

Rewilding and Olfactory Landscapes

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Introduction

‘Rewilding’ has emerged as a novel but provocative form of environmental conservation, leading to far more polarised viewpoints across both the academic and popular literature than the affiliated – and oftentimes overlapping – actions of ecological restoration and species reintroduction programmes. Much of this polarisation has stemmed from concerns about the implications of rewilding for productive land uses, particularly agriculture and forestry, the broader landscape politics of rewilding, and, at a conceptual level, because of disagreements over the meaning of rewilding. Nonetheless, a commonality across most formulations of the concept is that rewilding in some way normatively asserts the primacy of non-human agency over future ecosystem development.

Put another way, rewilders seek to implement landscape management strategies that do not depend on continuous

human interventions. Rather than weeding and removing dead matter, suppressing fires, providing supplementary feed for wild animals, protecting land to prevent fluvial and coastal erosion, and other such common conservation practices, rewilding aims to significantly reduce or completely withdraw such interventions, so that species and ecosystems become 'self-sustaining' and land 'self-willing'. In rewilding projects, much work is initially put into place; often, there is community engagement work to be done, as well as fundraising, ecological and social monitoring, and physical work on the ground. Dams, fences, and other barriers are removed, and certain organisms are introduced to 'kick start' ecological revival; top carnivores including wolves and lynx, and animals that remodel landscapes, such as beavers, loom large in the rewilding imagination. However, the intention is that once this work has taken place, landscape interventions are relinquished over the medium to long term.

There is now a vast policy-orientated framework, promulgated by a range of actors and institutions, including environmental NGOs and health and well-being policymakers, that situates experiences of nature as always being health-giving, healing, or therapeutic.¹ Through this framework, the natural world is characterised as inherently beautiful or possessing similar aesthetic value. While not explicitly tied to human well-being, this

¹ Samantha Walton's *Everybody Needs Beauty: In Search of the Nature Cure* (London: Bloomsbury Circus, 2021) charts the rise of this way of thinking within popular (Western) cultural, industrial, environmental, and healthcare settings.

position has become established within the field of environmental philosophy as, simply, 'positive aesthetics', most notably by Allen Carlson, who states that 'the natural environment, insofar as it is untouched by humans, has mainly positive aesthetic qualities; it is, for example, graceful, delicate, intense, unified, and orderly, rather than bland, dull, insipid, incoherent, and chaotic.'²

In what follows, I want to think through rewilding experiences from an olfactory aesthetic perspective in a European context. Such a way of approaching conservation can have significant ramifications for humans and non-humans alike, including the ways in which human communities experience, interpret, and relate to the natural world, their desire to protect certain species or ecological functions, as well as legislation that shapes these complex relations. I argue that rewilding presents us with a conservation practice that can propagate negative olfactory aesthetic qualities and experiences within landscapes, and that these qualities challenge prevailing tendencies in policy, administrative, and academic circles to position sensory experiences of nature as innately positive, and, relatedly, that negative olfactory aesthetic qualities and experiences need to be taken seriously if rewilding is to receive popular and legislative support.

² Allen Carlson, *Aesthetics and the Environment: The Appreciation of Nature, Art and Architecture*. (London: Routledge, 2011). See Emily Brady, 'The Ugly Truth: Negative Aesthetics and Environment', *Royal Institute of Philosophy Supplement* 69 (2011): 83–99, for a rejoinder to the positive aesthetics position.

