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Educational landscapes and the environmental entanglement of humans and non-humans through the starling murmuration

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ABSTRACT

Recent years have seen a continued critical reflection on the "post" or "more- than" representational landscape as well as a related critique of nature which centres on this concept as a deployment of meanings and their effects. In this paper, I want to explore the possibilities and challenges of widening access to these more entangled and performative understandings of nature and landscape through the example of winter roosting starlings and the spectacle of the starling mumuration. In doing so, this paper also explores the dominant educational constructions of nature as utilised in conservation work and informal educational television, the consideration of the latter taken up through my own work on a forthcoming BBC television series. The focus of this exploration is the RSPB Ham Wall nature reserve on the Somerset Levels, widely regarded as one of the prime locations in Britain for observing murmurations and where the number of visitors coming specifically to view roosting starlings on a winter's evening can reach 1,000 people. While in many ways the reserve maintains conventional roles of warden-led stewardship and observational education of nature "in its place," I also want to suggest that the spectacle of the starling murmuration affords an opportunity to convey humans and non-humans as embedded in a more performative understanding of conservation which challenges the predominant conventions of conservation practice. In this more refexive educational context, the possibility exists to frame an accessible and illustrative understanding of the geographies of a more entangled human-non-human nature.

KEYWORDS

conservation, landscape, murmuration, nature, non-human, starlings

1 | INTRODUCTION

Understandings of nature have long been constructed and articulated as something external to the social lives of humans. Nature, in this sense, is commonly framed as something which we escape to, "discover" or immerse ourselves in, creating a spatial demarcation of a nature "out there" or beyond the spaces of our social lives. The critical appraisal of this under - standing of nature has been a persistent feature of science and technology studies and the geographical work infused by it for many years, Bruno Latour's *We have never been modern* (1993) commonly providing a basis for such critical

engagements. As Hinchliffe (2007) has observed, this understanding of nature as separate from society "is probably the most common version of nature in Western societies" and is informed by narratives "where nature needs saving from humankind" (2007, p. 8); it is "the nature we have lost, polluted and destroyed, and which we are ever more insistently enjoined by the ecologists to conserve or preserve" (Soper, 1995, p. 180). The response to this narrative of threat is one of conservation management and environmental stewardship, and such work is commonly used to frame nature within educational contexts. An example of this conceptualisation is that offered by the Royal Society for the Protection of Birds (RSPB) and is echoed in their strapline: "giving nature a home."

What I argue in this paper is that this understanding of nature has endured and been reinforced through traditions of conservation work centred around the demarcated space of the nature reserve but that a more entangled understanding of nature and society can be conveyed through the particular landscapes constructed by the winter roosting habits of the Common or European Starling (*Sturnus vulgaris*) and the growing numbers of people who gather to watch starlings roost on a winter's evening. I will reflect on this practice through the example of the RSPB Ham Wall nature reserve by considering how the starling has influenced the work being done here, as well as the relations formed between starlings and the increas- ing visitor numbers at the reserve. More specifically, I will emphasise how these relations serve to highlight possibilities for articulating educational landscapes which capture a more productive sense of the natural–social and the human–non-

human, a sensibility which, while familiar within conceptual frameworks, remains unfamiliar in practice-based conservation settings. While I am not suggesting that current practices of nature education are entirely misguided, what I do want to emphasise is that the example of human–starling relations constituted through the murmuration presents a valuable and demonstrable challenge to a persistent and uncritical separation of "the natural" and "the social" within nature education. Having considered a more entangled view of human–starling relations, I also reflect on the possibilities of a broader public engagement with such conceptualisations through the medium of wildlife television broadcasting.

