Epps, R.S. Crowhurst, J.I. Mead, and E. Ezcurra. 2014. Local Extinction and Unintentional Rewilding of Bighorn Sheep (Ovis canadensis) on a Desert Island. *PLoS ONE*. 9 (3):e91358

von Essen, Erica., Hans Peter Hansen, Helena Nordström Källström, M Nils Peterson, and Tarla Rai Peterson. 2015. Toward a critical and interdisciplinary understanding of illegal hunting: a synthesis of research workshop findings. In *Urban and Rural Reports*, edited by SOL: Swedish University of Agricultural Sciences.

Wright, Justin, and Clive Jones. 2006. The Concept of Organisms as Ecosystem Engineers Ten Years On: Progress, Limitations, and Challenges. *BioScience*. 56 (3):203-209