The Olfactory Appreciation of Nature

The minimal literature that broaches the topic of what we may conceive of as being peoples' smellscape preferences – their olfactory likes and dislikes of a given space – tends to focus on urbanised areas, only ever imagining what the 'countryside' beyond urban edgelands may smell like. Victoria Henshaw's 2014 monograph *Urban Smellscapes*, provides a sense of what can be smelt, and where, across various towns and cities, and the preferences and meanings attached to different odours. In much of what Henshaw details, preferred odours are often those construed as 'natural'. Take the following excerpt, in which Henshaw reflects upon the olfactory preferences of her research participants located in Doncaster, a town in Yorkshire, England:

When they were asked about their favourite odour many participants highlighted fresh natural smells from woodland, countryside, fresh air, cut grass, trees, flowers or the rain. Despite expectations that experiences of these smells would be limited in Doncaster town centre, they were named across all the studied towns and cities as odours that people wanted to experience more, which they believed would enhance the quality of urban life.³

A more recent analysis of preferences in Sheffield, England, similarly indicates that the smells of trees, fresh water in the summer, and plants (such as lavender) contribute to smellscape 'pleasantness',⁴ while Porteous goes

³ Victoria Henshaw, *Urban Smellscapes: Understanding and Designing City Smell Environments* (New York: Routledge, 2014), 175.

⁴ Jieling Xiao, Malcolm Tait and Jian Kang, 'A Perceptual Model of Smellscape Pleasantness'. *Cities* 76 (2018): 105–115.

further when he states that ‘generalised preferences, at least amongst westerners, appear to favour natural scents from flowers, fruits and vegetables’.⁵

We are, then, presented with a scenario in which (Western) urbanites appear to demonstrate a preference for those smells we may, at least, stereotypically associate with ‘nature’, and that natural smells are coded as being ‘clean’, and beneficial to human well-being. An olfactory map also emerges here of highly domesticated and managed experiences of the natural world. What happens, though, when nature doesn’t provide ‘fresh’ or ‘clean’ smells? What happens when the grass is no longer cut, or water goes stagnant? What if in essence we are confronted with negative – or, at the very least, challenging – natural smells? We cannot fully know *a priori* what rewilding smellscape will be as these scapes will in a sense become ‘rewilded’ themselves, meaning they will be unpredictable, changeable, unmanaged, and ungovernable. Nonetheless, given its focus on non-intervention, rewilding presents us with a case of conservation practice that conflicts with overtly positive cultural smellscape preferences, and one that poses a significant challenge to environmental governance codified in legal frameworks, which seek to nurture and protect natural beauty.⁶

⁵ J. Douglas Porteous, ‘Smellscape’. *Progress in Human Geography* 9, no. 3 (1985): 360.

⁶ See Benjamin J. Richardson, Emily Barritt and Megan Bowman, ‘Beauty: A *Lingua Franca* for Environmental Law?’ *Transnational Environmental Law* 8, no. 1 (2019): 59–87, for a discussion on natural beauty and international legal frameworks.

Into the Swamp: Rewilding, Olfaction, and Negative Aesthetics

Recently, the Eurasian beaver (*Castor fiber*) has come to be something of an icon for rewilding within the United Kingdom and indeed across much of Europe. Having been extirpated some 400–500 years ago in the UK, beavers were legally reintroduced into Scotland in 2009 for a monitored trial period of five years, which culminated in the Scottish Government formally recognising the Eurasian beaver as a native species.⁷ Following on from the initiation of the trial, other beaver reintroduction efforts have begun in England and Wales.⁸ Aside from the animals' charismatic aesthetic values, the Eurasian beaver is valued by rewilders because of the functional role that beavers play within the wider landscape; they create new watery channels (used by the animals to move in a manner that affords relative protection from potential predators), thin trees and other vegetation adjacent to river systems, and build lodges and dams. These activities have been demonstrated to improve water quality, reduce flash flooding events, and

⁷ See Kim J. Ward and Jonathan Prior, 'The Reintroduction of Beavers to Scotland: Rewilding, Biopolitics, and the Affordance of Non-human Autonomy', *Conservation & Society* 18, no. 2 (2020): 103–113.