2 | CONSTRUCTING THE SPACES OF EDUCATIONAL NATURE

The RSPB claims to be "the largest nature conservation charity in the country" ("About the RSPB" n.d.) and as such plays a significant role in the way nature is constructed both for the purposes of promoting its conservation work as well as in offering a range of educational activities and resources for formal teaching and informal learning. The organisation's strapline "giving nature a home" provides a thematic backdrop to the way nature is presented conceptually through educational resources for teachers which seek "to connect young people with the natural world" ("Free school outreach visits" n.d.), "inspire children to explore nature at school" ("Fun and learning" n.d.) and get "young people outside and experiencing nature first hand" ("For teachers" n.d.). The conceptual language used to articulate and understand nature has been discussed extensively (see for example Soper, 1995;¹ Castree, 2005, 2014) and, as Ginn and Demeritt (2009) drawing on Raymond Williams have observed, these discussions commonly identify a tendency to describe "inature' as material place external to humanity" (2009, p. 300). However, as they go on to argue, Williams pointed to three broad definitions of nature which are intrinsically connected while also subject to a degree of tension. As well as a nature which is "external" to humanity, Williams also pointed towards our understandings of nature as: "intrinsic: the essential characteristics of a thing ... [and a] ... universal nature: the all-encompassing force controlling things in the world" (2009, p. 301). In the context of the educational nature conveyed by the RSPB, I argue that we are witnessing precisely this evocation of nature as a series of overlapping and unsettled meanings: nature as spatially separate from us while also being intrinsic and all-encompassing. While the RSPB's evocation of nature is pointing to a connectedness to humanity, it is also pointing to one which we, and young people in particular, have become separated from and should strive to reconnect with, echoing Ginn and Demeritt's observation of a nature seen "as the true home of humanity, [an] Edenic environment of healthy, wholesome and leisurely living that is at once youthful and timeless, familiar and far away" (2009, p. 300). As Matless (1995) has noted, this form of nature as "right living" has also been associated with notions of national identity and citizenship which are: "morally, spiritually and physically healthy, alert to the landscape" (Matless, 1995, p. 93).

For the RSPB then, the project of educational reconnection is framed by the bridging of a spatial divide between people and nature. The suggestion is that this can either be achieved through a process of reaching outwards to "explore nature and get closer to wildlife and the outside world" or by tempting nature back across the spatial divide towards us, facilitated by educational resources "showing how to make homes for nature" and "provide food and water for nature" in our gardens (Supporting resources, n.d.). In the context of exploring the "outside" spaces of nature, the RSPB facilitates this through the numerous nature reserves it manages and promotes as "great places to get away from it all, get closer to nature and enjoy spending time together as a family" (Supporting resources, n.d.). Indeed it has been suggested that these demarcated and protected areas are central to the ways that nature is imagined in the West (Brockington et al., 2008), echoing arguments drawn from critiques of the American idea of "wilderness" (see Cronon, 1996) that our understanding of nature "reflects the cultural values of increasingly industrialised and urbanised societies in which the natural environment seems to be fast disappearing" (Castree, 2005, p. 139). Consequently, in spatial terms the response has been "to establish and police fixed and ranked territories for Nature" (Lorimer, 2015, p. 163).

In addition to their comprehensive spatial demarcation, this notion of the "policed" nature reserve is also borne out in their often precisely designed spatial configurations of walkways, viewing areas and hides further territorialised by information boards which serve to (con)textualise the educational landscapes of the reserve. These are spaces which are carefully curated for a consuming public to invoke a sense of freedom, discovery and connection to nature, the experience of "connection" being facilitated through the apparently contradictory means of a carefully mapped route which continually maintains the visitor as a distanced observer of the "wilder" spaces just beyond their reach, a distance which is circumvented through the technologies of binoculars and spotting scopes. It is a form of conservation premised on the maintenance of an ordered and bounded space which strives to perpetuate an ecological equilibrium dependent on a measured balance of human intervention and non-intervention, which Jamie Lorimer has described as "conservation as composition" (2015). As Lorimer points out, this form of conservation is labour and cost intensive, targeted at particular species and, as Lorimer sees it, represents a "territorial trap into which modern conservation fell when it configured biogeography around purified nature reserves" (2015, p. 17). Nonetheless, and perhaps precisely because of its spatial confinement and navigability, the nature reserve has become established as an accessible and privileged educational space. However, what I initially want to establish here is the possibility of a more nuanced spatiality of the reserve than Lorimer suggests, where the nature reserve's ordered separation of the natural and the social, the human and the non-human, is being challenged by the intervention of the starling.

3 | THE EUROPEAN STARLING

Despite a widespread population decline in recent decades, the European Starling is still a common bird and its numbers swell during winter in the British Isles as birds from western continental Europe make the short migration over the North Sea and English Channel drawn by the relatively milder temperatures afforded by proximity to the Atlantic Ocean. During the winter months, each evening, starlings that have been spread across various feeding grounds during the day begin to take flight, and numerous flocks start to congregate in the sky above their roosting sites. Particular sites have become regularly occupied by large numbers of roosting starlings, their numbers often growing to tens or hundreds of thousands and occasionally reaching millions at a small number of locations. The Avalon Marshes on the Somerset Levels is one of these locations, with huge numbers of starlings commonly roosting in the vicinity of either Natural England's Shapwick Heath nature reserve or the neighbouring 265 hectare RSPB Ham Wall site. It is estimated that on some winter evenings starling numbers here can reach several million ("The great starling roost," 2012). As these birds begin to assemble they form into undulating, shape - shifting cloud-like formations which expand and contract, swoop and turn, enabled by information shared through a form of collective communication which remains the subject of some scientific conjecture (Figure 1).

Studies have observed "that a bird responds to this type of information only from its seven nearest neighbours" (Pearce et al., 2014; p. 10422) but it has also been argued that birds respond to the opacity of the flock as a whole by



FIGURE 1 Murmuration, Ham Wall. Photo © Rupert Fleetingly (cc-by-sa/2.0).

dynamically reacting to how light or dark their immediate surroundings within the flock are as an indicator of flock density (2014, p. 10422).² These huge, dynamic aerial "displays," known as murmurations, are primarily thought to be formed on the basis that such huge numbers both disorientate any would-be predators as well as reduce the chance of any particular individual being caught (Elphick, 2014). In this sense, the murmuration is comparable to the mass schooling of fish such as herring.

Over recent years it has been noted that this "amazing spectacle ... has now become a major tourist attraction" (Moss, 2012). At RSPB Ham Wall, the numbers of people coming to watch the nightly murmuration has continued to grow since the reserve became a regular roost site around a decade ago, and during the Christmas and New Year period of 2016/17 the number of visitors exceeded 1,000 for the first time on a single evening. The instances of increasingly large visitor numbers concentrated into just a couple of hours around sunset have presented a number of logistical challenges to the RSPB at Ham Wall.³ A car park, which previously accommodated a dozen or so cars, has had to expand into an adjoining plot in order to accommodate the hundreds of cars that can now arrive. The starlings have also necessitated the development of new facilities, including the installation of toilets, a new visitor centre and the offer of refreshments, though when visitor numbers are at their peak the visitor centre often has to close to avoid being overwhelmed by demand. The other significant challenge that the starlings have presented to the RSPB wardens at Ham Wall is that while their roosting habits are a regular, nightly occurrence during the winter months the exact location is highly variable from one end of the reserve to the other or sometimes further into neighbouring sites, meaning that murmurations can occur several miles apart from one night to the next. Wardens make a point of emphasising to visitors that the murmuration is a "natural phenomenon" in order to mitigate disappointment if people end up heading in the wrong direction. Nonetheless, wardens routinely find themselves having to respond to those who feel aggrieved at having missed the spectacle they have travelled to see. In an attempt to further guard against this situation, a starling telephone "hotline" has been established by the Avalon Marshes Landscape Partnership Scheme, a partnership of conservation bodies working in the area. This service informs visitors of the location of the murmuration on the previous evening as a "best guess" for the likely location on the following night. But, despite these measures, an emergent tension exists between the regulated spaces of conservation work, the agency of starlings and the demands of an expectant audience.

4 | STARLING-HUMAN ENTANGLEMENTS

The arrival of the starlings and the visitors that have followed them to Ham Wall have disrupted the demarcated and regulated spaces of the reserve and, in turn, challenged the conventions of conservation practice. In making sense of this, it is useful to return to Lorimer (2015), who asserts that conservation is essentially a passionate, non-rational practice motivated by "interspecies encounters" and that this can be productively understood through the identification of a range of what he refers to as "affective logics." For Lorimer, "an affective logic describes a habituated mode of engaging with, knowing about, and feeling toward wildlife" (2015, p. 9) and these ideas are articulated through the notion of "nonhuman charisma." Usefully, Lorimer explores these ideas through the example of bird watchers (or "birders" as they prefer to be known) and there are two particular forms of "nonhuman charisma" which can be usefully juxtaposed in highlighting the way that starlings have served to disrupt the conventions of conservation practice and entangle humans and non-humans at Ham Wall.