⁸ For the first licensed trial reintroduction in England, see: Devon Wildlife Trust. 'River Otter Beaver Trial.' Accessed 16 February 2023. <https://www.devonwildlifetrust.org/what-we-do/our-projects/river-otter-beaver-trial>; for Wales see North Wales Wildlife Trust, 'All About Beavers.' Accessed 16 February 2023. <https://www.northwaleswildlifetrust.org.uk/welshbeaverproject>



Figure 1: Flooded woodland due to the actions of beavers, Scottish Beaver Trial site (photograph by author).

enhance fish and insect habitats, amongst other ecological benefits.⁹

The reintroduction of beavers has, however, been met with scepticism – if not outright resistance – particularly from land managers, farmers, and agriculturalists, due to the perceived effects of beavers conflicting with other land uses. Beaver dams, for instance, may lead to the flooding of prime agricultural land, particularly in low-lying regions. From a non-instrumental perspective, the return of beavers into what were, at least nominally, managed landscapes, may be perceived as aesthetically challenging, not because of the beavers themselves, but for the ways in which they modify ecosystems at the land/water interface. Of principal interest here is the transformation of

⁹ See Róisín Campbell-Palmer et al. *The Eurasian Beaver Handbook: Ecology and Management of Castor fiber*. (Exeter: Pelagic Publishing, 2016).

orderly, maintained, multi-sensorially *legible* landscapes, to those that are messy, discordant, and sensorially complex; in short, the return of beavers is likely to produce aesthetically challenging landscapes that stand in opposition to Carlson's positive aesthetics.¹⁰

Through the actions of reintroduced beavers, areas of the woodland used for recreational purposes at the Scottish Beaver Trial site were flooded, creating deep stagnant pools of water that killed trees, primarily birch and oak (see Figure 1). The smell of rotting logs (a 'peaty, moist smell'¹¹ then, as well as other submerged plant matter, combines with the smells of still water – musty, or even 'rotten egg' odours, as hydrogen sulphide is released as a waste product of anaerobic bacteria – which is generally negatively valued: '... many cultures are perplexed or have a deep suspicion of still water, in part because of its smell.'¹² Indeed, wetlands, including bogs, marshes, and swamps, are sites of pronounced negative aesthetic valuations, with their mix of stagnant smells, and dark, swampy waters. In his book *Postmodern Wetlands*, Rod Giblett sets out the many ways in which these watery landscapes '... have been seen by many in "the west" as places of darkness,

¹⁰ Jonathan Prior and Emily Brady, 'Environmental Aesthetics and Rewilding.' *Environmental Values* 26, no. 1 (2017): 31–51.

¹¹ Emily Brady, *Aesthetics of the Natural Environment* (Edinburgh: Edinburgh University Press, 2003), 126.

¹² Joël Candau, 'The Olfactory Experience: Constants and Cultural Variables.' *Water Science and Technology* 49, no. 9 (2004): 11–17, 11. See also Hannah Pitt, 'Muddying the Waters: What Urban Waterways Reveal about Bluespaces and Wellbeing.' *Geoforum* 92 (2018): 161–170, 167 for an interesting discussion on the malodorous qualities of water.

disease and death, horror and the uncanny, melancholy and the monstrous' that required drainage and development to 'improve' them.¹³ Giblett charts a long cultural and political history of wetlands, wherein negative aesthetic proclamations about 'black waters' are highly gendered and racialised, and describes how such aesthetic-political judgements laid the ground for the need to 'conquer' and 'civilise' them. The value of wetlands has certainly increased in contemporary conservation discourses, but there remains an abiding aesthetic '...dislike [of] land-water, the muddy, mucky places where the land and the water mingle'.¹⁴

Morticulture, Decomposition and Excretion

The scent of rot and decay are likely to become the 'pungent loci'¹⁵ of many rewilded landscapes, particularly those set on a course for woodland regeneration, especially as dead wood – standing snags, rot holes, tree stumps and the like – starts to accumulate, and rivers and streams are left uncleared of vegetal detritus, leading to blocked channels and localised flooding. As woodland matures and dead wood accrues at ever-greater rates, there will be an associated change in the smellscape, as Peterken and Mountford note in relation to ongoing efforts to rewild a

¹³ Rod J. Giblett, *Postmodern Wetlands: Culture, History, Ecology* (Edinburgh: Edinburgh University Press, 1996), xi.

¹⁴ Holmes Rolston III, 'Aesthetics in the Swamps', *Perspectives in Biology and Medicine* 43, no. 4 (2000): 584–597.

¹⁵ Jim Drobnick, 'Toposmia: Art, Scent, and Interrogations of Spatiality', *Angelaki: Journal of Theoretical Humanities* 7, no. 1 (2002): 31–47, 37.

glen in the Scottish Highlands: ‘in a few decades, birches will be toppling over paths, dead wood will accumulate and there will be an air of decay and decrepitude.’¹⁶

As part of its emphasis on non- (or minimal) intervention, death and decomposition are not unintended consequences of rewilding strategies, rather, they are highly valued processes within a predominantly self-regulating system. Indeed, decomposition of organic matter, which is widely interpreted as bringing about negative aesthetic qualities to natural environments¹⁷ is essential for the restoration of ecological processes (primarily nutrient cycling), so much so that there is a growing realisation by woodland managers that interfering with decomposition cycles is ecologically deleterious:

Historically, managers removed deadwood as a hygiene measure to protect the timber resource from what were perceived to be dangerous threats from insect and fungal attack. This has resulted in levels of deadwood in British woodland which are too low for sustaining populations of many woodland species of key conservation importance.¹⁸

There are now examples of non-intervention on behalf of ‘morticulture’ – ‘the culturing of woody detritus in

¹⁶ George F. Peterken and Edward P. Mountford, *Woodland Development: A Long Term Study of Lady Park Wood* (Wallingford: CABI, 2017), 259.

¹⁷ Paul H. Gobster, ‘An Ecological Aesthetic for Forest Landscape Management.’ *Landscape Journal* 18, no. 1 (1999): 54–64.

¹⁸ Forest Enterprise, *Life in the Deadwood: A Guide to Managing Deadwood in Forestry Commission Forests* (Edinburgh: Forest Enterprise, 2002), 2.

forests¹⁹ – in parts of Europe, North America and Asia, but this is proving controversial from an aesthetic perspective, particularly in European woodlands previously managed under strict interventionist regimes.²⁰

Smells of rot and decay as an outcome of rewilding policy are not limited to those emanating from plant matter or stagnant waters; we can also expect to encounter the smells of animal carcasses within rewilded landscapes. Once again, the availability of animal carcasses is valuable from an ecological perspective, though this goes against the logic of modern agricultural methods and, in some cases, legislative demands placed upon land managers. Cortés-Avizanda et al. provide a good example of this through their analysis of avian scavengers within European rewilding efforts.²¹ The authors give an account of top avian scavengers – ‘true’ vultures and other raptor species – that depend upon carcasses of large animals for their survival. They detail how the recuperation of these species in Western Europe will require, amongst other

¹⁹ Carol A. Johnston, *Beavers: Boreal Ecosystem Engineers* (Cham: Springer International Publishing AG, 2007).

²⁰ Annick Schnitzler, ‘Towards a New European Wilderness: Embracing Unmanaged Forest Growth and the Decolonisation of Nature.’ *Landscape and Urban Planning* 126 (2014): 74–80.

²¹ Ainara Cortés-Avizanda, José A. Donázar and Henrique M. Pereira, ‘Top Scavengers in a Wilder Europe’, in *Rewilding European Landscapes*, eds. Henrique M. Pereira and Laetitia M. Navarro. (Cham: Springer International Publishing AG, 2015). Dead animals may also be publicly controversial from an animal ethics perspective; for an example of this in a rewilding context see Patrick Barkham, ‘Dutch Rewilding Experiment Sparks Backlash as Thousands of Animals Starve.’ *The Guardian*, 27 April 2018. <https://www.theguardian.com/environment/2018/apr/27/dutch-rewilding-experiment-backfires-as-thousands-of-animals-starve>

things, the modification of current EU 'sanitary' laws, imposed in the aftermath of the BSE crisis, that significantly limits the availability of livestock carcasses, as they are required to be destroyed rather than left in agricultural fields. These legal requirements have led to '...a halt in population growth, a decrease in breeding success, and an apparent increase in mortality of young age classes.'²² Ecological data also points to EU sanitary legislation affecting other species' feeding habits, such as wolves in Spain.²³