Drawing on the work of Julia Kristeva (1982), Lorimer utilises the concept of *jouissance*, which Kristeva uses to describe "the pleasure experienced in the presence of meaning" (Lorimer, 2015, p. 52). In relation to the practice of birders, he equates this to

the joy of identification and the making and completing of species lists – esoteric practices at the heart of amateur and professional field sciences ... the quiet sense of satisfaction that comes when the components of the world fit the units and schema with which you are familiar (2015, pp. 52–53).

In extending Lorimer's use of the concept of *jouissance*, its value here is in the way it represents a coming together of conventions in both conservation and educational practice. In conservation terms, as Lorimer notes, this is in the resonance between "units and schema" and the notion of conservation as composition, with its emphasis on particular species, often those valued as rare or under threat, and the fine-tuned maintenance of particular environmental conditions within a demarcated "nature space." In educational terms, *jouissance* also resonates with the conventional readings of nature-based educational learning, the application of the "units and schema" to make sense of nature and render it intelligible and measurable

in a social world. In both contexts then, *jouissance* signals a trait which has been identified in a number of critical engagements with nature–society and human–non-human relations, that of "*learning to be affected* ... meaning 'effectuated', moved, put into motion by other entities, humans or non-humans" (Latour, 2004, emphasis in original). The importance of this critical intervention is in its emphasis on revealing the role of affect within these conventions in that

learning should not be understood to be a process of discriminating sensations of the world 'out there' through a greater refined set of mental representations ... what has been 'learnt' is the capacity to be affected (Cohn, 2013).

In this sense then the "kit" of measuring devices of scales, charts and diagrams becomes an affective part of the user themselves: "the kit as fundamental components of this new ability of the body" (Cohn, 2013). As Hinchliffe (2007) states in relation to work on monitoring water voles:

the field guides as textual inscriptions of footprints and other characteristics were not equivalent to footprints in the field ... they were, instead, sensitizing devices, diagrams, that made water voles more rather than less real for those who started to use them (2007, p. 132).

The second form of "nonhuman charisma" that Lorimer (2015) points to is that of "epiphany," which describes "a specific transformative event involving an intense encounter with a particular organism ... these epiphanies are visceral and emotional but also very difficult to articulate" (2015, p. 51). It therefore acknowledges a response which is unapologetically affective and bears much in common with the descriptions of encounters with murmurations as "an amazing wildlife spectacle" (Starling roost, n.d.). These epiphanic encounters are clearly articulated on the Ham Wall Nature Reserve page of the popular tourist website Tripadvisor, where visitors affirm their affective experiences of nature, describing "an amazing impact that will be long remembered ... one of nature's great sights" (MartinH, 2018), "an amazing spiritual moment" (dart41, 2015), "the most amazing sight" (KathyDUSA, 2017) and that "it was great to witness this natural event. The numbers are incredible" (Lynda908, 2017). But, to add to Lorimer's register, I would also argue that there is an affective response borne specifically from the scale of the encounter, the swarming mass of starlings evoking something of Edmund Burke's notion of the sublime where "vastness of extent, or quantity, has the most striking effect" (Burke, 1757 [1990], p. 66). In this context it is not merely a question of an affective response to a particular organism within the landscape, but to the starlings as a performative element of the landscape within which the human is situated. This sentiment is captured in a further Tripadvisor post: "we often go to watch the starling murmurations in the winter; with the sun setting and the moon rising and mist rising from the rhynes⁴ – it is unbelievably beautiful" (TerriS, 2017). Here the human is embedded in the meaning of the encounter, making the nature reserve intelligible as a site which challenges the notion of "conservation as composition" and asserts a relational understanding of nature, not as "out there" but as embedded in human-non-human relations.

It is the spectacle or event of the murmuration itself that becomes the "sensitizing device." The affective response, integral to the viewer becomes, in turn, integral to the meaning of the murmuration. Indeed, the mediating devices commonly associated with nature observation are often notably absent from these encounters; binoculars and spotting scopes are not needed and may not even be owned by visitors, many of whom do not regard themselves as "birders." This is a nature space which is challenging the *jouissance* of the dedicated "birding" few in revealing a different kind of learning space for a different kind of "nature." Here the meaning of "nature" is spelled out in the affective response of the murmuration visitor rather than in the composed *jouissance* of the studious observer. If, as Noel Castree has stated, "what is called 'nature' is made sense of for you by a myriad of others who daily seek to shape your thoughts, feelings and actions" (2014, p. xvii) then here we can see the possibilities for learning about a "nature" which is "made sense of" by the murmuration visitor in their relations with the starlings. Here we can see a different kind of educational landscape.

5 | NEW EDUCATIONAL LANDSCAPES

In this new educational landscape the geographies of the nature reserve become redrawn through these human-starling relations. The ordered spaces of hides and viewing areas go from being galleries of a studied, "at a distance" nature to speculative, hopeful vantage points for a visceral human-starling encounter, which may or may not happen. Walkways and paths

become networks of information exchange on recent murmuration sights/sites. They also become impromptu viewing areas as people stake out their own spots with camping chairs along with food and drink to share. These relations have not only changed the social landscape but also the material landscape of the reserve; the toilets, car park and visitor centre are also the constructive work of starlings and humans. This is a nature which is thoroughly social, both within and between gatherings of humans and starlings, and provides us with the means for telling new sorts of nature stories within these landscapes. But, just as these co-constitutive starling–human relations present a possibility for reinterpreting the "nature" of the reserve, they also invite the capacity to question the notion that "the social" is exclusively situated with "the human" and that there are a "range of entities that may populate the social world" (Latour, 2005, p. 227). In conveying this, I propose the concept of "sociality," a term conventional used in socio-biology to describe degrees of association within animal groups, its value here being in the way it pulls the non-human within the linguistic sphere of "the social," opening up the possibility of an affective human–non-human social dynamic. The value of thinking about the murmuration in this context is also in the way it can be played out beyond the nature reserve, collapsing the spatial distinctions of the natural and social irrespective of which might be perceived as "out of place" in a given location. In order to explore this possibility further here, I want to depart briefly from the Ham Wall reserve and consider the example of a murmuration situated within the social spaces of a suburban neighbourhood in central England (Figure 2).

In the early weeks and months of 2015, each evening starlings began to gather in increasing numbers in the vicinity of a local health centre and an adjacent area of social housing in the North Buckinghamshire town of Wolverton. The starlings formed into a nightly murmuration which grew from a few thousand birds until reaching an estimated peak of approximately 30,000 birds by 22 March (Buckinghamshire Bird Club, 2016). During this period, each evening at dusk local residents began to gather in their front gardens, children on bikes congregated on street corners and traffic slowed and pulled over as people stopped to watch the murmuration. As the starling numbers increased and word spread of this nightly event,

the number of observers grew as well. Local residents and passers-by, many stopping on their way home from work, began to be joined by local photographers and birdwatchers who had picked up on the news via their own email and social media groups. As this unlikely configuration of different groups began to form each evening, resident children accepted offers of

views through bird watchers' binoculars and photographers attracted small huddles of people peering into the screens on the backs of their digital cameras. As the nightly ritual was repeated, people and starlings flocked together transforming the spatial-temporal flows of an area of suburban housing from post-work passage point to the stage of an event, the very evocation of place as expressed by Massey: "what is special about place is precisely that throwntogetherness, the unavoidable challenge of negotiating a here-and-now; and a negotiation which must take place within and between both human and non-human" (Massey, 2005, p. 140).

As the murmuration grew it became an increasingly prevalent topic of discussion on local social media groups, with people posting information about where to get the best view and what time to be there for "the show." One contributor to a local email group (P. Allen, personal communication, 19 March 2015) wrote:

Enjoyed another spectacular starling murmuration show from the open ground opposite the Wolverton Health Centre along with a mixed group of locals and birders of all ages this evening ... When it peaked, just after 6pm, I reckon numbers must have been reaching significant tens of thousands. I can only echo XXX's advice 'catch it while it lasts folks.'⁵



FIGURE 2 Wolverton murmuration. Photo © Nicky Kenny.