An increase in carrion, then, is a necessary requirement for the return of sustainable populations of a range of scavenger and opportunistic predatory species, and therefore carrion is important for a range of rewilding projects, especially given the rewilding ethos of avoiding the supplementary feeding of wild animals. As well as the putrid smells of decomposing animal bodies, other highly localised animal scents – scat, urine, and other waste excretions; scent markings; bodily scents – are likely to emerge in rewilding landscapes, again disrupting the stereotypically valued smells of 'clean' and 'fresh' nature that are associated with closely managed rurality.

At this juncture, it is important to note that, unlike wilderness creation and preservation, rewilding is not just about remote landscapes distant from human habitation, and nor does it necessitate the elimination of

²² José A. Donázar et al. 'Too Sanitary for Vultures.' *Science* 326, no. 5953 (2009): 664. https://doi.org/10.1126/science.326_664a

²³ Laura Lagos and Felipe Bárcena, 'EU Sanitary Regulation on Livestock Dispersal: Implications for the Diet of Wolves', *Environmental Management* 56, no. 4 (2005): 890–902.

imprints of human culture from landscapes.²⁴ Indeed, rewilding has been proposed, and is being carried out, in peri-urban and urban areas alike.²⁵ In my discussions with policy makers and conservationists, they are keen to stress that they see rewilding as a continuum of different activities applicable across a range of spatial scales – wildflower meadows replacing ornamental green spaces and manicured lawns; the creation of new urban wetlands; wild boar populations establishing themselves in urban woodlands – which will lead to subtle smellscape changes in and amongst large populations of people.

Such changes may be relatively short-lived, not only when they are highly localised (meaning we can move past them), but also when they are not, as ‘the perceived intensity of a smell declines rapidly after one has been exposed to it for some time. Not that the smell disappears, but the perceiver becomes habituated to it.’²⁶ Nonetheless, given the particular role that odours play

²⁴ Prior and Brady, ‘Environmental Aesthetics and Rewilding’, 31–51.

²⁵ See for example Architecture For London. ‘Rewilding London’. 2 November 2017. <https://architectureforlondon.com/news/rewilding-london>; and the following roundtable discussion on urban rewilding: Kevin Sloan, ‘Let Go Of Some Urban Domestication: How Would You Convince The Mayor To The City?’ *The Nature Of Cities*. 13 November 2017. <https://www.thenatureofcities.com/2017/11/13/re-wilding-make-cities-better-just-wilder>. In March 2022, beavers were re-introduced to the London Borough of Enfield, and there are examples of beavers living in urban centres across Europe, including Stockholm and Munich.

²⁶ J. Douglas Porteous, ‘Smellscape’. *Progress in Human Geography* 9, no. 3 (1985): 358.

in the formation of place-based memories²⁷ and sense of place²⁸ we should caution against assuming such experiences will not have repercussions for relations between self and landscape.

Conclusion

Rewilding has the capacity to bring about diverse, complex, and potentially more challenging, if not outrightly negative, smellscape to both rural and urban areas. While not all rewilding odours will necessarily be adjudicated to be negative – some, such as the smells of wildflowers in rewilded greenspaces, may be positively adjudicated, at least until the point of their eventual decay – they will likely defy cultural expectations of olfactory experiences, particularly given that nature is overwhelmingly positioned as ‘therapeutic’, ‘fresh’, or ‘clean’ smelling. Challenging or negative olfactory qualities also conflict with existing legal frameworks that tend to work toward sanitising and deodorising landscape experiences, including the removal of dead and decaying flora or fauna, due to sanitary concerns related to human and non-human health. It has been argued that the implementation of these ‘aseptic’ strategies in natural resource management, is a manifestation of social

²⁷ Kara C. Hoover, ‘The Geography of Smell.’ *Cartographica: The International Journal for Geographic Information and Geovisualization* 44, no. 4 (2009): 237–239.