Another murmuration visitor posted the following account on a local natural history group website (Manchester, 2015):

I have been watching the starling murmuration near to the V5, $H2^6$ roundabout on most evenings over the last 10 days ... usually I have watched them from the area of grass opposite the Wolverton health centre, as it is away from the noise of the traffic. You can hear the noise of all the wings beating. At times they appeared like a swarm of bees, other times like a truly massive swirling cloud. They turn and swoop, sometimes splitting into two or three groups. Then the separate groups come back together like colliding galaxies ... What more can I say, you have to see it, it was awesome!"⁷

In light of the starling murmuration then, both the reserve and the residential street become a new kind of educational landscape. They are landscapes in the sense that landscapes are always an entanglement of the natural and the social (see Morris & Revill, 2018) on the basis that "landscape is that with which we see, a perception-with-the-world" (Wylie, 2007, p. 176). What is also particularly pertinent here is a more performative and affective understanding of landscape, where, as Hayden Lorimer has argued: "landscapes (are) told as a distribution of stories and dramatic episodes, or as repertoires of lived practice" (2006, p. 515). And they are educational in the sense that they become sites of an accumulated, tacit knowl-edge enabled by a collective sensitisation to the murmuration, as well as through spontaneous human to human encounters with others. Through the starling murmuration, viewers are "learning to be affected," whether they set out to be or not.

In spatial terms, the murmuration serves as a neat illustration of the way that an established tradition of "natural" and "social" spaces can be disrupted and questioned. Not only are the bounded natural spaces of the reserve reframed by the "socialising" agency of people, the agency of starlings is also at work in reframing the residential street as a spontaneous site of natural-social encounter. In this sense, both are revealed as hybrid spaces of the natural-social. The murmuration reveals a hybridity which challenges conventional constructions of nature through capturing the dynamic and reciprocal relations of humans and non-humans and the "thrown together" spaces they co-create. As Hinchliffe has stated, this is not hybridity in the conventional sense that parties "simply interact to produce a new (impure) form. Rather, in relating, the parties must change too ... Nothing remains unaltered in the event of relating" (2007, p. 51). The point to take from this is that the murmuration does not represent a "new" or innovative form of "natural-social" relations, but that through the process of relating that it instigates, it has the capacity to question our perception of both humans and starlings in this moment; it is revealing "a world existing under our noses but one which we fail (quite literally) to see if we divide it into natural and social things." (Castree, 2005, pp. 224-225). In this sense, what I also want to emphasise is the way that the murmuration provides an illustrative educational tool for communicating the entanglement of the natural and social, the human and non-human, as well as challenging their associated spatial demarcation. Here I am thinking of "educational" primarily in a broadly informal context. The application of the starling murmuration to facilitate a critical way of thinking about nature and human-non-human relations would be relevant and useful in undergraduate teaching, for example, where such critical engagements in geography and environmental studies are not unfamiliar. However, here I am thinking more of "educational" in the context of wider public engagement through the informal education of wildlife television programming. As a form of engagement with "nature," wildlife television programming is already fluent in the art of capturing the spectacular and visceral event, even if this is often in a context where viewers are cognisant of the hyper-reality of its presentation. In this sense, wildlife television has traditionally been complicit in maintaining nature as "out there." But the murmuration offers a challenge to this representational framing. Indeed, according to another Tripadvisor reviewer it is "one of the few natural events that is better live than on television" (IanN, 2016).

6 | ENGAGING PUBLICS AND TELLING HUMAN-NON-HUMAN NATURE STORIES

During 2017 and 2018, I found myself in a positon to make my own, albeit minor, intervention into the critical exploration of natural-social landscapes in the context of wildlife broadcasting through my involvement as the academic consultant on a BBC series "Hugh's Wild West", presented by the celebrity chef, writer and environmental campaigner Hugh Fearnley-Whittingstall. The series was based on an exploration of wildlife in the West Country of England, but also involved those who observe, monitor and engage with it through a variety of "citizen-science" projects, environmental management schemes or self-taught observation and recording. In this sense, the series was premised on stories of the interactions and relations between wildlife and people; a possibility, perhaps, for telling more human–non-human nature stories in an

informal educational context. One episode included a story of the starling murmuration at the Ham Wall nature reserve which, consistent with the series as a whole, conveyed not only the gathering of starlings but also the gathering of people, something which was also articulated in the booklet published to accompany the series:

These murmurations have become an increasingly popular event for people in recent years and can draw crowds of up to a thousand spectators, many of whom don't consider themselves regular 'birdwatchers' but who are drawn to this dramatic spectacle nonetheless. As the sun sets over the Avalon Marshes and temperatures begin to plummet the assembled spectators share flasks of tea and exclamations of delight at the performance unfolding before them (Morris, 2018, p. 8).