²⁸ See for example, Richard Gorman, ‘Smelling Therapeutic Landscapes: Embodied Encounters with Spaces of Care Farming.’ *Health & Place* 47 (2017): 22–28.

disconnection from nature.²⁹ Another legal angle that pertains to rewilding, is the inculcation of ‘beauty’ as a standard for environmental protection. If ‘beauty’ were to be enshrined as a *lingua franca* for environmental law, what olfactory space is there for negative smells within such a legal framework?³⁰

As a developing form of conservation practice, then, rewilders need to take negative aesthetics seriously from both a legal and broader cultural perspective, particularly given that ‘... people’s aesthetic preferences often lead them to disregard the preservation of animals, plants, and landscapes that are deemed either “ugly” or “smelly”’.³¹ So how might we confront the challenge of negative olfactory aesthetics as a likely outcome of rewilding practices? As previously outlined, ‘positive aesthetics’ stipulates that nature unmodified by humans demonstrates positive aesthetic qualities. Within this theory, there is a propensity to fold negative aesthetic experiences into wider relational chains that ultimately amount to positive aesthetic value. The smell of a rotting animal carcass might be unpleasant, but the carcass, understood as a source of nutrients for other organisms, enables ecosystem-level beauty. Emily Brady has argued against such a position, in part because ‘this sort of reply

²⁹ M-Martina Quaggiotto et al. ‘Past, Present and Future of the Ecosystem Services Provided by Cetacean Carcasses.’ *Ecosystem Services* 54 (2022).

³⁰ Benjamin J. Richardson, Emily Barritt and Megan Bowman. ‘Beauty: A *Lingua Franca* for Environmental Law?’ *Transnational Environmental Law* 8, 1 (2019): 59–87.

³¹ Larry Shiner, *Art Scents: Exploring the Aesthetics of Smell and the Olfactory Arts* (Oxford: Oxford University Press, 2020), 309.

denies the existence of ugliness by reframing the aesthetic object into a whole and avoids the point in question, which is particular perceptual qualities rather than broader, holistic knowledge of some natural event or system.³² Indeed, the smell of a rotting carcass and our visceral response to it cannot be easily explained away by knowledge that the carcass is of ecological value to a healthy, beautiful ecosystem. Negative smells demand our aesthetic attention, even when we don't want them to, and so are a distinct category of smells set apart from the merely mundane or the boring, which are relatively easy to shield from our perception.³³ At any rate, reframing the carcass as a component of an ecological whole will not miraculously transform a negative aesthetic experience into a positive one. As we have seen, some ecological wholes, such as wetlands, are not characterised as either beautiful or fragrant. It might well be that, as Brady alludes to, the promotion of other forms of value, such as biodiversity and existence values,³⁴ may enable us to protect and care for ugly ecologies; the same can be said for malodours, without denying the very real existence of negative olfactory experiences.

I want to end by suggesting that addressing contemporary cultural connotations of negative rewilding scents may also be a plausible response. Take, for instance,

³² Brady, 'The Ugly Truth', 83–99, 86.

³³ Pertinent to the present discussion, Karl Rosenkranz in *Aesthetics of Ugliness: A Critical Edition* (London: Bloomsbury, 2017) argues that decomposition and decay should be categorised as a form of 'the disgusting' within aesthetic theory.

³⁴ Brady, 'The Ugly Truth', 83–99, 98–99.

our aesthetic experiences of agricultural land. Visually ‘untidy’ and ‘messy’ agricultural aesthetics are often interpreted as an outcome of negligence or a lack of a work ethic.³⁵ Indeed, there is a cross-cultural aesthetic appreciation of ‘tidy’ farms across Europe; maintaining a ‘tidy’ farm is an important component of what constitutes a ‘good farmer’, which is as much social and cultural as it is economical.³⁶ Challenging or negative smells of on-farm rewilding are an outcome of the relinquishment of tidiness, from a lack of adequate drainage to the non-removal of dead matter; a lack of tidiness results in a loss of social status within farming communities, regardless of any conservation benefits stemming from these actions.³⁷ How to move away from ‘tidiness’, is of course, a major challenge. Within a market economy, the role of education and changes to agricultural subsidies would be useful places to start.³⁸ From a more radical political economy perspective, it might mean an embrace of anti-capitalist, anti-work movements, such as degrowth. The