Even in this unchallenging way a departure is signalled whereby the starling is not the focus in this story; the story is one of the sociality of humans and starlings and the way that the landscape of the murmuration is one that can only be meaningfully understood through this relational dynamic.

In attempting to make such human-non-human nature stories accessible, the story of the starling murmuration is a device for communicating the possibility of a more relational understanding of the natural and social that is played out across space. In an educational context, the idea of natural-social spaces can be conveyed through familiar spatial entanglements, such as those found when "naturally" perceived aspects such as topography, geology and hydrology intersect with identifiably human interventions such as farming, mining and land drainage, and where wildlife habitats are formed through a range of identifiable and interconnecting influences. By drawing attention to the difficulties of disentangling these constituent influences and the landscapes upon which they are tangibly ascribed, the possibility emerges to present these ideas in a forum of wider public engagement in challenging the idea of nature as something outside day-to-day lives and suggest that:

it might be helpful for us to question the traditionally sharp distinction between 'the natural' and 'the human' and think instead of what might be described as a more 'entangled' relationship between the two, where our lives and landscapes are forged more through the ways they connect and influence each other (Morris, 2018, p. 8).

7 | CONCLUSION

Having begun by questioning the ways that the educational landscapes of nature are spatialised, I have gone on to argue for the importance of a more relational understanding of the "natural" and "social" through a consideration of the dynamics of the human–non-human relations which permeate both of these concepts and inform a critique of them as separate and bounded entities. While this is not in itself a new conceptualisation in an educational context, I hope this engagement has conveyed that what continues to be presented as "nature" is not only simplified and reductive but often contradictory and not entirely coherent. Nature is a concept which perhaps endures in spite of itself; such a familiar notion it is forgiven many conceptual shortcomings. But despite an adherence to the familiar nature–society dualism, the revealing of its contradictions is not a shock to us – it is clear that the social and the natural interconnect and inflect each other and we know that natural and social spaces are not neatly delineated. It is perhaps more of a shock that we work so hard at maintaining this separation.

What I have argued here is that the starling murmuration provides a model for communicating the natural and the social as more entangled. The murmuration challenges the conventions of an educational model which sees nature as spatially external to our social world, disrupting the idea that "nature is *somewhere else*: it's something we travel to, visit or dwell in prior to returning to our 'unnatural' towns and cities" (Castree, 2014, p 11; emphasis in original). In offering this challenge to the educational landscapes which have persisted within wildlife and conservation practices, the murmuration is revealed as an unequivocally human–non-human entanglement. Here we can tell a human–non-human nature story through the sociality of humans and starlings, presenting new educational landscapes where "nature" is expressed through those directly engaged in the encounter, whether at the nature reserve or on the corner of a residential street, as well as in the way these stories are told through wildlife television broadcasting. What is revealed through the constitutive relations of humans and starlings embedded in these landscapes is that rather than relying on the distinction of natural and social, our understanding of these relations is more productively articulated through the acknowledgement that it is "the specific actors and relations

between them that constitute our world" (Castree, 2005, p. 228) and that through their entangled sociality, humans and starlings forge landscapes together.

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ENDNOTES

¹ The opening chapter of Soper's What is nature?, entitled "The discourses of nature" is of particular interest here and a useful starting point for

anyone wishing to critically engage with the "ordinary parlance about 'nature" (Soper, 1995, p. 19).

 2 See also (Feare, 1984).

- ³ My thanks to RSPB Ham Wall site manager Steve Hughes for information provided during an interview with him in February 2018.
- ⁴ A Somerset word used to describe a wetland drainage ditch.
- ⁵ My gratitude to Peter Allen for his permission to quote from his message.
- ⁶ Note that the "V5" and "H2" referred to here relate to the alphanumeric codes used to identify roads in the vertical (north-south) and horizontal (east-west) grid system within the Milton Keynes area.
- ⁷ My gratitude to Paul Manchester for his permission to quote from his article.

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