³⁵ Shelley Egoz, Jacky Bowring and Harvey C Perkins, ‘Making a “Mess” in the Countryside: Organic Farming and the Threats to Sense of Place.’ *Landscape Journal* 25, no. 1 (2006): 54–66; Marc Treib, ‘Ethics ≠ Aesthetics.’ *Journal of Landscape Architecture* 13, no. 2 (2018): 30–41.

³⁶ Rob J. F. Burton, ‘Understanding Farmers’ Aesthetic Preference for Tidy Agricultural Landscapes: A Bourdieusian Perspective.’ *Landscape Research* 37, no. 1 (2012): 51–71.

³⁷ *Ibid.*, 65.

³⁸ The post-Brexit agricultural subsidy system being developed across the UK, which has not been fully fleshed out at the time of writing, points to a future scenario in which subsidies are tied to environmental improvements on agricultural land. A component of this is the implementation of large-scale ‘nature recovery’ efforts, including rewilding.

smells of rewilding, after all, are those of ecology over economic productivity, disrupting the through-flow of materials (resources in, 'waste' material out) characteristic of carefully managed landscapes, instead allowing them to accumulate, settle, stagnate, and stew in situ.

References

- Barkham, Patrick. 'Dutch Rewilding Experiment Sparks Backlash as Thousands of Animals Starve.' *The Guardian*. 27 April 2018. <https://www.theguardian.com/environment/2018/apr/27/dutch-rewilding-experiment-backfires-as-thousands-of-animals-starve>
- Brady, Emily. *Aesthetics of the Natural Environment*. Edinburgh: Edinburgh University Press, 2003.
- Brady, Emily. 'The Ugly Truth: Negative Aesthetics and Environment.' *Royal Institute of Philosophy Supplement* 69 (2011): 83–99.
- Burton, Rob J. F. 'Understanding Farmers' Aesthetic Preference for Tidy Agricultural Landscapes: A Bourdieusian Perspective.' *Landscape Research* 37, no. 1 (2012): 51–71.
- Campbell-Palmer, Róisín et al. *The Eurasian Beaver Handbook: Ecology and Management of Castor fiber*. Exeter: Pelagic Publishing, 2016.
- Candau, Joël. 'The Olfactory Experience: Constants and Cultural Variables.' *Water Science and Technology* 49, no. 9 (2004): 11–17.
- Carlson, Allen. *Aesthetics and the Environment: The Appreciation of Nature, Art and Architecture*. London: Routledge, 2011.
- Cortés-Avizanda, Ainara, José A. Donázar and Henrique M. Pereira. 'Top Scavengers in a Wilder Europe.' In *Rewilding European Landscapes*, edited by Henrique M. Pereira and Laetitia M. Navarro. Cham: Springer International Publishing AG, 2015.

- Devon Wildlife Trust. 'River Otter Beaver Trial. (n.d.)'. Accessed 16 February 2023. <https://www.devonwildlifetrust.org/what-we-do/our-projects/river-otter-beaver-trial>
- Donázar, José A. et al. 'Too Sanitary for Vultures?' *Science* 326, no. 5953 (2009): 664. https://doi.org/10.1126/science.326_664a
- Drobnick, Jim. 'Toposmia: Art, Scent, and Interrogations of Spatiality.' *Angelaki: Journal of Theoretical Humanities* 7, no. 1 (2002): 31–47.
- Egoz, Shelley, Jacky Bowring and Harvey C. Perkins. 'Making a 'Mess' in the Countryside: Organic Farming and the Threats to Sense of Place.' *Landscape Journal* 25, no. 1 (2006): 54–66.
- Forest Enterprise. *Life in the Deadwood: A Guide to Managing Deadwood in Forestry Commission Forests*. Edinburgh: Forest Enterprise, 2002.
- Giblett, Rod J. *Postmodern Wetlands: Culture, History, Ecology*. Edinburgh: Edinburgh University Press, 1996.
- Gobster, Paul. H. 'An Ecological Aesthetic for Forest Landscape Management.' *Landscape Journal* 18, no. 1 (1999): 54–64.
- Gorman, Richard. 'Smelling Therapeutic Landscapes: Embodied Encounters with Spaces of Care Farming.' *Health & Place* 47 (2017): 22–28.
- Henshaw, Victoria. *Urban Smellscapes: Understanding and Designing City Smell Environments*. London: Routledge, 2014.
- Hoover, Kara C. 'The Geography of Smell.' *Cartographica: The International Journal for Geographic Information and Geovisualization* 44, no. 4 (2009): 237–239.
- Johnston, Carol A. *Beavers: Boreal Ecosystem Engineers*. Cham: Springer International Publishing AG, 2007.
- Lagos, Laura and Felipe Bárcena. 'EU Sanitary Regulation on Livestock Dispersal: Implications for the Diet of Wolves.' *Environmental Management* 56, no. 4 (2005): 890–902. <https://doi.org/10.1007/s00267-015-0571-4>
- North Wales Wildlife Trust, 'All About Beavers.' (n.d.). Accessed 16 February 2023. <https://www.northwaleswildlifetrust.org.uk/welshbeaverproject>

- Peterken, George F. and Edward P. Mountford. *Woodland Development: A Long Term Study of Lady Park Wood*. Wallingford: CABI, 2017.
- Pitt, Hannah. 'Muddying the Waters: What Urban Waterways Reveal about Bluespaces and Wellbeing.' *Geoforum* 92 (2018): 161–170.
- Porteous, J. Douglas. 'Smellscape.' *Progress in Human Geography* 9 (1985): 356–378.
- Prior, Jonathan and Emily Brady. 'Environmental Aesthetics and Rewilding.' *Environmental Values* 26, no. 1 (2017): 31–51.
- Quaggiotto, M-Martina et al. 'Past, Present and Future of the Ecosystem Services Provided by Cetacean Carcasses.' *Ecosystem Services* 54 (2022).
- Richardson, Benjamin J., Emily Barritt and Megan Bowman. 'Beauty: A *Lingua Franca* for Environmental Law?' *Transnational Environmental Law* 8, no. 1 (2019): 59–87.
- Rolston III, Holmes. 'Aesthetics in the Swamps.' *Perspectives in Biology and Medicine* 43, no. 4 (2000): 584–597.
- Rosenkranz, Karl. *Aesthetics of Ugliness: A Critical Edition*. London: Bloomsbury, 2017.
- Schnitzler, Annick. 'Towards a New European Wilderness: Embracing Unmanaged Forest Growth and the Decolonisation of Nature.' *Landscape and Urban Planning* 126 (2014): 74–80.
- Shiner, Larry. *Art Scents: Exploring the Aesthetics of Smell and the Olfactory Arts*. Oxford: Oxford University Press, 2020.
- Treib, Marc. 'Ethics ≠ Aesthetics.' *Journal of Landscape Architecture* 13, no. 2 (2018): 30–41.
- Walton, Samantha. *Everybody Needs Beauty: In Search of the Nature Cure*. London: Bloomsbury Circus, 2021.
- Ward, Kim J. and Jonathan Prior. 'The Reintroduction of Beavers to Scotland: Rewilding, Biopolitics, and the Affordance of Non-human Autonomy.' *Conservation & Society* 18, no. 2 (2020): 103–113.
- Xiao, Jieling, Malcolm Tait and Jian Kang. 'A Perceptual Model of Smellscape Pleasantness.' *Cities* 76 (2018): 105–115. <https://doi.org/10.1016/j.cities.2018.01.013>